



# ISBNPA

Advancing Behavior Change Science

**AUCKLAND, NEW ZEALAND**

**11 - 14 JUNE, 2025**

***“Manaaki Taiao, Manaaki Tāngata, Manaaki  
Meake Nei.***

***Take Care Of The Environment, Take Care Of  
The People, Take Care Of The Future.”***



**Program  
and  
Abstract  
Book**

# TABLE OF CONTENTS

<b>Table of Contents</b>	<b>2</b>
<b>Welcome Message from the ISBNPA President</b>	<b>3</b>
<b>Welcome to Auckland, NZ</b>	<b>5</b>
<b>Welcome Message from the Annual Meeting Committee</b>	<b>7</b>
<b>The Committees</b>	<b>10</b>
<b>Thank you to our Reviewers</b>	<b>13</b>
<b>Thank you to our Sponsors &amp; Exhibitors</b>	<b>15</b>
<b>General Information</b>	<b>20</b>
<b>Social Events</b>	<b>23</b>
<b>Keynote Speakers</b>	<b>24</b>
<b>One to Watch Invited Talks</b>	<b>30</b>
<b>Preconference Workshops</b>	<b>36</b>
<b>Award Nominees</b>	<b>43</b>
<b>ISBNPA 2026</b>	<b>51</b>
<b>Program at a Glance</b>	<b>52</b>
<b>Award Nominees</b>	<b>56</b>
<b>Abstract Book</b>	<b>102</b>

# WELCOME MESSAGE FROM PRESIDENT

Dear ISBNPA colleagues,

I'm thrilled to warmly welcome you all to the 2025 International Society of Behavioral Nutrition and Physical Activity Conference held here in the vibrant city of Auckland, New Zealand.

We have looked forward to this moment with great anticipation since 2019. As many of you will recall, our plans to gather in Auckland were originally scheduled five years ago but were disrupted by the global COVID-19 pandemic. While that unexpected turn of events delayed our meeting, it also strengthened the resilience and unity of the ISBNPA community, renewing our collective energy and commitment to making Auckland 2025 a truly exceptional experience.

Under the leadership of Professors Erica Hinckson, Scott Duncan, and Melody Smith, the Annual Meeting Committee has curated an outstanding international program—extensive, excellent, and exciting—that we proudly refer to as the “3EXs.” Thoughtfully crafted, the program also incorporates a distinctive indigenous perspective that invites us to engage with the local context and broaden our understanding in meaningful and enriching ways.

We are thrilled to offer an inspiring and wide-ranging program that truly reflects the depth and energy of our field—with four outstanding keynote addresses, six captivating ‘One-to-Watch’ invited talks, eight pre-conference workshops, 58 thought-provoking symposia, ten lively Dare2Share sessions, 186 oral presentations, 206 short orals, 42 award orals, and an impressive 370 posters, showcasing innovation from around the globe. A special highlight of this year's program is a dedicated plenary session on research impact—an area central to ISBNPA's strategic initiatives—which will explore how we can better translate our collective knowledge into meaningful, measurable change in policy and practice. Before each keynote address, you will also hear about the progress we have made with ISBNPA's other strategic initiatives: Climate Action, Inclusive Culture, and Growing the Next Generation.

It is my distinct pleasure to extend a warm welcome to our distinguished keynote speakers—Professor Terryann Clark, Professor Melody Ding, Dr Ihi Heke, and Distinguished Professor Emeritus James F. Sallis — whose extensive expertise and leadership in advancing the fields of behavioural nutrition and physical activity will greatly enrich our program. I am also honoured to extend a special welcome to our emerging scholars—Tamara Bozovic, Deborah Heke, Maeghan James, Brittany Johnson, Ben Singh, and Jordan J. Smith—whose promising contributions represent the future of our research fields and the continued advancement of our Society.

One of the most enriching aspects of in-person conferences is the opportunity to connect, both professionally and personally. Auckland 2025 is designed to foster these connections, offering a wide range of opportunities to catch up with long-time colleagues and make new acquaintances. Whether it is during engaging sessions, informal discussions between presentations, or shared moments at social events, there will be plenty of chances to build meaningful relationships throughout the conference. Our venue, the Aotea Centre, is ideally located in the heart of Auckland, encouraging active, eco-friendly travel between sessions as you enjoy the walkable cityscape with fellow delegates.

# WELCOME MESSAGE FROM PRESIDENT

A highlight of the social programme is Mauri Ora, the ISBNPA Gala Dinner, to be held at the historic Auckland Town Hall. This special evening will include cultural experiences and provide a unique opportunity to engage with the local Indigenous community, offering insights into holistic approaches to life, health, and well-being. It promises to be a memorable night of connection, celebration, and cultural exchange.

This conference would not have been possible without the outstanding efforts of many individuals and groups. We extend our sincere gratitude to the Annual Meeting Committee, the Scientific Programme Committee, the Executive Committee, Executive Director Antonio Palmeira, abstract reviewers, session chairs, judges, volunteers, sponsors, exhibitors, Venue West Conference Services, and each and every one of you. Your contributions have been invaluable, and we are profoundly thankful.

I wish you an enjoyable and rewarding conference experience, filled with moments that you will value for years to come.

Kind Regards,



Ester Cerin  
**ISBNPA President**



# WELCOME TO AUCKLAND, NEW ZEALAND

Set between stunning harbors and lush volcanic landscapes, Auckland seamlessly blends vibrant city life with easy access to natural wonders. Known as **Tāmaki Makaurau**, or “**Tāmaki desired by many**,” Auckland is a dynamic city celebrated for its rich Polynesian heritage, thriving arts scene, and a love for outdoor adventure. With world-class sailing harbors and a lifestyle that bridges urban sophistication with nature, Auckland is consistently rated among the world’s most liveable cities.

## VIBRANCY

Auckland is where diversity and energy meet. As New Zealand’s largest city, home to a third of the nation’s people, it’s a melting pot of Māori, Pacific, and international cultures. The rugged, windswept beaches of the west coast stand in striking contrast to the gentle, family-friendly shores of the East, offering everything from surfing to relaxed picnics.

## FOOD & WINE

Auckland’s food scene is a vibrant fusion of its multicultural roots, with fresh local ingredients and international flavors. From fine dining on the waterfront to the bustling Ōtara Markets, where you can sample Polynesian and Pasifika delicacies, Auckland’s culinary offerings cater to all tastes. The surrounding wine regions, like the rolling vineyards of Kumeu and the renowned wineries on Waiheke Island (just a short ferry ride away), invite visitors to enjoy world-class wines in stunning landscapes.

## ATTRACTIONS

Auckland’s blend of nature and culture makes it a must-see destination. For a deep dive into history and art, visitors can explore treasures at the Auckland Museum or the Auckland Art Gallery Toi o Tāmaki. For outdoor enthusiasts, the Waitākere Ranges offer a vast network of trails through lush native rainforests, where you can hike to secluded waterfalls, spot unique wildlife, and experience breathtaking views of the coastline. Auckland also offers endless coastal exploration, from the Hauraki Gulf’s tranquil islands to iconic volcanic landscapes. The Sky Tower, New Zealand’s tallest building, provides a panoramic city view, and for the adventurous, there’s even an option to bungee jump. Auckland is a city where urban sophistication meets natural beauty—there’s something here for everyone.





# AUT

NEW ZEALAND

AUT is New Zealand's leading modern university, situated in one of the world's most dynamic and culturally rich cities; Auckland. Home to more than 26,000 students across three campuses, AUT is one of the largest and most diverse universities in the country. We have a 130-year history as a place of learning, and this year we are celebrating 25 years as a university.

Our research is focused on real-world impact, and our discoveries are widely used, both in New Zealand and around the world. From sports science to artificial intelligence, and ecology to public health, our research networks, institutes and centres address issues facing the environment, society and the world. Collaboration is an important part of our work, and we are connected to an extraordinary range of organisations worldwide; sharing expertise and resources to support industry, business, governments and society as a whole.



## AUCKLAND UNIVERSITY OF TECHNOLOGY

# WELCOME MESSAGE FROM THE ANNUAL MEETING COMMITTEE CONFERENCE CHAIRS

Tēnā koutou katoa (Greetings to you all),

As Chair of the ISBNPA 2025 Conference Organising Committee, along with my co-chairs Professor Scott Duncan and Professor Melody Smith, it is our pleasure to welcome you to this year's conference in Tāmaki Makaurau- Auckland, Aotearoa-New Zealand. This conference is a chance for our global community to come together, share ideas, challenge assumptions, and stimulate the kind of conversations that move our field forward, creating real, lasting impact in physical activity, nutrition, and health.

This year's conference has been made possible by a dedicated and passionate team from Auckland University of Technology (AUT) and the University of Auckland. I want to acknowledge my Co-Chairs, Scott Duncan (AUT) and Melody Smith (University of Auckland), who have been instrumental in their support to help shape the programme. I also extend my eternal gratitude to Robb Hogg, Chair of the Māori Cultural Programme & Mātauranga, who has led the integration of Māori perspectives and cultural elements throughout the conference. Special thanks also go to Professor Nigel Harris (AUT), Chair of the Sponsorship Committee, and Associate Professor Justin Richards from Victoria University Wellington /Sport New Zealand, our Head of Partnerships, whose efforts have been critical in bringing together the support needed for this event.

Our conference theme,

**“Manaaki taiao, manaaki tāngata, manaaki meake nei”**

“Take care of the environment, take care of the people, take care of the future”

captures our spirit as hosts, reflecting a deep respect for the interconnectedness of people, place, and the natural world. This guiding principle has shaped our scientific programme and the cultural experiences we have woven throughout the conference, providing a rich and immersive journey for all.

During my time as President of ISBNPA, we established the Indigenous Research Circle/Special Interest Group, co-led by Robb Hogg and Brittany Jock who, along with a delegation of Indigenous Canadian scholars and elders, will be joining us in Auckland. Their presence and voices will add depth and richness to our conversations, reminding us of the importance of Indigenous perspectives in our research.

The conference will officially open with a pōwhiri, a traditional Māori welcome, at the Aotea Centre, setting a powerful tone for the days ahead. This ceremony, steeped in protocol and respect, will include the hongi (nose-pressing greeting), welcoming speeches, and cultural performances, symbolising the coming together of people from around the world.

In addition to this, our pre-conference hui, “Exploring Indigenous Perspectives of Physical Activity and Nutrition”, will take place at a local marae (Māori meeting house). This immersive wānanga (workshop) will include culturally grounded physical activities such as waka ama (outrigger canoeing), kapa haka (Māori cultural performance), and a shared hāngī (traditional feast). It will offer participants a unique opportunity to connect with self, others, and place, while exploring the powerful relationship between culture, movement, and health.

# WELCOME MESSAGE FROM THE CONFERENCE CHAIRS

We are also honoured to have two of our keynote speakers representing Māori perspectives, Dr. Ihirangi Heke and Professor Terryann Clark, who will share their groundbreaking work in Indigenous health, providing insights that resonate deeply with the theme of this year's conference.

We are also excited to welcome our two international keynote speakers, Distinguished Professor Jim Sallis and Professor Melody Ding who will also bring important and thought-provoking perspectives.

As we gather, it is important to acknowledge that a successful conference is only possible through the efforts of many. I want to extend my sincere thanks to our volunteers, students, staff and Venue West who have worked tirelessly behind the scenes, ensuring that every detail has been carefully considered.

To our platinum sponsors, AUT and Sport NZ, along with all our sponsors, whose support has made it possible for us to create a truly impactful and engaging event: Thank you for believing in the importance of this work. Your contributions help us push the boundaries of what is possible in the fields of physical activity and nutrition.

Finally, I encourage all of you, our delegates, to take full advantage of the experiences woven throughout this program from traditional Māori games and planting native trees, to the powerful reflections of our closing ceremony centred around "Mauri Ora", a celebration of the flourishing life force that connects us all.

Thank you for being part of this global community and for your commitment to advancing the science of physical activity and nutrition.

Ngā mihi nui,



Professor Erica Hinckson  
2025 ISBNPA Conference Co-Chair, ISBNPA 2025  
On behalf of the Organising Committee



Professor Scott Duncan  
2025 ISBNPA Conference Co-Chair, ISBNPA 2025



Professor Melody Oliver-Smith  
2025 ISBNPA Conference Co-Chair, ISBNPA 2025

activPAL | research bred,  
research led, est. 2001

# activPAL4pro

the first natively waterproof activPAL - no jacket required

from  
**PAL**technologies  
Providing the Evidence

[www.palt.com](http://www.palt.com)



# THE COMMITTEES

## Annual Meeting Committee Chairs



**Scott Duncan**

Auckland University of Technology  
New Zealand



**Erica Hinckson**

Auckland University of Technology  
New Zealand



**Melody Smith**

University of Auckland  
New Zealand

## Committee Members



**Meg Bruening**

Penn State  
USA



**Robert Hogg**

Auckland University of  
Technology  
New Zealand



**Daniel Camiletti Moirón**

University of Cadiz  
Spain



**Lisa Mackay**

Auckland University of  
Technology  
New Zealand



**Jose Castro Piñero**

University of Cadiz  
Spain



**Antonio Palmeira**

Universidade Lusófona  
Portugal



**Ester Cerin**

Australian Catholic  
University  
Melbourne



**Justin Richards**

Victoria University of  
Wellington – Te Herenga  
Waka Sport NZ  
Ihi Aotearoa



**Jayna Dave**

USDA/ARS Children's  
Nutrition Research Center  
USA



**Ben Singh**

University of South Australia  
Australia



**Alexandra Descarpentrie**

University of Southern  
California  
USA



**Delfien Van Dyck**

Ghent University  
Belgium

# THE COMMITTEES



## Executive Committee



**Ester Cerin**  
ISBNPA President, Australian  
Catholic University  
Australia



**Andrea Ramirez Varela**  
University of Texas Health  
Science Center at Houston  
(UTHealth Houston) Texas  
USA



**Seb Chastin**  
ISBNPA President-Elect  
Glasgow Caledonian University



**Inês Santos**  
Universidade de Lisboa  
Portugal



**Meg Bruening**  
Penn State  
USA



**Deborah Salvo**  
University of Texas at Austin  
USA



**Scott Duncan**  
Auckland University of  
Technology  
New Zealand



**Sarah Shaw**  
University of Cambridge  
United Kingdom



**Jenna Hollis**  
University of Newcastle  
Australia



**Delfien Van Dyck**  
Ghent University  
Belgium



**Carol Marher**  
Universidad de Cuenca  
Australia



**Simone Verswijveren**  
Deakin University  
Australia



**Angelica Ochoa-Aviles**  
University of Southampton  
United Kingdom



**Kylie Wilson**  
Arizona State University  
USA



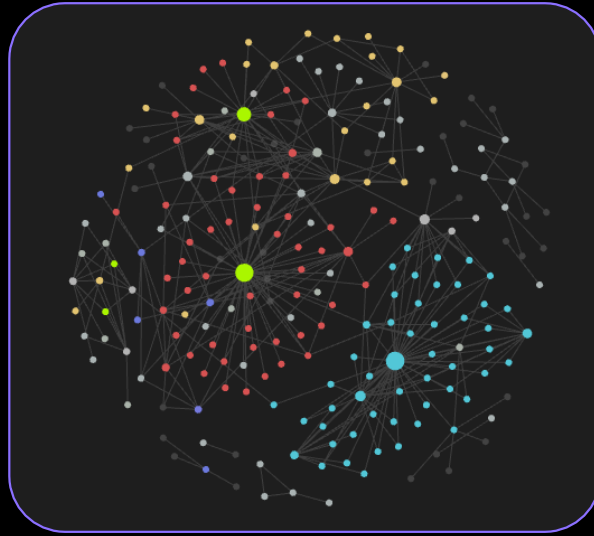
**Adewale Oyeyemi**  
Arizona State University  
USA



**Antonio Palmeira**  
Universidade Lusófona  
Portugal



# PKM INSIGHTS



- ☒ Do you find yourself struggling to organise all the information in your projects?
- ☒ Are you tired of juggling multiple tools to manage your notes, tasks and to link different sections of your writing?
- ☒ Is personal knowledge management (PKM) challenging?

*...then come talk to us*

*Special offer for  
ISBNPA 2025 Conference attendees*

**Claim your free 30-min consult**

# THANK YOU TO OUR ABSTRACT REVIEWERS

## THANK YOU!

The ISBNPA 2025 Annual Meeting Committee wishes to acknowledge the abstract reviewers for the ISBNPA 2025 Annual Meeting. Their expertise is invaluable in ensuring the quality and diversity of the content of the Conference program.

Thank you for your invaluable contribution to the ISBNPA 2025 Annual Meeting.

Antonio Palmeira, ISBNPA Executive Director

Erica Hinckson, Scott Duncan, Melody Smith (Chairs of the Annual Meeting Committee)

Marc Adams  
Maha Almohamad  
Teatske Altenburg  
Maureen Ashe  
Laura Balis  
Rebecca J Beeken  
Jacinta Brinsley  
Alissa Burnett  
Greet Cardon  
Shelby Carr  
Yihkai Chan  
Mai Chin A Paw  
Sofie Compennolle  
Milkana Borges Cosic  
Marina De Barros Pinheiro  
Marieke De Craemer  
Tom Deliens  
Craig Donnachie  
Scott Duncan  
Olivia L. Finnegan  
Cindy Forbes  
Jayne Fulkerson  
Jennifer Gale  
Jennifer Gay  
Claire Gough  
Justin Guagliano  
Janas Harrington  
Genevieve N Healy  
Erin Hennessy  
Joe Henson  
Kylie Hesketh  
Robert Hogg  
Bailey Houghtaling  
Russ Jago

Rachel Jones  
Jeroen Lakerveld  
Lua Perimal Lewis  
Nanna Lien  
Penelope Love  
Karen Ma  
Mallika Mathur  
Christophe Matthys  
Lisa K. Micklesfield  
Josef Mitáš  
Jorge Mota  
Patrick Mullie  
Nicole Nathan  
Jame Nobles  
Anthony Okely  
Antonio Palmeira  
Jenna Panter  
Natalie Pearson  
Alexandra Potts  
Tirna Purkait  
Nicola Ridgers  
Richard Rosenkranz  
Sara Rosenkranz  
Alisha Rovner  
Sanjay Saha  
Jorge Fernandez Santos  
Maria Paula Santos  
Jan Seghers  
Catarina Silva  
Andrea Smith  
Maria Soloveva  
Amanda Staiano  
Tom Stewart  
Rachel Sutherland

Anne Tedemann  
Debbe Thompson  
Chien Ting  
Linda Trinh  
Dinithi Uthumange  
Jelle Van Cauwenberg  
Delfien Van Dyck  
Esther Van Sluijs  
Maite Verloigne  
Tanis Walch  
Oliver Wilson  
Eleanor Winpenny  
Catherine Woods  
Hattie Wright  
Wenlun Yuan  
Casper J. P. Zhang  
Yijun Zhang  
Miaobing (Jazzmin) Zheng



# **Department of Sports Science and Physical Education**

*The Chinese University of Hong Kong*

## **About Us**



**Founded in 1963, The Chinese University of Hong Kong (CUHK) is a forward-looking comprehensive research university with a global vision, consistently ranked among the top 50 universities worldwide. Within this prestigious institution, the Department of Sports Science and Physical Education (SSPE) has emerged as a world-class center for sports research and education. Ranked 21st globally, 2nd in Asia, and 1st in China (QS World University Rankings for Sports-Related Subjects 2025), SSPE is dedicated to its vision of becoming a world-leading hub for research excellence and high-quality teaching.**

## **Higher Degree Programmes**



### **Research Postgraduate Programme**

- **Doctor of Philosophy (PhD) in Education (Sports Science & P.E.)**

### **Taught Postgraduate Programme**

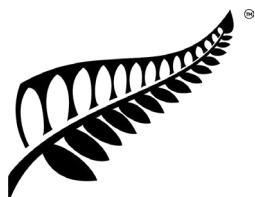
- **Master of Science (MSc) in Sports Science and Physical Activity**

### **Admission Scholarships**

- ✓ **Hong Kong PhD Fellowship Scheme (HKPFS) and CUHK Vice-Chancellor's PhD Scholarship Scheme are available in every academic year**
- ✓ **SSPA Full Tuition Academic Award for talented students studying MSc in Sports Science and Physical Activity**

# THANK YOU TO OUR SPONSORS

## PLATINUM SPONSORS



**SPORT  
NEW ZEALAND**  
IHI AOTEAROA

### **Sport NZ**

Sport NZ's vision is simple, "Every Body Active". We support a happier, healthier and more connected Aotearoa New Zealand by enabling communities to be active, in their way. We lead by maintaining the strength, resilience and integrity of the play, active recreation and sport system, and partner with organisations to achieve shared outcomes.



### **AUT**

AUT is New Zealand's leading modern university, situated in one of the world's most dynamic and culturally rich cities; Auckland. Home to more than 26,000 students across three campuses, AUT is one of the largest and most diverse universities in the country. We have a 130-year history as a place of learning, and this year we are celebrating 25 years as a university.

Our research is focused on real-world impact, and our discoveries are widely used, both in New Zealand and around the world. From sports science to artificial intelligence, and ecology to public health, our research networks,

institutes and centres address issues facing the environment, society and the world. Collaboration is an important part of our work, and we are connected to an extraordinary range of organisations worldwide; sharing expertise and resources to support industry, business, governments and society as a whole.



*AUT's new North Campus Building – named Tukutuku – located on Auckland's North Shore, with the city's Waitematā Harbour and CBD beyond. Opened in 2024, Tukutuku is home to the University's Faculty of Health and Environmental Sciences. (Photo credit: Sam Hartnett).*

# THANK YOU TO OUR SPONSORS

## GOLD SPONSOR



The activPAL™ is a widely utilized research-focussed wearable sensor for objectively quantifying free-living sedentary and ambulatory behaviors. Its extensive use in research, as evidenced by thousands of publications across diverse participant populations, underscores its value in providing robust data for assessing treatment efficacy and disease-related risks.

The activPAL categorizes daily activities into distinct posture-defined states: in-bed, lying, sitting, and ambulatory activities (standing, stepping, cycling). Typically, the device is worn continuously for up to 14 days, offering researchers objective Free-Living Outcomes (FLO) which can be broadly categorized into measures of Participation (Behavioral Outcomes) and measures of Ability (Biometric Outcomes). These behavioral outcomes quantify the volume, frequency and duration of an individual's engagement in specific activities whereas biometric outcomes are independent of activity volume and reflect the quality or performance of movements, for example walking intensity or sit-to-stand transition time.

New in 2025 is the activPAL4pro, the first natively waterproof activPAL (no jacket required). The aP4pro is optimized for artificial intelligence (AI) data analysis, featuring a data collection rate of up to 100 Hz and an updated, loss-less, high-fidelity data storage format. These enhancements are expected to facilitate more sophisticated and nuanced analyses of the acceleration and inclination data.

# THANK YOU TO OUR SPONSORS



香港中文大學  
體育運動科學系  
Department of Sports Science and Physical Education  
The Chinese University of Hong Kong

## The Chinese University of Hong Kong

Founded in 1963, The Chinese University of Hong Kong (CUHK) is a forward-looking comprehensive research university with a global vision, renowned for combining tradition with modernity and bridging Chinese and Western scholarship. Within this prestigious institution, the Department of Sports Science and Physical Education (SSPE) has emerged as a world-

class center for sports research and education. Ranked 21st globally and 1st in China (QS World University Rankings 2025), SSPE pursues its vision to become a world-leading hub for research excellence and high-quality teaching, dedicated to improving human health and well-being through sports science, physical education, and active living.

## SILVER SPONSORS



## Shanghai University of Sport - Journal of Sport and Health Science

The Journal of Sport and Health Science (JSHS) is a peer-reviewed, international, multidisciplinary scientific journal dedicated to the advancement of sport, exercise, physical activity, and health sciences. JSHS publishes original and impactful research, topical reviews, editorials, opinion, and commentary papers relating physical and mental health, injury and disease prevention, traditional Chinese exercise, and human performance. Through a distinguished, carefully selected international editorial board, JSHS has adopted the highest academic standards, impeccable integrity, and an efficient publication platform.

Fields of particular interest to JSHS include (but are not limited to)

- Sport and exercise medicine
- Injury prevention and clinical rehabilitation
- Sport and exercise physiology
- Public health promotion
- Physical activity epidemiology
- Biomechanics and motor behavior
- Sport and exercise biochemistry and nutrition
- Sport and exercise psychology
- Exercise and brain health
- Physical education
- Traditional Chinese sports, exercise, and health

## Baylor College of Medicine



# THANK YOU TO OUR SPONSORS

## ADDITIONAL SPONSORS



### **The Asia-Pacific Society For Physical Activity (ASPA)**

The Asia-Pacific Society for Physical Activity (ASPA) is a professional society to advance the science and practice of physical activity in Asia Pacific region. The Society provides a forum to bring together researchers, practitioners and policy makers to share expertise and experiences in the advancement of the field of physical activity.



# THANK YOU TO OUR EXHIBITORS

## EXHIBITORS



香港中文大學  
體育運動科學系  
Department of Sports Science and Physical Education  
The Chinese University of Hong Kong

## USDA/ARS Children's Nutrition Research Center

at Baylor College of Medicine in collaboration with Texas Children's Hospital

*Studying Nutrition Today for the Health of Future Generations*

Advancing research in nutritional health for children, as well as lactating and pregnant women.

### Leaders in Behavioral Science



Nutrition

Screen  
Time



Physical  
Activity

Sleep



Located within the heart of the Texas Medical Center,  
in Houston, Texas



BCM.edu/CNRC

# GENERAL INFORMATION

## Registration Desk and Name Badges

The registration desk is located on the Circle Foyer and will be open during the following times:

Wednesday, June 11: 7:00 - 21:00

Thursday, June 12: 07:30- 18:00

Friday, June 13: 07:30- 16:30

Saturday, June 14: 08:00 - 13:30

Delegate badges must be worn at all times while at the conference facilities.

Pre -conference workshop participants should pick up their badges prior to attending the workshops.

Badges and lanyards can be returned at the registration desk at the end of the conference to be recycled.

**Please note that outstanding payments can only be settled by credit card (Visa, Mastercard). No badges will be handed out if registration has not been paid in full. No cash payments are accepted.**

## Exhibition Hours:

Exhibits are located in the Stalls Foyer on the second level.

### **Wednesday, June 11:**

- 18:30 - 21:00

### **Thursday, June 12:**

- 11:00 - 12:00
- 13:15 - 14:14
- 16:00 - 16:45

### **Friday, June 13:**

- 10:30 - 11:30
- 12:45 - 13:30

## Speaker Ready Room

The Speaker Ready Room is located in **Waihorotiu #2** (Level 4).

Presenters are required to visit the Speaker Ready Room if they have not pre-loaded their presentation, would like to check their slides or need to make small edits, at least two hours prior to the start of their session. For sessions starting at 08:25AM, presenters must upload their presentations the day before wherever possible. A technician will be onsite should presenters have any questions or require assistance.

Wednesday, June 11: 11:00 - 17:30

Thursday, June 12: 07:30 - 17:00

Friday, June 13: 07:30 - 17:00

Saturday, June 14: 07:30 - 12:30

# GENERAL INFORMATION

## Dietary Requirements

Any dietary requirement and/or food allergy indicated during registration will be printed on the back of your name badge.

Only previously advised allergies will be accommodated.

The back of your name badge will indicate whether your dietary needs are being met within the main buffet or not. If your name badge indicates that a special meal has been prepared for you, please locate the nearest catering staff, show them the back of your badge, and they will provide you with your specially-curated meal.

If you have any questions or concerns, please reach out to any of the catering staff, or talk to someone at registration during registration hours.

## Posters and Nesi Job Board

Posters are located in the Stalls and Balcony Foyers on the second and fifth levels of the Aotea Center. They are grouped by SIG. Presenting authors are required to attend their posters during their session.

### **Poster Session 1 – Thursday, June 12, 2025: 11:00 am - 12:00 pm**

Mounting: between 07:30 and 08:25

Take down: between 16:45 and 18:00

### **Poster Session 2 – Friday, June 13, 2025: 10:30 am - 11:30 pm**

Mounting: between 07:30 and 08:25

Take down: between 15:15 and 18:00

Any posters not taken down at the end of each day will be removed by the organizers and can be picked up at the Registration Desk. Posters not collected by the end of the meeting will be recycled. We appreciate everyone's support in mounting and taking down posters on time.

The NESI Job Board will be located in the NESI Corner, in the Stalls Foyer.

## Conference Hotels

- Grand Millennium , 71 Mayoral Drive, Cnr Vincent Street, 300m from Aotea Centre
- Four Points Auckland, 110 Mayoral Drive, 300m from Aotea Centre
- JW Marriott Auckland, 22-26 Albert Street, 800m from Aotea Centre

If you need to make changes to your booking, please contact the hotel directly.

Booking confirmations have been sent by email.

# GENERAL INFORMATION

## Certificates of Attendance

Certificates will be sent out automatically by email within a few days of the conference.

If you require a certificate of presentation, please email [program@isbnpa.org](mailto:program@isbnpa.org) and allow for a few days for it to be issued and sent to you.

## Internet Access

### Wireless Network: Auckland Conventions or Auckland Live

#### Passcode: Aotea111

If you have issues or questions, please reach out to someone at the Registration Desk during Conference hours.

## Emergency Procedures

NO DRILLS are scheduled, so if an alarm sounds, it is the real thing. In the event of severe weather or a facility emergency, an alarm will sound, and instructions on how to proceed will be broadcast over the intercom system. The Aotea Centre staff will act as guides and will help anyone with mobility issues.

In the event of a medical emergency, please notify the Aotea Staff first, and they will call 111. If 111 is called before informing anyone from the facility, please let the Aotea Centre Staff know right away so they can alert Building Security, so someone is greeting the EMTs to get them to the right location of the emergency. A first aid kit and a defibrillator are located within the building, and Aotea Centre staff will be able to assist.

If instructed to take shelter or evacuate the building, as in the event of a fire, active shooter, etc., the Aotea Centre staff will assist guests to the nearest [rally point location](#) outside the facility. There is an evacuation map along with a rally point map provided for reference.

If you discover a Fire, inform the nearest Facility worker, and they will send out a radio call to Building Security to activate the alarms. Fire extinguishers are located throughout the facility, inside the exhibit halls and in the service hallways in the back of each meeting room.

# SOCIAL EVENTS

## MAURI ORA ISBNPA 2025 Dinner Experience

**Date:** June 13, 2025

**Location:** Auckland Town Hall

**Nau mai, haere mai e ngā manuhiri tūārangi!**

(We welcome you our visitors from afar!)

Join us for an unforgettable connection event (historically the conference dinner). The name of this connection event is 'Mauri Ora', translated as 'consciousness' or 'awakening'. Discover the beautiful culture of Aotearoa New Zealand at the Auckland Town Hall. Immerse yourself in the rich traditions of the Māori people with a breathtaking Kapa haka (cultural performance).

Savor the unique flavours of the local cuisine. Network with your peers, and dance the night away to the beats of a renowned DJ.

Spaces are limited, so secure your spot for this extraordinary evening during the registration process.

## KAIPĀTIKI Project

**Date:** June 10, 2025

**Location:** ECOHUB, 17 Lauderdale Road, Birkdale

Join us for a one-of-a-kind networking event – the [Kaipātiki Project](#), an innovative EcoHub growing a sustainable future for people and nature. They do this by empowering people, inspiring connection with nature and enabling sustainable living. Along with 1,000 volunteers annually, they run a thriving native plant nursery where they grow 40,000+ native plants every year and plant them back in the local reserves. They facilitate forest, stream and estuary regeneration activity, promote zero waste and encourage local food initiatives. By working together, we can restore our native plants, birds, bugs and fish.

# KEYNOTE SPEAKERS



**James F. Sallis**, Ph.D is Distinguished Professor Emeritus in the Herbert Wertheim School of Public Health at University of California San Diego and Professorial Fellow at Australian Catholic University, Melbourne.

His primary research interests are promoting physical activity and understanding policy and environmental influences on physical activity, nutrition, and obesity. His transdisciplinary research has documented promising environmental and policy strategies for promoting individual, planetary, and economic health, while enhancing equity. He is an author of over 800 scientific publications and one of the world's most cited scientific authors in any field. His current priority is getting research used to create healthy and sustainable cities.

## **Presentation Title:**

Environmental Research on Physical Activity and Nutrition Can Contribute to Solving Multiple Global Challenges

## **Presentation Abstract:**

Environmental research on physical activity and nutrition has grown and matured substantially since the dawn of the 21st century. High-quality science has impacted practice and policy in many sectors of society worldwide. While we continue working on improving the science and translating the results in the service of better global health, there are opportunities for applying our methods and findings to expand the impact of our work to confront some of the world's greatest challenges. In this talk, Dr. Sallis will invite ISBNPA attendees to broaden their outcomes of interest to co-benefits of healthy community and food system design, including health inequities and community prosperity. He will also encourage attendees to develop new partnerships and research goals to contribute to recommendations that can improve health while mitigating and adapting to climate change.

# KEYNOTE SPEAKERS



**Dr Ihi Heke** is of Māori descent and was raised in the mountain environments of New Zealand's South Island. Over the past 40 years Dr Heke has been a guide in Milford Sound's World Heritage Park, a mountain bike and ski guide in numerous alpine locations globally and more recently leading groups to experience traditional Māori environmental science. Dr Heke has post graduate degrees in Environmental Management, educational psychology and a PhD in population health. Dr Heke's current research focus has been using Systems Dynamics to help Māori and other indigenous groups abroad, build their own health and wellness activities through traditional environmental knowledge. In this capacity, Dr Heke was awarded a research grant by Johns Hopkins

University combining Systems Science and Maori Environmental Connections. Dr Heke also retains teaching positions with Case Western Reserve University and Montana State University. Dr Heke's current role is with Google X's (San Francisco) generative AI initiative. Dr Heke has also been developing VR180 Māori environmental experiences with a particular interest in high performance sport. More specifically his work has been looking at converting elite athletes into environmental champions by teaching them how to be environmentally centred rather than athlete centred in the ways that they train and evaluate elite performance.

## **Presentation Title:**

Climate Change, Traditional Ecological Knowledge and Well-Being: Contributions of Generative AI

## **Presentation Abstract:**

### ***Topics of discussion***

- Maori Ancestral concepts of health from the environment
- Climate change, traditional ecological knowledge and well being
- AI, data sovereignty and contributions to native well-being

# KEYNOTE SPEAKERS



**Dr. Terryann Clark Ph.D** is a Professor in the School of Nursing, University of Auckland and the Cure Kids Professorial Chair in Child and Adolescent Mental Health. She has worked as a nurse for over 30 years in youth health in various roles and

as an academic. TC was a founding member of the Youth2000 survey series over the past 25 years and has led the last 2 waves of the national youth health surveys. She has also led a study exploring the influence of whanaungatanga on Indigenous youth wellbeing. She has authored over 120 academic publications and 40 reports and recently was awarded a research impact award for influencing national policy. <https://profiles.auckland.ac.nz/t-clark>

**Presentation Title:**

Exploring wellbeing for Indigenous Māori youth: Toward culturally responsive and respectful interventions.

**Presentation Abstract:**

This presentation will share findings from research exploring the perspectives of well-being and the concept of whanaungatanga from Māori youth in New Zealand. Our findings provide some unique insights into how interventions might be shaped differently for an Indigenous population that are developmentally relevant and culturally safe. This has wider implications for how programmes and services are developed - moving away from universal one-size-fits-all approaches to recognising the complexity and intersections of youth development, ethnicity, culture and socio-political contexts to address health inequity.



# KEYNOTE SPEAKERS



**Dr. Melody Ding** is a Professor of Public Health/NHMRC Emerging Leader Fellow Prevention Research Collaboration | Sydney School of Public Health | Faculty of Medicine and Health THE UNIVERSITY OF SYDNEY and more recently leading groups to experience.

**Presentation Title:**

Active Research vs. Inactive Population: Why Physical Activity Research Needs Rebranding in a Complex World

**Presentation Abstract:**

Despite the prolific output of physical activity research, with thousands of papers published annually, global progress in promoting physical activity remains stagnant. Most countries are off track to meet the World Health Organization's Global Action Plan for Physical Activity (GAPPA) targets. This paradox raises critical questions: Why are we succeeding in research but failing in practice? Is it time to rethink and rebrand physical activity research? This talk will explore the complexities of physical activity as a 'wicked problem,' requiring innovative solutions that transcend traditional research frameworks. It will emphasize the need for systems thinking and collaborative approaches, encouraging researchers to engage with diverse stakeholders beyond their usual networks. By advocating for a 'mission-oriented' paradigm, this talk promotes systems-centred, collaborative, and equitable research to drive sustainable changes in physical activity promotion.



# PANEL DISCUSSION SPEAKERS



**Nicola Gamble** has over 20 years of experience working in research, evaluation and strategic insights roles across UK, Australia and New Zealand. Whilst working in New Zealand she has held roles within the Auckland Council, Fonterra, The Retirement Commission and at Aktive – Auckland Sport and Recreation. She currently leads the Research, Evaluation and Insights team at Sport New Zealand Ihi Aotearoa.



**Dr Nikki Penetito-Hemara** (Ngāti Ranginui, Ngāti Kahungunu, Whakatōhea, Ngāti Porou) is a researcher, practitioner and strategist, who is committed to disrupting systems that fail Māori. Committed to social innovation

and systems change, she thrives in spaces where creativity meets impact - unlocking new ways to uplift whānau and communities using kaupapa Māori principles and practices. A Māmā of four, a fierce competitor, and a natural haututū (mischief), Nikki jumps at any excuse to play. Whether as a respected practitioner of taonga tākaro (traditional Māori games), through

her rangahau (research), or in a backyard game with her tamariki, she believes movement is more than just an activity - it's connection, identity, and hauora (holistic wellbeing) in motion. Her PhD titled, He Pūkenga Pūrākau, Ka Ora te Tamaiti, explores the transformative power of pūrākau-based physical activity for tamariki Māori - proving that our tūpuna kōrero (ancestral narratives) are more than just stories, they are living, breathing tools for movement, learning, and wellbeing. Through her work, Nikki is reawakening mātauranga (Māori knowledge) and championing playful, culturally rich spaces where tamariki can move, learn, and grow - just as their ancestors did!



**Ella Kumar JP**, has been an elected member of the Puketāpapa Local Board since 2010 and currently serves as the Chair. Her passion in health and wellbeing has been part of her since 1989 where she started her focus on increasing physical activity through group fitness. Since then, completed her Post Graduate Certificate in Health Science and she is a Registered Exercise Prescriber.

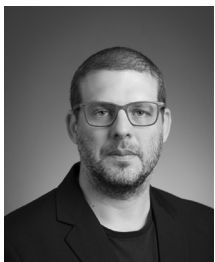
She has worked as public health promoter for South Asian Population with Auckland District Health Board, Procure Health and North Harbour Sports.

She continues to advocate Healthy holistic wellbeing in her current role, the local board has Puketāpapa Healthy Action Plan which plays a vital role.



**Dr Caryn Zinn** is a Professor of Nutrition at AUT's School of Sport & Recreation and a New Zealand Registered Dietitian with over 25 years of clinical experience. Her research and practice focus on whole-food nutrition and holistic lifestyle strategies in the contexts of metabolic health, and sports performance. A recognised leader in therapeutic carbohydrate-reduction, Caryn is Editor-in-Chief of the Journal of Metabolic Health and co-author of the best-selling "What the Fat?" series. Her work continues to influence both clinical practice and public health nutrition globally.

# PANEL DISCUSSION SPEAKERS



**Pedro Hallal** is a Professor at the University of Illinois - Champaign/Urbana. Prof. Hallal served as the President of the Federal University of Pelotas, Brazil from 2017 to 2020. His primary area of research is physical activity and public health. Prof. Hallal has published more than 500 scientific articles and his research has been funded by Brazilian and international agencies. According to Google Scholar, Prof. Hallal's work has been cited >93,000 times, and his h-index is 115. Prof. Hallal was the leader of the 2012, 2016 and 2021 Lancet Physical Activity Series— work that informs the global health burden of physical inactivity. He is one of the founders and former president of the Brazilian Society of Physical Activity and Health. He serves as the Editor-in-Chief of the Journal of Physical Activity and Health.

**Title:** Beyond Publications: Translating Research into Community Impact in Physical Activity and Nutrition

**Description:** In a time of growing global crises, from climate change to chronic disease, our responsibility as researchers extends far beyond the generation of knowledge. This plenary panel brings together voices from academia, the sport and recreation sector, Māori research communities, and community leaders to explore the critical question: What does meaningful community impact look like as a result of our research in physical activity and nutrition?

Co-chaired by AUT's Deputy Vice Chancellor Research Professor Mark Orams, and Professor Erica Hinckson (former ISBNPA president, 2021-2023) this 60-minute session seeks to stimulate dialogue among the ISBNPA community to reimagine the end-goal of research. Rather than focusing on traditional metrics of success such as peer-reviewed publications or citations, this panel will ask how we are or are not changing lives, systems, and environments in equitable and sustainable ways. Panellists will offer diverse insights into how research is translated into practice, how impact is experienced on the ground, and how we might more effectively embed community partnerships and Indigenous knowledge systems. With sensitivity and provocation, this session invites delegates to reflect on the future of research that matters, research that moves, heals, and uplifts communities.

# ‘ONE TO WATCH’ INVITED TALKS



**Dr. Jordan Smith**  
**Senior Lecturer**  
**The University of Newcastle**

Dr Jordan Smith is a Senior Lecturer at the University of Newcastle (UoN) and Deputy Lead of the ‘Schools’ research theme within UoN’s Centre for Active Living and Learning. Dr Smith obtained a Bachelor of Teaching (Health & Physical Education) in 2010 and PhD (Education) in 2015 from UoN, after which he commenced a full-time academic position

within UoN’s School of Education. His research focuses on promoting physical activity for child and adolescent health, with an emphasis on: i) school-based interventions, ii) promoting muscle-strengthening exercise (i.e., resistance training), and iii) priority populations such as low-income youth, older adolescents, and youth living with disability. Dr Smith’s research also explores the mechanisms underpinning the ‘exercise effect’ on young peoples’ cognitive and mental health with the goal of optimising physical activity programs for well-being among school-aged youth.

Staff profile: <https://www.newcastle.edu.au/profile/jordan-smith>

## **Title:**

Mind the gaps: Addressing overlooked priorities in school-based physical activity promotion

## **Abstract:**

Mind the gaps: Addressing overlooked priorities in school-based physical activity promotion

Globally, fewer than 1 in 5 school-aged youth accrues the 60 minutes or more of daily physical activity (PA) recommended for optimal health and development, and there has been an intergenerational decline in health-related fitness among this group. At the same time, young people are reporting increased rates of mental ill-health, with up to 75% experiencing clinically relevant (often chronic) symptoms of anxiety and depression at some point during adolescence.

Schools play a crucial role in promoting youth PA and addressing contemporary health challenges, and evidence supports the effectiveness and cost-effectiveness of school-based physical activity (PA) interventions. Whole-of-School (WoS) approaches – those targeting multiple opportunities for PA across the school day and directed at most or all students – have gained particular prominence. In principle, WoS interventions should be both effective and equitable. However, in practice, the complexity of WoS interventions makes them challenging to implement at scale, and difficult to adapt for diverse school contexts. Such interventions are also often the least effective for those most in need of support, such as older adolescents and students living with disability. In this presentation, I will introduce real-world case studies that highlight the potential of ‘targeted’ school-based interventions to address three overlooked priorities – Strength, Stress, and Special needs. First, I will provide an overview of recent school-based trials designed to support young people’s skills and confidence to engage in muscle- and bone-strengthening PA (Strength). Next, I will summarise my work addressing the pressing issue of older adolescent mental health through the delivery of targeted PA programs for students in their final years of schooling (Stress). Finally, I will describe my experience working with special education teachers to deliver vigorous PA at school to address health disparities experienced by youth with disability (Special needs), concluding with future research directions. Through this presentation, I aim to add nuance to current discourse in the field of school-based PA promotion, in particular highlighting the need for WoS interventions to be comprised of thoughtfully developed, evidence-based individual components. I also aim to demonstrate, through my research, how targeted PA interventions in schools can be used to address overlooked behaviours, populations and health challenges that are in need of far greater attention.

# 'ONE TO WATCH' INVITED TALKS



**Dr. Brittany Johnson**  
**Senior Research Fellow**  
**Flinders University**

Dr Brittany Johnson is a Senior Research Fellow in the Flinders University, Caring Futures Institute,

and a The Hospital Research Foundation Group Early-Mid Career Research Fellow. Britt's research aims to equip families with practical strategies to ensure children eat well, move more, and get enough sleep, to support health, development, and growth. She has expertise in applying behaviour change theory to understand current behaviours and how we can positively shift behaviours. Britt leads research programs in supporting children's health behaviours in under 5-year-olds and building the evidence for school-provided meals in Australian schools.

## **Title:**

Parenting, Provision, and Public Health: Tackling the complexities of children's dietary behaviour change

## **Abstract:**

We all know behaviour change is complex. This is further complicated when seeking to change parent/caregiver behaviours, such as those related to food provision, to ultimately change children's dietary outcomes. This presentation will showcase different research methods (e.g., intervention coding, discrete choice experiments, story completion) and frameworks (e.g., socioecological model, Behaviour Change Wheel, Knowledge to Action framework) used in trying to improve Australian children's diet. Examples will be highlighted across the research stages of understanding the behavioural problem, designing a behaviour change initiative, evaluation and evidence synthesis of initiatives and how to translate evidence to create real world impact.



# ‘ONE TO WATCH’ INVITED TALKS



**Dr. Ben Singh,  
Research Fellow,  
University Of South Australia**

Ben Singh is a postdoctoral researcher in Population and Digital Health at the University of South Australia, within the ARENA research centre. Dr Singh completed his PhD in 2019 at the Queensland University of Technology (Brisbane).

With a background in exercise physiology, his research focuses on the role of physical activity in cancer care and digital health, with contributions to several well-regarded journals. His work has been shared through media outlets and conferences, reaching a wide audience, and he has had the opportunity to collaborate with experts, healthcare organisations, and NGOs to improve understanding and practices in exercise oncology. Dr Singh remains committed to advancing this area of research through ongoing collaborations and contributions to the field.

**Title:**

Ripple effects: our findings on exercise and the mind, and the unexpected doors it opened

**Abstract:**

Research can do more than fill academic journals—it can shift public understanding, shape policy, and drive real-world change. In this presentation, I reflect on how a program of research exploring the health benefits of physical activity—often supported by digital tools such as apps and wearables—has generated ripple effects far beyond academia. My research focuses on advancing the role of physical activity in health promotion and demonstrating its wide-ranging benefits. Findings consistently show that regular physical activity enhances mood, reduces stress, supports recovery, and improves overall wellbeing—benefits that extend beyond clinical settings into everyday environments such as homes, workplaces, schools, and communities. A key focus of this research has been the mental and physical health benefits of exercise across diverse populations. These findings have gained widespread international media attention, with features in TIME, The New York Times, The Wall Street Journal, CNN, Vogue, and ABC News—reaching an international audience. This visibility led to a cascade of unexpected opportunities, including industry partnerships, keynote invitations at major national and international events, and the integration of findings into practice and policy. Writing for non-academic platforms such as The Conversation has also been vital in communicating complex evidence in a clear, relatable way. This presentation illustrates how sharing research beyond traditional channels can significantly amplify its impact—transforming knowledge into action and benefit for society.

# ‘ONE TO WATCH’ INVITED TALKS



**Dr. Maeghan James**  
**Postdoctoral Fellow**  
**Children’s Hospital of Eastern Ontario Research Institute**

Dr. Maeghan James is a postdoctoral fellow with the Healthy Active Living and Obesity (HALO) Research

Group at the Children’s Hospital of Eastern Ontario (CHEO) Research Institute. She completed her PhD at the University of Toronto, where her research focused on

understanding the role of parents in supporting children’s motor development and physical activity during early childhood. She is currently leading the Sending Preschoolers Outside (SPROUT) Study at the Canadian Centre for Outdoor Play in Ottawa, Ontario where she is investigating the developmental and health benefits of nature-based childcare for children and educators. Maeghan’s research and advocacy are centered on promoting inclusive active play as a vital tool for supporting the holistic development, health, and well-being of all children, including those with disabilities. She is deeply committed to ensuring that active play environments and opportunities are accessible, welcoming, and meaningful for every child. Beyond her research, Maeghan enjoys being active outdoors, camping, exploring local parks with her partner and four-legged best friend, Eddie and getting lost in a good fiction novel (preferably outside under a tree).

## **Title:**

Supporting children’s healthy development and movement behaviours through inclusive, nature-based early learning

## **Abstract:**

Active outdoor play in early childhood is essential for supporting health and development. Yet opportunities for outdoor play are steadily declining — particularly for children with disabilities, who often encounter additional barriers to physical activity and active play. Early childhood education (ECE) centres are uniquely positioned to promote outdoor play, but research on nature-based and outdoor-focused ECE centres remain limited and little is known about how these programs can effectively support children of all abilities. My research addresses this gap through the Sending PReschoolers OUTside (SPROUT) study, a prospective evaluation of one of Canada’s first licensed nature-based ECE programs. The SPROUT study compares nature-based and conventional ECE settings to assess the impacts on children’s physical, social, and cognitive development, as well as their 24-hour movement behaviours. Building on this work, the SPROUT-able project focuses specifically on children with disabilities, identifying barriers to outdoor play and co-developing inclusive strategies in partnership with families and communities. In this presentation, I will share preliminary findings from both the SPROUT and SPROUT-able projects. I aim to highlight how nature-based ECE can support holistic child development and movement behaviours, while also advancing equity in early learning environments. I will also discuss key barriers to outdoor play identified in our research and explore practical, inclusive strategies to support meaningful participation for children of all abilities.

# ‘ONE TO WATCH’ INVITED TALKS



**Dr. Tamara Bozovic**

**Principal - Research & Evaluation, Stellar Projects Ltd / Auckland University of Technology**

Tamara Bozovic is a walkability researcher and transport engineer interested in ways complex urban systems can contribute to decarbonisation, inclusion, and public health. In their role as

Principal - Research & Evaluation, at Stellar Projects Ltd, Tamara aims to support urban governance through targeted evidence-based decision support. This activity builds on years of professional experience focused on alternatives to driving, and a PhD (supervised by Prof Erica Hinckson) & post-doctoral scholarship examining mechanisms underpinning the complexity of urban systems and human decisions.

<https://www.linkedin.com/in/tamarabozaovic/>

**Title:**

Walkable for whom? Understanding and addressing discriminations in the car-centric city

**Abstract:**

Walkability is much discussed, but key evidence gaps remain, namely: how do walking experiences associate to features of the car-centric city, across demographic groups; to what extent do transport policies and governance reduce inequalities; and how do broader economic- and political forces shape walkability improvements and their undesirable outcomes, such as gentrification? This talk will examine walkability from an equity perspective. It will first discuss the notion of walkability, showing its contested nature and suggesting a framework rooted in the diversity of human experience. We will then examine walkability inequities from the technical perspective (how land use and design contribute to them and who is excluded) and from the governance perspective (how transport policies and governance improve pedestrian equity – or not). This talk draws on research on barriers to walking from the perspectives of people’s experiences, across age and disability; objective features associated with them; and the governance of walkability (how are decisions made, what motivates them, and whose voices are heard).

# ‘ONE TO WATCH’ INVITED TALKS



**Associate Prof. Deborah Heke, Associate Professor, Unitec**

Ngā Puhi, Te Arawa. Associate Professor and Director of Ngā Wai a Te Tūī Māori and Indigenous Research Centre at Unitec. With a background in Exercise Physiology, Psychology, and Public Health, her current research centres on Mana Wahine scholarship. Recent work includes an exploration of Māori and Indigenous women’s embodied practices and physical activity in te taiao as a means for connecting, communicating, and healing.

Deborah is also passionate about building the capability and capacity of Māori and Indigenous (future) scholars and providing spaces for Indigenous creativity and excellence in academia. She is also the current National Strategy Lead for the Ngā Pae o Te Māramatanga Māori and Indigenous doctoral network - Te Kupenga o MAI.

**Title:**

Whakarongo, tītiro, korikori kōrero ki ngā wāhine - exploring embodied and reciprocal healing relationship with our natural environments.

**Abstract:**

Indigenous communities are replete with powerful knowledges that have sustained their people and lands for generations, and are now being sought as having a considerable contribution to planetary, socio-ecological, or environmental health initiatives. As Māori and Indigenous Peoples, our intrinsic and deeply rooted connection with the environment is key to who we are and is often where our stories are positioned. Māori and Indigenous women, in particular, engage in embodied relationship with the natural environment in a range of ways, such as raranga (weaving), rongoā (medicine), māra (gardening) or korikori (physical activity) and more. This research - part of a Ngā Pae o te Māramatanga Matakiteanga project - builds on current knowledge, centring the contributions of Māori and Indigenous women to nurturing their people and places. It explores kōrero tuku iho (cultural narratives) that are centred around the embodied and active connection that wāhine have to te taiao, and the reciprocal healing potential that lies within that relationship. This work expands on previous research (Heke, 2022), with an intention to contribute to a shift in focus from the current anthropocentric approach to human and planetary health towards a more eco-centric perspective centring Indigenous knowledges. It seeks to explore how our intimate relationship with significant places can facilitate micro-climate action, reciprocal healing relationships, or small-scale, Indigenous-led initiatives. This presentation will present some of our initial findings through a developing model of wellbeing and aspirations for further work in this area.

# PRE-CONFERENCE MEETING AND WORKSHOPS

## Pre-Conference Satellite Gathering

**Exploring Indigenous Perspectives of Physical Activity and Nutrition: An immersive experience to connect with self, others, and place.**

This hui (gathering) will take place on **June 10, 2025**.

The hui is a three part wānanga (workshop) conducted on a Marae (ancestral Māori meeting place). Participants will engage in culturally grounded physical activities such as waka ama (outrigger canoe), and kapa haka (Māori cultural performance). Participants will also partake in hangi (traditional Māori food). Each activity will be followed with a kauhau (discussion) to delve deeper into Indigenous perspectives of physical activity and behavioural nutrition. This immersive experience aims to draw together practice and theory as a way to provide a fuller experience for participants to connect with self, others, and place.

**Journal of Sport and Health Science**  **JSHS**

**Free of Charge**

**Open Access**

**Q1**

SCI & SSCI

**>10**

Impact Factor  
(2024)

**Top 2**

Among International  
Sport Sciences Journals

**19.8**

CiteScore  
(2024)

**Top 1%**

Among Orthopedics and  
Sports Medicine Journals



Indexed in

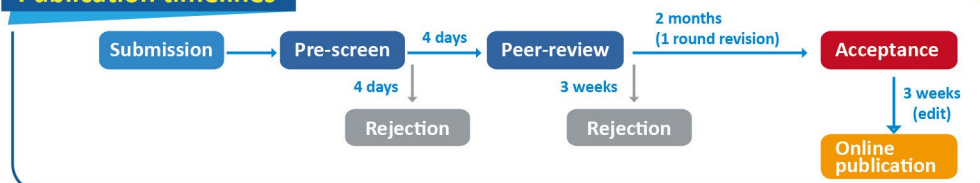
SCI, SSCI, MEDLINE, PubMed Central,  
Scopus, EBSCO, DOAJ, Embase, Hinari,  
CSA, NSD, CSCD, Dimensions, etc.

## Promoting Scientific Knowledge in Exercise and Health

### Upcoming special topics

- Exercise as A Cancer Treatment
- Artificial Intelligence in Health and Sport Sciences
- Artificial Intelligence for Mental Health
- Exercise Biochemistry and Metabolism

### Publication timelines



# PRE-CONFERENCE MEETING AND WORKSHOPS

## Pre-Conference Workshops

The Organizing Committee of ISBNPA 2025 Annual Meeting is pleased to offer a wide selection of pre-workshops in conjunction with the Conference.

The workshops are not included in the conference registration; delegates need to register for them in addition to the conference.

**Date:** Wednesday, June 11, 2025

**Time:** 08:00am – 12:30pm

### **Workshop #1: Network of Early Career Researchers and Students of ISBNPA (NESI) Workshop**

**Facilitator:** Stephen Barrett & Emma Ostermeier

#### **Workshop Description:**

This workshop is for early career researchers (ECRs) and students interested in learning strategies for enhancing research impact. The workshop is structured as a half-day session, covering two viewpoints on the topic .

The first section will focus on enhancing research impact from an academic perspective. This session is tailored for ECRs and students interested in advancing the understanding of scientific topics, including identifying gaps in understanding and inconsistent findings that require further exploration. The session will include interactive activities and talks led by senior academics who will discuss how to increase the discovery of research amongst the academic community.

The second section will focus on enhancing research impact from a real-world perspective. This session will examine the appropriateness of interventions and capacity-building efforts (community needs assessments – e.g., assets, disparities, and health issues in the community; ability to support interventions; and community collaborations). The session will also include strategies for effective research communication to translate findings into practice.

Throughout the two sessions, attendees will have the chance to network with other researchers at different stages of their careers and opportunities to practice effective communication and dissemination of research during interactive group activities.

# PRE-CONFERENCE MEETING AND WORKSHOPS

## **Workshop #2: Sha'tetionkwatte (we are all the same height): Wise practices for building equitable and respectful partnership research with Indigenous communities**

### **Workshop Description:**

Overview: This workshop will share best practices from an award-winning Indigenous community-academic research partnership. The Kahnawà:ke Schools Diabetes Prevention Program (KSDPP), in the Kanien'kehá:ka (Mohawk) community of Kahnawà:ke, near Montreal, Quebec, Canada, is a 30-year-old research partnership that has been sustained through grassroots governance and Haudenosaunee (People of the longhouse) decision-making that values partners and their diverse contributions, equally.

Learning Objectives: 1) characterize practices of shared decision-making during the research process; 2) apply tools developed to guide ethical, trauma-informed and community-driven research and integrated knowledge translation. Issue: The United Declaration on the Rights of Indigenous Peoples (UNDRIP) recognises Indigenous Peoples' rights to protect and perpetuate their knowledge systems, including in research. In Canada, research ethics guidelines and principles instruct researchers and institutions to respect Indigenous Peoples' self-determination in research. In the Canadian context of reconciliation, research policy supporting equity requires Indigenous decision-making in research. Implementing ethical and equitable guidelines into practice remains a challenge. There are few but increasing examples of successful community- academic research partnerships. The KSDPP research partnership, which is founded upon the KSDPP Code of Research Ethics that recognizes the distinct obligations of academic researchers, and community researchers and members, and Haudenosaunee decision-making and governance, is one such example.

Interactive Workshop Activities: Participants will apply tools and protocols to research scenarios based on real life examples from KSDPP's experiences selecting academic partners; reviewing and approving research; collecting and analysing data; and disseminating findings. All levels of experience are welcome!

# PRE-CONFERENCE MEETING AND WORKSHOPS

## **Workshop #3: Economic evaluation of implementation studies: practical aspects of design, analysis, reporting and interpretation**

**Facilitator:** Marina Pinheiro

### **Workshop Description:**

This workshop introduces health economic evaluation as a tool for clinicians and researchers aiming to translate evidence into practice and advocate for investment in health interventions. Economic evaluation provides a framework to compare intervention costs and outcomes, supporting decisions that maximize health impact.

Our workshop will provide practical guidance on planning, conducting, and interpreting economic evaluations within implementation studies. Using case studies of physical activity and nutrition interventions, we will cover the essentials of designing an evaluation, including identifying, measuring, and valuing health outcomes and costs. We will also offer insights into reporting economic results in clear and actionable ways, enhancing their relevance to policymakers and practitioners.

Designed for researchers and clinicians, this workshop is ideal for those conducting or planning implementation studies who want to assess the overall value of interventions or to better interpret economic evaluation results. With interactive discussions and opportunities to ask questions, this session aims to equip attendees with foundational skills in economic evaluation.

## **Workshop #5: Using system dynamics modelling tools to map the relationship between physical activity and climate change across the 8 investment strategies**

**Facilitator:** Erica Hinckson

### **Workshop Description:**

This interactive workshop is designed to explore and reframe physical activity within the context of climate change by utilising the 8 best investment strategies for physical activity. Participants will leverage system dynamics modelling tools to build upon a set of preliminary maps developed by academics from diverse fields (public health, physical activity, climate changes and systems thinking). The workshop will focus on enhancing these initial maps by integrating insights from external stakeholders, including policymakers, practitioners, and community health promotion agencies from around the world. By the end, participants will have input into the development of a comprehensive, stakeholder-informed model that illustrates how strategic investments in physical activity can support both climate adaptation and mitigation.

# PRE-CONFERENCE MEETING AND WORKSHOPS



## **Workshop #6: Building Coalitions for Transformative Food Environments in Asia: Strategies, Challenges, and Practical Tools**

**Facilitator:** Elaine Q. Borazon

### **Workshop Description:**

Coalition-building is essential for addressing complex public health challenges, particularly in Asia's diverse contexts where behavioral nutrition face distinct cultural, social, and economic hurdles. This four-hour interactive workshop is designed to equip researchers, practitioners, and policymakers with the knowledge and skills needed to create effective coalitions that drive sustainable changes in food environments. Participants will explore strategies to engage a wide range of stakeholders—including governments, NGOs, and the private sector—and gain practical tools for building trust, aligning goals, and coordinating actions across sectors.

Through case studies and participatory exercises, attendees will identify common barriers to coalition success, such as policy fragmentation and resource limitations, and develop tailored solutions to address these challenges. The workshop will also present frameworks for integrating evidence-based practices and local insights into coalition-building efforts. By the end, participants will have an actionable plan to initiate or strengthen coalitions advocating for healthier food marketing and retail environments supporting behavioral nutrition with a special focus on Asia's unique needs and opportunities.

## **Workshop #7: Engaging Stakeholders for Effective Implementation: Strategies for Sustainable Change**

**Facilitator:** Sarah Forberger

### **Workshop Description:**

Stakeholder engagement is essential for the success of implementation science, ensuring that interventions are relevant, contextually appropriate, and sustainable. This workshop will focus on the role of stakeholder engagement within behavioural nutrition research, examining how tailored engagement strategies can enhance the relevance, feasibility, and sustainability of interventions in diverse settings. By involving healthcare providers, policymakers, community members, and affected individuals, researchers align their work with real-world needs and increase the feasibility and implementation of evidence-based interventions. This workshop is designed for researchers who want to deepen their understanding of stakeholder engagement and develop practical skills to incorporate it into their research.

# PRE-CONFERENCE MEETING AND WORKSHOPS

Over four hours, participants will explore key concepts and tools for effectively engaging stakeholders. Using real-world examples from the field of nutrition from different countries (India, South Africa, Germany), they will learn how to apply stakeholder analysis, mapping, and engagement strategies, including the RACI matrix and stakeholder engagement plan. Participants will be able to directly apply these strategies to their research, ensuring that stakeholder perspectives are incorporated at each phase of the implementation process.

Through case studies, group work, and interactive discussions, participants will develop skills in designing engagement strategies that promote equity, inclusivity, and sustainability. The workshop will conclude with a recap of the covered tools and strategies, providing participants with a clear action plan for implementing stakeholder engagement in their projects.

## **Workshop #8: Food-EPI: a tool for working with local government to create healthy and sustainable food environments**

**Facilitator:** Rana Peniamina

### **Workshop Description:**

Are you interested in improving the health and wellbeing of communities through local government policy and initiatives that foster healthy and sustainable food environments? This workshop will introduce a new tool that has been designed to support community and local government representatives to evaluate current council healthy food initiatives and identify new priority initiatives that can improve community health and wellbeing. The tool can be used to evaluate and monitor council progress with respect to healthy and sustainable food initiatives and to identify priorities for future initiatives based on the specific context of an individual council and the needs of their community. Training will be provided in the use of the tool. This will include segments on: working collaboratively with community and council representatives, evaluating council progress, identifying priority initiatives that will work effectively in an individual council's context and fit with the priorities of their communities. The workshop will also include guidance on the methodology for developing the tool so it can be adapted for use with local governments in other countries.

# PRE-CONFERENCE MEETING AND WORKSHOPS

## **Workshop #9:** One step closer to gold standard: using predictive modelling with data from 24h diet recalls to improve food questionnaire data

**Facilitator:** Beatrix Jones

### **Workshop Description:**

Most national nutrition surveys use 24h diet recalls to assess the nutritional health of the population. Importantly, single 24h diet recalls are not appropriate to assess usual food intakes due to high day-to-day variability. Food frequency questionnaires (FFQs) give a picture of frequency of food intake for individuals, but are generally not sufficient to assess population food intakes. This workshop will outline statistical methods that give researchers the best of both worlds, by developing prediction models using data from a subsample of 24h diet recalls and accompanying demographics, that can then be applied to a larger FFQ dataset to allow assessment of population food intakes. This process lowers respondent and researcher burden, while producing outputs with greater utility. Workshop topics include preparation of predictor variables, lasso regression for automated variable selection, model diagnostics, and establishment of final models to predict intakes.

The workshop will include a step-by-step example to predict red meat intakes in a sample, by using a prediction model developed from individuals with both FFQ and 24h diet recall data and applying this to a larger set of FFQ data. Participants will be able to 'code along' with the example using their own device; code templates in both Stata and R and an example dataset will be provided. Participants should be familiar with either R or Stata.

# ISBNPA 2025 AWARDS NOMINEES

## Award Session: Cancer Prevention and Management / Mental Health and Well-being

**Date:** June 11, 2025

**Time:** 5:45pm - 7:00pm

### Mental Health and Well-being

Name	Organization	Paper Number	Paper Title
Victoria Whiteford	University of British Columbia	492	Acceptability and feasibility of a theory-informed community-based exercise therapy program for women with depression
Sarah Hunter	Flinders University, Preventive Health	359	Caring for Caregivers: A Prevention Program to Support Parent's Mental Health and Wellbeing Needs
Christine Emmer	University of Mannheim	831	The Role of Physical Activity for Well-Being and Cultural Identity in Migrant Acculturative Stress: A Daily Diary Study

### Cancer Prevention and Management

Name	Organization	Paper Number	Paper Title
Jessica Bourne	University of British Columbia	633	The feasibility of an e-cycling intervention among individuals being treated for prostate cancer: A pilot randomized controlled trial
Angela Fong	University of Michigan	590	Culturally Adapting a Resistance Exercise Intervention for Black Breast Cancer Survivors: A Qualitative Study
Dong-Woo Kang	Public Health Sciences Division, Fred Hutch Cancer Center	868	Motivational Impact of Supervised, High-Intensity Exercise in Men with Prostate Cancer Undergoing Active Surveillance

# ISBNPA 2025 AWARDS NOMINEES

## Award Session: Socio Economic Inequalities and Indigenizing Research

### Socio-Economic Inequalities

Name	Organization	Paper Number	Paper Title
Megan Ross	The University of Queensland	632	Physical activity, sedentary behaviour and sleep in the LGBTQIA+ community: a systematic review and meta-analysis
Lucia Leone	School of Public Health and Health Professions - University at Buf	819	Identifying Determinants of Food Prescription Program Implementation and Usage: A Mixed Methods Study in North America
Susan Paudel	1Institute for Physical Activity and Nutrition, Deakin University	386	Migrant parents' perceptions of the benefits, barriers and facilitators of young children's physical activity and sedentary behaviour: A systematic review

### Indigenizing Research

Name	Organization	Paper Number	Paper Title
Kieran Peltier	Nipissing University	893	Understanding Wholistic Health in Anishinaabe and Cree Youth in the Context of Sport and Physical Activity
Lara Andrews	Victoria University of Wellington	895	Developing a culturally competent and effective future workforce: Physical Activity and the Environment / Kori Tinana me te Taiao
Shannon Udy	School of Human Nutrition, Centre for Indigenous Peoples' Nutrition and Environment, Kahnawà:ke Schools Diabetes Prevention Program	688	Bridging Knowledge Systems: A Community-Based Participatory Food Systems Approach to Indigenous Food Security and Food Sovereignty

# ISBNPA 2025 AWARDS NOMINEES

## Award Session: Motivation and behavior change and e and mHealth

### e and mHealth

Name	Organization	Paper Number	Paper Title
Jacklyn Jackson	Hunter New England Local Health District, School of Medicine and Public Health, University of Newcastle, Hunter Medical Research Institute	623	The development of text messages in a digital health intervention to support parents across the First 2000 Days: the use of co-design and behaviour change theory
Kathryn Ross	University of Florida	367	Using a novel, micro-randomized factorial trial design to investigate the proximal impact of feedback on self-monitoring of dietary intake and physical activity
Nicola Ridgers	University of South Australia	892	Development of the Artificial Intelligence-based School Audit (AISA) platform

### Motivation and Behavior Change

Name	Organization	Paper Number	Paper Title
Jimikaye Courtney	University of North Carolina at Chapel Hill	609	Daily stress experiences interrupt adults' follow-through on their morning intentions to do physical activity
Simone Radavelli-Bagatini	Edith Cowan University (ECU)	363	Impact of provision of abdominal aortic calcification results on fruit and vegetable intake and cardiovascular risk control: a 12-week randomised controlled trial
Jodie Jetann	The University of Queensland	956	Perceived barriers and enablers to reducing occupational sedentary time in desk-workers with disability: a mixed methods study

# ISBNPA 2025 AWARDS NOMINEES

## Award Session: Children and Families and Early Care

### Children and Families

Name	Organization	Paper Number	Paper Title
Hannah Povall	Institute of Health and Neurodevelopment (IHN), School of Psychology, Institute of Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences	687	Examining social and family contextual differences between parental feeding profiles in UK parents of pre-school children: A Latent Profile Analysis
Karen Ma	University of Cambridge	581	Associations between parental self-reported psychological distress and parental attitudes to risk in play of 2-4-year-old children in the UK
Katherine Downing	Deakin University	920	Assessing toddlers' physical activity and sedentary time: agreement between parent-report and accelerometry

### Early Care and Education

Name	Organization	Paper Number	Paper Title
Rebecca Hodder	School of Medicine and Public Health, College of Health Medicine and Wellbeing, Hunter New England Population Health,, National Centre of Implementation Science, University of Newcastle, Hunter Medical Research Institute Population Health Program	684	Interventions for increasing fruit and vegetable consumption in children aged five years and under: a Cochrane living systematic review
Simone Verswijveren	Institute for Physical Activity and Nutrition (IPAN), Deakin University	416	Detecting nap times in young children from raw accelerometer data with a new, open, and simple algorithm: Demonstration of validity
Ruth Kipping	University of Bristol	956	Perceived barriers and enablers to reducing occupational sedentary time in desk-workers with disability: a mixed methods study

# ISBNPA 2025 AWARDS NOMINEES

## Award Session: Implementation and scalability, and Systems Science

### Implementation and Scalability

Name	Organization	Paper Number	Paper Title
Eeva Rantala	Department of Public Health, Finnish Institute for Health and Welfare, Institute of Public Health and Clinical Nutrition, University of Eastern Finland, VTT Technical Research Centre of Finland Ltd	500	Workplace choice architecture modification for healthy eating and daily physical activity: effectiveness of a quasi-experimental real-world intervention
Jo Salmon	Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University	932	A comparison of TransformUs intervention effectiveness at scale using compositional versus traditional analysis
Cassandra Lane	School of Medicine and Public Health, University of Newcastle, Hunter New England Population Health, HNE Local Health District, Hunter Medical Research Institute, National Centre of Implementation Science	616	Cultural Evaluation of SWAP IT: Enhancing Implementation in Schools with High Aboriginal Enrolment in the HNE region of Australia

# ISBNPA 2025 AWARDS NOMINEES

## Award Session: Implementation and scalability, and Systems Science

### Systems Science

Name	Organization	Paper Number	Paper Title
Wilma Waterlander	Amsterdam UMC, University of Amsterdam	531	Applying a participatory system dynamics approach on childhood overweight and obesity in the local context: a qualitative process evaluation of the LIKE project
Konsita Kuswara	NHMRC Centre of Research Excellence in Translating Early Prevention of Obesity in Childhood (CRE EP-OCH-Translate), University of Sydney, Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University	629	Leveraging systems thinking to explore knowledge mobilisation opportunities in early childhood obesity prevention: a qualitative study

## Award Session: Ageing and Young Adults

### Ageing

Name	Organization	Paper Number	Paper Title
Yuta Nemoto	University of Queensland	735	Trajectories of physical activity over 21 years and medication costs for chronic diseases: the Australian Longitudinal Study on Women's Health
Nicholas Koemel	The University of Sydney	657	Combined associations of sleep, physical activity, and nutrition with life expectancy: a population cohort study of UK adults
Bronwyn McGill	Prevention Research Collaboration, The University of Sydney	279	Effectiveness of a digital intervention to promote healthy ageing: a randomised controlled trial

# ISBNPA 2025 AWARDS NOMINEES

## Award Session: Ageing and Young Adults

### Young Adults

Name	Organization	Paper Number	Paper Title
Ella Creagh	Te Hau Kori - Centre for Physical Activity and Wellbeing at Te Herenga Waka - Victoria University of Wellington	906	Who hangs out with who and why? Peer crowds as a pathway to understanding and promoting youth physical activity.
Laura Marchese	1 Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University	965	Trajectories of plant-based dietary patterns and their longitudinal associations with cardiometabolic health among young Australian adults
Asha Collier	The University of Texas at Austin	357	Association Between Vitamin D Deficiency and Insomnia Among United States Adolescents and Young Adults

## Award Session: Policies and Environments and Participatory Research in Health Promotion

### Policies and Environments

Name	Organization	Paper Number	Paper Title
Soye Shin	Duke-NUS Medical School	364	Evaluating the Impact of Singapore's Nutri-Grade Beverage Labels on Prepackaged Beverage Purchases and Diet Quality: A Before and After Study
Lindsey Smith Tailliel	University of North Carolina at Chapel Hill	953	Upward trends in the uptake of environment certificates or 'ecolabels' in food packages: data reliability and 10-year trends in the Brazilian food supply
Megan Knapp	Xavier University of Louisiana	641	Mapping Restaurant Food Environments: Nutritional Quality of Restaurants with Children's Menus and Neighborhood Disparities

# ISBNPA 2025 AWARDS NOMINEES

## Award Session: Policies and Environments and Participatory Research in Health Promotion

### Participatory Research in Health Promotion

Name	Organization	Paper Number	Paper Title
Jessie Van Kerckhove	Sciensano	755	Using participatory methods to identify barriers for physical activity and healthy diets in a deprived local community: a case study in Flanders
Kate Purcell	The University of Sydney, Institute for Musculoskeletal Health, Sydney Local Health District	658	Co-designing implementation strategies with health professionals to support them to promote physical activity (PROMOTE-PA Study)
Tara Cain	Alliance for Research in Exercise Nutrition and Activity (ARENA), UniSA Allied Health and Human Performance, University of South Australia	499	Shaping the future of AI in rural healthcare: engaging communities to support modifiable lifestyle behaviours.

# ISBNPA 2026 - SAVE THE DATE!

Save the date for ISBNPA 2026 taking place in Cadiz, Spain!

Get ready to connect with new and returning colleagues in the field and explore the vibrant and unique culture of this impressive city, the oldest in Western Europe.

Sign up for the ISBNPA newsletter to receive updates about Abstract submissions, registrations, and program updates.

See you in Cadiz!



# ISBNPA

Advancing Behavior Change Science

**CADIZ, SPAIN**

**27 - 30 MAY, 2026**



PROGRAM AT A GLANCE

Wednesday, June 11, 2025

	KTK Theatre	Hunua #1 Level 1	Hunua #2 Level 1	Hunua #3 Level 1	Waitakere #1 Level 3	Waitakere #2 Level 3	Waitakere #3 Level 3	Limelight #1 Level 3	Limelight #2 Level 3	Waihorotiu #1 Level 4	Herald Theatre	Balcony Foyer	Hunua Rooms Foyer Space
8:30 - 12:30		WS1: Network of Early Career Researchers and Students of ISBNPA (NESI) Workshop	WS5: Using system dynamics modelling tools to map the relationship between physical activity and climate change across the 8 investment strategies	WS3: Economic evaluation of implementation studies: practical aspects of design, analysis, reporting and interpretation	WS9: One step closer to gold standard: using predictive modelling with data from 24h diet recalls to improve food questionnaire data.	WS2: Sha'tetionkwatte (we are all the same height): Wise practices for building equitable and respectful partnership research with Indigenous communities	WS6: Building Coalitions for Transformative Food Environments in Asia: Strategies, Challenges, and Practical Tools	WS7: Engaging Stakeholders for Effective Implementation: Strategies for Sustainable Change	WS8: Food-EPI: a tool for working with local government to create healthy and sustainable food environments				
12:30 - 13:15	Lunch Break - On Own												
13:00 - 15:15	Opening Ceremony												
15:20 - 16:20	Keynote #1: Environmental Research on Physical Activity and Nutrition Can Contribute to Solving Multiple Global Challenges												
16:25 - 16:35	Refreshment Break												
16:35 - 17:35	Panel Discussion: Translating Research to Practice												
17:45 - 19:00		4. Awards Children and Families and Early Care	7. Awards Policies and Environments and Participatory research	6. Awards Ageing and Young Adults	3. Awards Motivation and e and mHealth	1. Awards Cancer Prevention and Management / Mental Health and Well being			5. Awards Implementation and Systems Science	2. Awards Socio Economic Inequalities and Indigenizing Research			
19:00 - 21:00	WELCOME RECEPTION												

PROGRAM AT A GLANCE

Thursday, June 12, 2025

	KTK Theatre	Hunua #1 Level 1	Hunua #2 Level 1	Hunua #3 Level 1	Waitakere #1 Level 3	Waitakere #2 Level 3	Waitakere #3 Level 3	Limelight #1 Level 3	Limelight #2 Level 3	Waihorotiu #1 Level 4	Herald Theatre	Balcony Foyer	Hunua Rooms Foyer Space
8:30 - 9:45	S1.01 Driving better health: from improved sleep to nutrition education to high intensity interval training in truck drivers – novel approaches to address health inequalities within this occupational group	S1.02 Innovative methods in designing and delivering activity and nutrition programmes to people with a cancer diagnosis	S1.03 Advancing the evidence to scale-up health promotion programs: findings from a series of randomised trials to maximise the adoption of an evidence-based school nutrition program	S1.04 Children’s screen media use and sleep: Innovations in assessment pave the way to novel insights	S1.05 Exploring social inequalities in nutrition and health: international insights through quantitative, qualitative, and mixed methods	S1.06 Co-Designed Digital Interventions for Promoting Health across Diverse and Priority Populations	S1.07 Exploring inequities, diet quality, and obesity in early childhood using two national, longitudinal studies in New Zealand and the United States	S1.08 New frontiers in 24-hr time-use interventions for brain health: compositional data analysis, optimization and co-design	S1.09 Enhancing Physical Activity, Wellbeing, and Learning for Children of All Ages and Abilities	S1.10 Indigenous Health Promotion, Concepts of Health, & Cultural Safety.	S1.11 Active New Zealand: Leveraging government physical activity surveillance data to influence research, policy and practice in Aotearoa New Zealand and internationally	S1.12 How can we change environments to promote physical activity? Mixed-method natural experiments for robust practice-based evidence	DS.1.01. Developing a diabetes nutrition curriculum for American Indian and Alaska Native Adults with Type 2 Diabetes
10:00 - 11:00	Keynote #2: Climate Change, Traditional Ecological Knowledge and Well-Being: Contributions of Generative AI												
11:00 - 12:00	Coffee Break - Poster Session												
12:00 - 13:15		O.1.01: Building Foundations: Advancing Research in the Early Years	O.1.02: Implementation and Scalability in Schools	O.1.03: From Sensors to Insights: Cutting-Edge Tools in Children’s Health Research	O.1.04: Environment and health	O.1.05: Policy and Equity: Shaping Sustainable and Healthy Food Systems	O.1.06: Innovative Community, School, and Summer Research in Child Health	O.1.07: Ageing and Health (Musculoskeletal, Brain)	O.1.08: Integrative Approaches to Mental Health: Nutrition, Physical Activity, and Community-Based Solutions	O.1.09: Shaping Health through Spaces: Global Insights into Environmental Impacts	O.1.10: Transforming Food Access: Policies, Environments, and Behaviors for Healthier Communities	O.1.11: Motivation in Chronic Disease	DS.1.02 :A human-centred design approach to tackling challenges and creating solutions for healthy eating and physical activity.
13:15 - 14:15	Lunch Break- Posters, Exhibits and ISBNPA Marketplace												
13:15 - 14:00	Meet the Mentors Lunch												
14:15 - 15:30		SO.1.01: Cancer	SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change	SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health	SO.1.04: Environment and health	SO.1.05: Participatory research	SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention	SO.1.07: Latest Findings in Ageing	SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors	SO.1.09: Implementation and Scalability in Young People	SO.1.10: Policies for Active and Healthy Communities	SO.1.11: Behavior Change in Health Promotion	DS.1.03: How to Encourage Physical Activity in Young Adults, focus-group style brainstorming session
15:30 - 16:00	Ripple effects: our findings on exercise and the mind, and the unexpected doors it opened	Whakarongo, tītiro, korikori kōrero ki ngā wāhine - exploring embodied and reciprocal healing relationship with our natural environments.	Parenting, Provision, and Public Health: Tackling the complexities of children’s dietary behaviour change	Mind the gaps: Addressing overlooked priorities in school-based physical activity promotion	Walkable for whom? Understanding and addressing discriminations in the car-centric city	Supporting children’s healthy development and movement behaviours through inclusive, nature-based early learning							
16:15 - 16:45	Coffee Break- Posters, Exhibits and ISBNPA Marketplace												
16:45 - 18:00	S1.13 Leveraging global physical activity and physical education data to shape the future: the launch of the GoPA! and GoPE! 2025 Country Cards	S1.14 Active Algorithms: Developing the physical activity interventions of the future with machine learning and artificial intelligence	S1.15 Applying innovative equity-focused methodologies for improving implementation of behavioural nutrition and physical activity programs.	S1.16 Moving screen use guidelines: Should children’s screen use guidelines be separated from 24-hour movement guidelines?	S1.17 Innovative food systems approaches to promote the six dimensions of food security: initiatives from Australia and the USA.	S1.18 Creating a healthy society using citizen science	S1.19 Reflecting on a decade: The impact and future of the Position Statement on Active Outdoor Play	S1.20 Innovative and scalable solutions to increase physical activity participation among older adults	S1.21 Creating and evaluating Health Promoting Early Childhood Education and Care settings	S1.22 Bridging the gap between research and practice through government and academic partnerships: Opportunities, challenges and lessons learned from Australia and New Zealand	S1.23 Advances in research on sleep, physical activity and dietary behaviours in Hong Kong youth	S1.24 How is the Online food environment shaping our health? Challenges and opportunities for public health	DS.1.04: Lessons from the garden: Identifying solutions to implementing, scaling, and maintaining a rigorous program of research in non-traditional settings

PROGRAM AT A GLANCE

Friday, June 13, 2025

	KTK Theatre	Hunua #1 Level 1	Hunua #2 Level 1	Hunua #3 Level 1	Waitakere #1 Level 3	Waitakere #2 Level 3	Waitakere #3 Level 3	Limelight #1 Level 3	Limelight #2 Level 3	Waihorotiu #1 Level 4	Herald Theatre	Balcony Foyer	Hunua Rooms Foyer Space
8:00 - 9:15	S2.25 Effects of health behavior interventions among people with cancer - development, adherence, early results, and future design considerations for remote and supervised randomized controlled trials	S2.26 Towards better identification and understanding of determinants of Physical Activity Behaviours across settings and ages		S2.28 International applications of the Youth Activity Profile (YAP) tool to enhance the assessment and promotion of physical activity in youth	S2.29 It just takes a spark to light a fire: Building capacity and understanding of child physical activity in low- and middle-income countries through Global Matrix initiative	S2.30 Culturally Relevant Citizen Science for Enhancing Community Wellbeing and Built Environment Advocacy	S2.31 Approaches to supporting Indigenous families with nutrition and movement behaviour in first 2000 days of life	S2.32 Empowering mental health providers to promote physical activity in practice: Innovative training approaches in real-world settings	S2.33 Are Screens Enhancing or Hindering Positive Movement and Nutrition Behaviours in Early Childcare Environments?	S2.34 Operationalizing and applying multilevel dissemination strategies to increase reach and adoption over time	S2.35 Advancing Multidisciplinary and Cross-Border Collaboration in Obesity Prevention in Europe: Insights from the OBEClust Network and Three of its Projects (OBCT, Better4U, HealthyW8)	S2.36 International efforts to improve dietary quality by reducing ultra-processed food intake: policies, challenges, and tradeoffs	DS.2.05: Hands-on Participatory Data-Analysis Workshop with Photovoice – Insights from Eat Like a Pro -LIFTS project
9:30 - 10:30	Keynote #3: Exploring wellbeing for Indigenous Māori youth: Toward culturally responsive and respectful interventions.												
10:30 - 11:30	Coffee Break- Poster Session												
11:30 - 12:45		O.2.12: Enhancing School Environments: Policies, Practices, and Innovations	O.2.13: Behavioral Patterns and Health Outcomes: Insights from Physical Activity and Eating Behaviors	O.2.14: Balancing Acts: Screen Time, Physical Activity, and Cognitive Growth in the Digital Age	O.2.15: Technology and Tools for Tracking and Understanding Health Behaviors	O.2.16: From Adolescence to Adulthood: Studies on Lifestyle Behaviors and Mental Health Outcomes	O.2.17: Indigenous research	O.2.18: Ageing and Health (Metabolic, Cardiovascular)	O.2.19: Early Childhood Health: Nutrition, Activity, and Sleep	O.2.20 : Implementation and Scalability	O.2.21: Advancing Health Equity Through Food Assistance, Incentives, and Access	O.2.22: Food Policy, Health, and Equity: Global Perspectives on Nutrition, Pricing, and Inclusion	DS.2.06: Reaching a common understanding and definition of Food Literacy
12:45 - 13:30	Lunch Break- Posters, Exhibits and ISBNPA Marketplace												
13:30 - 15:15		O.2.23: The Power of Labels: Evaluating Nutrition Warnings, Claims, and Consumer Behavior	O.2.24: Family-Based Strategies to Improve Child Health	O.2.25: Nurturing Healthy Beginnings: Nutrition and Activity in Childhood	O.2.26: Security and Socio-economic inequalities	O.2.27: Participatory research and cancer	O.2.28: Emerging Insights in Young Adult Health and Well-being	O.2.29: Ageing, Physical Activity and Function	O.2.30: Shaping the Early Years in Childcare Settings	O.2.31: Digital Interventions and Strategies for Improving Health	O.2.32: Feeding Minds: Exploring the Impact of Food Availability, Marketing, and Industry Strategies	O.2.33: School-Based Interventions for Nutrition and Physical Activity	DS.2.07: Building healthy communities within a high-risk high income and low-to-middle income nation: The SCORE! Youth-Sustainability Healthy Active Living (SCORE! YOUTH SHAL) Collaborative Data Review & Co-Designing Next Steps
15:15 - 16:30	S2.37 Medically Tailored Meals: Exploring Food Provider and Hospital Partnerships as a Novel Approach to Supporting Behavioral Nutrition for Cancer Patients	S2.38 International Perspectives on Policy, Systems, and Environmental Approaches to Address Food Insecurity among Higher Education Students	S2.39 Bidirectional implementation lessons between the science and practice of physical activity and healthy eating interventions delivered in home settings	S2.40 Food security in pregnancy and early life	S2.41 Righting Recruitment: Opportunities and Approaches to Create more Representative Research	S2.42 Global perspectives on Healthy Food Incentive Program designs, implementation, outcomes, scalability and sustainability	S2.43 Translational Issues with the Adoption and Utilization of the Family Nutrition and Physical Activity (FNPA) Tool for Child Obesity Prevention	S2.44 Developing guidelines, practice environments and measures for function-focused physical activity interventions in hospitalised older adults.		S2.46 Tailoring the fit: A co-designed community, evidence-based lifestyle program for polycystic ovary syndrome	S2.47 Closing Gaps in Food Marketing Regulations: Evidence for the Inclusion and Effective Monitoring of Brand Advertising and Digital Marketing	S2.48 Increasing health equity through promoting healthy diets and physical activity	
19:00 - 21:00	MAURI ORA – GALA DINNER												

PROGRAM AT A GLANCE

Saturday, June 14, 2025

	KTK Theatre	Hunua #1 Level 1	Hunua #2 Level 1	Hunua #3 Level 1	Waitakere #1 Level 3	Waitakere #2 Level 3	Waitakere #3 Level 3	Limelight #1 Level 3	Limelight #2 Level 3	Waihorotiu #1 Level 4	Herald Theatre	Balcony Foyer	Hunua Rooms Foyer Space
8:30 - 9:45	S3.49 Innovations in Compositional Analysis: Unpacking Time-Use Behaviours for Health and Wellbeing	S3.50 Marketing and Labeling of Foods for Infants and Young Children: Examining the State of Play, Misleading Claims, Parental Perceptions, and Policy Interventions	S3.51 Menu labeling interventions to promote health and sustainability in restaurants	S3.52 Messiness of Family Mealtimes – exploring measurement, messaging and experiences of family meals	S3.53 Stigma and Food Insecurity	S3.54 Engaging end-users and stakeholders in supporting physical activity and sleep behaviour change – sharing approaches to making user engagement more inclusive.	S3.55 The Next Step: Disseminating School-Based Health-Promoting Interventions to a Wider Population.	S3.56 Pringles Versus Peaches: Should Public Policy Prioritize Promoting Whole Foods or Eliminating Ultra- Processed Foods?	S3.57 Plant-Based Diets for Early Childhood Education settings: Nutritional and Environmental Triumph or Gamble?	S3.58 The best of both worlds: applying systems science and implementation science to enhance public health nutrition interventions	DS.3.09: Fishbowl conversation: Payment models of school-provided meal programs		DS.3.10: Understanding the Past, Transforming the Future: A Path to Indigenous Equity
10:00 - 11:15		H. Policies and environments  SO.3.12: Interventions and Environments for Public Health	B. Motivation and behavior change  SO.3.13 : Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles	G. Children and families  SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth	I. Socio-economic inequalities  SO.3.15: Socio- economic inequalities	J. Young Adults  SO.3.16: Youth physical activity and nutrition: outcomes and interventions	G. Children and families  SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes	H. Policies and environments  SO.3.18 : Innovative Tools and Global Trends in Policy and Environment	F. Early care and education  SO.3.19: Innovations and Insights in Early Childhood and Youth	E. Implementation and scalability  SO.3.20: Implementation and Scalability			
11:15 - 11:30	Coffee Break												
11:30 - 12:30	Keynote #4: Active Research vs. Inactive Population: Why Physical Activity Research Needs Rebranding in a Complex World												
12:30 - 13:15	What's next @ ISBNPA												

# AWARD SESSION PRESENTATIONS

## Caring for Caregivers: A Prevention Program to Support Parent's Mental Health and Wellbeing Needs

**Dr. Sarah Hunter**<sup>1,2</sup>, Dr Georgia Middleton<sup>1</sup>, Amelia Scott<sup>1</sup>, Konnie Kalompratsos<sup>3</sup>, Professor Annette Briley<sup>1</sup>, Dr Karen Matvienko-Sikar<sup>4</sup>, Jacqueline Anderson<sup>2</sup>, Dr Natasha Schranz<sup>2</sup>, Rachel Kirby<sup>3</sup>, Professor Rebecca Golley<sup>1</sup>

<sup>1</sup>Flinders University, Bedford Park, Australia, <sup>2</sup>Preventive Health SA, Adelaide, Australia, <sup>3</sup>Child and Family Health Service, Adelaide, Australia, <sup>4</sup>University College Cork, Adelaide, Australia

**Award Session: Cancer Prevention and Management | Mental Health and Well being, Waitakere 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** The transition to parenthood is a life-changing and high-risk period for parents' mental health and wellbeing. This has implications for how well parents can look after themselves physically and mentally, and how they care for their children. The purpose of this project was to co-design and implement an evidence-informed program to support caregiver mental health and wellbeing to improve parents' capacity to care for themselves and their children, encourage self-care practices, and ultimately improve the food and movement opportunities for children and families.

**Methods:** The "Caring for Caregivers" program was co-designed using Integrated-Knowledge Translation, with intervention mapping and mixed methods. The Program comprises 1-2 hours of evidence-informed psychoeducation targeting caregivers mental health, wellbeing, self-care, and social supports. Two feasibility trials were conducted to determine whether implementing this program into routine services is acceptable, feasible, and improves the wellbeing of caregivers. One was delivered as week 3 of the 4-week CaFHS Early Parenting Groups and the second was as a standalone antenatal class delivered by CaFHS at the Women's and Children's Hospital. Surveys were used to collect clinical and acceptability outcomes and focus groups collected acceptability and feasibility outcomes. Quantitative data was analysed using descriptive and inferential statistics and qualitative data was analysed using content analysis.

**Results:** Between July and October 2024, a total of 16 Caring for Caregiver Early Parenting Groups with n=147 caregivers were conducted at CaFHS and a total of 4 Caring for Caregiver classes with n=25 caregivers were conducted at the Women's and Children's Hospital. Preliminary data analysis shows caregivers found the Program acceptable, were satisfied with the early parenting group and antenatal class and were likely to return or recommend CaFHS to others.

**Conclusion:** This program was deemed acceptable and feasible and demonstrated capacity to improve the wellbeing of parents. Improving parents' wellbeing has the potential to increase their capacity to engage in health-promoting behaviours for themselves and their children. The program will now be implemented and tested at scale across CaFHS to further unpack the impact of a supportive prevention program on the health and wellbeing of parents during their transition to parenthood.

## Acceptability and feasibility of a theory-informed community-based exercise therapy program for women with depression

**Miss Victoria Whiteford<sup>1</sup>**, Dr. Madelaine Gierc<sup>1</sup>, Dr. Heather Gainforth<sup>2</sup>, Dr. Eli Puterman<sup>1</sup>, Dr. Guy Faulkner<sup>1</sup>

<sup>1</sup>University of British Columbia, Vancouver, Canada, <sup>2</sup>University of British Columbia, Okanagan, Canada

**Award Session: Cancer Prevention and Management | Mental Health and Well being, Waitakere 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Exercise is an evidence-based strategy for treating depression. However, limited research has investigated ways to translate exercise-based therapy for depression to community settings. The aim of this study was to test the feasibility and acceptability of an exercise-referral therapy program for women with depression in partnership with an existing community-based exercise clinic.

**Method:** We conducted a mixed-method single-arm feasibility study assessing a 12-week exercise program for women with clinical depression. The exercise program included two one-hour sessions/week at the exercise clinic with one independent session outside of the exercise clinic. The program was supplemented with behaviour change counselling delivered over 9 sessions, via telephone, focusing on self-regulatory skill development to maintain exercise after program completion. Feasibility was assessed by tracking attendance and reporting pre-post trends on measures of depression (PHQ-9), anxiety (GAD-7) and physical activity (IPAQ). The Multi-Process Action Control Approach (M-PAC) assessed reflective, regulatory, and reflexive processes. Acceptability was explored through thematic analysis of semi-structured interviews with all participants.

**Results:** 14 participants were recruited in one month and 11 completed the program. Adherence to the program (79% adherence rate) and behavioural counselling (94% adherence rate) was high. Depression and anxiety symptoms decreased ( $15 \pm 3.74$ ) to ( $7.73 \pm 3.61$ ), and ( $13.36 \pm 7.31$ ) to ( $8.27 \pm 5.25$ ), respectively. Minutes of MVPA increased from ( $74 \pm 101.3$ ) to ( $208 \pm 141.27$ ). Regulatory processes, specifically self-regulatory skills, increased ( $11.64 \pm 4.68$ ) to ( $18 \pm 4.84$ ). Participants described the program as a positive and enjoyable experience, with all recommending the program to 'other women like them'. Important program components included having scheduled session times each week, the provision of behavioural support, the knowledge and expertise of exercise professionals, and free access to an exercise clinic. Barriers to attending exercise sessions included limited session times and illness.

**Conclusion:** Our results confirmed the feasibility and acceptability of a 12-week community-based exercise program for women with depression.

**Results:** are now informing an RCT to assess the effectiveness of a community-based exercise referral program as an alternative and/or adjunctive treatment for depression.

# Culturally Adapting a Resistance Exercise Intervention for Black Breast Cancer Survivors: A Qualitative Study

**Dr. Angela Fong<sup>1</sup>**, Hala Abbas<sup>1</sup>, Isabel Wakefield<sup>1</sup>, Dr. Dominique Kinnett-Hopkins<sup>1</sup>, Dr. Ken Resnicow<sup>1</sup>

<sup>1</sup>University of Michigan, Ann Arbor, USA

**Award Session: Cancer Prevention and Management | Mental Health and Well being, Waitakere 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** In the United States, only 4.8% of Black breast cancer survivors meet resistance exercise guidelines ( $\geq 2$  sessions/week) despite its well-documented benefits for reducing fatigue and improving health-related quality of life. For exercise interventions targeting historically marginalized populations, cultural adaptation, particularly incorporating “deep structure” cultural elements, is crucial for improving relevancy and uptake. This study assessed culturally relevant factors influencing exercise engagement to adapt an existing resistance exercise intervention.

**Methods:** Semi-structured interviews ( $M=75.9$ ,  $SD=13.9$  minutes) were conducted via Zoom with  $N=7$  Non-Hispanic Black breast cancer survivors ( $M=59.0$ ,  $SD=9.8$  years; 42.8% separated/divorced; 57.1% with a graduate degree and employed; 42.8% Stage I diagnosis). Transcripts were inductively analyzed and deductively mapped onto the cultural considerations framework for tailoring physical activity interventions.

**Results:** Three main themes developed. First a barrier to resistance exercise was neglecting oneself due to competing priorities; participants often “pulled the weight” and prioritized others’ needs. Second facilitators to resistance exercise included three subthemes: i) enhancing health where participants sought strength and symptom relief to maintain social roles; ii) valuing relationships where participants preferred exercising with significant others to foster meaningful connections; and iii) learning from other Black women where participants valued learning from other survivors’ real-life experiences, reflecting the importance of experiential knowledge. Third intervention preferences included using images of real Black women with diverse body types, culturally significant music, and the color purple. Themes and subthemes mapped onto the cultural considerations framework, highlighting surface level considerations (informational preferences), collectivism where Black women are socialized to place the needs of others before their own personal needs (barriers and enhancing health), social relationships which emphasizes close social and family-like relationships (valuing relationships), and experiential knowledge where personal experience is an important factor in knowledge transfer (learning from other Black women).

**Conclusions:** This research represents an initial step in culturally adapting a resistance exercise intervention for Black breast cancer survivors. Findings underscore the importance of culturally relevant antecedents to resistance exercise behavior. Future research will develop and test narratives derived from these themes to facilitate group discussions and problem-solving, ultimately incorporating them into the adapted intervention for a subsequent clinical trial

## The feasibility of an e-cycling intervention among individuals being treated for prostate cancer: A pilot randomized controlled trial

**Dr. Jessica Bourne<sup>1</sup>**, Dr. Hazel Blythe<sup>2</sup>, Dr. Emma Hart<sup>2</sup>, Dr. Chloe Forte<sup>5</sup>, Mr. Jon Aning<sup>3</sup>, Professor Richard Martin<sup>4</sup>, Professor Athene Lane<sup>6</sup>, Professor Miranda Armstrong<sup>5</sup>

<sup>1</sup>University of British Columbia, Kelowna, Canada, <sup>2</sup>School of Physiology, Pharmacology & Neuroscience, Bristol, United Kingdom, <sup>3</sup>Bristol Urological Institute, Southmead Hospital, North Bristol NHS Trust, Bristol, United Kingdom, <sup>4</sup>Population Health Sciences, University of Bristol, Bristol, United Kingdom, <sup>5</sup>Centre for Exercise, Nutrition and Health Sciences, School of Policy Studies, Bristol, United Kingdom, <sup>6</sup>Bristol Medical School, Bristol, United Kingdom

**Award Session: Cancer Prevention and Management | Mental Health and Well being, Waitakere 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** In the UK, prostate cancer is the most common male cancer. Engaging in physical activity (PA) is a key component of treatment. However, rates of PA are low in this clinical population. Electrically assisted cycling (e-cycling) has been shown to increase PA in inactive and older adults and positively impact physical and mental health. This study examined the feasibility of an e-cycling intervention in adults with prostate cancer.

**Methods:** A parallel-group two-arm randomized waitlist-controlled pilot study was conducted. Thirty eligible individuals were randomized into either the e-cycling intervention (Mage=66) or waitlist control (Mage= 67). Participants in the e-cycling condition received two one-to-one e-bike training sessions followed by a 12-week e-bike loan, including two follow-up one-to-one cycling sessions. Feasibility was assessed as a) the number of eligible individuals and the number of individuals that consented to participate, b) the retention rate based on the number of individuals that completed the post-intervention testing, c) the number of individuals in the intervention group that attended each e-cycling training session, and d) acceptability of the study procedures and intervention for participants. Distance traveled during the trial was calculated using bicycle odometers.

**Results:** Eighty individuals were screened and deemed eligible for the study, of which 30 (38%) consented to participate. Reasons for declining participation included being unwell or overwhelmed due to treatment (n=11), lack of time (n=10), road safety concerns (n=6) or not liking exercise (n=10). Retention of participants at post-testing was 77% (n=23). Reasons for discontinuing included starting treatment (n=2), pain due to treatment (n=1), time commitment (n=1), knee injury unrelated to the study (n=1), and wanting an e-bike sooner (n=1). In the intervention condition, 83% of participants completed both e-cycling training sessions before the e-bike loan, 41% completed session 3, and 25% completed session 4. Participants reported the study procedures to be acceptable and personally interesting. The mean distance ridden during the loan period was 501 km (IQR 322, 650). Following the loan period, 60% of individuals (n=9) continued cycling.

**Conclusions:** E-cycling is a feasible and acceptable intervention for men being treated for prostate cancer and a fully-powered definitive trial is warranted.

# The Role of Physical Activity for Well-Being and Cultural Identity in Migrant Acculturative Stress: A Daily Diary Study

**Dr. Christine Emmer<sup>1</sup>**, Frauke Mann<sup>1</sup>, Ksenija Edelinski<sup>1</sup>, Jutta Mata<sup>1</sup>

<sup>1</sup>University of Mannheim, Mannheim, Deutschland

**1. Award Session: Cancer Prevention and Management | Mental Health and Well being, Waitakere 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** The number of people migrating has risen continuously to about 280 million worldwide. International migration involves adapting to new cultural settings while retaining one's own culture. This process can lead to acculturative stress, a risk factor for migrant health, as well as cultural identity, a key integration outcome.

**Methods:** We investigated the interplay between acculturative stress, well-being (positive and negative affect), cultural identity (national and ethnic identity), and the protective role of physical activity using a 7-day-diary methodology with 266 participants with migration history (1,473 observations).

**Findings:** Daily acculturative stress was associated with lower well-being (positive affect:  $\beta = -.05$ ,  $p = .011$ ; negative affect:  $\beta = .05$ ,  $p = .014$ ) and lower national ( $\beta = -.07$ ,  $p < .001$ ) but not ethnic ( $p = .343$ ) identity. Physical activity was linked to higher well-being (positive affect:  $\beta = .15$ ,  $p < .001$ , negative affect:  $\beta = -.12$ ,  $p < .001$ ) and showed a tendency to buffer negative affect associated with acculturative stress ( $\beta = -.04$ ,  $p = .066$ ). Being physically active was not associated with ethnic identity ( $p = .196$ ) but in tendency with national identity ( $\beta = .02$ ,  $p = .072$ ). Supporting social identity theory, exploratory analyses indicated that stronger cultural identity correlated with higher well-being. Furthermore, cultural identity did not buffer the effects of acculturative stress on well-being but exacerbated them. All analyses were controlled for general stress, highlighting the unique effects of migrant acculturative stress beyond general stress.

**Conclusions:** The findings identify daily acculturative stress as an additional burden for people with migration history, with physical activity offering a potential buffering effect. Interventions targeting migrant health might consider cultural identity and focus on promoting physical activity as a strategy to improve well-being.

# Motivational Impact of Supervised, High-Intensity Exercise in Men with Prostate Cancer Undergoing Active Surveillance

**Dr. Dong-Woo Kang<sup>1,2</sup>**, Dr. Normand Boulé<sup>3</sup>, Dr. Catherine Field<sup>3</sup>, Dr. Adrian Fairey<sup>3</sup>, Dr. Kerry Courneya<sup>3</sup>

<sup>1</sup>Dana-Farber Cancer Institute, Boston, USA, <sup>2</sup>Harvard Medical School, Boston, USA,

<sup>3</sup>University of Alberta, Edmonton, CANADA

**1. Award Session: Cancer Prevention and Management | Mental Health and Well being, Waitakere 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Limited research exists on exercise motivation in men with prostate cancer undergoing active surveillance. This secondary analysis of a randomized controlled trial evaluated whether a supervised high-intensity interval training (HIIT) program could foster and sustain exercise behavior in this population, guided by the Theory of Planned Behavior (TPB). We assessed whether participation in a structured, supervised exercise regimen could positively influence motivation, perceived control, and intention to maintain exercise, potentially addressing challenges in promoting sustained exercise behavior within this clinical group.

**Methods:** Fifty-two men were enrolled in the Exercise during Active Surveillance for Prostate Cancer (ERASE) trial and randomly assigned to a 12-week, thrice-weekly, supervised aerobic HIIT intervention or usual care. Motivational outcomes were assessed using TPB-based constructs using a self-reported survey, including anticipated and experienced outcomes, motivation, perceived control, and exercise barriers. Group differences in motivation were analyzed using descriptive and inferential statistics, and effect sizes were calculated for changes in motivational outcomes using Cohen's d.

**Results/findings:** The HIIT group demonstrated high adherence, with 96% adherence and 100% compliance rates. Following the intervention, the HIIT group reported significant improvements in enjoyment ( $p < 0.001$ ;  $d = 1.38$ ), motivation ( $p = 0.001$ ;  $d = 0.89$ ), perceived control over exercise ( $p < 0.001$ ;  $d = 0.85$ ), and confidence in their exercise capability ( $p = 0.004$ ;  $d = 0.66$ ) when compared to baseline. In addition, participants in the HIIT group displayed a stronger intention to continue exercising over the next six months, with higher scores in perceived control ( $p = 0.006$ ;  $d = 0.68$ ) and planning ( $p = 0.032$ ;  $d = 0.67$ ) than those in the usual care group. Reported barriers to exercise were minimal but included muscle soreness (56%), limited time availability (36%), and travel requirements (40%).

**Conclusion:** This study demonstrated that supervised HIIT is a feasible and effective strategy to enhance exercise motivation among men with prostate cancer on active surveillance, along with improved motivation and control over exercise behavior. These findings support HIIT as a promising intervention to foster long-term exercise engagement in this population. Further research should explore long-term exercise adherence and motivational changes.

# Migrant parents' perceptions of the benefits, barriers and facilitators of young children's physical activity and sedentary behaviour: A systematic review

**Dr. Susan Paudel<sup>1</sup>**, Dr Sarah Marshall<sup>1</sup>, Prof Jenny Veitch<sup>1</sup>, Ms Chahana Paudel<sup>1</sup>, Prof Kylie Hesketh<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University, Burwood, Australia*

**2. Award Session: Socio Economic Inequalities | Indigenizing Research, Waihorotiu #1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Despite increasing global migration, children from migrant backgrounds are underrepresented in physical activity research. This systematic review aimed to consolidate existing evidence on parental perceptions of the benefits, barriers, and facilitators of promoting physical activity and limiting sedentary behaviour of migrant children aged 0-6 years.

**Methods:** Six electronic databases (Medline, CINAHL, PsycINFO, SPORTDiscus, Global and Health EMBASE) were searched for qualitative peer-reviewed English language studies using terms covering migrants, parents, perceptions, physical activity, and sedentary behaviour. The JBI (Joanna Briggs Institute) Qualitative Critical Appraisal Checklist for Qualitative Research was used to assess the methodological quality of the included studies. Analysis was guided by the best-fit framework synthesis approach and the socio-ecological model.

**Results:** Database searches yielded 6059 unique records, with 33 studies included in this review. Key parent perceived benefits of physical activity were better health outcomes, development, and long-term outcomes and perceived benefits of sedentary behaviour were education, health and development and a parenting tool to keep children calm and occupied. Eight themes (25 sub-themes) across four levels of the socio-ecological model (primarily interpersonal and community-level) were identified as barriers and facilitators of physical activity. Seven themes (14 sub-themes: primarily interpersonal) were identified for sedentary behaviour. While some barriers and facilitators were similar to what has been reported for the general child population (such as weather, space and time constraints), there were some unique factors especially relevant to children of migrant backgrounds, such as limited social networks, parental priorities, and cultural norms. Additionally, some common barriers (such as neighbourhood safety) were reported to have a greater impact on children of migrant backgrounds.

**Conclusion:** Parents from migrant backgrounds perceived that their young children experienced some unique barriers to physical activity and sedentary behaviour. Future public health programs targeting physical activity and sedentary behaviour among migrant children should consider their culture, context, and unique experiences to design and implement tailored interventions.

# Physical activity, sedentary behaviour and sleep in the LGBTQIA+ community: a systematic review and meta-analysis

**Dr. Megan Ross<sup>1</sup>**, Dr Michalis Stylianou, Dr Joshua Simmich, Dr Stephanie Duncombe, Dr Kathryn Fortnum, Dr Francisco Perales, Dr Sjaan Gomersall

<sup>1</sup>The University Of Queensland, Herston, Australia

**2. Award Session: Socio Economic Inequalities | Indigenizing Research, Waihorotiu #1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Sexual and gender minority (LGBTQIA+) adults experience health inequities, including poorer health, and reduced participation in health-promoting behaviours. The purpose of this systematic review was to (1) examine adherence to physical activity, sedentary behaviour, and sleep guidelines (24-hour movement behaviours) within these communities; and (2) compare participation and guideline attainment to cisgender and heterosexual adults.

**Methods:** Seven databases were searched from inception to January 2024 using search terms based on the study population and 24-hour movement behaviours. Studies were included if they reported physical activity, sedentary behaviour and/or sleep outcomes for gender and/or sexual minority adults. Study quality was evaluated using an adapted version of the National Health Lung and Blood Institute Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies that considered best practices for the collection of information for LGBTQIA+ individuals. Proportional meta-analyses were performed using random effects models for sexual and gender minority groups meeting guidelines or participating in each movement behaviour, and an odds ratio (OR) summary effect was calculated for binary outcome data from studies with a cisgender or heterosexual comparison group.

**Results:** Ninety-five studies were included; 79% were rated 'fair' quality. Most studies were cross-sectional (76%), conducted in North America (76%), and focussed on sexual orientation (80%) and physical activity (77%). Sexual minority women had higher odds of meeting aerobic physical activity guidelines compared to heterosexual women (OR 1.18, 95% CI 1.02 to 1.37), with no significant differences identified between sexual minority and heterosexual men (1.03, 0.86 to 1.23). Gender minority adults had lower odds of participating in aerobic physical activity compared to cisgender adults (0.63, 0.45 to 0.88). Sexual minority women, but not men, had lower odds of meeting sleep guidelines than their heterosexual counterparts (0.85, 0.74 to 0.97). Sedentary behaviour data were limited with no differences detected.

**Conclusions:** Movement behaviours varied within sexual and gender minority groups, highlighting the limitation of considering the 'LGBTQIA+ community' a homogenous cohort. Tailored approaches for improving movement behaviours are warranted, particularly for gender minority adults. Further research is needed for sedentary behaviour, sleep, and more nuanced categorisations of gender and sexuality.

# Bridging Knowledge Systems: A Community-Based Participatory Food Systems Approach to Indigenous Food Security and Food Sovereignty

**Miss Shannon Udy**<sup>1,2,3</sup>, Dr. Treena Delormier<sup>1,2,3</sup>, Kaylia Marquis<sup>3</sup>, Derek Montour<sup>4</sup>, Vivienne Walz<sup>5</sup>, Alexis Shackleton<sup>6</sup>

<sup>1</sup>*School of Human Nutrition, Ste-Anne-de-Bellevue, Canada*, <sup>2</sup>*Centre for Indigenous Peoples' Nutrition and Environment, Ste-Anne-de-Bellevue, Canada*, <sup>3</sup>*Kahnawà:ke Schools Diabetes Prevention Program, Kahnawà:ke, Canada*, <sup>4</sup>*Kahnawà:ke Shakotia'takehnhas Community Services, Kahnawà:ke, Canada*, <sup>5</sup>*Onkwata'karitáhtshera Secretariat, Kahnawà:ke, Canada*, <sup>6</sup>*Mohawk Council of Kahnawà:ke, Kahnawà:ke, Canada*

**Award Session: Socio Economic Inequalities | Indigenizing Research, Waihorotiu #1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** This study aimed to co-design a participatory process to create a shared vision and understanding of a community food system to promote Indigenous food security, nutrition, and well-being. In partnership with the Kahnawà:ke Schools Diabetes Prevention Program (KSDPP), this study arose to support community-driven efforts for food security and food sovereignty in the Kanien'kehá:ka (Mohawk) community of Kahnawà:ke, Québec. The innovation of this research lies in its bridging of Indigenous and Western research approaches, ensuring that Indigenous knowledge systems and practices are central to food security planning.

**Methods:** The research proposes a Community-Based Participatory Food Systems Approach that intertwines Indigenous and Western research methodologies, including community-based participatory research and system dynamics. This approach fosters collaborative engagement through participatory visioning and group model building workshops. Community members work together to explore their hoped future for their food system, develop a causal loop diagram centred on a priority food system issue, and identify strategies for food system change. Workshop data are analyzed qualitatively to develop themes characterizing participants' shared vision and understanding of their food system.

**Findings:** The participatory process resulted in a food system vision for Kahnawà:ke, emphasizing local values and priorities such as community food production and access to land. The food system model developed highlighted the interconnectedness of food security, land management, social and cultural dimensions, and community participation, illustrating the many factors and dynamics shaping food security and food sovereignty at the community level. This shared, systemic perspective provided a framework for participants to identify impactful actions for the future. The findings and dedicated engagement of community members, demonstrate the value of aligning Indigenous and Western research approaches to address complex food system challenges.

**Conclusions:** This study contributes a new approach to Indigenous food security and food sovereignty research and planning by bringing together distinct knowledge systems in a way that prioritizes Indigenous values and cultural practices. It fosters self-determination by providing a framework for developing actionable strategies to promote food security and systemic change. It offers a model for future community-based research and practice that honours and respects Indigenous knowledge while advancing community-driven food sovereignty initiatives

## Identifying Determinants of Food Prescription Program Implementation and Usage: A Mixed Methods Study in North America

**Dr. Lucia Leone<sup>1</sup>**, Dr. Jill Tirabassi<sup>1</sup>, Dr. Natalie Poulos<sup>4</sup>, Dr. Saria Lofton<sup>3</sup>, Dr. Kim Gans<sup>2</sup>

<sup>1</sup>*School of Public Health and Health Professions - University at Buffalo, Buffalo, United States,*

<sup>2</sup>*University of Connecticut, Storrs, United States,* <sup>3</sup>*University of Illinois at Chicago College of Nursing, Chicago, United States,* <sup>4</sup>*University of Texas at Austin, Austin, United States*

**Award Session: Socio Economic Inequalities | Indigenizing Research, Waihorotiu #1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Food prescription programs (FoodRx) provide recipients with free or subsidized foods (mainly produce) via referral from a health provider. FoodRx programs have demonstrated improvements in food security, diet quality, and health outcomes, but efficacy is threatened by poor program implementation. Our research uses a mixed methods implementation science approach to understanding determinants of FoodRx implementation and participation.

**Methods:** A survey on FoodRx program characteristics, enrollment, and usage was distributed nationwide to FoodRx program implementors across the U.S through the National Obesity Research, Evaluation and Policy Network (NOPREN). A purposive sample of survey respondents was invited to participate in qualitative interviews, prioritizing programs with a mix of urban/rural sites, a variety of program delivery models, high reach/usage, and/or unique approaches. The interview focused on determinants of FoodRx program implementation and usage. Interviews were conducted over Zoom and respondents received \$50 USD. Interviews were recorded, transcribed, and double-coded using Atlas.ti inductively and deductively guided using the Consolidated Framework for Implementation Research (CFIR 2.0).

**Results:** 97 surveys were completed, and 24 participants completed qualitative interviews. Among the interviewees, 4 FoodRx programs operated in urban locations only, 4 operated in rural locations and 16 operated in multiple locations. The number of recipients served ranged from 12 to 40,000. Qualitative interviews suggest there was variation in program delivery models, but most programs addressed transportation barriers and the need to balance program reach with participation choice in their program design (CFIR: Innovation Characteristics). Many programs included elements to support usage including recipes/cooking education (CFIR: Inner Setting) and focused on sourcing local foods (CFIR: Innovation Characteristics). Commonly cited implementation barriers included funding constraints, transportation issues, and technology (CFIR: Outer Setting). Community health workers facilitated implementation as well as usage (CFIR: Inner setting). Other Implementation facilitators included partnerships and policy changes that allowed for more sustainable long-term funding (CFIR: Outer Setting).

**Conclusions:** Common practices from successful FoodRx programs will be used to inform future research and program implementation. This research is timely given that states have begun instituting 1115 waivers to allow reimbursement for FoodRx programs by Medicaid, a government-funded insurance program for lower-income individuals.

# Understanding Wholistic Health in Anishinaabe and Cree Youth in the Context of Sport and Physical Activity

**Mr. Kieran Peltier<sup>1</sup>**, Dr. Colin McLaren<sup>2</sup>, Dr. Cindy Peltier<sup>1</sup>, Dr. Brenda Bruner<sup>1</sup>, Dr. Mark Bruner<sup>1</sup>

<sup>1</sup>Nipissing University, North Bay, Canada, <sup>2</sup>Cape Breton University, Sydney, Canada

**2. Award Session: Socio Economic Inequalities | Indigenizing Research, Waihorotiu #1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** Sport and physical activity have been mobilized as a vehicle for positive developmental outcomes, and a context in which Indigenous youth can thrive (Baillie et al., 2016; Bruner et al., 2016). These experiences offer Indigenous youth the capacity to attain their full potential, accrue wholistic health benefits, and live in balance (Bruner et al., 2019). Despite this, there is limited research to understand Indigenous perspectives surrounding wholistic health and sport and physical activity participation. The purpose of this research was to explore and better understand how the wholistic health of Anishinaabe and Cree youth is associated with participation in sport and physical activity.

**Methods:** This study is grounded in an Anishinaabe research paradigm (Peltier, 2018) and implemented a Two-Eyed Seeing approach (Bartlett et al., 2012). This Two-Eyed Seeing approach (Bartlett et al., 2012) employed sharing circles as an Indigenous method of knowledge generation (Lavallée, 2009), and Braun and Clarke's (2016) thematic analysis, a non-Indigenous method, to analyze the data. Using purposeful sampling, eight Anishinaabe and Cree youth (five males, three females; Mage = 16.75 years) were recruited to participate in one of two virtual sharing circles. Sharing Circles followed a semi-structured interview guide with open-ended questions and were carried out using Zoom Video Communications given the research was conducted during the COVID-19 pandemic.

**Results:** Findings highlighted that sport and physical activity are associated with positive outcomes related to physical adaptations, mental health, mental skills, and interconnectedness for Anishinaabe and Cree youth. However, to balance findings, this research also demonstrates room for growth in sport and physical activity participation (i.e., negative relational, and internal experiences).

**Conclusions:** This research shares unique knowledge and stories of Anishinaabe and Cree youth regarding wholistic health outcomes experienced through participation in sport and physical activity. Findings from this research add important context and nuance to the overarching belief that sport and physical activity participation is beneficial to the wholistic health of Indigenous youth.

## Developing a culturally competent and effective future workforce: Physical Activity and the Environment / Kori Tinana me te Taiao

**Dr. Lara Andrews<sup>1</sup>**, Dr Justin Richards<sup>1</sup>, Dr Ihirangi Heke, Dr Wayne Ngata, Dr Geoff Kira  
<sup>1</sup>Victoria University of Wellington, , New Zealand

**2. Award Session: Socio Economic Inequalities | Indigenizing Research, Waihorotiu #1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

The impact of the physical environment on physical activity participation is well established. Similarly, there is an emerging evidence base for how the physical environment in which participation takes place moderates the relationship between physical activity and various wellbeing outcomes. These are both critical topics within the curriculum of existing physical activity promotion teaching programmes globally. However, Indigenous wellbeing frameworks emphasise the direct implications of engaging with the natural environment, rather than positioning it as a determinant of physical activity participation or a moderator of how this relates to wellbeing. The aim of this project was to develop a course within a physical activity promotion postgraduate teaching programme that aligns with a mātāuranga Māori (traditional Māori knowledge) approach to promoting hauora (wellbeing) in Aotearoa New Zealand. We designed and developed a course in consultation with leading Māori academics, practitioners and policy-makers. The course was underpinned by the Atua Matua Māori Health Framework, which is environmentally-based and strives to enhance hauora through meaningful interpretations of Indigenous ancestral knowledge. The course provided students with an understanding of how te taiao (the natural environment) influences physical activity, hauora and wellbeing. Specifically, the focus was on exploring how mātāuranga Māori is embedded in te taiao and the incidental health outcomes that arise from privileging the environment. The course was delivered in Whanganui-a-Tara (Wellington) for the first time in 2024 to students enrolled in the Master of Physical Activity and Hauora degree programme at Victoria University of Wellington – Te Herenga Waka. Students developed skills in engaging with te taiao to develop an understanding of mātāuranga Māori and bring about subsequent incidental positive outcomes for hauora and physical activity participation. This is an important component to build into future tertiary training and workforce development in Aotearoa New Zealand and is likely to have similar relevance for other Indigenous population groups internationally.

## Impact of provision of abdominal aortic calcification results on fruit and vegetable intake and cardiovascular risk control: a 12-week randomised controlled trial

**Dr. Simone Radavelli Bagatini<sup>1</sup>**, Dr Catherine P. Bondonno<sup>1,2</sup>, Dr Jack Dalla Via<sup>1</sup>, Dr Marc Sim<sup>1,2</sup>, Dr Abadi K. Gebre<sup>1</sup>, Dr Lauren C. Blekkenhorst<sup>1,2</sup>, Ms Emma L. Connolly<sup>1</sup>, Dr Nicola P. Bondonno<sup>1,3</sup>, Prof John T. Schousboe<sup>4</sup>, Prof Richard J. Woodman<sup>5</sup>, Dr Kun Zhu<sup>2,6</sup>, Ms Shelby Mullin<sup>6</sup>, Prof Pawel Szulc<sup>7</sup>, Prof Ben Jackson<sup>8,9</sup>, Prof James Dimmock<sup>10</sup>, Prof Markus P. Schlaich<sup>2,11,12,13</sup>, Prof Kay L. Cox<sup>2</sup>, Prof Douglas P. Kiel<sup>14</sup>, Prof Wai H. Lim<sup>2,15</sup>, Prof Mandy Stanley<sup>16</sup>, Prof Amanda Devine<sup>1</sup>, Prof Peter L. Thompson<sup>2,17</sup>, Dr Evan J. Williams<sup>18</sup>, Prof Lisa G. Wood<sup>18</sup>, Prof Moira Sim<sup>1</sup>, Prof Robin M. Daly<sup>19</sup>, Prof Jonathan M. Hodgson<sup>1</sup>, Prof Joshua R. Lewis<sup>1,2,20</sup>

<sup>1</sup>Nutrition & Health Innovation Research Institute, School of Medical and Health Sciences, Edith Cowan University, Perth, Australia, <sup>2</sup>Medical School, University of Western Australia, Perth, Australia, <sup>3</sup>Danish Cancer Institute, Copenhagen, Denmark, <sup>4</sup>Park Nicollet Clinic and HealthPartners Institute, and Division of Health Policy and Management, University of Minnesota, Minneapolis, United States, <sup>5</sup>Flinders Centre for Epidemiology and Biostatistics, Flinders University, Adelaide, Australia, <sup>6</sup>Department of Endocrinology and Diabetes, Sir Charles Gairdner Hospital, Nedlands, Australia, <sup>7</sup>INSERM UMR 1033, University of Lyon, Hospices Civils de Lyon, Lyon, France, <sup>8</sup>School of Human Sciences (Exercise and Sport Science), University of Western Australia, Perth, Australia, <sup>9</sup>Telethon Kids Institute, Perth, Australia, <sup>10</sup>Department of Psychology, College of Healthcare Sciences, James Cook University, Australia, <sup>11</sup>Dobney Hypertension Centre, Medical School, Royal Perth Hospital Research Foundation, Perth, Australia, <sup>12</sup>Department of Nephrology, Royal Perth Hospital, Perth, Australia, <sup>13</sup>Department of Cardiology, Royal Perth Hospital, Perth, Australia, <sup>14</sup>Hinda and Arthur Marcus Institute for Aging Research, Hebrew SeniorLife, Department of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, United States, <sup>15</sup>Department of Renal Medicine, Sir Charles Gairdner Hospital, Perth, Australia, <sup>16</sup>School of Medical and Health Sciences, Edith Cowan University, Joondalup, Australia, <sup>17</sup>Department of Cardiology, Sir Charles Gairdner Hospital, Perth, Australia, <sup>18</sup>School of Biomedical Science and Pharmacy, University of Newcastle, New Lambton Heights, Australia, <sup>19</sup>Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Melbourne, Australia, <sup>20</sup>Centre for Kidney Research, Children's Hospital at Westmead, School of Public Health, Sydney Medical School, The University of Sydney, Sydney, Australia

**3. Award Session: Motivation and behavior change | e and mHealth, Waitakere 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice: B. Motivation and behavior change**

Suboptimal lifestyle is the major contributor to cardiovascular disease (CVD) globally, with efforts to improve diet and physical activity a cornerstone to reducing disease burden. Provision of vascular imaging results to individuals improved CVD risk factor control. Whether this approach improves lifestyle-related risk reducing behaviors such as fruit and vegetables intake remains uncertain. This study aimed to examine the impact of providing abdominal aortic calcification (AAC), a measure of structural vascular disease on measures of fruit and vegetable intake (primary outcome), physical activity, and other CVD risk factors (secondary outcomes). In this two-arm 12-week randomised controlled trial, 240 community dwelling men and women aged 60-80 years were provided cardiovascular and CVD-risk educational (Ed) resources and randomised 1:1 to receive their AAC results at baseline (AAC+Ed group), or not (Control+Ed group). Consumption of fruit and vegetables was assessed using a food frequency questionnaire, and plasma carotenoids - biomarkers of fruit and vegetable intakes. AAC was assessed from lateral spine bone density scans using a 24-point semiquantitative score. Between-group differences were tested using linear mixed-effects regression. The mean age of participants was 68.7 years (SD  $\pm$  5.0), 57.5% were women and ~57% had AAC. Plasma carotenoids and fruit and vegetable intakes increased significantly within both groups (all

p<0.01), with no between-group differences at 12 weeks (mean difference +0.03 µg/mL [95%CI -0.06, 0.13] and +18 g/d [-37, 72], respectively). The AAC+Ed group had a reduced CVD risk score (P<0.05) and reduced total and non-HDL cholesterol (P<0.05) at 12-weeks compared to Control+Ed. Levels of physical activity, overall diet quality and blood pressure were unchanged between and within groups. Intake of fruit and vegetables significantly increased in both groups. Providing AAC results with education did not further improve measures of fruit and vegetable consumption in older adults over 12 weeks but may have led to improvement in some CVD risk factor control compared to the education alone. Further studies focused specifically on those with moderate to high AAC are warranted.

## Using a novel, micro-randomized factorial trial design to investigate the proximal impact of feedback on self-monitoring of dietary intake and physical activity

**Prof. Kathryn Ross**<sup>1,3</sup>, Prof. Jaime Ruiz<sup>1</sup>, Ms. Meena Shankar<sup>1</sup>, Prof. Peihua Qiu<sup>1</sup>, Mr. Zibo Tian<sup>1</sup>, Ms. Anisha Wadhvani<sup>1</sup>, Prof. Lisa Anthony<sup>1</sup>, Dr. Rebecca Krukowski<sup>2</sup>

<sup>1</sup>University of Florida, Gainesville, USA, <sup>2</sup>University of Virginia, Charlottesville, USA, <sup>3</sup>Advocate Aurora Research Institute, ,

**3. Award Session: Motivation and behavior change | e and mHealth, Waitakere 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Embedding a factorial design within a micro-randomized trial (MRT) framework offers potential to efficiently evaluate the effectiveness of specific components of digital health interventions. Critically, little evidence exists to inform optimal construction of self-monitoring feedback in digital health promotion interventions.

**Methods:** We are using a factorial MRT to evaluate the impact of four different feedback components on adherence to self-monitoring and goal attainment, including feedback regarding 1) calorie goal attainment, 2) dietary quality, 3) physical activity goal attainment, or 4) goal setting. Participants were provided with a single weight loss education session and asked to self-monitor dietary intake, physical activity, and weight daily using commercially-available digital tools (the Fitbit app, Inspire 3 activity monitor, and Aria Air e-scale). Under a 2x2x2x2 full-factorial design, participants are being randomized each week for 16 weeks to one of 16 feedback conditions. Mixed-effects regression models will be used to investigate main effects of each feedback condition on adherence to self-monitoring and goal attainment the week after each message is received.

**Results/Findings:** We enrolled 28 adults with obesity (age = 42.6±12.1 years, BMI=37.2±6.6 kg/m<sup>2</sup>, 85.7% Female) interested in weight loss. As of week 8 of the MRT (ending in December 2024), participants have been randomized 218 times across the 16 feedback conditions (one participant was withdrawn week 3 and thus only contributed data for two randomizations). Of the feedback messages sent, 95.4% were viewed by participants. Participants self-monitored dietary intake on 75.4% of possible days (5.3 days/week) and physical activity on 95.3% of days (6.7 days/week). Final analyses will be conducted in January 2025 and will be presented at the ISBNPA meeting.

**Conclusions:** Results demonstrate the feasibility and acceptability of implementing a factorial MRT to assess the proximal impact of digital health intervention components aimed at increasing adherence to self-monitoring of dietary intake and physical activity (and, ultimately, adherence to dietary intake and physical activity goals). Technological requirements and pragmatic considerations for implementation of these designs will be discussed, and final results will provide foundational evidence for developing future digital health interventions aimed at changing dietary intake and physical activity behaviors.

## Daily stress experiences interrupt adults' follow-through on their morning intentions to do physical activity

**Dr. JIMIKAYE COURTNEY<sup>1</sup>**, Dr. Aiden Chauntry<sup>1</sup>, Dr. Paschal Sheeran<sup>1</sup>

<sup>1</sup>University of North Carolina at Chapel Hill, Chapel Hill, United States

**3. Award Session: Motivation and behavior change | e and mHealth, Waitakere 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Physical activity (PA) intentions can predict PA behavior and could serve as a real-time signal for behavior change interventions. However, PA intentions do not consistently predict PA behavior. This intention-behavior gap is poorly understood, but experiencing daily psychological stressors, which occur on 40% of days, may interrupt or prevent intention follow-through. This study investigated whether daily stressful experiences moderated the effect of PA intentions on behavior to inform approaches for real-time interventions.

**Methods:** Overweight/obese adults wore an activPAL accelerometer for 21 consecutive days, completed morning daily diaries about PA intentions (0 [Do not intend to do PA] – 4 [Definitely intend to do PA]), and evening reports of daily stressful experiences and leisure-time PA (aerobic PA, strength-training). Two-part multilevel models with logistic and gamma regressions tested within-person interactions between PA intentions and stress (stressor frequency, average stress severity, average stress-related negative affect) on the odds and amount of time spent in PA, with separate models for activPAL-measured moderate-to-vigorous PA (MVPA) and self-reported leisure-time PA, controlling for weekend days.

**Results:** Participants (N=91, Mage=30.6±6.5, 58% female, 72% White) averaged 15±22 and 25±54 minutes of activPAL-MVPA and leisure-time PA, respectively, experienced stressors on 36% of days, and had an average stress severity of 0.9±1.3 (range 0–4). On days with stronger morning intentions, participants had 41-44% higher odds of doing PA (odds ratio [OR]:1.41–1.44,  $p<.001$ ) and spent 17-19% more time in both activPAL-MVPA and leisure-time PA (prevalence ratios [PR]:1.19 and 1.17,  $p<.001$ , respectively). All stress variables significantly moderated intention-PA associations. Morning intentions were not associated with odds of doing leisure-time PA on days participants experienced one more stressor (ORinteraction=0.80,  $p<.05$ ), stress severity was 1.4 points higher (ORinteraction=0.89,  $p<.05$ ), or stress-related negative affect was 1.5 points higher (ORinteraction=0.61,  $p<.01$ ) than a typical day. Morning intentions were not associated with time in activPAL-MVPA on days when participants' stress severity was 1.6 points higher than usual (PRinteraction=0.95,  $p<.05$ ).

**Conclusions:** Daily stress experiences appear to interrupt the likelihood of following through on PA intentions. Prevention interventions could use real-time stress measures to signal the need for intervention and help people follow-through on their PA intentions via “if-then planning” or other behavior change techniques.

## The development of text messages in a digital health intervention to support parents across the First 2000 Days: the use of co-design and behaviour change theory

Dr. Alison Brown<sup>1,2,3,4</sup>, Ms. Nayerra Hudson<sup>1,2,3</sup>, Ms Jessica Pinfold<sup>1</sup>, Ms Rebecca Sewter<sup>1</sup>, Ms Lynda Davies<sup>1</sup>, Ms Sonya Stanley<sup>1</sup>, **Dr. Jacklyn Jackson<sup>1,2,3</sup>**, Ms Tauri Smart<sup>1</sup>, Ms Belinda Tully<sup>5</sup>, Dr Nafiseh Ghafourina<sup>1</sup>, Ms Alison Kidston<sup>1</sup>, Dr. Daniel Groombridge<sup>1,3</sup>, Dr Paul Craven<sup>1</sup>, Ms Sinead Redman<sup>1</sup>, Associate Prof. Rachel Sutherland<sup>1,2,3,4</sup>

<sup>1</sup>Hunter New England Local Health District, New Lambton Heights, Australia, <sup>2</sup>School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, <sup>3</sup>Hunter Medical Research Institute, Newcastle, Australia, <sup>4</sup>National Centre of Implementation Science, Newcastle, Australia, <sup>5</sup>Armajun Aboriginal Health Service, Inverell, Australia

**3. Award Session: Motivation and behavior change | e and mHealth, Waitakere 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Healthy Beginnings for HNEKids (HB4HNEKids) is an m-health program that aims to support families by providing evidence-based preventative health text messages across the First 2000 Days. This study aims to describe the process that was undertaken to develop text messages for HB4HNEKids using co-design and the Behaviour Change Wheel (BCW).

**Methods:** A four stage process was undertaken to develop text message content for the HB4HNEKids program. Co-design was embedded into each stage with the formation of multiple expert consensus groups including a variety of stakeholders as appropriate. The stages included: Stage 1) identification of priority health topics where feedback was sought by an advisory group of health executive, senior leadership and program managers; Stage 2) determination of barriers and enablers for priority health topics guided by a practice expert group of clinicians, allied health staff, multicultural health and Aboriginal partners; Stage 3) mapping barriers and enablers to the BCW and Behaviour Change Techniques (BCT) and; Stage 4) Development of text messages where feedback was sought from a range of partners including child and family health services staff, allied health, community health services, and parents/carers.

**Results:** Priority health areas identified via expert consensus and literature included infant feeding (breastfeeding, introduction to solids), common nutritional concerns, child health and development, carer wellbeing, sleep, physical activity and sedentary time, primary health care checks and immunisations. Across 0-5 years, 230 text messages have been developed for HB4HNEKids. As part of message development, all messages have incorporated a range of BCTs. At present, 490,000 messages have been sent to families in the Hunter New England region of NSW.

**Conclusions:** This process has highlighted the value in integrating policy, evidence, theory and clinical expertise to develop a scalable m-health program and provides a framework for utilising a co-design process for future m-health program development.

## Development of the Artificial Intelligence-based School Audit (AISA) platform

**Dr. Nicola Ridgers<sup>1</sup>**, Prof Jo Salmon<sup>2</sup>, Ms Pegah Tabarisaadi<sup>2</sup>, Prof Abbas Khosravi<sup>2</sup>

<sup>1</sup>University of South Australia, Adelaide, Australia, <sup>2</sup>Deakin University, Burwood, Australia

**3. Award Session: Motivation and behavior change | e and mHealth, Waitakere 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Students spend up to 200 days per year at school. The school physical environment shapes student outcomes, including physical and mental health and wellbeing. Tools to assess the external school physical environment exist (e.g., in-person audits, Google Earth), but have cost, time, reach, and dated satellite images limitations. The aim of this study was to develop an audit platform of schoolgrounds (AISA) using novel artificial intelligence (AI) and computer vision methods.

**Methods:** One hundred and seventy-six schools located in Victoria and South Australia were selected at random from the MySchool website. The satellite images for the school footprints were obtained via Nearmap and the school boundary determined using Landchecker. Using V7 Labs, aerial images were manually annotated to label the following schoolground features: school boundary, school buildings, playgrounds, sports/play areas, green spaces (trees/shrubs, open green spaces), shaded areas, and car parking. A U-net model was trained and tested. Ninety percent of the annotated segmented images were used to train the AI model, while ten percent of the images were used to test the model.

**Results:** The trained AISA model achieved an overall accuracy of 91% in predicting schoolground features. It recorded an Intersection over Union (IoU) of 72.6%, a Dice score of 84%, sensitivity of 84%, and specificity of 97%. While these metrics indicate strong performance for most labels, a detailed analysis by class shows that the model struggled with certain labels. Specifically, labels representing features that were either underrepresented in the images or exhibited significant variations, such as shaded areas, had inadequate IoU scores. Improving these areas will require the addition of more sample data to enhance model accuracy.

**Conclusions:** The AISA model has the potential to explore novel associations between the external school physical environment and student behaviours, such as physical activity, at scale in future research. The platform may also provide important information for policy makers and architects to inform new school builds.

## Perceived barriers and enablers to reducing occupational sedentary time in desk-workers with disability: a mixed methods study

**Ms. Jodie Jetann<sup>1</sup>**, Dr Jessica Hill, Dr Ana D Goode, Prof Sean Tweedy, Prof Genevieve N Healy

<sup>1</sup>The University of Queensland, St Lucia, Australia

**3. Award Session: Motivation and behavior change | e and mHealth, Waitakere 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** This study aimed to explore the perceived barriers and enablers to reducing occupational sedentary time in desk-workers with disability, particularly those with vision or mobility impairments who face challenges with standing and walking, common strategies for reducing occupational sedentary behaviour.

**Methods:** This mixed-methods cross-sectional study included an online survey and interviews. Quantitative and qualitative data were collected on barriers and enablers, along with demographic, disability, strategy, and sedentary behaviour information. Descriptive statistics summarised the quantitative data and thematic analysis identified key themes from the interviews. Barriers and enablers were discussed within the ecological framework to identify areas of influence on behaviour (intrapersonal, interpersonal, physical environment, policy), and the COM-B model, to determine the drivers of behaviour (capability, opportunity, or motivation).

**Results:** Fifty-one eligible participants (82% female, mean age of 42.8 (SD 10.1) years), across 11 industry sectors, with 21 (41.2%) having mobility challenges and eight (15.7%) with vision impairment, completed the online survey. Ten participants with mobility disability or vision impairment that completed the survey, contributed to the interviews. The most common barriers reported by the survey participants were forgetting to take breaks (94.1%) and needing to be reminded to be less sedentary (75.4%), both barriers being intrapersonal influences with capability drivers. Interviews identified how the participants impairment significantly impacted their ability to be less sedentary in the workplace, an intrapersonal influence with a capability driver. Participants reported not being able to engage in occupational reducing strategies, due to pain, fatigue, low self-efficacy, or concerns about safety. The most common enablers identified in the survey were autonomy over workplace movement (74.5%), and having managerial support (58.8%), both interpersonal influences with opportunity drivers. The interviews highlighted the inclusion of a disability support employee, as a key enabler, assisting in modifying or developing occupational sedentary reducing strategies for desk-workers with disability and promoting the use of inclusive language (policy influence, opportunity driver).

**Conclusions:** By identifying the shared and unique barriers and enablers perceived by desk-workers with disability in reducing occupational sedentary behaviour, this study provides insights to inform future interventions and policies to reduce occupational sedentary behaviour in this high-risk population.

## Detecting nap times in young children from raw accelerometer data with a new, open, and simple algorithm: Demonstration of validity

**Dr. Simone Verswijveren<sup>1</sup>**, Dr Vincent van Hees<sup>2</sup>, Katherine Downing<sup>1</sup>, Ms Stephanie Renahan<sup>1</sup>, Mr Luke Boerdijk<sup>1,3</sup>, Prof. Jo Salmon<sup>1</sup>, Prof. Kylie Hesketh<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), Deakin University, Geelong, Australia*, <sup>2</sup>*Independent Consultant, Accelting, Almere, The Netherlands*, <sup>3</sup>*Hogeschool van Amsterdam, Amsterdam, The Netherlands*

**4. Award Session: Children and Families | Early Care and Education, Hunua 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** There are currently no public algorithms available to detect short daytime naps across young children. Consequently, napping may be misclassified as inactivity, considered “unhealthy behaviour”, instead of appropriately classified as “healthy” sleep. Accurately capturing daytime sleep is essential for understanding young children's 24-hour movement patterns. Therefore, the aim of this study is to propose and evaluate an open-source algorithm to detect daytime sleep (i.e., naps) in young children (aged 0-4 years) from accelerometer data.

**Methods:** Participants concurrently wore ActiGraph activity monitors on their hip (GT3X+) and their wrist (GT9X) during the day and had video cameras in their bedrooms allowing identification of nap start and end times. Carers also kept a logbook documenting naps and periods of restricted movement (e.g. strapped in a pram). The developed nap detection algorithm entails labelling any sustained inactivity bouts of no z-axis angle change by more than 5 degrees for more than 5 minutes as a nap if it lasts  $\geq 30$  and  $< 240$  minutes and does not overlap by more than 10% with detected non-wear. Algorithm-detected nap times were compared to video footage coded by trained research assistants.

**Results/findings:** Twelve participants (mean age [standard deviation] = 1.42 [1.03] years; 33.3% girls; 16.7% crawling vs 83.3% walking) provided accelerometer and nap footage data (1-6 naps). The algorithm accurately detected 40 out of 40 recorded naps from hip-worn accelerometer data (100% sensitivity). Three naps were falsely detected, of which two were explained by restriction in a pram and a car, as reported by carers. In addition, 95 out of 97 (97.9%) reported restricted time periods were not misclassified as naps. Classification performance from the wrist-worn data are currently being calculated.

**Conclusions:** The algorithm shows strong potential for accurately detecting naps in young children, while offering an easy interpretable design. The presentation will also cover the algorithm's application to large intervention datasets, showcasing its broader applicability and potential for advancing 24-hour movement research. This algorithm will be made publicly available through the GGIR R-package, contributing to more accurate measurement of 24-hour movement behaviours whilst reducing participant burden for parents and their young children.

## Associations between parental self-reported psychological distress and parental attitudes to risk in play of 2-4-year-old children in the UK

**Dr. Karen Ma<sup>1</sup>**, Dr Kathryn Hesketh<sup>1</sup>, Dr. Helen Dodd<sup>2</sup>, Dr. Esther Van Sluijs<sup>1</sup>, Dr. Andrea Smith<sup>1</sup>

<sup>1</sup>University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>University of Exeter, Exeter, United Kingdom

**4. Award Session: Children and Families | Early Care and Education, Hunua 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Stress and poor mental health are known to influence decision-making and willingness to take risks. However, little is understood about how parental mental health relates to risks their children may take. Risky play is important for child physical and mental health, child confidence, and provides opportunities to be physically active. The study aimed to understand the association between parental self-reported psychological distress and tolerance of risky play in relation to 2-4-year-olds in the UK.

**Methods:** Data were from the British Preschool Children's Play Survey, a cross-sectional, nationally representative sample of 1032 caregivers of 2-4-year-old children in the UK (67.8% female). Psychological distress was assessed using the Kessler Psychological Distress (K6) scale, a well-validated screening measure for psychological distress. Risk tolerance was assessed by the Tolerance for Risk in Play Scale (TRiPS) and the Risk Engagement and Protection Survey (REPS) (including Protection from Injury (PFI) and Engagement with Risk (EWR) subscales), which are validated instruments for assessing parental attitudes. Linear regression models assessed the association between caregiver psychological distress and TRiPS, REPS-PFI, and REPS-EWR scores. Subgroup analyses stratified by caregiver gender were also performed. Analyses adjusted for confounders, including child factors (age, gender, birth order, physical and learning disabilities), parent factors (age, gender, marital status, and disability), and family factors (social economic status, ethnicity, and urban/rural neighbourhood environment).

**Results:** In the main analyses, caregiver psychological distress was not associated with TRiPS ( $B = 0.0037$ ,  $p = 0.91$ ), REPS-PFI ( $B = 0.033$ ,  $p = 0.30$ ) or REPS-EWR ( $B = -0.049$ ,  $p = 0.14$ ). Subgroup analyses showed that the latter association between psychological distress and REPS-EWR was significant only among male caregivers ( $B = -0.11$ ,  $p = 0.04$ ) but not female caregivers ( $B = -0.010$ ,  $p = 0.81$ ). This suggests that male caregivers with greater psychological distress are less permissive in allowing children to engage with risks.

**Conclusions:** Male caregivers experiencing psychological distress appear to be more protective in terms of risk engagement in young children. This may be an important factor to consider when designing programmes to promote risky play in British preschoolers.

# Interventions for increasing fruit and vegetable consumption in children aged five years and under: a Cochrane living systematic review

Dr. Kate O'Brien<sup>1,2,3,4</sup>, **Dr. Rebecca Hodder**<sup>1,2,3,4</sup>, Rebecca Wyse<sup>1,2,3,4</sup>, Associate Professor Flora Tzelepis<sup>1</sup>, Associate Prof. Sze Lin Yoong<sup>2,3,5</sup>, Dr Fiona Stacey<sup>1</sup>, Prof Luke Wolfenden<sup>1,2,3,4</sup>  
<sup>1</sup>School of Medicine and Public Health, College of Health Medicine and Wellbeing, University of Newcastle, Newcastle, Australia, <sup>2</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>3</sup>National Centre of Implementation Science, University of Newcastle, Newcastle, Australia, <sup>4</sup>Hunter Medical Research Institute Population Health Program, Newcastle, Australia, <sup>5</sup>Global Centre for Preventive Health and Nutrition Institute for Health Transformation, School of Health and Social Development, Geelong, Australia

## 4. Award Session: Children and Families | Early Care and Education, Hunua 1, June 11, 2025, 5:45 PM - 7:00 PM

### **SIG - Primary Choice:** F. Early care and education

**Purpose:** Insufficient consumption of fruits and vegetables during childhood increases the risk of non-communicable diseases, including cardiovascular disease. This study aims to assess the benefits and harms of interventions designed to increase the consumption of fruit and/or vegetables among children aged five years and under.

**Methods:** Since 2017, this review has followed Cochrane methodology as a living systematic review, conducting monthly database searches and re-publishing the review when the updated results impact on review conclusions (last update published September 2024). Eligible studies included randomised controlled trials (RCTs) with a parallel control grouping testing interventions aimed at increasing the consumption of fruit and/or vegetables amongst children aged five years and under. Meta-analyses or synthesis according to Synthesis Without Meta-analysis (SWiM) guidance was conducted.

**Results:** Fifty-three trials involving 12,350 participants were included. Interventions centred on child-feeding practices (e.g. repeated vegetable exposure) and multicomponent strategies (e.g. combining preschool policy changes with parent nutrition education) probably lead to small increases in fruit and vegetables intake, equivalent to 15.5 grams of vegetables and 0.34 cups of fruit and vegetables a day, respectively. In contrast, parent nutrition education interventions may lead to little to no change in children's consumption of fruit and vegetables. Cost data from the few studies reporting it indicated intervention costs ranged from \$325 to \$1500 USD, with no unintended harms reported in the two studies that reported assessing them.

**Conclusions:** The review highlights that certain interventions aimed to increase fruit and vegetable intake can positively influence fruit and vegetable consumption in children aged five years and under, providing valuable insights for policymakers and practitioners in developing effective strategies for young children. More research is needed to increase the certainty of the evidence, and especially assessment and reporting of unintended negative outcomes of interventions and their costs.

## Examining social and family contextual differences between parental feeding profiles in UK parents of pre-school children: A Latent Profile Analysis

**Miss Hannah Povall<sup>1,2</sup>**, Professor Jacqueline Blissett<sup>1</sup>, Dr Abigail Pickard<sup>1</sup>, Dr Katie Edwards<sup>1</sup>, Dr Catherine G Russell<sup>2</sup>, Dr Kathleen Lacy<sup>2</sup>, Professor Claire Farrow<sup>1</sup>

<sup>1</sup>*Institute of Health and Neurodevelopment (IHN), School of Psychology, Aston University, Birmingham, United Kingdom*, <sup>2</sup>*Institute of Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia*

**4. Award Session: Children and Families | Early Care and Education, Hunua 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Parental feeding practices are an important potential target for intervention to support healthy child eating behaviour and diet. Variable-centred approaches are often used to assess parental feeding practices but fail to account for parents using multiple feeding practices with their children, unlike person-centred approaches which examine how behaviours cluster together. Prior research applying person-centred approaches found profiles distinguished by coercive control and structure-based feeding practices. The differences between feeding profiles in appetitive traits or diet quality are often researched, with less focus on social and family contextual variables. This study aimed to determine how feeding practices cluster together (including autonomy support-based practices) and to describe whether profiles differ on family contextual variables.

**Methods:** In 2022, 989 parents of children aged 3-5 years (M= 4.1 years) based in the UK completed an online survey. The survey included the Comprehensive Feeding Practices Questionnaire, measuring parental feeding practices, and validated questionnaires capturing family contextual variables. Latent Profile Analysis was conducted to identify profiles of parents using similar feeding practices, and MANCOVA was used to assess for differences in family contextual variables.

**Results:** A three-profile solution was selected based on common model fit indices and theoretical considerations. Profile 1 'coercive control' (25.2%) showed high use of coercive control practices and low use of structure and autonomy support practices. Profile 2 'autonomy support' (29.6%) showed low use of coercive control practices and high use of structure and autonomy support practices. Profile 3 'try everything' (45.2%) showed a pattern of high use of all three types of parental feeding practices: coercive control, structure and autonomy support. Parents in 'coercive control' had significantly lower parental wellbeing and reported more barriers of time and energy for meal planning compared to other profiles. In contrast, parents in 'autonomy support' had significantly lower household chaos and parental stress.

**Conclusions:** Three distinct feeding profiles in parents of preschool children have been identified. The results indicate that parental stress, wellbeing and household chaos play a role in parents' use of feeding practices. Tailoring of future children's eating behaviour and diet interventions should consider both co-occurring feeding practices and important family context.

# Effectiveness of NAPSACC UK: An environmental nursery nutrition and physical activity cluster Randomised Controlled Trial

**Prof. Ruth Kipping<sup>1</sup>**, Prof. Sharon Ann Simpson<sup>2</sup>, Dr. Kim Hannam<sup>1</sup>, Prof. Pete Blair<sup>1</sup>, Prof. Russell Jago<sup>1</sup>, Prof. Corby K Martin<sup>3</sup>, Dr. Zoi Toumpakari<sup>1</sup>, Dr. Laura Johnson<sup>1</sup>, Dr. James Garbutt<sup>1</sup>, Dr. Rachel Maishman<sup>1</sup>, Prof. James White<sup>4</sup>, Dr. Rebecca Langford<sup>1</sup>, Prof. William Hollingworth<sup>1</sup>, Dr. Madeleine Cochrane<sup>1</sup>, Prof. Laurence Moore<sup>2</sup>, Dr. Dianne Ward<sup>5</sup>, Dr. Anne Martin<sup>2</sup>, Dr. Stephanie Chambers<sup>2</sup>, Mr. Tom Reid<sup>1</sup>, Ms. Megan Pardoe<sup>1</sup>, Dr. Alex Dobell<sup>6</sup>, Dr. Marie Murphy<sup>6</sup>, Ms. Susan Stratton<sup>2</sup>, Ms. Karissa Neubig<sup>3</sup>, Dr. Jodi Taylor<sup>1</sup>, Prof. Miranda Pallan<sup>6</sup>

<sup>1</sup>University of Bristol, Bristol, United Kingdom, <sup>2</sup>University of Glasgow, Glasgow, United Kingdom,

<sup>3</sup>Pennington Biomedical Research Centre, Baton Rouge, United States of America, <sup>4</sup>Cardiff University, Cardiff, United Kingdom, <sup>5</sup>University of North Carolina, Chapel Hill, United States of America, <sup>6</sup>University of Birmingham, Birmingham, United Kingdom

## 4. Award Session: Children and Families | Early Care and Education, Hunua 1, June 11, 2025, 5:45 PM - 7:00 PM

### **SIG - Primary Choice:** F. Early care and education

**Purpose:** Over 90% of children aged ≤4 attend UK early education settings. There is evidence that the 'NAPSACC' intervention improves nutrition and physical activity in US nurseries. The aim of this trial is to investigate the effectiveness of 'NAPSACC UK' (Nutrition and Physical Activity Self-Assessment for Child Care) for nutritional intake and physical activity in UK early education settings.

**Methods:** A cluster randomised controlled trial using repeat cross-sectional assessments with 52 UK nurseries and 570 consented 2-5 year-olds. Stratified randomisation allocated 25 nurseries to intervention and 27 to usual practice control. The one-year NAPSACC UK intervention had two cycles of: nutrition and physical activity self-assessment, staff workshops and goal setting supported by public health practitioners. Co-primary outcomes were average total energy (Kcal) intake per eating occasion (lunch and snacks) consumed at nurseries and accelerometer-assessed total activity time on nursery days. Secondary outcomes were moderate-to-vigorous physical activity, sedentary time, serving size, and diet quality (percentage of core and non-core food consumed), and zBMI. Analysis was intention-to-treat.

**Results:** There was no evidence of an intervention effect for average kcal/occasion consumed at nurseries (geometric mean ratio 0.86, 95% CI [0.72, 1.03], p=0.09) and minutes of total physical activity (mean difference -2.13 [-10.96, 6.70], p=0.64). There was strong evidence that the intervention reduced Kcal served and consumed at lunch (mean difference -69.1 [-116, -22.2], p=0.004 and -67.7 [-118.6, -18.7], p=0.009, kcal/lunch respectively). There was no evidence of a difference between treatment arms for 9/11 secondary outcomes for Kcal served and consumed at snacks, proportion of non-core Kcal consumed, zBMI and physical activity secondary outcomes. 76% (19/25) of intervention nurseries completed at least one cycle of NAPSACC UK.

**Conclusions:** NAPSACC UK did not improve physical activity or average calorie intake per eating occasion. NAPSACC UK did reduce energy serving and consumption for lunches, closer to national guidelines for portion size, but not snacks. NAPSACC UK should be optimised for lunches.

## Assessing toddlers' physical activity and sedentary time: agreement between parent-report and accelerometry

**Dr. Katherine Downing<sup>1</sup>**, Dr Parinaz Mehdipour<sup>2</sup>, Prof. Liliana Orellana<sup>2</sup>, Dr. Simone Verswijveren<sup>1</sup>, Dr. Jill Hnatiuk<sup>1</sup>, Prof. Valerie Carson<sup>3</sup>, Dr Marie Löff<sup>4</sup>, Prof. Jo Salmon<sup>1</sup>, Prof. Kylie Hesketh<sup>1</sup>

<sup>1</sup>Institute for Physical Activity and Nutrition, Deakin University, Geelong, Australia, <sup>2</sup>Biostatistics Unit, Faculty of Health, Deakin University, Geelong, Australia, <sup>3</sup>Faculty of Kinesiology, Sport, and Recreation, University of Alberta, Edmonton, Canada, <sup>4</sup>Department of Biosciences and Nutrition, Karolinska Institutet, Stockholm, Sweden

**4. Award Session: Children and Families | Early Care and Education, Hunua 1, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** To compare toddlers' accelerometer-derived physical activity (PA) and sedentary time (SED) data with parent-reported measures.

**Methods:** Parents (n=150) estimated the percent of the day their toddler usually spends sitting/lying down when not sleeping (%SED), 'pottering' (light-intensity PA [%LPA]), 'on the go' (moderate-intensity PA [%MPA]), and 'huff and puff' (vigorous-intensity PA [%VPA]). They also reported average daily total PA (TPA hours/day), 'high energy' PA (MVPA hours/day), and screen time and time spent restrained (summed to give SED hours/day). Toddlers (2.3±0.3 years; 46.7% girls) wore ActiGraph GT3X accelerometers for ≥7.4 hours/day on ≥4 days. Activity intensities (SED, LPA, MPA, MVPA, VPA and TPA hours/day) were derived using validated cut points and converted to percentage of waking wear time. Participants were included if survey completion was within 7 days and overlapped by ≥1 day with accelerometer wear. Measures of agreement included distribution of difference between parent-reported and accelerometer-derived measures and Spearman correlations.

**Results:** Preliminary analyses showed that %SED was significantly lower (median difference: -37.2% p<0.0001) and %LPA, %MPA, and %VPA significantly higher (median differences: 10.4%, 17.2%, and 4.4%, respectively; all p<0.0001) in parent reports compared to accelerometry. No significant correlations were observed between parent-report and accelerometry for these variables (r=0.053, -0.175, 0.084, and 0.073, respectively; all p>0.05). Although the median time differences for TPA and MVPA were small (-0.2 [IQR -1.4, 1.9] and -0.1 [IQR -0.6, 0.7] hours/day, respectively), the correlations between parent-reported and accelerometer-derived TPA (r=0.139 [95% CI -0.022, 0.292]) and MVPA (r=0.194 [95% CI 0.035, 0.344]) were not significant or weak, respectively, which is explained by the large variability (IQR) of the differences. Parent-reported SED hours/day was significantly lower than accelerometer-derived SED (median difference -5.3 [IQR -6.1, -4.4] hours/day) with no significant correlation (r=0.007 [95% CI -0.153, 0.167]). Estimates of sleep agreement using novel 24-hour movement data processing (currently underway) will also be presented.

**Conclusions:** Results indicate that parent-reported duration of time in MVPA and TPA aligns more closely with accelerometry measures than percent-of-time estimates. While parents may more accurately estimate duration of time in PA than SED, reports of SED should account for behaviours beyond screen time and restraint

## Workplace choice architecture modification for healthy eating and daily physical activity: effectiveness of a quasi-experimental real-world intervention

**Dr. Eeva Rantala<sup>1,2,3</sup>**, Dr. Saara Vanhatalo<sup>3</sup>, M.Sc. Mikko Valtanen<sup>1,4</sup>, Prof. Jaana Lindström<sup>1,2</sup>, Prof. Jussi Pihlajamäki<sup>1,5</sup>, Prof. Kaisa Poutanen<sup>3</sup>, Prof. Pilvikki Absetz<sup>6</sup>, Adj. Prof. Leila Karhunen<sup>2</sup>

<sup>1</sup>Department of Public Health, Finnish Institute for Health and Welfare, Helsinki, Finland, <sup>2</sup>Institute of Public Health and Clinical Nutrition, University of Eastern Finland, Kuopio, Finland, <sup>3</sup>VTT Technical Research Centre of Finland Ltd, Espoo and Kuopio, Finland, <sup>4</sup>Department of Mathematics and Statistics, University of Turku, Turku, Finland, <sup>5</sup>Department of Medicine, Endocrinology and Clinical Nutrition, Kuopio University Hospital, Kuopio, Finland, <sup>6</sup>Faculty of Social Sciences, Tampere University, Tampere, Finland

**5. Award Sessions: Implementation and Systems Science, Limelight 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Modifying the choice architecture of behavioural contexts can facilitate health behaviour change, but existing evidence builds mostly on small-scale interventions limited in duration, targets, strategies, and settings. This study evaluated the effectiveness of a one-year hybrid type 2 implementation-effectiveness trial aiming to promote healthy eating and daily physical activity with subtle modifications to the choice architecture of diverse worksites.

**Methods:** The intervention was contextualised to and integrated into the routine operations of each worksite. Effectiveness was evaluated in a pre-post design. Intervention sites (n=21) implemented a median of two (range 1–9) intervention strategies for healthy eating and one strategy (range 1–5) for physical activity. Questionnaires pre (n=1126) and post (n=943) intervention surveyed employees' behavioural patterns at work (food consumption: vegetables/roots, fruit/berries, nuts/almonds/seeds, sweet treats, fast food, water; physical activity: restorative movement, exercise equipment use, stair use). Multi- and single-level regression models evaluated effectiveness, treating intervention as a continuous predictor formed of the site-specific dose (n intervention strategies employed) and the mean quality (three-point rating per strategy halfway and at the end of the intervention) of implementation relevant to each outcome. Benjamini-Hochberg (BH) procedure controlled the false discovery rate.

**Results:** A multinomial logistic regression model found the intervention significantly associated with a favourable change in employees' fruit/berry consumption (interaction of time and implementation, BH-adjusted p=0.042). The intervention was associated with an increase in the proportion of employees consuming 1 portion (pre 39.9%, post 42.8%; ratio of two odds ratios [ORR] 1.2, 95% CI 1.0-1.3) and the proportion consuming ≥ 2 portions (pre 19.2%, post 19.5%; ORR 1.2, 95% CI 1.0-1.4) of fruit/berries per typical work shift compared to the proportion consuming none (pre 15.8%, post 10.7%). Associations with other outcomes were non-significant. Sites with greater dose and quality of implementation targeting fruit/berry consumption used strategies that reduced the physical effort required to have fruit/berries at work and covered multiple eating-related contexts at the worksite.

Conclusions: The results suggest that a contextualised, multicomponent choice architecture intervention could positively influence eating behaviour at the workplace, but outcomes may depend on the type of intervention strategies used and the extent of their delivery.

## Applying a participatory system dynamics approach on childhood overweight and obesity in the local context: a qualitative process evaluation of the LIKE project

**Dr. Wilma Waterlander**<sup>1</sup>, Dr Angie Luna Pinzon<sup>1</sup>, Prof Karien Stronks<sup>1</sup>

<sup>1</sup>Amsterdam UMC, University of Amsterdam, Amsterdam, Netherlands

**5. Award Sessions: Implementation and Systems Science, Limelight 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice: N. Systems Science**

**Purpose:** How do you apply a system dynamics approach in practice? Methods based in system dynamics (SD) have gained prominence within public health research in recent years. SD is grounded in theory and explains how central principles, such as adaptation, dynamics and emergence can be used to understand or change complex systems. To date, few examples exist where this theory has been applied consistently – from start to finish – in a prevention approach in a local context. This study aimed to evaluate how theoretical principles of SD have been applied in the Lifestyle Innovations Based on Youth Knowledge and Experience (LIKE) project.

**Methods:** A multi-methods qualitative process evaluation was conducted using the LIKE project, situated in Amsterdam, the Netherlands, as a case study. LIKE applied a participatory system dynamics approach for obesity prevention in youth, throughout the entire project during a time period of 6 years. Data collection included document reviews, Ripple Effects Mapping, and semi-structured interviews.

**Results/Findings:** We identify three key lessons: 1) Interdependency programme and context: The tendency in public health projects is to focus on understanding the content of the system (e.g., obesity), but equally important is having a clear understanding of the working of the local context; 2. Dynamic and adaptive character: being 'dynamic' is within the name of system dynamics and therefore seems logical, but application requires a fluid budget planning and stakeholder involvement to allow quick shifts in focus; 3. Governance: SD projects require strategic planning, effort, and enduring commitment; it takes time to understand how to navigate complexities in systems change.

**Conclusions:** Applying SD principles in a local context requires a collective shift in thinking and working for all involved parties, with the full extent of this becoming apparent only during implementation. Challenges in particular relate to the many uncertainties that arise whereby everything continues to change over time, including the focus of system under study; the required stakeholders; and momentum for change. This demands fluid budgets; staff involvement and new ways of determining effectiveness. Our findings bring important lessons for future system dynamics projects.

## Cultural Evaluation of SWAP IT: Enhancing Implementation in Schools with High Aboriginal Enrolment in the HNE region of Australia

Mr Daniel Groombridge<sup>2,3,4</sup>, **Dr. Cassandra Lane**<sup>1,2,3,4</sup>, Ms Jessica Zorba<sup>2</sup>, Ms Katie Robertson<sup>2</sup>, Ms Rahel Boon<sup>2</sup>, Associate Professor Rachel Sutherland<sup>1,2,3,4</sup>, Professor Luke Wolfenden<sup>1,2,3,4</sup>  
<sup>1</sup>*School of Medicine and Public Health, University of Newcastle, Callaghan, Australia*, <sup>2</sup>*Hunter New England Population Health, HNE Local Health District, Wallsend, Australia*, <sup>3</sup>*Hunter Medical Research Institute, New Lambton Heights, Australia*, <sup>4</sup>*National Centre of Implementation Science, , Australia*

**5. Award Sessions: Implementation and Systems Science, Limelight 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** SWAP-IT is an Australian school-based nutrition intervention consistently shown through research to promote healthier lunchbox choices for children. Although Aboriginal stakeholders contributed to its initial development, SWAP-IT remains universal in design which may limit its implementation within Aboriginal communities. Adapting public health programs for priority populations can address this, requiring qualitative research to understand the unique contextual needs. This study aimed to explore the perspectives of Aboriginal school staff regarding SWAP-IT resources and implementation in schools with high Aboriginal enrolments and to identify any necessary cultural adaptations.

**Methods:** We conducted an exploratory qualitative study grounded in Indigenous methodology within the HNE region of NSW Australia – a large and geographically diverse area. The project was led by an Aboriginal Program Manager from the Local Health Service, with cultural oversight provided by governance groups. Data were collected using yarning (an Australian Indigenous qualitative data collection tool) through individual and groups yarns with 11 Aboriginal staff from seven schools. Data were analysed using team-based thematic analysis, incorporating group yarns to collaboratively identify and refine key themes.

**Results:** Theme 1: Participants held positive perceptions of SWAP IT with a call for greater cultural responsiveness. Participants supported SWAP-IT's goal of improving children's nutrition however, they emphasized the importance of adapting for Aboriginal artwork, traditional foods and cooking practices, and culturally aligned communication methods. Theme 2: There are unique contextual considerations which affect implementation of nutrition programs in schools with high Aboriginal enrolments. Specifically, food insecurity, limited digital access/knowledge, and low engagement due to competing priorities were some of the challenges needing to be addressed for program implementation by Aboriginal communities.

**Conclusion:** This study revealed essential insights to inform cultural adaptations of SWAP-IT for Aboriginal communities in the HNE region. Incorporating surface-level adaptations (e.g., Aboriginal artwork) and deep-level adaptations (e.g., cultural food practices) can enhance the program's acceptability and effectiveness, improving implementation and addressing health disparities. Additional strategies may be required to address broader nutritional challenges in these communities. Co-designing and piloting an adapted program with Aboriginal communities are critical next steps to ensure meaningful, contextually appropriate, and sustainable improvements.

## Leveraging systems thinking to explore knowledge mobilisation opportunities in early childhood obesity prevention: a qualitative study

**Dr. Konsita Kuswara**<sup>1,2</sup>, Ms Elly Ganakas<sup>1,2</sup>, Dr Eloise-kate Litterbach<sup>2,3,4,5</sup>, Professor Kylie Hesketh<sup>1,2</sup>, Dr Penelope Love<sup>1,2</sup>, Dr Melanie Pescud<sup>6</sup>, Professor Louise Baur<sup>1,7,8</sup>

<sup>1</sup>NHMRC Centre of Research Excellence in Translating Early Prevention of Obesity in Childhood (CRE EPOCH-Translate), University of Sydney, Sydney, Australia, <sup>2</sup>Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia, <sup>3</sup>School of Psychology, Deakin University, Geelong, Australia, <sup>4</sup>The Australian Centre for Behavioural Research in Diabetes, Diabetes Victoria, Carlton, Australia, <sup>5</sup>Institute for Health Transformation, Deakin University, Geelong, Australia, <sup>6</sup>Centre for Arts, Mental Health and Wellbeing WA, School of Allied Health (M315), The University of Western Australia, Crawley, Australia, <sup>7</sup>Sydney School of Public Health, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>8</sup>Specialty of Child and Adolescent Health, Sydney Medical School, University of Sydney, Sydney, Australia

**5. Award Sessions: Implementation and Systems Science, Limelight 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** N. Systems Science

**Purpose:** Despite widespread recognition of the importance of knowledge mobilisation, many research organisations still rely on a ‘disseminate and hope’ approach, often neglecting the diverse needs and contexts of different research users. Systems thinking provides a perspective for understanding the complex, relational, and context-dependent nature of knowledge mobilisation, providing new insights into how these efforts can be better tailored. This study applies systems thinking to explore strategies for targeted knowledge mobilisation in early childhood obesity prevention.

**Methods** This qualitative study employed a phenomenological approach, incorporating actor mapping and stakeholder interviews. Actor mapping workshops were conducted with a convenience sample of subject matter experts in childhood obesity prevention from across Australia. These workshops identified key actors at various levels of the system, their roles, and influence on obesity prevention and associated health behaviours in young children. A purposive sample of these actors was then interviewed to gain insider perspectives on potential leverage points for research to influence policy and practice. Actor mapping workshops and interviews were recorded, transcribed, and analysed inductively using NVivo 14 software.

**Results** Eighteen experts participated in the actor mapping workshops, identifying key groups of actors across health, education, social sectors, and independent advocacy organisations. A purposive sample of 22 key actors (59% response rate) were interviewed. Three overarching themes were apparent: • Prevention is deprioritised in broader public health agendas, with a lack of central leadership to drive actions on obesity prevention across all levels of government. • Silos exist within and across the early years sector, hindering coordinated efforts to address the multiple determinants of obesity. • Strengthening connections between influential actors across early years’ systems is an untapped opportunity to improve outcomes for young children’s healthy growth.

**Conclusions** To advance obesity prevention in early childhood, fostering collaboration among key actors in the system is essential. Engaging actors outside health promotion, such as early childhood education and key advocacy groups, using evidence of co-benefits is a key strategy for aligning shared goals and strengthening alliances. Targeted knowledge mobilisation efforts

should consider different ways of framing early childhood obesity prevention and explore potential mutually beneficial solutions.



## A comparison of TransformUs intervention effectiveness at scale using compositional versus traditional analysis

**Prof. Jo Salmon**<sup>1</sup>, Dr Simone Verswijveren<sup>1</sup>, Dr Aaron Miatke<sup>1,2</sup>, Professor Anna Timperio<sup>1</sup>, Associate Professor Natalie Lander<sup>1</sup>, Professor Chris Lonsdale<sup>3</sup>, Professor David Lubans<sup>4</sup>, Associate Professor Harriet Koorts<sup>1</sup>, Associate Professor Nicola D Ridgers<sup>2</sup>, Professor Amanda Telford<sup>5</sup>, Professor Lisa Barnett<sup>1,6</sup>, Dr Taren Sanders<sup>3</sup>, Professor Adrian Bauman<sup>7</sup>, Associate Professor Karen Lamb<sup>8</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia*, <sup>2</sup>*Alliance for Research in Exercise, Nutrition and Activity, University of South Australia, Adelaide, Australia*, <sup>3</sup>*Institute for Positive Psychology and Education, Australian Catholic University, North Sydney, Australia*, <sup>4</sup>*Centre for Active Living and Learning, College of Human and Social Futures, University of Newcastle, Callaghan, Australia*, <sup>5</sup>*National School of Education, Australian Catholic University, East Melbourne, Australia*, <sup>6</sup>*Institute for Physical Activity and Nutrition, School of Health and Social Development, Deakin University, Geelong, Australia*, <sup>7</sup>*School of Public Health, University of Sydney, Sydney, Australia*, <sup>8</sup>*Melbourne School of Population and Global Health, University of Melbourne, Melbourne, Australia*

**5. Award Sessions: Implementation and Systems Science, Limelight 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** To compare the effectiveness of the TransformUs primary school physical activity (PA) and sedentary behaviour (SB) intervention at scale using compositional versus traditional statistical analysis techniques.

**Methods:** Time spent in PA and SB was assessed by GT3X+ ActiGraph accelerometers worn for 8 days during waking hours at T1 (baseline), T2 (12-mths) and T3 (24-months). Accelerometry data were processed in GGIR with validated acceleration intensity thresholds to define sedentary time (SED), light-intensity PA and moderate-to-vigorous-intensity PA (MVPA). Traditional analysis consisted of linear mixed models to compare mean average daily SED and average daily MVPA at 12- and 24-months follow-up between children in intervention and control schools. Novel compositional analysis (CoDA) consisted of a multivariate response linear mixed model that simultaneously modelled the composition of all intensities (expressed as a set of isometric log ratios [ilrs]) as the outcome while accounting for the clustering of ilrs within participants, within school, within time points by specifying unstructured covariance matrices for both the random intercept and residual error terms. Both models adjusted for child age and sex, postcode Index of Relative Socio-economic Disadvantage score, school Index of Community Socio-Educational Advantage score, school sector, and school geographic location.

**Results:** A total of 917 participants (61% intervention group; mean age  $9.34 \pm 0.66$  years; 52% girls) provided valid accelerometer data. Traditional models showed that at 12- (-4.62 minutes/day [95%CI = -7.54, -1.70],  $p = 0.002$ ) and 24-months (-5.37 [-8.72, -1.99],  $p=0.002$ ), the intervention group had a small but statistically significant decrease in MVPA compared to the control group. No intervention effects were observed for SED. In contrast, multivariate compositional models showed no significant intervention effects on the proportion of MVPA compared to other intensities at 12- or 24-months. However, estimates suggest a significant increase in SED (relative to LPA and MVPA) at 24-months in the intervention group compared to controls (0.120,  $p=0.013$ ).

**Conclusions:** While the effectiveness of the TransformUs intervention was not favourable at scale, the difference in findings between the traditional versus compositional analytical

techniques suggests it is important to analyse the outcomes to account for the co-dependency between activity intensities.



## Effectiveness of a digital intervention to promote healthy ageing: a randomised controlled trial

**Dr. Bronwyn McGill<sup>1</sup>**, Dr Philip Clare, Ms Nicole Halim, Dr Yeun Sim Sarah Jeong, Ms Deidre Upton

<sup>1</sup>Prevention Research Collaboration, The University of Sydney, Camperdown, Australia

**6. Award Sessions: Ageing | Young Adults, Hunua 3, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Despite the emergence of more digital interventions promoting active and healthy living among older adults, evidence of their effectiveness is limited. Healthy and Active for Life (HAL) Online is a free 10-week intervention for adults aged 60+ years to improve health behaviours comprising online modules and phone health coaching. This study examined the effectiveness of HAL Online to improve older adults' health behaviours and wellbeing.

**Methods** This randomised controlled trial compared the effectiveness of HAL Online (intervention group) to receiving printed educational materials (control group) in older adults. Physical activity (PA), concern about falling, social wellbeing and fruit and vegetable consumption were measured by self-reported surveys at baseline, post-program (intervention group) and 12-month follow-up (intervention and control groups). We used regression models to model change from baseline to post-program, and baseline to follow-up.

**Results** Of 369 intervention and 312 control participants, 368 intervention post-program surveys, and 224 intervention and 217 control follow-up surveys were completed and analysed. At baseline, participants were predominantly women, well-educated and English-speaking. Post-program, moderate-to-vigorous PA increased (+1.46 days/week,  $p < 0.001$ ) and the chance of meeting PA recommendations was higher (RR 2.18, 95%CI 1.66 to 2.87) than baseline. Concern about falling decreased (MD -0.5, 95%CI -0.72, -0.28), social wellbeing improved (MD 1.16, 95%CI 0.79, 1.52), and fruit (OR 1.80, 95%CI 1.04, 2.55) and vegetable consumption (RR 1.45, 95%CI 1.05, 1.99) increased. After 12 months, PA improved significantly with greater improvement among the intervention group (MD +0.7 days/week, 95%CI 0.20, 1.20; RR 1.49, 95% CI 1.13, 1.96 for meeting PA recommendations). Intervention participants also showed significantly greater improvement in social wellbeing than control participants (MD 0.99, 95%CI 0.07, 1.91). While other improvements were reported across groups, differences were not statistically significant.

**Conclusions** Adding to limited evidence for using digital interventions to support active and healthy living in older adults, our research shows short-term program effectiveness of HAL online. Long-term, effectiveness of this digital intervention compared to receiving educational materials, was evident for PA and social wellbeing improvements, but not for other outcomes. Practice implications include targeting recruitment to under-represented populations and exploring evidence-based opportunities for maintaining behaviour change.

## Association Between Vitamin D Deficiency and Insomnia Among United States Adolescents and Young Adults

**Ms. Asha Collier<sup>1</sup>**, Mr. Saketh Amasa<sup>2</sup>, Mr. Bipin Singh<sup>3</sup>, Ms. Deepali Ernest<sup>3</sup>, Ms. Aparajita Chandrasekhar<sup>3</sup>, Dr. Sarah Messiah<sup>4</sup>

<sup>1</sup>The University of Texas at Austin, Austin, United States, <sup>2</sup>University of Texas Medical Branch, John Sealy School of Medicine, Galveston, United States, <sup>3</sup>The University of Texas Health Science Center at Houston School of Public Health, Houston, United States, <sup>4</sup>The University of Texas Southwestern Medical Center Peter O'Donnell Jr. School of Public Health, Dallas, United States

**6. Award Sessions: Ageing | Young Adults, Hunua 3, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice: J. Young Adults**

**Purpose:** To investigate the association between vitamin D deficiency and insomnia risk in United States (US) adolescents and young adults (AYAs) aged 15-25 years. While the role of vitamin D in sleep regulation has been suggested, population-level evidence of this relationship in young adults remains limited. This analysis leverages a national research network database to determine this association, addressing a critical gap in our understanding of modifiable risk factors for sleep health in this population.

**Methods:** Using 2012 to 2022 Electronic Health Record (EHR) data from US healthcare organizations in the TriNetX research network, we retrospectively identified 9,375,502 patients between the ages of 15 and 25 years. Roughly 2% (n=190,774) had a diagnosis of vitamin D deficiency. One-to-one propensity score matching for age, sex, race/ethnicity, diabetes, hypertension, and dyslipidemia was conducted to balance cohorts, and incidence was assessed within a two-year post-diagnosis period.

**Results/Findings:** A total of 181,136 patients constituted each cohort (mean age 22 years (SD: 2.0), 60.9% female, 51.2% White, 19.8% Hispanic/Latino, 19.4% Black/African American, 4.4% Asian). Insomnia was more prevalent in those with Vitamin D deficiency versus those without (5.0% vs. 2.8%, p<0.01). Those with Vitamin D deficiency were over 6 times more likely to be diagnosed with insomnia [OR=6.05; 95% CI: 5.63,6.50, p-value <0.0001 for risk difference) vs. those with no Vitamin D deficiency.

**Conclusion:** This population-based analysis shows a strong association between vitamin D deficiency and insomnia in US AYAs. The six-fold higher odds of insomnia in vitamin D deficient individuals suggests that vitamin D status could be an important modifiable risk factor for sleep health in this age group. These findings have significant implications for both clinical practice and public health, suggesting that vitamin D screening and supplementation could be considered as part of sleep health interventions for AYAs. Given that vitamin D insufficiency is more prevalent globally than deficiency, future research should investigate whether vitamin D supplementation can effectively prevent or improve insomnia symptoms in this population and examine whether similar associations exist with Vitamin D insufficiency

## Combined associations of sleep, physical activity, and nutrition with life expectancy: a population cohort study of UK adults

**Dr. Nicholas Koemel**<sup>1,2,3</sup>, Dr. Raaj Biswas<sup>1,2,3</sup>, Dr Matthew Ahmadi<sup>1,2,3</sup>, Dr. Leandro Rezende<sup>4</sup>, Dr. Tian Wang<sup>5</sup>, Professor Adrian Bauman<sup>3</sup>, Prof Clara Chow<sup>6</sup>, Prof Luigi Fontana<sup>3,7</sup>, Prof Stephen Simpson<sup>3,8</sup>, Prof Margaret Allman-Farinelli<sup>3,9</sup>, Prof. Peter Cistulli<sup>3,10,11</sup>, Professor Emmanuel Stamatakis<sup>1,2,3</sup>

<sup>1</sup>Mackenzie Wearables Research Hub, Charles Perkins Centre, The University of Sydney, Sydney, Sydney, Australia, <sup>2</sup>School of Health Sciences, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>3</sup>Charles Perkins Centre, The University of Sydney, Sydney, Australia, <sup>4</sup>Department of Preventive Medicine, Escola Paulista de Medicina, Universidade Federal de São Paulo, São Paulo, Brazil, <sup>5</sup>The George Institute for Global Health, Sydney, Australia, <sup>6</sup>Westmead Applied Research Centre, University of Sydney and Department of Cardiology, Westmead Hospital, Sydney, Australia, <sup>7</sup>Department of Endocrinology, Royal Prince Alfred Hospital, Sydney, Australia, <sup>8</sup>School of Life and Environmental Sciences, Faculty of Science, The University of Sydney, Sydney, Australia, <sup>9</sup>Nutrition and Dietetics, School of Nursing, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>10</sup>Northern Clinical School, Faculty of Medicine and Health, University of Sydney, Sydney, Australia, <sup>11</sup>Department of Respiratory and Sleep Medicine, Royal North Shore Hospital, Sydney, Australia

**6. Award Sessions: Ageing | Young Adults, Hunua 3, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Sleep, physical activity, and nutrition (SPAN) are crucial factors for health and longevity, yet despite their interdependencies, they are often studied as isolated behaviours. In this study, we examine the combined association of SPAN behaviours with life expectancy and disease-free life expectancy.

**Methods:** This prospective cohort analysis included 59,078 participants from the UK Biobank (median age: 64.0 years; 45.4% male) who wore trackers for 7 days and self-reported dietary data. Wearable-measured sleep (hours/day) and moderate to vigorous physical activity (MVPA; mins/day) were calculated using a machine learning based schema. A 10-item diet quality score (DQS) assessed the intake of vegetables, fruits, whole grains and refined grains, unprocessed and processed meats, fish, dairy, vegetable oils, and sugary beverages (0-100 for all components with higher values indicating higher quality). Cox proportional hazards models were used to estimate hazard ratios (HR) for all-cause mortality risk across 27 separate joint tertile combinations of SPAN behaviours with the lowest tertile for all three as the referent group. We estimated life expectancy using a life table approach based on UK Census data, applying HRs from SPAN categories to estimate changes in life expectancy. Disease-free life expectancy was estimated as the number of years lived without cardiovascular disease or cancer.

**Results/findings:** Over the 8.1-year median follow-up time, 2,458 mortality events occurred. Compared to the referent group of combined SPAN exposure (lowest tertiles for all three), the optimal SPAN combination involving moderate sleep duration (7.2-8.0 hours/day), high MVPA (42-103 mins/day), and a DQS between 57.5 and 72.5 was associated with 12.5 years (95% CI: 9.6, 14.7) longer life expectancy and 5.0 years (95% CI: 3.9, 5.6) longer disease-free life expectancy.

**Conclusions:** We show that the most optimal SPAN combination was associated with a >12-year gain in life expectancy and a 5-year gain in disease-free life expectancy. These findings underscore the public health importance of incorporating more holistic lifestyle recommendations for improving healthspan.

## Trajectories of plant-based dietary patterns and their longitudinal associations with cardiometabolic health among young Australian adults

**Ms. Laura Marchese**<sup>1</sup>, Prof Sarah McNaughton<sup>2,3</sup>, Dr Gilly Hendrie<sup>4</sup>, Dr Priscila Machado<sup>1</sup>, Associate Prof. Therese O'Sullivan<sup>5</sup>, Emeritus Prof. Lawrence Beilin<sup>6</sup>, Prof. Trevor Mori<sup>6</sup>, Dr Kacie Dickinson<sup>7</sup>, Dr Katherine Livingstone<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia,* <sup>2</sup>*Health and Well-Being Centre for Research Innovation, School of Human Movement and Nutrition Sciences, University of Queensland, St Lucia, Australia,* <sup>3</sup>*School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia,* <sup>4</sup>*CSIRO Health and Biosecurity, Adelaide, Australia,* <sup>5</sup>*School of Medical and Health Sciences, Nutrition & Health Innovation Research Institute, Edith Cowan University, Joondalup, Australia,* <sup>6</sup>*Medical School, Royal Perth Hospital Unit, University of Western Australia, Perth, Australia,* <sup>7</sup>*Caring Futures Institute, College of Nursing and Health Sciences, Flinders University, Adelaide, Australia*

**6. Award Sessions: Ageing | Young Adults, Hunua 3, June 11, 2025, 5:45 PM - 7:00 PM**

### **SIG - Primary Choice: J. Young Adults**

**Purpose:** Plant-based diets are increasingly consumed among younger demographics and associated with favourable cardiovascular health markers. However, it is unclear how plant-based diet quality tracks from adolescence to young adulthood, and how this impacts cardiovascular health later in life. Thus, this study aimed to explore trajectories of plant-based dietary patterns from adolescence to young adulthood and investigate associations with cardiometabolic health markers in young Australian adults.

**Methods:** Longitudinal data from 417 participants from the Raine Study were included. Semi-quantitative food frequency questionnaires conducted at 14, 20, and 27 years of age were used to derive three plant-based diet quality index scores: an overall plant-based diet (PDI), a healthy plant-based diet (hPDI), and a less healthy plant-based diet (uPDI). Markers of cardiometabolic health included waist circumference, blood lipids, and blood pressure obtained at 14 and 28 years of age. Group-based trajectory modelling was used to describe plant-based diet quality trajectory groups from adolescence to young adulthood. Multivariate linear regression models were used to investigate associations with cardiovascular health markers.

**Results/findings:** Different sex-specific trajectory groups for the plant-based diet quality indices were identified. Plant-based diet quality trajectory groups were relatively stable over the life stages, with participants remaining either above or below average diet quality at all time points. Associations with cardiovascular health outcomes differed between the sexes, with the hPDI having the greatest number of associations for females, and the uPDI for males. Being female with a higher hPDI score was associated with lower insulin ( $\beta = -1.11$  (95%CI -2.12, -0.09)), HOMA-IR ( $\beta = -0.25$  (95%CI -0.48, -0.01)), systolic blood pressure ( $\beta = -2.75$  (95%CI -5.31, -0.19)), and hs-CRP ( $\beta = -1.53$  (95%CI -2.82, -0.23)), and higher HDL-cholesterol ( $\beta = 0.13$  (95%CI -0.03, 0.23)) compared to females with lower hPDI scores. Being male in the higher scoring uPDI group was associated with higher waist circumference ( $\beta = 3.12$  (95%CI 0.61, 5.63)), waist-to-height ratio ( $\beta = 0.02$  (95%CI 0.01, 0.03)), insulin ( $\beta = 1.54$  (95%CI 0.33, 2.76)), HOMA-IR ( $\beta = 0.35$  (95%CI 0.07, 0.63)), and hypertension status ( $\beta = 6.60$  (95%CI 1.04, 12.00)) when compared to the lower scoring uPDI group.

**Conclusions:** This study provides new insights into how plant-based diets track across adolescence into adulthood, impacting on cardiometabolic risk factors differently for males and females. Findings highlight the importance of early sex-specific interventions in adolescence to reduce future risk of cardiovascular-disease.

## Trajectories of physical activity over 21 years and medication costs for chronic diseases: the Australian Longitudinal Study on Women's Health

**Dr. Yuta Nemoto<sup>1,2</sup>**, Professor Wendy Brown<sup>1,3</sup>, Dr. Stephanie Duncombe<sup>1</sup>, Dr. Gregore Mielke<sup>1</sup>

<sup>1</sup>University of Queensland, Brisbane, Australia, <sup>2</sup>Kanagawa University of Human Services, Kawasaki, Japan, <sup>3</sup>Bond University, Gold Coast, Australia

**6. Award Sessions: Ageing | Young Adults, Hunua 3, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Little is known about the economic burden associated with different trajectories of physical activity in mid-aged women. We identified the associations of physical activity trajectories using 21 years of data with medication costs for chronic diseases for women aged 47–52 at baseline.

**Methods:** Data were from the 1946–1951 cohort of the Australian Longitudinal Study on Women's Health (N = 8489). Surveys were mailed at three-year intervals from 1998 (age 47–52) to 2019 (age 68–73) to collect physical activity data. Cumulative medication costs for chronic diseases, including diabetes, hypertension, hyperlipidaemia, pain, and mental disorders, were calculated for the period January 2019 to December 2022 (age 71–76) using Pharmaceutical Benefits Scheme data, which cover prescription medicines subsidised under Australia's universal health insurance system. Group-based trajectory modelling was used to identify trajectories of physical activity. Tobit regression models were conducted to examine associations between physical activity trajectories and medication costs. Additionally, simulated medication costs were estimated by manipulating physical activity trajectories, and differences from the natural course were calculated.

**Results:** Five trajectories were identified: Low-stable (14.0% of participants), Moderate-stable (50.8%), Increasing (20.9%), Declining (7.9%), and High-stable (6.3%). The median of 21-year overall physical activity levels was 196 MET-min/week for the Low-stable, 745 MET-min/week for the Moderate-stable, 1571 MET-min/week for the Increasing, 1679 MET-min/week for the Declining, and 2509 MET-min/week for the High-stable group. Compared with women in the Low-stable group, those in the Increasing and High-stable groups had lower medication costs across all diseases ( $p < 0.05$ ). Women in the Moderate-stable group incurred lower medication costs for diabetes, hypertension, pain, and mental disorders ( $p < 0.05$ ). Among those in the Declining group, only medication costs for pain were less than in the Low-stable group. Estimated medication costs, based on the results of Tobit regression models, indicated that if women in the Declining and Low-stable group transitioned to the High or Moderate-stable group, respectively, annual medication costs for this age cohort could decrease by AUD 13 million.

**Conclusions:** These findings suggest that increasing PA in low active women and preventing declines in PA at this life stage could significantly reduce medication costs in early older age.

## Who hangs out with who and why? Peer crowds as a pathway to understanding and promoting youth physical activity.

**Miss Ella Creagh<sup>1</sup>**, Chloe Bishop<sup>2</sup>, Nicola Gamble<sup>2</sup>, Fran McEwen<sup>2</sup>, Simon Mareko<sup>2</sup>, Roger Wood<sup>2</sup>, Dr Justin Richards<sup>2</sup>

<sup>1</sup>*Te Hau Kori - Centre for Physical Activity and Wellbeing at Te Herenga Waka - Victoria University of Wellington, Wellington, New Zealand*, <sup>2</sup>*Ihi Aotearoa - Sport New Zealand, Wellington, New Zealand*

**6. Award Sessions: Ageing | Young Adults, Hunua 3, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Trends in youth physical activity are reported using traditional demographics such as age, gender, ethnicity, deprivation, and location. However, we know that peers share values, attitudes and beliefs; and peers can have a significant influence on behaviour, especially for youth. Understanding peer crowds and their relationships with physical activity may offer new insights into physical activity patterns in youth. The purpose of the project was to describe existing youth peer crowds in Aotearoa New Zealand and develop a low-burden method of peer crowd identification that can be embedded in existing surveillance tools.

**Methods** The research was led and funded by Sport NZ with support from Victoria University and Rescue Agency. In 2024 the research team conducted interviews and focus groups with teenagers and young adults across the country. The participants organised photos of young people into peer crowds, discussed the characteristics of these peer crowds, and answered brief questions about their personal interests and physical activity behaviours. The photo sort and interview data were analysed to determine what peer crowds existed and which photos best represented each peer crowd. The photos were then reduced to a smaller selection which have been included in national surveillance tools for physical activity to understand the influence of peer crowds at a population level.

**Results/findings** There were 5 peer crowds for Teenagers (Rural, Roots & Resilience, Mainstream, Popular, Alternative) and 7 peer crowds for Young Adults (Tradies, Outdoorsy, Roots & Resilience, Mainstream, Young Professional, Alternative, Partier). Each peer crowd differed in interests, values, and aesthetic presentation. Physical activity preferences and attitudes were also different between peer crowds and mapped onto the domains of active recreation (outdoors, artistic movement, exercise & fitness, social sports, cultural/indigenous movement).

**Conclusions** Understanding the current landscape of peer crowds is the first step in developing novel ways to investigate physical activity patterns and create tailored and effective marketing and interventions for youth. This approach could also be adapted to be used by other physical activity organisations in different contexts, as peer crowds may vary across time and place.

# Evaluating the Impact of Singapore's Nutri-Grade Beverage Labels on Prepackaged Beverage Purchases and Diet Quality: A Before and After Study

**Dr. Soye Shin<sup>1</sup>**

<sup>1</sup>*Duke-NUS Medical School, Singapore, Singapore*

**7. Award Session: Policies and Environments | Participatory research, Hunua 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** While prior studies suggest that Front-of-Package (FOP) labels can positively influence consumer choices, most research relies on one-time controlled experiments. Moreover, the impact of labelling policies on sugar-specific reformulation remains underexplored compared to nutrients such as sodium and fats. Filling these gaps, this study aims to examine real-world effects of Singapore's mandatory nutritional label for beverages, Nutri-Grade (NG), using consumer purchase data. We hypothesize that NG promotes healthier beverage choices and product reformulation by reducing sugar content.

**Methods:** Using Nielsen longitudinal scanner data from 895 nationally representative Singaporean households, we analyzed beverage purchases before (April 2019-March 2020) and after (April 2023-March 2024) the policy. On the demand side, we employed a fixed-effects regression model to assess changes in household sugar consumption, comparing post-policy outcomes to a counterfactual scenario predicted from pre-policy trends (i.e., what purchases would have been expected in the post-policy period, in the absence of NG). On the supply side, we examined changes in the monthly average sugar and saturated fat content per 100 ml of the beverages purchased as well as the prevalence of artificial sweeteners, common replacements for sugar, before and after.

**Results/findings:** Preliminary results show that NG label reduced household sugar consumption from beverage purchases by 3.10g [95% CI: - 4.99, - 1.23], or 17% per household per day, compared to the counterfactual. On the supply side, the average sugar content of beverages purchased decreased by 1.65g [95% CI: -1.658, -1.647], or 29%, while saturated fat content fell by 0.07g [CI: -0.071, -0.066], or 10%. Additionally, the proportion of beverages containing artificial sweeteners increased by 12.3% [CI: 12.22%, 12.37%], suggesting reformulation efforts to maintain consumer appeal.

**Conclusions:** This study provides robust evidence of NG's dual effectiveness in driving healthier consumer choices and industry product reformulation, which have significant implications for policymakers globally in designing interventions to combat NCDs and promote healthier diets.

## Shaping the future of AI in rural healthcare: engaging communities to support modifiable lifestyle behaviours.

**Ms. Tara Cain<sup>1</sup>**, Dr Rachel Curtis<sup>1</sup>, Prof Carol Maher<sup>1</sup>, Assoc Prof Ashleigh Smith<sup>1</sup>, Dr Ben Singh<sup>1</sup>, Dr Jacinta Brinsley<sup>1</sup>, Prof Katina D'Onise<sup>2</sup>, Dr Dot Dumuid<sup>1</sup>, Dr Francois Fraysse<sup>1</sup>, Assoc Prof Rachel Milte<sup>3</sup>, Assoc Prof Karen Murphy<sup>1,4</sup>, Dr Aaron Davis<sup>1,5</sup>

<sup>1</sup>Alliance for Research in Exercise Nutrition and Activity (ARENA), UniSA Allied Health and Human Performance, University of South Australia, Adelaide, Australia, <sup>2</sup>University of South Australia, Adelaide, Australia, <sup>3</sup>Rehabilitation, Aged and Extended Care, Flinders University, Adelaide, Australia, <sup>4</sup>UniSA Clinical and Health Sciences, University of South Australia, Adelaide, Australia, <sup>5</sup>UniSA Creative, University of South Australia, Adelaide, Australia

**7. Award Session: Policies and Environments | Participatory research, Hunua 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** General practitioners and clinicians are often first contacted for support with modifiable lifestyle behaviours, like nutrition, exercise, and sleep. Artificial intelligence (AI) has the potential to transform how primary healthcare providers support people living in rural and remote communities to improve their lifestyles through applications such as automated health monitoring, personalised care, and virtual health advice. This presents a promising opportunity for increasing access to health information and support in these often-underserved areas. We explored future possibilities, facilitators, and barriers for technology-enabled health services in these communities.

**Methods:** Using a participatory research approach with horizon scanning and foresight methods, data were collected during a structured workshop at the South Australian Rural Health Research and Education Conference. 40 participants, including rurally based general practitioners, clinicians, medical students, and researchers completed four activities exploring historical events, future possibilities, experiential scenarios, and priority setting using the MoSCoW framework. Written responses were systematically transcribed and thematically analysed through consensus discussions.

**Findings:** Four key themes were identified including: technological advances, fair access to health services, patient-centred care, and ethical concerns in rural healthcare. Participants highlighted how digital health innovations, particularly telehealth, have improved rural care access. They identified opportunities for AI to support diagnostics and virtual health services in these communities. Using MoSCoW prioritisation, participants expressed concerns about limited representation of Aboriginal Peoples and rural contexts in AI technologies, equitable service access, and culturally respectful approaches to introducing technologies that support healthcare providers in promoting healthy behaviours. While enthusiastic about AI's potential to improve rural health, participants worried about unintended consequences like widening health inequities and increasing social isolation.

**Conclusions:** The findings reveal significant opportunities to integrate AI technologies in supporting primary healthcare providers with lifestyle-related health services in rural communities. Successful implementation will require actively engaging Aboriginal Peoples and rural stakeholders in shaping AI applications to ensure enhanced equitable access and culturally appropriate support for promoting healthy behaviours. Developing tailored guidelines,

fostering community partnerships, and prioritising training for healthcare providers will be essential next steps to realise AI's full potential in rural health.



# Mapping Restaurant Food Environments: Nutritional Quality of Restaurants with Children's Menus and Neighborhood Disparities

**Dr. Megan Knapp<sup>1</sup>**, Maria Munoz, Yin Wang, Lisa Hofmann, Dr. Charles Stoecker, Dr. Melissa Fuster

<sup>1</sup>Xavier University of Louisiana, New Orleans, US

**7. Award Session: Policies and Environments | Participatory research, Hunua 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study aims to assess the nutritional environments of restaurants offering children's menus and examine the relationship between restaurant food environments and neighborhood-level factors in a southern United States city with disproportionately high childhood obesity rates.

**Methods:** Cross-sectional data were collected via on-site assessments of restaurants with children's menus in New Orleans, Louisiana (n=191). Restaurant nutrition scores were calculated based on the healthfulness of menu items using modified Nutrition Environment Measures Survey in Restaurant (NEMS-R) and Children's Menu Assessment (CMA) procedures. Restaurant locations were mapped using QGIS 3.16, and population-weighted averages of characteristics of neighborhoods within a restaurant's 800-meter road-network buffer were assigned to each restaurant, including racial/ethnic composition and socio-economic opportunity [defined by the Social and Economic Child Opportunity Index (COI-SE)]. Multivariate linear regressions were employed to examine associations between restaurants' NEMS-R/CMA scores and characteristics of surrounding neighborhoods, controlling for restaurant characteristics.

**Results/Findings:** The average NEMS-R/CMA score was 4.37(SD 4.67). Compared with restaurants in neighborhoods with lower COI-SEs, restaurants in areas with higher COI-SEs were associated with an increase of 2.413 (95%CI: 0.474 to 4.352; P=0.015) in NEMS-R/CMA scores. Chain-affiliated restaurants were associated with higher scores compared to independent restaurants (2.131, 95%CI: 0.439 to 3.822; P=0.014). Lower scores were observed in sit-down restaurants versus fast food (-2.347, 95%CI: -4.453 to -0.240; P=0.029). No significant associations were found between racial/ethnic composition and NEMS-R/CMA scores.

**Conclusions:** Identifying neighborhood and restaurant characteristics that are associated with less healthy options will inform place-based interventions and policies to improve food environments. New Orleans restaurants in neighborhoods with greater socio-economic opportunities had healthier restaurant offerings, showcasing the importance of policies to improve food environments as a vehicle to address nutrition inequities. The finding that fast food restaurants and chains were more likely to offer healthier options may result from standardization of operations across jurisdictions with varying levels of healthy menu regulations, revealing the need for regulations to disseminate these efforts to all restaurants. These data are crucial for understanding and responding to the inequitable distribution of diet-related conditions and promoting healthier dietary habits to reduce childhood obesity rates.

## Co-designing implementation strategies with health professionals to support them to promote physical activity (PROMOTE-PA Study)

**Ms. Kate Purcell<sup>1,2</sup>**, Dr. Jennifer Baldwin<sup>1,2</sup>, Ms. Roslyn Savage<sup>1,2</sup>, Ms Kerry West<sup>1,3</sup>, Leanne Hassett<sup>1,2,4</sup>, Anne Tiedemann<sup>1,2</sup>, Abby Haynes<sup>1,2</sup>, Marina Pinheiro<sup>1,2</sup>, Cathie Sherrington<sup>1,2</sup>

<sup>1</sup>The University of Sydney, Sydney, Australia, <sup>2</sup>Institute for Musculoskeletal Health, Sydney Local Health District, Sydney, Australia, <sup>3</sup>The Children's Hospital at Westmead, Sydney, Australia, <sup>4</sup>Western Sydney Local Health District, Sydney, Australia

**7. Award Session: Policies and Environments | Participatory research, Hunua 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** PROMOTE-PA aims to collaboratively develop and test implementation strategies to support health professionals to promote physical activity (PA) within their clinical practice. This abstract describes the formative co-design of implementation strategies that will be used in a later trial.

**Methods** Our co-design methodology was informed by the Consolidated Framework for Implementation Research (CFIR) and the COM-B behaviour change model. Interviews and focus groups with health professionals from 13 public hospitals in Sydney, Australia, focused on identifying barriers to PA promotion and generating local solutions using two scenarios (unlimited versus limited resources). A draft suite of implementation strategies was identified from previous research and reviewed with health professionals for contextual fit, potential effectiveness, drawbacks, delivery preferences and alternative strategies. Interviews and focus groups were recorded, transcribed and analysed using a qualitative description approach in NVivo 13.

**Results** Health professionals (n=98) were recruited in 2022/23. Most were physiotherapists (88%), 74% female. Clinical settings included paediatrics (21%), aged care (25%) and an adults/older people (54%). Health professional, patient and system barriers were identified. These included competing clinical demands, patient resistance, cost, transport, frailty, disability, family support and limited information about and availability of community-based PA options. Flexible approaches that allow health professional teams to choose implementation strategies and tailor delivery mechanisms were preferred. Co-design led to removal of some proposed strategies and changes in how others were operationalised. Agreed strategies for teams to choose from were education and training (online resource hub with education and training videos, face-to-face training in health coaching); tailored strategies to address community barriers (activity directory, patient-facing resources, develop transition models of service delivery and community-PA referral systems); and system-level clinical champions.

**Conclusion** Many health professionals are engaged and interested in promoting PA to their patients. Multiple, complex barriers exist, but health professionals can identify strategies to help address local barriers. Adopting a co-design process for the PROMOTE-PA trial strengthened engagement with health professionals about PA promotion. Tailored approaches, designed with health professionals that can be adapted to different clinical contexts and patient populations are required.

## Using participatory methods to identify barriers for physical activity and healthy diets in a deprived local community: a case study in Flanders

**Mrs. Jessie Van Kerckhove**<sup>1,2</sup>, Prof. Maïté Verloigne<sup>2</sup>, Dr. Leonor Guariguata<sup>3</sup>, Dr. Stefanie Vandevijvere<sup>1</sup>

<sup>1</sup>Sciensano, Brussels, Belgium, <sup>2</sup>Ghent University, Ghent, Belgium, <sup>3</sup>KU Leuven, Leuven, Belgium

**7. Award Session: Policies and Environments | Participatory research, Hunua 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Background:** Childhood obesity remains a treat to public health throughout the world, and is guided by a strong socioeconomic profile, with generally less opportunities for physical activity (PA) and less access to healthy food for the most vulnerable. Engaging both the target group and key stakeholders is essential in developing and implementing context-specific actions. The aim of this study was to assess barriers for PA and healthy diets from different points of view using participatory methods and identify context-specific actions to increase opportunities for PA and access to healthy diets among children and adolescents living in a deprived area in Flanders.

**Methods:** To identify barriers, group model building (GMB) was used for local actors (government officials and representatives from different organisations; n = 13), whilst Photovoice was used to involve children and adolescents (n = 90; aged 4 -16). Additionally, parents and teachers (n = 10) engaged in field interviews. During the sessions, each group proposed specific actions, which were subsequently discussed by the stakeholders in a third and final GMB session.

**Results:** Actors highlighted how road safety and car use influences PA, whilst children, adolescents and parents identified insufficient equipment and facilities as main cause. For healthy diets, all groups noted limited access to healthy food outlets throughout the municipality or, particularly in the most vulnerable neighbourhoods, any access to food. Additionally, parents and adolescents emphasized unequal opportunities and investments across the municipality. Through photovoice, children and adolescents visualized their living environment and the issues they encounter, which were validated in the interviews, resulting in an increased understanding from the actors. Context-specific actions targeting these barriers were proposed and are currently being evaluated on feasibility and effectiveness.

**Conclusions:** The combination of Photovoice, interviews and GMB highlighted barriers from different points of view, offering an example for other local governments aiming to improve PA and access to healthy diets through co-creation of context-specific actions. Proposed actions will be evaluated before implementation to encourage sustained local government support and effective implementation of these actions. HEALTH4EUKIDS is funded by the European Health and Digital Executive Office (Grant 101082462)

## Upward trends in the uptake of environment certificates or 'ecolabels' in food packages: data reliability and 10-year trends in the Brazilian food supply

Dr. Ana Clara Duran<sup>1</sup>, Ms Maria Vitoria Cruz<sup>2</sup>, Ms Beatriz Silva Nunes<sup>1</sup>, Dr Thais Diniz Oliveira<sup>3</sup>, Professor Paula Carvalho Pereda<sup>2</sup>, **Dr. Lindsey Smith Taillie**

<sup>1</sup>Center for Food Studies and Research, University of Campinas, Campinas, Brazil, <sup>2</sup>Department of Economics, University of Sao Paulo, Sao Paulo, Brazil, <sup>3</sup>Department of Global Development, College of Agriculture and Life Sciences, Cornell University, Ithaca, USA

**7. Award Session: Policies and Environments | Participatory research, Hunua 2, June 11, 2025, 5:45 PM - 7:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** With the increasing use of environmental food labeling (ecolabels) on packaging and the risk of misinformation leading consumers to view ultra-processed foods as healthier or more desirable, this study aimed to (1) assess the reliability of environmental certificates in a commercial food database and (2) analyze trends in their prevalence within the Brazilian packaged food supply.

**Methods** Using packaging and food composition data from the Mintel database of newly launched food products between 2010 and 2021, we identified environmental certificates issued by third-party organizations and the Brazilian government. First, we assessed the reliability of the 20 most common environmental certificates appearing on food packaging for a subsample of products launched between 2018 and 2021. This verification compared the database information against manually coded data collected by trained research assistants, using Gwet's Kappa AC1 for agreement. Second, we described changes in the prevalence of environmental certificates and other sustainability claims in the Brazilian packaged food supply. Future analyses will include year- and food category/processing level-fixed effect regressions to verify which food and beverage categories showed the most significant increases and whether ultra-processed foods (UPFs) had a higher prevalence of ecolabels compared to non-UPFs.

**Results** The 20 most common environmental certificates included organic certifications (issued by the Brazilian Ministry of Agriculture and third-party organizations), fair trade, certified wood use in packaging, B Corporation certification, and ecolabels from environmental nonprofits funded by related revenues. All certificates demonstrated high reliability (Gwet's Kappa AC1 > 0.90). Between 2010 and 2021, the prevalence of newly launched products featuring ecolabels (environmental certificates or sustainability claims) doubled, rising from 7% to 15%. Future analyses will identify which food and beverage categories experienced the largest increases and whether ultra-processed foods (UPFs) had a greater prevalence of ecolabels compared to non-UPFs.

**Conclusion** This study demonstrates that information on ecolabels from a commercial packaged food database is reliable for monitoring changes in ecolabel adoption on food packaging. The findings reveal a more than twofold increase in ecolabel prevalence within the Brazilian packaged food supply, highlighting the need for stronger regulation of ecolabel usage in food packaging.

# POSTER PRESENTATIONS

## Navigating Heart Disease: Care Partner Involvement in Managing Health Behaviors Among Female Patients

Dr. Melissa M. Franks<sup>1</sup>, Ms. Megan B. Mason<sup>2</sup>, Dr. Kristin J. August<sup>2</sup>, Dr. Matthew P. Harber<sup>3</sup>, Ms. Katrina Riffin<sup>4</sup>, Mr. William Sherlow<sup>5</sup>, **Dr. Elizabeth A. Richards<sup>1</sup>**

<sup>1</sup>Purdue University, West Lafayette, USA, <sup>2</sup>Rutgers, Camden, USA, <sup>3</sup>Taylor University, Upland, USA, <sup>4</sup>Ball Memorial Hospital, Muncie, USA, <sup>5</sup>Indiana University Arnett Hospital, Lafayette, 47905

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** To explore the role of care partners (spousal and non-spousal), in the management of heart disease among female patients who have attended cardiac rehabilitation. Heart disease impacts not only those diagnosed, but also their families, due to necessary lifestyle modifications and potential shifts in role dynamics. Given the documented disparities in health outcomes between male and female patients, understanding how different types of care partners contribute to disease management, including health behavior change, is crucial.

**Methods:** This study utilized data from two pilot studies involving 54 female patients managing heart disease. Participants were recruited from three hospital-based cardiac rehabilitation centers and via an online survey platform. Statistical analyses were conducted to compare differences in the quality of the care partner relationship, care partner involvement in health-related activities, including exercise and diet management, and self-rated health and functional capacity by care partner type (spousal vs. non-spousal).

**Results:** Female patients reported spousal and non-spousal primary care partners with equal frequency. Notably, 37% of married women reported someone other than their spouse as their primary care partner. Women reported that their care partners helped them manage their diet and exercise (both 68.5%), accompanied them to healthcare provider visits (57.4%), and helped manage their blood pressure (35.2%). Patients with non-spousal care partners were significantly older ( $68.7 \pm 11.9$  years) compared to those with spousal care partners ( $59.7 \pm 9.8$  years,  $p < .01$ ). Despite these differences, there were no significant differences in the quality of relationships, level of care partner involvement, or patients' self-rated health and functional capacity between those with spousal and non-spousal care partners.

**Conclusion:** This study highlights that non-spousal care partners are similarly involved in managing heart disease as spousal care partners. Although demographic differences exist, these do not appear to impact the extent of care or patient health outcomes significantly. Future research should aim to include more diverse populations and utilize objective health measures to further validate these findings. Understanding and leveraging the role of various care partners can enhance patient care strategies, ultimately improving health outcomes and quality of life for women with heart disease.

## Feeding and nutrition practices, healthcare access, and needs of women with young children living in three regions in Ethiopia

**Prof. Mary Hearst<sup>1</sup>**, Hussen Mekonnen, Blaine Damte, Melissa Laska

<sup>1</sup>University of Minnesota, Minneapolis, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Describe the services received from local public healthcare facilities in Ethiopia, practices, knowledge, and gaps or barriers for women about breastfeeding, complimentary feeding, antenatal care and maternal nutrition, three evidence-based strategies to reduce the dual burden of malnutrition.

**Methods:** Qualitative focus groups were conducted at two public healthcare facilities in each of three cities, Addis Ababa, Dire Dawa, and Jijiga. We recruited women over the age of 18 years who attend the public healthcare facility and have children under five years. Focus groups were led by trained local facilitators in Amharic or Somali and were digitally recorded, transcribed, and translated into English.

**Results:** Thirty-seven women participated in focus groups in January, 2024. The majority identified as homemakers and had no formal or elementary school education. The women received antenatal care services, counseling on pregnancy and post-natal care, and counseling on child feeding practices. The scope of counseling varied by location as did the role of the health extension workers. Growth monitoring of children was only available in the health facilities. The primary concerns were their children's nutritional status and having financial means to provide care. They also requested further education around feeding and nutrition for themselves and their children. Overnutrition was not a concern.

**Conclusions:** The Ethiopian government has clear policies and practices for feeding and nutrition services and education at the public healthcare facilities, including a broad reaching Seqota Declaration. Yet, there are barriers and gaps in knowledge and service provision that will need to be addressed to improve the nutritional status of women and children.

## Pathway to life course research in low-middle income countries: Andhra Pradesh Children and Parents Study (APCAPS) 1994-2023

**Ms. Chitra Sharma<sup>1</sup>**, Dr. Bharati Kulkarni<sup>2</sup>, Professor Nuala M Byrne<sup>1</sup>, Ms. Santhi Bhogadi<sup>3</sup>, Dr. Poppy AC Mallinson<sup>4</sup>, Ms. Judith Lieber<sup>4</sup>, Dr. Rameshwar Sarma KV<sup>5</sup>, Dr. Radha Krishna KV<sup>5</sup>, Professor Hannah Kuper<sup>4</sup>, Dr. Poornima Prabhakaran<sup>3</sup>, Dr. Vipin Gupta<sup>6</sup>, Dr. Gagandeep Kaur Walia<sup>3</sup>, Professor Robin Wilson<sup>7</sup>, Dr. Santosh Kumar Banjara<sup>5</sup>, Dr. Hemant Mahajan<sup>5</sup>, Mr. Nick Birk<sup>4</sup>, Dr. Akshay Jagadeesh<sup>4</sup>, Professor Sanjay Kinra<sup>4</sup>, Dr. Kiran DK Ahuja<sup>1</sup>, Professor Andrew P Hills<sup>1</sup>

<sup>1</sup>University of Tasmania, Launceston, Australia, <sup>2</sup>Indian Council of Medical Research, New Delhi, India,

<sup>3</sup>Public Health Foundation of India, New Delhi, India, <sup>4</sup>London School of Hygiene and Tropical Medicine, London, United Kingdom, <sup>5</sup>National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, India, <sup>6</sup>University of New Delhi, New Delhi, India, <sup>7</sup>Freelancer, London, United Kingdom

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: H. Policies and environments**

Low-middle-income countries (LMICs) share a higher burden of global cardiovascular diseases (CVDs) and rapid transition in the built environment potentially impacts life course trajectories of physical activity, diet, and body composition. Life course epidemiology is a valid approach to unravel CVD aetiology and inform and assess interventions, but effective use of these methods requires a setting-specific approach including adoption of conceptual models, overcoming data availability gaps in resource-poor settings, and using appropriate statistical methods justified by directed acyclic graphs (DAGs). We adopt and discuss a socio-ecological model of the South Asian phenotype, associated with increased CVD risk in South Asians. Using Andhra Pradesh Children and Parents intergenerational Study (APCAPS 1994-2023), based in 29 villages of rural South India, we map available data against indicators of interest in the conceptual model and illustrate the rapidly transitioning multi-level APCAPS determinants including environment, household, and individual characteristics. DAGs are used to illustrate the complex inter-relationships between multi-level determinants and BMI. From 1994 to 2011, environmental transition of villages is demonstrated with higher mean night-time light intensity values (from 6.2 to 15 units). Between 2003 and 2023, household (n=2260) environments saw increased ownership of mechanized assets. For example, motorcycle ownership jumped from 18% to 76%, and appliances became ubiquitous like television ownership increasing from 72 to 87%. A significant inter-generational shift was also seen in education and occupation. In 2010, parents (n=2824) reported being largely uneducated or not completing primary school (86%), while their children (n=842), in their mid-thirties in 2021, reported completion of high or higher secondary school (57%), or professional education (20%). Similarly, parents in 2010 had largely been unskilled labourers (70%), compared to their children who reported occupations commensurate with their qualifications in 2021, male (86%) and female (37%). However, almost half of the female children (45%) were homemakers and had reduced participation in the workforce when compared to their mothers. Standard analytical approaches are ineffective in addressing complex, interconnected, transitioning determinants across generations. We provide an initial template towards using life course epidemiology for CVD aetiology in South Asians, as a step towards identifying and addressing knowledge and resource gaps.

# Characterizing the retail food environment in a Latin American city: Challenges and implications for research in the majority world

Dr. Leticia Vidal<sup>1</sup>, BSc. Florencia Alcaire<sup>1</sup>, BSc. Gerónimo Brunet<sup>1</sup>, **Dr. Gastón Ares<sup>1</sup>**

<sup>1</sup>Universidad de la República, Montevideo, Uruguay

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Scarce information exists about the characteristics of the retail food environment in cities in the regions where most of the world's population live. In this context, the present study aimed at characterizing the retail food environment of Montevideo, a Latin American capital city.

**Methods:** The study relied on five steps: i) validating two secondary data sources (administrative records and Google Maps) in a sample of 106 census tracts, ii) characterizing the food outlets identified on the ground, iii) developing local criteria to identify areas with lack of adequate physical access to healthy foods based on food purchasing behavior, iv) identifying areas without adequate access to healthy foods in two low socio-economic status (SES) neighborhoods, v) semi-structured interviews with residents of the two neighborhoods.

**Results:** At the aggregate level the secondary databases showed moderate sensitivity (0.614) and concordance (0.487), and substantial positive predictive value (0.701). However, their validity was markedly lower in low SES census tracts. Formal small neighborhood stores were identified as a key source of foods, specially in low SES areas. These outlets showed large heterogeneity in their food supply, highlighting the complexity of categorizing food outlets as proxy of (un)healthy foods. A threshold of 600 m was selected to identify areas without adequate physical access to healthy foods. Using this criterion, all the residential areas in two low SES neighborhoods had adequate physical access to healthy foods. Although residents did not perceive problems related to physical access, they highlighted challenges related to the price, variety, and quality of the foods sold in the area.

**Conclusions:** Results highlight a series of methodological challenges and the importance of capturing the local food sources that shape the availability of healthy and unhealthy foods in the majority world. Secondary data sources must be used with caution, particularly for characterizing areas with low socio-economic status. Adaptations of definitions and methodologies seem necessary to acknowledge the complexity of the retail food environment of Latin American cities.

## Categorizing Neighborhood Trauma Levels of Schools in Philadelphia PA USA in Order to Guide Trauma-informed School-based Interventions

**Dr. Krista Schroeder<sup>1</sup>**, Dr. Chelsea Singleton<sup>2</sup>, Dr. Loni Philip Tabb<sup>3</sup>, Ms. Chanmi Lee<sup>1</sup>, Dr. Gabriella McLoughlin<sup>1</sup>

<sup>1</sup>Temple University, Philadelphia, USA, <sup>2</sup>Tulane University, New Orleans, USA, <sup>3</sup>Drexel University, Philadelphia, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Historically, most trauma research has focused on individual-level trauma, such as child abuse. Recent work has drawn greater attention to the potential for neighborhood environment factors, such as violent crime, to be causes of trauma, as well as for collective trauma, such as structural racism or economic disenfranchisement, to impact whole communities. A better understanding of trauma burden in the community surrounding a school can guide trauma-informed place-based efforts to avert trauma-associated health risks in school students. Thus, the primary purpose of this study was to categorize neighborhood trauma levels for schools in Philadelphia, PA, USA, in order to inform future work delivering school nutrition and school physical activity programming to students in neighborhoods with highest trauma levels.

**Methods:** This study was a secondary analysis of existing data. A neighborhood trauma score was calculated for every census tract in Philadelphia, based on 25 spatial data sources and innovative, but previously published and validated, spatial analytic methods. Data capturing addresses of N=329 Philadelphia public schools were geocoded and school neighborhoods were operationalized by creating a 800 meter circular buffer around each school. A neighborhood trauma score was created for each school's neighborhood, based on the weighted proportion of each census tract that fell within that school's neighborhood. The geographic distribution of school's neighborhood trauma was mapped and local Moran's I was used to identify geographic clusters of schools in high versus low trauma neighborhoods.

**Results/findings:** Results are forthcoming. At present, we are in the final steps of mapping and local Moran's I analyses, so we anticipate no issue in completing analyses in advance of the June 2025 conference.

**Conclusions:** This study is among the first to explore neighborhood trauma levels among schools in Philadelphia – a city that experiences notably high trauma prevalence. Findings can guide future efforts to prioritize, develop, and deliver trauma-informed place-based health promotion programs to schools in Philadelphia. Further, methods can be replicated in future studies focused on understanding school students' exposure to neighborhood trauma in other geographic areas beyond Philadelphia.

# Promoting Unstructured Recess Activity in Urban High School: A Case Study Combined Spatial Planning and Behavioral Guidance Strategy

**Dr. Yiping Yan<sup>1</sup>**, Prof Yang Liu<sup>1</sup>

<sup>1</sup>Shanghai University of Sport, Shanghai, 中国

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: J. Young Adults**

**Purpose:** With the increasing global urbanization, the solidification of urban school land and the restriction to adjust recess time have limited the participation of students in unstructured recess activities. This study aimed to examine the effects of an intervention that combined spatial planning with a behavioral guidance strategy based on Geographic Information Systems (GIS) to promote unstructured recess activity among high school students.

**Methods:** An urban high school (22.11 m<sup>2</sup> per student) with 475 students (mean age: 16.96 ± 0.71 years; boys: 47.2%) was selected as a case. The effect of the intervention was assessed using a self-controlled experimental design. The low-cost intervention (15.97¥/person/week) involved the relocation of sports equipment and the use of students activity maps designed based on GIS. The duration and number of moderate-to-vigorous physical activity (MVPA) was measured with accelerometer and direction observation respectively. A Chi-square test was used to compare the proportions of observed number of MVPA. Mixed linear regression was employed to compare the duration of MVPA, controlling for gender, body mass index (BMI), age, intervention status, activity level, and recess duration, while also examining their interaction effects with the intervention. Focus group interview was used to analyze effect of the intervention.

**Result:** The number of MVPA observed in school spaces increased from 216 at baseline to 294 at follow-up; Significant increases ( $p < 0.05$ ) in the number of MVPA were showed in informal and formal sports spaces; For least-active students, post-test and follow-up demonstrated a significant increase in the duration of MVPA ( $\beta=0.90$ ,  $p < 0.05$ ); Age and sex was not a significant moderator in intervention (sex:  $\beta=-0.65$ ,  $p > 0.05$ ; Age:  $\beta=0.16$ ,  $p > 0.05$ ); Recess time was a significant moderator in intervention ( $\beta=0.63$ ,  $p<0.01$ ). Three key themes was identified in interview, include enriched students spatial perception, behavioral changes in activity, and comfort zone effects for active students were identified.

**Conclusions:** Multi-component intervention combined with spatial planning and behavioral demonstrated the potential to augment student participation in MVPA, while also enhancing the duration of MVPA among least-active students. This cost-effective intervention holds promise for integration into existing high school recess activity programs.

## What nutrients of concern are present in packaged food products in Nepali retail stores?

**Ms. Nisha Sharma<sup>1</sup>**, Dr. Prabhat Lamichhane<sup>2</sup>, Dr. Penny Love<sup>1</sup>, Mr. Pradeep Kaji Poudel<sup>3</sup>, Dr. Cherie Russell<sup>1</sup>, Professor Colin Bell<sup>1</sup>

<sup>1</sup>Deakin University, Geelong, Australia, <sup>2</sup>La Trobe University, Melbourne, Australia, <sup>3</sup>Tribhuvan University, Kathmandu, Nepal

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Nepali older infants and young children (IYC) are increasingly consuming packaged foods. However, the nutrition quality of the packaged foods available to them has not been assessed. This study aimed to assess nutrients of concern (e.g. total energy, sugar, sodium, fat) in packaged foods available in retail stores in Nepal using nutrient thresholds from the WHO Southeast Asia Region Nutrient Profile Model (SEARNPM).

**Methods:** In this cross-section study, label information on 2001 packaged food products (excluding culinary ingredients, tea, coffee, frozen foods, processed meat fish, and sea food products) that were for sale in 26 (4 supermarkets, 22 corner stores) retail stores were photographed. Ingredients and nutrients of concern were extracted from product labels and products were organized into 14 food groups (e.g. bakery products) recognized in Nepal. The primary outcome of this study was the proportion of products exceeding thresholds for total energy, total fat, saturated fat, total sugar, added sugar, and sodium.

**Findings:** We found 2001 packaged products, 1525 (76%) of which had sufficient and readable information on the labels. When assessed against SEARNPM, 1323 (86.8%) of these products exceeded thresholds for one or more of the nutrients of concern. Almost all bakery products (99.7%), confectionery (99.6%), savoury snacks (99.2%), and water-based flavoured drink (98.3%), most frozen dairy based desserts and edible ices (88.4%), approximately three-quarters of instant noodles and soups (75.6%), half of the cereals (54%), juices (50%) and milk and dairy-based drinks (46%) exceeded thresholds for one or more of the nutrients of concern. Most products exceeded the energy threshold (94.9%) followed by total sugar (79.7%), total fat (72.5%), saturated fat (71.4%), added sugar (55.3%), and sodium (55.1%).

**Conclusion:** This is the first study to assess nutrients of concern in packaged foods available in Nepali retail stores. The study revealed that most packaged products exceeded energy, total sugar, fat, or sodium thresholds suggesting regulatory measures may be needed to limit exposure and consumption of packaged foods by IYC.

# Investigation and Research on the Dietary Nutrition of Youth Volleyball Players

**Dr. Xi Wang**<sup>1,2</sup>, Ms. Qian Xu<sup>1</sup>, Ms. Qiuping Zhang<sup>1</sup>, Dr. Defeng Zhao<sup>1</sup>

<sup>1</sup>Shanghai Research Institute of Sports Science(Shanghai Anti-Doping Agency), Shanghai, China,

<sup>2</sup>Shanghai University of Sport, Shanghai, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: J. Young Adults**

**Purpose:** In order to understand the nutritional status of young athletes and provide a favorable basis for the improvement of dietary nutrition of young athletes in competitive sports in the future.

**Methods:** 16 players of Shanghai youth women's volleyball team were selected, aged  $15.9 \pm 1.9$  years, with a height of  $178 \pm 4.8$  cm and a weight of  $65.3 \pm 5.2$  kg. (1) Dietary survey method -- food weighing method was adopted. During the survey period, the consumption of all kinds of food and the amount of remaining food in each meal (including all food consumed except dinner, such as various fruits, drinks, snacks, etc.) were accurately weighed and recorded in detail. (2) Dietary review method: during the dietary survey period, ask and accurately record the weight of all snacks and fruits eaten by athletes after dinner, and try to keep the food packaging as a reference.

**Results:** Female athletes were found to have insufficient total calories, too little breakfast, too much dinner, and too much extra meals. The proportion of carbohydrate intake is too low, which is related to the fact that athletes do not know the role of sugar in sports training. It is necessary to strengthen the intake of sugar-rich food such as staple food of athletes, so as to avoid the effect of insufficient sugar storage on sports ability and training effect. Less VA and VB1; Calcium intake is low and zinc intake is low.

**Conclusions:** (1) To strengthen athletes' understanding and learning of nutrition knowledge, let them know the importance of dietary nutrition, learn how to choose food according to their body's needs. (2) Strengthen the sports nutrition training for canteen staff, strengthen the knowledge of balanced dietary nutrition of athletes canteen cooking staff, and make delicious and balanced dietary nutrition according to the needs of young athletes. (3) The coach should not only be strict in training, but also give more guidance in dietary nutrition, so as to timely and reasonably urge the athletes to make scientific and reasonable choices of various foods during meals.

## Intensity or Volume: The Role Physical Activity in Health-related Physical Fitness

**Dr. Yanping Qiu**, Dr. Iijuan Wang, Ms. huan chen, Ms. xiaoqing li

<sup>1</sup>Shanghai University of Sport, CHAINA, Shanghai, China, <sup>2</sup>Shanghai University of Sport, CHAINA,

Shanghai, China, <sup>3</sup>Shanghai University of Sport, CHAINA, Shanghai, China, <sup>4</sup>Dong Li Feng Mei Health School, CHAINA, Shanghai, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** This cross-sectional study aimed to examine how physical activity volume, intensity, and duration are associated with the health-related physical fitness in Chinese adolescents.

**Methods:** This study recruited 240 students aged 12-18 (143 males, 97 females) from a middle school in Haizhu District, Guangzhou City. Average acceleration (AvAcc), intensity gradient (IG) and the most active X minutes (MX metrics) have been proposed as volume, intensity, and duration of physical activity (PA). The data collection period was from March to May 2023. Participants wore ActiGraph wGT3X-BT triaxial accelerometers on their non-dominant wrist continuously for 7 days to measure physical activity, with removal allowed only during bathing and swimming. Data were sampled at 1-second intervals with a frequency of 30Hz, with at least 2 school days and 1 weekend day (worn for  $\geq 16$  hours per day) considered as valid data. The raw accelerometer data were processed using the GGIR package in R software. Health-related physical fitness was assessed using four FitnessGram tests, which included evaluations of cardiorespiratory fitness, muscular fitness, flexibility, and body composition. Multiple linear regression models were performed to predict the association between PA metrics and health-related physical fitness after adjusting age, sex and accelerometer wear time.

**Results:** The mean value of average acceleration is 27.94 mg, and the mean value of intensity gradient is -2.20. Among the four fitness indicators, only cardiorespiratory fitness is significantly correlated with intensity gradient ( $p=0.013$ ,  $p<0.05$ ), as well as with the most active 1, 2, and 5 min ( $p=0.042$ ,  $p=0.034$ ,  $p=0.017$ ,  $p<0.05$ ). No significant correlations were found with the other indicators.

**Conclusions:** Overall, the PA metrics are essential for health-related physical fitness, especially in highlighting the importance of intensity over quantity in improving cardiorespiratory fitness. The metrics for the most active 1, 2, and 5 minutes provide guidance for achieving optimal physical activity levels to enhance cardiorespiratory fitness.

## Kids at the Table: Co-investigating the Child Food Insecurity Experiences Scale (CFIES) with school-aged children

Ms. Amanda Taylor<sup>1,2</sup>, **Associate Prof. Helen Vidgen<sup>1,2</sup>**, Dr Sabine Baker<sup>1,2</sup>, Danielle Gallegos<sup>1,2</sup>

<sup>1</sup>Centre for Childhood Nutrition Research, Faculty of Health, Queensland University of Technology, South Brisbane, Australia, <sup>2</sup>School of Exercise and Nutrition Sciences, Faculty of Health, Queensland University of Technology, Kelvin Grove, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Experiences of household food and nutrition insecurity (FNI) threaten optimal child development through both nutritional and non-nutritional pathways. Current monitoring of FNI focusses on economic access to food, with some measures identifying impacts on children. Many tools, however, rely on caregiver perspectives which may not accurately reflect children's experiences. Child self-report measures are available and are increasingly being used, however, there is limited reporting of how children comprehend and engage with these measures within local contexts. The Child Food Insecurity Experiences Scale (CFIES) is a 10-item self-report child FNI tool which has undergone preliminary validation in 13 countries, including Australia. Limited face validity was completed during its development. This qualitative study aims to enhance its face, content and developmental validity in an Australian context using the perspectives of children.

**Methods:** A multi-pronged recruitment approach, primarily via community organisations and social media outreach, will include children aged 8-to-12 years, sampling for diversity. Face-to-face, qualitative cognitive interviews will be conducted in settings chosen with children and their families to optimise participant comfort. Verbal probes/prompts and think aloud techniques aim to establish whether children understand key terms and words, and if the CFIES questions, response categories and reference period are understood across the target age group. Participatory and creative elements have been included in the interview protocol to facilitate children's participation.

**Results/findings:** Recruitment with community partners and via social media has resulted in an initial sample of n=17 children from a range of cultural backgrounds and varied FNI experiences. Preliminary findings (n=17 interviews) indicate children have diverse understandings of key words and items, potentially influencing measure validity. A 12-month reference period seems to present difficulties for children in framing their responses. Children have also indicated the need to consider survey modality and for questions to be sensitively framed to ensure privacy and reduce stigma.

**Conclusions:** Children with diverse FNI experiences can provide novel insights regarding measure validity through an adapted cognitive interviewing method. Further data collection and analysis will continue to illuminate children's understandings and processes of engaging with self-report measures and will explore if child-provided feedback can effectively inform item re-design.

# Kuentos Litratun Hinemlo/Litoratol Ammwelil Aramas: A Photovoice study to understand facilitators and barriers of childhood health behaviors in the Northern Mariana Islands

**Dr. Rica Dela Cruz<sup>1</sup>**, Dr. Rachel Novotny<sup>1</sup>, Dr. Kathryn Braun<sup>1</sup>

<sup>1</sup>University of Hawaii at Manoa, Honolulu, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** To combat childhood obesity, it is important to understand the socioecological influences contributing to health behaviors of children through the lens of their caregivers. The purpose of this study was to identify perceived beliefs of parents and caregivers on the facilitators and barriers to healthy eating and physical activity among children in the Commonwealth of the Northern Mariana Islands (CNMI), an archipelago in the northwestern Pacific region.

**Methods:** Parents/caregivers of 2-8-year-old-children were recruited from 7 communities across 3 islands in the CNMI. Using Photovoice, a form of visual ethnography and participatory action research, participants were asked to take photos in their communities and homes of what they believed to be facilitators or barriers of healthy eating or physical activity for their children. Each community discussed their photos in 3 recorded focus group sessions that generated ideas for action to improve health behaviors of CNMI children. Participatory analysis of photos by participants and a secondary analysis by investigators were conducted to develop themes. The U.S. Institute of Medicine's (IOM) Childhood Obesity Prevention Framework was used to categorize themes into socioecological levels of influence (i.e. Individual Factors, Behavioral Settings, Sectors of Influence, and Social Norms/Values).

**Results/findings:** Analysis of 215 photos by 31 participants from 7 communities yielded 7 overarching themes developed from 7 facilitator themes and 7 barrier themes. Overarching themes were: Availability and Access to Food (n=49 photos), Physical Activity Spaces (n=44 photos), Activity Choices (n=43 photos), Environmental Resources (n=28 photos), Affordability of Food and Activities (n=23 photos), Family Influences (n=18 photos), and Norms (n=18 photos). Photos illustrated how each theme, e.g., Norms, could be both a facilitator (Positive Activity Norms for Kids) or barrier (Unhealthy Social Norms). Majority of themes were related to IOM levels of Behavioral Settings and Sectors of Influence.

**Conclusions:** Facilitators and barriers for child healthy eating and physical activity span across all levels of socioecological influences, but mostly within Behavioral Settings and Sectors of Influence. Based on these findings, it is recommended that interventions for childhood health in the CNMI be multilevel and involve community partners from different sectors of influence and behavioral settings.

## Exploring the genetic modifiers influencing adult eating behaviour: A scoping review

**Mrs. Julie Brown<sup>1</sup>**, Dr Andrea Braakhuis<sup>1</sup>, Dr Lillian Morton<sup>1</sup>

<sup>1</sup>University of Auckland, Auckland, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Abstract Purpose:** The primary aim of this scoping review was to explore and map the genetic associations with various eating behaviours, including emotional eating, appetite regulation, taste perception, and food-related impulsivity. We aimed to identify common genetic loci and highlight research gaps, offering a comprehensive overview of how genetic variations influence eating behaviours. This innovative research integrates genetic and behavioural findings to outline pathways for future nutrigenetic studies and personalised dietary interventions.

**Methods:** We conducted a rigorous scoping review using established frameworks, systematically searching twelve electronic databases, including PubMed, MEDLINE (Ovid), and EMBASE, covering published and unpublished literature from 2014 up to April 2024. Covidence managed data extraction, while NVivo facilitated thematic analysis. Our inclusion criteria focused on studies examining genetic associations with eating behaviours across cross-sectional, longitudinal, and intervention designs. We considered research linking specific genetic polymorphisms, such as SNPs, to phenotypes like hunger, satiety, and emotional eating, using validated eating behaviour questionnaires or dietary interventions.

**Results:** From 3,177 identified articles, 64 met the eligibility criteria. Our analysis revealed consistent associations between SNPs in genes like MC4R, CD36, ADIPOQ, CLOCK, TAS2R38 and FTO with diverse eating behaviours. Emotional eating was frequently linked to serotonergic and dopaminergic pathway variants, while taste perception associated with lipid-sensing genes. Six key themes emerged: taste perception and preferences, appetite and satiety, emotional eating, disinhibition and unrestrained eating, food timing and habits, and snacking, cravings, and binge eating. The reviewed studies predominantly involved younger participants (mean age:  $35.2 \pm 8.4$  years) and females, with older and male populations underrepresented.

**Conclusions:** Our findings underscore the complex interplay between genetics and eating behaviour, emphasising the need for standardised methodologies and diverse demographic inclusion. These insights pave the way for precision nutrition interventions tailored to genetic profiles and highlight research priorities, including examining underrepresented groups. This work contributes significantly to understanding the genetic underpinnings of eating behaviours, offering directions for enhancing the efficacy of intervention strategies.

## ASSOCIATION OF MEETING THE 24-H MOVEMENT GUIDELINES WITH HIGH BLOOD PRESSURE IN ADOLESCENTS: A CROSS-SECTIONAL STUDY.

**Prof. Jorge Mota**<sup>1</sup>, Prof Gerson Ferrari<sup>2</sup>, prof Gabriel G. Cucato<sup>3</sup>, Prof Danilo R. Silva<sup>4</sup>, Prof Luis Carlos Vanderlei<sup>5</sup>, Prof William R. Tebar<sup>5</sup>, Prof. Diego Christofaro<sup>5</sup>

<sup>1</sup>Faculty of Sports, Porto, Portugal, <sup>2</sup>Universidad Autónoma de Chile, Chile, Santiago, Chile, <sup>3</sup>Northumbria University, Newcastle Upon Tyne, UK., <sup>4</sup>newcastle, United Kindon, <sup>5</sup>Universidade Federal de Sergipe, Brasil, Sergipe, Brasil, <sup>5</sup>São Paulo State University (Unesp),Brazil., Presidente Prudente, Brasil

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The 24-h movement guidelines for children and adolescents comprise recommendations for adequate sleep, moderate to vigorous physical activity (MVPA) and sedentary behaviour (SB). However, whether adolescents who meet these 24-h movement guidelines may be less likely to have high blood pressure (HBP) has not been established.

**Methods:** The present study assessed the association between meeting 24-h movement guidelines and HBP in a school-based sample of 996 adolescents between 10-17 years ( $13.2 \pm 2.4$  years, 55.4% of girls). Blood pressure was measured using a digital oscillometric device, while sleep, MVPA, and SB were measured using the Baecke questionnaire. The association between the 24-h movement guidelines and HBP was performed using binary logistic regression adjusted for sex, age, socioeconomic status, and body mass index.

**Results:** It was observed that less than 1% of the sample met the three 24-h movement guidelines. The prevalence of HBP was lower in adolescents who met all three movement 24-hour guidelines (11.1%) compared to those who did not meet any guidelines (27.2%). Individual 24-h movement guidelines analysis showed that adolescents with adequate sleep were 35% less likely to have HBP (OR = 0.65; 95% CI 0.46-0.91). Meeting sleep guidelines and meeting MVPA (OR = 0.69; 95% CI 0.50-0.95) or SB (OR = 0.67; 95% CI 0.48-0.94) was inversely associated with HBP.

**Conclusions:** Adolescents who meet two or three 24-h movement guidelines were respectively 47% (OR = 0.53; 95% CI 0.29-0.98) and 34% (OR = 0.66; 95% CI 0.48-0.91) less likely to have HBP. In adolescents, meeting sleep and 24-hour movement guidelines was inversely associated with HBP.

# The relationship between potential *Listeria monocytogenes* exposure and diet quality and dietary intake during pregnancy: A cross-sectional analysis in Australian women

**Miss Kee June Ooi**<sup>1,2</sup>, Dr Sasha Fenton<sup>1,2</sup>, Rachael Taylor<sup>1,2</sup>, Dr Madeleine Hinwood<sup>3</sup>, Melinda Hutchesson<sup>1,2</sup>, Prof. Clare Collins<sup>1,2</sup>

<sup>1</sup>School of Health Sciences, College of Health, Medicine and Wellbeing, University Of Newcastle, Callaghan, Australia, <sup>2</sup>Food and Nutrition Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>3</sup>Data Science, Hunter Medical Research Institute, New Lambton Heights, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Previous research suggests more frequent consumption of foods potentially harbouring *Listeria monocytogenes* is associated with higher nutrient intakes but also increased miscarriage risk. However, this research was conducted over two decades ago and therefore does not reflect contemporary dietary patterns, nor did it investigate the influence of potential *Listeria monocytogenes* exposure on diet quality during pregnancy. The purpose of this study was to evaluate associations between potential *Listeria monocytogenes* exposure and, dietary quality and intake in a contemporary sample of Australian pregnant women. This innovative research utilized updated and validated dietary assessment tools to provide a comprehensive understanding of how these foods influence maternal overall diet quality in today's context.

**Methods:** This secondary analysis included women aged  $\geq 19$  years with singleton pregnancy from two longitudinal cohorts, in New South Wales and Western Australia. Dietary intake was assessed using the validated Australian Eating Survey (AES), and was used to derive participants' food group serves, macro- and micronutrient intakes, and diet quality, based on the Australian Recommended Food Score. Potential *Listeria monocytogenes* exposure was assessed from AES responses, using the *Listeria* Food Exposure Score (LFES). Pearson's correlation and linear regression analyses estimated associations between potential *Listeria monocytogenes* exposure and dietary quality and intake.

**Results/findings:** Data from 1,638 women (mean (SD) age 32.0 (5.0) years) were included. The median (IQR) gestational age was 35 (34-36) weeks, 43.5% of women had no prior pregnancies. The mean (SD) for ARFS and LFES was 33.6 (9.7) and 16.3 (5.2). A higher LFES (i.e. more frequent consumption of potential food sources of *Listeria monocytogenes*) was significantly associated with higher diet quality score ( $r=0.60$ ,  $P<0.001$ ). Vegetables and legumes food group ( $r=0.43$ ,  $P<0.001$ ), and Vitamin E ( $r=0.52$ ,  $P<0.001$ ) had the highest correlation with the LFES.

**Conclusions:** In this sample of pregnant women, more frequent consumption of potential food sources of *Listeria monocytogenes* was associated with higher diet quality, healthy food groups and micronutrient intakes. These findings highlight the need to update guideline messages to ensure adequate nutrient intakes while limiting the risk of listeriosis, by presenting lower-risk food choices to pregnant women that align with dietary recommendations.

## Using the Practical, Robust Implementation and Sustainability Model (PRISM) with community stakeholders and Meals on Wheels staff to inform the development of Meals+ - an enhanced home delivered meals program

**Dr. Kim Gans<sup>1</sup>**, Ms. Snehaa Ray<sup>1</sup>, Ms. Grace Kane<sup>1</sup>, Dr. Kali Thomas<sup>2</sup>, Ms. Brie Tyler<sup>1</sup>, Dr. Caitlin Caspi<sup>1</sup>

<sup>1</sup>University of Connecticut, Storrs, United States, <sup>2</sup>Johns Hopkins School of Nursing, Baltimore, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

### **SIG - Primary Choice: A. Ageing**

**Purpose:** Meals on Wheels (MOW) addresses health and social needs among older adults by home-delivering meals. Our research aims to understand whether adding enhancements (community health worker calls and home delivered-grocery bags) to the traditional home delivered meal program of MOW-Rhode Island (RI) (Meals+) can further improve food insecurity, diet quality, perceived loneliness, and health-related quality of life among older adults.

**Methods:** To inform the development of Meals+, qualitative interviews were conducted with 12 community stakeholders, and 5 MOW-RI leaders/staff using PRISM-guided questions. Stakeholders also completed an adapted version of the PRISM survey focusing on the external environment, implementation, and sustainability infrastructure of MOW-RI/Meals+. We also assessed the confidence levels of MOW-RI community health workers (CHW) for delivering the Meals+ intervention and study activities.

**Results:** Stakeholders expressed positive views of the planned Meals+ intervention, believing it addresses gaps often overlooked in food insecurity. Primary concerns were participant barriers, e.g. difficulties opening food products and cooking meals; and building trust with CHW. To address these barriers, stakeholders suggested providing participants with kitchen utensils, offering healthy recipes, and conducting home visits to assess living conditions. In the PRISM survey, on a scale of 7 (1 = little to no extent and 7 = a very great extent), mean scores were high for MOW-RI environmental support (6.19), MOW-RI capacity to connect the community with other organizations (5.99) and MOW-RI's capacity to effectively manage Meals+(6.2); and a little lower for funding sustainability (5.5). MOW-RI staff felt that Meals+ would yield positive outcomes. Out of 10 (with 10 = extremely confident and 1 = not confident), CHW mean scores were 7.6 for conducting coaching calls, 8.0 for recruiting /consenting participants, and 9.8 for administering pre-post assessments. PRISM interviews and surveys will be readministered at study's end.

**Conclusions:** Our findings informed the development of the Meals+ intervention and demonstrate its potential for feasibility and to achieve positive outcomes among older adults. This presentation will also describe the intervention trial and include the results and adaptations informed by our Meals+ pilot, which will be completed before the main trial begins in January 2025.

# Academic-related stressors and marginal food security among graduate students: distinguishing marginal food security from food security to support healthier eating behaviors

Jean Pierre Enriquez<sup>1</sup>, **Dr. Elizabeth Gollub**<sup>2</sup>

<sup>1</sup>Louisiana State University, School of Nutrition and Foods Sciences, Baton Rouge, United States,

<sup>2</sup>Louisiana State University AgCenter, School of Nutrition and Foods Sciences, Baton Rouge, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** This study examines the impact of academic-related stressors on marginally food-secure graduate students to highlight the importance of distinguishing marginal food security (MFS) from general food security (FS) classifications. This research aims to provide insight into how MFS can signal a state of food-related vulnerability and disadvantageous eating behavior distinct from FS.

**Methods:** Graduate students at a large southeastern university in Louisiana were recruited for this 2023 study, through various channels, including professors, student organizations, and social media. The study sample size,  $n = 502$ , represented a response rate of 10.83% of the graduate student population. Participants completed an online survey, covering demographics, academic stressors, and food security status, which was assessed using the U.S. Adult Food Security Survey Module 10-item survey, with a modified reference period “since starting graduate school”. Data analysis involved descriptive statistics and logistic regression to assess associations between MFS and academic stressors, including money limitations, time management, classes, and thesis/dissertation/research.

**Results/Findings:** Approximately 29% of graduate students were identified as marginally food-secure. The mean age of participants with MFS was  $29.9 \pm 7.8$  years. The majority of marginally food-secure graduate students (>65%) reported being single, female, White or Caucasian, and having an assistantship. A significant association ( $p < 0.05$ ) between MFS and stress from financial limitations was found; students reporting this stressor were less likely to be fully food-secure. Time management and classes were not significantly associated with MFS ( $p > 0.05$ ). Common concerns among marginally food-secure students included anxiety over food running out and lack of balanced meals due to affordability, accompanied by diminished food intake, even when hungry.

**Conclusion:** MFS among graduate students was found to involve distinct challenges such as food-related anxiety and financial stress, which were not often reported by fully food-secure individuals. Distinguishing MFS from FS is essential for developing targeted interventions that address the specific needs of marginally food-secure students. Recognizing MFS as a unique state could enable early intervention strategies addressing socioeconomic inequalities to prevent further progression of food insecurity, improve eating behaviors, and promote graduate student well-being.

## Diet Quality, Physical Activity, and Weight Status of Young Children in the Northern Mariana Islands

**Dr. Rica Dela Cruz<sup>1</sup>**, Dr. Lynne Wilkens<sup>2</sup>, Dr. Rachel Novotny<sup>1</sup>

<sup>1</sup>University of Hawaii at Manoa, Honolulu, USA, <sup>2</sup>University of Hawaii Cancer Center, Honolulu, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** To better understand childhood obesity in the Commonwealth of the Northern Mariana Islands (CNMI), this study examined the association of diet quality and physical activity with weight status among young children. We hypothesized higher diet quality and/or higher physical activity would be associated with lower weight status of CNMI children.

**Methods:** Cross-sectional data on anthropometry and 2 days of diet and activity records of 2-8-year-old CNMI children were collected as part of the Children's Healthy Living (CHL) program. Body mass index (BMI) and BMI z score, U.S. Healthy Eating Index (HEI-2005) scores, and moderate, vigorous, and total metabolic equivalent (MET) hours/day were calculated, and examined by demographic factors – race/ethnicity [Northern Marianas Descent (NMD), Other Pacific Islander, Filipino, Other], age group (2-5 years, 6-8 years), and sex – using chi square, ANOVA, or t tests. Linear models of BMI z-score as an outcome and logistic models of overweight/obesity (OWOB) status examined their associations with HEI-2005 and total MET hours/day.

**Results/Findings:** Of the 582 CNMI children, 27.7% were OWOB, with more children having obesity (16.2%) than overweight (11.5%). Mean total HEI-2005 score was 60.9/100. Eighty percent (80%) of children exceeded recommended screen time and averaged 1.3 hours of moderate activity, but only 0.07 hours of vigorous activity per day. 6-8-year-olds (21.6%) and boys (20.7%) had significantly ( $p < 0.01$ ) higher percent of obesity than 2-5-year-olds (12.4%) and girls (11.2%), respectively. Filipinos had significantly higher total HEI-2005 than NMD children (64.7 and 59.0, respectively;  $p < 0.01$ ). However, NMD children had significantly higher total MET hours/day than Filipino children (33.7 and 32.7, respectively;  $p < 0.01$ ). No association was found between HEI-2005 and MET hours/day with BMI z-score or OWOB in the total sample of children. However, in subgroup analysis stratifying age groups, an inverse association was found between HEI-2005 and BMI z-score among 6-8-year-old children ( $\beta = -0.02$ ,  $p = 0.01$ ).

**Conclusion:** CNMI children's diet quality needs improvement, screen time is high, and vigorous activity is low. 6-8-year-olds with higher quality diet had lower BMI z score; thus, improving children's diet quality through targeted interventions starting at elementary school may help reduce the childhood obesity prevalence in the CNMI

## Relationships among smartphone applications use, physical activity, and sedentary behavior in Chinese young adults

**Prof. Xiang Fan<sup>1</sup>**, Ms Mengyao Shi<sup>1</sup>

<sup>1</sup>Shanghai Jiao Tong University, , China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** This study aimed to investigate the correlations between smartphone applications (APP) use, physical activity, and sedentary behavior among Chinese young adults.

**Methods:** We enrolled 345 subjects aged 19-22 who were chosen from Shanghai, China. We intend to obtain objective data of the duration of subjects' use of various smartphone phone applications by sending survey logs and measure their weekly physical activity by accelerometer (ActiGraph GT3X-BT). Two-variable Spearman and Pearson correlation analysis was carried out for variables of different genders, and cubic function extremum was obtained for variables with correlation by curve estimation and MATLAB.

**Results:** A total of 139 males participated in the survey, with an average BMI of  $24.26 \pm 8.76$ , a median daily MVPA of 28.5 min (20.86-41.50), and median daily steps of 4269.50 (2976.88-5955.25). A total of 109 females were enrolled, the average BMI was  $22.11 \pm 6.22$ , the median daily MVPA was 27.0 min (17.88-37.50), and the median daily steps was 4313.88 (3487.69-5510.56). The high social APP users were 68.9% less likely than the low social APP users to be in the higher daily sedentary group (OR=0.311, 95%CI=0.125, 0.776), the group with high entertainment APP use was 129.2% more likely to be the group with higher daily sedentary time than the group with low entertainment APP use (OR=2.292, 95%CI=1.012, 5.188), the high consumer APP users were 70.9% less likely to be in the higher daily sedentary group than the low consumer APP users (OR=0.291, 95%CI=0.125, 0.679); The high education APP users were 55.7% less likely to be the high sedentary group than the low education APP users (OR=0.443, 95%CI=0.207, 0.948).

**Conclusion:** This study found that the use of social, entertainment and consumer applications were correlated with daily sedentary time.

## Interrupting evening sitting with regular activity breaks reduces sleep disturbances in free-living adults.

**Miss Jennifer Gale**<sup>1</sup>, Associate Professor Elaine Hargreaves<sup>2</sup>, Dr Jillian Haszard<sup>3</sup>, Dr Meredith Peddie<sup>1</sup>

<sup>1</sup>Department of Human Nutrition, University of Otago, Dunedin, New Zealand, <sup>2</sup>School of Physical Education, Sport and Exercise Sciences, University of Otago, Dunedin, New Zealand, <sup>3</sup>Haszard Biostatistics, , New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Current sleep recommendations discourage exercise prior to bedtime, but the evidence base behind this recommendation is questionable. In a laboratory setting, frequently interrupting evening sedentary time with 3-min of resistance-based 'activity breaks' extended subsequent free-living accelerometer measured sleep duration. These effects have yet to be explored in a free-living setting. Drawing on behaviour change theory a regular activity breaks intervention was designed to support participants to interrupt evening sitting. This pilot study aimed to assess the effect of interrupting evening sedentary time with regular activity breaks on self-rated free-living sleep quality and disturbances.

**Methods:** Twenty participants (mean age  $34 \pm 12$  years, female  $n=18$ ) completed a two-week intervention which aimed to support them to perform 2-3 min of activity, every 30 mins during the evening using evidence-based behaviour change techniques. Participants completed the Pittsburgh Sleep Quality Index (PSQI) at the end of the 7-day baseline period to assess habitual sleep quality, and again at the end of the 2-week intervention period to assess sleep quality over the previous 2-weeks. The PSQI contains 19 self-rated questions, answers to which are combined to form seven 'component scores' (sleep quality, sleep onset latency, sleep duration, sleep efficiency, sleep disturbances, use of sleeping medications, and daytime dysfunction) which range from 0 to 3. A sum of the seven component scores is calculated to give the 'global' PSQI score (out of 21).

**Results:** At both timepoints 90% of participants reported their sleep quality to be 'Very Good' or 'Fairly Good'. The Global PSQI score improved by 1.0 point (95% CI -2.1 to 1.4). The largest improvement was observed in the sleep disturbance component score which improved by 0.35 points (95% CI -0.6 to -0.1) following the two-week intervention. Component scores for sleep latency and habitual sleep efficiency improved by 0.3 (95% CI -0.6 to 0.0) and 0.2 (95% CI -0.6 to 0.2) respectively.

**Conclusions:** Even in adults with good or fairly good self-reported sleep, interrupting evening sitting time by performing regular activity breaks reduced subsequent sleep disturbances. Future RCTs should investigate this effect, particularly in people who report poorer overall sleep quality.

## Introducing EngAge: Co-Creation and Initial Implementability of an Intervention Targeting Sedentary Behaviour in Older Adults using the Staircase Approach

**Dr. Shilpa Dogra**<sup>1</sup>, Dr Dina Katsoulis, Dr Sean Horton, Dr David Dunstan, Dr Bill Kapralos, Dr Jennifer Copeland, Dr Danielle Bouchard

<sup>1</sup>Ontario Tech University, Oshawa, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

### **SIG - Primary Choice: A. Ageing**

**Purpose:** To co-create a behaviour change intervention targeting sedentary behaviour in adults aged 65 and older using the Staircase Approach, and to provide initial implementability metrics on the new intervention.

**Methods:** The co-creation process involved a mixed-methods study that included 1) focus groups with three samples: older adults, exercise/recreation professionals who work with older adults, and primary care providers, 2) a systematic search and review of interventions targeting sedentary behaviour change among older adults, and 3) co-creation with the research team. Data from the first two studies were analyzed and collated, then sent to the research team along with a list of questions to probe for specific issues to consider in designing the program. The principal investigator and a research team member conducted interviews with each team member, created an initial draft of the program, then solicited feedback. This intervention is currently being implemented in two provinces in Canada using different recruitment methods. Implementability outcomes (feasibility, fidelity, acceptability) are being assessed.

**Results:** Across the three samples, 17 focus groups were conducted (n=50). It was clear from this work that participants in all samples had difficulty conceptualizing an intervention that targeted sedentary time rather than exercise. Preferences and insights varied; some were contradictory. For example, some felt that technology literacy was low in the target population, while others felt that older adults were tech savvy. Social components were emphasized by many, but feasible suggestions were not provided. The systematic search and review included 14 papers (17 intervention groups). Across studies, there was consistent acceptability of sedentary time reduction interventions, but inconsistent findings related to effectiveness. The interviews led to the co-creation of the EngAge Program, a 9-week program with three cycles; each cycle focused on one goal created by the older adult. It included three check-ins with the research team (the mid-way point of each three-week cycle). Implementability testing is ongoing but indicates promise among older adults who were inactive at baseline.

**Conclusions:** The EngAge program provides an opportunity for older adults to participate in a self-administered sedentary time reduction program before progressing to programs focused on increasing physical activity.

## Co-design workshops to develop a child health behaviour evidence-base dashboard

Miss Samantha Morgillo<sup>1</sup>, Dr Sarah Hunter<sup>1,2</sup>, Professor Rebecca Golley<sup>1</sup>, Dr Lua Perimal-Lewis<sup>1</sup>, **Brittany Johnson<sup>1</sup>**

<sup>1</sup>Flinders University, Adelaide, Australia, <sup>2</sup>Preventative Health SA, Adelaide, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Initiatives targeting child health behaviours including nutrition, activity and sleep are important to support healthy growth in early childhood and prevent obesity. Despite the increase in research, initiatives rarely reach real world settings, referred to as the research to policy and practice gap. TOPCHILD-Policy is developing practical tools to address this, by tailoring evidence, collated from initiatives targeting child health behaviours in the first 1000 days. This project aimed to co-design a child health behaviour evidence-base dashboard to support adoption of evidence-based decision making in practice settings.

**Methods:** Living lab methodology was used to conduct a series of five online co-design workshops (60-90 minutes). Recruitment involved purposeful sampling following anticipated next-user mapping, and invited potential participants (e.g. policy officers, program managers and practitioners in the Australian early years system) via email. Workshop topics (e.g. content, functionality, design, prototype feedback and implementation) informed development of the concept and prototype alongside workshops by a software developer. Data collection during and between workshops included transcripts, online whiteboards and surveys. A rolling analysis took place using a pragmatic qualitative descriptive approach. Quantitative data were analysed as frequency counts. Findings informed the next workshop and dashboard development.

**Results/findings:** There were 19 participants registered for one or more workshops. To date, data have been collected from 4 of 5 workshops, with attendance of 8-10 participants per workshop (n=14). Categories identified from analyses included desired uses (e.g. to identify, adapt or plan an evidence-informed initiative), desired content (e.g. evidence summaries, case studies, measurement tools), desired functions (e.g. search and filtering evidence to meet needs) and design of the dashboard (e.g. simple layout, intuitive). Initial prototype feedback identified positive aspects (e.g. clear layout, easy navigation) and suggestions for improving the design, functionality and organisation of content (e.g. colour code content). The final workshop will identify barriers and enablers to use of the dashboard and explore implementation plans.

**Conclusion:** Co-designing a dashboard tailored to next-user needs, supports adoption of evidence-based decision making to enable implementation of initiatives that promote child health behaviours. Further investigation of user-testing, prior to pilot trials in practice settings will evaluate adoption of evidence.

## Diet Quality and Physical Activity in Relation to Screen Time Guideline Adherence among Children in the US-affiliated Pacific Region

**Dr. Ashley Yamanaka**<sup>1</sup>, Ms Kristi Hammond<sup>1</sup>, Dr. Lynne Wilkens<sup>2</sup>, Dr. Anthony Okely<sup>3</sup>, Dr. Yurii Shvetsov<sup>2</sup>, Dr. Dorothea Dumuid<sup>4</sup>, Dr. Jean Butel<sup>1</sup>, Mr. Travis Fleming<sup>5</sup>, Ms Leslie Shallcross<sup>6</sup>, Dr Tanisha Aflague<sup>7</sup>, Dr. Chloe Lozano<sup>2</sup>, Dr. Rachel Novotny<sup>1</sup>

<sup>1</sup>University of Hawaii at Manoa, Honolulu, USA, <sup>2</sup>University of Hawaii Cancer Center, Honolulu, 96813,

<sup>3</sup>University of Wollongong, Wollongong, Australia, <sup>4</sup>University of South Australia, Adelaide, Australia,

<sup>5</sup>American Samoa Community College, Pago Pago, USA, <sup>6</sup>University of Alaska Fairbanks, Fairbanks,

USA, <sup>7</sup>University of Guam, Mangilao, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The relationship between screen time, diet, and physical activity is understudied in Pacific children; specifically, how adherence to screen time guidelines correlates with diet quality, physical activity intensity, and sleep in children from the US-affiliated Pacific region remains unexplored.

**Methods:** Cross-sectional data from the 2013-2014 Children's Healthy Living Program were analyzed. Diet quality, measured by the US Healthy Eating Index, HEI-2020 total and component scores (higher scores represent better diet quality) from 2 days of dietary records, and accelerometer-measured physical activity were compared between children adhering to screen time guidelines ( $\leq 2$  hours/day per American Academy of Pediatrics) and those not meeting guidelines, using ANOVA models adjusted for age, sex, energy intake, and survey design.

**Results:** Among 1973 participants (49.9% girls, age  $5.52 \pm 1.63$  years), children meeting screen time guidelines had distinct dietary and activity behaviors compared to those not meeting guidelines. While the HEI-2020 total scores were similar between screen time groups ( $48.58$ ,  $p=0.99$ ), HEI-2020 components for children meeting screen time guidelines had lower scores in Total Fruits ( $2.29 \pm 0.11$  vs  $2.51 \pm 0.08$ ,  $p=0.025$ ) and Dairy ( $3.97 \pm 0.27$  vs  $4.84 \pm 0.14$ ,  $p=0.0008$ ), and higher scores in Seafood & Plant Proteins ( $2.84 \pm 0.07$  vs  $2.32 \pm 0.07$ ,  $p<0.0001$ ). For HEI-2020 moderation components (higher scores indicate lower intake), these children had higher scores for Sodium ( $6.68 \pm 0.08$  vs  $6.21 \pm 0.09$ ), Saturated Fat ( $6.53 \pm 0.11$  vs  $6.23 \pm 0.09$ ), and Added Sugars ( $8.38 \pm 0.09$  vs  $7.90 \pm 0.09$ , all  $p<0.001$ ), suggesting more controlled intake. Children meeting screen time guidelines also showed more sedentary time ( $295.45 \pm 2.54$  vs  $285.09 \pm 2.83$  min/day), more moderate-intensity activity ( $83.76 \pm 1.53$  vs  $78.21 \pm 0.95$ ), less light-intensity activity ( $230.02 \pm 2.45$  vs  $246.66 \pm 2.68$ ), and less sleep ( $570.02 \pm 1.94$  vs  $575.92 \pm 1.73$  min/day, all  $p<0.01$ ).

**Conclusion:** This study highlights that meeting screen time guidelines does not necessarily correlate with healthier diet and activity behaviors, suggesting the need for a more integrated and nuanced approach to child behavioral guidelines that considers screen time, diet quality, physical activity, sleep duration, and sleep disturbance together.

## Movement behaviour knowledge and self-efficacy among parents of young children in Canada and associations with sociodemographic factors

**Dr. Brianne Bruijns<sup>1</sup>**, Dr. Matthew Bourke<sup>2</sup>, Ms. Kendall Saravanamuttoo<sup>1</sup>, Dr. Patricia Tucker<sup>1</sup>  
<sup>1</sup>Western University, London, Canada, <sup>2</sup>The University of Queensland, Brisbane, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The purpose of this study was to examine: 1) parents' knowledge of the Canadian 24-Hour Movement Guidelines for the Early Years (The Guidelines); 2) parents' perceived knowledge and self-efficacy of concepts pertaining to movement behaviours in early childhood; and, 3) the influence of sociodemographic characteristics on the aforementioned variables.

**Methods:** A cross-sectional online survey was conducted with parents/guardians ( $n = 576$ ) of young children ( $<5y$ ) in Canada. This survey explored parents' knowledge of The Guidelines (11 items), and perceived knowledge (11 items; 5-point scale) and self-efficacy (11 items; 11-point scale) of movement behaviour concepts in early childhood. Descriptive statistics were calculated for independent variables, while multivariate regression models were used to determine if any sociodemographic factors were associated with parents' movement behaviour knowledge and self-efficacy.

**Results:** Only 11.9% of parents reported being familiar with The Guidelines; most (75.0%) correctly identified the screen time guideline for children under 2 years (i.e., no screen time), while few (14.7%) correctly identified the recommendation for toddler/preschooler total physical activity (i.e., 180 mins/day). Many parents (65.9%) reported to be very or extremely knowledgeable about safe sleep practices in early childhood; yet 71.8% of parents reported to be not at all or only somewhat knowledgeable about muscle- and bone-strengthening activities for young children. Overall, participants were moderately confident in promoting healthy movement behaviours ( $M = 6.01$ ;  $SD = 1.73$ ). Parents with higher levels of education reported significantly higher perceived movement behaviour knowledge compared to those who were less educated ( $p = .004$ ), and parents identifying as white reported significantly higher levels of movement behaviour self-efficacy compared to parents from minority ethnic groups ( $p = .028$ ). Finally, participants who were more physically active reported both higher perceived movement behaviour knowledge ( $p < .001$ ) compared to those who were less active.

**Conclusion:** These findings emphasize the need to raise awareness of The Guidelines among parents of young children in Canada and shed light on specific movement behaviour concepts that parents might benefit from learning more about. The noted equity gaps are concerning and highlight the need for targeted movement behaviour education for parents from lower socioeconomic groups.

## Leveraging participatory research for effective evaluation of an experiential school food education program implemented in diverse elementary schools

**Ms. Christine St Pierre<sup>1</sup>**, Ms. Beth Bacon<sup>2</sup>, Ms. Lauren Rotholz<sup>1</sup>, Ms. Hannah Schiff<sup>2</sup>, Dr. Jennifer Sacheck<sup>1</sup>

<sup>1</sup>The George Washington University Milken Institute School of Public Health, Washington, USA,

<sup>2</sup>FRESHFARM FoodPrints, Washington, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

### **SIG - Primary Choice: K. Participatory Research in Health Promotion**

**Purpose:** School-based experiential food education programs are a popular strategy for engaging and empowering students to make healthy food choices. These programs are rightly tailored to the context of each school community, but consistent implementation of rigorous evaluation methods across multiple sites is challenging. The FRESHARM FoodPrints program is integrated into regular school-day programming at 21 diverse public elementary schools in Washington, DC. An academic-community partnership was formed to co-create a program-wide impact and process evaluation protocol.

**Methods:** During the 2023-24 academic year, researchers and program stakeholders collaboratively designed and piloted data collection tools and methods at a purposive sample of n = 6 schools representing the demographic and socioeconomic diversity of program sites. Tools to measure food literacy and fruit and vegetable (FV) intake outcomes were administered to 4th and 5th grade students at the start and end of the academic year. Data sharing protocols were established to track reach, dose and fidelity, and an interactive activity was co-developed to assess participant receptivity.

**Results:** and lessons learned were discussed and captured during regular partnership meetings and integrated into an evaluation study protocol for the 2024-25 school year.

**Findings:** Outcome measures were collected from n = 69 students in Fall 2023 and n = 72 students in Spring 2024 (30% participation rate). The questionnaire formats proved challenging for participant literacy levels and dietary recall abilities. Program receptivity (n = 222 participants) highlighted cooking and eating as the major sources of program satisfaction. From these results, the partners developed consent processes and data collection methods for the evaluation protocol aimed at increasing the participation rate and ensuring a representative sample. Questionnaire response formats were simplified, and pictures were incorporated to improve student comprehension. Program tracking tools providing process evaluation metrics were collaboratively re-designed to yield higher quality data and greater consistency in collecting metrics across all school sites.

**Conclusions:** The participatory research process employed in this academic-community program partnership led to the successful development of a robust evaluation protocol that will serve specific experiential food education program needs while yielding evidence to inform best practices in experiential food education more broadly.

## Diabetes and obesity risk factors among Pasifika children and adolescents living in Sydney: Baseline assessment from the Pasifika Preventing Diabetes Programme

**Mr. Timothy Low-wah<sup>1</sup>**, Professor David Simmons<sup>1,2,5</sup>, Ms Tayla Thompson<sup>2</sup>, Mrs Makeleta Felilia<sup>4</sup>, Mr Tene Pahulu<sup>5</sup>, Mrs Ronda Thompson<sup>2</sup>, Dr Valentina Naumovski<sup>2</sup>, Assoc. Professor Freya MacMillan<sup>1,3</sup>, Assoc. Professor Kate McBride<sup>1</sup>

<sup>1</sup>Translational Health Research Institute, Western Sydney University, Sydney, Australia, <sup>2</sup>School of Medicine, Western Sydney University, Sydney, Australia, <sup>3</sup>School of Health Sciences, Western Sydney University, Sydney, Australia, <sup>4</sup>Western Sydney Local Health District, Sydney, Australia, <sup>5</sup>South Western Sydney Local Health District, Sydney, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** To assess the prevalence of diabetes and obesity risk factors among Pasifika children and adolescents residing in Sydney in the Pasifika Preventing Diabetes Programme (PPDP): a church-based step-wedge randomised controlled trial of a peer-support/community activation facilitated lifestyle intervention aiming to reduce the risk of type 2 diabetes.

**Methods:** Data were collected from April 2022 to November 2024. Self-reported baseline data on dietary behaviours, physical activity, and screen time were collected via a validated questionnaire. Height, weight, body fat percentage, blood pressure and mid-upper arm circumference (MUAC) measurements were collected (under the parental supervision if aged under 8 years). Overweight and obesity were defined using a combined approach of body mass index (BMI) > 85th percentile, body fat percentage ≥ 20% for boys and ≥ 25% for girls and MUAC in the overweight range 17.2 - 22.4 cm for boys and 18.0 - 23.2 cm for girls.

**Results:** Assessments were collected from 143 Pasifika children and adolescents (range: 4-17 years, mean age 12.0 ± 3.5 years, 48.9% female, 73.7% Tongan) from 24 Pasifika churches. Obesity were present in 65.4% of the cohort, with 81.8% participants having a BMI ≥ 85th percentile. Mean body fat was 33.0±10.9% for boys and 32.9±9.5% for girls. The mean MUAC for boys and girls across age groups were: 4-9 years: 28.6±8.0 cm and 27.2±5.9 cm; 10-14 years: 29.9±7.0 cm and 30.1±7.7 cm; 15-17 years: 31.3±7.6 cm and 26.3±6.0 cm. Overall, 88.2% of participants did not consume the recommended 5 serves of vegetables per day, and 97.2% reported consuming takeaway foods > once per week. None of the children aged 2-4 years met the guideline of >180 mins/day of physical activity, with all reporting >60 mins/day of recreational screen. Among those 5-17 years old, 35% reported >60 mins/day of moderate to vigorous physical activity, and 75% reported >2 hours/day of screen-based entertainment.

**Conclusions:** This study highlights the high rates of overweight and obesity, and suboptimal dietary and sedentary behaviours among Pasifika children and adolescents in Australia. These findings underline the importance of behavioural interventions, such as PPDP, to prevent future diabetes.

# Experiences of Discrimination and Low Food Security: Exploring the Importance of Intersecting Identities

**Dr. Chelsea Singleton<sup>1</sup>**

<sup>1</sup>*Tulane University, New Orleans, USA*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** Prior studies have linked self-reported experiences of discrimination to increased risk of food insecurity in several populations, including women and racially-marginalized individuals. Despite the recent growth in literature on this topic, findings are limited because they have not considered the importance of intersecting identities. This study aimed to apply an intersectional lens to this work by exploring differences in associations between discrimination and low food security status among adults given their number of intersecting identities. By exploring intersecting identities, we will gain new insight into how multiple forms of disadvantage can shape the lived-experiences of an individual.

**Methods:** We conducted an online survey in 2024 that was completed by 1,479 adults living in the U.S. (mean age: 49.9; 51.4% female; 17.4% non-Hispanic Black; 27.5% SNAP participation). Respondents reported their socio-demographics and completed two screeners: the 6-item U.S. Food Security Module and the Everyday Discrimination Scale (short version). We ran a multivariable-adjusted logistic regression model to determine if discrimination score [range: 0 (low) – 25 (high)] was associated with low food security status. We ran stratified models to determine if associations between discrimination score and low food security status varied by the total number of intersecting identities. Identities of interest include female sex, race/ethnicity other than non-Hispanic White,  $\leq$  high school education, and SNAP participation.

**Results/Findings:** Mean discrimination score was 5.17. The multivariable-adjusted regression model revealed that every one unit increase in discrimination score was associated with a 15% increase in odds of low food security (OR: 1.15; 95% CI: 1.13-1.19). Stratified models revealed that the change in odds was 13% among individuals with 0 identities of interest. Respectively, it was 14%, 19%, 20%, and 24% among individuals with 1, 2, 3, and all 4 identities of interest (all  $p < 0.05$ ).

**Conclusions:** Self-reporting experiences of discrimination is associated with low food security status among U.S. adults. Odds of low food security increases as the total number of socially and economically disadvantaged identities an individual possesses increases.

## Parent perceptions, concerns and self-efficacy regarding child eating behaviours related to appetite self-regulation.

**Dr. Georgie Russell<sup>1</sup>**, Professor Carolyn Ross<sup>2</sup>, Dr Tracy J Lee<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University, Burwood (Melbourne), Australia,* <sup>2</sup>*School of Food Science, Washington State University, Pullman, USA*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Effective appetite self-regulation (ASR) involves a balance between avoidant or approach prepotent responses to food and top-down regulatory control. Parent perspectives on child eating behaviours associated with ASR are unknown but are important to understand to identify where to direct support and resources to support ASR development. The purpose of this study was to describe parents' perceptions, concerns and self-efficacy related to children's avoidant, approach and top-down control eating behaviours.

**Methods:** Parents of children aged 2-12 years, residing in Australia, responded to social media advertisements and completed an online survey. The survey included 40 child eating behaviour items, derived from existing questionnaires, that were mapped to food avoidance, food approach and top-down control of eating. Parents rated how true each behaviour was of their child (responses: not at all, somewhat, very), their concern about the behaviour (responses: not at all, somewhat, very) and their perceived self-efficacy in dealing with the behaviour (1-10 rating). Descriptive statistics and kappa analysis were performed.

**Results:** 340 parents (94% mothers) completed the survey, and child mean age was 5.8y (SD2.9, 46.6% boys). The behaviours that parents reported as being most true of their children were related to food rejection, slow speed of eating, emotional undereating and food responsiveness (rated as true or somewhat true by >66% of parents). Least common behaviours were emotional overeating and restraint (rated as true or somewhat true by <10% of parents). Parents were most concerned about food avoidance behaviours (>33% somewhat or very concerned) and least concerned about approach and top-down behaviours. Self-efficacy was high overall (Mean>7) but was lowest for food avoidance behaviours. Agreement between trueness and concern ratings was low-moderate ( $\kappa$  range 0-0.74).

**Conclusions:** According to parents, child food avoidance behaviours occur most commonly and are most concerning. Parents feel lower self-efficacy in dealing with avoidance behaviours than food approach or regulatory behaviours. Assistance and resources are required to help parents manage child food avoidant behaviours to encourage child healthy eating and growth. At the same time there is a need to educate parents about developing healthy food approach and top-down control behaviours in children.

## How do social norms influence the introduction of solid foods: A qualitative study of Australian caregivers

**Miss Amelia Scott<sup>1</sup>**, Dr Sarah Hunter<sup>1</sup>, Dr Rebecca Feo<sup>1</sup>, Professor Rebecca Golley<sup>1</sup>, Dr Brittany Johnson<sup>1</sup>

<sup>1</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Adelaide, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The introduction of solids is recommended at around six months of age when breast milk or infant formula alone are no longer adequate to meet nutritional requirements. This timepoint is critical for growth, development of oral motor skills and the formation of texture and flavour preferences. Caregivers play a key role in shaping a child's early eating experiences, yet adherence to guidelines for introducing solids remains low. Social norms are one factor influencing caregivers' early feeding decisions. Despite evidence of their impact, social norms are considerably underexplored. While prior research has identified social norms existing internationally, it remains unclear which social norms exist in Australia and how they influence caregivers' early feeding behaviours. This study aims to determine how social norms influence the introduction of solids to infants in Australia.

**Methods:** A qualitative cross-sectional analysis of data collected via a longitudinal study of Australian caregivers (n=18). Caregivers of infants around six months of age were recruited via social media. Online individual semi-structured interviews were conducted to explore the social norms influencing caregivers' behaviours when introducing solids. Data were analysed via reflexive thematic analysis.

**Results/findings:** Caregivers reported receiving feeding advice from a range of sources, including older family members, friends, mothers' groups, health professionals and social media. Social norms were described around the first foods to provide, feeding method (such as purees vs. baby-led weaning), timing of introducing solids, mess, family meals and homemade vs. convenience foods. Most caregivers perceived the influence of infant feeding guidelines outweighing that of social norms, however confusing and conflicting information led caregivers to seek advice from social media and personal networks.

**Conclusions:** This novel research provides a nuanced view of the social context of early food provision, demonstrating the existence of social norms influencing the introduction of solids. This study provides the groundwork to understand how feeding practices and social norms evolve overtime, which is crucial for policy-makers to develop more effective stage-specific behaviour change interventions and guidance. Future research should explore how these social norms shift and shape infant feeding behaviours across critical timepoints within the complementary feeding period.

# Associations of Moderate-to-Vigorous Physical Activity and Sedentary Time with Functional Fitness among Older Women in Hong Kong

**Miss Xiao-qi Huang<sup>1</sup>**, Miss Kai-ling Ou<sup>1</sup>, Dr Wendy Yajun Huang<sup>1,2</sup>

<sup>1</sup>Department of Sport, Physical Education and Health, Academy of Wellness and Human Development, Hong Kong Baptist University, Hong Kong, China, <sup>2</sup>Dr Stephen Hui Research Centre for Physical Recreation and Wellness, Hong Kong Baptist University, Hong Kong, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Maintaining functional fitness is essential for healthy aging. This study aimed to examine the associations between moderate-to-vigorous physical activity (MVPA), sedentary time, and functional fitness among older women in Hong Kong.

**Methods:** A cross-sectional study was conducted among 303 community-dwelling women in Hong Kong, with an average age of 69.4 ( $\pm 6.34$ ) years and mean BMI of 23.1 ( $\pm 3.71$ ). Functional fitness was measured using the Senior Fitness Test, which included six components: the 30-second chair stand, 30-second arm curls, back scratch, chair sit-and-reach, 8-foot up-and-go, and 2-minute step test. These tests measured upper and lower body strength, flexibility, aerobic endurance, agility and dynamic balance, respectively. MVPA and sedentary time were evaluated using ActiGraph accelerometers worn for seven consecutive days. Generalized linear models were used to analyse the associations between MVPA, compliance with the physical activity guidelines (MVPA time  $\geq 150$  min/week), sedentary time, and functional fitness.

**Results:** On average, participants engaged in 32.8 minutes of daily MVPA, with 63% meeting the physical activity guidelines. MVPA was positively associated with the Z-scores of most functional fitness test components, including overall functional fitness ( $\beta = 0.007$ ,  $p < 0.001$ ), upper body strength ( $\beta = 0.008$ ,  $p < 0.001$ ), lower body strength ( $\beta = 0.009$ ,  $p < 0.001$ ), upper body flexibility ( $\beta = 0.009$ ,  $p < 0.001$ ), agility and dynamic balance ( $\beta = 0.006$ ,  $p = 0.011$ ), and aerobic endurance ( $\beta = 0.007$ ,  $p = 0.011$ ). No significant associations were found between sedentary time and functional fitness. Meeting the physical activity guidelines was positively associated with the Z-scores of overall functional fitness ( $\beta = 0.234$ ,  $p = 0.005$ ), lower body strength ( $\beta = 0.266$ ,  $p = 0.030$ ), and upper body flexibility ( $\beta = 0.459$ ,  $p < 0.001$ ).

**Conclusion:** Higher MVPA levels are positively associated with functional fitness in older women, while sedentary time has no significant relationship. Meeting physical activity guidelines is crucial for maintaining strength and flexibility in older women.

## Meal boxes as an innovative intervention strategy to enable healthy food choices and a healthier home food environment among low-income families

**Ms. Hanneleen Hoepman<sup>1</sup>**, Ms. Wendy Van Lippevelde<sup>1</sup>, Ms. Anneleen Van Kerckhove<sup>1</sup>  
<sup>1</sup>Ghent University, Ghent, Belgium

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: I. Socio-economic inequalities**

**Background/purpose:** Meal boxes are a relatively new kind of food purchasing option that have been gaining popularity. Meal boxes consist of premeasured food items with an accompanying recipe and are generally delivered to households after ordering online. However, in their current format they aren't an affordable, available, accessible, and acceptable option for low-income consumers due to for example their higher price, complexity of recipes, and extensive use of kitchen utensils and equipment. Given the significant share of low-income individuals/families in Belgium, this is a missed opportunity for meal box suppliers and, more importantly, for low-income consumers. Meal boxes provide a convenient opportunity to try out new healthy and tasty meals using a step-by-step recipe which helps to overcome relevant barriers (such as food literacy, self-efficacy) for healthier food choices among low-income families. The objective of the current study is to assess the needs, preferences, acceptability and willingness to pay among low-income parents regarding meal boxes.

**Method:** Focus groups will be conducted with low-income parents of 6- to 12-year-olds in the first part of 2025. Participants will be recruited via different channels (e.g., community health centres, social organisations) in Flanders. Examples of the topics to be discussed in the focus groups include, but will not be limited to: preferred content/type of the meals, complexity of recipes, available cooking equipment to prepare meals, habits around family meals, willingness to pay for meal boxes, preference for online versus offline ordering and specific delivery channels. The interviews will be audiotaped and transcribed. A qualitative inductive content analysis will be conducted using Nvivo version 12.

**Results & conclusion:** Preliminary results of this study will be presented at the ISBNPA conference in June 2025. The results of this needs assessment among low-income parents regarding meal boxes will provide relevant insights in a consumer group currently overlooked by meal box providers. In a next step, these insights can be further developed in a meal box intervention for this target audience. As such, this research aims to contribute to behavioral nutrition by addressing dietary inequalities and potentially suggesting sustainable strategies to improve health, of low-income families in particular.

# The estimated impact of mandatory front-of-pack nutrition labelling policies on adult obesity prevalence and cardiovascular mortality in England: a modelling study

**Dr. Rebecca Evans<sup>1</sup>**, Professor Martin O'Flaherty<sup>1</sup>, Dr I Gusti Ngurah Edi Putra<sup>1</sup>, Dr Christodoulos Kypridemos<sup>1</sup>, Professor Eric Robinson<sup>1</sup>, Dr Zoé Colombet<sup>1</sup>

<sup>1</sup>University of Liverpool, Liverpool, United Kingdom

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Since 2013, industry-endorsed front-of-pack traffic light labels have been implemented voluntarily on packaged food in the UK. The UK Government is now considering alternative labelling approaches which may be more effective, such as Chile's mandatory nutrient warning labels. The primary aim of this study was to model the likely impact of implementing mandatory front-of-pack nutrition labels in England on energy intake and consequent population-level obesity, and, secondarily, cardiovascular disease (CVD) mortality.

**Methods:** A microsimulation model (2024-2043) was built to estimate the impact of changing front-of-pack nutrition labels in England. The two main policy scenarios tested were mandatory implementation of (i) traffic light labels and (ii) nutrient warning labels. For each scenario, the impact of the policy through assumed changes in energy intake due to consumer behaviour change and reformulation was modelled. The main outcome measures were change in obesity prevalence (%) and CVD deaths prevented or postponed.

**Results:** Compared to the baseline scenario (current voluntary implementation of traffic light labelling), mandatory implementation of traffic light labelling was estimated to reduce obesity prevalence in England by 2.28% (95% UI -4.06 to -0.96) and prevent or postpone 17000 (95% UI 4700 to 48000) CVD deaths. Mandatory implementation of nutrient warning labelling was estimated to have a larger impact; a 3.68% (95% UI -9.94 to -0.18) reduction in obesity prevalence and the prevention/postponement of 29000 (95% UI 1200 to 110000) CVD deaths.

**Conclusions:** This work offers the first modelled estimation of the impact of introducing mandatory front-of-pack nutrition labels on health outcomes in the adult population in England. Findings suggest that mandatory implementation of nutrient warning labels would reduce rates of obesity and CVD deaths, compared to current voluntary or mandatory implementation of traffic light labelling, and should therefore be considered by the UK government.

## Children's Health Behaviors Vary by Social Determinants of Health

**Mr. Paul Son**<sup>1</sup>, Mr. Yuxin Nie<sup>1</sup>, she, her Qiaoyin Tan<sup>1</sup>, Dr. Amanda Staiano<sup>2</sup>, Dr. Fahui Wang<sup>3</sup>, Dr. Gang Hu<sup>4</sup>, MD Stewart Gordon<sup>5</sup>, she, her Peyton Murray<sup>2</sup>, Mr. Cehong Luo<sup>3</sup>, she, her Yutian Zeng<sup>3</sup>, Dr. Renee Underwood<sup>2,6</sup>, Dr. Senlin Chen<sup>1</sup>

<sup>1</sup>*School of Kinesiology, Louisiana State University, Baton Rouge, USA*, <sup>2</sup>*Pediatric Obesity and Health Behavior Laboratory, Pennington Biomedical Research Center, Baton Rouge, USA*, <sup>3</sup>*Department of Geography & Anthropology, Louisiana State University, Baton Rouge, USA*, <sup>4</sup>*Chronic Disease Epidemiology Laboratory, Pennington Biomedical Research Center, Baton Rouge, USA*, <sup>5</sup>*Louisiana Healthcare Connections, Baton Rouge, USA*, <sup>6</sup>*Department of Kinesiology and Health Studies, Southeastern Louisiana University, Hammond, USA*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Social determinants of health (SDOHs) may affect children's health behaviors including physical activity, screen time, sleep, and dietary intake. Failing to meet the recommended levels of health behaviors has a negative effect on children's health. Therefore, this study aimed to explore the relationship between four health behaviors and key social determinants of health (SDOHs) in children from under-resourced communities.

**Methods:** Following a stratified sampling strategy, parent proxies (N = 311) completed an online survey to report their children's (5-12 years old) health behaviors (i.e., physical activity, screen time, sleep, and diet), height and weight to categorize weight status, and SDOHs including socioeconomic status (SES; area deprivation index [ADI], household income), living conditions, household chaos, and food insecurity. The sample was mostly eligible for or enrolled in Medicaid (i.e. a public insurance coverage plan for low-income residents) and African Americans. The data were screened and analyzed using descriptive statistics and canonical and bivariate correlations. The health behaviors were cross-sectionally compared by SDOHs and weight status.

**Results/Findings:** Participants with overweight or obesity [OWOB] engaged in greater screen time than those with normal weight (NW). Health behaviors (i.e., physical activity, screen time, sleep, and diet) were more favorable among the higher SES group. SDOHs (as a canonical variant) correlated with health behaviors (the other canonical variant;  $r = 0.27$ ,  $p < 0.05$ ,  $R^2 = 7.1\%$ ). Of the SDOHs, less household chaos was correlated with more regular bedtime routines in both weight status groups (NW:  $r = -0.19$ ,  $p < 0.05$ ; OWOB:  $r = -0.24$ ,  $p < 0.01$ ), while worse living conditions and greater food insecurity were associated with more screen time and more physical activity ( $r$  ranged from 0.19 to 0.22,  $p < 0.05$ ) in NW participants.

**Conclusions:** The findings revealed cross-sectional differences in health behaviors by SDOHs. SDOHs including household chaos and food insecurity showed weak but significant correlations with health behaviors. Future research on health behavior interventions in children from under-resourced communities should address influential home-based SDOHs (e.g., SES, ADI, living conditions, household chaos, food insecurity) regardless of weight status.

## Healthcare workers' perceptions of climate change, health behaviors, and health impacts

**Dr. John Bucci<sup>1</sup>**

<sup>1</sup>Marine Microverse Institute, Kittery Point, United States, <sup>2</sup>University of New Hampshire, Durham, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Prior research suggests that healthcare workers are well-positioned to serve as trusted messengers who can advocate for climate resilience and planetary health for patients, colleagues, and communities. However, little is known about behavioral healthcare workers' perceptions of the climate crisis and its impacts on the clients and communities they serve. **Methods:** New Hampshire Healthy Climate, a non-profit group based in the U.S., conducted a web-based survey of healthcare workers in 2024. Survey responses (n=355) were analyzed using logistic regression models.

**Results/Findings:** Overall, results suggest that 77.6% of healthcare respondents were very concerned and 14.2% were somewhat concerned about climate change and its impact on mental and physical health outcomes and health behaviors (e.g., physical activity, diet, stress management). In models controlling for political party, nurses and behavioral health professionals such as social workers and psychologists were more likely to provide anticipatory guidance (OR 2.90, p=0.0007; 95% CI 1.56-5.37) and talk to their patients about climate change (OR 2.048, p=0.0188; 95% CI 1.13- 3.72) compared to other types of health professionals. Other sociodemographic covariates (e.g., gender, age, years in practice) were not significantly associated with these outcomes. Healthcare workers also expressed their own challenges related to the climate crisis, including feelings of eco-anxiety, solastalgia, and syndemic stress.

**Conclusions:** The results suggest that tailored education, outreach, supportive communities of practice, and attention to systemic barriers (i.e., time constraints) may be needed for different types of healthcare workers and community contexts. Additionally, findings are being used to develop interventions to address healthcare workers' mental health challenges related to the climate change crisis. For example, forest therapy, blue space (ocean/water-based) interventions, and other nature-based therapeutic interventions are being piloted and evaluated.

## Trends in cooking skills and involvement in food preparation among youth: a multi-country analysis

**Mrs. Sarah Martel**<sup>1</sup>, Virginie Drolet-Labelle<sup>1</sup>, Jean Adams<sup>2</sup>, Christine M. White<sup>3</sup>, David Hammond<sup>3</sup>, Lana Vanderlee<sup>1</sup>

<sup>1</sup>Centre Nutrition, santé et société (NUTRISS), Institut sur la nutrition et les aliments fonctionnels (INAF), Université Laval, Québec, Canada, <sup>2</sup>Centre for Diet & Activity Research, MRC Epidemiology Unit University of Cambridge, , United Kingdom, <sup>3</sup>School of Public Health Sciences, University of Waterloo, , Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Preparing food at home can support healthier dietary patterns. This study aimed to characterize self-reported cooking skills and involvement in food preparation among youth ages 10-17 across 6 countries and examine trends over time.

**Methods:** Annual cross-sectional surveys were completed in 2019-2022 by youth aged 10–17 years (n=43,344) in Australia, Canada, Chile, Mexico, the United Kingdom and the United States, as part of the International Food Policy Study. A cooking skills score was created according to self-reported ability to perform 5 skills: use a knife, use a microwave, use a stove, measure and mix ingredients, and follow a recipe (alone/with help/not at all). Youth also reported frequency of involvement in dinner/evening meal preparation in the last 7 days. Weighted adjusted negative binomial regression models examined associations between year and sociodemographic characteristics with cooking skills scores and frequency of involvement in meal preparation.

**Results:** Overall, 25.4% of youth reported being able to perform all five cooking skills alone and youth were involved in dinner/evening meal preparation on average 2 times in the past 7 days. Youth were more likely to report higher cooking skills scores in 2019 compared to 2021 and 2022, and higher cooking skills in 2020 compared to 2021 ( $p \leq 0.001$  for all). Involvement in meal preparation was lower in 2019 than all other years, and lower in 2020 and 2022 compared to 2021 ( $p \leq 0.001$  for all). Overall, girls, older youth, those from an ethnic majority, and those with greater perceived income adequacy were more likely to have higher cooking skills scores compared to boys, those from an ethnic minority and those with lower income adequacy. Youth from ethnic minorities and girls were more likely to report more frequent involvement in meal preparation than those from majority ethnicity and boys ( $p \leq 0.001$  for all). Differences between countries will be explored.

**Conclusion:** Cooking skills tended to be lower over time; however, involvement in meal preparation was greater over time, and highest in 2021. The findings show the need for programs and policies to increase youth involvement in food preparation and may help target these programs to support healthier food cultures.

# Movement Behaviour and Sleep Patterns in Semi-Urban Nepal: Insights from Accelerometer-Based Assessment

**Mr. Rajan Shrestha<sup>1</sup>**

<sup>1</sup>Nepal Development Society, Bhaktapur, Nepal, <sup>2</sup>Aarhus University, Aarhus C, Denmark

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** N. Systems Science

**Purpose:** This study aimed to assess movement behavior and sleep patterns among adults in semi-urban Nepal using accelerometers, addressing increasing public health concerns regarding inadequate physical activity and poor sleep quality.

**Methods** A cross-sectional study was conducted in Pokhara Metropolitan City, Nepal, involving 436 adults aged 18 to 69 years. Participants wore wrist-worn Axivity AX3 accelerometers for seven consecutive days, with the devices set to a frequency of 100 Hz and a dynamic range of  $\pm 8g$ . Data from 416 participants (95.41% of those enrolled) were considered valid after excluding records with fewer than three wear days or less than 23 hours of wear per day. The activity intensity thresholds for analysis were defined as follows: low physical activity ( $\geq 30$  mg), moderate physical activity ( $\geq 100$  mg), and vigorous physical activity ( $\geq 400$  mg).

**Results** The average age of participants was  $48.5 \pm 12.8$  years. Data revealed that over half of the participants (56.9%) did not meet the World Health Organization's recommendation of 150 minutes of moderate to vigorous physical activity (MVPA) per week. On average, participants engaged in  $29.0 \pm 31.2$  minutes of daily MVPA, with males being more active (37.8 minutes) than females (25.0 minutes). In terms of sleep, participants reported an average of 6.6 hours of sleep per day; however, accelerometer data indicated that the actual sleep duration was lower, averaging 5.6 hours per day. The sleep efficiency was calculated at 79.9%, suggesting suboptimal sleep quality in this population.

**Conclusions** This study highlights a significant prevalence of insufficient physical activity and poor sleep efficiency among the semi-urban population of Nepal. The use of accelerometer-based objective measures revealed discrepancies between perceived and actual levels of activity and sleep. These findings provide valuable insights for designing interventions aimed at improving both physical activity and sleep health. Future initiatives should utilize objective monitoring tools in low-resource settings to address the dual challenges of physical inactivity and inadequate sleep, thereby reducing the risks associated with non-communicable diseases.

## Factors associated with compliance of movement behaviors in Mexican schoolchildren and adolescents: ENSANUT 2022-2023

**Dr. Catalina Medina<sup>1</sup>**, Dr. Alejandra Jáuregui<sup>1</sup>, MPH Nabetse Blas<sup>1</sup>, Dr. Ismael Campos<sup>1</sup>, Dr. Simón Barquera<sup>1</sup>

<sup>1</sup>National Institute of Public Health Mexico, Cuernavaca, Morelos, Mexico

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose.** To examine the correlates of non-compliance with the movement behaviors (MB) recommendations and the association with nutritional status in Mexican school children and adolescents.

**Methods.** Cross-sectional study with data from the National Health and Nutrition Survey 2022-2023 (Ensanut 2022-2023), including MB (physical activity, sedentary behavior, and sleep), sociodemographic characteristics (sex, well-being index, educational level, and rural/urban area) and nutritional status (body mass index). Univariate and multivariate logistic regressions were used.

**Results.** Being female, living in urban areas, and having a higher well-being index were associated with not meeting any of the three MBs recommendations (schoolchildren) or some individual MBs (schoolchildren and adolescents). Not meeting any of the three MB recommendations was associated with higher odds of being overweight or obese in adolescents.

**Conclusion.** Strategies to promote healthy MB with a gender perspective, especially in urban areas and among those with a higher well-being index, should be prioritized.

# A Scoping Review on the Link Between Water Accessibility and Food and Nutrition Security in the United States

**Dr. Bailey Houghtaling**<sup>1,2</sup>, Dr. Gabrielle Bennett<sup>2,3</sup>, Dr. Tessa Englund<sup>4</sup>, Dr. Denise Holston<sup>5</sup>, Dr. Molly Parker<sup>2</sup>, Dr. Elena Serrano<sup>2,3</sup>, Dr. Sarah Misyak<sup>2,3</sup>, Nila Pradhananga<sup>5</sup>, Randa Morgan<sup>6</sup>, Dr. Valisa Hedrick<sup>2</sup>

<sup>1</sup>Center for Nutrition & Health Impact, Omaha, USA, <sup>2</sup>Department of Human Nutrition, Foods, and Exercise, Virginia Tech, Blacksburg, USA, <sup>3</sup>Family Nutrition Program, Department of Human Nutrition, Foods, and Exercise, Virginia Tech, Blacksburg, USA, <sup>4</sup>Thurston Arthritis Research Center, University of North Carolina at Chapel Hill, Chapel Hill, USA, <sup>5</sup>School of Nutrition and Food Sciences, Louisiana State University (LSU) & LSU Agricultural Center, Baton Rouge, USA, <sup>6</sup>Louisiana State University Libraries, Louisiana State University, Baton Rouge, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Access to safe, high quality drinking water is threatened by inadequate public infrastructure and climate change, particularly among United States (U.S.) populations with lower income. The purpose of this scoping review was to explore the link between water accessibility and food and nutrition security in the U.S. to inform research and practice efforts.

**Methods:** A scoping review was conducted following standard JBI Methodology and the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews. Eligibility criteria for the inclusion of grey literature and peer-reviewed sources included: qualitative or quantitative data focused on water availability, affordability, and/or quality in relation to food (food/financial security) and/or nutrition (diet quality) security; based in the U.S., including U.S. territories; centered on populations with lower income; and published in the English language. Key terms (e.g., "drinking water", "water access" AND "food security", "sugary drink\*") were applied to six databases, including PubMed, Medline, CabDirect, Environment Complete, Agricola, and ProQuest. Grey literature searches focused on relevant webpages. Two authors independently reviewed sources for inclusion and extracted data using Microsoft Excel; a third author was engaged to reconcile discrepancies.

**Results:** Sixty sources met the scoping review inclusion criteria. Forty-seven (78%) sources were considered original research. Most sources focused on water accessibility at the household level (n=40, 67%) or in school/university settings (n=14, 23%) regarding residents/communities with lower income. Findings across settings suggested that limited water availability (during natural disasters, lack of indoor plumbing), poor water quality (actual or perceived), and affordability (the cost of bottled water purchases or water bills) were associated with strained household resources/the redirection of finances away from household food purchases, lower water intake, and higher sugar-sweetened beverage intake. Conversely, some intervention studies that improved water accessibility were associated with mitigations to child overweight prevalence, increased water intake, and decreased sugar-sweetened beverage intake.

**Conclusions:** Access to safe, high quality and affordable water is a basic need that threatens actions toward achieving food and nutrition security among U.S. populations with lower income. Strategies to improve access to safe, high quality drinking water and to increase research in this area are warranted.

## Leading with Experience: A community food advocacy training program for individuals with lived experience of nutrition insecurity

**Ms. Gabrielle Young<sup>1</sup>**, Dr Kate Bauer<sup>1</sup>, Dr Jeneen Ali<sup>1</sup>

<sup>1</sup>University of Michigan, Ann Arbor, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Engaging individuals with lived experience of hunger in decision-making is crucial to creating food systems that promote nutrition security. However, these individuals, who have been marginalized and traumatized, require support to be able to “come to the table” to be partners in change. The goal of the Feeding MI Families Community Food Advocacy Fellowship (CFAF) was to empower Michigan parents with lived experience of hunger to advocate for advancing policies and programs that support nutrition security among Michigan’s families.

**Methods:** The development and implementation of CFAF was guided by an Advisory Council of policy and food system leaders. Nineteen Fellows were selected from approximately 100 interested individuals. Fellows participated in a 9-month program that included training webinars led by federal, state, and local experts; group skill-building sessions; and individual career coaching. Biweekly newsletters with additional training and advocacy opportunities were sent to Fellows. Fellows were provided a \$2,500 stipend and financial support for travel and technology. Fellows completed pre- and post-fellowship assessments to evaluate changes in their beliefs and behaviors.

**Results:** On average, Fellows attended 87% of program activities. Fellows’ confidence to engage in diverse advocacy activities increased during the program from 4.1 (3.7) to 4.7 (4.2) on a scale from 1 (not at all confident) to 5 (very confident). After completing the program, Fellows reported engaging in 80% of common advocacy activities, an increase from 67% pre-program. New activities that Fellows engaged in included facilitating roundtable discussions at statewide policy forums, serving as panelists for discussions on nutrition security, and partnering with school districts to support student nutrition. Satisfaction with the program was extremely high, and Fellows continue to engage with each other and request additional training opportunities.

**Conclusions:** Parents with lived experience of nutrition insecurity are eager to use their knowledge to advocate for improved food systems. These individuals benefit from supportive training programs that can increase their skills, confidence, and professional networks. Expansion of advocacy training opportunities and engagement with individuals with lived experience can improve community food policies and programs.

## Substituting sedentary behaviour with standing and stepping in people with osteoarthritis awaiting surgery at a South African public hospital: a compositional analysis of the effect on self-reported joint functional outcomes.

**Dr. Rebecca Meiring<sup>1,4</sup>**, Mr Yusuf Kaoje<sup>4</sup>, Dr Emmanuel Frimpong<sup>3</sup>, Dr Lipalo Mokete<sup>5</sup>, Dr Joanne McVeigh<sup>2,4</sup>

<sup>1</sup>The University of Auckland, Auckland, New Zealand, <sup>2</sup>Curtin University, Perth, Australia, <sup>3</sup>Concordia University, Montreal, Canada, <sup>4</sup>School of Physiology, University of the Witwatersrand, Johannesburg, South Africa, <sup>5</sup>Arthroplasty Unit, Division of Orthopaedic Surgery, Charlotte Maxeke Johannesburg Academic Hospital, Johannesburg, South Africa

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Surgical waiting times for joint replacement in South African public hospitals are significantly long, given the immense pressure the healthcare system is under. This study aimed to determine the effect of reallocating time spent in sedentary behaviour (SB) on functional health outcomes in people with advanced knee or hip osteoarthritis (OA) awaiting joint replacement surgery.

**Methods:** This cross-sectional study of men and women (n=177) between the ages of 45 and 85 years old, diagnosed with primary hip or knee OA, measured physical activity and sedentary behaviour with the activPAL accelerometer 24 hours/day for seven days. The average daily time spent in SB, sleep, standing and moving were obtained. The Knee injury/Hip dysfunction and Osteoarthritis Outcome Score (KOOS/HOOS) assessed self-perceived joint dysfunction across five domains: symptoms, pain, activities of daily living (ADL), sport and recreational activity, and quality of life (QoL) (higher score indicates better self-perceived function). Data were analysed as a composition of 24-hour behaviours.

**Results:** Reallocating 30 min of SB to stepping predicted an increase in the overall HOOS/KOOS score (predicted change: 1.21 (0.03, 2.38), mean (95% CI);  $p < 0.05$ ). Similarly, the reallocation of standing to stepping was associated with an increase in the overall HOOS/KOOS score (change: 1.52 (0.14, 2.90),  $p < 0.05$ ). There was no change in pain score when 30 min SB was reallocated to the other behaviours. Replacing 30 min of SB with stepping, predicted an increase in the symptoms score (1.63 (0.02, 3.24),  $p < 0.05$ ). For both self-reported ADLs and QoL, an increase in score was associated with reallocating 30 min of SB with stepping (ADL: 1.67 (0.18, 3.15); QoL: 1.40 (0.05, 2.76), both  $p < 0.05$ ) and reallocating 30 min of standing with stepping (ADL: 2.05 (0.31, 3.8); QoL: 1.64 (0.04, 3.23), both  $p < 0.05$ ). Reallocation of 30 min of sitting to standing was not associated with a change in functional score.

**Conclusions:** Although intensity was not delineated, the reallocation of sitting to stepping behaviours was associated with improved self-perceived functional scores in people with advanced knee OA awaiting surgery. This study highlights the potential for interventions to support moving more in a population underserved by the public health system.

# Parents' Socioemotional Context and Child Feeding Practices: A Cross-Sectional Study of Parent and Child Disinhibited Eating Behaviours

Chantelle Twynstra<sup>1</sup>, Leah Robinson<sup>1</sup>, Stephanie Saputra<sup>2</sup>, Dr. Georgia Middleton<sup>3</sup>, **Ms. Celeste Bouchaud**<sup>1</sup>, Dr. Tamara Cohen<sup>1</sup>

<sup>1</sup>The University of British Columbia, Vancouver, Canada, <sup>2</sup>Concordia University, Montreal, Canada,

<sup>3</sup>Flinders University, Adelaide, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Childhood is a critical period for the development of lifelong eating behaviours and dietary patterns. Parental disinhibited eating behaviours, defined as emotional overeating and food responsiveness, may impact a child's eating behaviours; however, there is a lack of research that explores this relationship and the additional complexities that could modulate such a relationship, including the socio-emotional feeding environment and parental feeding practices. This study set out to investigate the association between parent and child disinhibited eating behaviours and determine how parental feeding practices and socioemotional context of feeding are associated with and mediate this relationship.

**Methods:** This cross-sectional online study surveyed parents of children aged 5-11 years living in Canada. Parents completed a series of questionnaires, including the Child Feeding Questionnaire (CFQ) and Parent Socioemotional Context of Feeding Questionnaire (PSCFQ), as well as questions regarding disinhibited eating. Data was assessed using correlational and mediational analyses to determine the associations and effects of each individual questionnaire subscale on the relationship between parent and child disinhibited eating.

**Results:** There were 713 parents (92% self-identified as women) who participated in the study. A statistically significant relationship between parent and child disinhibited eating ( $r=0.21$ ,  $p<0.001$ ) was observed. Additionally, certain subscales of the CFQ (perceived parent weight, concerns of child weight, restriction and monitoring) and PSCFQ (coercion and chaos) were positively correlated with disinhibited eating behaviours in children and parents. Most mediational effect sizes were found to be very small ( $r<+/-0.10$ ).

**Conclusion:** Parental disinhibited eating behaviour, in addition to the socioemotional context and parental feeding practices, have the potential to impact the development of disinhibited eating in children. Targeting these factors within nutrition interventions for children may be a way to encourage healthful eating practices. Future research should analyze multiple subscales related to the feeding environment and feeding practices to assess their impact on the relationship between parent and children disinhibited eating, rather than examining them independently. This may provide a greater understanding of the complexity of factors that interact and affect disinhibited eating behaviours in parents and children.

## Quantifying children's exposure to unhealthy food marketing: Updated estimates for the digital age

Mr. Ryan Gage<sup>1</sup>, **Ms. Libby McNaughton**<sup>1</sup>, Dr. Moira Smith<sup>1</sup>, Mr. Marcus Gurtner<sup>1</sup>, Prof. Louise Signal<sup>1</sup>

<sup>1</sup>University of Otago, Wellington, Wellington, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Food marketing has been found to influence children's food preferences, attitudes and dietary behaviours. Comprehensive policies are needed to reduce children's exposure to unhealthy food marketing and in turn prevent rising obesity rates. Insights from the Kids'Cam Project – a wearable camera study of children's environments – suggest that plain packaging and restrictions in settings like schools could substantially and equitably reduce children's exposure to unhealthy food marketing. However, these studies underestimated screen-based exposure and predated the rapid rise in smartphone use. This study aims to provide updated estimates of children's exposure to food marketing in both physical and digital environments, including the contribution of digital exposure to overall exposure. A sub-analysis will examine differences between digital and physical marketing.

**Methods:** Digital exposure data will be sourced from Kids Online Aotearoa, a cross-sectional observational study of 156 children aged 11 to 13 years from the Wellington region. Like its predecessor, Kids'Cam, participant recruitment followed stratified sampling by ethnicity, gender and socioeconomic deprivation to ensure representativeness. Participants used Zoom to record their online activity over four days. Coding will be guided by WHO classifications and will identify content characteristics including product type, contributor and engagement. Daily exposure rates will be calculated and collated with data from the Kids'Cam Project (2014/15) to update estimates of children's overall exposure to food marketing. Sensitivity analysis will explore uncertainties in both datasets, including changes in the physical environment over time and evolving product categories, although these are expected to be minor given limited policy changes in the Wellington region.

**Results:** The results will summarise the extent and nature of children's exposure to unhealthy food marketing online, including its percentage contribution to total exposure. Key differences between digital and physical exposure will be highlighted.

**Conclusions:** Findings will inform policy aimed at reducing children's exposure to unhealthy food marketing across digital and physical environments. Such action is crucial to improve dietary behaviours and reduce rising obesity rates. Addressing the global nature of digital marketing will likely require coordinated action at international, national, and local levels.

## Measuring physical activity and sedentary behaviour in hospitalised older adults: A scoping review of randomised controlled trials

**Dr. Christina Ekegren<sup>1</sup>**, Mr Lane Meyer<sup>1</sup>, Associate Professor Michele Callisaya<sup>1</sup>, Professor Maureen Ashe<sup>2</sup>, Associate Professor Claire Baldwin<sup>3</sup>, Associate Professor Sze-Ee Soh<sup>1</sup>, Professor Dawn Mackey<sup>4</sup>

<sup>1</sup>Monash University, Frankston, Australia, <sup>2</sup>Department of Family Practice, The University of British Columbia, Vancouver, Canada, <sup>3</sup>Caring Futures Institute, College of Nursing and Health Sciences, Flinders University, Adelaide, Australia, <sup>4</sup>Department of Biomedical Physiology and Kinesiology, Simon Fraser University, Burnaby, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** There is growing evidence for the effectiveness of hospital-based movement interventions for improving hospitalisation outcomes, particularly in older adults. However, synthesis of the evidence is currently impeded by a lack of guidance on the measurement of movement behaviours in hospital settings. A critical first step in developing guidance on outcomes and measurement tools for future trials is to review existing literature to determine which outcomes and tools have been included in previous trials. Therefore, the aim of this study was to identify physical activity and sedentary behaviour outcomes, measurement tools and protocols used, and data integrity in randomised controlled trials (RCTs) of hospital-based movement interventions in middle aged and older adults.

**Methods:** Four databases were searched for RCTs published between 2000 and 2023 evaluating interventions and measuring outcomes related to movement behaviour (physical activity and/or sedentary behaviour) of adults (mean or median age >50 years) during an acute or sub-acute inpatient admission. Data extracted included movement behaviour outcomes, measurement tools/devices, measurement protocols, and the integrity of movement data. Data were reported and synthesised using frequencies/percentages and via narrative summaries.

**Results:** After screening (n=18,018), 34 studies were included. The majority of studies were conducted in subacute rehabilitation (n=13) and excluded participants with cognitive impairment (n=27) and/or mobility impairment (n=24). A total of 17 different movement behaviour outcomes were measured, with step count measured in 22 studies. Most studies (n=30) measured movement behaviours using a wearable device. There were 43 unique measurement devices/tools used across studies, with significant heterogeneity observed in protocols for their use.

**Conclusions:** Given the substantial heterogeneity of movement behaviour outcomes, and measurement tools and protocols used, there is an urgent need to develop evidence-based guidelines for measuring movement behaviours in hospital-based trials. Without this, synthesis of clinical trial outcomes and subsequent implementation of effective interventions for improving hospital-based movement behaviours will remain lacking.

# The Application of a Participatory Simulation Game (FeedQuest) to Real Life and Questionnaire Measures of Parental Feeding Practices

**Mr. Luke Pullar<sup>1,2</sup>**, Professor Jacqueline Blissett<sup>1</sup>, Dr Alison Spence<sup>2</sup>, Dr Alissa Burnett<sup>2</sup>, Dr Megan Jarman<sup>1</sup>

<sup>1</sup>College of Health and Life Sciences, Aston University, Birmingham, United Kingdom, <sup>2</sup>School of Exercise and Nutrition, Deakin University, Geelong, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: N. Systems Science**

**Purpose:** FeedQuest is a participatory simulation game in the early stages of development, that aims to capture complex interactions during mealtimes between parent and child, and their influences on vegetable consumption. This study aims to explore the different tools used to collect information on feeding practices by examining the level of agreement between simulated feeding practices in FeedQuest, feeding practices used by parents in a real mealtime, and parent self-reported use of feeding practices.

**Method:** In this preliminary analysis, 37 parents from the UK (36 mothers, mean age = 36.1 years) with a child aged 3-7 years were asked to complete a background questionnaire and the Comprehensive Feeding Practices Questionnaire (CFPQ). Participants then played FeedQuest and simulated what they deemed to be a 'typical' evening mealtime. Following this, participants were asked to video-record a real mealtime at home with a target vegetable. The three feeding practices (food rewards, pressure, modelling) possible in FeedQuest were assessed using the CFPQ and were also coded in the real mealtimes. The agreement between the feeding practices in FeedQuest and those observed in the real mealtime recording (Kappa statistics); and between the feeding practices in FeedQuest and the parent self-reported feeding practices from the CFPQ (point biserial correlations) were assessed.

**Results:** Twenty-three (62.2%) of the 37 parents played the game and sent a video-recorded mealtime.

Results to date indicate that food rewards ( $\kappa = 0.456$ ,  $p < 0.05$ ) and pressure ( $\kappa = 0.481$ ,  $p < 0.05$ ) had moderate levels of agreement between the use of feeding practices in FeedQuest and the feeding practices observed in the real mealtime recording, while modelling ( $\kappa = 0.378$ ,  $p < 0.05$ ) demonstrated a fair level of agreement. Of the feeding practices examined between the CFPQ and FeedQuest, only food rewards ( $r = 0.327$ ,  $p < 0.05$ ) demonstrated a significant relationship.

**Conclusions:** This study provides novel information about the performance of different feeding practice measures, and suggests that FeedQuest can be used as a tool to collect complex data to understand the feeding practices parents use at mealtimes to support their child to eat vegetables.

# Physical Activity, Sedentary Behavior, and Physical Literacy of Children in Demonstration Schools in Bangkok, Thailand

**Dr. Raweewan Maphong<sup>1</sup>**, Dr. Sonthaya Sriramatr<sup>2</sup>

<sup>1</sup>Chulalongkorn University, Bangkok, Thailand, <sup>2</sup>Srinakharinwirot University, Bangkok, Thailand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** This study investigates physical literacy (PL), active play (AP), physical activity (PA), and sedentary behavior (SB) among children aged 10–12 years in two demonstration schools in Bangkok. The objectives were to assess PL, AP, PA, and SB levels and examine the relationships between these variables.

**Methods:** A cross-sectional study including 97 participants was conducted, consisting of healthy children aged 10 to 12 years. The assessment measures comprised the Thai Physical Activity Children Survey (TPACS) for evaluating PA, AP, and SB levels, with the CAPL-2 Questionnaire and physical competency tests (PACER, CAMSA, and plank) for assessing PL. Data were analyzed using descriptive statistics and Pearson correlations.

**Results:** The findings indicated that 9.28% of participants were categorized as "Beginner," 82.47% as "Progression," and 8.25% as "Achieving" in PL, with none reaching the "Excellence" level. The mean PL score was 42.85 (SD = 16.40). A significant positive correlation was observed between PL and AP ( $r = 0.30$ ,  $p < 0.05$ ), however no significant relationships were detected between PL and PA or SB ( $p > 0.05$ ).

**Conclusions:** The study revealed that most children were categorized under "Progression" for PL, with no participants reaching the "Excellence" level, suggesting substantial potential for improvement. The positive correlation between PL and AP emphasizes the importance of unstructured, informal activities in fostering PL. However, the absence of significant associations between PL and PA or SB suggests that additional strategies are needed to integrate PL into a broader range of active behaviors. These results highlight the critical need for targeted interventions in both family and school environments to strengthen PL and encourage a variety of PA in children.

# Parents of young children and their experiences and perspectives of behavioural interventions targeting diet and physical activity: a qualitative systematic review

**Miss Helen Little**<sup>1,2</sup>, Dr Sarah Shaw<sup>2</sup>, Mr Yusuf Adia<sup>2</sup>, Miss Samira Hiesl<sup>1,3</sup>, Professor Nicola Heslehurst<sup>1,4</sup>, Professor Ruth Kipping<sup>1,5</sup>, Dr Kathryn Hesketh<sup>1,2</sup>

<sup>1</sup>National Institute for Health and Care Research School for Public Health Research (NIHR SPHR) , , United Kingdom , <sup>2</sup>University of Cambridge , Cambridge, United Kingdom , <sup>3</sup>Imperial College London , London , United Kingdom , <sup>4</sup>Newcastle University , Newcastle Upon Tyne , United Kingdom , <sup>5</sup>University of Bristol , Bristol , United Kingdom

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Parents' diet and physical activity (PA) behaviours are shaped by biological, social, emotional, and physical changes experienced during early parenthood; evidence is scarce on how best to support diet and PA in parents of young children. This qualitative systematic review aimed to understand the experiences and perspectives of parents of 0-5-year-olds participating in interventions targeting diet and/or PA behaviours.

**Methods:** Six electronic databases (MEDLINE, EMBASE, APA PsycINFO, The Cochrane Library, Applied Social Sciences Index and Abstracts, and Web of Science) were systematically searched to April 2024. Citation chaining, screening, data extraction and quality appraisal were conducted in duplicate. Inclusion criteria were structured around the PIOS framework:

**Population:** parents of children aged 0-5 years; **Intervention:** behavioural interventions targeting diet and/or PA; **Outcomes:** parents' experiences and perspectives; **Study design:** qualitative methodologies in high income settings. Framework synthesis was used to provide higher-order knowledge and richer understanding of parents' experiences and perspectives of diet and PA behavioural interventions across studies.

**Results:** Of 9504 studies screened, 116 full texts were assessed, and 13 papers were included, conducted in North America (n=7), Europe (n=3), and Australia (n=3). Interventions targeted diet (n=5), PA (n=4) or both (n=4); three studies focussed on low-income families only. Higher-order knowledge was consistent across diet and PA intervention components, with preference for flexible delivery, group-based and social activities, and easy to use/tailored digital tools. Preliminary analysis suggested parents' experiences centred around concepts of: (1) opportunity for parents to involve and bond with their children over healthy foods; (2) motivations to improve healthy behaviours; (3) barriers to positive behaviour change (including time, tiredness, and financial costs); and (4) PA as a chance to prioritise parents' own health.

**Conclusions:** Future interventions may benefit from greater input from lower income families and provide opportunities for social connection. They should be delivered flexibly and at low-cost to participants. Dietary interventions may better motivate behaviour change by involving the whole family, whereas PA interventions afford parents the opportunity to prioritise their own health. This evidence can help to inform future behaviour-change interventions, better tailoring them to the needs of parents during early parenthood.

# Associations between built environmental characteristics with NCDs and multi-morbidity in older adults: a systematic review

**Miss Mette van der Linden**<sup>1,2</sup>, Linda J. Schoonmade<sup>3</sup>, Paul Meijer<sup>4</sup>, Dr. Bram J. Berntzen<sup>1,2</sup>, Dr. Jeroen Lakerveld<sup>1,2</sup>

<sup>1</sup>Amsterdam University Medical Centre, Department of Epidemiology and Data Science, Amsterdam, the Netherlands, <sup>2</sup>Amsterdam Public Health, Health Behaviours and Chronic Diseases, Amsterdam, the Netherlands, <sup>3</sup>Vrije Universiteit Amsterdam, Medical Library, Amsterdam, the Netherlands, <sup>4</sup>Department of Global Public Health & Bioethics, Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht, the Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

## **SIG - Primary Choice: A. Ageing**

**Purpose:** The proportion of older adults in Europe is increasing rapidly. This demographic shift is accompanied by an increase in the prevalence of non-communicable diseases (NCDs) and multi-morbidity, which places a significant burden on individuals and healthcare systems. Features of the built environment can influence the development of chronic diseases in later life and may therefore represent an important target for preventive strategies. This study systematically reviewed the empirical evidence on the association between built environmental characteristics with NCDs and multi-morbidity in community-dwelling older adults.

**Methods:** We searched Medline, Embase, Web of Science, and Scopus for studies published between January 1, 2000 and July 31, 2024. We included studies conducted in urban settings among adults aged 55+ years from high-income countries, while excluding those using subjective measures of the built environment. Titles and abstracts were screened using ASReview. In accordance with the study protocol published in PROSPERO (CRD42024571957), a minimum of two independent reviewers will conduct the full-text screening, data extraction, and risk of bias assessment. Upon completion, a narrative synthesis of the evidence will be provided, structured by domain of exposure.

**Results:** The literature search yielded a total of 48,874 studies, of which 146 were selected for full-text screening. A preliminary analysis of the studies included thus far (n=41), shows that most studies were conducted in the United States, Europe, and Asia. Half of the studies employed a cross-sectional design, slightly fewer used a longitudinal design, and only a few were case-control studies. The most frequently studied exposures were attributes related to physical infrastructure (e.g., walkability and street connectivity) and green spaces. There was substantial heterogeneity in measurement methods. The most frequently studied health outcomes were mental health conditions, type 2 diabetes, and cardiovascular diseases. Statistically significant associations between the built environment and health outcomes were found in most studies, generally in expected directions.

**Conclusion:** Preliminary evidence suggests an association between certain built environment characteristics and health outcomes in community-dwelling older adults. These provide entry points for upstream preventive approaches and for the identification or heatmapping of areas that may facilitate or impede health in old age.

## The associations between toddler's physical activity, sleep, self-regulation and different domains of self-regulation

**Mrs. Abhigale D'cruz<sup>1</sup>**, Dr. Katherine Downing<sup>1</sup>, Dr. Simone Verswijveren<sup>1</sup>, Prof. Kylie Hesketh<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University, Melbourne, Australia*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Self-regulation is the ability to manage one's cognitions, emotions and behaviours and is important for long-term physical and psychological wellbeing. Research in older children suggests a potential beneficial association between physical activity (PA), sleep, and self-regulation. Findings also indicate that PA and sleep may be differently associated with the different domains of self-regulation. However, evidence for these associations remain unclear in toddlerhood, a crucial period for the development of PA, sleep and self-regulation skills. This cross-sectional study examined the associations between toddlers' PA, sleep, global self-regulation and the individual domains of self-regulation (i.e., cognitive, emotional, and behavioural).

**Methods:** Toddlers' total physical activity (TPA) and moderate- to vigorous-intensity (MVPA) were assessed via a 2-item parent report scale and Early Years Physical Activity Questionnaire, respectively. Daily nighttime sleep and nap duration were assessed via parent report and summed to calculate total sleep duration. The Child Sleep Habits Questionnaire and Brief Infant Sleep Questionnaire-revised were used to assess sleep behaviours (bedtime resistance, sleep-onset-delay, sleep duration, nighttime waking and bedtime routine). Self-regulation was assessed using the Early Years Toolbox – Child Self-regulation and Behaviour Questionnaire. A series of linear regression models were used to examine the associations of PA and sleep with global self-regulation and the individual domains of self-regulation, adjusting for age, sex, and parental education.

**Results:** Findings from 160 toddlers ( $2.1 \pm .5$ yr.) suggest that neither TPA, nighttime sleep, naps nor sleep behaviours were associated with global self-regulation or the individual domains of self-regulation. MVPA was associated with global self-regulation ( $B=3.60$ ;  $CI_{95} 0.61, 6.60$ ) and cognitive self-regulation ( $B=11.24$ ;  $CI_{95} 3.33, 19.15$ ), but not the other domains of self-regulation.

**Conclusion:** We found mostly null associations between the constructs despite studies in older children suggesting positive associations. It is possible that the influence of PA and sleep on self-regulation becomes perceptible only as children grow older, and toddlers might be too young for any observable impact.

# The Dual Influence of Family Dinners and Digital Dependence on Mental Health of 8-10-Year-Old Children

博士。 **Fan Zhu**, Professor Zhonghui He, Professor Ma Yinghua<sup>2</sup>

<sup>1</sup>Peking University, Beijing, 中国, <sup>2</sup>Institute of Child and Adolescent Health, Peking University, ,

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The dynamic interplay between familial activity and electronic device dependence has garnered considerable attention in modern discussions pertaining to pediatric mental health. This investigation endeavors to elucidate the associations among family meal frequency, electronic device dependence, and various facets of mental health among children aged 8-10 years in Beijing.

**Methods:** A total of 1,394 children aged 8-10 years were recruited from four primary schools in Beijing using a cluster sampling method. The Strengths and Difficulties Questionnaire (SDQ) was utilized to assess mental health status, including emotional symptoms, ADHD, conduct problems, and peer relationship issues. The CY-PSPP (categorized into sport, body, condition, strong, and physical self-worth) and Rosenberg Self-Esteem Scale were used to measure children's self-esteem and physical self-esteem. Frequency of family meals and electronic device dependence were evaluated through a series of questionnaire items. Data were analyzed using R 4.4.2, employing regression analysis and structural equation modeling (SEM) with reverse mediation to explore the relationships between mental health, family mealtime frequency, and electronic device dependence.

**RESULTS:** After adjusting for socioeconomic status, BMI, and other confounding, the odds ratios (ORs) for the lack of family meals on emotional symptoms, peer relationships, self-esteem, body, sport, and condition were 1.42, 1.77, 1.43, 1.38, 1.56, and 1.78, respectively ( $P < 0.05$ ). The ORs for electronic device dependence on emotional symptoms, ADHD, self-esteem, body, strong, PSW, sport, and condition were 1.35, 1.52, 2.11, 1.80, 1.86, 1.80, 2.27, and 2.17, respectively ( $P < 0.05$ ). Subgroup analysis by gender revealed significant differences in self-esteem, with boys exhibiting higher OR values for both lack of family meals and electronic device dependence compared to girls ( $P < 0.05$ ). Mediation analysis revealed that the direct effect of family mealtime frequency accounted for 9.44% of the mediation effect between electronic device dependence and self-esteem ( $P < 0.05$ ).

**Conclusion:** This study underscores the critical importance of family meals and electronic device dependence on children's mental health with various aspects. Boys were found to be more susceptible to these factors compared to girls, suggesting the necessity for gender-specific interventions to mitigate these impacts effectively.

## Participatory co-design of physical activity and unhealthy eating interventions for urban adolescents in South Africa

**Dr. Fevisayo Wayas<sup>1</sup>**, Prof Maylene Shung-King, Dr Louise Foley, Prof Estelle V Lambert

<sup>1</sup>Research Centre for Health through Physical Activity, Lifestyle and Sport (HPALS), Division of Physiological Sciences, Department of Human Biology, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, <sup>2</sup>Health Policy and Systems Division, School of Public Health and Family Medicine, Faculty of Health Sciences, Cape Town, South Africa, <sup>3</sup>MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: K. Participatory Research in Health Promotion**

Background and

Purpose: Obesity in children and adolescents is a global health problem that is on the rise in low- and middle-income countries (LMICs). Overweight and obesity have been linked to urbanisation and behavioural and health-related risk factors including physical inactivity and unhealthy eating. This study aimed to identify contextual drivers of physical inactivity in adolescents' immediate environments in Cape Town, South Africa and their prioritised and feasible evidence-based interventions.

Methods This study utilized a participatory mixed-method three-phase process. In phase 1 we identified contextual drivers of physical inactivity and unhealthy diet among school-going adolescents in their immediate environments via secondary analysis of qualitative data from 45 adolescents and 36 caregivers in Cape Town. In phase 2 we identified and matched interventions, some evidence-based interventions from the MOVING and NOURISHING framework related to these drivers onto the Behaviour Change Wheel (BCW). In phase 3 using modified Delphi procedures, an expert panel (>N= 23) of parents, academia, adolescents, policymakers, school staff and civil societies prioritized interventions in terms of their importance and feasibility.

Results Findings highlighted the contextual barriers of physical activity and unhealthy eating in adolescents such as lack of structured competitive sports in schools and physical education in schools, stigma associated with school feeding schemes and neighbourhood safety concerns impacting healthy eating and physical activity. The highest-ranked intervention in Cape Town was to “develop and implement guidelines for the school food environment” and “provide inclusive and equitable opportunities for intra- and inter-school sports competitions and physical activity related events” for healthy eating and physical activity respectively. Stakeholders identified the school environment as a viable platform for interventions and education was a prioritised intervention to promote healthy eating and physical activity in adolescents.

Conclusion It was possible, using a modified Delphi approach, to provide an evidence-based, actionable, prioritised list of interventions from relevant stakeholders to promote physical activity and healthy eating in adolescents in Cape Town, South Africa. School-based interventions should be considered as a viable platform for feasible, effective, and sustainable interventions to promote healthy and active living in adolescents in Cape Town, South Africa.

# Physical inactivity among adults in Qatar: Identifying 'at-risk' sub-groups in a representative cohort of the Qatar Biobank

**Dr. Lina Majed<sup>1</sup>**, Dr. Khoulood Mtibaa<sup>1</sup>, Dr. Ameera Almarkhi<sup>1</sup>, Dr. Marilyn Lock<sup>1</sup>

<sup>1</sup>Hamad Bin Khalifa University, Doha, Qatar

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** This study examined physical activity (PA) levels in a representative sample of the adults living in Qatar and investigated demographic (i.e., age, sex, nationality), anthropometric [i.e., body mass index (BMI)], socio-economic (i.e., educational level, employment status, monthly income), and health-related (i.e., presence and number of main chronic diseases, daily screen time, occupational PA, smoking) predictors of physical inactivity. Findings will allow the identification of specific sub-groups who are at increased risk of developing chronic diseases due to insufficient PA.

**Methods:** This study used a random cross-sectional sample of 5,999 adults (43.1% women, age range: 18-82y) from the Qatar Biobank cohort. Participants completed several questionnaires including the short form of the International Physical Activity Questionnaire. A binary logistic regression examined significant predictors of physical inactivity (i.e., not meeting PA guidelines). A multivariate analysis of variance (MANOVA) further tested sex and age interactions on weekly time spent in walking, moderate (MPA) and vigorous PA (VPA).

**Results:** Overall, 76.3% of the population were physically inactive. The regression model was statistically significant [ $\chi^2(33)=351.33$ ,  $p<0.001$ ], explained 11.2% of the variance in PA status, and correctly classified 74.4% of cases. Men were 1.8 times more likely to be classified as physically active as compared to women. Aging was associated with an increased likelihood of physical inactivity [ $\chi^2(4)=30.8$ ,  $p<0.001$ ]. BMI [ $\chi^2(1)=22.1$ ,  $p<0.001$ ], daily screen time [ $\chi^2(4)=17.2$ ,  $p=0.002$ ], occupational PA [ $\chi^2(3)=65.6$ ,  $p<0.001$ ], educational level [ $\chi^2(4)=35.7$ ,  $p<0.001$ ], monthly income [ $\chi^2(4)=12.2$ ,  $p=0.03$ ] and smoking [ $\chi^2(2)=6.5$ ,  $p=0.04$ ] were all significant predictors of physical inactivity. MANOVAs indicated a significant interaction between sex and age [ $F(12,15462)=19.84$ ,  $\eta^2=0.01$ ,  $p<0.001$ ] on the studied PA variables. Men presented significant declines in MPA and VPA with age and a significant increase in walking after the age of 40-49y. Women had no significant changes in average MPA (18-29 years: 40.92 min/week) and VPA (18-29 years: 33.04 min/week) with age, while a decline in walking was observed from 18-29y to 40-49y.

**Conclusions:** Findings highlight the need for targeted interventions to promote PA, particularly among older adults and women presenting an increased risk, as well as addressing modifiable risk factors such as obesity, screen time, and smoking.

## Factors influencing use and choice of Core Outcome Sets and Outcome Measurement Instruments in trials of interventions to prevent childhood obesity.

Ms. Eibhlín Looney<sup>1</sup>, Ms. Moira Duffy<sup>1</sup>, **Miss Dimity Dutch<sup>2</sup>**, Dr Darren Dahly<sup>3</sup>, Dr Karen Matvienko-Sikar<sup>1</sup>, on behalf of the SCOPE project team

<sup>1</sup>School of Public Health, University College Cork, Cork, Ireland, <sup>2</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Adelaide, Australia, <sup>3</sup>HRB Clinical Research Facility Cork, School of Public Health, University College Cork, Cork, Ireland

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Childhood obesity is a significant public health challenge. Standardised measurement of intervention outcomes using Core Outcome Sets (COS) and standardised Outcome Measurement Instruments (OMIs) can help identify effective preventive interventions. Two COS for childhood obesity prevention have been developed; standardised sets of OMIs for these COS are in development. To support their use, COS and OMIs must be acceptable to intervention trialists, however understanding of trialists perspectives is limited. This study examined 1)trialists' awareness and attitudes towards existing COS and factors influencing their use, 2)the characteristics of OMIs that trialists currently use, and 3)how trialists choose OMIs and factors influencing those choices.

**Methods:** An online, cross-sectional international survey was conducted of trialists (n=46) involved in conducting and/or designing trials of interventions to prevent childhood obesity and/or promote childhood obesity related health behaviours in children 0-5 years. Closed-ended questions included trialist characteristics, awareness of existing COS and factors influencing their use, characteristics of OMIs, and factors influencing how trialists choose OMIs. Quantitative descriptive analysis were conducted.

**Results/findings:** Seventy percent of respondents were familiar with COS in general; 84% of whom were familiar with one or both childhood obesity prevention COS. Existing questionnaires/surveys(83%), adapted questionnaires/surveys(80%), and anthropometric measures(80%) were the most commonly reported types of OMIs trialists currently use. How trialists prefer to administer OMIs is influenced by the OMI type, e.g., trialists favour administering anthropometric measures in-person, and questionnaires/surveys electronically. The ten most important factors for trialists when choosing OMIs are: 1)length of time to complete, 2)content validity, 3)OMI responsiveness, 4)relevance for population, 5)ease of administration, 6)reliability, 7)acceptability to participants, 8)number of items, 9)participant comprehensibility, and 10)criterion validity.

**Conclusions:** COS and standardised OMIs can reduce research waste and outcome heterogeneity, and improve evidence syntheses. Findings indicate that standardisation of outcomes and OMIs must consider trialist reported factors related to ease/feasibility of OMI use, along with key measurement properties such as reliability and validity. In addition, use of COS and OMIs are likely influenced by trial-related factors. Consideration of such factors can inform approaches to maximising use of COS and standardised OMI sets in future trials of childhood obesity prevention interventions.

## Using the Veggie Meter® to Objectively Assess Fruit and Vegetable Intake in Preschool and Elementary School Teachers in Houston, Texas

**Ms. Mackenzie Senn**<sup>1</sup>, Dr. Nalini Ranjit<sup>2</sup>, Ms. Angela Zieba<sup>1</sup>, Dr. Ru-Jye (Lindi) Chuang<sup>1</sup>, Dr. Courtney Byrd-Williams<sup>2</sup>, Ms. Jill Cox<sup>3</sup>, Ms. Katherine French<sup>3</sup>, Ms. Azar Gaminian<sup>4</sup>, Mr. Mike Pomeroy<sup>4</sup>, Dr. Shreela Sharma<sup>1</sup>

<sup>1</sup>UTHealth Houston School of Public Health, Houston, USA, <sup>2</sup>UTHealth Houston School of Public Health in Austin, Austin, USA, <sup>3</sup>Penn State University, State College, USA, <sup>4</sup>Brighter Bites, Houston, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** While objective assessment is preferable to self-report especially for evaluating effectiveness of interventions. However, there are few objective measures of fruit and vegetable (FV) intake. Veggie Meter® (VM), a reflection spectroscopy device, is a non-invasive objective measure used to approximate fruit and vegetable intake. The purpose of our study was to present baseline data and examine the cross-sectional association of Veggie Meter® (VM) assessed skin carotenoid levels with self-reported FV intake among preschool and elementary school teachers participating in a nutrition intervention research study.

**Methods:** During the 2022-2023 school year, baseline data was obtained from 348 teachers participating in Nurturing Healthy Teachers evaluation study, a nutrition intervention to improve food security and diet quality among elementary teachers. VM was used to assess skin carotenoids and FV intake was assessed with the 2009–2010 NHANES Dietary Screener Questionnaire. Descriptive statistics and correlation were used to determine associations between FV intake and VM scores at baseline.

**Results/findings:** Most of the participants were female, identified as Hispanic, were highly educated, and had a mean age of 43 years (n=348). The mean VM score was 224±82. (range: 48-572). The mean VM scores did not differ by age, gender, ethnicity, education, or food security status, but did differ by BMI ( $p<0.0001$ ). However, the VM meter score did differ by age, ethnicity, education, and BMI depending on if VM score was above or below 250. Baseline mean fruit consumption was 0.82±0.35 servings/day and mean total vegetable consumption was 1.43±0.27 servings/day. Finally, a weak statistically, but significant correlation was found between fruit, vegetable, and total fruit and vegetable intake with VM scores (fruit:  $r=0.25$ ,  $p<0.0001$ ; vegetable:  $r=0.28$ ,  $p<0.0001$ ; total FV  $r=0.31$ ,  $p<0.0001$ ). When examining the mean FV intake using four VM score quartile-based categories, higher consumption of FV was observed in teachers with high VM scores.

**Conclusions:** Findings illustrate how the VM effectively captures FV intake among teachers, and appears to covary with self-report FM measures, offering a suitable, quick alternative to FV intake, that can be effectively utilized in population level studies.

# Participants' Perceptions of SNAP Emergency Allotment Termination: Implications on Food Choices, Financial Stability, and Well-being in the Double Up Food Bucks Oregon Program

**Ms. Maadhanki Kasimanickam<sup>1</sup>**, Dr. Katherine Speirs<sup>2</sup>, Dr. Ashley Munger<sup>3</sup>, Ms. Zoe Teigen<sup>1</sup>, Mr. Tyler Quillin<sup>1</sup>, Ms. Mallory Watson<sup>4</sup>, Mr. Joel Caris<sup>4</sup>, Ms. Rachael Ward<sup>4</sup>, Dr. Stephanie Grutzmacher<sup>2</sup>

<sup>1</sup>Oregon State University, Corvallis, United States of America, <sup>2</sup>University of Arizona, Tucson, United States of America, <sup>3</sup>California State University - Los Angeles, Los Angeles, United States of America,

<sup>4</sup>Farmers Market Fund, Portland, United States of America

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** The Supplemental Nutrition Assistance Program (SNAP), the largest federal nutrition assistance program in the United States, provides monthly benefits to eligible low-income households for food purchases. The SNAP Emergency Allotment (EA), introduced in March 2020, increased these benefits during the COVID-19 pandemic. However, its termination in March 2023 reduced benefits for SNAP recipients nationwide. The Double Up Food Bucks (DUFEB) program incentivizes SNAP recipients to buy fresh produce by providing a dollar-for-dollar match. This study examined how DUFEB Oregon participants perceived the impact of EA termination on food choices, financial stability, and well-being, offering insights for future policies supporting low-income households, post-pandemic. We hypothesized that participants perceived a significant difference between the advantages of having EA and the drawbacks of its termination.

**Methods:** Cross-sectional survey responses were analyzed from participants recruited from farmers markets, grocery stores, and Community Supported Agriculture (CSA) farms as part of the DUFEB Oregon Program Evaluation, 2023 (N=280). Change scores were calculated for seven paired survey items assessing participants' perceptions of EA's impact on food affordability, buying desired food, purchasing fresh produce, shopping preferences, stress reduction, meeting other basic needs, and DUFEB participation. Paired samples t-tests evaluated the statistical significance of change scores.

**Results/findings:** Participants reported that EA enhanced food choices, financial stability, and well-being, with pre-termination agreement levels between 70.0% and 95.7% across survey items. Post-termination, fewer participants agreed that losing EA made it challenging to meet their needs, with agreement levels ranging from 50.0% to 90.0%. Change scores reflected this, with means ranging from -0.24 to -0.71 and all paired samples t-tests yielding negative t-values (p-values < 0.05).

**Conclusions:** This study underscores EA's role in supporting SNAP recipients' food choices, financial stability, and well-being in DUFEB Oregon. While EA was valued, participants did not perceive its loss as creating severe hardship, suggesting resilience or adaptability despite reduced benefits. Nonetheless, sustained support in nutrition assistance programs remains essential to address ongoing food security challenges. Future research will explore the long-term impacts of EA termination on DUFEB Oregon participants, offering insights to guide federal nutrition assistance policies and promote health equity across the United States.

## Caregiver mental health diagnoses are linked to control-based feeding practices and food insecurity among Head Start and Pre-K Counts families

**Ms. Nicole Skinner<sup>1,2</sup>**, Dr. Emily Hohman<sup>1,2</sup>, Dr. Susan Carnell<sup>3</sup>, Dr. Jennifer Savage<sup>1,2</sup>

<sup>1</sup>The Pennsylvania State University, Department of Nutritional Sciences, University Park, USA, <sup>2</sup>Center for Childhood Obesity Research, University Park, USA, <sup>3</sup>Johns Hopkins School of Medicine, Baltimore, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Caregivers living in a low-income context who are at increased risk for social isolation, chronic stressors, and limited healthcare access tend to have higher prevalence of mental health diagnoses. Mental health diagnoses like attention-deficit/hyperactivity disorder (ADHD) or anxiety could increase the likelihood of caregivers using control-based feeding practices as a way to manage stress or feel a sense of control in a challenging situation. This study aimed to examine if the frequency and type of self-reported mental health diagnoses correlates with feeding practices and food security status of caregivers living in a low-income context.

**Methods:** Participants included 323 caregivers enrolled in ONE PATH, a responsive feeding trial delivered to caregiver-child-teacher triads in Head Start or Pre-K Counts. At study entry, caregivers completed the Structure and Control in Parent Feeding questionnaire, Feeding to Manage Child Behavior Questionnaire, USDA Food Security Module, and self-reported mental health diagnoses.

**Results/findings:** Self-reported mental health diagnoses were common among caregivers of preschool aged children: anxiety (56.04%), depression (52.01%), ADHD (17.65%), and bipolar disorder (16.10%). Most caregivers (66.87%) reported ever having at least one of these diagnoses with 17.96%, 28.17%, 15.48% and 5.26% of caregivers reporting 1, 2, 3 and 4 of these diagnoses respectively. Frequency of mental health diagnoses was positively associated with control-based feeding ( $\beta=0.06$ ,  $p=0.05$ ) and use of food as a reward ( $\beta=0.07$ ,  $p=0.05$ ). Caregivers who reported depression used less food to soothe to manage child emotions ( $p=0.04$ ). Caregivers who reported bipolar disorder used more control-based feeding ( $p=0.01$ ) and use of food as a reward to manage child behavior ( $p=0.04$ ). ADHD and anxiety were not associated with control-based feeding. Total number of mental health diagnoses (OR=1.47, CI:1.20, 1.79), anxiety (OR=2.34, CI:1.40, 3.90), depression (OR=1.98, CI:1.21, 3.24), and bipolar disorder (OR=2.62, CI:1.97, 6.68) were associated with greater odds of food insecurity. Caregiver ADHD was not associated with food security status in this population.

**Conclusions:** Results suggest that mental health conditions, parent feeding practices, and food insecurity appear to be interconnected. It is critical for public health interventions to be designed to tackle these problems simultaneously to improve responsive feeding.

# Cardiometabolic and Nutritional Health of Transgender and Gender Diverse Youth and Young Adults in Central Ohio: Results from Project Gender NutriScope, a Mixed Methods Cross-Sectional Community-Engaged Study

**Dr. Heather Schier<sup>1</sup>**, Krithika Chetty<sup>2</sup>, Shivakriti Induri<sup>2</sup>, Dr. Carolyn Gunther<sup>2</sup>

<sup>1</sup>*Appalachian State University, Boone, United States*, <sup>2</sup>*The Ohio State University, Columbus, United States*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**OBJECTIVE:** Transgender and gender diverse (TGD) youth and young adults are at-risk for nutrition-related health disparities. The aim of this community-engaged cross-sectional study was to describe the cardiometabolic and nutritional health of TGD youth and young adults residing in central Ohio (USA).

**Methods:** A parallel convergent study design, informed by the health equity promotion framework and a community advisory board, was implemented. A purposive sample was recruited through community partners in central Ohio. Participants were 13-24 years old and self-identified as gender diverse. Cardiometabolic and nutritional health were assessed using anthropometric (BMI categories, waist circumference, blood pressure), biometric (skin carotenoids, hemoglobin), and survey data (24-hour dietary recalls). The Healthy Eating Index (HEI), an estimation of dietary alignment with the Dietary Guidelines for Americans, was used to evaluate diet quality. Descriptive statistics [mean (SD); n (%)] were analyzed. In depth interviews were analyzed using reflexive thematic analysis (RTA).

**Findings:** Sixteen participants enrolled in the study. Mean age was 18.1±3.4 years. Participants identified as transgender man (n=8), transgender woman (n=1), nonbinary (n=5), and/or genderqueer (n=4). Seven (43.75%) were categorized as obese, 3 (18.75%) overweight, 4 (25%) healthy weight, and 1 (6.25%) underweight. Mean(SD) waist circumference was 92.3(18) cm for adolescents and 101.5(22.5) cm for young adults. Blood pressure was elevated for 5 (31.25%) participants. Mean(SD) RRS palm measures of total carotenoid status, a biomarker of fruit and vegetable intake, were 21437.5(6651.7) for adolescents and 29357.1(12418.8) for young adults. Hemoglobin, a biomarker of iron status, was within healthy ranges for all. On average, participants had a mean total HEI score of 46, indicating slightly lower diet quality compared to national averages for 14–18-year-olds (48) and 19-58-year-olds (57). RTA findings indicated participants were concerned about dietary quality and several used food to affirm their gender.

**Conclusion:** Among this sample of TGD youth and young adults in central Ohio, overweight/obesity and elevated blood pressure were common, while diet quality was poor and below national averages. Biomarkers indicated generally adequate iron status but low fruit and vegetable intake. Collectively results underscore the need for large scale studies and tailored nutrition interventions.

## The PAN Project: A cross-sectional exploration of associations between menstrual health, diet quality and food-related behaviours in female athletes of all levels

Ms. Catherine V. Caro<sup>1,5</sup>, Dr Zoe Bell<sup>1</sup>, Dr Michele Renard<sup>1,2</sup>, Ms Elizabeth Brown<sup>1</sup>, Dr Paulina Kloskowska<sup>3</sup>, Ms Laura Edwards<sup>4</sup>, Dr Angela Flynn<sup>5</sup>, **Dr. Fiona Lavelle<sup>1</sup>**

<sup>1</sup>Department of Nutritional Sciences, King's College London, London, United Kingdom, <sup>2</sup>SHE Research Centre, Department of Sport and Health Sciences, Technological University of the Shannon, Athlone, Ireland, <sup>3</sup>Department of Physiotherapy, School of Life Course & Population Sciences, King's College London, London, United Kingdom, <sup>4</sup>King's Sport & Wellness, King's College London, London, United Kingdom, <sup>5</sup>School of Population Health, Royal College of Surgeons Ireland, Dublin, Ireland

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Female sport participation has increased across all levels, highlighted by sex parity at the 2024 Olympic games. However, a Sex Data Gap persists in sport and exercise research, particularly in relation to female-specific health concerns. Female athletes have unique health needs related to their menstrual cycle and are disproportionately affected by conditions such as relative energy deficiency in sports (REDs). Additionally, female athletes consistently report dietary intake deficiencies and poorer diet quality. Therefore, this research aimed to (i) understand the associations between menstrual health, diet quality indicators and food-related behaviours in female athletes across sporting levels, and (ii) explore athletes' perceptions of the influence of menstrual health on training and performance.

**Methods:** An exploratory cross-sectional online survey was pre-registered (<https://doi.org/10.17605/OSF.IO/NCSZK>), received ethical approval (Ref: LRU/DP-23/24-41676) and was disseminated during April and May 2024. UK or Republic of Ireland (ROI) residents,  $\geq 18$  years old, trained and/or competed as an athlete prior to and/or during pregnancy within the last eight years were eligible. The survey's secondary variables were analysed: menstrual health, perceived training influence, fruit and vegetable intake, and meal preparation frequency. All numerical data will be analysed using IBM SPSS Statistics, including descriptive statistics, ANOVA, Chi-square tests and correlations. A content analysis of athlete perceptions on training/performance will be conducted. Descriptive statistics and preliminary findings are reported here, with full results to be presented.

**Results:** A total of 160 athletes were included in this analysis (88.8% UK; 11.2% ROI), with a mean age of 35.05 years  $\pm$  3.69. 54 (33.8%) trained at national level or above. Over half the athletes (53.7%) reported preparing their household's main meal more than five times per week. Daily portions of fruit and vegetables were  $2.98 \pm 1.44$  and  $3.37 \pm 1.31$ , respectively. Only 33.1% reported having regular periods. Athletes reported experiencing pre-menstrual symptoms often or always, including pain (32.5%), bloating (45.1%), mood changes (42.6%), cravings (33.8%), and gastrointestinal symptoms (36.3%). Athletes perceived cramps, pain, gastro discomfort, motivation and fatigue as negatively influencing their training.

**Conclusions:** This preliminary research will provide evidence around associations between menstrual health, food-related behaviours, and diet quality that could inform future interventions.

## What aspects of outcome measurement instruments are important to parents/caregivers in child health trials

Ms. Moira Duffy<sup>1</sup>, Ms. Eibhlin Looney<sup>1</sup>, Ms. Laoise Kelly<sup>1</sup>, **Miss Dimity Dutch**<sup>2</sup>, Dr Brittany Johnson<sup>2</sup>, Ms Lucy Porter<sup>3</sup>, Dr Sarah Redsell<sup>3</sup>, Dr Karen Matvienko-Sikar<sup>1</sup>

<sup>1</sup>*School of Public Health, University College Cork, Cork City, Ireland*, <sup>2</sup>*Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Adelaide, Australia*, <sup>3</sup>*University of Nottingham, Nottingham, England, UK*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Parents/caregivers' perspectives and preferences about outcome measurement instruments (OMIs) used in child health trials may influence whether they and their children take part in trials that could impact child health research in the future. The aim of this study was to conduct the first examination of what characteristics of OMIs were important in influencing parents/caregivers' decisions to engage with and participate in trials of interventions to prevent childhood illness and/or improve child health outcomes, including those related to physical activity, sedentary behaviours, and nutrition.

**Methods:** An online international cross-sectional survey was conducted with 491 parents/caregivers of at least one child aged ≤12 years. The survey utilized both closed and open-ended questions to evaluate what types of OMIs parents/caregivers would be most comfortable using to provide data in child health research. It also examined parents/caregivers' preferences for where (e.g., at home, in hospital), how (e.g., online, in-person), when (e.g., before or during medical visits), and with whom (e.g., healthcare professionals, researchers) data is collected in child health research. Data were analysed using descriptive statistics.

**Results:** The ten most important characteristics that influence parents/caregivers willingness to provide information in a study about their child's health are: 1) potential risk to their child, 2) potential child discomfort, 3) ease of information provision, 4) potential benefit to others, 5) potential benefit to their child, 6) duration of data collection, 7) knowing what will happen to data provided, 8) clarity of instructions, 9) perceived importance of the research, 10) frequency of data collection. The preferred methods for providing information were online, in-person, and over the phone. Participants most preferred a healthcare professional collecting study information, followed by doing it themselves. Participants preferred to provide study information in their own time, followed by during a routine visit, and prior to a routine visit.

**Conclusions:** These findings suggest child safety, child comfort, and ease of providing information should be the highest priorities for trialists when designing and conducting data collection in child health research. Consideration of these factors is crucial to improving recruitment, retention, and the experience of children and their parents/caregivers in child health studies.

## Exploring family mealtime dynamics: A latent profile analysis with adolescents and parents

Miss Laurence Vermette<sup>1,2</sup>, Miss Marie-France Beaudin<sup>1,2</sup>, **Miss Camille Lavoie<sup>3,1,2</sup>**, Mr. Thomas Sire<sup>1,2</sup>, Dr. Genevieve Lavigne<sup>1,2</sup>, Noemie Carbonneau<sup>1,2</sup>

<sup>1</sup>University of Quebec in Trois-Rivieres (UQTR), Trois-Rivieres, Canada, <sup>2</sup>Institute of Nutrition and Functional Foods (INAF), Quebec, Canada, <sup>3</sup>University of Quebec in Montreal (UQAM), Montreal, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The goals of the present study were to identify distinct profiles of teenagers and parents based on family mealtime characteristics and to examine whether these profiles differ in eating behaviors and body image outcomes.

**Methods:** Participants were 280 teenagers and 479 parents from Quebec, Canada. Latent profile analysis, a person-centered statistical approach, was performed. Profiles were identified based on patterns detected across four variables: frequency of family-shared dinners, frequency of distractions during mealtime, and frequency of two types of arguments during mealtime (i.e., related vs. unrelated to food and eating habits). The profiles were then compared on a range of food-approach traits (e.g., food responsiveness, emotional overeating) and food-avoidance traits (e.g., food fussiness, emotional undereating), as well as body image variables (e.g., body dissatisfaction, body esteem).

**Results:** Three distinct subgroups of teenagers were identified based on family mealtime characteristics: Profile 1) a high frequency of family-shared dinners, a low frequency of distractions, and a low frequency of both types of arguments (60.6% of the sample); Profile 2) a low frequency of family-shared dinners, a high frequency of distractions, and a low frequency of both types of arguments (26.7%); and Profile 3) a high frequency of family-shared dinners, a low frequency of distractions, and a high frequency of both types of arguments (12.7%). Similar subgroups were found in the sample of parents based on the same family mealtime characteristics, though with differing proportions. Adolescents in profile 3 reported higher food-approach trait scores, higher body dissatisfaction, and lower body esteem compared to those in profile 1. No significant differences in outcomes were observed between profiles 1 and 2. Profiles 2 and 3 differed only on two outcomes: adolescents in profile 3 reported higher food responsiveness and lower body esteem scores.

**Conclusions:** These results highlight the relevance of examining the characteristics of family mealtime using a person-centered statistical approach. These findings are significant for the field of eating behaviors, as they emphasize the need to focus not only on the frequency of family meals but also on the dynamics that occur during mealtime, particularly the importance of fostering a harmonious atmosphere.

## Assessing differences in the healthfulness of food received by food pantry clients based on sociodemographics and pantry distribution methods

Mrs. Lisa Poirier<sup>1</sup>, Ms. Wenxuan Fan<sup>1</sup>, Ms Stacey Williamson<sup>1</sup>, Ms Alexis Lightner<sup>1</sup>, Ms Shuqi Wang<sup>1</sup>, Dr Melissa Reznar, Dr Daniel Barnett<sup>1</sup>, **Dr Joel Gittelsohn<sup>1</sup>**

<sup>1</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** As the number of people who are dependent on the charitable food system continues to grow, it is important to consider the factors affecting the healthfulness of foods received. This study sought to understand how pantry distribution methods and individual client sociodemographics affect the food received.

**Methods:** As part of a parent randomized controlled trial, we recruited food pantries and their clients in Baltimore, Maryland. Information about food pantry operations, including distribution style (client-choice vs pre-packaged bag), was collected. The Food Assessment Scoring Tool (FAST) method was used to assess the healthfulness of the foods received using a food scale to weigh individual food categories and assigning a score based on the FAST guidelines. FAST scores range from 0-100, with 100 indicating a greater proportion of healthy food. Client sociodemographic data was collected via in-person questionnaire. One-way ANOVA, Fisher's exact, and T-tests were used to test bivariate relationships.

**Results:** Preliminary results are presented from 7 food pantries (2 client-choice, 5 pre-packaged bags) and 76 clients (36 from client-choice pantries, 40 from pre-packaged bag pantries). Clients using the client-choice pantries were older, had a smaller household size, more likely to identify as Black/African-American, and lower annual income (  $p=0.027$ ,  $p=0.044$ ,  $p=0.008$ ,  $p=0.027$ , respectively). The overall average FAST score was 65.3, with an average score of 61.3 for client-choice and 66.8 for pre-packaged pantries. This difference was not statistically significant. In the overall sample, larger households had significantly higher FAST scores ( $p=0.032$ ), and Black/African-American clients had lower FAST scores than other racial groups (63.4 vs. 71.9;  $p=0.001$ ). Male-identifying clients had higher FAST scores (67.5) compared to female-identifying clients (57.3) in client choice pantries ( $p=0.021$ ).

**Conclusions:** Although food pantry distribution method may not play a large part in defining the healthfulness of food received by clients, individual characteristics may impact the foods chosen or received. Food pantries should try to understand sociodemographics of their clients more to ensure individual needs are met, and that policies or interventions are tailored to specific groups. In the future, intra-pantry variation in FAST scores should be explored for a deeper understanding.

## Contribution of ultra-processed food intake to energy among children across the US-affiliated Pacific region in the Children's Healthy Living (CHL) Program

**Ms. Kristi Hammond<sup>1</sup>**, Dr. Lynne R. Wilkens<sup>2</sup>, Dr. Ashley B. Yamanaka<sup>1</sup>, Dr. Jean Butel<sup>1</sup>, Dr. Tanisha Aflague<sup>3</sup>, Patricia Coleman<sup>4</sup>, Travis Fleming<sup>5</sup>, Dr. Jonathan Deenik<sup>1</sup>, Dr. Rachel Novotny<sup>1</sup>

<sup>1</sup>University of Hawai'i at Manoa, Honolulu, , <sup>2</sup>University of Hawai'i Cancer Center, Honolulu, , <sup>3</sup>University of Guam, Mangilao, , <sup>4</sup>Northern Marianas College, , , <sup>5</sup>American Samoa Community College, ,

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Ultra-processed foods (UPFs) make up a growing proportion of children's diets globally, accounting for >60% of energy in the US. UPFs have been linked to child nutrition and health outcomes such as obesity and poor diet quality. Although the nutrition transition and the influx of imported, processed foods in the Pacific region are documented, consistent food classification methods aligned with global UPF assessment efforts have not been extensively applied. This study aims to apply the NOVA classification system to dietary data from the US-affiliated Pacific region.

**Methods:** This descriptive analysis uses cross-sectional data from the Children's Healthy Living (CHL) Program (2013-2014). Two days of food records, entered into Pacific Tracker 3, were assessed for 3529 children aged 2-8 years across 11 Pacific jurisdictions (Alaska, American Samoa, Guam, Hawai'i, Northern Mariana Islands, Marshall Islands, Palau, and the Federated States of Micronesia: Chuuk, Kosrae, Pohnpei, Yap). The NOVA classification system was employed to categorize foods and recipes (n=2397) based on processing. The percentage of total energy intake (% kcal) from minimally processed foods (group 1), culinary ingredients (group 2), processed foods (group 3), and UPFs (group 4) were calculated.

**Results:** Most foods were easily classified (66.1%), with some regional recipes pending ingredient disaggregation for accurate categorization. Preliminary findings indicate variation in UPF consumption across jurisdictions. The lowest energy contribution from UPFs was observed in Chuuk (18.5%), and Yap (28.9%), and Pohnpei (29.4%), while Hawai'i (48.6%), Alaska (47.5%), and Guam (46%) reported the highest. Major energy contributors were white rice and milk (group 1), vegetable oil and coconut milk (group 2), canned tuna and peanut butter (group 3), and sausage and instant noodles (group 4). Common foods reported by children included white rice and milk (group 1), sugar and butter (group 2), soy sauce and canned tuna (group 3), and white bread and sweetened tea (group 4).

**Conclusion:** Initial results show marked variability in energy contribution from NOVA groups among children between Pacific jurisdictions. Taking food processing into consideration, this research highlights potential differences in food supplies and nutrition transition situations, which can be informative for food systems surveillance and policy efforts.

## Sedentary Behavior, Self-Efficacy, and Diabetes Management Among Older Women with Type 2 Diabetes: Baseline Data from the STEP Up T2D Study

**Dr. Mary Whipple<sup>1</sup>**, Anna Fleischman<sup>1</sup>, Michael Evans<sup>1</sup>, Victoria Andreano<sup>1</sup>, Emma Bailey<sup>1</sup>, Kendall Karrmann<sup>1</sup>, Dr. Siobhan McMahon<sup>1</sup>, Dr. Diane Treat-Jacobson<sup>1</sup>

<sup>1</sup>University of Minnesota, Minneapolis, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Background and Purpose:** Cardiovascular disease is the leading cause of death and disability in older women. Prior research demonstrates that interrupting prolonged sedentary behavior (SB) may benefit cardiovascular health. Still, studies of the effects of SB interruptions are limited in women and older people with chronic conditions like type 2 diabetes (T2D). The STEP Up T2D study is an ongoing, randomized crossover trial designed to evaluate sex differences in the acute effects of SB interruptions on vascular function. In the present analysis, we used baseline data from the STEP Up T2D study to examine the relationships between SB, self-efficacy, and diabetes management (hemoglobin A1c, self-management) among women aged 60 and older with T2D.

**Methods:** Data were collected on diabetes duration, hemoglobin A1c (HbA1c), self-management of T2D (Problem Areas in Diabetes [PAID]), and relevant medical history. Participants completed two questionnaires evaluating self-efficacy associated with reducing SB (Self-Efficacy to Reduce Sedentary Behavior Scale [SRSB]) and increasing exercise (Exercise Confidence Scale [ECS]). Sedentary time and sit-to-stand transitions were measured objectively via a thigh-mounted accelerometer for 7 days. Analyses were conducted with R version 4.3.2;  $P < .05$  was considered statistically significant.

**Results:**  $N=15$  women were enrolled with a mean (SD) age of 71.3 (6.1) years. Participants had T2D for 14.6 (10.1) years, with a HbA1c of 6.9% (0.5) and BMI of 31.7 (7.7) kg/m<sup>2</sup>. Participants spent an average of 10.7 (2.1) hours per day sedentary. A significant negative correlation was observed between PAID score and exercise self-efficacy ( $r=-0.83$ ,  $p=.003$ ). Although not statistically significant, there was a moderate negative correlation between the number of sit-to-stand transitions and HbA1c ( $r=-0.55$ ,  $p=.08$ ). PAID score was not associated with the total volume of SB, number of sit-to-stand transitions, or SRSB.

**Conclusions:** Our findings suggest that among older women with T2D, self-efficacy to reduce SB and increase exercise are strongly correlated, yet distinct, constructs that warrant consideration in the design of SB interventions. Future interventional work is needed to understand the relationships between sit-to-stand transitions and HbA1c as we seek to design tailored SB interventions to reduce cardiovascular risk in older women and men with T2D.

## Older Women with Type 2 Diabetes Report Greater Perceived Autonomy in Motivations to Exercise Compared to Healthy Controls: Preliminary Findings from the SitWise Study

**Dr. Mary Whipple**<sup>1,2,3</sup>, Ethan Clark<sup>2</sup>, Dr. Ana Pinto<sup>2,3</sup>, Dr. Rebecca Scalzo<sup>2,3,5</sup>, Dr. Amy Huebschmann<sup>2,3</sup>, Dr. Kevin Masters<sup>2</sup>, Dr. Audrey Bergouignan<sup>2,4</sup>, Dr. Irene Schauer<sup>2,5</sup>, Dr. Jane Reusch<sup>2,3,5</sup>, Dr. Judith Regensteiner<sup>2,3</sup>

<sup>1</sup>University of Minnesota, Minneapolis, USA, <sup>2</sup>University of Colorado, Aurora, USA, <sup>3</sup>Ludeman Family Center for Women's Health Research, Aurora, USA, <sup>4</sup>Université de Strasbourg, Strasbourg, France, <sup>5</sup>Rocky Mountain Regional VA, Aurora, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Background and Purpose:** Reducing or interrupting sedentary behavior (SB) positively influences blood pressure and glucose, yet implementing and sustaining behavior change can be challenging. This study aimed to examine the relationship between behavior change constructs (e.g., meaning, self-efficacy, and self-regulation) and SB in women with T2D, compared to healthy women of similar age and BMI.

**Methods:** Women 60-75 years old with and without T2D were recruited for this cross-sectional study. Participants were asked to wear a thigh-mounted accelerometer (activPAL) for 7 days for objective measurement of sedentary time and sit-to-stand transitions, and complete questionnaires to assess meaning in life (Meaning in Life Questionnaire), self-efficacy (Hu Self-Efficacy in Walking Questionnaire), depressive symptoms (Patient Health Questionnaire-8), perceived social support (Interpersonal Support Evaluation List), and motivation for exercise (Behavioral Regulation in Walking Questionnaire). Pearson correlations evaluated relationships between variables and t-tests compared data between women with T2D and healthy controls. Data analysis was performed using SPSS version 27;  $P < 0.05$  was considered statistically significant.

**Results:** N=20 women (45% with T2D) were recruited. Mean (SD) age was 67.4 (4.4) years, BMI was 32.2 (4.4), sitting time was 8.4 (2.4) hours per day, and number of sit-to-stand transitions was 49.7 (14.5). Significant correlations were observed between SB and external motivation ( $R^2 .542$ ,  $p=.037$ ). Meaning in life was similar between women with and without T2D, as were perceived social support, depressive symptoms, self-efficacy, and pain and stiffness. Differences between women with and without T2D were observed in integrated, intrinsic, and identified regulation. In models adjusted for age and BMI, T2D was not significantly associated with time in SB or number of sit-to-stand transitions. Although not significant – relative autonomy was negatively related to SB ( $B=-17.1$ , 95% CI -35.1-0.8).

**Conclusions:** Women 60-75 years of age with and without T2D engaged in similar levels of objectively measured SB. Women with T2D report greater autonomy and controlled regulation of their exercise behavior compared to women without T2D. Additional research is needed to understand the nuances of motivations to exercise and SB in older women with T2D to facilitate the design of theory-based, behavioral interventions to reduce and interrupt prolonged SB.

## Use of Machine Learning in Fall Predictions Among Long-Lived Brazilians: NATAL Study Protocol

**Dr. Leony Galliano**<sup>1</sup>, Ms Raíssa Melo<sup>1</sup>, Chen Zheng<sup>2</sup>, Jeremiah Deng<sup>2</sup>, Narun Pat<sup>2</sup>, Tiago Barreira<sup>3</sup>, Prof. Debra Waters<sup>2</sup>, Eduardo Costa<sup>1</sup>

<sup>1</sup>Universidade Federal do Rio Grande do Norte, Natal, Brasil, <sup>2</sup>University of Otago, Dunedin, New Zealanda, <sup>3</sup>Syracuse University, Syracuse, United States of America

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

### **SIG - Primary Choice: A. Ageing**

**Purpose:** Falls are the leading external cause of mortality among individuals aged 80 and above. Higher physical activity may be a protective factor against falls risk. However, most studies have focused on younger elderly populations (under 80 years). This study aims to determine if 24-hour movement behaviors (physical activity, sedentary time, steps, and sleep) are associated with fall risk using machine learning.

**Methods:** This is a prospective cohort study with a representative sample (n=500) of long-lived Brazilians residing in Natal, Brazil. Movement behaviors (sedentary time and physical activity) will be assessed using accelerometry over 7 days via the ActiPal. At baseline, fall risk will be evaluated through functional tests, recent fall history (within the past 12 months), and fear of falling (Falls Efficacy Scale–International, FES-I). The follow-up phase will last 36 months, during which fall incidence will be monitored monthly by an app followed by phone follow-up if a fall is reported. Both at baseline and during follow-up, exploratory analyses will investigate associations between additional movement behaviors (e.g., steps per day, step cadence, light physical activity), functional fitness metrics (e.g., lower limb strength, balance, gait speed), and other outcomes. Additional data will be collected for sample characterization, identification of confounding factors, and exploratory analyses.

**Findings:** In addition to being innovative due to the sample investigated, the NATAL study will analyse accelerometry time series data to develop machine learning models. This analysis will capture complex relationships and temporal dependencies inherent in the data. The study will integrate contextual information specific to each participant, enhancing the predictive accuracy of the models and minimising errors by accounting for individual variability and external factors. By employing feature importance analysis and explainable artificial intelligence techniques we will identify the key behavioural and demographic factors and their interactions that most likely lead to fall risks.

**Conclusions:** The data generated by the NATAL Study are expected to contribute to the development of tailored movement behavior recommendations for fall prevention in long-lived populations. Moreover, the study aims to enhance understanding of the relationship between falls and movement behavior in this growing yet understudied demographic.

# Farmers Market Vendor Perspectives on the Benefits, Drawbacks, and Successful Implementation of a SNAP Nutrition Incentive Program

**Dr. Stephanie Grutzmacher<sup>1</sup>**, Dr. Ashley Munger<sup>4</sup>, Dr. Katherine Speirs<sup>1</sup>, Maadhanki Kasimanickam<sup>2</sup>, Zoe Teigen<sup>2</sup>, Mallory Watson<sup>3</sup>, Joel Caris<sup>3</sup>, Rachael Ward<sup>3</sup>

<sup>1</sup>University of Arizona, Tucson, USA, <sup>2</sup>Oregon State University, Corvallis, USA, <sup>3</sup>Farmers Market Fund, Portland, USA, <sup>4</sup>California State University Los Angeles, Los Angeles, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Participants in the Supplemental Nutrition Assistance Program (SNAP), the U.S.'s largest food assistance program, can increase their purchasing power for fruits and vegetables at participating retailers through SNAP nutrition incentive programs (SNAP NIs). SNAP NIs are associated with increases in fruit and vegetable consumption and food security for participants (e.g., Karpyn et al., 2022). Yet, there are also some potential drawbacks. For example, SNAP NIs are currently funded by competitive grants and characterized by several significant barriers to implementation, including matching fund requirements, administrative burdens, and limited reach and availability (John et al., 2023; Silva et al., 2023). Little is known, however, about how farmers market vendors (i.e., the farmers who sell produce at farmers markets) perceive the benefits and drawbacks of implementing SNAP NIs and what factors support successful implementation.

**Methods:** To understand these perspectives, we conducted in-depth interviews in 2022 with 10 farmers market vendors participating in a statewide SNAP NI, Double Up Food Bucks Oregon (DUFBO). Thematic analysis (Braun & Clarke, 2021) was used to analyze interview transcript data.

**Results/Findings:** For vendors, the benefits of participating in DUFBO included increased numbers of market attendees and market sales and increased access to fresh fruits and vegetables for low-income families, which provided additional meaning to their work. Some minor perceived drawbacks included a longer timeline for redeeming money from DUFBO, the need to adjust sales practices to accommodate \$2 DUFBO voucher increments, and only being able to redeem DUFBO for produce and no other types of food (e.g., dairy, eggs, grains). Factors perceived as facilitating the success of DUFBO implementation included having adequate market capacity and resources for implementation, simplicity and consistency in the way the program operates, education about program rules, no stigma around program use, and accessible market location and hours.

**Conclusions:** Overall, vendors reported appreciating and benefiting from the program in several ways, including increased sales and enhanced sense of mission and community. Ensuring program operations are streamlined and clear can support program uptake among vendors, an essential component to increasing the availability of DUFBO to SNAP participants.

## Implementation of nutrition and responsive feeding practices for infants (0-2 years) by Early Childhood Education and Care managers and educators: baseline results from the Tiny Bites study

**Dr. Melanie Lum**<sup>1,2</sup>, Dr Najma Moumin<sup>1,3</sup>, Dr Gloria Leung<sup>1</sup>, Ms Michelle Lim<sup>1</sup>, Ms Nicole Pearson<sup>2,4,5,6</sup>, A/Prof Rachel Sutherland<sup>2,4,5,6</sup>, Ms Maria Romiti<sup>5</sup>, Ms Hannah Lamont<sup>5</sup>, Ms Karen Gillham<sup>5</sup>, Dr Clare Dix<sup>7</sup>, A/Prof Sze Lin Yoong<sup>1,2</sup>

<sup>1</sup>Global Centre for Preventive Nutrition and Health, Institute for Health Transformation, School of Health and Social Development, Deakin University, Burwood, Australia, <sup>2</sup>National Centre of Implementation Science (NCOIS), University of Newcastle, Newcastle, Australia, <sup>3</sup>Women and Kids Theme, South Australian Health and Medical Research Institute, Adelaide, Australia, <sup>4</sup>School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, <sup>5</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>6</sup>Population Health Research Group, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>7</sup>School of Health, University of the Sunshine Coast, Sunshine Coast, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** The development of healthy eating habits in infancy can optimize growth trajectories and protect against excessive weight gain later in life. Evidence indicates infant feeding practices (e.g. the types and quantity of foods offered) and responsive feeding practices (e.g. not using food as a reward; identifying hunger cues) promote the establishment of optimal eating behaviours. Outside the home, early childhood education and care (ECEC) services are the primary setting where infants are exposed to feeding practices. This study aims to describe the implementation of nutrition and responsive feeding practices for infants (0-2 years) by ECEC Managers and Educators.

**Methods:** We recruited 24 services to the Tiny Bites study, a randomized controlled trial conducted in New South Wales, Australia. The Manager and one Educator working in the nursery room were invited to participate in a baseline survey (Jun-Sep 2024). For Managers, we assessed service demographics and infant feeding and breastfeeding policy implementation. For Educators, we assessed the implementation of infant feeding and responsive feeding practices. Both surveys were developed by the research team based on validated tools. The implementation of practices will be described via descriptive statistics. We will conduct linear regression analyses to assess differences in implementation by service characteristics.

**Results/findings:** Twenty-three (96%) Managers and 22 Educators (92%) completed the baseline survey. Early results indicate that while most services have a written infant and toddler nutrition (n=21; 87.5%) and breastfeeding (n=22; 92%) policy, few service policies contained all the recommended elements (n=5; 21% and n=9; 37.5%, respectively). The recommended practice which was implemented by the greatest number of services (n=21; 95.5%) was “not using food as a reward or punishment”, while “encouraging children >6 months to drink from a cup” was implemented by the fewest number of services (n=3; 13.6%). Association analyses are underway.

Conclusions: This is the first known study to assess the implementation of nutrition and responsive feeding practices delivered to infants by ECEC Managers and Educators. These findings will provide insight into infant feeding practices delivered in ECEC which require additional implementation support to meet recommendations.

# Food insecurity among post-secondary students in high income countries: Systematic review and meta-analysis

**Prof. Fiona Mckay<sup>1</sup>**, Ms Bolanle Racheal Olajide<sup>1</sup>, Ms Lisa Melleuish<sup>1</sup>, A/Prof Eric Lau<sup>1</sup>, A/Prof Matthew Dunn<sup>1</sup>

<sup>1</sup>Deakin University, Burwood, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Food insecurity has recently emerged as a growing problem among students attending post-secondary institutions in high income countries, where it is associated with poorer health outcomes and poorer academic performance. The aim of this systematic literature review and meta-analysis is to synthesize evidence from published studies describing the prevalence of food insecurity among students in post-secondary educational institutions.

**Method:** A broad search was employed to identify any studies related to food security among post-secondary students in high income countries (PROSPERO identifier: CRD42023468944). Four electronic databases were systematically searched: Medline, CINAHL, Global Health, and Embase, in November 2023. Key thematic areas searched were food insecurity and education; no temporal limitations were placed on the search. Only English language peer-reviewed articles were considered. Four authors independently reviewed all articles to identify relevant studies.

**Findings:** 156 studies are included in this review. Sample sizes ranged from 10 to 122,269 participants (total participants 743,075, 409,047 women) with a median of 4764. Most studies were based in the USA (n=139, 88%), and most were cross-sectional (n=131, 84%). All articles were published after 2009, with more than three-quarters (n=121, 77.5%) published after 2020. One hundred (64%) studies reported the mean age of participants; across these studies the average age was 22.4 years (range 18 to 78 years). Almost all studies employed one form of the USDA household food security survey module. Food insecurity across the whole sample ranged from 11.8% to 98%, the pooled estimate for food insecurity was 42.2%, (95% CI=38.8-45.8%).

**Conclusions:** Our findings show that a high proportion of students attending post-secondary institutions experience food insecurity, potentially leading to both poorer academic and health outcomes.

## Advancing Opportunities to Explore School Food Programs Through Community-Based Methodology: Evidence From Six School Boards In Ontario, Canada

Miss Nina Trask<sup>1,2</sup>, Ms. Nicole Weber<sup>1,2</sup>, Miss. Emma Wedekind<sup>1,2,3</sup>, Miss. Selina Quibrantar<sup>1,2</sup>, **Dr. Mavra Ahmed<sup>1,2</sup>**, Dr. Daniel Sellen<sup>1,2,4</sup>

<sup>1</sup>Department of Nutritional Sciences, University of Toronto, Toronto, Canada, <sup>2</sup>Joannah and Brian Lawson Centre for Child Nutrition, University of Toronto, Toronto, Canada, <sup>3</sup>Dalla Lana School of Public Health, University of Toronto, Toronto, Canada, <sup>4</sup>Department of Anthropology, University of Toronto, Toronto, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** As Canada develops its first-ever National School Food Program (NSFP), localized evidence is essential for effective policies. This study created an innovative methodology to assess school food programs (SFPs) by involving key stakeholders and community partners, addressing barriers and facilitators to implementation. By fostering school-community partnerships and focusing on localized evidence, it strengthens the SFP evidence base and provides valuable insights to improve NSFP implementation, supporting better nutritional intake and dietary behaviours for students across diverse regions.

**Methods:** The research team assessed each school board's context and submitted a Research Ethics Board (REB) application before or after forming partnerships with key community stakeholders. Partners included SFP Coordinators, school and board staff, Public Health Units, Non-Profit Organizations, and Ontario Student Nutrition Program staff. School board staff adapted the study's protocol to align with their priorities, while community organizations contributed local expertise to study materials and communications. This mixed-methods study engaged 55 school-level SFP implementers across six school boards through surveys and follow-up focus groups or interviews. Qualitative data was analyzed using collaborative thematic analysis in NVivo, combining inductive and deductive approaches following Braun and Clarke's (2006) guidelines. Quantitative survey data summarized descriptive statistics.

**Findings:** Through school and community partnerships, we recruited six school boards and 55 participants. Participating schools represented diverse SFP modalities, socio-economic backgrounds, cultural contexts, and geographic regions, enabling a thorough exploration of local SFP practices and the existing potential for broader partnerships. Centring school and community insights revealed critical lessons for adaptability in implementation—such as barriers and facilitators for staffing, funding, procurement, and delivery—and identified opportunities to build SFP partnerships and networks.

**Conclusion:** This approach led to one of the most comprehensive studies of SFPs in Ontario, and it demonstrates highly effective community-based methods to engage local stakeholders, explore existing SFPs, and leverage the value of school and community level involvement in research and decision-making. By integrating school board and community insights, the study enhanced understanding of SFP implementation and informed strategies tailored to local contexts. Thus, methodological adaptations to local contexts can improve the applicability of the data gathered and strengthen NSFP implementation in Canada.

## Latent classes characterized by perceived neighborhood food environment, household food security, and food shopping behaviors are associated with the home food environment of U.S. Hispanic/Latino households with youth

**Dr. Amanda McClain<sup>1</sup>**, Dr. Carmen R. Isasi<sup>2</sup>, Dr. Krista M. Perreira<sup>3</sup>, Dr. Josiemer Mattei<sup>4</sup>, Dr. Guadalupe X. Ayala<sup>1</sup>, Dr. Yasmin Mossavar-Rahmani<sup>2</sup>, Dr. Daniela Sotres-Alvarez<sup>5</sup>, Dr. Martha Daviglus<sup>6</sup>, Dr. Linda Van Horn<sup>7</sup>, Dr. Gregory A. Talavera<sup>1</sup>, Dr. Linda C. Gallo<sup>1</sup>

<sup>1</sup>San Diego State University, San Diego, USA, <sup>2</sup>Albert Einstein College of Medicine, Bronx, USA, <sup>3</sup>University of North Carolina School of Medicine, Chapel Hill, USA, <sup>4</sup>Harvard Chan School of Public Health, Boston, USA, <sup>5</sup>University of North Carolina Gillings School of Global Public Health, Chapel Hill, USA, <sup>6</sup>University of Illinois Chicago College of Medicine, Chicago, USA, <sup>7</sup>Northwestern Feinburg School of Medicine, Chicago, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** To fill a gap in knowledge, we previously identified five latent classes for the perceived neighborhood food environment (PNFE), household food security status, and food shopping behaviors among households in the U.S. multisite Study of Latino Youth (SOL Youth): 1) “average quality, somewhat costly PNFE, diverse food store shoppers,” 2) “high quality, high-cost PNFE, food-insecure supermarket shoppers,” 3) “poor quality, high-cost PNFE, convenience store and supermarket shoppers,” 4) “high quality, somewhat costly PNFE, food-secure diverse food store shoppers,” 5) “high quality, affordable PNFE, food-secure supermarket shoppers.” To advance this work, we investigated the relationships of these classes with the home food environment.

**Methods:** We used cross-sectional data from 983 households in SOL Youth, comprised of adult caregivers and youth (8-16y) residing together. Adult caregivers self-reported the frequency (never to always) in which 17 food/drink items were available in the home in the past 30 days. We considered these items individually (score range: 1-5) and as wholesome (5 items (fruit, vegetables, 100% fruit juice, low-fat/fat-free milk, unsweetened cereal), score range: 5-25) and empty-calorie (8 items (chocolate, candy, cakes, chips, juice drinks, sodas, sports drinks, sweetened cereal), score range: 8-40) scores, with higher scores indicating higher frequency of availability in the home. We examined relationships of latent classes with the home food environment using complex survey linear regression.

**Results:** Mean scores for wholesome, but not empty-calorie, food/drink items differed by latent class. Compared to “high quality, affordable PNFE, food-secure supermarket shoppers” (mean (SE): 18.6 (0.3)), mean wholesome item scores were lower for three classes (Class 1: 17.6 (0.4),  $P<0.01$ , Class 2: 17.7 (0.4),  $P<0.05$ , Class 3: 17.5 (0.4),  $P<0.05$ ), but did not differ from Class 4 (17.8 (0.4)). Mean raw fruit and raw vegetable scores also differed by classes in a similar pattern.

**Conclusions:** High quality, affordable neighborhood food environments and household food security may intersect to enable Hispanic/Latino households with children to have fresh fruits and vegetables in the home, although these environment-behavior intersections may be more

nuanced for other food/drink items. Future qualitative research is needed to contextualize these findings for intervention development to promote nutrition equity.



## Unstructured Summertime Activities among Preschoolers: An Analysis of Time-Use and Childcare Accessibility

**Mr. Griffin Randolph<sup>1</sup>**, Sarah Burkart<sup>1</sup>, Bridget Armstrong<sup>1</sup>, Elizabeth Adams<sup>1</sup>, R. Glenn Weaver<sup>1</sup>, Hannah Parker<sup>1</sup>, James White III<sup>1</sup>, Meghan Savidge<sup>1</sup>, Olivia Finnegan<sup>1</sup>, Nicholas Niako<sup>2</sup>, Michael Beets<sup>1</sup>

<sup>1</sup>Department of Exercise Science, University of South Carolina, Columbia, SC, USA, Columbia, USA,

<sup>2</sup>Department of Epidemiology and Biostatistics, University of South Carolina, Columbia, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Research suggests that children's health behaviors decline during the summer; little is known why. Therefore, understanding children's activities and whereabouts during the summer may help identify avenues for intervention. This study examines how preschoolers spend their time outside the home during the summer months and the accessibility and affordability of summer childcare programs for parents.

**Methods:** Participants included parents of preschool children ages 3-5 (n=34; 55.9% female; 50% White; 5.4±0.3 years) in an observational cohort study. Parents self-reported their hours worked, children's time in summer childcare, and completed daily diaries to report their children's activities outside the home (e.g., errands with parents, sporting events, birthday parties) during the summer.

**Results:** This time-use analysis consisted of 213 days of parent-reported daily diaries for children's summer activities, with parents completing an average of 5.0±0.4 daily diaries out of 7 possible days. The majority (86.8%) of waking hours during the summer were spent at home. When children did leave home, they accompanied parents on errands on 15.5% of the days (on days reported avg. 106.7±134.9 min/d), engaged in other activities (e.g., birthday parties, baseball games, doctor appointments) on 11.7% of days (174±128.6 min/d), and visited someone else's home on 8.5% of days (314±262 min/d). Children were only in summer childcare on 4.7% of the days (508±35.2 min/d). Parents reported not working on 65.7% of the days (n=134) during the summer. On the days parents did report working, they spent an average of 441±142.7 min/d at work. Additionally, 46.9% of parents (n=15) agreed they had options for childcare and 46.9% of parents (n=15) reported that the cost of summer childcare was difficult to afford.

**Conclusion:** Based on our findings, preschoolers spend most of their time at home and not in external structured environments during the summer. Parents assume significant responsibility and provide essential care for their children. The lack of structured environments and affordable childcare during the summer may pose challenges for many parents. Finding affordable summer programs may help support health-focused interventions in preventing weight gain and obesity risk among preschoolers.

## Design, framework and study measures of Brighter Bites, a cluster RCT to assess impact of a nutrition intervention on cardiometabolic health outcomes among children living in a persistent poverty area of Texas, USA

**Dr. Shreela Sharma<sup>1</sup>**, Dr Ru-Jye Chuang, Dr William Perkison

<sup>1</sup>UTHealth Houston School of Public Health, Center for Health Equity, Houston, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Introduction:** The Acres Homes Cancer Prevention Collaborative (AHCPC), one of five NCI-funded cancer prevention research centers, aims to reduce cancer risk in Acres Homes, a persistent poverty neighborhood in Houston, Texas. One AHCPC research project is evaluating Brighter Bites (BB), a school-based nutrition intervention providing fresh produce and nutrition education to under-resourced communities. We will present the framework, design, process, outcome measures, and preliminary baseline data of a cluster-randomized controlled trial (RCT) to test BB effects on child obesity, metabolic parameters (HbA1c, blood pressure), diet, food and nutrition security in children and their parents in Acres Homes.

**Methods:** We will randomize 12 schools into intervention and wait-list comparison groups across two waves over two school years (2024-2025 and 2025-2026). In the 2024-2025, six elementary schools were recruited and randomized (three per group), with 1st-3rd graders eligible with two years follow up per child. Schools were eligible if >75% of students were enrolled in the National School Lunch (NSLP) program. Grounded in the Social Cognitive Theory, the BB intervention includes 16 distributions of 20-25 lbs. of fresh produce, recipe tastings, bilingual English/Spanish nutrition education, and BB mobile app. Wave 1 baseline data was collected from 427 children and their parents from September to October 2024. Metabolic markers, BMI, and skin carotenoid levels are assessed in person, while other measures are obtained via parent-reported questionnaires.

**Results/Findings:** At baseline in fall 2024, 427 parent-child dyads were recruited across six Wave 1 schools (target N was 360). All recruitment and measurement approaches were reviewed for feedback by the AH CPC community advisory group. Among the 1st to 3rd grade children, 51.8% were female, and 78.2% Hispanic. Additionally, 26.9% of children participated in the NSLP, 32.5% received SNAP benefits, and 24.4% received WIC assistance. The average household size was five, with 31.13% of households earning \$15,000 - \$30,000 and only 43.3% had health insurance. Mean Veggie Meter scores were 225.71, average child HbA1c was 5.3% (5.4% pre-diabetic), and ~50% of children were overweight or obese.

**Conclusion:** This study will provide essential data on the impact of nutrition interventions on cardiometabolic health among at-risk children.

# A systematic review and meta-analysis of randomised controlled trials assessing antioxidant supplementation for the management of gestational diabetes in pregnancy.

**Dr Paige van der Pligt<sup>1,2</sup>**, Prof Glenn Wadley<sup>1</sup>, Dr I-Lynn Lee<sup>3</sup>, Dr Sara Ebrahimi<sup>4</sup>, Ms Sheree Spiteri<sup>2,4</sup>, Ms Kim Dennis<sup>2</sup>, Dr Shaun Mason<sup>1</sup>

<sup>1</sup>Institute for Physical Activity and Nutrition (IPAN), School of Exercise & Nutrition Sciences, Deakin University, Geelong, Australia, <sup>2</sup>Department of Nutrition and Dietetics, Western Health, Footscray, Australia, <sup>3</sup>Department of Endocrinology, Sunshine Hospital, St Albans, Australia, <sup>4</sup>School of Exercise & Nutrition Sciences, Deakin University, Burwood, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance first recognised in pregnancy and is the most common medical complication of pregnancy globally. Hyperglycaemia and associated production of reactive oxygen species can lead to oxidative stress in pregnancy. However, the potential effectiveness of increased antioxidant intake in the management of GDM has not been widely examined. Its usefulness alongside medical nutrition therapy (MNT) for assisting glycaemic control in women with GDM is not well understood. The purpose of this study was to establish the effect of antioxidant supplementation on the management of GDM by summarising evidence from randomised controlled trials to date.

**Methods:** A systematic review and meta-analyses of randomised controlled trials was conducted based on PRISMA guidelines. Databases searched were MEDLINE, CINAHL, Global Health, Scopus, Embase and Cochrane until September 2024. Random effects meta-analyses using Cochrane Review Manager software were conducted to establish the effect of antioxidant supplementation on multiple glycaemic outcomes in women with GDM.

**Results / findings:** A total of 13 studies (1380 participants) were included in the review. Mean BMI across study participants was 27.2kg/m<sup>2</sup>. All studies were clinical randomised controlled trials and 12 were double blinded. Four different antioxidants were assessed across studies (selenium (n=3); alpha-lipoic acid (n=4); zinc (n=5); e-3-gallate (n=1)). Significant pre-post differences between antioxidant supplementation and control groups were found for fasting insulin (SMD, 95%CI) (-0.97 [-1.69 -0.24]; p=0.009, HOMA-IR (-0.90 [-1.25, -0.54]; p<0.0000, HOMA-B (-0.86 [-1.05, -0.67]; p<0.00001 and QUICKI (1.09 [0.32, 1.87]; p=0.005 Heterogeneity was substantial (I<sup>2</sup>>50%, p<0.05) for all models except for HOMA-B (I<sup>2</sup>=0%, p>0.05). Nine studies were assessed as having low risk of bias and four studies rated 'some concerns' of bias.

**Conclusions:** Beneficial effects of antioxidant supplementation in pregnancy on fasting insulin, HOMA-IR, HOMA-B and QUICKI in women with GDM were observed. Findings suggest that antioxidant supplementation could be potentially useful for the management of GDM alongside current MNT. Further clinical trials are needed to establish the preferred type of antioxidants likely to be effective in practice.

## Association between food insecurity and dental caries prevalence, and oral health-related behaviors and factors among under-resourced children and families

**Dr. Ru-Jye (Lindi) Chuang<sup>1</sup>**, Dr. Mengxi Wang<sup>3</sup>, Ms. Jiaqi Jiang<sup>3</sup>, Dr. Alejandra Garcia Quintana<sup>2</sup>, Dr. Jose-Miguel Yamal<sup>3</sup>, Dr. Shreela Sharma<sup>2</sup>

<sup>1</sup>UTHealth Houston, Department of Health Promotion and Behavioral Sciences, Center for Health Equity, Houston, USA, <sup>2</sup>UTHealth Houston, Department of Epidemiology, Center for Health Equity, Houston, USA, <sup>3</sup>UTHealth Houston, Department of Biostatistics and Data Science, Coordinating Center for Clinical Trials, Houston, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Dental caries is one of the most prevalent chronic diseases among children in the United States, and is associated with poor diet quality. Food insecurity (FI), the limited or uncertain availability to obtain nutritionally adequate and safe foods, is a well-documented, poverty-linked social determinant of health. However, the association between FI and oral health is yet to be further explored. The objective of this study is to assess the association between household FI and kindergarten children's dental caries prevalence, oral health related practices, and parents' oral health-related psychosocial factors.

**Methods:** This cross-sectional analysis uses the baseline data from a parent cluster-randomized controlled trial, CATCH Healthy Smiles. Children's dental caries experience in primary and permanent teeth were assessed using the International Caries Detection and Assessment System (ICDAS) visual dental assessments conducted by trained dentists, and household FI, and oral health-related factors and practices were self-reported by parents. The baseline ICDAS data was collected from 1,084 kindergarten children from 34 elementary schools in Houston, TX, and 712 children's parent provided answers to FI and were included in the analysis. We used Chi-square or Fisher's exact tests to analyze categorical variables and Wilcoxon rank-sum test for continuous variables.

**Results:** Prevalence of household FI was 50.4% in this sample. Participating children had a median age of 5, majority were Hispanic (69.7%). Although no significance was observed, children from the FI group had a higher prevalence of active dental caries (50.1% vs. 48.7%) and needing urgent dental attentions (35.9% vs. 30.9%), as compared to the Food Security group. Parents identified as FI also reported to have significantly lower oral health-related knowledge ( $p=.015$ ), self-efficacy ( $p<.001$ ), social support ( $p=.003$ ), and oral health related quality of life for children ( $p<.001$ ) and for family ( $p=.001$ ). Moreover, children in the FI group reportedly miss more days of school (0.56 vs. 0.37,  $p=.021$ ).

**Conclusions:** Kindergarten students from under-resourced families are susceptible to FI. These results call for attention to address the impact of FI as part of oral health intervention programs to promote the health and well-being of children and their families.

## Feasibility and Preliminary Signal of a Sleep Promotion Program for 4-Year-Old Kindergarten Students: A Single Group Proof-of-Concept Study

**Dr. Sarah Burkart<sup>1</sup>**, Mr. Griffin Randolph<sup>1</sup>, Dr. Elizabeth L. Adams<sup>1</sup>, Dr. Michael W. Beets<sup>1</sup>, Ms. Olivia Plenzler<sup>1</sup>, Ms. Madeline Mikes<sup>1</sup>, Ms. Carmen R. White<sup>1</sup>, Dr. Lauren von Klinggraeff<sup>2</sup>, Mrs. Meghan Savidge<sup>1</sup>, Ms. Hannah Parker<sup>1</sup>, Ms. Olivia Finnegan<sup>1</sup>, Mr. James W. White III<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Dr. R. Glenn Weaver<sup>1</sup>, Ms. Francesca Lupini<sup>1</sup>, Dr. Anthony J. Holmes<sup>1</sup>, Dr. Keagan Kiely<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, United States, <sup>2</sup>Augusta University, Augusta, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Healthy sleep behaviors are essential for children's development, yet few studies have leveraged the unique partnership between teachers and parents to prevent suboptimal sleep. This study aimed to examine the feasibility and preliminary signal of a combined school- and home-based sleep promotion program using a single group design.

**Methods:** Children enrolled in needs-based 4K and their caregiver participated in a combined school- and home-based sleep promotion program in Spring 2024. The 4-week program was designed to promote sleep health and ultimately classroom behavior. Parents received text messages with sleep-related information 3x/week, an at-home activity to complete with their child 1x/week, and teachers led classroom activities 1x/week. Weekly topics emphasized the importance of sleep for health and academic success, creation and consistency of a bedtime routine, bedtime resistance strategies. At baseline and post-intervention, parents completed surveys and daily diaries while children wore a wrist-based Axivity AX3 accelerometer to measure sleep for 7 days. Following the program, parents and teachers completed a final evaluation survey. Feasibility indicators included recruitment, retention, and assessment completion metrics.

**Results:** Of 60 eligible children in 3 classrooms, 13 were interested and enrolled (22% recruitment yield). All participants finished the program, but one parent withdrew during post assessments citing work challenges. All teachers and parents agreed the materials were interesting and helpful. Teachers reported implementing 42% of classroom activities. Parents reported implementing 60% of home activities, with all parents completing at least one. All parent surveys were completed at baseline, and one was incomplete at post-intervention. Parents completed  $5.2 \pm 2.2$  and  $5.1 \pm 2.8$  daily diaries at baseline and post, respectively. Children provided  $5.1 \pm 1.8$  and  $5.4 \pm 2.5$  days of valid sleep data at baseline and post, respectively. Parents (83%) reported making changes to their children's sleep during the program, most frequently mentioning an earlier, more consistent bedtime. This was supported by accelerometry data which indicated an average bedtime of 10:11 PM ( $\pm 1.4$ hr) at baseline and 9:43 PM ( $\pm 1.1$ hr) at post.

**Conclusions:** Although the sleep promotion program demonstrated preliminary signal in shifting bedtime earlier, strategies to boost recruitment and implementation of program activities must be emphasized in the pilot RCT.

## Associations of financial stress with overall stress, executive functioning, adiposity, and cardiometabolic risk factors among predominantly low-income Hispanic and Black adults

**Miss Mackenzie Senn<sup>1</sup>**, Ms. Angela Zieba<sup>1</sup>, Dr. Jemima John<sup>1</sup>, Dr. Terry Huang<sup>2</sup>, Ms. Christine Whang<sup>2</sup>, Ms. Annie Dunlap<sup>2</sup>, Dr. Luis Olivera Leon<sup>2</sup>, Dr. Shreela Sharma<sup>1</sup>

<sup>1</sup>UTHealth Houston School of Public Health, Houston, USA, <sup>2</sup>CUNY Graduate School of Public Health & Health Policy, New York, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Over 40% of adults are affected by obesity in the U.S. today. Obesity interventions often lack consideration of the status of mental health and cognitive load as precursors to intervention success, especially in low-income adults. Limited prior research has shown that financial stress may be associated with obesity, independent of income. To examine the cross-sectional associations of financial stress with overall stress, cognitive functioning, adiposity, and cardiometabolic risks among predominantly low-income Hispanic and Black adults.

**Methods:** A sample of 62 adults from Houston, TX and New York, NY provided measures on financial stress, self-reported stress, cognitive functioning tests, body mass index (BMI), waist circumference, and metabolic indicators (blood pressure, fasting glucose and lipids, and HbA1c). Descriptive statistics, correlations, and regression modeling will be used to examine associations among these variables. Analysis is ongoing and anticipated to be completed spring 2025 and we will plan to present the results in June 2025.

**Results:** Data were collected from 26 participants in Texas, mostly female, with an average age of 43 years. Forty-six percent identified as Hispanic, 42% as Black, and 12% as White. Seventy-six percent had completed at least some college (1-3 years) or higher education. Over half lacked health insurance, while 31% had public insurance and 15% had private insurance. Sixty-five percent had a household income below \$35,000. The mean BMI was  $7.8 \pm 8.6$ , and 30% were pre-diabetic. Participants had a Spending Source Score of 3.5 (range: 1-5), indicating limited spending ability, with most reporting difficulty paying bills and making ends meet. On average, participants experienced moderate perceived stress, with a score of 22 (range: 0-40). We hypothesize that higher financial stress is associated with increased overall stress, lower cognitive functioning, higher adiposity, and a higher risk of metabolic dysfunction.

**Conclusion:** This pilot study sheds light on the role of financial stress, a proxy social determinant of health, in obesity and related metabolic outcomes. Study results will inform future interventions on how to mitigate stress and improve cognitive functioning by improving financial security as a strategy to optimize the impact of obesity and related chronic disease interventions.

# Impact of Multi-Ethnic Classification Methods on Adolescents' Physical Activity Outcome

**Mr. Ziang Li<sup>1</sup>**, Prof. Justin Richards<sup>2</sup>, Dr. Hayley McGlashan-Fainu<sup>1</sup>, Prof. Melody Smith<sup>1</sup>

<sup>1</sup>University of Auckland, Auckland, Aotearoa New Zealand, <sup>2</sup>Victoria University of Wellington, Wellington, Aotearoa New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Ethnic differences in physical activity (PA) have been observed internationally. The classification of ethnicity in an increasingly multi-ethnic society may play a role in observed differences. Considering Aotearoa New Zealand's increasingly younger multi-ethnic population, the selection of ethnicity classification methods becomes a crucial step when conducting research on adolescent PA. This study aims to investigate the differences in adolescent PA outcomes using four ethnicity classification methods provided by Statistics New Zealand and to explore their strengths and weaknesses.

**Methods:** This study utilises data from the 2023 Voice of Rangatahi survey led by Ihi Aotearoa Sport New Zealand. MVPA was assessed by asking participants, "Over the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?" with responses ranging from 0 to 7. Ethnicity data were collected with the question, "Which ethnic group or groups do you identify with or belong to?" with 17 options, allowing for multiple selections. PA outcomes for different ethnic groups were compared using the Prioritised, Total Response, and Single/Combination-8 and 15 groups methods. Differences in PA outcomes were determined using the Kruskal-Wallis test and post-hoc Dunn comparisons, with adjustments for multiple comparisons via the Bonferroni Correction. Model fits for four ethnicity classification methods were assessed using Generalized Linear Models with Negative Binomial Regression.

**Results:** The multi-ethnic group accounted for 24.33% of the participants. Overall trends in PA outcomes among adolescents across the four classification methods were relatively stable; however, differences in PA levels were observed between ethnic groups. Compared to Prioritised and Total Response methods, approximately 30% of ethnicities, except Māori, were reclassified into more prioritised categories. The Single/Combination methods demonstrated greater stability in PA data for multi-ethnic groups.

**Conclusions:** Although the choice of ethnicity classification methods did not significantly affect adolescent PA outcomes in this study, each method emphasises different aspects. The Single/Combination method appears more suitable for data with a higher proportion of multi-ethnic groups, while the Prioritised and Total Response methods do not effectively maintain PA data stability. Careful selection of ethnicity classification methods is recommended based on the research focus.

## Incorporating plant-based protein foods into menus for Early Childhood Education and Care settings: Staff perspectives

**Dr. Penelope Love<sup>1</sup>**, Ms Kathleen See<sup>1</sup>, Dr Alison Spence<sup>1</sup>, Dr Jennifer McCann<sup>1</sup>

<sup>1</sup>Deakin University, Geelong, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Increasing intakes of dietary plant-based proteins (e.g. legumes) has potential to improve human health (SDG 3) and reduce environmental impact (SDG 13). Food preferences and dietary habits form in early childhood, providing an opportunity for early exposure to plant-based proteins (PBPs). Globally, 54% of children aged 3-6years (21% LMIC; 79% HIC) attend early education and care (ECE) for 3-4 full days a week, during which 50-60% of daily dietary requirements should be met. ECE is therefore an important setting to positively influence dietary exposure to unfamiliar foods such as PBPs. There are limited studies exploring the understanding and confidence of ECE staff regarding the feasibility of introducing PBPs within their services. This study explored barriers and enablers to PBP food provision from the perspectives of ECE staff involved in menu planning and/or food preparation/cooking.

**Methods:** Online surveys captured cross-sectional qualitative data and minimally descriptive quantitative data. The online survey was open during July 2023, with open and close-ended questions, including ECE service and participant characteristics; knowledge and attitudes to PBP consumption; perceived barriers/enablers to including PBPs in meals/snacks; strategies to encourage child consumption of PBPs; menu planning resources used. Data was exported to MS-Excel for descriptive analysis and to NVIVO for qualitative inductive thematic analysis using a constructivist approach.

**Results:** Ninety-one respondents completed the survey. The majority were in management (59%) positions with a duration of >10years in the role, and a diploma or degree qualification; followed by cooks/chefs (37%) with a duration of <5years in the role, and a diploma qualification. Most (60%) ate animal-proteins (meat, chicken, fish) regularly, with 30% eating these foods less than 3d/week. Three respondents (all management roles) ate no animal-proteins. While most (71%) reported using evidence-based Menu Planning Guidelines, less than half (48%) reported using specific plant-based guidelines. Concerns about allergies and child resistance were most frequently cited barriers and provision of recipes and training were most frequently cited enablers to the inclusion of PBPs.

**Conclusion:** This study advances our knowledge about ECE staff perspectives regarding plant-based food provision. Study findings can inform the development of appropriate support and resources for this sector.

## Data driven method for spatial mapping of 'Food Outlets' across Europe.

**Mr. Mohan Raju Jayashankaramma Shankar Raj**<sup>1,2,3</sup>, Mr. Nishit Patel<sup>1,2,3</sup>, Mr Wagtendonk Alfred<sup>1,2,3</sup>, Dr. Jeroen Lakerveld<sup>1,2,3</sup>

<sup>1</sup>Amsterdam UMC, Epidemiology and Data Science Dept, Amsterdam, Netherlands, <sup>2</sup>Amsterdam Public Health Research Institute, Amsterdam, Netherlands, <sup>3</sup>Upstream Team, Amsterdam, Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** The neighborhood density of (un) healthy food outlets likely influence dietary behaviors and nutrition-related health outcomes of residents. Thorough research into this requires adequate spatial variability, big data sets, and standardized, high-resolution spatial information on food retail exposure. This study aims to map all restaurants, fast-food outlets, supermarkets and greengrocers in Europe using a novel, step-by-step Google scraping method.

**Methods:** First, we utilized publicly available 'postal codes' data and leveraged Google Maps API (Application Programming Interface) key to retrieve 'nearby' food outlet place IDs (identifiers) and their corresponding names for each postal code's geographical area. Unique Google map URL (Uniform Resource Locator) were then constructed for each 'relevant food retail outlet category with the collected place IDs to retrieve geo-coordinates (latitude and longitude) of each outlet. Alongside this, additional food outlet categories for restaurant attributes such as reviews, ratings, opening hours, delivery, dine-in, and takeaway were also scraped which provide important insights when mapping food environments.

**Results/Findings:** Using our novel scraping method, we were able to successfully retrieve geo-coordinates and attributes for close to 2.5 million restaurants across Europe, resulting in a comprehensive and highly accurate POI (Point of Interest) dataset suitable for advanced geospatial and epidemiological analyses. The positional accuracy of the POIs was checked for its highest spatial accuracy.

**Conclusions:** We mapped food outlets at highest resolution with good spatial accuracy for the whole of Europe. The method applied successfully combined open data sources with API technologies. This spatial data enables conducting geographically precise and data-rich analyses on Europe's food environment, and the association with health behaviors and health outcomes. It could furthermore contribute to the development of targeted interventions and policies aimed at improving nutritional health outcomes.

## Parental perceptions of female tamariki physical activity behaviours: A case study situated within the Tāmaki Makaurau Auckland region

**Miss Emma Birley<sup>1</sup>**, Dr Rachel Batty<sup>1</sup>, Professor Ajmol Ali<sup>1</sup>

<sup>1</sup>Massey University, Auckland, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** In Aotearoa New Zealand, physical activity rates are recognised as low amongst children aged 5-11 years (tamariki). The Tāmaki Makaurau Auckland region is specifically noted as having one of the lowest physical activity participation rates for tamariki in the country. Furthermore, significantly lower participation rates have been reported amongst female tamariki. With these rates in mind, it is important to appreciate the key role parents and caregivers play in determining their children's physical activity levels. In this sense, they are often described as 'gate keepers'. It is important to understand their attitudes and approaches towards physical activity, along with the opportunities provided to (and for) their daughters. Limited qualitative research exists pertaining to parental perspectives on tamariki and physical activity, particularly in younger girls. Therefore, the aim of this study is to explore parent and caregiver perceptions pertaining to physical activity engagement involving female tamariki, whilst also encouraging discussion on noted barriers and facilitators of participation. Such insights will contribute to the understanding of physical activity behaviours and may help guide future interventions to increase physical activity participation rates amongst female tamariki. This study is part of a larger ongoing study exploring a wider set of stakeholders' perceptions on physical activity and female tamariki.

**Methods:** Semi-structured, one-to-one online interviews were conducted with parents and caregivers of female tamariki across the Tāmaki Makaurau Auckland region. Recognising that the influence of physical activity participation is complex, the socio-ecological model was employed as a theoretical framework to inform the interview questions. Interviews were transcribed verbatim, and data is being inductively analysed using thematic analysis. Key themes and findings will be presented. The latter will be mapped using the socio-ecological model.

**Findings:** Findings are forthcoming and will address the identified existing gap in literature regarding parental perceptions of female tamariki and physical activity within an Aotearoa New Zealand context.

**Conclusions:** Conclusions are forthcoming. This study will encourage parents to assess the provision, and appreciate the value of physical activity for their female tamariki. Findings will also help inform future initiatives to better support female tamariki in increasing their physical activity levels.

## Associations between ultra-processed food intake in toddlerhood and childhood and prospective trajectories of body mass index into adolescence: findings from the UK Gemini cohort

**Miss Gabriella Heuchan<sup>1</sup>**, Dr Harry Tattan-Birch<sup>1</sup>, Dr Rana Conway<sup>1</sup>, Professor Clare Llewellyn<sup>1</sup>

<sup>1</sup>University College London (UCL), London, United Kingdom

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** To determine associations between ultra-processed food (UPF) intake at 21-months and 7-years-of-age and body mass index (BMI) trajectories, before and after adjustment for confounders and diet quality.

**Methods:** Design: Prospective birth cohort established in 2007 with repeated measures of height and weight up to age 15-years and dietary intake at age 21-months and 7-years. Participants: Children from the Gemini study of twins born in 2007 in England and Wales. Measures: The exposure was UPF intake as a percentage of daily energy intake, measured using 3-day diet diaries at 21-months and 7-years-of-age. The outcome was modelled BMI up to age 15-years for children consuming UPF at the mean and 1 standard deviation above ('high UPF') and below ('low UPF') the mean at ages 21-months and 7-years. Analyses: BMI was modelled using linear mixed-effects models. Models included (1) unadjusted BMI trajectory, (2) adjusted for sociodemographic and maternal health cofounders and concurrent BMI at UPF intake timepoint, (3) as previous, additionally adjusting for saturated fat and sugar as % total energy and sodium density, and (4), as previous, additionally adjusting for total energy intake.

**Results:** In total, 4746 children had a mean of 10.2 (SD 8.48) BMI measurements from birth to 15.8-years-of-age. Of these, 2587, 592, and 570 twins had dietary data at 21-months, 7-years, and both ages, respectively. Mean UPF intake was 46.9% (SD 14.7) energy at 21-months and 59.4% (SD 12.5) at 7-years-of-age. Children with high UPF intake had higher BMIs at 15-years-of-age than those with low intake. BMI difference for high vs low UPF intake was 0.82 units (95% CI, 0.47-1.17;  $P < 0.001$ ) at 21-months and 0.56 units (95% CI, 0.08, 1.04;  $P = 0.02$ ) at 7-years in model 2. [model 3&4 in progress, completion expected December 2024].

**Conclusions:** Higher consumption of UPF in toddlerhood and childhood was associated with higher BMI in later childhood and adolescence. [further comment to be added on the results when adjusting for diet quality].

## **YEBO-SPAN (Youth Engaged- Better Outcomes): Exploring adolescent citizen scientists' healthy eating, physical activity, and mental well-being using social network analysis in Cape Town, South Africa.**

**Dr. Zulfah Albertyn-Blanchard<sup>1,2</sup>**, Associate Professor Olufunke Alaba<sup>1,3,2</sup>, Dr Sasha West<sup>4</sup>, Mr Roger Woodruff<sup>1,2</sup>, Dr Feyisayo Wayas<sup>1,2</sup>, Dr Ismail Teladia<sup>5</sup>, Emeritus Professor Estelle Vicki Lambert<sup>1,2</sup>

<sup>1</sup>University of Cape Town, Cape Town, South Africa, <sup>2</sup>Research Centre for Health through Physical Activity, Lifestyle and Sport (H-PALS), Faculty of Health Sciences, Cape Town, South Africa, <sup>3</sup>Health Economics Unit, School of Public Health and Family Medicine, Cape Town, South Africa, <sup>4</sup>Human Performance Laboratory, Cape Peninsula University of Technology, Cape Town, South Africa, <sup>5</sup>Directorate Curriculum GET, Western Cape Education Department, Cape Town, South Africa

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Adolescents' social relationships, particularly with their peers and family, have a great impact on their behaviour and can shape their attitude towards their well-being. A social network analysis was performed to understand who the key players are in adolescent citizen scientists' social networks and their role in healthy eating behaviour, physical activity, and mental well-being.

**Methods:** Adolescents (14–15 years) from two Cape Town secondary schools participated in the Youth Engagement for Better Outcomes (YEBO\_SPAN) Study, using a citizen scientist (CS) approach. A bespoke social network survey was developed, asking youth to identify themselves in terms of various descriptive attributes, and examine how key individuals and attributes, from family (e.g., parents, grandparents) to peers (e.g. best friend, sporty friend, clever friend), or community (e.g. coach, faith-leader, teacher) influenced their healthy eating, physical activity, and mental well-being. Roles were categorized as supportive, advisory, or obstructive to these behaviours. Preliminary results are presented using Pandas in Python, with detailed network analysis and visualization planned later using NetworkX.

**Results/findings:** Among 93 adolescent CS, 75.2% (n=70) identified as female, and 23.6% (n=22) as male, with an average age of 14.7 years (SD = 0.65). Participants described themselves primarily as curious (40.8%), smart (31.1%), and kind (24.7%). These attributes were predominantly described by female CS, whereas, male CS specifically described themselves as embodying other attributes like creativity (40.9%) and being sporty (31.8%). Mothers were the primary source of advice on healthy eating, physical activity, and mental health, followed by best friends. However, paradoxically, both were also noted as unsupportive in these areas. When mothers were unsupportive, reasons included food preparation (24%) for healthy eating, lack of time or knowledge (both 13.9%) for physical activity, and cultural/traditional barriers or lack of support for mental health. Best friends were considered unsupportive due to food purchases for healthy eating and deprioritization of physical activity and mental health. No differences were observed in roles by gender.

**Conclusions:** Strengthening the relationship and communication between the core individuals within the social network of adolescent CS can greatly improve their well-being.

# Addressing the Double Burden of Malnutrition in Indonesia: Evaluating Food Retail Policies for Healthier Environments

**Dr. Avita Usfar<sup>1</sup>**, Ms. Nadhila Beladina<sup>1</sup>, Ms. Esther Novalia<sup>1</sup>, Ms. Azka Fitri<sup>1</sup>, Mr. Iwan Ariawan<sup>1</sup>

<sup>1</sup>Reconstra Utama Integra Research, Jakarta, Indonesia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Southeast Asian countries are facing a double burden of malnutrition, both of undernutrition and growing number of obesities. This trend is attributed to the dietary shifts from economic transitions, urbanization, and the obesogenic environments. In Indonesia, the lack of information on food retail landscape hampers the efforts to address these issues. This study highlights the need to understand policies in shaping food retail to promote equitable access to healthy foods and foster healthier food environments for improved public health outcomes in the region.

**Methods:** We analyzed 133 policy documents and conducted in-depth interviews with 21 stakeholders representing various sectors, including ministries and agencies in 2022-2023, to identify regulatory frameworks, strategies, and gaps of food retail management in Indonesia. This study mapped the current food retail landscape, policy implementation, and barriers to promoting healthy food access. The findings provide insights into policy effectiveness and offer actionable recommendations for fostering healthier food environments.

**Findings:** The current policy environment for promoting a healthy food environment reveals significant gaps, particularly in the food retail sector. Food retailers are not mandated to engage in nutrition-related programs due to a lack of clear regulations and community demand. Furthermore, the "healthier choice" label policy is not widely adopted by the food industry, remaining voluntary with guidelines that require refinement. Existing policies are predominantly focused on food safety, neglecting the crucial nutritional aspects at points of purchase. Additionally, suboptimal food governance, characterized by siloed government operations, hinders effective monitoring and evaluation of Nutrition Facts labeling policies within the ready-to-eat food industry.

**Conclusions:** The analysis of Indonesia's food retail policies highlights gaps and challenges in promoting a healthy food environment, including the absence of mandatory nutrition-related programs for retailers and the voluntary nature of "healthier choice" labeling. Policies primarily focus on food safety over nutritional value, while weak governance and fragmented government operations hinder effective monitoring and implementation. An integrated approach is needed, with stronger regulations mandating healthier food options in retail and fostering stakeholder collaboration to enhance policy effectiveness and public health outcomes.

## YEBO-SPAN (Youth Engaged: Better Outcome- Social networks, Physical Activity and Nutrition): Factors Associated with Lifestyle Choices in Adolescent Citizen Scientists from South Africa.

**Prof. Olufunke Alaba<sup>1,2,3</sup>**, Dr Zulfah Albertyn-Blanchard<sup>1,3</sup>, Dr Sasha West<sup>4</sup>, Mr Roger Woodruff<sup>1,3</sup>, Dr Feyisayo Wayas<sup>1,3</sup>, Dr Ismail Teladia<sup>5</sup>, Emeritus Professor Estelle Vicki Lambert<sup>1,3</sup>

<sup>1</sup>University of Cape Town, Cape Town, South Africa, <sup>2</sup>Health Economics Unit, School of Public Health and Family Medicine, Cape Town, South Africa, <sup>3</sup>Research Centre for Health through Physical activity, Lifestyle and Sport (H-PALS), Faculty of Health Sciences, Cape Town, South Africa, <sup>4</sup>Human Performance Laboratory, Cape Peninsula University of Technology, Cape Town, South Africa, <sup>5</sup>Directorate Curriculum GET, Western Cape Education Department, Cape Town, South Africa

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: K. Participatory Research in Health Promotion**

**Purpose:** YEBO-SPAN is a pilot project designed to engage adolescents self-identified as 'citizen scientists'; to recognize barriers to healthy eating, physical activity (PA) and mental well-being in their school and surrounding community environments; and to proffer solutions and advocate for stakeholders to address these barriers. This presentation aims to describe the results of a lifestyle survey completed at the start of the project, to gain insights into their practices and perceptions of barriers and facilitators to their healthy lifestyle choices. These lifestyle choices include healthy eating, physical activity, screen time and sleep habit

**Methods:** Self-identified 'citizen scientists' (N=97) from two secondary high schools located in low-middle income communities in Cape Town, South Africa, completed a lifestyle questionnaire, adapted from the Global Diet and Activity Research (GDAR) network, and a bespoke social network survey (results not presented here). Questions include household demographics, a food habits questionnaire, questions on PA related to different domains including sport, physical education, travel, and non-structured activity, screen time, sleep habits, and factors that influence these behaviours.

**Results:** The average age of the adolescents was 14.7 years (SD = 0.65), with 75.2% identifying as female. Preliminary results show that 31.9% of girls and 27.8% of boys were in the top third of the healthy eating score, which includes fruit, vegetables, and protein consumption. For moderate-to-vigorous physical activity (MVPA), 61% of boys and 12.7% of girls were in the highest third of MVPA scores. Associated factors of mental well-being like screen and sleep time revealed that 53.2% of adolescents slept more than 8 hours on weekdays, increasing to 61% on weekends. Boys' weekend sleep decreased from 57% to 52%, while girls' increased from 52% to 64%. Weekly pocket money was negatively associated with 8+ hours of sleep in a week. Additionally, 27.4% reported daily screen time over 120 minutes, with 29.7% of girls and 21.1% of boys.

**Conclusions:** This study highlights critical insights into adolescents' lifestyle behaviours, particularly sleep, screen time, PA, and dietary habits. Addressing gender disparities through targeted health promotion strategies is crucial for improving adolescent health outcomes.

# Knowledge Attitudes and Behaviours Towards Reducing Meat Consumption Among Meat-Eaters Across Five High-income Countries: A Systematic Review

**Miss Dinithi Uthumange<sup>1,2</sup>**, Dr. Kathryn Bradbury<sup>1,2</sup>, Prof. Boyd Swinburn<sup>1</sup>, Helen Eyles<sup>1,2</sup>

<sup>1</sup>Department of Epidemiology and Biostatistics, School of Population Health, Faculty of Medical and Health Sciences, University of Auckland, Auckland, New Zealand, <sup>2</sup>Centre for Translational Health Research: Informing Policy and Practice, Faculty of Medical and Health Sciences, University of Auckland, Auckland, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This systematic review aimed to synthesize the current evidence on Knowledge, Attitudes, and Behaviours (KAB) of adult meat-eaters (18 years and older) toward reducing meat consumption in countries with similar food systems and high population meat intakes (Australia, Canada, New Zealand, the United Kingdom, and the United States).

**Methods:** Methods followed the PRISMA guidelines. A systematic search was conducted in June 2024 and updated in October 2024 across MEDLINE (Ovid), Scopus, and EMBASE. Studies published in English from January 2015 to October 2024 were included. All study designs with observational data were eligible. Studies focusing on vegan and vegetarian diets, and those including only participants who had already omitted animal-based products were excluded. Study quality was assessed using the Critical Appraisal Skills Programme (CASP) and the Appraisal Tool for Cross-Sectional Studies (AXIS).

**Results:** The initial search identified 5,068 studies (1818 Medline, 1742 Scopus, 1508 EMBASE). After removing duplicates (n=1,714), 3,354 titles and abstracts were manually screened. Full texts of 84 papers were assessed for eligibility, with 51 included in the final review: 40 quantitative, three mixed-methods, and eight qualitative studies. Most studies were from the UK (n=20), followed by Australia (n=15), USA (n=14), Canada (n=4) and NZ (n=3), with some overlap. All five countries followed similar patterns in KAB. Preliminary findings indicate that most study participants were aware of the negative health and environmental impacts associated with high consumption of animal-based products. Although a large portion of participants made efforts to reduce the intake of meat and other animal-based products, several reasons were observed for continued consumption, including the belief that meat is a 'necessary' component in a healthy diet. Females perceived reducing animal-based product intake more favourably compared to other genders. Health, animal welfare, and environmental impact were identified as key factors encouraging meat reducing behaviours.

**Conclusion:** The KAB of adults in countries with high meat intakes toward reducing meat provide important context for developing effective strategies and policies to support the transition to more sustainable diets.

## Creating healthy diets whilst minimising change from current diets: a linear programming approach

**Miss Hannah Griffin**<sup>1</sup>, Dr Breige. A McNulty<sup>2</sup>, Dr David Wright<sup>3</sup>, Dr Anne. P Nugent<sup>1</sup>, Professor Lorraine Brennan<sup>2</sup>, Dr Patricia Eustachio Colombo<sup>4,5</sup>

<sup>1</sup>Queen's University Belfast, School of Biological Sciences, Belfast, Northern Ireland, <sup>2</sup>University College Dublin, UCD School of Agriculture and Food Science, Dublin, Ireland, <sup>3</sup>Queen's University Belfast, School of Medicine, Dentistry and Biomedical Sciences, Belfast, Northern Ireland, <sup>4</sup>Karolinska Institutet, Department of Global Public Health, Stockholm, Sweden, <sup>5</sup>London School of Hygiene and Tropical Medicine, Centre on Climate Change and Planetary Health, London, United Kingdom

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: N. Systems Science**

Nutritionally adequate diets are widely promoted, yet there is little information about how population dietary intakes may have to adjust to align with such goals and whether they would be acceptable. There is currently no such information for the island of Ireland (Iol). Using a linear programming approach, where minimal deviation from usual diet was used as a proxy for acceptability, this study modelled what nutritionally adequate yet acceptable diets may comprise for Iol individuals. Following estimation of population mean daily intake (MDI) of nutrients and of 44 food groups, linear programming was used to generate three scenarios which optimised population diets, but maintained acceptability. First, constraints relating to energy and macronutrients were applied (scenario 1), followed by constraints relating to energy, macronutrients and 13 other vitamins/minerals (scenario 2) and finally energy, macronutrients, 13 other nutrients plus the Irish Food Based Dietary Guidelines (scenario 3). Two national food surveys representing the Iol were combined, providing a total cohort of 1484 adults aged 18-64y. With each scenario, the number of individuals that could meet the criteria decreased. In scenario 1, 100% of the cohort met the constraints with all food groups included in the proposed diets. This reduced to 93% and 71% for scenarios 2 and 3 respectively, with 'liver and liver dishes' being excluded from scenarios 2 and 3. The number of food groups that increased from the baseline diet (based on mean intakes) across scenarios differed, with 19 food groups increasing in intakes in scenario 1, 21 food groups increased in 2 and 20 food groups in 3. There was a trend whereby intake of plant based food groups increased and animal based food groups decreased throughout each scenario in order to fulfil the nutritional constraints. A nutritionally adequate diet that meets both nutrient requirements and dietary guidelines is possible, however, the more constraints added the harder it is to create diets that are similar to current baseline intakes and likely to be acceptable. Across the scenarios increases in consumption of plant based food groups and decreases in animal based food groups were observed generally.

# Changing the beliefs of the people living in the Federal Capital Territory (FCT) of Abuja, Nigeria (Cattles/Fulani) on land grazing

**Mr. Michael Oke<sup>1</sup>**

<sup>1</sup>Michael Adedotun Oke Foundation, Federal Capital Territory P.O.BOX 11611, Abuja, Nigeria, Nigeria

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

According to World Bank predictions, Nigeria's population is projected to double to 400 million people between 2015 and 2050. It is projected that the population growth will have a significant impact on the demand for livestock as a vital source of food and livestock products. Amidst the challenges posed by climate change, farmer-herder conflicts, and population growth, the industry needs to develop innovative and flexible technologies, boost crop-livestock integration, and establish small- and commercial-scale dairy and beef farms. It also needs to establish pastures and feedlots, manage livestock migration, and implement peace-building mechanisms. While the mindset of the cattle herdsman, moving for the free grasses and water in the cities of the Federal Capital Territory has altered the livestock productivity. Some of the Fulani's who were interviewed continued to adhere to the distinct traditions, beliefs, and ideologies of this generation regarding the movement of cattle, while others continued to operate their farms for dubious reasons, asserting that their revenue comes from raising livestock. It's a business, and customary behavior needs to alter due to the implications for the agricultural sectors, and open grazing methods need to be outlawed. There are various advantages and disadvantages to the opening grazing that is involved, and it is necessary to validate the cow's placement in the research sites in Gwagwalada, Kwali. Not moving their cattle along and developing discipline are also important recommendations based on our research. The government should outlaw these practices and implement new technologies for cattle production in the Federal Capital Territory of Abuja, Nigeria. Moving cattle into a profitable area also necessitates setting up and managing a pasture. Keywords: Cow, grazing, Fulani, Federal Capital Territory, raising, Livestock

# Sex and Gender in Sedentary Behaviour Research with Older Adults: A Scoping Review

**Dr. Jennifer Copeland<sup>1</sup>**, Milena Zdjelar<sup>1</sup>, David Scott<sup>2</sup>, Jon Doan<sup>3</sup>, Shilpa Dogra<sup>4</sup>

<sup>1</sup>Dept. of Kinesiology & Physical Education, University of Lethbridge, Lethbridge, Canada, <sup>2</sup>University Library, University of Lethbridge, Lethbridge, Canada, <sup>3</sup>Faculty of Health Sciences, University of Lethbridge, Lethbridge, Canada, <sup>4</sup>Faculty of Health Sciences, Ontario Tech University, Oshawa, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Sex and gender-based analyses of sedentary behaviour among older adults could identify important considerations for improving adherence to interventions that promote healthy movement behaviours and healthy aging. The purpose of this study was to explore how sex and gender are being considered in research on sedentary behaviour among older adults, and how researchers are defining and measuring sex and gender.

**Methods:** A scoping review was conducted to examine research that used a sex and gender-based analysis (SGBA) of sedentary behaviour among older adults. Studies published in the databases MEDLINE, APA PsycINFO, Web of Science, and SPORTDiscus were searched with no date limits. Articles were included if participants were  $\geq 65$  years, sedentary time was measured, and a SGBA was conducted. Two researchers independently screened studies and reviewed the extracted data. Studies were categorized based on the stated objectives of the SGBA and how sex and gender were measured. The terminology of sex- and gender-related variables were examined and the interpretation of sex and/or gender differences were reviewed to identify any themes or direction for future work.

**Results:** Forty-one studies were identified from 3470 records screened. No specific tools were used to assess sex or gender in any study and only binary categories for sex or gender were presented. Eight studies consistently used sex- and gender-related terminology in ways that aligned with the accepted definitions of each; 33 studies used sex- and gender-related terms interchangeably. Two themes were identified for the stated purpose of the SGBA: 1. to explore sex or gender as a determinant of sedentary behaviour ( $n=26$ ), or 2. to determine if sex or gender moderated the impact of sedentary behaviour on health ( $n=15$ ). 28 studies suggested differences in sedentary behaviour between men and women are explained by gender roles and the division of household labour.

**Conclusions:** Using sex- and gender-related terminology interchangeably dismisses the complexity of biological and sociocultural factors that impact health and health behaviours. There are critical gaps in our understanding of how sex and gender may influence sedentary behaviour among older adults and in the approach to studying, measuring, and analysing these relationships.

# The contribution of youth sport participation to physical activity levels and cardiovascular disease risk factors in 5- to 14-year-old children: a systematic review and meta-analysis.

Dr. Jacob Otile<sup>1</sup>, **Jake Long**<sup>1</sup>

<sup>1</sup>Indiana University, Bloomington, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Introduction:** Cardiovascular disease (CVD) accounts for 18 million deaths annually, disproportionately burdens underrepresented racial and ethnic groups, with economic costs surpassing any other health condition. Youth sport participation may improve CVD-related risk factors, but these studies have shown mixed outcomes. As the primary objective of this systematic review, we examine youth sports' impact on physical activity (PA) levels and CVD risk factors in children aged 5 to 14. The secondary objective assesses variations outcomes by racial and ethnic groups.

**Methods:** This systematic review, registered with PROSPERO (CRD4202347219), utilized Covidence software, encompassing studies published in English, Spanish, and Portuguese between January 1995 and April 2024 across PubMed, Medline, EMBASE, Cochrane Library, SPORTDiscus. Included studies on youths from any health background assessing sports' impact on PA or CVD risk factors, examining outcomes like PA levels, blood pressure, lipid fractions, BMI, central adiposity, systemic inflammation, or glucose levels/insulin resistance. Cochrane Risk of Bias version 1 tool evaluated study quality. Meta-analysis will have narrative descriptions and summary tables based on study design and outcomes. Studies were categorized into observational and experimental sub-groups for separate analysis and investigating heterogeneity sources.

**Results:** Initial screening phase consisted of 12,285 studies; 372 studies underwent full-text review, and 154 made the final extraction. We are currently finalizing data extraction and expect completion by May 2025. Findings may inform how sport can be included in physical activity-based interventions and vice versa, and how PA-based interventions/programs can be incorporated into existing sport programs for optimal health outcomes in children and public health.

**Conclusion:** Based on the findings of this study, we anticipate that we will identify correlation between physical activity and or sport participation with cardiovascular risks. This will identify the gaps for future research as well as the incorporation of physical activity and sports participation in school programs.

# Community Solutions to Enhance the Healthfulness of Grocery Stores: A Mixed-Methods Study on the Perspectives of Immigrant Parents

**Dr. Hadis Dastgerdizad Elyaderani**<sup>1</sup>, Dr Rachael Dombrowski<sup>2</sup>, Dr Bree Bode<sup>3</sup>, Dr James Mallare<sup>4</sup>

<sup>1</sup>University of Miami, Coral Gables, USA, <sup>2</sup>California State University, San Marcos, USA, <sup>3</sup>Michigan Fitness Foundation, Lansing, USA, <sup>4</sup>Wayne State University, Detroit, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Grocery store environments are recognized as key community settings for promoting and sustaining healthy nutritional behaviors in children, particularly for immigrant families who have historically faced inequities and often face limited access to nutritious foods and higher rates of diet-related diseases. This study aimed to (1) identify the factors within grocery store environments that influence parents' decisions to purchase sugar-sweetened beverages (SSBs) for children 2-5 years old (2) explore immigrant parents' perspectives on strategies to reduce SSB purchases and consumption.

**Methods:** An explanatory sequential approach with a mixed-methods design was employed. Quantitative data were collected through surveys of 110 parents with children ranging 2-5 years, who were customers of 30 grocery stores in immigrant enclaves of cities Detroit, Dearborn, Warren, and Hamtramck, and 48 stores in less diverse neighborhoods as a comparison group of Metro Detroit, Michigan. The survey assessed parents' nutrition knowledge, children's eating patterns, and factors influencing SSB purchases. Qualitative data were gathered from semi-structured interviews with 25 first- or second-generation immigrant parents, providing insights into how immigration shapes nutritional behaviors and strategies for reducing SSB purchase and consumption.

**Results:** Nearly 78% of parents demonstrated inadequate knowledge of healthy nutrition. Children's eating patterns revealed several unhealthy behaviors, with children in immigrant enclaves consuming significantly more sugary drinks and fewer healthier options like water or plain milk compared to children in the comparison group. The store placement of SSBs was identified as the primary factor encouraging SSB purchases while advertising healthier beverages was viewed as a key strategy to reduce SSB purchases. Key themes from parents' narratives verified (1) non-supportive grocery store environments for healthy eating, (2) the impact of acculturation on the American food environment, (3) promising store-based and family-based strategies for reducing SSB purchases and consumption.

**Conclusions:** There is a critical need for healthy nutrition initiatives that engage grocery stores and families with young children, especially immigrant families. Parents emphasized that grocery stores should strive to uphold the health of the communities and prioritize children's health, considering families' actual demands. This would assist in fostering healthier nutritional behavior in young children and reducing early childhood obesity.

## Cultural perspectives of Hispanic mothers and faith-based leaders towards childhood obesity in Hispanic communities.

**Dr. Martha Rojo<sup>1</sup>**, Mr. Jonathan Rodriguez<sup>1</sup>, Mr. Erickson Feliciano<sup>1</sup>, Mrs. Ahn Pham<sup>1</sup>, Dr. Leonie Declerk<sup>1</sup>, Dr. Joel Gittlesohn<sup>2</sup>

<sup>1</sup>University of Arkansas for Medical Sciences, Little Rock , USA, <sup>2</sup>Joh Hopkins University, Baltimore , USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Childhood obesity is a national epidemic, disproportionately affecting children from minority groups, with Hispanic children experiencing the highest prevalence rates. The purpose of this study was to explore the perceptions of Hispanic mothers and faith-based leaders (FBLs) towards childhood obesity and implementation of a healthy-eating obesity-prevention program in faith-based organizations (FBOs). Despite the critical role FBOs play in Hispanic communities, there is a lack of research investigating their potential as settings for delivering interventions. This study uniquely focuses on FBOs to address obesity among Hispanic children.

**Methods:** We employed a mixed-methods approach, surveying 66 FBOs and conducting interviews with 30 Hispanic mothers and 30 FBLs. FBOs were recruited through multiple strategies and FBLs were identified from the surveys. Hispanic mothers were recruited through snowball sampling. All participants completed a 20-item demographic survey prior to the interviews. A semi-structured interview guide facilitated the interviews, with 75% conducted face-to-face and 25% via Zoom. Eighty percent of the interviews were conducted in Spanish and translated into English. Interviews were audio-recorded, transcribed, and uploaded to MAXQDA for data management. Descriptive statistics were used to characterize the sample, while thematic analysis was applied to analyze the interviews.

**Results/findings:** Seventy-nine percent of the FBOs had a kitchen, but only 8% offered cooking classes, 60% were Catholic, 63% had outdoor activity space. For the mothers, 57% were Catholic, 57% attended church more than once weekly, and all had at least one child living at home. Key themes were: a) Normalization of body size “Gordito” is a complex phenomenon, for some it serves as an expression of endearment. For others, a well-rounded child is desired, as thinness is perceived as a sign of illness or lack of resources; b) Compensatory parental role may influence the development of childhood obesity; c) Time and monetary constraints impede Hispanic families from eating healthy meals. Mothers and FBLs concur that FBOs are adequate settings for implementing interventions.

**Conclusions:** This study illustrates the confounding perception of childhood obesity in a population that historically has scarce resources. Such issues need to be addressed when developing interventions for this community.

## Assessing socioeconomic disparities in emerging hybrid food environments: a cross-sectional analysis of the DIGIFOOD study

**Miss Sisi Jia**<sup>1,2</sup>, Dr Katherine Owen<sup>2,3</sup>, Professor Philayrath Phongsavan<sup>2,3</sup>, Professor Margaret Allman-Farinelli<sup>2,4</sup>, Dr Alice Gibson<sup>2,5</sup>, Dr Stephanie Partridge<sup>1,2</sup>

<sup>1</sup>Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, Sydney, Australia,

<sup>2</sup>Charles Perkins Centre, Sydney, Australia, <sup>3</sup>Prevention Research Collaboration, Sydney School of Public Health, Faculty of Medicine and Health, Sydney, Australia, <sup>4</sup>Discipline of Nutrition and Dietetics, Sydney Nursing School, Faculty of Medicine and Health, Sydney, Australia, <sup>5</sup>Leeder Centre for Policy, Economics, and Data, Sydney School of Public Health, Sydney, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Meal delivery applications (e.g. Uber Eats or Just Eat) are online systems which facilitate the delivery of foods or drinks for consumption. These platforms are an emerging disruptor to existing food environments which may be socioeconomically patterned. This study aimed to examine the associations between socioeconomic disadvantage and the 'hybrid food environment' – where individuals have combined access to food outlets in-person (local), in addition to outlets that can deliver to them (online).

**Methods:** Across New South Wales, Australia, we studied 506/597 total unique postcodes that were serviced by Uber Eats – the market-leading meal delivery application in Australia. Online food outlets were web scraped from UberEats and local food outlets from Google Maps. Socioeconomic disadvantage at the postcode level was the main exposure variable (quintiles 1 to 5 with 1 the most disadvantaged). The outcome variable was the count of online and local outlets in a specified postcode, across nine different food outlet categories. These categories included: alcohol retailers, fast-food franchises, healthy food franchises, sandwich or salad shops, desserts and sweets, independent restaurants and cafes, independent takeaways, fresh produce, supermarkets. We used quasi-Poisson regression models, adjusting for population size and remoteness.

**Results/findings:** Meal delivery applications have significantly increased access to food outlets across all food outlet categories, except for fresh produce. The rate of fresh produce outlets accessible locally was 49% greater, than the rate of fresh produce outlets accessible online ( $p < 0.001$ ). Compared to Quintile 1, areas in Quintile 5 saw significantly higher rates of alcohol retailers (IRR: 1.40, 95%CI: 1.15, 1.72) and healthy food franchises (IRR: 1.38, 95%CI: 1.02, 1.86) in hybrid food environments.

**Conclusions:** Compared to more advantaged areas, disadvantaged areas experience a reduced rate of food outlets accessible online. The role of the local food environment in enabling access to fresh produce appears to remain important in these disadvantaged areas. Urgent attention is needed to ensure healthy food retail is easily accessible both locally and online in underserved areas.

## Comparison of parental perception of their children's physical activity and sedentary behaviour and accelerometer-measured estimates

**Dr. Brenda Bruner<sup>1</sup>**, Dr. Bruno da Costa<sup>2</sup>, Dr. Barbi Law<sup>1</sup>

<sup>1</sup>Nipissing University, North Bay, Canada, <sup>2</sup>McGill University, Montreal, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: K. Participatory Research in Health Promotion**

**Purpose:** In Canada, guidelines for physical activity provide information for stakeholders (e.g. parents, teachers) to promote light-intensity physical activity (LPA), moderate-to-vigorous physical activity (MVPA), and limit sedentary behaviours (SB) among children and adolescents. Parents play a key role in fostering a healthy, active lifestyle among their children, but it is important for parents to have a clear understanding of their children's behaviour first. This study, as part of a participatory project aimed at improving children's movement behaviours, sought to compare parents' perceptions of their children's LPA, MVPA, and SB with accelerometer measurements.

**Methods:** Parents of children aged 5-13 years attending an elementary school in a small rural community in central Ontario, Canada, reported their children's daily minutes of LPA, MVPA, and SB. Children wore a GeneActiv accelerometer on their non-dominant wrist for 7 days. Data were filtered for 16 hours of wear-time per day, and minutes of each behaviour were estimated using Hildebrand et al. (2016) cut-off points. Student's t-tests and Wilcoxon tests were used to compare parent-reported and accelerometer-measured behaviours.

**Results:** Thirty-two parent-child dyads provided valid self-reported data from parents and valid accelerometer data for analysis. The average age of the parents was  $40.5 \pm 6.9$  years, and the mean age of the children was  $9.0 \pm 2.6$  years, with 56% of the child sample identifying as male. Parents over-estimated their children's MVPA (average of 194 minutes/day) compared to accelerometer estimates (64 minutes/day,  $p < 0.01$ ) and underestimated their children's LPA compared to accelerometer measurements (137 minutes/day vs. 284 minutes/day,  $p < 0.01$ ). Parents also underestimated their children's SB compared to accelerometer estimates (154 minutes/day vs. 506 minutes/day,  $p < 0.01$ ).

**Conclusion:** Parents significantly overestimated their children's MVPA and underestimated both LPA and SB when compared to accelerometer data. These discrepancies suggest that parents may not be effectively encouraging sufficient physical activity or limiting SB due to an inaccurate understanding of their children's actual activity levels. The findings also highlight the need for objective measures in assessing children's physical activity and SB to better inform the development of interventions and programs that reflect the activity levels of children.

# Examining the Associations of Physical Function with Demographic, Social-Behavioral, and Health Factors in Older Low-income Minority American Adults

**Dr. Zenong Yin<sup>1</sup>**, Dr. Erica Sosa<sup>1</sup>, Dr. Meizi He<sup>1</sup>, Dr. Vidya Sharma<sup>1</sup>, Dr. Sarah Ullevig<sup>1</sup>

<sup>1</sup>University of Texas San Antonio, San Antonio, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Declines in physical function (PF) are predictive of disability, quality of life, and mortality in older adults. This study examined the associations of PF measures with demographic, social-behavioral, and health factors in older American adults.

**Methods:** Study participants were community-dwelling adults aged 60+ years of the South Texas in the United States of America (USA). Data for this study was collected at the baseline assessment of an online nutrition education intervention study. PF was assessed by the Short Physical Performance Battery (SPPB) consisted of chair-stand test, gait speed test, and balance test. Other measures included the Physical Activity Scale for the Elderly (PASE), the Dietary Screener Questionnaire, Adult Food Security Survey Module, the UCLA Loneliness Scale, the body mass index (BMI), and a demographic and health history survey. A parsimonious regression model was used to examine the associations of SPPB total score and scores of chair-stand test, gait speed test, and balance test with demographic, social-behavioral, and health variables.

**Results:** The participants (n=352, mean age= 72.1 (SD 6.55) were 78% females; 13% Black, 60% Latino; 19% White, 9% others; 48% with ≤high school education; 50% with household income ≤US\$20,000/year; 49% with obesity, and 80% with ≥chronic health conditions. Mean SPPB score was 7.42 (2.26) with 7.92 (2.17) for males and 7.29 (2.27) for females).

**Results:** of regression analysis showed that 1) total SPPB score was associated with age ( $\beta$  -.25,  $p<0.001$ ), household income ( $\beta$  .21,  $p<0.002$ ), and PASE score ( $\beta$  .19,  $p<0.07$ ); 2) chair-stand score was associated with sex/female ( $\beta$  -.21,  $p<0.001$ ) and physical activity scores ( $\beta$  .10,  $p<0.09$ ); 3) gait speed score was associated with age ( $\beta$  -.31,  $P<0.001$ ), sex/female ( $\beta$  -.13,  $p<0.02$ ), household income ( $\beta$  .16,  $p<0.005$ ), and BMI ( $\beta$  -.26,  $p<0.001$ ); and 4) the balance score was associated with age ( $\beta$  -.16,  $p<0.006$ ), household income ( $\beta$  -.20,  $p<0.001$ ), and loneliness score ( $\beta$  -.12,  $p<0.03$ ).

**Conclusion:** Older low-income and minority adults had lower SPPB total scores than the national average in the USA. Equitable and sustainable health promotion programs are needed to address the disparities in PF.

## Associations between food parenting practices and children's fruit and vegetable intake among Latine caregiver-child dyads

**Mrs. Michelle Perry<sup>1</sup>**, Ivone Lurssen<sup>1</sup>, Kelly Bouchard<sup>1</sup>, Leonardo Arriola Carnicelli<sup>1</sup>, Alexia Sanchez Contreras<sup>1</sup>, Dr. Patricia Risica<sup>1</sup>, Dr. Kim Gans<sup>1,2</sup>, Dr. Tayla von Ash<sup>1</sup>, Dr. Amy Moore<sup>3</sup>, Dr. Shira Dunsiger<sup>1</sup>, Dr. Alison Tovar<sup>1</sup>

<sup>1</sup>Brown University, Providence, USA, <sup>2</sup>University of Connecticut, Storrs, USA, <sup>3</sup>The Pennsylvania State University, University Park, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Food parenting practices encompass a wide range of behaviors or strategies that parents use to influence their children's eating habits. These practices have been associated with children's diet but most of these studies are largely based on self-report measures of dietary intake, such as food frequency questionnaires and 24-hr dietary recalls. More research is needed to examine these associations using objective measures of dietary intake. The purpose of this study is to compare the associations between food parenting practices and two measures of children's fruit and vegetable (FV) intake: an objective measure and a self-report measure.

**Methods:** This is a secondary analysis of ongoing baseline data collection from a sample of Latine caregiver-child dyads in Rhode Island. The Food Parenting Inventory and the Comprehensive Feeding Practice Questionnaire are being used to quantify food parenting practices. Two measures of child FV intake are being utilized: the Veggie Meter, a noninvasive research-grade instrument that measures carotenoids in the skin, and two-24 hour recalls which are being used to calculate Healthy Eating Index (HEI-2015) scores. Linear regressions are being used to examine the relationship between food parenting practices (repeated presentation of new foods, encouraging exploration of new foods, offering new foods, child involvement in food preparation, healthy eating guidance) and child FV intake.

**Results:** Preliminary results from 59 Latine caregiver child dyads are presented here. Children were a mean age of 3.49 (SD: 1.02) years and 66% female. Mean Veggie Meter child score was 259.03 (SD:  $\pm 79.19$ ) and mean HEI FV intake was 1.48 (SD: 0.78) cups per day. Caregivers were a mean age of 34.23 (SD:  $\pm 7.70$ ) years and 93% female. Sixty-three percent of caregivers reported experiencing food insecurity. Preliminary results found no significant associations between food parenting practices and either measure of child FV intake.

**Conclusions:** While there was no association between food parenting practices and children's objective and self-report FV intake among Latine caregiver-child dyads, future research should examine this among larger samples. We are actively collecting data to further explore these associations and provide a more robust understanding of this relationship.

# GusNIP Community Voices: Collaboratively Shaping a National Evaluation of a Fruit and Vegetable Policy Initiative in the United States

**Dr. Carmen Byker Shanks**<sup>1</sup>, Dr. Whitney Fung Uy<sup>1</sup>, Ka Her<sup>1</sup>, Dr. Amy Yaroch<sup>1</sup>

<sup>1</sup>Center for Nutrition & Health Impact, Omaha, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** The Gus Schumacher Nutrition Incentive Program (GusNIP) is a national policy initiative in the United States (U.S.) aimed at improving access to healthy foods in underserved communities through Nutrition Incentive (NI) and Produce Prescription (PPR) programs. GusNIP's Coordinating Center (NTAE) launched the Community Voices (CV) initiative to enhance and expand the national evaluation of these programs. A central focus was to gather feedback from GusNIP grantees, partners, and participants for a more comprehensive picture of the program's effects on individuals and communities. This session will share the process and preliminary findings from the CV initiative, highlighting key results, emerging priorities, and next steps.

**Methods:** The CV initiative aimed to revise and expand the GusNIP evaluation metrics, addressing gaps in understanding the true impact of the NI and PPR programs. A phased, participatory data collection process was employed, utilizing focus groups, interviews, surveys, and events to gather insights from a wide range of GusNIP audiences. Each phase of data collection built upon the previous one, allowing for iterative analysis that deepened understanding of the evolving needs and priorities of GusNIP projects. Opportunities to "member check" the findings from each phase across the broader GusNIP community allowed for revision and confirmation that the results resonated with perspectives of all GusNIP audiences.

**Results:** The CV initiative provided a valuable platform for exploring enhanced evaluation practices, ensuring more accuracy in reflecting the diverse needs and impacts of NI and PPR programs. Preliminary findings highlight the need for evaluation metrics that go beyond traditional indicators, such as fruit and vegetable intake, food security, and health. Participants called for inclusion of new indicators, such as broader social and economic impacts. These insights emphasize the need for evaluation strategies that account for complexity and diversity across different communities.

**Conclusion:** The insights gained from the CV initiative are transforming GusNIP evaluation by incorporating community-driven feedback and ensuring that future evaluation frameworks are both inclusive and adaptive. This approach can be applied to public health nutrition initiatives in the U.S., and other countries.

## Lifestyle risk Factors for chronic diseases across the stages of reproductive ageing in women: The LIFE Study

**Dr. Mia Schaumberg<sup>1,2</sup>**, Mrs Laura Pernoud<sup>1</sup>, Dr Paul Gardiner<sup>2</sup>, Ms Jamie Noll<sup>1</sup>, Dr Melinda Dean<sup>1</sup>, Mr Corey Linton<sup>1</sup>, Dr Meegan Walker<sup>1</sup>, Dr Hattie Wright<sup>1</sup>, Dr Joseph Scott<sup>1</sup>, Dr Alex Metse<sup>1</sup>

<sup>1</sup>University of the Sunshine Coast, Sippy Downs, Australia, <sup>2</sup>The University of Queensland, St Lucia, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

### **SIG - Primary Choice: A. Ageing**

**Purpose:** Hormonal changes with menopause lead to vasomotor irregularities, sleep disturbance, anxiety, weight gain and cognitive complaints, which have all been linked to an increased risk of chronic diseases and dementia. Changes in lifestyle behaviours at midlife may contribute to the accelerated chronic disease development and progression. This study aimed to a) investigate lifestyle behaviours (physical activity, sedentary behaviour, sleep, diet, social) and 24-h movement patterns in a cohort of midlife-women, and b) evaluate associations between lifestyle behaviours and physical, cognitive, and psychosocial wellbeing across pre-, peri- and post-menopause.

**Methods:** Mid-life women (n=162; aged 40-65 years) participated in this cross-sectional study. Menopause stage was assessed using STRAW10+ criteria and validated via serum hormone measures. Demographic data, menopause-related symptoms, quality of life and psychosocial wellbeing were collected using validated tools. Lifestyle behaviours across 24-hours (sleep, physical activity, and sedentary behaviour) were assessed via triaxial accelerometry, and diet, physical function, cognitive function, body composition, and blood biochemistry were measured using best-practice tools and techniques.

**Results:** A total of n=162 women (premenopausal n=42, perimenopausal n=53 and postmenopausal n=67) completed all testing sessions. Poorer movement patterns, sleep health and dietary patterns were evident in perimenopause, compared with pre- and post-menopause. Poorer lifestyle behaviours were associated with greater experience of menopause symptoms (e.g. vasomotor, psychosocial symptoms). Analysis is ongoing.

**Conclusions:** The midlife transition (i.e., menopause) is critical for health outcomes of women in older age, and lifestyle behaviours greatly influence mental and physical health. Associations between lifestyle and health-related outcomes across the menopause may provide an indication of future chronic disease risk including dementia, and potential targets for lifestyle intervention in this population. It is important to consider the interdependent effects of lifestyle behaviours on physical and mental health, and the changes that occur across menopause. An integrated approach addressing lifestyle behaviours in women across menopause is needed to inform public health approaches to disease risk reduction, including dementia, in women.

# Health-Related Social Needs and Caregiver Physical Activity in an Underserved Population

**Dr. Aspen Streetman<sup>1</sup>**, Shelby Wallace, Dr. Laren Samuels, Dr. William Heerman

<sup>1</sup>Vanderbilt University Medical Center, Nashville, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** While most adults in the United States do not meet physical activity guidelines, adherence to those guidelines is lowest among traditionally minoritized racial and ethnic groups. The causes of this disparity in physical activity are not well described, though unmet health-related social needs (HRSN) may be an explanation. This study aims to investigate the extent to which HRSN are associated with physical activity among Hispanic/Latino adults.

**Methods:** We conducted a cross-sectional analysis of baseline data from a randomized trial implementing a behavioral intervention to treat parent and child obesity. Caregiver eligibility included being 18 or older, self-identifying as Hispanic and/or Latin American, and having a body mass index  $\geq 24\text{kg/m}^2$  and  $< 56\text{kg/m}^2$ . Physical activity was self-reported using the Exercise Vital Sign and divided into five categories: 0 hours,  $\leq 1$  hour, 1-2 hours, 2-4 hours, or  $> 4$  hours weekly. Responses to six validated surveys were used to derive HRSN fulfillment scores for healthy food access, safety from crime, social support, food security, well-being, and neighborhood resource utilization. Proportional odds regression models using complete data ( $n=289/301$ ) adjusted for caregiver age, educational attainment, country of birth, and partnership.

**Results/findings:** Among 289 adults, the mean age was 34.0 (SD 6.3) years; 95% identified as women. The average physical activity/week was 2.2 (SD 3.2) hours; 31.1% exercised at least 150 minutes/week. A statistically significant association between well-being and being in a higher vs. lower physical activity category was observed (OR=1.059, 95% CI: 1.012-1.109). Across other HRSN, higher fulfillment was not significantly associated with being in a higher physical activity category (healthy food access [OR=1.014, 95% CI: 0.970-1.061]; safety from crime [OR=1.003, 95% CI: 0.919-1.094]; social support [OR=1.033, 95% CI: 0.989-1.079]; having food security [OR=0.834, 95% CI: 0.532-1.307]; and neighborhood resource utilization [OR=1.079, 95% CI: 0.979-1.189]).

**Conclusions:** The association between well-being and physical activity was statistically significant at the 5% significance level. Estimates for the relationship between other HRSN and physical activity were not statistically significant, indicating associations in either direction. Further investigation is required into associations between HRSN and caregiver health behaviors, especially among important sub-populations.

## The Influence of Outside School Hours Care (OSHC) on Children's Physical Activity

**Ms. Zoe Power<sup>1</sup>**, Ms Kayla Elliot<sup>1</sup>, Distinguished Professor Anthony Okely<sup>1</sup>, Dr Zhiguang Zhang<sup>1</sup>

<sup>1</sup>Early Start, University of Wollongong, Wollongong, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The after-school period (3:00pm to 6:00pm) has been identified by the World Health Organisation (WHO) as important for promoting moderate- to vigorous-intensity physical activity (MVPA) in children. There is limited research examining the influence of after-school programs on children's MVPA engagement. We examined if Australian children's MVPA during the after-school period differed on afternoons they attended outside school hours care (OSHC) compared to afternoons they did not. The influence of OSHC attendance on daily MVPA was also examined.

**Methods:** A cross-sectional study was conducted, obtaining results from 81 primary school-aged children (mean age =  $8.65 \pm 1.67$ y) across 11 OSHC services in New South Wales, Australia. MVPA was assessed using a wrist worn Axivity AX3 accelerometer worn by participants for seven consecutive days. Accelerometer data were processed using the R package GGIR. Participant demographic data were collected through a parental questionnaire. Participants' OSHC attendance records during the data collection period were collected. Mixed models were used to examine the differences in MVPA during the after-school period and the whole day between afternoons children attended and did not attend an OSHC service. Child age, sex, and home language were included in the adjusted models accordingly.

**Results:** Children had significantly higher MVPA engagement on afternoons that they attended an OSHC service compared to afternoons they did not ( $B = 10.80$  minutes; 95% CI: 7.32, 14.28;  $p < 0.001$ ). Children also engaged in 8.63 more minutes of MVPA across the whole day on days that they attended an OSHC service in the afternoon compared to days they did not (95% CI: 1.70, 15.57;  $p = 0.015$ ).

**Conclusions:** OSHC attendance may promote MVPA engagement in children across both the after-school period and the whole day. These findings support leveraging the OSHC sector and up-skilling staff for increasing PA engagement among Australian primary school children.

## Determinants of regular active travel between different destinations during school and work periods: A life course perspective

**Dr. Xiaoyue Chen**<sup>1</sup>, Prof. Astrid Kemperman<sup>2</sup>, Prof. Harry Timmermans<sup>2</sup>

<sup>1</sup>Northeast Forestry University, Harbin City, China, <sup>2</sup>Eindhoven University of Technology, Eindhoven, the Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: H. Policies and environments**

**Purpose:** Previous studies on active travel have been mainly based on cross-sectional data, with few comparative analyses of the determinants of regular active travel across different destinations and life stages. However, regular active travel behaviours are dynamic throughout life, and their determinants may change. Capturing these changes is significant for further developing targeted healthy living interventions. This study adopts a life-course perspective to explore interactions and differences among determinants of regular active travel decisions for commuting, daily shopping, and non-daily shopping trips during school and work periods.

**Method:** An online survey was developed to collect retrospective longitudinal data on life trajectories, commuting behaviours, and shopping travel behaviours in the Netherlands. Participants were 627 adult panellists from an existing representative panel of the Dutch population. Two independent trivariate probit models were estimated, one for school periods and the other for work periods, to explore the possible interactions and differences among determinants of regular walking and cycling for transport to different commuting and shopping destinations. Based on the life-course theory and previous active travel research findings, the influences of socio-demographic characteristics, life transitions, and neighbourhood attributes were captured for each model.

**Results:** Results show unobserved interactions between regular active travel decisions for commuting behaviours and shopping travel behaviours during both school and work periods. Considering such interactions, determinants of regular active travel decisions work differently for commuting, daily shopping, and non-daily shopping trips. Age, education, vehicle ownership, and distance are important determinants for both school and work periods, simultaneously affecting commuting and shopping trips, albeit they affect different types of trips differently. Life transitions and living with physically active people play a larger role in shopping travel behaviour. Neighbourhood attributes show more significance for shopping trips during school periods, while during work periods, their influences are more diverse.

**Conclusions:** Determinants from socio-demographic characteristics, life transitions, and neighbourhood attributes appear to play differential roles in regular active travel decisions across destinations and life stages. Therefore, to better promote lifelong active travel practices, policymakers could further refine intervention strategies, such as targeting different life stages, destinations, and individuals with specific characteristics.

# The Impact of Physical Activity Patterns on Depressive Symptoms Among Adolescents: A Cross-Sectional Study

**Ms. Geyu Li<sup>1</sup>**, Mr. Nan Zheng<sup>1</sup>, Dr. Lijuan Wang<sup>1</sup>

<sup>1</sup>Shanghai University of Sport, Shanghai, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** The relationship between the frequency of Moderate-to-Vigorous Physical Activity (MVPA) during the week and the mental health of children and adolescents is currently unclear. This study aims to explore the relationship between two patterns of physical activity—"concentration" and "regularity"—and depression symptoms in children and adolescents.

**Methods:** The study utilized Actigraph wGT3X-BT accelerometers to measure the duration of MVPA and employed the Center for Epidemiological Studies Depression Scale (CES-D) to assess depressive symptoms. The research controlled for covariates such as age, gender, parental education level, family income, sleep duration, and screen time. Statistical analysis was conducted using SPSS 26.0 software, with Logistic regression models analyzing the relationship between MVPA patterns and depressive symptoms, progressively controlling for different covariates.

**Results:** The prevalence of depressive symptoms was 28.6%, with a higher incidence observed in females compared to males and an increase in prevalence with higher academic levels. The mean daily MVPA duration was 38.4 minutes, with 77.6% of participants not achieving the recommended 60 minutes per day. After adjusting for covariates, the "regularly active" group exhibited a significantly reduced risk of depressive symptoms ( $OR=0.378$ ,  $p<0.001$ ) compared to the "insufficiently active" group. In contrast, the "concentrated active" group did not show a significant association with depressive symptoms ( $OR=0.690$ ,  $p=0.075$ ). Threshold effect analysis revealed that in the "concentrated active" group, a daily MVPA threshold of 64.6 minutes was associated with a reduced risk of depressive symptoms ( $OR=0.507$ ,  $p<0.05$ ), with no additional benefit observed beyond this point.

**Conclusions:** "Regular" activity has the best effect in reducing the risk of depressive symptoms among adolescents. Although "concentrated" activity group didn't obtain significant affect as "regular" activity group, it still has a certain effect in reducing the risk of depressive symptoms compared to "insufficiently active" group.

# Front of package labels (FOPL): A healthy “nudge” or harmful “shove”? Content analysis of the front-of-package of Israeli food products

**Mrs. Or Avishai Ofer<sup>1</sup>**, Prof. Aron Troen<sup>1</sup>, Prof. Eyal Ert<sup>2</sup>

<sup>1</sup>Department of Biochemistry, Food Science and Nutrition The Hebrew University of Jerusalem, Rehovot, Israel, <sup>2</sup>Department of Environmental Economics and Management The Hebrew University of Jerusalem, Rehovot, Israel

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: H. Policies and environments**

**Purpose:** This study examines how non-official front-of-package elements interact with Israel's mandatory front-of-package labeling (FOPL) system, featuring red warnings for unhealthy products and green endorsements for healthy ones. Despite the implementation of FOPLs, little is known about how non-official packaging elements may counteract their effectiveness. We aim to characterize these additional elements and their potential to distract, mislead, or mimic official FOPLs, providing insights into interference undermining their effectiveness in promoting healthier food choices.

**Methods:** A cross-sectional content analysis was conducted on 3,174 food and beverage products from two major Israeli online supermarkets. Data scraping collected product imagery and nutritional information. Using a customized coding protocol adapted from the literature, three trained coders systematically categorized packaging elements, after validating the protocol to ensure adequate inter-rater reliability. Elements were categorized based on their proximity to FOPLs, alignment with FOPL color schemes, mimicry of official designs, and potential to mislead. Quantitative analyses, including descriptive statistics and Z-tests, evaluated associations between these elements and the official FOPLs.

**Results:** Products with red or green FOPLs commonly featured three to five additional elements like logos, claims, and depictions. Many depictions were placed near the official FOPL: 63% of general product images, 51% of fruit or vegetable depictions, and 61% of nature-related images. There was color alignment between these depictions and the FOPLs. Among products with fruit or vegetable depictions, 34% showed images not found in the product; 20% of these were round and near the official FOPL. Green backgrounds were more common behind green labels, while red elements often paired with non-health claims ( $p < 0.05$ ). Health claims appeared on over half the products, more frequently on green-labeled items (62%) than red-labeled ones (55%); non-health claims were more common on red-labeled products (74%). Notably, 27% of products featured unofficial round elements mimicking official FOPLs.

**Conclusions:** Our findings highlight the prevalence of competing visual elements that could undermine FOPLs' effectiveness in guiding healthier choices. The discovery of elements mimicking the official warning FOPLs, unique to the Israeli context, underscores the need to understand how industry marketing practices might respond to FOPL regulations to undermine their effectiveness.

# Understanding Physical Activity and Physical Education Policies to Advance Youth Physical Activity Promotion in Illinois: A Blueprint from the Global Observatory for Physical Education (GoPE!)

**Prof. Rafael Miranda Tassitano<sup>1</sup>**, Dr. Maria Cecilia Tenorio<sup>1</sup>, Mr Rafael Cristão<sup>2</sup>, Ms Andressa Sobrinho<sup>3</sup>, Dr. Dean Dudley<sup>4</sup>, Dr. Marcos Onofre<sup>2</sup>, Dr. Michael Pratt<sup>5</sup>, Dr. Pedro Hallal<sup>1</sup>, Dr. Andre Varela<sup>6</sup>, Dr. João Martins<sup>2</sup>

<sup>1</sup>University of Illinois at Urbana-Champaign, Champaign, United States, <sup>2</sup>Universidade de Lisboa, Lisboa, Portugal, <sup>3</sup>University of São Paulo, São Paulo, Brazil, <sup>4</sup>Macquaire University, Sydney, Australia,

<sup>5</sup>University of California San Diego, San Diego, USA, <sup>6</sup>University of Texas, Austin, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** To describe the evolution of physical activity (PA) and physical education (PE) policies aimed at promoting PA at the school level in Illinois-USA.

**Methods:** The Global Observatory for Physical Education (GoPE!) is a global, independent surveillance system with local representatives that monitors PE and PA policies, surveillance, and research at the national level. In this exploratory study, the GoPE! research protocol was used to evaluate PA and PE policies at the state level. The following indicators were examined using official documents from Illinois State: (1) PE curriculum, (2) policy mandating PE, (3) minimum required PE time; (4) a PE monitoring system; (5) PA initiatives.

**Results/findings:** PE is mandatory in all compulsory school years in Illinois and should be delivered by specialized PE teachers. However, a school board is authorized to excuse pupils on an individual basis for several reasons (e.g., participation in interscholastic or extracurricular athletic programs, preparation for admission to an institution of higher learning, marching band program, or eligibility for special education). The PE curriculum is sequentially and developmentally organized to achieve state goals, including the development of movement skills and knowledge, health-related fitness, and attitudes for a healthy lifestyle. In terms of funding, general state funds support school districts and schools in promoting PE, and school boards determine the frequency of PE classes, with a minimum of three days per week. In recent years, all public schools have been required to provide 30 minutes of daily supervised, unstructured, child-directed play for all students in kindergarten through grade 5. In terms of monitoring, the State Board of Education determines the indicators presented in the school report card, which currently only includes the number of PE classes per week.

**Conclusions:** Although PE is mandatory and supported by a curriculum, the number of PE classes and school-based PA initiatives and opportunities, as well as pedagogical approaches, may vary across schools. It depends on decisions made by individual school boards, particularly regarding extracurricular activities before and after school hours. This study contributes to explore the PE and PA policy implementation at the subnational level in one state of USA.

## Australian 24-hour movement guidelines update: a systematic review of evidence for First Nations adults and older adults

**Dr. Rona Macniven**<sup>1</sup>, Mr Raymond Kelly<sup>2</sup>, Dr Rochelle Davis<sup>3</sup>, Dr Monique Francois<sup>3</sup>, Mr Jose Castaneda Solarte<sup>3</sup>, Professor Anthony Okely<sup>3</sup>

<sup>1</sup>UNSW Sydney, Kensington, Australia, <sup>2</sup>The University of Melbourne, Melbourne, Australia, <sup>3</sup>University of Wollongong, Wollongong, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** First Nations people in Australia have holistic cultural views of health and wellbeing. Ongoing colonisation and marginalisation have led to poorer health outcomes, higher chronic disease rates, and at a younger age. While physical activity levels are high among First Nations children, fewer adults are sufficiently active for health benefits. This systematic review of First Nations peoples' movement behaviours aimed to inform the Australian 24-hour movement guidelines update. Objectives were to examine associations between a) physical activity, b) sedentary behaviour, c) sleep, and d) integrated movement behaviours and health-related outcomes in adults 18 – 64 years and over 65 years.

**Methods:** Six databases (Scopus, Informit, MEDLINE, PsycINFO, EMBASE, CINAHL) were searched for articles published between January 2013 and May 2024. Intervention and cohort studies in Australia with First Nations adults 18 years of age and older that examined volume, duration, frequency or intensity of any of the four movement behaviours and their associations with health outcomes were eligible for inclusion.

**Results:** Fourteen physical activity studies met the inclusion criteria. A meta-analysis could not be performed due to study heterogeneity. Study designs were single-group pre-post (N=11), randomised controlled trials (N=2) and one cohort study. Participant numbers totalled 3646 (median 29, range 10-2645). Study findings favoured a higher level of activity for desirable physical function (strength N=2; balance N=2), adiposity and body composition (weight N=8; body mass index N=9, waist circumference N=9), health-related quality of life (N=1) and dementia and cognitive impairment not dementia (N=1) outcomes. Associations with hypertension and cardiometabolic biomarkers were mixed. No eligible studies on sedentary behaviour, sleep or integrated movement behaviours were found.

**Conclusions:** While there is less evidence of the association between First Nations adults and older adults physical activity and health outcomes, existing evidence is largely consistent with non-Indigenous populations. Building an evidence base for sedentary behaviour, sleep, integrated movement behaviours and health outcomes could be considered for prioritisation by First Nations people. Given the similarities in known benefits, the Australian 24-hour movement guidelines update can be considered relevant for First Nations adults and older adults.

## Validation of the Wholistic Compass: A Measure of Indigenous Youth Development through Sport and Physical Activity

**Dr. Meredith Schertzinger<sup>1</sup>**, Dr Brenda Bruner<sup>1</sup>, Kieran Peltier<sup>1</sup>, Dr Colin D. McLaren<sup>2</sup>, Cade Nolan<sup>1</sup>, Dr Mark W. Bruner<sup>1</sup>

<sup>1</sup>Nipissing University, North Bay, Canada, <sup>2</sup>Cape Breton University, Sydney, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** Participation in sport and physical activity can positively influence the wholistic well-being of Indigenous youth (Bruner et al., 2019). Wholistic well-being can be conceptualized through the teachings of the Medicine Wheel, an Indigenous framework which includes physical, mental, emotional, and spiritual quadrants (Lavallée, 2009; Lavallée & Lévesque, 2013). In collaboration with Indigenous youth (project Phases 1- 3), the Wholistic Compass, a self-assessment questionnaire, was co-constructed to evaluate Indigenous youth development. Through the lens of sport and physical activity participation, the questionnaire measures wholistic well-being, Indigenous identity, perceived barriers, sources of support, and connections to others (community, family, friends, culture, land, and ancestors). With Phases 1-3 completed, the purpose of this research was to validate the Wholistic Compass (Phase 4).

**Methods:** A total of 443 Indigenous youth athletes in Canada (Mage = 12.31 years; 55.5% boys, 89.2% First Nations) completed the Wholistic Compass. Confirmatory factor analyses (CFA) were run to determine the model fit of the measures. For the CFA of wholistic well-being and social support, the scales were modelled as higher-order constructs with four dimensions. Wholistic well-being was modelled with dimensions of physical, mental, emotional, and spiritual health. Social support was modelled with emotional, tangible, esteem, and informational support. The scales for Indigenous identity, perceived barriers, sources of support, and connections were modelled as global measures.

**Results:** Illustrating the CFA for wholistic well-being, the model demonstrated acceptable fit indices:  $\chi^2(50) = 157.51$ ,  $p < .001$ , CFI = 0.93, TLI = 0.91, RMSEA = 0.07 (90% CI: 0.06, 0.09), and SRMR = 0.07. Standardized loadings of the four well-being dimensions on the higher-order construct ranged from 0.45 (mental health) to 0.84 (emotional health), indicating moderate to strong contributions. Variance estimates showed that emotional health accounted for the highest proportion of variance in wholistic well-being, followed by spiritual, physical, and mental health. The remaining CFA results for the other Wholistic Compass measures will be discussed in the presentation.

**Conclusions:** Results provide initial evidence that the Wholistic Compass may be a valid measure for assessing wholistic well-being and Indigenous youth development in sport and physical activity.

# Development of the Wholistic Compass: A Culturally-Relevant Measure of Indigenous Youth Development through Sport and Physical Activity

**Dr. Mark Bruner<sup>1</sup>**, Kieran Peltier<sup>1</sup>, Dr. Colin McLaren<sup>2</sup>, Dr. Ian Boardley<sup>3</sup>, Aaron Paibomsai<sup>1</sup>, Rebekah Wilson<sup>4</sup>, Dr. Brenda Bruner<sup>1</sup>

<sup>1</sup>Nipissing University, North Bay, Canada, <sup>2</sup>Cape Breton University, Sydney, Canada, <sup>3</sup>University of Birmingham, Birmingham, UK, <sup>4</sup>Southampton, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** Positive youth development is a strengths-based perspective recognizing all young people hold potential for positive, successful, and healthy development (Lerner et al., 2005). For Indigenous youth, participation in sport and physical activity (PA) may positively contribute to physical, mental, emotional, and spiritual well-being (Lavallée, 2007). However, there are no validated and culturally-relevant measures to evaluate such developmental benefits in sport and physical activity (Bruner et al., 2016). Therefore, the purpose of this research was to develop the Wholistic Compass, a culturally-relevant measure of Indigenous youth development through sport and physical activity.

**Methods:** Guided by a Two-Eyed Seeing approach (Bartlett et al., 2012), we undertook a three phased approach. Phase 1 was designed to gain an understanding of Indigenous youth development through sport and PA. Thirteen sharing circles were conducted with 99 Indigenous youth across Canada (Bruner et al., 2019). Phase 2 assessed item content validity through Think Aloud interviews with 15 Indigenous youth. In Phase 3, the Wholistic Compass Application (App) was developed and a pilot study was conducted with 231 Indigenous youth.

**Results:** Phase 1 findings provided the basis for item generation across the four Medicine Wheel quadrants (physical, mental, emotional, spiritual), and items associated with connections to others, perceived barriers to participation, and social support. Phase 2 resulted in item wording modifications and highlighted the need for a mobile App to appeal to youth participants, which was created in consultation with the project Governing Council. Phase 3 involved an exploratory factor analysis to test initial reliability and validity for the measure. Following item analysis, 7 items were removed, 16 items reworded, and 17 items added (12 of which make up an ethnic identification scale; Bombay et al., 2010).

**Conclusions:** There is initial validity evidence to support the Wholistic Compass as a culturally relevant, app-based self-assessment questionnaire that evaluates Indigenous youth development in sport and PA. Further psychometric testing is required to support ongoing validation efforts.

## Exploring the Association Between Connections and Wholistic Well-being of Indigenous Youth Athletes in Sport

**Mr. Cade Nolan**<sup>1</sup>, Dr. Meredith Schertzinger<sup>1</sup>, Mr. Kieran Peltier<sup>1</sup>, Dr. Colin McLaren<sup>2</sup>, Dr. Brenda Bruner<sup>1</sup>, Mr. Gary Lynch<sup>3</sup>, Dr. Mark Bruner<sup>1</sup>

<sup>1</sup>Nipissing University, North Bay, Canada, <sup>2</sup>Cape Breton University, Sydney, Canada, <sup>3</sup>Indigenous Sport and Wellness Ontario, Mississauga, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** North American Indigenous youth experience a high number of chronic health issues due to the complex effects of inequality arising from contemporary colonization and intergenerational trauma (Ferguson et al., 2021). Sport and physical activity can serve as a vehicle to positively influence the wholistic well-being of Indigenous youth and address these negative health outcomes (Bruner et al., 2016). Through engagement in sport and physical activity, Indigenous youth have reported enhanced connections to their communities and others (Bruner et al., 2019). The purpose of the study aimed to explore how connections to others can influence wholistic well-being of Indigenous youth athletes involved in sport.

**Methods:** In partnership with Indigenous Sport and Wellness Ontario (ISWO), study participants included 223 Indigenous youth athletes (Mage = 15.07; 86.5% First Nations, 13.5% Metis) from 37 teams across 11 different sports who competed for Team Ontario during the 2023 North American Indigenous Games (NAIG). Athletes completed the Wholistic Compass Application, a culturally relevant, self-assessment questionnaire that evaluates Indigenous youth development in sport and physical activity. Four multiple regression analyses were run to identify how connections (family, community, friends, peers, culture, land, ancestors) related with the components of wholistic well-being (physical, mental, emotional, spiritual). The strength of each connection was independently measured on a 5-point scale anchored at 1 (Strongly Disagree) and 5 (Strongly Agree).

**Results:** All four regression models were statistically significant. Connections to peers were found to be significantly associated with both physical ( $\beta = .313$ ,  $p < .001$ ) and mental well-being ( $\beta = .203$ ,  $p = .012$ ). Connections to community were significantly associated with physical well-being ( $\beta = .231$ ,  $p = .009$ ). Additionally, spiritual well-being showed strong associations with connections to culture ( $\beta = .246$ ,  $p < .001$ ) and ancestors ( $\beta = .429$ ,  $p < .001$ ).

**Conclusions:** This study emphasizes the importance of strong connections—particularly to peers, communities, cultural, and ancestral ties—in promoting the physical, mental, emotional, and spiritual well-being of Indigenous youth athletes. Further research is needed to explore ways to strengthen these connections and enhance the wholistic well-being of Indigenous youth.

## Physical activity and parenting confidence: insights from initial co-design of a physical activity program for parents of young children

**Ms. Cynthia Smith<sup>1</sup>**, Dr Sharinne Crawford<sup>2</sup>, Dr Jill Hnatiuk<sup>1</sup>, Dr Susan Paudel<sup>1</sup>, Prof Kylie Hesketh<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia,* <sup>2</sup>*SPHERE, NHMRC Centre for Research Excellence, Department of General Practice, School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Previous research suggests physical activity (PA) is important for mental health and confidence, but PA levels decline during the transition to parenthood. There is limited evidence on how parents determine their parenting confidence, or the role that PA might play. This study aimed to explore how parents of young children (aged 2-5 years) experience parenting confidence, explore the relationship between PA and parenting confidence, and to co-design a conceptualised PA program specifically for parents of young children.

**Methods:** Facebook advertising was used to recruit 22 parents (19 mothers, 3 fathers) across Australia. Parents participated in 1:1 qualitative interviews via videoconferencing exploring parenting confidence and PA. Inductive thematic analysis was used to generate themes. An initial program design was developed in Microsoft PowerPoint, and following design thinking, participants participated in a second 1:1 interview via videoconferencing to co-design a program, with data analysed using a framework method.

**Results/findings:** Four key themes were identified in first round interviews: parenting confidence is dynamic, the functioning of the family unit can influence parenting confidence, parents view PA as important for them and their child, and PA participation influences parenting practices. Within these themes common motivators to PA were identified as being a good role model and to physically keep up with children, with key barriers to PA including a lack of time, insufficient PA knowledge, and cost of activities. To address these barriers the final program conceptualisation was a smartphone app which included features such as short “how to” videos and opportunities for free social connection with other parents within their local community. Key ideas from parents included mindfulness activities, physical activities to co-participate with their children, and a variety of goal setting and incentive driven measures to enhance engagement and continued use of the app.

**Conclusions:** Parents of young children identify PA as important for themselves and their children, and report positive influences on their parenting practices and therefore their parenting confidence. PA programs that address parents’ needs and barriers and emphasise how PA might positively influence their parenting could lead to more engagement from parents than more generalised PA programs.

## Impact of Front-of-Package Nutrition Labeling on the consumption of ultra-processed foods in the NutriNet Brazil cohort: preliminary results.

**Dr. Marília Tokiko Oliveira Tomiya<sup>1,2</sup>**, Ms. Beatriz Menezes de Albuquerque Torquato<sup>1</sup>, Dr. Catalina Serrano<sup>3</sup>, Camila Aparecida Borges<sup>1</sup>, Dr. Neha Khandpur<sup>1,4</sup>, Prof. Dr. Ana Paula Bortoletto Martins<sup>1</sup>

<sup>1</sup>Center for Epidemiological Studies in Nutrition and Health (NUPENS), Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brazil, <sup>2</sup>Fundação Faculdade de Medicina, São Paulo, Brazil, <sup>3</sup>Department of Nutrition, School of Public Health, University of São Paulo, , Brazil, <sup>4</sup>Division of Human Nutrition and Health, Wageningen University & Research, Wageningen, Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** An inadequate diet, characterized by high consumption of ultra-processed foods, is one of the main risk factors for chronic non-communicable diseases. In Brazil, the National Health Surveillance Agency (ANVISA) approved in 2020 a new regulation for nutrition labeling of packaged foods (RDC nº429), including mandatory front-of-pack nutrition labeling, which aims to inform consumers about the nutritional properties of foods. Thus, this study aims to evaluate the impact of front-of-pack nutrition labeling on the consumption of ultra-processed foods.

**Methods:** This is a cohort study of a subsample of NutriNet Brazil and included participants who responded to two 24-hour recalls in 2022 and 2024. Food consumption was assessed using the Nova classification, in which foods are allocated to one of four food groups according to the degree and purpose of industrial food processing, namely: g1) natural or minimally processed foods; g2) culinary ingredients; g3) processed foods; and g4) ultra-processed foods. Finally, each group's contribution to the daily energy consumption (%) was estimated. Data analysis was performed using the Student's repeated measures test with bootstrapping and the effect size calculation (Cohen's d).

**Results:** 2,908 individuals with a median (IQ) age of 41 (33-54) years were evaluated, with a predominance of women (82.8%) and from the southeast region (67.6%). When comparing total energy consumption and food groups, a significant decrease was evidenced in all groups ( $p < 0.001$ ). On the other hand, when investigating the percentage of daily energy contribution of each group, it was observed that group 1 presented an increase of 2.27% (95%CI 1.66 - 2.87) and group 4 a decrease of 1.81% (95%CI 1.27 - 2.34), with Cohen's d of 0.416 and 0.132, respectively.

**Conclusion:** These preliminary results suggest a positive impact of front-of-package nutrition labeling, with an increase in the consumption of natural and minimally processed foods and a decrease in the consumption of ultra-processed foods. Therefore, these are robust analyses to assess the reliability and stability of the results.

# The Association between Environmental Factors and Physical Activity Levels among Older Adults in Hong Kong

**Miss Yu Ting Alison Ou<sup>1</sup>**, Dr. Yan Sun<sup>1</sup>, Prof. Daniel. W.L Lai<sup>1</sup>

<sup>1</sup>Hong Kong Baptist University, Hong Kong, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Although the physical activity (PA) levels among older adults in Hong Kong are higher than global averages, there remains a need to understand how environmental factors may facilitate and/or sustain physical activity. Exploring the association between neighborhood characteristics and PA may provide valuable insights on maintaining or enhancing the already active lifestyle of Hong Kong's older adult population.

**Methods:** A total of 410 Hong Kong older adults aged 60 to 80 were recruited in 2024 from research centers, elder community centers, and through social media. Participants wore an Actigraph accelerometer for ten hours per day over four days, including at least one weekend day, to measure moderate-to-vigorous physical activity (MVPA). Participants reported on neighborhood environmental factors using the 31-item Neighborhood Scales questionnaire, which covered the domains of walking environment, availability of healthy foods, safety, violence, neighborhood social cohesion, activities with neighbors, and aesthetic quality. Given the skewed positive distribution of the dependent variable, PA, a generalized linear model (GLM) with a gamma distribution and log link was used to examine the association between these factors and PA levels. Demographic variables (e.g., age, gender, marital status, education, employment status, and living arrangement) were included as covariates.

**Results:** The GLM analysis indicated that several neighborhood factors were significantly associated with PA levels. Specifically, better perceived walking environment (Estimates=1.28,  $p < .001$ ), aesthetic quality (Estimates=1.38,  $p < .001$ ), safety (Estimates=1.35  $p < .001$ ), and social cohesion (Estimates=1.5,  $p < .001$ ) were positively associated with higher PA. In contrast, factors such as neighborhood violence, frequency of interaction with neighbor and availability of healthy foods did not show significant associations with PA levels.

**Conclusions:** The findings highlight a strong association between neighborhood environmental factors, particularly safety, aesthetic quality, walkability, and social cohesion and the PA level of older adults in Hong Kong. Although this study cannot establish causality, policymakers and urban planners may want to consider enhancing these aspects of the environment in the hope that this will promote and sustain active lifestyles. Future research should evaluate the effectiveness of these interventions and explore potential mechanisms by which these environmental factors influence behavior.

# Parental awareness and perceptions of children's movement behaviours: Exploring knowledge of the Canadian 24-Hour Movement Guidelines

Dr Bruno da Costa<sup>1</sup>, **Dr. Brenda Bruner**<sup>2</sup>, Dr Barbi Law<sup>2</sup>

<sup>1</sup>McGill University, Montreal, Canada, <sup>2</sup>Nipissing University, North Bay, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Engagement in light physical activity (LPA) and moderate-to-vigorous physical activity (MVPA) is crucial for children's healthy development. Limiting excessive sedentary behaviour (SB) is also important for maintaining good health. Given the importance of these behaviours, the Canadian 24-Hour Movement Guidelines for Children and Youth (24HMG) encourage children to reach recommended levels and can help parents and other stakeholders (e.g. teachers, health professionals) support movement behaviours. However, it is unclear to what extent parents are knowledgeable about the guidelines and whether this knowledge influences their perception of their children's movement behaviour as acceptable or not. This study aimed to (1) evaluate parents' knowledge of the Canadian 24HMG, (2) assess whether parents believe their children's engagement level in these behaviours is acceptable, and (3) determine whether knowledge of the guidelines is associated with proxy-reported levels of LPA, MVPA, and SB.

**Methods:** Thirty-six parents of children aged 5-13 years from a small rural community in central Ontario, Canada (agem=40±7 years) reported the extent of their knowledge of the 24HMG using a 5-point scale ('very high' to 'very low'). Parents also reported their children's daily minutes of LPA, MVPA, and SB for a typical day over the past week and perceptions of acceptability of their children's MVPA, LPA, and SB on a 5-point scale ('unacceptable' to 'acceptable'). Linear regressions were used to test associations.

**Results:** Most parents (69%) had low knowledge of the 24HMG. According to parental reports, children spent an average of 226±131 minutes/day in MVPA, 170±130 minutes/day in LPA, and 195±245 minutes/day in SB. Sixty-one percent felt their children's MVPA levels were acceptable, 47% felt their children's SB levels were acceptable, and 67% felt their children's LPA levels were acceptable. No significant associations were found between knowledge of the guidelines and proxy-reported behaviours.

**Conclusion:** While most parents reported low awareness of the Canadian 24HMG, many perceived their children's movement behaviours as acceptable. The lack of association between guideline knowledge and reported behaviours suggests a need for targeted interventions to enhance parental awareness. Future research should explore the criteria parents use to assess the acceptability of their children's physical activity and SB.

## Experience-based co-design of a prehabilitation pathway for children with acute lymphoblastic leukaemia (protocol).

**Miss Alexis Ross<sup>1</sup>**, Dr Emilie Bertrand<sup>1</sup>, Dr Hanna van Waart<sup>1</sup>, Dr Marta Seretny<sup>1,2</sup>, Ms Hannah Rapata<sup>3</sup>, Dr. Andrea Braakhuis<sup>1</sup>, Dr Amy Lovell<sup>1,2</sup>

<sup>1</sup>The University of Auckland, Auckland, New Zealand, <sup>2</sup>Te Whatu Ora, Health New Zealand, Auckland, New Zealand, <sup>3</sup>Ārahi Research and Consulting, Auckland, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Prehabilitation is a holistic approach to patient care encompassing exercise, nutrition, psychosocial support, and complementary and alternative medicine. This approach provides targeted interventions that increase resilience and mitigate the losses and consequences of treatment. This research will use experience-based co-design to develop multimodal prehabilitation interventions for children with acute lymphoblastic leukaemia.

**Methods:** Two groups will be invited to participate in this research: (1) children and young people (<14 years) receiving cancer treatment or have completed treatment in the last 2 years, and their family (whānau), and (2) health professionals and other stakeholders who have worked or are working in childhood cancer in New Zealand. Patients/parents will complete semi-structured interviews to discuss their experiences of nutrition and activity, and we will ask health professionals about their perspectives across these domains. Following this, participants will be invited to participate in two wānanga (workshops) to co-design prehabilitation intervention(s) that address these unmet needs.

**Conclusions:** The active involvement of patients [and their families] is central to the NZ Health Research Strategy and is crucial to delivering effective, person-centred healthcare. This research prioritises the 'patient voice' to address current and future needs and enhance patient and whānau engagement in supportive care for childhood cancer in New Zealand. The feasibility of these interventions will be assessed in a sample of 8-10 newly diagnosed children with ALL before being implemented in a randomised controlled trial investigating the effect of these interventions.

# Nutrition and physical activity interventions delivered during treatment for children and young people with cancer: a systematic literature review.

**Miss Alexis Ross**<sup>1</sup>, Dr Emilie Bertrand<sup>1</sup>, Dr Hanna van Waart<sup>1</sup>, Dr Marta Seretny<sup>1,2</sup>, Dr Andrea Braakhuis<sup>1</sup>, Dr Amy Lovell<sup>1,2</sup>

<sup>1</sup>The University of Auckland, Auckland, New Zealand, <sup>2</sup>Te Whatu Ora, Health New Zealand, Auckland, New Zealand, <sup>3</sup>Ārahi Research and Consulting, Auckland, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Background:** Children with cancer experience symptoms during treatment that significantly impact their nutrition and physical activity levels, increasing morbidity and reducing healthy survival. Despite this, interventions to address these challenges are not part of standard care.

**Methods:** A comprehensive search strategy was developed, and a literature search was performed on four databases (MEDLINE, Embase, SCOPUS, and ProQuest Health & Medical Sciences) from inception until March 22, 2024.

**Results:** Eight thousand and forty-nine articles were identified, with 231 progressing to full-text review and 77 selected for inclusion and data extraction. Of the included studies, four were a nutrition intervention only, four delivered a combined nutrition and physical activity intervention, and 68 were a physical activity intervention only. There was significant heterogeneity in study design, variables measured, and outcomes reported; therefore, no meta-analysis could be performed.

**Conclusion:** No consensus on the type of intervention, measurements, or outcome variables to effect positive change can be made. Future prospective intervention studies should incorporate standardised measures of nutrition-related outcomes and physical function to evaluate the effect of interventions in this population.

## Step Count in Community-Dwelling Older Adults: A 5-year Longitudinal Analysis (CORE Study)

**Dr. Leony Galliano<sup>1</sup>**, Ms Raíssa de Melo Silva<sup>1</sup>, Miss Carla Oliveira<sup>1</sup>, Miss Daniele Lopes<sup>1</sup>, Ms Maria Beatriz Araújo<sup>1</sup>, Dr Ludmila Cabral<sup>1</sup>, Ms Yuri Freire<sup>1</sup>, Ms Marcyo Câmara<sup>1</sup>, Dr Tiago Barreira<sup>2</sup>, Dr Debra L Water<sup>3</sup>, Dr Eduardo Caldas Costa<sup>1</sup>

<sup>1</sup>Universidade Federal do Rio Grande do Norte, Natal, Brazil, <sup>2</sup>Syracuse University, Syracuse, United States of America, <sup>3</sup>University of Otago, Dunedin, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Understanding the dynamics of physical activity during the early stages of aging in older adults is essential for designing targeted interventions. Step count is a widely accessible and user-friendly metric of physical activity, making it a valuable tool for communicating public health messages. This study aimed to evaluate longitudinal changes in step count and the sociodemographic factors associated with these changes in older adults.

**Methods:** This was a 5-year longitudinal study (Cardiovascular, Cognitive, and Exercise Study in Elderly; CORE) conducted with community-dwelling Brazilian older adults aged 60-80 years. Daily step count was measured using a hip-worn accelerometer for seven days. Sociodemographic variables included sex, education, race/ethnicity, and living with a partner. Bivariate associations and linear regression were used for data analysis.

**Findings:** A total of 76 participants who completed accelerometry assessments in both moments were included (80% females; mean age: 67.4±5.4 years). During the 5-year period, the average daily step count showed a significant reduction of 1051±2342 steps ( $p<0.001$ ). Bivariate analysis showed that being male ( $p=0.03$ ) and having higher education ( $p=0.03$ ) were associated with a greater reduction in steps/day, while living with a partner ( $p=0.08$ ) and race/ethnicity ( $p=0.06$ ) were not significantly associated. In the adjusted analysis, only sex remained associated with changes in step count (males: -2155.1±3390.9 steps/day; females: -766.4±1922.4 steps/day;  $p=0.02$ ).

**Conclusion:** Our findings indicate a significant decline in daily step count over 5 years in community-dwelling Brazilian older adults, with a greater magnitude of decline observed in males.

## Food Retail Environments and Policy Implications in Southeast Asia: Insights from the SEAOFEE Study

Prof. Bee Koon Poh<sup>1</sup>, Associate Professor Dr Sirinya Phulkerd<sup>2</sup>, Ms Wai Siew Teh<sup>1</sup>, Dr. Elaine Borazon<sup>3</sup>, **Dr. Sameeha Mohd Jamil**<sup>1</sup>, Ms Adila Fahmida Saptari<sup>4</sup>, Mr Shashidharan Shashidharan<sup>1</sup>, Ms Mohd Sakri Anis Munirah<sup>1</sup>, Associate Professor Dr Yong Kang Cheah<sup>5</sup>, Associate Professor Dr Che Aniza Che Wel<sup>1</sup>, Professor Dr Anne-Marie Thow<sup>6</sup>

<sup>1</sup>Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, <sup>2</sup>Mahidol University, Nakhon Pathom, Thailand, <sup>3</sup>National Sun Yat-Sen University, Kaohsiung, Taiwan, <sup>4</sup>Reconstra Utama Integra, Jakarta, Indonesia, <sup>5</sup>Universiti Utara Malaysia, Sintok, Malaysia, <sup>6</sup>University of Sydney, Sydney, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** The South East Asia Obesogenic Food Environment (SEAOFEE) study explored the role of food retail environments and policies in influencing dietary behaviors in urban areas of Southeast Asia. This study identified barriers, facilitators, and opportunities for policy and environmental interventions to promote healthier food access and address the region's double burden of malnutrition.

**Methods:** A two-part approach was employed across four Southeast Asian countries, namely Indonesia, Malaysia, Thailand, and the Philippines. Phase I comprised document analysis of food-related policies to identify policy gaps and opportunities for improving food retail environments. Phase II involved in-depth interviews with policymakers, food retailers, and public health advocates to assess barriers and facilitators to policy implementation through policy space analysis. Thematic analysis was applied to evaluate these factors and identify actionable policy opportunities.

**Results/findings:** The study revealed significant gaps in food retail policies, including low prioritization of nutrition, government silos, corporate influence, and inefficiencies in food supply chains. Despite these barriers, facilitators for policy improvements were also identified. Existing policies on food pricing, labeling, and composition, provide a basis for promoting healthier food retail practices. Incentives like tax breaks, fee waivers and certification support were perceived as useful tools for encouraging retailers to adopt healthier practices. Consumer awareness is recognized as a driver for change, with increasing demand for healthier diets pushing manufacturers and retailers into adapting their products to suit these preferences, presenting opportunities to integrate policy interventions with market trends. Policy opportunities included strengthening connections between retail practices and nutrition outcomes, enhancing corporate accountability, empowering and educating consumers to make informed choices, and improving coordination among policymakers and other stakeholders.

**Conclusions:** This study provides valuable insights into how food policies and environments shape dietary behaviors in Southeast Asia. The findings highlight the importance of addressing systemic barriers while leveraging facilitators to transform food retail environments and improve public health outcomes. Building on SEAOFEE findings, efforts are underway to establish a regional community of practice that aims to advance policy innovation and collaboration for healthier and more sustainable food systems across the region.

# Methodology of Web-Scraping as a Computer Systems Tool for Inputs in Population Nutrition in Latin America

**Dr. Alejandra Contreras-Manzano<sup>1</sup>**, Ms Alejandro Andrade<sup>1</sup>, Nut Rossy Bravo<sup>1</sup>, Dra Alejandra Jauregui<sup>1</sup>, Dr Simon Barquera<sup>1</sup>, Dr Mary L'abbe<sup>2</sup>, Dr Nadia Flexner<sup>2</sup>

<sup>1</sup>National Institute of Public Health, Cuernavaca, Mexico, <sup>2</sup>University of Toronto, , Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Introduction:** Web-scraping is a computational technique used to extract structured data from websites automatically, enabling the analysis of large volumes of information. Our objective was to describe the methodology implemented in the INSP-Scraper project to collect data from supermarket websites across Latin America.

**Methodology:** In 2023, a platform consisting of three components was developed: a script to extract information from a supermarket website, an API (Application Programming Interface), and a web application. The data extraction script was written in the programming language "Python" and was designed according to the data structure of each supermarket (departments, categories, and subcategories) to retrieve product information. Data were stored in a database via an API that communicates bidirectionally with the web application named "Latam Food Supply". This web application enables visualization and manual input of additional data fields such as nutritional facts, ingredients, additives, front-of-pack labeling, and advertising strategies.

**Results:** The script was executed to extract information from a Mexican supermarket's website, covering data from 10 food and supplement departments, resulting in a database of 9,567 products. This included barcode information, images, prices, URLs, names, descriptions, and product specifications. Subsequently, in 2024, the methodology was replicated for eleven supermarkets in Latin America: Guatemala (n=6,864), Costa Rica (n=6,090), Argentina (n=7,526), El Salvador (n=4,830), Brazil (n=10,218), Colombia (n=6,835), Panama (n=10,001), Ecuador (n=5,837), two new supermarkets in Mexico (n=23,305) and additionally United States. In Mexico, data extraction from the first supermarket occurred in October 2023 (n=8,823) and April 2024 (n=8,762) to monitor the implementation of phase 2 of the front-of-pack labeling. We aim to capture complete information for at least half of the scraped products by mid-2025. This methodology is cost-effective and replicable; however, data availability and quality depend on the supermarkets' update frequency.

**Conclusion:** Web-scraping is a promising tool for evaluating food policies related to e-commerce, nutritional labeling, advertising and digital platforms.

## 24-hour Movement Behaviours in Community-Dwelling Older Adults: A Daily Analysis of Sleep, Sedentary Time, and Physical Activity

**Miss Raissa Silva<sup>1</sup>**, Dr. Leony Galliano<sup>1</sup>, Mr Yuri Freire<sup>1</sup>, Miss Carla Oliveira<sup>1</sup>, Miss Daniele Lopes<sup>1</sup>, Mr Marcyo Camara<sup>1</sup>, PhD Ludmila Cabral<sup>1</sup>, PhD Tiago Barreira<sup>2</sup>, PhD Debra Waters<sup>3</sup>, PhD Eduardo Costa<sup>1</sup>

<sup>1</sup>Universidade Federal do Rio Grande do Norte, Natal, Brazil, <sup>2</sup>Syracuse University, Syracuse, United States, <sup>3</sup>University of Otago, Dunedin, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** The 24-hour movement behaviours (sleep, sedentary time, and physical activity) are associated with health outcomes in older adults. However, the daily variability of these behaviours remains unclear. This study aimed to describe the weekly adherence to healthy movement behaviours and the sociodemographic factors associated with this adherence in older adults.

**Methods:** This cross-sectional analysis included older adults aged 60-80 years. Sleep, sedentary time (ST), moderate-to-vigorous physical activity (MVPA), and step count were assessed using hip-worn accelerometer over seven days. Healthy behaviours: sleep between 7-9 hours/day; ST <8.5 hours/day; MVPA ≥21 minutes/day; and step count ≥7,500 steps/day. The frequency of meeting these recommendations was categorized as none (unhealthiest profile) or 5+ days/week (healthiest profile). Prevalence ratios (PR) for healthiest profile were estimated by age, sex, and education.

**Findings:** A total of 246 participants (65.7 ± 4.8 years; 78.5% female) were included. On average, participants spent 6.0 ± 1.7 hours/day sleeping, 9.5 ± 1.6 hours/day in ST, engaged in 25 ± 22 minutes/day of MVPA, and took 7,040 ± 2,797 steps/day. Regarding daily adherence, 23%, 30%, 22%, and 23% of participants did not meet recommendations for sleep, ST, MVPA, and step count on any day of the week, respectively. Conversely, 7%, 13%, 24%, and 21% met recommendations for sleep, ST, MVPA, and step count on 5+ days per week, respectively. Overall, the majority of participants met healthy movement behaviour recommendations for sleep (70%), ST (57%), MVPA (54%), and step count (56%) on 1-4 days per week. The factors associated with the healthiest profile were: i) age (PR = 0.47; 95% CI: 0.21-1.03) and female sex (PR = 4.31; 95% CI: 1.01-18.3) for ST; ii) age (PR = 0.51; 95% CI: 0.27-0.96) and male sex (PR = 0.38; 95% CI: 0.19-0.76) for MVPA; iii) male sex (PR = 0.38; 95% CI: 0.19-0.78) for step count. No factors were associated with the healthiest sleep profile.

**Conclusions:** Most older adults meet the recommended guidelines for sleep, ST, MVPA, and step count 1 to 4 days per week. Age and sex were associated with healthiest movement behavior profiles during waking hours but not during sleep.

# Pester Power Influence on Family Purchase Decisions, Dietary Consumption and Health Outcomes in Children and Adolescents: A Scoping Review

Mrs Quek Sue Lyn, **Dr Mohd Jamil Sameeha**

<sup>1</sup>Penampang District Health Office, Lot 13A-2, Pusat Dagangan, Pekan Donggongan, 89500, Penampang, Malaysia, <sup>2</sup>Centre for Community Health Studies (ReaCH), Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan Raja Muda Aziz, 50300, , Malaysia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Pester power is defined as children's influence over adult purchasing decisions through persistent requests. Previous studies have shown that food marketing to children and adolescents has been systematically reviewed to effect on their behavior and consumption patterns, but many didn't emphasize about this social behavior in between. Hence, this study aims to examine the influence of pester power on family purchasing decisions, dietary consumption, and health outcomes among children and adolescents.

**Methods:** Protocols such as Joanna Briggs Institute's guidelines and protocols, the PRISMA checklist and the methodological framework by Arksey and O'Malley were applied in this review. Databases used to search the articles were Emerald Insight, PubMed, Web of Science, and grey literature from April 2014 to April 2024.

**Results:** Following the PRISMA checklist, a total 34 articles were selected for analysis. The research covered children and adolescents aged 0-18 years old. The findings showed that younger children were often successful at influencing family purchases, while older children used more effective pestering strategies. Majority of children frequently requested unhealthy foods and beverages. Studies on pester power influence on dietary consumption and health outcomes were very few. Children who pester were more likely to consume unhealthy options and have higher risk of being overweight or obese in cross sectional study, but not longitudinal analyses.

**Conclusion:** The review highlights the need for more studies on the long-term effects of pester power and suggests potential policy interventions on marketing practices aimed at children and interventions to reduce unhealthy food pestering among children and adolescents.

## A tailored dance program for wellbeing and fall prevention in people aged 65+: initial findings from a pilot trial

**Dr. Heidi Gilchrist<sup>1</sup>**, Dr Abby Haynes<sup>1</sup>, Prof Cathie Sherrington<sup>1</sup>, Dr Juliana Oliveira<sup>1</sup>, Dr Marina Pinheiro<sup>1,2</sup>, Associate Professor Leanne Hassett<sup>1,2</sup>, Professor Dafna Merom<sup>3</sup>, Professor Anne Tiedemann<sup>1</sup>

<sup>1</sup>Institute of Musculoskeletal Health, School of Public Health, University of Sydney, Camperdown, Australia, <sup>2</sup>Sydney School of Health Sciences, Faculty of Medicine & Health, University of Sydney, Camperdown, Australia, <sup>3</sup>School of Health Sciences, Western Sydney University, Campbelltown, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** One-third of adults over 60 will fall each year, leading to injuries and impacting health and quality of life. While physical activity focusing on balance and strength can reduce fall risk, existing fall prevention programs are often unpopular. Our previous research showed that a tailored dance program for fall prevention and wellbeing was well-attended and engaging, though its effectiveness in preventing falls is unproven. This study aims to assess the acceptability, feasibility, and impact of a tailored dance intervention for individuals aged 65 and over.

**Methods:** This is a pilot randomized controlled trial of a tailored dance program for community-dwelling individuals aged 65+. The intervention consists of a 10-week, twice-weekly group-based dance program, with up to 20 participants in each 75-minute class. Key features of the program include meaningful music, narrative and imagery, accessibility through modification and graduated challenge, and a relational approach fostering a humanizing environment. The control group receives the same program after the follow-up data collection period. Participants complete surveys and functional assessments pre and post intervention. There will be two rounds of the 10-week intervention followed by 10-week control classes. The primary outcome is participant satisfaction. Secondary outcomes include study feasibility, impact on balance, strength, memory, health and wellbeing measures, and potential adverse events.

**Results:** In round 1, 16 participants were randomly assigned to the intervention, 18 to the waitlist control group. Acceptability of the program was high: 92% of intervention participants would recommend the program to others aged 65+; 92% would continue attending if available; 100% found the study procedures and assessments acceptable; and 86% would recommend the study procedures to others. Feasibility was also high with 34 participants recruited in 6 weeks. Thirty-one completed the 10-week trial (91% retention), and all attended at least 70% of classes. Impact data is currently being analysed.

**Conclusions:** The tailored dance intervention shows good acceptability and feasibility at the halfway mark. Final results will inform the design of a larger trial with falls as the primary outcome. If effective, tailored dance programs could be recommended as an accessible and enjoyable strategy for preventing falls in older adults.

# Effects of thermal environmental factors on college students' affective responses after an outdoor physical education class

**Tai Ji<sup>1</sup>**, Yan Luo<sup>1</sup>, Guang Yang<sup>1</sup>, Wenxi Liu<sup>1</sup>, Ms. Xin Li<sup>1</sup>

<sup>1</sup>Shanghai Jiao Tong University, Shanghai, 中国

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study aimed to examine the effects of thermal environmental factors on college students' affective responses immediately following an outdoor baseball class.

**Methods:** 33 undergraduate students enrolling in the same baseball class in a Chinese university participated in this study. The classes started from 10:00 a.m. to 11:30 a.m. on every Friday from September to December in 2023. Ambient temperature, relative humidity, and wind speed were measured using the KANOMAX 6533-2G. Solar radiation was recorded with a HIOKI device. Students' physical activity levels and heart rates were tracked through each session using ActiGraph GT3X and Polar Verity Sense. At the end of each class, students' affective states were measured using the Exercise-Induced Feeling Inventory. Linear mixed-effect model was used to analyze the data.

**Results:** (1) Ambient temperature ( $\beta = -0.074$ , 95%CI [-0.115, 0.007],  $p > 0.05$ ), relative humidity ( $\beta = 0.015$ , 95%CI [-0.026, 0.056],  $p > 0.05$ ), wind speed ( $\beta = -0.114$ , 95%CI [-2.112, 1.885],  $p > 0.05$ ), and solar radiation ( $\beta = 0$ , 95%CI [-0.001, 0.001],  $p > 0.05$ ) did not significantly affect revitalization. (2) Relative humidity ( $\beta = 0.044$ , 95%CI [0.006, 0.081],  $p < 0.05$ ) positively affected tranquility, while ambient temperature ( $\beta = -0.034$ , 95%CI [-0.118, -0.31],  $p > 0.05$ ), wind speed ( $\beta = 1.067$ , 95%CI [-0.775, 2.908],  $p > 0.05$ ) and solar radiation ( $\beta = 0$ , 95%CI [-0.001, 0.001],  $p > 0.05$ ) had no significant effect. (3) Ambient temperature ( $\beta = 0.077$ , 95%CI [0, 0.154],  $p > 0.05$ ), wind speed ( $\beta = -1.225$ , 95%CI [-3.287, 0.836],  $p > 0.05$ ), relative humidity ( $\beta = -0.029$ , 95%CI [-0.072, 0.015],  $p > 0.05$ ) and solar radiation ( $\beta = 0$ , 95%CI [-0.001, 0.001],  $p > 0.05$ ) had no significant impact on physical exhaustion. (4) Ambient temperature ( $\beta = -0.076$ , 95%CI [-0.145, -0.006],  $p < 0.05$ ) negatively affected positive engagement. Relative humidity ( $\beta = 0.02$ , 95%CI [-0.015, 0.055],  $p > 0.05$ ), wind speed ( $\beta = 0.223$ , 95%CI [-1.489, 1.935],  $p > 0.05$ ) and solar radiation ( $\beta = 0$ , 95%CI [-0.001, 0.001],  $p > 0.05$ ) had no significant impact.

**Conclusions:** Ambient temperature and relative humidity have significant effects on affective responses in physical education classes for college students.

# Research Trend, Barriers and Facilitators of Physical Activity among Adults with Type 2 Diabetes Mellitus in African countries: A Systematic Review and Meta – Analysis

Mr. Godsway Edem Kpene<sup>1</sup>, Ms Esther Fewu<sup>2</sup>, Ms Ramat Sarbah<sup>1</sup>, **Dr. Cecilia Marinho Tenorio<sup>1</sup>**

<sup>1</sup>University of Illinois Urbana-Champaign, Urbana, USA, <sup>2</sup>Jasikan College of Education, Jakisan, Ghana

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** The increasing incidence of Type 2 Diabetes Mellitus (T2DM) in Africa poses significant public health challenges. Despite the critical role of physical activity (PA) in improving T2DM outcomes, there is no comprehensive review consolidating the unique and collective barriers and facilitators influencing PA in this region. This systematic review and meta-analysis examines research trends, barriers, and facilitators of PA among adults with T2DM in Africa, offering insights to inform targeted interventions and policies to improve PA participation and health outcomes.

**Method:** Two online databases (Scopus and CINAHL) were searched on October 12, 2024. No limit on the date of publication was applied. Three groups of search terms (Population, Physical Activity, Type 2 diabetes mellitus) were combined using Boolean operators. Of the 100 articles retrieved, after removing duplicates and screening titles, abstracts, and full texts by two independent reviewers, only 19 articles met the inclusion criteria for the study. The JBI Systematic Reviews Checklist was used to assess the quality of the various studies. Data on study design, physical activity measure, study characteristics, and domain of PA research were extracted. The R version 4.4.2 meta and metafor packages were used for the meta – analysis.

**Results:** Studies from seven African countries [South Africa 8(42.11%), Botswana 2(10.11%), Ghana 3(15.79%), Malawi 1(5.26%), Mauritius 1(5.26%), Nigeria 3(15.79%), and Uganda 1(5.26%)] between 1995 and 2023 were analyzed. Funding supported 7(36.84%) of the studies. Most were cross-sectional 9(47.37%), followed by randomized controlled trials 4(21.05%). Research domains included Correlates and Determinants 9(47.36%), Health Outcomes 5(26.32%), Interventions 3(15.79%), and Surveillance 2(10.53%). The pooled proportion of physically active T2DM patients was 49% (36% – 63%). Gaps in patient knowledge, illness-related challenges, and sociocultural and structural factors were key barriers to PA. Conversely, key facilitators of PA were the perceived health benefits of PA, the influence of peers and healthcare workers, integrating PA into daily routines, and educational initiatives.

**Conclusion:** Most African PA research among T2DM patients focused on correlates and determinants. Barriers outweighed facilitators, emphasizing the need for targeted interventions and policy guidelines to improve PA in this population.

## Using CBPR and citizen science to promote age-friendly environments among rural Native American older adults

**Dr. Maja Pedersen<sup>1</sup>**, Dr. Samantha Morigeau<sup>2</sup>, Taylor Stewart<sup>1</sup>, . Zak Doueiri<sup>3</sup>, Sofia Panarella<sup>3</sup>, Dr. Abby C King<sup>3</sup>

<sup>1</sup>*School of Public and Community Health Sciences, The University of Montana, Missoula, United States,*

<sup>2</sup>*Tribal Health, The Confederated Salish and Kootenai Tribes, Mission, United States,* <sup>3</sup>*Department of Epidemiology and Population Health, Stanford University School of Medicine, Stanford, United States*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Background.** There is growing attention on the role of environmental factors, physical activity (PA), and healthy aging, particularly among older adult populations that experience health inequities. A central driver to research in this area is the World Health Organization (WHO) Age Friendly Cities framework, which defines key topics for age-friendly environments. However, Native American (NA) older adults, particularly those living in rural areas, experience unique needs related to healthy aging environments rooted in history, culture, and context that are not adequately reflected in the WHO framework. Therefore, we used a community-based participatory research (CBPR) approach to advance understanding of environmental factors and healthy aging among NA older adults living on a rural, tribal reservation in the United States.

**Methods:** This study grew from a seven-year partnership between the Confederated Salish and Kootenai Tribes Tribal Health Department (CSKT THD) and the University of Montana. The CSKT THD trained local staff as study facilitators to recruit NA older adult participants. Participants acted as citizen scientists and used the Stanford Discovery Tool mobile app to gather audiovisual, narrative, and survey data, which served as a foundation for interpretive group processes to identify and prioritize factors in their environments that impacted healthy aging, with a focus on PA and safety. Participants also generated potential solutions and actions that could be employed to improve conditions.

**Results:** The CSKT THD trained staff (N=5) as facilitators, and recruitment took place on the rural Flathead Indian Reservation in Montana, USA. Recruitment is ongoing; to date, N= 18 NA older adult participants have engaged in data collection across four rural communities, collecting 56 photos with 45 narratives. Thematic findings and recommended actions are presented in the context of existing tribally driven research indicating distinct considerations for environmental factors, PA, and healthy aging, and the WHO framework.

**Conclusions:** This study shares a model of CBPR and citizen science that centers the voices of rural NA older adults in shaping priorities for age-friendly environments. Findings convey critical considerations across cultural and contextual domains that can inform the development of relevant public health interventions to improve healthy aging and reduce health inequities.

## Living in High-Risk Neighborhood Social Environments Associates with Less Favorable Cardiovascular Health Behaviors Based on Life's Essential 8: Data from the Step It Up Community-Engaged, Digital Health Physical Activity Intervention

**Dr. Marcus Andrews<sup>1</sup>**, Shirley Lopez de Leon, Sonal Sharda, Foster Osei Baah, Abhinav Saurabh, Hannatu Tarfa, Ayushi Dave, Mario A. Pita, Manuel A Cintron, Sandy T. Reynolds, Dana Sandler, Shelby R. Hicks, Elizabeth M. Aquino Peterson, J. Eleanor Seo, Lola R. Ortiz-Whittingham, Kameswari A. Potharaju, Andrew S. Baez, Sam J. Neally, Nithya P. Vijayakumar, Kaveri Curlin, Colby Ayers, Laurel G. Mendelsohn, Marie Marah, Ayanna L Wells, Sarah M. Deguzman, Azeb T. Redai, Valerie M. Mitchell, Katherine J. Tolentino, Billy S. Collins, Kayla Airaghi, Shanna Yang, Sara Turner, Dr. Yvonne Baumer, Tiffany Powell-wiley

<sup>1</sup>National Institutes of Health, Bethesda, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Life's Essential 8 (LE8) cardiovascular health factors are important in shaping cardiovascular disease (CVD) risk. However, associations between neighborhood social environment and LE8 remain understudied, especially among minoritized cohorts. Therefore, we investigated associations between neighborhood social environment features and CV health based on LE8 and its sub-components among African American (AA) women living in resource-limited Washington, D.C. neighborhoods.

**Methods:** Participants were enrolled in Step It Up, a community-engaged digital health physical activity (PA) intervention; participants were divided into low- and high-risk neighborhood social environment clusters by principal components analysis. Neighborhood clusters were based on individual perceived neighborhood safety, violence, disorder, and social cohesion and objective scores on a neighborhood deprivation index from US Census data. The LE8 score was composed of smoking, diet, blood pressure, diabetes (HbA1c), blood lipids (total cholesterol and HDL), BMI, sleep, and PA scores, with higher scores indicating lower CVD risk. Ordinal linear regressions were used to examine these associations, adjusting for age and diagnosis/treatment of hypertension, diabetes, and hyperlipidemia.

**Results:** The study cohort included 163 AA women (mean age=56.84±12.02 years). Living in the high-risk neighborhood cluster was not associated with overall LE8 score; it associated with a 0.91 unit decrease in Sleep Score (p=0.01) and 0.73 unit decrease in overall PA score (p=0.04). Living in the high-risk neighborhood cluster was associated with a 1.12 unit decrease in vigorous leisure-time PA (p=0.03). However, no other significant relationship was found among any other LE8 sub-components.

**Conclusions:** We found that living in a high-risk neighborhood social environment was associated with less favorable sleep and PA as CV health behaviors. Ultimately, these findings could be used to construct tailored health interventions and policies to address the neighborhood social environment and promote improved CV health behaviors for CVD risk reduction, especially among urban, resource-limited communities of color.

# Pack Your Pantry! An Exploratory Intervention for College Students Living in On-Campus Housing

**Dr. Emily Heying<sup>1</sup>**

<sup>1</sup>College of Saint Benedict/Saint Johns University, Minneapolis, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Although college campuses are aware of food security among students, few studies assess campus interventions to increase food access and nourishment. The goal of this exploratory study was to pilot a four-week intervention that provided primarily shelf-stable foods and basic culinary and nutrition education to third-year college students at a private, residential college in the United States.

**Methods:** The four-week intervention, titled Pack Your Pantry, included grocery pickups in week one and three and online education all four weeks. Weekly education videos covered basic culinary education, meal-planning strategies, and nutrition education. Inclusion criteria included: female third year full-time student status, living in on-campus apartments, and enrollment in a campus meal plan that did not provide unlimited meals. Mixed-methods data collection occurred at the end of each of the four weeks via an online survey. Participant engagement was measured by yes/no questions regarding education participation, grocery usage, meal preparation, and meal planning. Means and standard deviation of participants answering “yes” were calculated. Open-ended questions were utilized to collect participant insight on relevancy and usefulness of education provided. Thematic analysis was then performed for assessment.

**Results/Findings:** The study had a retention rate of 88% (n = 27 for 1st grocery pickup, n = 24 for 2nd grocery pickup).  $83\% \pm 3.5\%$  (mean  $\pm$  SD) of participants watched the online education within one week of reception,  $83\% \pm 4.4\%$  of participants prepared at least one meal weekly using groceries from the program, and  $41\% \pm 4.7\%$  of participants created weekly meal plans. 75% of participants in the week 1 & 2 surveys responded “yes” to using at least half the groceries, whereas only 38% answered yes for the week 3 & 4 surveys. Thematic analysis revealed that participants found the education on vegetable preparation methods, food safety guidelines, and local food assistance programming to be most useful and relevant to their needs.

**Conclusions:** Most participants that enrolled in the Pack Your Pantry intervention used their groceries and engaged with online education. College students may lack knowledge in different food preparation areas and benefit from education and hands-on opportunities.

## Assessing Dollar Store Food Environments and Alignment with Nutrition Support Programs for Children

**Dr. Rachael Dombrowski<sup>1</sup>**, Dr Samantha Sundermeir<sup>2</sup>, Dr Joel Gittelsohn<sup>3</sup>, Dr Bree Bode<sup>4</sup>, Dr. Christina Kasprzak<sup>5</sup>, Dr. Megan Winkler<sup>2</sup>, Dr. Hadis Dastgerdizad<sup>6</sup>, Dr. Beth Racine<sup>7</sup>, Dr. Ravneet Kaur<sup>8</sup>, Dr. Chelsea Singleton<sup>9</sup>

<sup>1</sup>California State University San Marcos, San Marcos, USA, <sup>2</sup>Emory University, Atlanta, USA, <sup>3</sup>Johns Hopkins University, Baltimore, USA, <sup>4</sup>Michigan Fitness Foundation, Lansing, USA, <sup>5</sup>University of Buffalo, Buffalo, USA, <sup>6</sup>University of Miami, Miami, USA, <sup>7</sup>Texas A&M University, El Paso, USA, <sup>8</sup>University of Illinois Rockford, Rockford, USA, <sup>9</sup>Tulane University, New Orleans, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** This study seeks to address current gaps in dollar store research by assessing the in-store food environment in 200 dollar stores across 10 states and determining how, and in what ways, dollar stores align with the U.S. Supplemental Nutrition Program for Women, Infants, and Children (WIC) food package. **Background:** The surge of dollar stores in the United States, particularly within impoverished communities, has raised concerns among residents, policymakers, and public health professionals regarding their impact on community health, economic development, and household nutrition and food security. Conducting in-store assessments with a common tool is critical for understanding the dollar store food environment and to establish common data for evidence-based policy actions and interventions over time.

**Methods:** In August 2024, the research team piloted and began data collection in dollar stores using the Nutrition Environment Measures Survey for Dollar Stores (NEMS-DS) - a collaboratively developed tool. A random sample of (N=200) dollar stores across ten sites were selected for data collection. Settings include urban, suburban, rural, and Tribal land locations where there is a high prevalence of dollar stores that co-exist with limited healthy food access, household health inequities, and low-income populations. A cross sectional design is being used to evaluate alignment with the federal minimum WIC stocking standards, and availability, quality, price, and marketing of healthy and unhealthy foods. Scores will be created for WIC alignment, healthy food availability, ultra-processed foods, and community resourcefulness.

**Findings:** By the time of presentation data collection and analysis will be complete. We will first present descriptive statistics and the scores mentioned above across the 10 sites to provide an overview of the food environment among the 200-dollar stores assessed. Then, we will discuss how well dollar stores align with federal minimum WIC stocking standards as well as focus in on state-level requirements in 1-2 locations as case examples.

**Conclusions:** The findings from this work will be disseminated to policymakers and dollar store corporations to outline opportunities for stores to align their stocking standards with federal and state WIC guidelines and to improve food and nutrition security in low-income communities.

## Relationship between motor skills and nutrition knowledge in 7- to -8-year-old children from the North West Province

**Dr. Wilmarié du Plessis<sup>1</sup>**, Mariëtte Conradie<sup>1</sup>, Makama Andries Monyeki<sup>1</sup>

<sup>1</sup>Physical activity, Sport and Recreation (PhASRec), North-West University, Potchefstroom, South Africa.,

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The purpose of the study was to determine the relationship between motor skills and nutrition knowledge in primary school aged 7 to 8 years children from South Africa.

**Methods:** A cross-sectional research design was used, with data collected from 168 participants (78 boys & 90 girls) who were part of the Body Composition Using Isotope Techniques study (BC-IT study) have been used. Measurements included anthropometric data (height, weight, BMI, BMI Z-scores), nutrition knowledge via a questionnaire, and motor skills assessed using the Test of Gross Motor Development-2 (TGMD-2). Data were analyzed using descriptive statistics and correlation analyses in SPSS.

**Results/findings:** The mean age of the participants was  $7.54 \pm 0.50$ . Boys demonstrated significantly better motor performance than girls in tests such as the standing broad jump (boys:  $119.53 \pm 19.34$  cm; girls:  $111.90 \pm 18.74$  cm), beep test laps (boys:  $33.77 \pm 15.34$ ; girls:  $27.09 \pm 11.15$ ), and predicted  $\dot{V}O_{2\max}$  (boys:  $48.64 \pm 5.32$ ; girls:  $46.30 \pm 3.85$ ). Regarding nutrition knowledge, 91% of children reported receiving lessons on healthy eating, and most understood the benefits of fruits and vegetables for illness prevention (92%) and the health risks of sugar and sweets (91%). When asked about food groups, vegetables (31%), fruits (24%), and protein sources like meat and eggs (27%) were preferred, while dairy products (5%) and fats/oils (2%) were the least chosen. Correlation analyses revealed a positive and significant association between the perception that eating sugar is good for health and sprint speed over 10 meters ( $r=0.269$ ,  $p=0.026$ ). Conversely, kicking skill was negatively associated with perceived knowledge of food groups essential for building muscles ( $r=-0.301$ ,  $p=0.015$ ).

**Conclusions:** The findings indicate that the perception of consuming a high amount of sugar, sweets, and sweet foods being moderately good for health was positively correlated with performance in a 10-meter sprint. Conversely, kicking skill showed a negative correlation with perceived knowledge about food groups essential for muscle building. These results suggest potential misconceptions about diet and its role in physical performance, which may impact skill development and athletic abilities. A need to conduct longitudinal studies to explore causal relationships between dietary perceptions, actual dietary habits, and motor skills outcomes.

**Keywords:** Motor skills, perceived nutritional knowledge, anthropometry, fitness, South African children

# Trends in Physical Activity Disparities Among Adolescents in Illinois: Insights from the Youth Risk Behavior Surveillance System (2007-2023)

**Dr. Maria Cecilia Marinho Tenorio<sup>1</sup>**, Godsway Edem Kpene, Ranatu Sarbaht, Dr. Rafael Miranda Tassitano

<sup>1</sup>University of Illinois Urbana-Champaign, Champaign, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Physical activity (PA) is an important component of adolescent health, providing numerous immediate and lifelong benefits. However, the prevalence of meeting PA recommendation is low, and disparities in PA levels persist, with socioeconomic status emerging as a significant determinant of health. This study aims to examine inequalities in PA levels among adolescents in Illinois-USA from 2007 to 2023, focusing on trends related to gender, age, race/ethnicity, academic performance, and sleeping arrangements.

**Methods:** This descriptive study utilized data from The Youth Risk Behavior Surveillance System (YRBSS) Combined High School dataset for Illinois for 2007, 2015, and 2023. Students were classified as physically active if they engaged in at least 60 minutes of PA on  $\geq 5$  day/week. Descriptive statistics and inferential statistical analyses, stratified by year, were conducted using R and presented as frequencies and percentages.

**Results/findings:** A total of 8,619 adolescents were included (2007:  $n=2,438$ ; 2015:  $n=3,282$ ; 2023:  $n=2,899$ ). Across all years, the proportions of participants were male (50.2%), older than 15 years (61.5%). White (31.6%), Black (22.5%), Hispanic/Latino (36.6%), had better academic performance (69.8%), reported sleeping in other places (58.4%) and were physically inactive (78.8%). Over the three years under review, Boys consistently showed higher prevalence of PA than girls, with absolute differences of 33.9 percentage points (p.p.) in 2007, 25.8 p.p. in 2015, and 24.1p.p. in 2023. For Race/Ethnicity the difference between White and Black was 16.8 p.p in 2007, 27.2 p.p in 2015 and 18.9 p.p in 2023. Adolescents aged  $>15$  years were more active than those  $\leq 15$ . Students with higher academic performance had significantly higher PA levels. Sleeping arrangements also influenced PA, with students living with parents/guardians reporting higher PA levels.

**Conclusions:** The study observed that significant and persistent disparities in PA were observed across gender, age, race/ethnicity, academic performance, and sleeping over the study period, highlighting the importance of understanding disparities between different groups, particularly among girls, Black adolescents, and students with lower academic performance, to create effective strategies that ensure access to PA for the entire population, especially for those most in need.

## Exploring how physical activity mediates the association between individual neighbourhood built characteristics and health-related fitness in urban dwelling Canadian adults.

**Dr. Levi Frehlich<sup>1</sup>**, Dr. Tanvir Turin<sup>1</sup>, Dr. Patricia Doyle-Baker<sup>1</sup>, Dr. Justin Lang<sup>2</sup>, Dr. Gavin McCormack<sup>1</sup>

<sup>1</sup>University of Calgary, Calgary, Canada, <sup>2</sup>Centre for Surveillance and Applied Research, Public Health Agency of Canada, Ottawa, Canada, Ottawa, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Neighbourhood built characteristics (NBCs) are consistently associated with physical activity (PA). There is emerging evidence suggesting that NBCs are also associated with health-related fitness (HRF), including cardiorespiratory, muscular, and morphological fitness. While PA and HRF are correlated and both independently protect against chronic disease, HRF appears to be more strongly associated with physical health outcomes. Few studies have explored the direct and indirect effects of NBCs on HRF. This study aimed to estimate associations between NBCs and HRF, and the extent to which PA mediates these associations.

**Methods:** Our dataset included objectively measured HRF (grip strength [kg], VO2max [ $\text{mL} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$ ], jump height [m], and flexibility [cm]) and accelerometer-measured minutes a day of light, moderate, and vigorous intensity PA (LPA, MPA, and VPA) from three cycles of the Canadian Health Measures Survey (CHMS). CHMS data were postal code matched with objectively measured NBCs estimated within 1km of home, including intersection density ( $\geq 3$ -way intersections/ $\text{km}^2$ ), dwelling density (dwelling count/ $\text{km}^2$ ), points of interest (destination count), and transit accessibility (transit stop and station count). Using sex-stratified covariate-adjusted mediation analysis (PROCESS SPSS macro), we estimated associations between NBCs and HRF outcomes with LPA, MPA, and VPA assigned as parallel mediators estimating indirect and direct effects.

**Results/findings:** The mean (SD) ages for males ( $n=2,983$ ) and females ( $n=3,085$ ) were 47.6 (15.4) and 47.7 (15.7) years, respectively. For males and females, all NBCs were associated with HRF outcomes, and mediation by PA was observed but varied according to NBC, intensity of PA, and HRF outcome. Intersection density and points of interest were the most frequently associated with HRF for males and females. For males, there were a total of 8 negative and 2 positive indirect effects, and 3 negative direct effects between NBCs and HRF outcomes. For females, there were a total of 6 negative indirect effects and 4 positive direct effects between NBCs and HRF outcomes.

**Conclusions:** Our findings suggest a possible connection between NBCs and HRF. However, the role of PA as a mediator in this relationship remains unclear. Despite this uncertainty, NBCs appear to be associated with HRF, although these relationships are nuanced.

## Feasibility and preliminary efficacy of the biya yadha gudjagang yadha: Healthy Dads Healthy Mob program

**Mr. Jake Macdonald<sup>1</sup>**, Mr. Nathan Towney<sup>1</sup>, Prof. Kathleen Butler<sup>1</sup>, Dr. Myles Young<sup>1</sup>, Dr. Lee Ashton<sup>1</sup>, Ms. Briana Barclay<sup>1</sup>, Prof. Philip Morgan<sup>1</sup>

<sup>1</sup>University of Newcastle, Newcastle, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** To investigate the feasibility and preliminary efficacy of the biya yadha gudjagang yadha: Healthy Dads Healthy Mob program. This new and innovative study was a 9-week health and wellbeing program tailored for Aboriginal fathers and their children living on Darkinjung Country (Central Coast NSW, Australia). The program involved weekly sessions with a health-education component, a physical activity component, and a healthy shared meal.

**Methods:** Single arm, pre-post feasibility trial including qualitative and quantitative measures. Primary measures included targets for recruitment (20 families), fidelity ( $\geq 80\%$ ), attendance ( $\geq 70\%$ ), compliance ( $\geq 60\%$ ), retention ( $\geq 70\%$ ), and program satisfaction (4/5). Secondary outcomes were assessed via questionnaire to measure preliminary efficacy which included cultural identity, physical activity, and nutrition. Anthropometry measures included objectively measured weight and BMI. Yarning was used as a culturally appropriate method to gain qualitative information regarding the feasibility and preliminary efficacy of the program.

**Results:** Feasibility was achieved with nearly all a-priori benchmarks met; fidelity 93% (benchmark  $\geq 80\%$ ), attendance 79% (benchmark  $\geq 70\%$ ), home-activity compliance 93% (benchmark  $\geq 60\%$ ), retention 86% (benchmark  $\geq 70\%$ ), satisfaction 5/5 (benchmark = 4/5). Recruitment capability (7 families) was not achieved (benchmark: 20 families). Regarding preliminary efficacy, large effect sizes ( $d \geq 0.8$ ) were evident for most assessed outcomes in both fathers and children. Overwhelmingly positive qualitative feedback indicated that Aboriginal fathers living on Darkinjung Country find the program to be acceptable.

**Conclusions:** The biya yadha gudjagang yadha: Healthy Dads Healthy Mob program was the first health and wellbeing program designed for Aboriginal fathers and their primary-school aged children living on Darkinjung Country. The feasibility of the study was supported by high levels of program attendance, retention, and participant satisfaction. These findings are complimented by very positive qualitative feedback indicating that Aboriginal fathers living on Darkinjung Country find the program to be acceptable. Based on the findings of this study we recommend that the positive indicators of preliminary efficacy are further investigated in a larger trial, and that these findings inform future parenting research involving Aboriginal fathers.

## Regular intense physical activity reduces sweet taste sensitivity and chemosensory surface in healthy participants

**Ms. Isabella Kimmeswenger<sup>1,2</sup>**, Marlies Gaider<sup>2,3</sup>, Kevin Doppelmayr<sup>3</sup>, Jakob P. Ley<sup>4</sup>, Barbara Lieder<sup>1,3,5</sup>

<sup>1</sup>Institute of Physiological Chemistry, Faculty of Chemistry, University of Vienna, Vienna, Austria, <sup>2</sup>Vienna Doctoral School in Chemistry, University of Vienna, Vienna, Austria, <sup>3</sup>Christian Doppler Laboratory for Taste Research, Faculty of Chemistry, University of Vienna, , Austria, <sup>4</sup>Symrise AG, , Germany, <sup>5</sup>Institute of Clinical Nutrition, University of Hohenheim, Stuttgart, Germany

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: J. Young Adults**

**Purpose:** Chemosensory signaling is affected by inflammation, which may be caused by an unhealthy lifestyle. However, also intense physical activity can increase cytokine release. While differences in taste perception directly after the execution of exercise interventions have already been investigated, evidence on the effect of regular intense activity is scarce. We hypothesized that due to exercise-induced low-grade inflammation, people frequently engaging in physical activity show impairments in sensory perception.

**Methods:** In an observative human study we compared female and male participants who exercise  $\geq 6$  hours per week ( $n=34$ ) with participants exercising  $\leq 2.5$  hours per week ( $n=31$ ). Data concerning salivary IL-6 and urinary 8-iso-PGF<sub>2</sub>-a concentrations, body composition, sweet taste sensitivity and preferences, dietary intake of sweet food, physical activity, size and area of fungiform papillae was collected. Statistical analysis was conducted using PCA followed by linear regression models, Student's t-tests with Dunnett Multiple Comparison Test or Mann-Whitney-U test.

**Results/findings:** A PCA revealed that 44.15% of cumulative proportion of variance was explained by two principal components. PC1 was primarily driven by variables related to body composition and morphological aspects of fungiform papillae, while PC2 was strongly affected by sweet taste sensitivity, consumption of sweet foods and salivary IL-6 concentration. Participants from the high activity group had a lower PC1 and higher PC2 score compared to less active participants. Group comparisons for the variables summarized by PCA revealed that physically more active participants had increased levels of IL-6 ( $+25.6 \pm 10.9\%$ ), alongside with a decreased sweet taste sensitivity ( $-35.8 \pm 12.8\%$ ), higher consumption of sweet foods ( $+11.9 \pm 4.9\%$ ) and a decreased number ( $-24.8 \pm 4.9\%$ ) and area ( $-29.8 \pm 6.4\%$ ) of fungiform papillae compared to less active participants.

**Conclusions:** The results show impaired markers of taste function and higher inflammation markers in individuals with a high physical activity level, supporting the hypothesis that physical activity affects the taste apparatus in an inflammation-induced manner. The reduced sweet taste perception in highly active persons may facilitate an increased sugar intake, assisting the supply of elevated energy needs.

# Do neighbourhood perceptions modify the associations between objectively measured walkability and physical activity in adults living in Canada?

**Dr. Levi Frehlich<sup>1</sup>**, Dr. Stephanie A. Prince<sup>2</sup>, Dr. Justin J. Lang<sup>2</sup>, Dr. Gavin R. McCormack<sup>1</sup>

<sup>1</sup>University of Calgary, Calgary, Canada, <sup>2</sup>Centre for Surveillance and Applied Research, Public Health Agency of Canada, Ottawa, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Intrapersonal and interpersonal factors as well as past and recent interactions with the environment shape how individuals perceive their built environment. While perceived and objectively measured neighbourhood walkability often lack agreement, both are associated with physical activity. Studies to date often conceptualize neighbourhood perceptions as a mediator of the relationship between the objectively measured built environment and physical activity. However, it is also plausible that neighbourhood perceptions may amplify or attenuate the effects of the objectively measured built environment on physical activity. This study aimed to determine if perceived walkability modifies associations between objectively measured walkability and physical activity in adults living in Canada.

**Methods:** Using adult (18-64 years) data from cycles 5 and 6 of the Canadian Health Measures Survey, we examined whether perceived walkability (Physical Activity Neighborhood Environment Survey) modified the association between objective neighbourhood walkability (Canadian Active Living Environment Index linked via postal code) and accelerometer-measured steps and minutes of moderate-to-vigorous intensity physical activity (MVPA). Multivariate generalized linear models (gamma distribution with identity link) assessed whether perceived walkability modified the associations between objectively measured walkability and physical activity outcomes (steps and MVPA) separately for males (n=1,233) and females (n=1,167) while adjusting for important sociodemographics.

**Results/findings:** Males and females had a mean (SD) age of 43.5 (11.7) and 43.3 (11.6) years, respectively. Mean daily steps were 8,976 (3,845) for males and 8,294 (3,732) for females. Mean daily minutes of MVPA were 30.2 (28.6) for males and 26.7 (29.2) for females. In males, perceived walkability amplified the effect of objective walkability on daily steps (Binteraction: 120.3; 95%CI 34.0-206.5; p=0.006) and daily minutes of MVPA (Binteraction: 0.71; 95%CI 0.12 to 1.3; p=0.018). No other significant interactions were observed.

**Conclusions:** Our findings suggest that among adult males, the combination of perceived and objective walkability has a synergistic effect on accelerometer-measured daily steps and minutes of MVPA. More research is needed to understand the nuanced interplay between the perceived and objective built environment, physical activity, and sex, to better inform targeted public health interventions.

# INFLUENCES OF SOCIODEMOGRAPHIC FACTORS AND A GLOBAL COMPARISON OF CARDIORESPIRATORY FITNESS IN PRIMARY SCHOOL CHILDREN: THE NW-CHILD STUDY

**Mrs. Xonnè Muller<sup>1,2,3</sup>**, Prof AE Pienaar<sup>1</sup>, Dr B Gerber<sup>1</sup>, Dr CN Moran<sup>3</sup>, Dr NE Brooks<sup>3,4</sup>

<sup>1</sup>School of Human Movement Sciences, North-West University, Potchefstroom Campus, South Africa,

<sup>2</sup>Department of Human Movement Sciences, University of Fort Hare, Alice Campus, South Africa,

<sup>3</sup>Faculty of Health Sciences and Sport, University of Stirling, Stirling, Scotland, UK, <sup>4</sup>Department of Kinesiology, DePauw University, Greencastle,, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Physical activity (PA) and engagement in health-related fitness are significant contributors to healthy child development. Over the past half-century, PA and cardiorespiratory fitness (CRF) have declined in child and adolescent populations globally, with discrepancies reported amongst gender and socioeconomic status (SES) groups. These trends are also evident in the South African childhood population. The study aimed to compare current CRF trends of South African children to global criteria reference standards (CRS) with the intent to identify at-risk populations.

**Methods:** A total of 349 children (boys=165; girls=184) participated. Follow-up measurements were taken (2013, 2016) at mean ages of 9.8 and 12.8. The PACER test was used to assess CRF. Data analysis included means, standard deviations and mixed linear models. P-values were adjusted according to the Tukey method.

**Results:** Boys performed better than girls in CRF across both SES groups (low, high) and time points ( $p < 0.01$ ). According to the Fitnessgram cut-points, boys of a low SES achieved a VO<sub>2</sub>max of 44.2 mL/kg/min and 44.4 mL/kg/min at ages 9 and 12, placing them in the healthy fitness zone (HFZ). For girls, both high (40.9 mL/kg/min) and low (40.8 mL/kg/min) SES groups achieved the HFZ classification at the age of 9. Both SES groups (low=38.5 mL/kg/min; high=39.8 mL/kg/min) were classified into the needs improvement (NI) zone at age 12. Compared with the Eurofit standards by Tomkinson, none of the gender and SES groups reached the CRF thresholds classifying them as at-risk. According to the Ruiz standards, which indicate risk for cardiovascular disease (CVD), both SES and gender groups meet these thresholds at the age of 9, with only the boys meeting the criteria at the age of 12.

**Conclusion:** These universal cut-points by Ruiz, Tomkinson and the Fitnessgram are considered valid monitoring guidelines to identify CRF risk in South African children as similar trends are observed. However, girls aged 12 are especially at risk, which necessitates interventions. Further national research on CRF is crucial to inform targeted interventions needed to bridge these SES and gender disparities. It is essential to enhance overall PA and PF levels in children from various backgrounds.

## Pathways to Sugar-Sweetened Beverage Consumption in Parent-Child Dyads: An Actor-Partner Interdependence Model Approach

Professor May Lwin<sup>1</sup>, **Ms Allison Seet<sup>1</sup>**, Ms Ysa Marie Cayabyab<sup>1</sup>, Ms Seraphina Leo<sup>1</sup>,  
Professor Peter Schulz<sup>2</sup>

<sup>1</sup>Nanyang Technological University, Singapore, Singapore, <sup>2</sup>University of Lugano, Lugano, Switzerland

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

### **SIG - Primary Choice:** G. Children and families

Childhood obesity remains a significant global public health issue, with the consumption of sugar-sweetened beverages (SSBs) identified as a key contributing factor. While familial influences on dietary behaviors and obesity are well-documented, the bidirectional dynamics between parents and children in shaping SSB consumption remain under-explored. Drawing on Social Influence Theory, this study examines how parent-child perceptions and consumption intentions regarding SSBs are interrelated, with attitudes serving as a mediating factor. A survey was conducted among 250 parent-child dyads in Singapore. Dichotomous items were used to measure cognitive perceptions (parent:  $\omega = 0.71$ ; child:  $\omega = 0.76$ ) and attitudes (parent:  $\omega = 0.96$ ; child:  $\omega = 0.94$ ) towards SSBs. Meanwhile, a self-reported measure captured the participants' intention to consume SSBs. Based on the World Health Organization's definition of SSBs, images of culturally relevant drink products were used in the survey to describe SSBs. Pearson's correlation and the Actor-Partner Interdependence Model (APIM) were used to analyze the nature of the parent-child dyadic relationship. Pearson's  $r$  correlation indicated positive associations between parent and child cognitive perceptions ( $r = 0.21$ ,  $p < .001$ ) and consumption intentions ( $r = 0.33$ ,  $p < .001$ ) of SSBs. Path analysis revealed significant actor effects: Parents' ( $\beta = 0.52$ ,  $p < .001$ ) and children's ( $\beta = 0.43$ ,  $p < .001$ ) cognitive perceptions of SSBs strongly predicted their positive attitudes towards these beverages. Attitudes, in turn, influenced intentions to consume SSBs (parent:  $\beta = 0.32$ ,  $p < .001$ ; child:  $\beta = 0.31$ ,  $p < .001$ ). Partner effects were also observed where parents' cognitive perceptions influenced their children's consumption intentions ( $\beta = 0.20$ ,  $p = .01$ ), and children's cognitive perceptions affected their parents' attitudes ( $\beta = 0.20$ ,  $p = .02$ ). Study findings provide new insights into obesity prevention efforts, highlighting the reciprocal influence of both parents and children in promoting healthier habits. By addressing the bidirectional impact of parent-child dynamics, this research bridges psychology theory and health communication practice, offering a novel framework for combating obesity through family-centered approaches.

# Effects of a School-Based Physical Activity Intervention on Physical Fitness and Executive Functions Among Chinese Preschoolers: A Quasi-Experimental Study

**Miss Shan Jiang<sup>1</sup>**, Prof. Amy Sau HA<sup>1</sup>, Prof. Johan YY Ng<sup>1</sup>

<sup>1</sup>The Chinese University of Hong Kong, Hong Kong, Hong Kong

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** We aimed to examine the effectiveness of a six-month school-based physical activity (PA) intervention on improving physical fitness (PF) and executive functions (EFs) among Chinese preschoolers.

**Methods:** A quasi-experimental design was employed, involving 120 preschoolers (58 boys;  $5.10 \pm 0.64$  years old) from 21 preschool classes in Shenzhen, China. Participants were randomly assigned to either the intervention group (IN,  $n = 12$ ) or a wait-list control group (CG,  $n = 9$ ). The program constituted a whole-school health promotion intervention encompassing four key components: a. quality physical education classes; b. professional development for teachers; c. active physical activity homework; d. energetic playgrounds. Over six months, the intervention group received the program, while the control group received usual schooling. Measurements before and after the intervention included body weight status (BMI) and PF components (cardiorespiratory fitness, speed-agility, lower-body muscular strength, balance) measured using the PREFIT Battery. EFs (working memory and cognitive flexibility) were assessed through computer-based neurocognitive tasks. Intention-to-treat analyses were adopted, and mean differences among groups for each outcome were tested by two-way analysis of covariance (ANCOVA) with repeated measures, while adjusting for age and sex. The effect size (ES) was reported as an  $\eta^2$  (partial eta square) value.

**Results:** The intervention showed significant improvements on cardiorespiratory fitness, speed-agility, balance, and working memory and cognitive flexibility after the 6-month intervention (all  $p < 0.05$ , ES = 0.04-0.30). Both IN and CON showed enhancement in PF and EFs, but IN demonstrated significantly greater improvements in both the PF and EFs compared to CON (both  $p < 0.05$ ). However, no significant group differences were found with respect to BMI and lower-limb muscular strength.

**Conclusion:** The findings suggest that a six-month school-based intervention appeared to be effective in improving PF and EFs in preschoolers. Further research is warranted to explore the applicability and constraints of a school-based intervention for promoting the development of young children in educational settings.

## Which factors influence urban Indian adolescents' snacking behaviors? – A qualitative study

**Dr. Neha Rathi<sup>1</sup>**, Prof Anthony Worsley<sup>2</sup>, Prof Meg Bruening<sup>3</sup>

<sup>1</sup>Department of Beauty and Wellness, Symbiosis Skills & Professional University, Pimpri-chinchwad, India, <sup>2</sup>School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia, <sup>3</sup>Department of Nutritional Sciences, College of Health and Human Development, The Pennsylvania State University, University Park, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Urban Indian adolescents often practice unhealthy dietary behaviors such as meal skipping and snacking on high energy foods with low nutrient value. Overconsumption of energy-dense, nutrient-poor (ENDP) snacks is widely cited as one of the potential drivers of the obesity epidemic. To promote healthy snacking behaviors among adolescents it is essential to explore the various factors which may influence the consumption of healthy and unhealthy snacks among Indian adolescents. The aim of this inquiry was to qualitatively explore factors influencing snacking behavior of urban Indian adolescents.

**Methods:** Informed by the social constructivism framework, an exploratory-descriptive qualitative research approach was employed to obtain a richer understanding of the influences on adolescents' snacking behaviors. Using purposive sampling, adolescents aged 10-19 years were recruited from two government and two private schools in Varanasi, Uttar Pradesh, India. Face-to-face interviews were conducted in Hindi/English, per the preference of the participants. The conversations were digitally recorded, transcribed verbatim, and translated to English (where necessary) for analysis. The transcribed data were subjected to thematic analysis. Themes were extracted using inductive coding in the NVivo software program.

**Results:** A total of 62 adolescents (50% female; 76% private school pupils) with mean age 15.3 (SD : 1.86) years completed the interviews between November 2024 and February 2025. Ten themes emerged including: (i) Perceptions of a snack; (ii) Liking for unhealthy snacks; (iii) Cost of snacks; (iv) Family food environment (e.g. Food rules regarding snacking); (v) Influence of the peer group; (vi) School food environment (e.g. Easy availability of unhealthy snacks in canteens, limited supply of healthy snacks in canteens); (vii) Snacking episodes (e.g. consuming snacks at night, consuming snacks while watching TV); (viii) Influence of mass media; (ix) Packaging; (x) Neighborhood food environment.

**Conclusions:** The results show that multiple factors are likely to influence snacking behaviors in Indian adolescents, aligning with literature on adolescent snack consumption in international settings. Behavioral interventions should be designed to create enabling environments to encourage healthy snack consumption in adolescents by removing barriers at the individual, household, and community levels.

# Food Availability and Access and Health Outcomes Differ Across Subregions of Appalachia

**Dr. Rebecca Hagedorn-Hatfield<sup>1,2</sup>**, Mrs Carrie Cruz<sup>2</sup>, Ms Tess Evans<sup>2</sup>, Ms Katie Przyblo<sup>2</sup>, Dr Melissa Olfert<sup>3</sup>

<sup>1</sup>Altarum, Ann Arbor, United States, <sup>2</sup>Meredith College, Raleigh, United States, <sup>3</sup>West Virginia University, Morgantown, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** The Appalachian Region faces significant challenges related to isolation and poverty, which impact health and well-being. The Appalachian Regional Commission divides the area into five subregions with similar topography, demographics, and economic conditions. However, limited research exists on differences in food access and availability across these subregions.

**Methods:** Secondary data were collected at the county level from the U.S. Census Bureau, Robert Wood Johnson Foundation, and Feeding America. Food access indicators included the percentage of households with limited access to healthy food and the percentage of food-insecure households above the Supplemental Nutrition Assistance Program (SNAP) threshold. Food availability indicators included the number of grocery stores and convenience stores. Health outcomes included food insecurity and diabetes rates. Descriptive statistics (mean and standard deviation) were computed and one-way analysis of variance (ANOVA) were used to analyze differences by subregion.

**Results:** Northern Appalachia had the highest average number of grocery stores ( $15.1 \pm 10.5$ ), while Central Appalachia had the lowest ( $5.5 \pm 2.3$ ). Southern Appalachia had the highest average number of convenience stores ( $9.7 \pm 7.8$ ), with North Central Appalachia reporting the lowest ( $5.9 \pm 3.6$ ). Significant differences in food availability were observed across subregions ( $p < 0.0001$  and  $p = 0.0433$ , respectively). Southern Appalachia reported the highest percentages of limited access to healthy foods ( $7.5 \pm 5.1$ ) and food-insecure households above the SNAP threshold ( $49.9 \pm 8.4$ ), while Central Appalachia had the lowest ( $3.5 \pm 3.5$  and  $19.3 \pm 12.7$ , respectively). Rates of food insecurity ( $19.7\% \pm 2.5\%$ ) and diabetes ( $12.3\% \pm 1.1\%$ ) were highest for Central Appalachia and lowest for North Central Appalachia ( $13.7\% \pm 1.8\%$  and  $9.6\% \pm 1.1\%$ , respectively). Food access and health outcome differences across subregions were statistically significant ( $p < 0.0001$  for all).

**Conclusions:** Differences across the Appalachian subregions exist. These findings highlight the need for targeted interventions and policies tailored to the unique challenges of each subregion. Addressing these disparities could improve food security and health outcomes across the Appalachian Region.

# The influence of caregivers' value tensions on nutrition decisions for their families: A qualitative study in disadvantaged neighbourhoods

**Ms. Noa van den Brink<sup>1</sup>**, Dr. Valentijn Visch<sup>1</sup>, Nicolien Dinklo<sup>2</sup>, Ashley Smit<sup>2</sup>, Heleen Bouma<sup>3</sup>, Dr. Marina Bos-de Vos<sup>1</sup>

<sup>1</sup>Delft University of Technology, Delft, The Netherlands, <sup>2</sup>Erasmus University Medical Centre, Rotterdam, The Netherlands, <sup>3</sup>Muzus, Delft, The Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** This study explores value tensions in nutrition decisions among caregivers of children (0-4 years) in disadvantaged neighbourhoods in the Netherlands. Daily challenges like stress, limited support, and financial strain influence tensions between values, such as maintaining family harmony versus making healthy food choices, negatively impacting nutrition decisions by caregivers. Nutrition interventions often fail to address these tensions, making it difficult to integrate advice and support in experienced tensions and caregivers' daily lives. This helps explain their relatively low effect on intervention uptake and effectiveness. We aim to inform future health interventions with an understanding of value tensions in nutrition decisions to enhance their effectiveness in promoting healthy eating.

**Methods:** We conducted semi-structured interviews with 20 caregivers of children aged zero to four, living in disadvantaged neighbourhoods. We used pre-interview sensitization exercises (e.g. photo assignments) to enhance participants' awareness and generative techniques during the interviews (e.g. image selection) to facilitate deeper reflection and expression of nutrition decisions and tensions. Transcripts were analysed inductively to identify value tensions, stressors triggering them, and protective factors that mitigate stressor and tension impact.

**Results:** Six key value tensions caregivers experienced regarding nutrition were identified in the analysis. The three most commonly mentioned tensions were balancing the value of health of the child with values of (1) enjoyment of the child, (2) convenience, and (3) caregiver well-being. Specific stressors, such as demanding child behaviour, unhealthy food provided by family and friends, and lack of caregiver 'me-time', triggered these tensions. Protective factors, including social and material support like informal childcare and access to healthy and convenient foods, helped alleviate tension.

**Conclusions:** This study provides insight into how value tensions, stressors, and protective factors shape caregivers' nutrition decisions for their family. Addressing these tensions as barriers to behaviour change can improve intervention uptake. Interventions should support multiple values (e.g. both caregiver well-being and child health) and integrate stress management, social and material support. Additionally, our findings provide guidance to tailor interventions to individual experienced tensions and the moments they take place.

# Understanding Physical Activity and Physical Education Policies to Advance Youth Physical Activity Promotion in Illinois: A Blueprint from the Global Observatory for Physical Education (GoPE!)

**Prof. Rafael Miranda Tassitano<sup>1</sup>**, Dr. Maria Cecilia Tenorio<sup>1</sup>, Mrs Rafael Cristão<sup>2</sup>, Ms Andressa Sobrinho<sup>3</sup>, Dr. Dean Dudley<sup>4</sup>, Dr. Michael Pratt<sup>5</sup>, Dr. Pedro Hallal<sup>1</sup>, Dr. Andrea Ramirez Varela<sup>6</sup>, Dr. João Martins<sup>2</sup>

<sup>1</sup>University of Illinois at Urbana-Champaign, Champaign, USA, <sup>2</sup>Centro de Estudos em Educação, Faculdade de Motricidade Humana, Lisboa, Portugal, <sup>3</sup>University of São Paulo, São Paulo, Brazil,

<sup>4</sup>Macquarie University, Sydney, Australia, <sup>5</sup>University of California San Diego, San Diego, USA,

<sup>6</sup>University of Texas, Austin, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** To describe the evolution of physical activity (PA) and physical education (PE) policies aimed at promoting PA at the school level in Illinois-USA.

**Methods:** The Global Observatory for Physical Education (GoPE!) is a global, independent surveillance system with local representatives that monitors PE and PA policies, surveillance, and research at the national level. In this exploratory study, the GoPE! research protocol was used to evaluate PA and PE policies at the state level. The following indicators were examined using official documents from Illinois State: (1) PE curriculum, (2) policy mandating PE, (3) minimum required PE time; (4) a PE monitoring system; (5) PA initiatives.

**Results/findings:** PE is mandatory in all compulsory school years in Illinois and should be delivered by specialized PE teachers. However, a school board is authorized to excuse pupils on an individual basis for several reasons (e.g., participation in interscholastic or extracurricular athletic programs, preparation for admission to an institution of higher learning, marching band program, or eligibility for special education). The PE curriculum is sequentially and developmentally organized to achieve state goals, including the development of movement skills and knowledge, health-related fitness, and attitudes for a healthy lifestyle. In terms of funding, general state funds support school districts and schools in promoting PE, and school boards determine the frequency of PE classes, with a minimum of three days per week. In recent years, all public schools have been required to provide 30 minutes of daily supervised, unstructured, child-directed play for all students in kindergarten through grade 5. In terms of monitoring, the State Board of Education determines the indicators presented in the school report card, which currently only includes the number of PE classes per week.

**Conclusions:** Although PE is mandatory and supported by a curriculum, the number of PE classes and school-based PA initiatives and opportunities, as well as pedagogical approaches, may vary across schools. It depends on decisions made by individual school boards, particularly regarding extracurricular activities before and after school hours. This study contributes to explore the PE and PA policy implementation at the subnational level in one state of USA.

# Parent-focused behavioural Interventions for the prevention of early childhood obesity: results of the TOPCHILD systematic review and individual participant data meta-analysis

Dr. Kylie Hunter<sup>1</sup>, Mr David Nguyen<sup>1</sup>, Dr Sol Libesman<sup>1</sup>, Dr Jonathan Williams<sup>1</sup>, Mr Mason Aberoumand<sup>1</sup>, Mr Jannik Aagerup<sup>1,2</sup>, **Dr Brittany Johnson<sup>3</sup>**, Ms Angie Barba<sup>1</sup>, Prof Louise Baur<sup>4</sup>, Professor Rebecca Golley<sup>3</sup>, Prof Anna Lene Seidler<sup>1,2</sup>

<sup>1</sup>NHMRC Clinical Trials Centre, The University of Sydney, Sydney, Australia, <sup>2</sup>German Center for Child and Adolescent Health (Site Rostock/ Greifswald), University Medical Center, Rostock, Germany, <sup>3</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Adelaide, Australia, <sup>4</sup>University of Sydney, Sydney, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Childhood obesity is a major global health issue. Governments are investing into early prevention programs, yet their effectiveness remains uncertain. We evaluated the effectiveness of parent-focused behavioural early childhood obesity prevention interventions.

**Methods:** For this individual participant data (IPD) meta-analysis, we systematically searched medical databases and trial registers for randomised controlled trials comparing parent-focused behavioural obesity prevention interventions commencing before 12 months of age with usual care, no intervention or attention control. Investigators of eligible trials were invited to join the Transforming Obesity Prevention for Children (TOPCHILD) Collaboration and to share their IPD. Screening, data checking, re-coding, integrity, risk of bias and GRADE assessments were conducted in duplicate according to a pre-specified protocol. The primary outcome was body mass index (BMI) z-score at age 24±6 months. Key secondary outcomes were duration of exclusive breastfeeding assessed at 6±2 months, and each of the following at age 24±6 months: daily vegetable consumption, screen time, physical activity, sleep duration, and parent feeding practices domain of control (restriction). We conducted intention-to-treat two-stage random effects meta-analysis to determine effects overall and for pre-specified subgroups.

**Results/findings:** We identified 18 completed and eligible trials that assessed our primary outcome. We obtained IPD for 17 (n=9128) out of these 18 trials (n=9383), representing 97% of eligible participants. We found no evidence of an effect of interventions on BMI z-score at age 24±6 months (mean difference -0.01 [95% CI -0.08, 0.05], high certainty evidence,  $\tau^2=0.01$ , n=6505, 2623 missing). This result was robust across individual-level subgroups (e.g. socioeconomic position, parental weight status, maternal age, parity) and intervention/trial-level subgroups (e.g. mode of intervention delivery, dose, setting, country), as well as sensitivity analysis accounting for different analysis methods, missing data, risk of bias and integrity checks. For our secondary outcomes, we included 31 trials with IPD from 28,825 children and found mostly no evidence of effects.

**Conclusions:** These findings indicate that current parent-focused behavioural interventions are insufficient to prevent obesity at age 24±6 months. This highlights a need to re-think childhood obesity prevention approaches to address the complex social and environmental determinants of obesity in children.

## Do Barriers, Enablers, and Support Needs for Screen Use Management Differ by Presence of Siblings Among Australian Parents of Young Children?

**Dr. George Thomas<sup>1</sup>**, Dr Stephanie L Duncombe<sup>2</sup>, A/Prof Sjaan R Gomersall<sup>1,3</sup>, Prof Alina Morawska<sup>4</sup>, Dr Ineke Vergeer<sup>5</sup>, Prof Stuart JH Biddle<sup>5</sup>

<sup>1</sup>Health and Wellbeing Centre for Research Innovation, School of Human Movement and Nutrition Sciences, The University Of Queensland, Brisbane, Australia, <sup>2</sup>School of Public Health, The University of Queensland, Brisbane, Australia, <sup>3</sup>School of Health and Rehabilitation Sciences, The University of Queensland, Brisbane, Australia, <sup>4</sup>School of Psychology, The University of Queensland, Brisbane, Australia, <sup>5</sup>Centre for Health Research, University of Southern Queensland, Brisbane, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Parents face a range of barriers in managing their young child's screen use, which may be influenced by the presence of older siblings. However, little research has explored whether parents of children with siblings face different challenges compared to those raising a single child. This study aimed to identify the most commonly perceived barriers, enablers, and support needs for Australian parents in managing young children's screen use and examine their association with the number of older siblings in the household.

**Methods:** A cross-sectional online survey was conducted with Australian parents of children under five years. The survey included questions on social demographics (e.g., number of siblings) and perceived barriers, enablers, and support needs related to managing screen use for their youngest child. Data were collected via Qualtrics between March and June 2024. Descriptive analyses identified the most common barriers, enablers, and support needs, while logistic regression examined their associations with single child households compared with households with siblings. Models were adjusted for parent relation (e.g., mother or father), age, and education.

**Results:** Among 249 Australian parents, the most common barrier to managing young children's screen use was enforcing consistent rules across caregivers and environments (23%). Key enablers included providing engaging non-screen activities (87%) and designating screen-free times (82%). Parents most frequently sought support in managing child resistance (80%), modelling healthy screen use (78%), and setting screen limits (76%). Logistic regression showed parents of a single child were more likely to report difficulty finding alternative activities (OR=2.03; 95% CI: 1.06-3.94). Establishing clear screen rules was more helpful in households with siblings (OR=1.75; 95% CI: 0.94-3.28), while parents of a single child were more likely to seek support for managing child resistance (OR=2.31; 95% CI: 1.13-4.95).

**Conclusions:** Parents face significant challenges in managing young children's screen use, with needs varying by the presence of siblings. Tailored support, particularly for first-time parents, should focus on alternative activities and managing resistance. Clear, consistent guidelines may be beneficial for parents of younger children with siblings. Further work is required to develop tailored support for parents with different sibling compositions regarding optimal screen use.

# Sleep assessment methods: navigating the landscape across the lifespan

**Prof Rute Santos<sup>1</sup>**, prof. Eduarda Sousa-Sá<sup>2</sup>

<sup>1</sup>Universidade do Minho, Institute of Education, Portugal, , , <sup>2</sup>American University of Middle East, Department of Liberal Arts, Kuwait , ,

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Sleep is a fundamental non-movement behaviour, crucial at all life stages. Recent societal shifts have disrupted sleep, impacting health and human movement behaviours, with global trends showing declining human's sleep duration. An overview of sleep health effects is essential, requiring consensus on definitions and measurement tools for epidemiological studies. This work aims to offer an overview of methods to assess sleep duration and quality for population-based studies, deliver a user's guide for tool selection, and identify research gaps.

**Methods:** we conducted a comprehensive narrative review on sleep assessment methods.

**Results:** Future directions involve standardizing sleep health definitions and exploring sleep health determinants. Sleep health education initiatives should be integrated into public health programs, starting early in school curriculums. Improved tools and criteria are needed to quantify sleep health, emphasizing both subjective and objective assessment methods. Longitudinal research should investigate sleep dimensions beyond duration, fostering extensive, multidisciplinary studies in healthy children. Sleep interventions should consider 24-hour behaviours' combined effects on health across the lifespan. The need for continuous population-based sleep surveillance and enhanced sleep education has been highlighted. This suggests a shift towards objective measures of sleep and the development of new detection algorithms. Additionally, validation studies and regulatory requirements for sleep apps and devices are crucial for ensuring data accuracy and safety.

**Conclusion:**.. this work provides a comprehensive overview of sleep assessment methods across the lifespan, emphasizing the importance of integrating subjective and objective measures and the need for standardization in sleep health definitions and surveillance. Future research should focus on refining sleep-detection devices, establishing consensus and regulations, and incorporating sleep education into public health initiatives. **FUNDING.** This work was supported by the Portuguese Foundation for Science and Technology grants: PTDC/SAU-DES/0166/2021; UIDB/00317/2020 and UIDP/00317/2020

## HOW DO YOU CHOOSE TO MOVE? ADAPTATION AND IMPLEMENTATION OF THE CHOOSE TO MOVE PROGRAM IN SYDNEY, AUSTRALIA.

**Mrs. Sandra O'Rourke**<sup>1</sup>, Ms Catherine Kirkham<sup>1</sup>, Ms Betty Ramsay<sup>1</sup>, Mr Daniel Cheung<sup>1,2</sup>, Ms Courtney West<sup>1</sup>, Prof Catherine Sherrington<sup>1</sup>, Associate Professor Leanne Hassett<sup>1,3</sup>, Professor Heather McKay<sup>4</sup>, Professor Anne Tiedemann<sup>1</sup>

<sup>1</sup>*Institute for Musculoskeletal Health, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia*, <sup>2</sup>*Discipline of Physiotherapy, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia*, <sup>3</sup>*Sydney School of Health Sciences, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia*, <sup>4</sup>*Active Aging Research Team at the University of British Columbia, British Columbia, Canada*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Over half of older adults in Australia do not meet physical activity recommendation. Low physical activity has significant consequences for older adults including reduced physical function and increased risk of falls and fall-related injuries. Choose to Move is a 3-month, community-based program developed by the Active Aging Research Team at the University of British Columbia, Canada. Co-designed with older adults, Choose to Move aims to provide motivation and support to enable older adults to be more physically active and socially connected. It has been successfully delivered in Canada with over 7,000 participants. The program is demonstrated to increase physical activity, improve mobility, and reduce social isolation and loneliness. This study aims to adapt, implement and evaluate the Choose to Move program in Sydney, Australia.

**Methods:** This study is a non controlled, single group implementation study that will target adults 50 years and over living in the community in Sydney, Australia who are currently physically inactive but are willing to become more active. The Choose to Move program involves developing a personalised physical activity plan and attending eight activity coach-led group discussion sessions. Sixteen programs with an average of 10-16 participants per group (n= 160) will be delivered in Sydney. The program will be co-designed and adapted to fit the Australian context. To support its delivery, we will partner with organisations SHARE and the Older Women's Network (OWN). The program's effectiveness will be evaluated based on various health and implementation outcomes.

**Results/findings:** The Choose to Move program material has been adapted for an Australian audience and recruitment commenced in December 2024. Overall, the main adaptations involved tailoring the language and incorporating geographically contextualised examples on program material. Additionally, local resources and programs were included. Sixteen participants have enrolled, and two community exercise provider organisations have been identified to deliver the Choose to Move program.

**Conclusions:** The Choose to Move program aims to motivate and support older adults to become more physically active and socially connected. The implementation of this program provides a potentially scalable solution to address the increasing burden of physical inactivity and social isolation in Australia.

# Understanding Predictors of Time Spent in Nature and Its Influence on Mental Wellbeing among College Students: A Multivariate Analysis

Mr. omotayo onanuga<sup>1</sup>, **Dr. GINA BESENYI<sup>1</sup>**

<sup>1</sup>Kansas State University, Manhattan, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: J. Young Adults**

**Purpose:** Time spent with nature (TSN) offers students space for personal reflection, help builds sense of self, facilitates shared social experiences, and provides stress reduction from academic life.<sup>1-4</sup> The study developed a predictive model for TSN and its impact on mental wellbeing among college students, incorporating demographics, psychological constructs (e.g., intention, self- efficacy), behavioral factors (physical activity) and attitudes toward nature.

**Methods:** Cross- sectional data were collected from a volunteer sample of currently enrolled undergraduates in four waves during the 2023-2024 academic year. TSN in minutes was calculated by multiplying the average time spent in parks per day by the number of days they visited in a month. Physical activity (PA) was measured using Godin Leisure-Time Exercise questionnaire<sup>5</sup> and attitudes (Positive, Negative & Concern) toward TSN (A-TSN) was captured with the Attitude Toward Spending Time in Nature Scale.<sup>6</sup> Self-efficacy (SE-TSN),<sup>6</sup> Intention of TSN (I-TSN)<sup>6</sup> and nature connectedness (NC)<sup>7</sup> were measured using 5-point Likert scales to measure confidence levels of spending time outdoors and how respondents feel about nature. Poisson and Gaussian regression models were used to assess TSN and mental wellbeing predictors.

**Results:** Participants (n=367) were mostly female (67%), white (84%) with a mean age of 20.2 (SD=3.9), and distributed across four academic years (24.3%, 21%, 23.2%, 23.9%). Results from the Poisson regression model indicate that age (~0.02, p<0.001), sex (~0.098, p<0.001), average I-TSN (~0.216, p<0.001), SE- TSN (~0.024, p<0.006), NC (~-0.042, p<0.001), PA level (~0.026, p<0.001), and the A-TSN (only Concern variable: ~0.042, p<0.001) significantly predict time spent with nature. The Gaussian overall model was significant, with wellbeing positively associated with time spent in nature; however, the relationship was not statistically significant (p = 0.246). Surprisingly, the result shows a negative relationship between A-TSN (positive) and well-being.

**Conclusions:** TSN has a positive relationship with wellbeing in college students but is influenced by other factors, underscoring the complexity of the relationship. The negative relationship between A-TSN (positive) and well-being suggests complex psychological or contextual dynamics. This research offers valuable insights into the predictors of nature engagement and its implications for mental wellbeing among college students.

# Effects of combined dietary restriction and exercise on cardiovascular disease risk factors in postmenopausal women: a systematic review and meta-analysis of randomised controlled trials

**Miss Haiqin ZHANG<sup>1</sup>**, Mr Junjie CHEN<sup>1</sup>, Dr Fenghua SUN<sup>1</sup>, Dr Chen ZHENG<sup>1</sup>

<sup>1</sup>Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Background and purpose:** Postmenopausal women are at an increased risk of developing cardiovascular disease (CVD) due to the reduction in the protective effect provided by estrogen. Previous research has indicated that exercise and dietary restriction (DR) may effectively improve CVD-related risk factors. The aim of the systematic review and meta-analysis was to investigate the effect of adding exercise to DR compared to DR only on CVD related risk factors in postmenopausal women.

**Methods:** Database searches were conducted utilising PubMed, Web of Science, Cochrane Library, Scopus, CINAHL, and SPORTDiscus to December 2024. Randomised controlled studies investigating the combination of DR and exercise in at least one of the CVD risk factors, including body weight, blood glucose, lipid profiles, and cardiorespiratory fitness in postmenopausal women were included. The overall effect size between the DR plus exercise and DR only groups for each CVD risk factor were calculated utilising the random-effects model, appropriate mean differences (MD) or standardised mean differences (SMD) with 95% confidence interval (CI). This review was registered at PROSPERO (CRD42025641472).

**Results:** 13 RCTs (15 studies) involving 1198 participants were identified as eligible for final analysis. Overall, the meta-analysis shows that DR combined with exercise significantly improved CVD risk factors, including body weight [MD: -0.69 Kg; 95% CI: -1.21 to -0.16 Kg;  $p = 0.01$ ; 17 studies], waist circumference [MD: -0.96 cm; 95% CI: -1.91 to -0.01 cm;  $p = 0.06$ ; 10 studies], blood glucose [SMD: -0.99 (95% CI: -1.56 to -0.42;  $p = 0.0007$ ; 8 studies], and VO<sub>2</sub>max [SMD: 0.40 (95% CI: 0.24 to 0.55;  $p < 0.00001$ ; 9 studies]. There is no significance on triglycerides [SMD: 0.11; 95% CI: -0.09 to 0.30;  $p = 0.29$ ; 7 studies]; low-density lipoprotein [SMD: 0.13; 95% CI: -0.08 to 0.34;  $p = 0.22$ ; 6 studies]; and total cholesterol [SMD: 0.06; 95% CI: -0.18 to 0.29;  $p = 0.63$ ; 5 studies] between groups.

**Conclusion:** Adding exercise to DR leads to significant improvements in body composition and VO<sub>2</sub>max compared to dietary restriction alone, while there is no significant effect on lipid profiles. This study provides strategies to prevent CVD in postmenopausal women.

# Policy stakeholders' understanding of a whole-systems approach to tackle physical inactivity in children through the co-construction of a causal loop diagram and the perception of its usefulness – a pilot study

**Dr. Fiona Chun Man Ling<sup>1</sup>**, Mr Simon Penhall<sup>2,3</sup>

<sup>1</sup>Health Determinants Research Collaboration - South Tees, Middlesbrough Council, Middlesbrough, United Kingdom, <sup>2</sup>College of Health, Wellbeing and Life Sciences, Sheffield Hallam University, Sheffield, United Kingdom, <sup>3</sup>You've Got This, South Bank, United Kingdom

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** N. Systems Science

**Purpose:** Both the Office for Health Improvement and Disparities (UK) and WHO have advocated the adoption of a whole-systems approach that captures multi-agency perspectives to promote physical activity (PA). A causal loop diagram (CLD) of a context-specific PA system can inform intervention strategies through understanding the factors/actors within the system and their interactions. However, understanding of systems thinking seems to vary amongst policy stakeholders. This pilot study aimed to explore policy stakeholders' understanding of systems thinking through co-constructing a CLD that represents the PA system for children in South Tees (Northeast England). We also explored the purpose(s) of the system, and the perceived usefulness of CLD, with policy stakeholders who are partners of a Sport England-funded Place Partnership, You've Got This (YGT), which takes a place-based whole systems approach to tackling inactivity, and with the YGT Core Team.

**Methods:** Six policy stakeholders from three different organizations co-constructed a CLD over two workshops. Workshop 1 - participants wrote down each factor/actor that contributed to physical (in)activity in children on a post-it note. Arrows were then added to indicate the direction of relationships between them. Workshop 2 - participants iterated the CLD and discussed the findings. Individual interviews with four participants, and reflection sessions with the YGT Core Team were conducted.

**Findings:** Thirty factors/actors were included in the final CLD with five interacting subsystems identified - PA culture, PA literacy, screen use, childcare pressure and urban planning. Connectivity between child activity venues was considered a potential leverage for intervention. Getting children addicted was regarded as the purpose of the screen use subsystem. Thematic analyses identified benefits of CLD – enhanced understanding of different perspectives on the challenges, informing future intervention direction and promoting collaborations and accountability. Identified challenges – engaging in systems thinking, validity assurance and evaluative use. All partners reflected on how the 'whole-systems approach' has become a buzz word for many without having some understanding of systems thinking.

**Conclusion:** This study highlighted the need to reinforce the concept of systems thinking to policy stakeholders who (intend to) adopt a whole-systems approach, and the potentials of CLDs to tackle physical inactivity.

# Examining the Impact of Supplemental Nutrition Assistance Program (SNAP) Emergency Allotments Termination on the Household Food Security of SNAP Participants with Children

**Miss Maadhanki Kasimanickam<sup>1</sup>**, Dr. Harold Bae<sup>1</sup>, Dr. Stephanie Grutzmacher<sup>2</sup>

<sup>1</sup>Oregon State University, Corvallis, United States, <sup>2</sup>University of Arizona, Tucson, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** The Supplemental Nutrition Assistance Program (SNAP) provides monthly benefits to eligible low-income U.S. households for food purchases. The SNAP Emergency Allotments (EA), introduced in March 2020, increased benefits during the COVID-19 pandemic. However, its staggered termination, with some states terminating EA early and others sustaining EA until national termination in March 2023, reduced recipients' benefits nationwide. In this study, we hypothesized that households experiencing early EA termination would have increased odds of food insecurity compared to households experiencing national termination. This study provides insights into the role of food assistance policies in promoting food security and informing future policy decisions.

**Methods:** A logistic regression analysis was used to evaluate changes in odds of household food insecurity using nationally representative, repeated cross-sectional data from the U.S. Census Bureau's Household Pulse Survey (July 2021-February 2023). Study participants included survey respondents aged 18 years or older reporting SNAP enrollment and at least one child in the household (N=42,942). Food insecurity was measured using a two-level categorization: food-secure and food-insecure. Demographic and socioeconomic covariates and a linear time trend were included in the model, with household weights applied to account for survey design.

**Results/Findings:** Households exposed to early EA termination had 35% increased odds of food insecurity versus unexposed households while accounting for covariates and secular trend ( $p=1.00E-09$ ). Independent of EA termination, households with five or more children had 30% increased odds of food insecurity versus households with one child ( $p=7.61E-06$ ). Households with unemployed respondents had 33% increased odds of food insecurity versus households with employed respondents ( $p<2E-16$ ). Households with female respondents had 9% decreased odds of food insecurity versus households with male respondents ( $p=0.004$ ).

**Conclusions:** These findings highlight EA's role in mitigating food insecurity during the COVID-19 pandemic. While early termination increased the odds of household food insecurity, results also reveal broader structural vulnerabilities and risks for food insecurity among specific subpopulations, persisting regardless of the generosity of SNAP benefits. Policymakers should address the immediate impacts of policy terminations and systemic inequities that place specific subpopulations at greater risk. This study offers insights to inform equitable public health policies and targeted interventions.

## The evaluation of a family-based multiple health behaviour intervention targeting girls: The Beyond the 80 feasibility trial

**Dr. Justin Guagliano<sup>1,2</sup>**, Dr. Aymen El Masri<sup>1,2</sup>, Dr. Sarah Kennedy<sup>1,2</sup>, Dr. Catharine Fleming<sup>1,2</sup>, A/Prof. Erin Mackenzie<sup>1,3</sup>, Mr. Nicholas West<sup>1</sup>, Ms. Holly Hliounakis<sup>1</sup>, A/Prof. Emma George<sup>1,2</sup>  
<sup>1</sup>Western Sydney University, Penrith, Australia, <sup>2</sup>Translational Health Research Institute, Penrith, Australia, <sup>3</sup>Centre for Educational Research, Penrith, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Family-based multiple health behaviour change interventions can potentially provide greater public health impact than single-behaviour intervention, as modifying one lifestyle behaviour may lead to improvements in others. Therefore, the purpose of this study was to assess the feasibility and acceptability of Beyond the 80 (BT80), a family-based healthy lifestyle intervention targeting school-aged girls.

**Methods:** BT80 was an 8-week single-arm pre-post feasibility trial co-delivered with a National Rugby League Women's Premiership team. Families were eligible if, at minimum, a parent and daughter (aged 7-11 years) participated, however, whole family participation was encouraged. Families attended weekly educational and rugby league focused practical sessions and received home-based challenges. Educational sessions focused on physical activity, muscle-strengthening activity, healthy eating, communication and emotions, and sleep. Targets were set a priori for recruitment (20 families), attendance ( $\geq 70\%$ ), and retention ( $\geq 70\%$ ). We also measured fidelity (via study-specific checklist), compliance (challenges completed), child engagement (direct observation), and acceptability of the intervention and evaluation protocol (child/parent self-report).

**Results/Findings:** Targets were not met for recruitment ( $N = 12$  families) and attendance (68%), but retention (92%) was met. Intervention fidelity was high (98% education, 100% practical), as was child engagement (90% education, 96% practical), and child and parent self-rated satisfaction with the educational (child = 90%, parent = 100%) and practical sessions (child = 96%, parent = 99%). However, families only completed 1-2 home-based challenges, on average, over the intervention period. Data collection took an average of  $102.1 \pm 25.6$  minutes at baseline and  $69.7 \pm 17.9$  minutes at intervention end. Parents self-reported that the duration of data collection and number of measures was acceptable. Overall, all children and parents liked participating in BT80 and thought it was fun. We found  $>90\%$  of children and all parents enjoyed participating in BT80 because it was family-based.

**Conclusions:** The preliminary findings related to the BT80 intervention and evaluation are promising, however, there is a need for further optimisation of the recruitment strategies and reinforcement activities. The lessons learned from this study can be used to inform a future pilot trial.

# GOING BEYOND WALKABILITY: DEVELOPMENT OF A NEIGHBORHOOD ACTIVE LIVING ENVIRONMENT INDEX IN THE ORISCAV-LUX STUDY

**Ms. Juliette Van Beek**<sup>1,2</sup>, Martin Dijst<sup>1,2</sup>, Olivier Klein<sup>1</sup>, Dr. Laurent Malisoux<sup>3</sup>, Dr. Torsten Bohn<sup>3</sup>, Mohammadreza Aghanejadahmadchali<sup>1,2</sup>, Camille Perchoux<sup>1</sup>

<sup>1</sup>Luxembourg Institute of Socio Economic Research, Esch-sur-alzette, Luxembourg, <sup>2</sup>University of Luxembourg, Esch-sur-alzette, Luxembourg, <sup>3</sup>Luxembourg Institute of Health, Strassen, Luxembourg

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** The walkability index (WI) is a widely accepted measure for evaluating the built environment with a physical activity (PA) outcome, but overlooks other key environmental characteristics that may promote an active lifestyle. This study aimed to develop a more comprehensive index, assessing additional neighborhood built environment characteristics potentially encouraging PA.

**Methods:** The active living environment index (ALEx) is composed of three sub-indicators: 1) availability and proximity of day-to-day amenities, 2) sports facilities, and 3) recreational green and blue spaces within residential neighborhoods. It was calculated for a subsample of the ORISCAV-LUX II study (n = 476) and analyzed across geographical areas and socioeconomic strata. Sensitivity analyses on index composition and weighting method were performed. Using gamma generalized linear models (GGLM), associations of the ALEx and its sub-indicators with accelerometer-derived moderate-to-vigorous PA (MVPA), light PA (LPA) and sedentary time (ST) were assessed. Effect modification by lifestyle preference [for being active], education, and sex were explored. Descriptive and regression results of the EFI were compared with the WI.

**Results/findings:** The median participant's ALEx score was 35.7 (IQR = 41.3) and median WI score was 47.2 (IQR = 25.6). Fully adjusted models showed no significant associations between ALEx, WI and the outcomes. However, effect modification by sex was observed for the association between the ALEx, the sub-indicator amenities and MVPA; and for the association between the sub-indicator sports facilities and LPA; suggesting that female participants benefited more from these facilities. There was a consistent interaction effect by lifestyle preference for the sub-indicator green and blue spaces across all three outcomes, benefiting participants not prioritizing being active. The results imply a stronger positive association between the sub-indicator sports facilities and LPA for participants with higher educational levels. For the WI, a significant interaction effect by sex on MVPA was identified.

**Conclusions:** Comprehensive environmental indices incorporating a broader range of built environment characteristics are essential for accurately assessing their associations with PA and ST, particularly among groups at risk of inactive lifestyles. Further refinement of the ALEx is warranted to enhance its applicability as a tool for urban planning and public health policy making.

## ISA-Physical Activity and Environment cohort study, Sao Paulo, Brazil: results of 10 years of data collection

**Prof. Alex Florindo**<sup>1</sup>, Ms Bianca Onita<sup>1</sup>, Ms Andreia Miranda<sup>1</sup>, Mr. Guilherme Goulardins<sup>1</sup>, Professor Pedro Hallal<sup>2</sup>

<sup>1</sup>University of Sao Paulo, São Paulo, Brasil, <sup>2</sup>University of Illinois, Champaign-Urbana, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Longitudinal studies on physical activity and the built environment are scarce in low- and middle-income countries, and maintaining sample retention across waves of data collection is a significant challenge. Epidemiological studies have employed various methods to locate people and address this issue. This work describes the results of the third wave of data collection from an adult cohort study in Brazil.

**Methods:** The ISA-Physical Activity and Environment study used baseline data from the São Paulo Health Survey conducted in 2014/2015 through household face-to-face interviews with 4,042 participants aged 12 years or older residing in São Paulo City, Brazil. The cohort's common characteristic is their residence in São Paulo, enabling the assessment of the built environment's influence on physical activity and health outcomes. The second wave, conducted during the COVID-19 in 2020/2021, used telephone interviews and included 1,434 adults (35.5% of the baseline). In 2023/2024, we conducted the third wave using multiple search strategies (households and health care settings) and interview methods (face-to-face/household and telephone). The eligible sample included 3,893 individuals (3.7% deceased between baseline and the second wave).

**Results/findings:** After 10 years, we successfully interviewed 1,584 adults (39.2% of the baseline), of which 59.7% used accelerometers. The main difficulty for tracing the 3,893 individuals was outdated addresses (15.3%), followed by individuals not located in their households or by telephone (10.3%), change of address located (7.9%), and migration out of Sao Paulo (5.8%). Additionally, 4.4% of the participants were deceased, 8.1% refused participation, and 7.4% were excluded due to physical/cognitive impairment or pregnancy. A total of 978 individuals (24.2 % of the 4.042) participated in all three waves of data collection. Among the 1,584 participants, 58.6% were women, with a mean age of 50.7 years, and 61.8% had at least 12 years of education. The prevalence of leisure-time walking was 36.8% (95%CI:34.5–39.2), while walking for transportation was reported by 74.4% (95%CI: 72.2–76.5).

**Conclusion:** The results highlight the challenges of maintaining cohort retention in megacities of low- and middle-income countries. Implementing diverse strategies and data collection methods may help address this issue. Support FAPESP (2017-17049-3) and CNPq 309301/2020-3).

## Physical Activity Levels of Children with and without Autism Spectrum Disorder on School versus Non-School Days

**Prof. Keith Brazendale**<sup>1</sup>, Prof. Ethan Hunt<sup>2</sup>, Prof. Christopher Pfladderer<sup>2</sup>, Prof. Denver Brown<sup>3</sup>, Prof. R. Glenn Weaver<sup>4</sup>, Prof. Michael Beets<sup>4</sup>

<sup>1</sup>University of Central Florida, Orlando, United States, <sup>2</sup>University of Texas, Austin, United States,

<sup>3</sup>Kansas State University, Manhattan, United States, <sup>4</sup>University of South Carolina, Columbia, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Children with autism spectrum disorder (ASD) have lower daily physical activity (PA) compared to neurotypical peers, placing them at risk of developing excess adiposity and poor cardiometabolic health. Evidence demonstrates children's PA levels are lower during non-school days compared to school days. Whether these patterns exist in children with ASD is yet to be established, therefore the purpose of this study is to compare PA levels of children with and without ASD on school versus non-school days.

**Methods:** Cross-sectional data from wave 2 of the Adolescent Brain Cognitive Development study (November 2018 to November 2020) was used to assess PA levels (steps, sedentary, light, moderate and vigorous intensity) of children with >8 days of PA data. PA was captured via the Fitbit® Charge 2 device worn on the non-dominant wrist. Children with an ASD diagnosis were matched with neurotypical pairs using propensity score matching (1:1) on key covariates (sex, age, household income) creating balanced groups for comparisons. Mixed-effects models accounting for the nesting of multiple days of PA data per child were computed to explore differences by day (school vs. non-school), diagnosis (ASD vs non-ASD), and day-by-diagnosis interactions.

**Results:** 87 children with, and 87 children without, ASD (N=174, Mean age 11.6, 43.4% female, 32% <\$25,000 per year household income) provided 1,402 observation days during school (n=1,102) and non-school days (n=300). No differences were found in children with ASD's PA levels on school days versus non-school days. However, children without ASD took 2,275 more steps per day (95%CI; 475, 4074), spent 111.3 minutes less sedentary per day (95%CI; -193.2, -29.6), and spent 52.1 more minutes per day (95%CI; 17.8, 86.4) in light intensity PA during school days versus non-school days. On non-school days, children with ASD spent 13.4 more minutes (95%CI; 0.6, 26.2) in moderate intensity PA compared to children without ASD.

**Conclusions:** School versus non-school day PA differences were not found in children with ASD. Consistent with previous literature, children without ASD were less active on non-school days compared to school days. Future studies should longitudinally examine PA patterns of children with ASD to identify intervention opportunities.

## Parental and Child Physical Activity and Screen Time: Associations during the COVID-19 Pandemic

Lyah Ng<sup>1</sup>, Dr. Gavin McCormack<sup>1</sup>, Dr. Patricia Doyle-Baker<sup>1</sup>, **Dr. Levi Frehlich**

<sup>1</sup>University of Calgary, Calgary, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The social environment shapes children's movement behaviours. Studies report positive associations between parent and child physical activity and sedentary behaviour. Parents can influence their children's physical activity and sedentary behaviour through modelling, co-participation, providing resources and opportunities, and reinforcement. The COVID-19 pandemic severely interrupted daily routines but also provided more family time opportunities. The public health emergency response to the pandemic (e.g., stay-at-home mandates) created more opportunities for parent-child interactions. Our study aimed to estimate the associations between moderate-to-vigorous intensity physical activity (MVPA) and screen time (ST) among parents and children during the pandemic.

**Methods:** Our secondary analysis included survey data (n = 330 parent-child dyads) gathered from a random sample of households in Calgary, Canada, between April and June 2020—approximately 1–3 months after the World Health Organization declared COVID-19 a pandemic. MVPA, ST, and sociodemographic characteristics of one parent and one child (aged 5–12 years) per household were captured. Children's MVPA and ST outcomes were dichotomized to align with the Canadian 24-Hour Movement Guidelines (MVPA  $\geq 60$  minutes per day and ST  $< 2$  hours per day, respectively). Covariate-adjusted logistic regression models estimated the associations (odds ratios [OR]) between parent and child MVPA and ST.

**Results/findings:** The sample included 149 girls and 180 boys (mean age: 10.7 years, SD 4.0). Among children, 16.7% participated in  $\geq 60$  minutes of MVPA 7 days/week, and 12.5% participated in  $< 2$  hours/day of total ST. Among parents (mean age: 42.7 years, SD 8.9), 67.2% were female. On average, parents participated in 7.6 (SD 6.8) hours/week of MVPA and 19.9 (SD 19.1) hours/week of recreational ST. Parent-reported weekly hours of MVPA were associated with children achieving  $\geq 60$  minutes of MVPA 7 days/week (OR 1.05, 95% CI 1.01, 1.09). Moreover, parent-reported weekly hours of recreational ST were associated with children being less likely to achieve  $\geq 60$  minutes of MVPA 7 days/week (OR 0.97, 95% CI 0.95, 0.99) and more likely to exceed  $\geq 2$  hours/day of total ST (OR 1.12, 95% CI 1.04, 1.19).

**Conclusions:** Family-focused interventions that concurrently promote MVPA and reduce ST among children and parents are vital, especially during public health emergencies.

## Estimating Expenditure and the Cost of Adherence to a DASH Diet Pattern Among Low-Income Adults in South Africa

**Dr. Alexandra Ross<sup>1,2</sup>**, Dr. Shu Wen Ng<sup>2</sup>, Dr. Rina Swart<sup>3</sup>

<sup>1</sup>Harvard T.H. Chan School of Public Health, Boston, USA, <sup>2</sup>University of North Carolina Gillings School of Global Public Health, Chapel Hill, USA, <sup>3</sup>University of the Western Cape, , South Africa

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Understanding the relationship between food expenditure and diet quality is crucial for informing policies that promote healthy eating in low-income populations. The Dietary Approaches to Stop Hypertension (DASH) diet is associated with reduced hypertension risk, yet its affordability remains a key barrier to adherence. This study leverages a novel application of purchase and pricing data to estimate the financial feasibility of adopting the DASH diet among young adults in Langa, South Africa.

**Methods:** We used dietary recall data from 4,981 participants (aged 18–39 years) from 2018. Food expenditure was estimated by linking reported food consumption to Kantar WorldPanel price data and the South African Food Composition Table. DASH diet scores were calculated using an established scoring method, categorizing participants into accordance tertiles. Estimated food expenditure was assessed per 100g and per 2000 kcal. We conducted ANOVA tests to compare expenditures across accordance tertiles and multinomial logistic regressions to examine sociodemographic correlates of DASH adherence. Positive deviance analyses provided descriptions of reported foods by accordance and expenditure levels.

**Results:** The lowest DASH accordance tertile had the highest estimated food expenditure per day (men: 61.7 South African Rand (ZAR), women: 50.69 ZAR), whereas higher DASH scores were associated with lower or similar daily expenditures. When adjusting for caloric intake, higher DASH accordance was associated with increased expenditure per 2000 kcal, reflecting the higher cost of nutrient-dense foods. Positive deviant participants who achieved high DASH accordance at low expenditure reported a greater variety of vegetables, lean meats, and whole grains compared to other groups. Sociodemographic factors such as age, employment status, and receipt of child support grants influenced expenditure patterns and dietary adherence.

**Conclusions:** This study provides an innovative assessment of food affordability and diet quality using real-world pricing data. While higher DASH accordance can be achieved at various expenditure levels, structural barriers such as affordability and food environment constraints remain significant. Policy interventions, including subsidies for healthy foods and targeted cash transfer programs, could enhance access to nutritious diets in low-income settings. The findings offer important implications for future interventions aimed at improving diet quality and preventing hypertension in resource-constrained populations.

## Cardiometabolic outcomes of youth participating in organised sport from childhood to early adolescence

**Miss Holly Hliounakis<sup>1</sup>**, Associate Professor Taren Sanders<sup>2</sup>, Associate Professor Emma George<sup>1,3</sup>, Dr. Justin Guagliano<sup>1,3</sup>

<sup>1</sup>*School of Health Sciences, Western Sydney University, , Australia*, <sup>2</sup>*Institute for Positive Psychology & Education, Australian Catholic University, , Australia*, <sup>3</sup>*Translational Health Research Institute, Western Sydney University, , Australia*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** It is well established that youth sport contributes to children's physical activity, and that physical activity improves cardiometabolic health. However, there is insufficient research on the effect of longitudinal youth sports participation on cardiometabolic risk in childhood. The purpose of this study was to determine 1) what organised sports participation trajectories exist from childhood to early adolescence, and 2) how cardiometabolic risk differs by youth sport trajectory.

**Methods:** We included data from waves four, five, and six of the Longitudinal Study of Australian Children and the intermediary Child Health CheckPoint (CHCP) wave. Participants (n=1851, 51.2% male) were aged  $12.0 \pm 0.4$  at the CHCP. We used latent class analysis to determine the organised sport trajectories of participants over the five-year period and conducted linear regressions to compare a summative cardiometabolic risk score (CMRS) between latent classes. This analysis was repeated for participation in team and individual sports participation. Analyses were adjusted for sex, moderate-to-vigorous physical activity (MVPA), socioeconomic status, and sexual maturity. We also ran models unadjusted for MVPA.

**Results/findings:** Four latent classes were identified. Adolescents were classified as consistent participants (65.6%), late uptakes (16.7%), dropouts (8.2%), or non-participants (9.6%). Linear regressions revealed that adolescents who dropped out of sports had significantly worse CMRS ( $B=1.19$ ; 95%CI, 0.09, 2.29) than those in the non-participation class, regardless of adjustment for MVPA. For team and individual sport participation, five trajectories were identified. These included consistent participants in both team and individual sports (31.0%), consistent individual (18.2%), consistent team (18.7%), moving from individual to team (14.8%), and non-participants (17.3%). No significant associations were found between CMRS and sports participation trajectory when adjusting for MVPA, but the unadjusted model showed significantly better CMRS for consistent participants in both sports ( $B=-0.81$ ; 95%CI, -1.39, -0.23), and team sports ( $B=-0.78$ ; 95%CI, -1.42, -0.14).

**Conclusions:** Dropping out of sports during adolescence is associated with worse CMRS, but consistent participation in team sports on its own or in combination with individual sports is associated with better CMRS attributed to MVPA. Strategies to retain children in organised sports long-term and sustain adolescent MVPA following sports dropout are therefore needed.

## Opportunities for active play: Determining the effect of a 12 month intervention aimed at improving maternal health literacy around infant play and development in a low income-community in Johannesburg, South Africa.

**Ms. Fiona Bennin<sup>1</sup>**, Prof Shane Norris<sup>1</sup>, Dr Alessandra Prioreshi<sup>1</sup>

<sup>1</sup>University of Witwatersrand, Johannesburg, South Africa

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Background:** In the early months of life, allowing infants access to unstructured, unrestricted play in their home environment is imperative for encouraging physical activity and development. Mothers in low-income communities may lack the knowledge of how to promote age-appropriate development through play. This study examined the effect of a 6-month intervention on maternal health literacy and opportunities for infant play in a low-income community in Johannesburg, South Africa.

**Methods:** This study was nested in a Randomized Controlled Trial (RCT), the Play Love And You (PLAY) study, conducted from September 2022 to June 2024. From 6-12 months postpartum, intervention group participants received interactive App-based content promoting infant active play and development. The control group received the normal standard of care. The primary outcome was Health Literacy questionnaire (HLQ) scores, while secondary outcomes included maternal beliefs about infant physical activity, home affordances for motor development, and infant physical/sedentary behaviors. A combined “opportunities for active play” score was derived from the secondary measures. Data were analysed in STATA, using an intention to treat approach. Descriptive data were reported using N (%) for categorical data and means (SD) for continuous data. Wilcoxon rank tests determined the effect of the treatment.

**Results:** At baseline, the 67 intervention and 65 control participants averaged 29 years old; most were single (64%) and had completed secondary education (64%). No significant differences were observed at 12 months between groups in maternal HLQ ( $p=0.45$ ), maternal beliefs ( $p=0.47$ ), infant physical activity ( $p=0.91$ ) or sedentary time ( $p=0.15$ ), and opportunities for play ( $p=0.36$ ). However, from 6-12 months, the intervention group showed significantly greater improvements in maternal beliefs about physical activity ( $p=0.00$ ) and opportunities for play ( $p=0.01$ ), despite the control group having significantly greater increases in home affordances ( $p=0.00$ ).

**Conclusions:** Infants whose mothers received the intervention had increased opportunities for active play over time. Interventions using accessible resources can promote infant play in low-resource settings. Policymakers and health promoters should provide mothers with simple, practical activities to encourage active play in the first year of life.

## Characteristics of sprint running dynamic in children

**Prof. Vesna Babic<sup>1</sup>**, Vahida Kozić<sup>1</sup>

<sup>1</sup>University of Zagreb, Faculty of kinesiology, Zagreb, Hrvatska

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The aim of this research is to determine the 50 metres running dynamics with children of a younger school age as well as differences between girls and boys.

**Methods:** The research has been conducted on a sample of 93 girls [age 10,81 ( $\pm 0,71$ ); height 146,4 ( $\pm 7,37$ ) cm; body mass 39,9 ( $\pm 8,64$ ) kg] and 75 boys [age 10,68 ( $\pm 0,75$ ); height 145,06 ( $\pm 6,37$ ) cm; body mass 38,4 ( $\pm 7,34$ ) kg]. The time of the sprinter's running on each five metres were recorded on a section of 50 metres have been measured with telemetry system for electronic measurement "Brower". The basic descriptive parameters have been worked out, while the differences between the girls and boys have been analyzed by the univariate analysis of variance.

**Results/findings:** The results for the segment speeds with boys and girls show that 50 metres sprint running with children of a younger school age have been identified, namely: the acceleration phase or starting acceleration, the phase of reaching and maintaining submaximal speed, the phase of optimal running speed, and the deceleration phase. It has been noted that the duration of the mentioned stages varies between girls and boys. Research findings that children of younger school age cannot maintain their maximum running speed in a sprint after 40 m have been confirmed. The analysis of differences between girls and boys of a younger school age has shown that there are statistically significant differences according to sex.

**Conclusions:** This research is a continuation of the study of the problem of the phenomenon of sprint running, and especially the dynamics of that running. The results of this research provide insight into aspects of sprinting in children and can help in creating programs adapted to specific sports activities for younger athletes. The results of this research would be useful for future kinesiology research and athletic practice.

## Correlates of children's physical literacy: Exploring the role of parental perceptions of physical activity for promoting children's physical activity

**Dr. Yang Liu<sup>1,2</sup>**, Dr. Marcus Henning<sup>2</sup>, Dr. Yan Chen<sup>2</sup>, Dr. Senlin Chen<sup>3</sup>, Mr. Yangyang Li<sup>4</sup>, Mr. Yuhuai Wang<sup>1</sup>, Ms Lu Liu<sup>1</sup>, Ms Baoxuan Jin<sup>1</sup>

<sup>1</sup>School of Physical Education, Wuhan University of Technology, Wuhan, China, <sup>2</sup>School of Medicine, The University of Auckland, Auckland Central, New Zealand, <sup>3</sup>School of Kinesiology, Louisiana State University, Baton Rouge, The United States of America, <sup>4</sup>College of Sport Sciences, Chung-Ang University, Dongjak District, South Korea

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Parents and the home environment contribute to children's development of physical literacy (PL). The purpose of this study was to examine parental perceptions of physical activity (PPPA) and its association with children's PL.

**Methods:** Children (N=195, M[age]=9.09) from a primary school located in Central China completed the simplified-Chinese version of the Canadian Assessment of Physical Literacy (CAPL) inventory, which assesses four PL dimensions: cognitive, behavioral, affective, and physical. Parents of these children completed the validated PPPA instrument (Cronbach  $\alpha$ : 0.80~0.86; CFI=0.93, AGFI=0.85, GFI=0.90, RMSEA=0.08) capturing five constructs including altitude, awareness, value, understanding, and appreciation. Hierarchical linear modeling (HLM; children nested in classes) was conducted to examine the relationships between PPPA and PL, after controlling for gender of the participating parent, age, socioeconomic status (SES), and body mass index (BMI).

**Results:** Based on the overall PL score, girls (M = 68.28; SD = 9.53) and boys (M = 65.71; SD = 10.52) scored in the progressing to achieving stage of PL development continuum (all four stages as stated in CAPL manual: beginning, progressing, achieving, and excelling). Parents of girls scored 92.51 (SD = 3.71) and parents of boys scored 92.50 (SD = 3.92) for overall PPPA (max possible = 105). For girls, results of the HLM showed parents' awareness was significantly associated with PL ( $\beta = 1.29$ ,  $p = 0.02$ ,  $R^2_{\text{partial}} = 0.02$ ) and the behavioral domain of PL ( $\beta = 1.05$ ,  $p = 0.02$ ,  $R^2_{\text{partial}} = 0.06$ ). For boys, the overall PPPA score was significantly associated with PL ( $\beta = 0.53$ ,  $p < 0.01$ ,  $R^2_{\text{partial}} < 0.01$ ) and the physical domain of PL ( $\beta = 0.18$ ,  $p = 0.02$ ,  $R^2_{\text{partial}} = 0.01$ ). Additionally, parents' appreciation was significantly associated with boys' cognitive domain of PL ( $\beta = 0.30$ ,  $p = 0.03$ ,  $R^2_{\text{partial}} < 0.01$ ).

**Conclusion:** The findings showed the PPPA scores are associated with children's PL. Intervention (especially those involving family and parents) with the goal of fostering children's PL should consider PPPA including parents' awareness, appreciation, and overall perception of physical activity. The association between PPPA and PL may also vary by gender of the children.

# Exploring the association between neighbourhood accessibility and walking behaviour: a GPS- and accelerometer-based study

**Mr. Mehdi Barati<sup>1</sup>**, Dr Tom Stewart<sup>1</sup>, Prof Scott Duncan<sup>1</sup>

<sup>1</sup>Auckland University of Technology, Auckland, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** While accessibility is positively linked to walking behaviour, limited research has incorporated multi-dimensional accessibility indices and their relationship with walking behaviour across different contexts. This study examines the correlation between neighbourhood accessibility and walking behaviour: (1) within/outside home neighbourhood buffers, and (2) within areas undergoing major urban development and control areas with no planned changes. It also explores how neighbourhood awareness and work status moderate these relationships.

**Methods:** This study included 110 individuals aged 18 years or above. An accessibility index (ranging from 1: lowest accessibility to 5: highest accessibility), incorporating various socio-cultural and environmental facilities (e.g., healthcare services, public spaces, spiritual hubs), was used to assess neighbourhood accessibility. Each participant was assigned an accessibility score based on their home location. Based on trip locations, walking behaviour (time spent walking in minutes per trip) was categorised into four types and analysed separately: walking within/outside the home neighbourhood buffer and walking within development/control areas. Socio-demographics (e.g., work status, household income) were collected through household interviews. The relationship between neighbourhood accessibility and walking behaviour was analysed using linear mixed-effects models adjusted for socio-demographic covariates, with interaction terms included to assess moderation effects.

**Results:** Unadjusted analyses showed no significant association between accessibility and walking behaviour. However, after adjusting for socio-demographic covariates, each unit increase in accessibility was associated with an increase of 3 minutes per trip outside home neighbourhood buffers ( $\beta = 3.2$ ; 95% CI = 0.63, 5.84;  $p = 0.015$ ). The interaction between accessibility and work status ( $\beta = -3.8$ ; 95% CI = -6.93, -0.56;  $p = 0.021$ ) suggested that the association between accessibility and walking behaviour outside the home neighbourhood buffer was weaker for unemployed individuals. Low-income participants walked approximately 6 minutes less per trip than high-income individuals ( $\beta = -6.4$ ; 95% CI = -10.79, -1.99;  $p = 0.005$ ).

**Conclusions:** Findings suggest that improved neighbourhood accessibility encourages walking beyond residential areas, particularly among employed individuals. Thus, policymakers should prioritise accessibility improvements around key destinations (e.g., workplaces) rather than focusing solely on residential neighbourhoods. Additionally, addressing socio-economic disparities in walkability remains essential for ensuring equitable access to active transport opportunities.

## Anywhere, Anytime: Eating Environments of Native Hawaiian, Pacific Islander and Filipino Infants 3 -12 Months of Age

**Miss Christina Young**<sup>1</sup>, Dr. John Chen<sup>2</sup>, Dr. Bliss Kaneshiro<sup>3</sup>, Dr. Fengqing Maggie Zhu<sup>4</sup>, Dr. Jessie Kai<sup>1</sup>, Dr. Marie Kainoa Fialkowski<sup>5</sup>

<sup>1</sup>University of Hawai'i at Mānoa, Honolulu, United States, <sup>2</sup>John A. Burns School of Medicine, Honolulu, United States, <sup>3</sup>Queen's Health System, Honolulu, United States, <sup>4</sup>Purdue University, West Lafayette, United States, <sup>5</sup>University of Hawaii Cancer Center, Honolulu, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Infant eating environments play an important role in shaping early dietary patterns, food preferences, and social interactions during mealtime. This may be critically important for Native Hawaiian and Pacific Islander (NHPI) and Filipino populations, who exhibit more health disparities, such as overweight and obesity, compared to other ethnicities across Hawai'i. Little is known about NHPI and Filipino infants' complementary feeding behaviors. This study aims to analyze their eating environments through real-time mobile food record (mFR) images to provide insight on when and where infants are consuming complementary foods.

**Methods:** The Exploring First Foods of Keiki on O'ahu, Hawai'i Pilot study (2018 to 2019) conducted a cross-sectional investigation of a convenient sample of NHPI and Filipino infants aged 3 - 12 months old and their caregivers (n=70). Caregivers were asked to record all of their infants' eating events over four days using the mFR. These images were systematically analyzed to classify eating environments as "within the home" or "outside of the home." Within-home settings were further classified into the following categories: on a bed, floor, table, counter, high chair, furniture, or other, while the outside-home settings sub-categories included a car, restaurant, or store. The frequencies and distribution of eating occasions across environments were summarized by descriptive statistics.

**Results:** A total of 1604 eating occasions were recorded, of which 1233 were images. Eating mostly occurred within the home (n=1106, 69.0%). The most frequent in-home settings were on a table (n=459, 41.5%), on a counter (n=448, 40.5%), or on a bed (n=54, 4.9%). Eating outside of the home was less frequent, with restaurants (n=43, 2.7%), outdoors (n=27, 1.7%), or in the car (n=22, 1.4%) being the most common.

**Conclusion:** This study is the first to objectively capture and analyze real-time eating environments among NHPI and Filipino infants using mFR images, eliminating recall bias and providing insight to where feeding occurs. Future research around infant diet quality within and outside the home is needed to address the potential environments influencing eating habits of infants and inform future work to promote healthy eating environments.

## Association between parental-reported and device-based measured parental practices and preschool-aged children's physical activity

**Miss Lauren Baines<sup>1</sup>**, Dr Valerie Carson<sup>1</sup>, Ms Morgan Potter<sup>1</sup>, Mr Yeongho Hwang<sup>1</sup>, Ms Madison Boyd<sup>1</sup>, Miss Ramiah Moldenhauer<sup>1</sup>, Mr Joshua Li<sup>1</sup>, Miss Jayleen Hills<sup>1</sup>, Dr Patti-Jean Naylor<sup>2</sup>, Dr Ryan Rhodes<sup>2</sup>, Dr Sam Liu<sup>2</sup>, Dr Jean Buckler<sup>2</sup>

<sup>1</sup>University of Alberta- Faculty of Kinesiology, Sport, and Recreation, Edmonton, Canada, <sup>2</sup>University of Victoria- School of Exercise Science, Victoria, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Preschool-aged children (3-5 years) are at a critical stage of development where crucial and rapid advancements are made in the physical, mental, social, and cognitive domains. Physical activity supports healthy development during this critical time period. Parents are important gatekeepers to preschool-aged children's physical activity and therefore it is important to identify the parental practices that promote physical activity to support healthy development. The purpose of this study was to comprehensively examine the associations of parental-reported and device-based parental physical activity modeling and parent-child co-participation in physical activity with preschool-aged children's physical activity.

**Methods:** A cross-sectional sample of 130 parents with preschool-aged children from the baseline time-point of PLAYshop randomized controlled trial was utilized. Children were required to be aged 3-5 years and reside in non-rural British Columbia or Alberta. Parental physical activity modeling was measured with accelerometers (i.e., parental physical activity levels) and via a parental-report questionnaire using established items. Parent-child co-participation was measured with accelerometers using a Bluetooth proximity feature that can identify minutes of physical activity that parents and children were in close proximity and via a parental questionnaire using established items. Multiple linear regression models will be conducted.

**Results/findings:** Descriptive statistics for device-based parental practices showed mean and standard deviation values at baseline: LPA 238.2 (51.2), MVPA 31.9 (15.4), TPA 270.2 (59.1), co-participation 75.2 (30.9) and co-participation MVPA 3.2 (2.2). In addition, questionnaire-reported summed modeling was 8.9 (2.0) and summed co-participation was 14.2 (3.5). Cronbach's alpha will be calculated for physical activity modeling and parent-child co-participation items from the questionnaire. Multiple linear regression models will be conducted that adjust for demographic covariates (children's age, sex, race/ethnicity, hours in childhood, and parental education).

**Conclusions:** The current research fills gaps in the literature regarding the lack of studies that utilize both parental-report questionnaires and device-based measures of parental practices. Utilizing both measures can provide a more comprehensive examination of the associations with children's physical activity. In addition, there is limited research surrounding parental practices in the preschool-aged group. This research aims to identify key targets for future interventions that support healthy movement behaviours in the preschool years.

## Association between parental screen time practices and preschool children's screen time

**Miss Lauren Baines<sup>1</sup>**, Ms Madison Boyd<sup>1</sup>, Dr Sandra Wiebe<sup>2</sup>, Dr Yao Zheng<sup>2</sup>, Dr Christina Rinaldi<sup>3</sup>, Miss Ramiah Moldenhauer<sup>1</sup>, Ms Morgan Potter<sup>1</sup>, Ms Jasmine Rai<sup>1</sup>, Mr Joshua Li<sup>1</sup>, Ms Kyla Dorn<sup>2</sup>, Dr Ryan Rhodes<sup>4</sup>, Dr Valerie Carson<sup>1</sup>

<sup>1</sup>University of Alberta- Faculty of Kinesiology, Sport, and Recreation, Edmonton, Canada, <sup>2</sup>University of Alberta- Faculty of Arts- Department of Psychology, Edmonton, Canada, <sup>3</sup>University of Alberta- Faculty of Education- Department of Educational Psychology, Edmonton, Canada, <sup>4</sup>University of Victoria- School of Exercise Science, Victoria, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Most preschool children (3-4 years) do not meet international screen time recommendations putting them at risk for sub-optimal physical, cognitive, and social-emotional development. Parents play an integral role in children's use and access of screens. While demographic correlates of preschool children's screen time have been frequently examined specific screen time parental practices have been less frequently examined. The purpose of this study was to examine the associations between parental screen time practices (modeling, restriction, instruction) and preschool children's screen time.

**Methods:** A cross-sectional sample of 348 parents with preschool children from the baseline time-point of the longitudinal TECH project was utilized. Children were required to be ages 3, 3.5, or 4 at baseline and reside in Western, Canada. Parental screen time practices, including modeling (parental screen time as a proxy), restriction (5 items;  $\alpha=0.90$ ; e.g. set specific viewing hours), and instruction (5 items;  $\alpha=0.62$ ; e.g., explain what something on the screen means) were measured via parental-report questionnaire using established items. Preschool-children's screen time (TV/video viewing, video/computer games, total screen time), across multiple devices, was also measured via a parental-report questionnaire using established items. Multiple linear and logistic regression models were conducted that adjusted for several demographic covariates.

**Results/findings:** Higher frequency of parental restriction (possible range 1-4) was associated with significantly lower min/day of preschool children's TV/video viewing ( $B=-11.1$ ; 95%CI: -21.1, -1.2) and total screen time ( $B=-12.3$ ; 95%CI: -24.5, -0.1). Conversely, higher hr/day of parental screen time (proxy for modeling) was significantly associated with higher min/day of preschool children's TV/video viewing ( $B=5.7$ ; 95%CI: 1.7, 9.7) and total screen time ( $B=7.8$ ; 95%CI: 2.9, 12.6). Parental instruction was not associated with preschool children's screen time. Additionally, none of the parental practices were associated with higher odds of playing video/computer games.

**Conclusions:** The current research fills gaps in the literature by incorporating modern devices in preschool children's screen time measures. In addition, parental screen time restriction and instruction have rarely been studied as potential correlates of preschool children's screen time. Findings suggest parental modeling and restriction may be important targets for future interventions aiming to minimize screen time in the preschool years.

## Ultra-processed food consumption in New Zealand adolescents and its contribution to nutrient intake

**Prof. Kathryn Beck**<sup>1</sup>, Dr Karen Mumme<sup>1</sup>, Professor Cathryn Conlon<sup>1</sup>, Ms Jasmin Jackson<sup>2</sup>, Ms Laurie Wharemate-Keung<sup>2</sup>, Ms Kate Hammond<sup>1</sup>, Dr Jamie de Seymour<sup>1</sup>

<sup>1</sup>Massey University, Auckland, New Zealand, <sup>2</sup>Ministry of Education, , New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Although ultra-processed food (UPF) consumption of New Zealand adolescents is considered high, there is no formal evidence quantifying UPF intake in New Zealand adolescents. This study was the first to measure UPF intake in New Zealand adolescents and its contribution to daily nutrient intake.

**Methods:** Using a cross-sectional study design, students in Years 7-13 (~10 + years of age) living in the Auckland, Bay of Plenty and Waikato regions were invited to participate. Data was collected in a classroom setting during school terms two and three of 2024. Dietary data was collected via an electronic 24-hour dietary recall using Intake24 (adapted for the New Zealand population). All foods (including ingredients in mixed meal recipes) consumed by participants were classified using the NOVA classification system into one of the following categories: Ultra-processed, Processed, Processed Culinary Ingredients, or Unprocessed or Minimally Processed food. The contribution of UPF to daily energy consumption was calculated. Participants were grouped into tertiles of UPF consumption and average nutrient intake was compared between tertiles, using one-way ANOVA.

**Results:** Dietary recalls were collected from 628 adolescents from 16 schools. In total, adolescents consumed 1376 different foods. Of these, 51% were classified as UPF. Ultra-processed food consumption contributed to 65.9% of daily energy intake. Energy intake across the three tertiles of UPF consumption was not significantly different. Protein ( $P<0.001$ ), beta-carotene ( $P<0.001$ ), magnesium ( $P=0.002$ ) and zinc ( $P<0.001$ ) were significantly lower in the highest tertile of the UPF consumption group; carbohydrates ( $P=0.002$ ) and sodium ( $P<0.001$ ) were significantly higher.

**Conclusions:** These initial findings are fundamental to our understanding of the amount of UPF being consumed by adolescents in New Zealand and the impact of UPF intake on diet quality. The contribution of UPF to energy intake in our study is similar to studies reporting on UPF consumption in children and adolescents in the United States of America (67%) and the United Kingdom (66%). Further analyses of the collected data will allow us to understand what foods are contributing to UPF in New Zealand adolescents; where they are sourcing and consuming these foods; and who they are consuming it with.

## Do added sugar warning labels and removal of front-of-pack nutrition content claims promote purchasing preferences for commercial baby and toddler foods without added sugars? An online shopping experiment.

**Dr. Helen Dixon**<sup>1,2</sup>, Dr. Mamaru Awoke<sup>1</sup>, Ms. Maree Scully<sup>1</sup>, Dr. Jennifer McCann<sup>3</sup>, Dr. Alison McAleese<sup>4</sup>, Dr. Ashleigh Haynes<sup>1,2</sup>, Dr. Bridget Kelly<sup>5</sup>, Dr. Lindsey Smith Taillie<sup>6</sup>, Mrs. Jane Martin<sup>7</sup>, Dr. Mihiri Silva<sup>8,9,10</sup>, Dr. Anthea Rhodes<sup>10,11</sup>, Dr. Helen Skouteris<sup>12</sup>, Mrs. Andrea Schmidtke<sup>7</sup>

<sup>1</sup>Centre For Behavioural Research In Cancer, Cancer Council Victoria, East Melbourne, Australia, <sup>2</sup>Melbourne School of Psychological Sciences, The University of Melbourne, Parkville, Australia, <sup>3</sup>Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Burwood, Australia, <sup>4</sup>Prevention Division, Cancer Council Victoria, Melbourne, Victoria, Australia, , , <sup>5</sup>Early Start, School of Health and Society, Faculty of the Arts, Social Sciences and Humanities, University of Wollongong, Northfields Avenue, Wollongong, NSW, 2522, Australia, , , <sup>6</sup>Carolina Population Center and Department of Nutrition, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, , , <sup>7</sup>Food for Health Alliance, East Melbourne, Victoria, Australia, , , <sup>8</sup>Inflammatory origins, Murdoch Children's Research Institute, Parkville, Victoria, Australia', , , <sup>9</sup>Melbourne Dental School, University of Melbourne, Parkville, Victoria, Australia, , , <sup>10</sup>The Royal Children's Hospital Melbourne, Parkville, Victoria, Australia, , , <sup>11</sup>Department of Paediatrics, University of Melbourne, Melbourne, Victoria, Australia, , , <sup>12</sup>School of Public Health and Preventive Medicine, Monash University, 553 St Kilda Road, Melbourne, VIC 3004, Australia, ,

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Background:** Many commercial baby and toddler foods (CBTFs) are high in added sugars, posing ongoing health risks to consumers. On-pack nutrition content claims can create a 'health halo' over CBTFs. Front-of-pack warning labels have been shown to be effective at increasing knowledge of potential risks associated with harmful products. **AIMS:** To test whether displaying Added Sugar Warning labels ('warning labels') and removing front-of-pack nutrition content claims on CBTFs containing added sugars helps parents evaluate these products and prompts purchasing of CBTFs without added sugars.

**Methods:** Using an online shopping experiment, 1,017 Australian parents of babies and toddlers (6 to <36 months) were randomly assigned to one of four conditions, using a 2 (warning label: control/warning) X 2 (claims: absent/present) between-subjects design. Parents viewed a series of shopping screens displaying twelve baby/toddler CBTFs (six with added sugars, six without), featuring labelling and claims reflecting their assigned condition. Analyses tested effects of ASWLs and removal of claims on purchasing choices (logistic regression), purchasing intentions, perceptions of the nutritional profile and healthiness for CBTFs with added sugars (linear regressions).

**Results/findings:** Significant main effects (all  $p < 0.05$ ) revealed that compared to the control condition, displaying warning labels: reduced parent's likelihood of choosing CBTFs containing added sugar (82% vs. 53%); mean purchasing intentions (M: 4.93 vs. 3.80); perceptions of suitability (M: 4.65 vs. 3.70), naturalness (M: 4.55 vs. 3.82), healthiness (M: 4.48 vs. 3.76), and fibre content (M: 4.44 vs. 4.05); but increased perceptions of the level of added sugar (M: 4.70

vs. 5.70), total sugar (M: 4.62 vs. 5.07) and salt (M:4.03 vs. 4.18) for sugary CBTFs. These effects were observed irrespective of whether nutrition content claims were displayed or not (no main effects or interactions with warning labels).

Conclusions: Displaying warning labels on CBTFs containing added sugars detracts from parents' perceptions of the healthiness and suitability of these products and reorients their purchasing preferences towards less sugary options. Warning labels offer a promising policy option for helping inform parents about the presence of added sugars in CBTFs, nudging them towards buying healthier options to feed their babies and toddlers.

## Association between fatherhood and paternal physical activity and sitting time: A longitudinal study using Ten to Men data

**Dr. Aymen El Masri<sup>1</sup>**, A/Prof Kingsley Agho<sup>1</sup>, Doctor Taren Sanders<sup>2</sup>, Dr. Justin Guagliano<sup>1</sup>  
<sup>1</sup>Western Sydney University, Penrith, Australia, <sup>2</sup>Australian Catholic University, North Sydney, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Fatherhood is a crucial stage in adulthood that can reshape life choices. Most research examining the impact of parenthood on physical activity (PA) and sitting time (ST) has focused on mothers and has been cross-sectional. The purpose of this study was to longitudinally examine the impact of fatherhood on paternal PA and ST.

**Methods:** We used data from the Australian Institute of Family Studies' 'Ten to Men' study, using four waves of data from 2013 (Wave 1) to 2022 (Wave 4). Outcome variables included self-reported moderate-vigorous PA time, ST on a usual workday, and ST on a non-workday. Fatherhood variables included fathers with dependent children vs men without, number of dependent children, and the age of the youngest dependent child (Waves 3-4). We used negative binomial generalised linear mixed models, adjusting for age, education, income, employment status, marital status, body mass index, SEIFA, city vs rural/regional residence, and time.

**Results:** The analytical samples using 4 waves of data varied for the outcome variables (11,227 to 11,548). There were significant associations between fatherhood status ( $\beta = -0.12$ ; 95%CI= -0.16,-0.08) and number of children ( $\beta = -0.05$ ; 95%CI= -0.07,-0.04) with paternal PA time. Having children aged 0-5 ( $\beta = -0.16$ ; 95%CI= -0.25,-0.08) and 6-12 ( $\beta = -0.10$ ; 95%CI= -0.17,-0.03) years was associated with a reduction in PA time in comparison to men without dependent children. Fatherhood status ( $\beta = -0.09$ ; 95%CI= -0.11,-0.08) and number of children ( $\beta = -0.04$ ; 95%CI= -0.05,-0.04) were significantly associated with a reduction in ST on a non-workday. There were reductions in ST on a non-workday for men with children aged 0-5 ( $\beta = -0.22$ ; 95%CI= -0.26,-0.18), 6-12 ( $\beta = -0.15$ ; 95%CI= -0.18,-0.11), and 13-17 ( $\beta = -0.07$ ; 95%CI= -0.11,-0.03) years.

**Conclusions:** Our study showed that there was a negative relationship between fatherhood and PA time, and having younger children was associated with less PA time. All fatherhood variables were associated with lower ST on a non-workday. The decrease in PA and ST on a non-workday could potentially be explained by increases in light PA associated with routine parenting responsibilities. Future studies could improve precision by using objective measures of PA and ST.

## Japan Postcode-level walkability index and total and domain-specific walking time for adults living in 95 cities across the country

**Dr. Shiho Amagasa<sup>1,2</sup>**, Ms. Misaki Takahashi<sup>1</sup>, Dr. Noritoshi Fukushima<sup>2</sup>, Dr. Masaki Machida<sup>2</sup>, Dr. Shigeru Inoue<sup>2</sup>

<sup>1</sup>Teikyo University, Itabashi-ku, Japan, <sup>2</sup>Tokyo Medical University, Shinjuku-ku, Japan

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** We aimed to examine the relationships between the Japan Postcode-level walkability index (JPWI) and total and domain-specific walking time for adults living in 95 cities across the country.

**Methods:** This cross-sectional study included 40,286 Japanese adults (men 50.5%, 49.4 ± 15.6 years) who responded to a web-based survey conducted in 2021 using stratified random sampling. The JPWI was calculated by generating a 1,000m road network buffer from a representative point within each postcode boundary and summarizing the population density, intersection density and number of facility types within this area. A self-report questionnaire was used to assess weekly time spent on total and domain-specific walking time (walking for leisure or for daily living). A spline curve was used to describe the relationship between the JPWI and walking time. Multivariate logistic regression analyses were used to examine the relationships between the JPWI and walking time after adjusting for potential confounders.

**Results/findings:** The median weekly time spent on total walking, walking for daily living, walking for leisure was 140 (45, 300) min, 75 (20, 180) min, 20 (0, 120) min, respectively. There was a non-linear positive association between JPWI and total walking, with the slope increasing as JPWI exceeded 0.5. Similar results were found for walking for daily living. Compared to the group with the lowest JPWI, the group with the highest JPWI spent more time on total walking (aOR: 1.46, 95%CI: 1.37-1.56), walking for daily living (aOR: 1.73, 95%CI: 1.59-1.88), and walking for leisure (aOR: 1.41, 95%CI: 1.32-1.50). These associations between JPWI and walking were stronger for walking for daily living than for leisure.

**Conclusions:** There was a non-linear positive association between JPWI and walking time, with a particularly strong association with walking for daily living.

# Impact of Light Volleyball Intervention Program on Improving Physical Attributes of Older Adults in Hong Kong: A Randomized Controlled Trial

**Dr. Ka Man Leung<sup>1</sup>**, Dr. Yu Chen Shi<sup>2</sup>

<sup>1</sup>The Education University of Hong Kong, Hong Kong, China, <sup>2</sup>The Macau University of Science and Technology, Macau, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Physical inactivity, which increases older adults' likelihood of getting chronic diseases, is prevalent in Hong Kong (HK) older adults and the HKSAR government has been proactively promoting active aging to mitigate the issue. The study examined the impact of a 16-week light volleyball (LVB) intervention program on the physical health of older adults in HK.

**Methods:** A total of 276 participants aged 60 years old or above (female = 83%) were recruited and randomly assigned to three groups: LVB intervention group, Taichi (TC) active control group, and control group. The results of the fitness component tests were recorded before and after the program.

**Results:** Participants from LVB intervention demonstrated significant improvement in lower body strength  $h[F(2,272) = 7.23, p = .001, \eta^2 = .05]$ , agility  $[F(2,272) = 6.05, p = .003, \eta^2 = .043]$  and dynamic balance  $[F(2,272) = 9.41, p = .001, \eta^2 = .065]$  when compared to TC active control group and control group.

**Conclusions:** To promote active aging amongst older adults in HK, the results of this preliminary study together with the upcoming follow-up tests will provide insight for health specialists and practitioners to choose the LVB community program given its positive health effect in older adults. **Keywords** Adapted physical activity; Older adults; Randomized controlled trial; Volleyball; Light volleyball; Intervention; Aging; Physical attributes; Sports Trial registration: ChiCTR, ChiCTR1900026657. Registered 17 October 2019, <https://www.chictr.org.cn/showprojEN.html?proj=44350> This work was supported by the Research Impact Fund of the University Grants Committee [Project Number: R2010-18]

## Using Group Model Building to understand the influencing factors of food insecurity and co-create systemic (school) actions to enhance food security among Flemish primary school children

**Miss Anne-Sophie Van Dijck<sup>1</sup>**, Miss Dieneke Van de Sompel<sup>1</sup>, Miss Coosje Dijkstra<sup>2</sup>, Miss Wendy Van Lippevelde<sup>1</sup>

<sup>1</sup>Ghent University, Ghent, Belgium, <sup>2</sup>Amsterdam UMC, Amsterdam, The Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: N. Systems Science**

**Purpose:** Food insecurity among children and families is a rising problem in Belgium. To decrease food insecurity, a systems dynamics approach is imperative, working towards the implementation of systemic actions at the different levels of the (school food) system. Firstly, this study aims to contribute to the understanding of food insecurity in Flanders by using Group Model Building. Secondly, a systemic action plan will be co-created within the school food system to enhance food security among primary school children.

**Method:** A participatory systems approach will be applied in two municipalities in Flanders (Belgium). In each municipality, three Group Model Building (GMB) sessions will be conducted with up to 25 relevant school stakeholders (e.g. representatives of the local government, school teachers, social organisations, ...). During the GMB sessions, stakeholders will build a causal loop diagram with the different factors of food insecurity, in which leverage points of change will be identified. In a next phase, actions will be co-developed informed by the Action Scales Model, thereby ensuring that actions are developed for different levels in the school food system. In a parallel trajectory, with 10-15 children and families experiencing food insecurity, in-depth qualitative data will be collected through individual interviews. This data will provide context of participants daily lives and is crucial to inform the CLD.

**Results:** The process will result in the creation of a CLD that will represent the perceptions of the different school stakeholders and target group on food insecurity in Flanders. The map will identify several sub-systems and leverage points of change, and will be translated into co-developed action plans for the two municipalities. The GMB sessions will be conducted in the spring of 2025. The preliminary results of these GMB sessions will be presented, including a systems map, crucial leverage points and co-created systemic actions.

**Conclusion:** The causal loop diagram provide a comprehensive overview of the various factors that have an influence on food insecurity among children in Flanders. Furthermore, the leverage points and systemic (school) actions that have been developed will have the potential to provide a foundation for the further prevention of food insecurity.

## The association between walking for transport and frailty in community-dwelling older adults

**Miss Shivangi Shah<sup>1</sup>**, Mr Yang Chen, Dr Alice Owen, Dr Joanne Ryan, Dr Robyn Woods, Professor Dragan Illic, Ms Holly Wild, Dr Stella Talic, Associate Professor Danijela Gasevic  
<sup>1</sup>Monash University, Melbourne, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Walking, as a mode of transportation, can help older adults incorporate sufficient physical activity into their daily routines. However, its impact on frailty development in this population remains unclear. This study investigated the association between transport-related walking and development of frailty among community dwelling Australians aged 70 years and over.

**Methods:** A prospective cohort of 10,672 older adults (mean age 74.9 years, 51.9% females), participating in the ASPIRin in Reducing Events in the Elderly Longitudinal Study of Older Persons, reported their frequency of transport-related walking (never, rarely/once a week, more than once a week or every day). Frailty was defined using two measures: Fried phenotype criteria and a 67-item Deficit Accumulation frailty Index [DAI]. The Cox proportional hazards regression (HR and 95% CI) was used to assess the association between transport-related walking and the risk of frailty. The model was adjusted for socio-demographics, health-related behaviours (including overall physical activity), baseline frailty status, biomedical and clinical factors.

**Results:** During a median follow-up period of 5.4 years, 11.3% participants developed frailty according to the Fried frailty phenotype and 20.4% according to DAI. In a fully adjusted model and compared with persons who reported never walking for transport, the risk of developing frailty was lower among those who walked for transport more than once a week (Fried; HR= 0.68 (0.51-0.91), DAI; HR= 0.78 (0.61-0.98)) or walked everyday (Fried; HR= 0.67 (0.50-0.90)), DAI; HR= 0.78 (0.61-0.99)). The risk of frailty was similar for people reporting never walking for transport and those reporting walking rarely or once a week.

**Conclusions:** The risk of developing frailty was lower in older adults who engaged in transport walking more than once a week or every day compared to those never engaging in transport walking, independent of baseline frailty status and overall physical activity levels. Findings underscore the importance of transport walking in maintaining physical function and reducing frailty risk. Supporting transport walking initiatives and improving neighbourhood walkability are key strategies to fostering active lifestyles and promoting healthy ageing.

## Proximity to Municipally-Designated Walkability Promotion Areas in City Center and Residents' Walking Time in Japan: A Natural Experiment

**Dr. Shigeru Inoue<sup>1</sup>**, Dr. Shiho Amagasa<sup>1,2</sup>, Dr. Hiroyuki Kikuchi<sup>1</sup>, Dr. Noritoshi Fukushima<sup>1</sup>  
<sup>1</sup>Tokyo Medical University, Shinjuku, Japan, <sup>2</sup>Teikyo University, Itabashi, Japan

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Improving the local built environment is a potential strategy to increase physical activity levels in the population. Since 2020, Japan's Ministry of Land, Infrastructure, Transport, and Tourism has carried out a project to promote walking-friendly areas in city centers (Town Walkable Promotion Project: TWPP). In the new National Health Promotion Plan, Health Japan 21 (third term), launched in 2023, one of its 51 goals is to increase the number of cities adopting TWPP. This natural experiment study investigated the relationship between proximity to a TWPP area and physical activity in Japanese adults.

**Methods:** We analyzed data from 5,022 individuals in a web-based survey conducted in 2021, using a sample of residents in 10 TWPP cities across Japan (men: 49.4%, mean age: 50.2±16.4 years). Participants reported their walking distance from home to the TWPP area, categorized as (A) 0–30 minutes (n=763), (B) 30–60 minutes (n=1,519), and (C) more than 60 minutes (n=2,740). A self-report questionnaire assessed weekly walking time at baseline and one-year follow-up. Linear mixed models examined cross-sectional and longitudinal associations between proximity to the TWPP area and walking time.

**Results/findings:** In the cross-sectional analysis, those living closest to the TWPP area walked 65 more minutes per week on average than those living the farthest (A: 466 min/week, B: 457 min/week, C: 401 min/week, P for trend <0.001). Similar results were obtained after stratification by gender and age. In the longitudinal analysis, individuals living closest to the TWPP area increased their walking time by 32 min/week, while no significant increase was observed in the other groups (A: +32 min/week, B: +21 min/week, C: -1 min/week, P for trend = 0.102).

**Conclusions:** This study suggests that developing walkable environments through the TWPP may positively impact physical activity levels among residents in the surrounding area. However, caution is needed in interpreting the findings due to study design limitations and the timing of the survey after COVID-19.

# Contribution of Social Factors, Built Environments, and Health Behaviors in Mediating the Relationship Between Socioeconomic Status and Depression: A Systematic Review

**Dr Nur Azizah<sup>2</sup>**, Dr Monica Motomura<sup>3,4</sup>, Professor Yung Liao<sup>4,5</sup>, Dr. Chien-yu Lin<sup>1,4,6</sup>

<sup>1</sup>National Cheng Kung University, Tainan City, Taiwan, <sup>2</sup>China Medical University, Taichung, Taiwan,

<sup>3</sup>State University of Londrina, Londrina, Brazil, <sup>4</sup>Waseda University, Tokorozawa, Japan, <sup>5</sup>National Taiwan Normal University, Taipei, Taiwan, <sup>6</sup>Swinburne University of Technology, Melbourne, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** To synthesize research findings on the relationships between socioeconomic status (SES) and adults' depression risk explained by social factors, built environments, and health behaviors.

**Methods:** A systematic search was conducted in four databases (Web of Science, PubMed, Embase, and PsycINFO) as of December 2024. Studies of adults aged 20+ years examining individual- (e.g., education and income) or area-level SES (e.g., neighborhood deprivation) as the exposure and depression (either self-reports or clinical diagnosis) as the outcome, with at least one mediator among social factors, built environments, and health behaviors were included.

**Results/findings:** There were 41 articles and 46 instances included. Among these articles, most of them investigated individual-level SES, with only 4 examining area-level SES and 3 examining both levels. All instances reported a relationship between lower SES and higher depression. The majority of studies identified social factors (34 instances), followed by health behaviors (10 instances) and built environments (2 instances). Findings showed that adults with lower SES or living in lower-SES neighborhoods were associated with lacking social capital or support (23 out of 29), lower level of physical activity (3 out of 3), more likely be smoking (1 out of 1) and engaged in unhealthy lifestyles (4 out of 5), and feeling unsafe in neighborhood (2 out of 2), in turn higher risk of depression. No mediation effects were found for social integration and seeking social support as a coping behavior.

**Conclusions:** Public Health strategies or initiatives focusing on increasing social capital or support, promoting healthy lifestyles such as physical activity, and enhancing neighborhood safety, particularly in adults with lower SES or living in lower SES areas, could potentially mitigate the socioeconomic inequalities in mental health.

# Effect of Coordinative Physical Activity on Executive Function in Preschool Children

**Miss Jing LIU<sup>1</sup>**, Dr Fenghua SUN<sup>1</sup>

<sup>1</sup>The Education University of Hong Kong, Hong Kong, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** The purpose of this study was to investigate the effect of a ten-week coordinative physical activity (PA) intervention on preschool children's three executive function (EF) subdomains: working memory, inhibitory control and cognitive flexibility, and to compare it to both a regular PA group and a sedentary control group.

**Method:** The study used a cluster randomized controlled trial design. Three grade three kindergarten classes were randomly selected in South China and assigned to a regular PA group in which children continued their habitual PA, a coordinative PA group in which children attended different coordinative exercises and activities, or a sedentary control group. All the intervention was administered from 10 to 11 am in the morning. The whole intervention lasted 10 weeks and was scheduled 3 times per week with 55 minutes for each session. The three subdomains of EF, i.e., working memory (the Digit Span Forward test), inhibitory control (the Child Flanker Test with Fish), and cognitive flexibility (the Dimensional Change Card Sort task), were assessed before and after the intervention.

**Results:** A total of 98 preschool children (age =  $66.7 \pm 4.0$  months; 52 girls) completed the study and were included in the final data analysis. Linear mixed models revealed a significant group-by-time interaction for working memory [ $F(2, 98) = 8.18, p < 0.001$ ], inhibitory control [ $F(2, 98) = 3.88, p = 0.024$ ], and cognitive flexibility [ $F(2, 98.05) = 6.38, p = 0.002$ ]. Post hoc comparisons showed that children from the coordinative PA group improved more in EF tasks over time than those from the regular PA group ( $p < 0.05$ ) and control group ( $p < 0.01$ ).

**Conclusion:** This study demonstrated that a 10-week structured coordinative PA intervention effectively improved EF performance and had a superior impact on EF compared to regular PA. It may serve as a promising alternative to facilitate EF development in preschool children.

## Concurrent changes in sleep duration and alcohol consumption during the transition to retirement: a multi-trajectory analysis

**Dr. Saana Myllyntausta<sup>1</sup>**, Professor Solja Niemelä<sup>2</sup>, Ms Jaana Pentti<sup>3,4,5</sup>, Professor Jussi Vahtera<sup>3,4</sup>, Professor Sari Stenholm<sup>3,4,6</sup>

<sup>1</sup>Department of Psychology and Speech-Language Pathology, University of Turku, Turku, Finland,

<sup>2</sup>Department of Psychiatry, University of Turku and Turku University Hospital, Turku, Finland,

<sup>3</sup>Department of Public Health, University of Turku and Turku University Hospital, Turku, Finland, <sup>4</sup>Centre for Population Health Research, University of Turku and Turku University Hospital, Turku, Finland, <sup>5</sup>Clinicum, Faculty of Medicine, University of Helsinki, Helsinki, Finland, <sup>6</sup>Research Services, Turku University Hospital and University of Turku, Turku, Finland

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Retirement from work may bring changes in several lifestyle factors. While sleep duration has been observed to increase, studies have provided mixed results for changes in alcohol consumption. Since alcohol consumption is known to disturb sleep, the objective was to examine concurrent changes in alcohol consumption and sleep during the transition to retirement among public sector employees in Finland.

**Methods:** The study population consisted of 3,915 participants (mean age before retirement: 63 years, 83% women) of the Finnish Retirement and Aging study who responded to annual surveys before and after retirement up to five times in total. Concurrent trajectories of alcohol consumption of moderate risk ( $\geq 14$  units per week among men,  $\geq 7$  units among women, or an extreme drinking occasion during past year) and self-reported sleep duration (per 24 hours) around the retirement transition were analyzed using group-based multi-trajectory analysis. Pre-retirement trajectories of being classified into these trajectories were examined using multinomial regression analyses.

**Results:** Four trajectories of sleep duration and alcohol consumption were identified: slightly increasing short sleep duration and temporarily increasing alcohol use (Group 1, 16% of the participants), increasing mid-range sleep duration and low prevalence of alcohol use (Group 2, 59%), increasing longer mid-range sleep duration and temporarily increasing alcohol use (Group 3, 14%), and increasing mid-range sleep duration and a sharp temporary increase in alcohol use (Group 4, 11%). The strongest pre-retirement predictors for belonging to Group 1 and Group 4 when compared to Group 2, were male sex, smoking, psychological distress, and sleep difficulties. In addition, obesity and suboptimal health were associated with belonging to Group 1, suboptimal health with belonging to Group 3, and non-manual occupation and having no job strain with belonging to Group 4.

**Conclusions:** More than half of public sector employees belonged to a group with an optimal sleep duration and a low prevalence of moderate-risk of alcohol consumption around the transition to retirement. Although men, smokers, those with psychological distress, and those with sleep difficulties before retirement were more likely to be in groups that increased their alcohol consumption at retirement, this increase appears to be temporary.

## Physical activity in people living with Type 2 Diabetes Mellitus related lower limb complications

**Dr. Bingyan Pang<sup>1</sup>**, Miss Hannah Porter<sup>1</sup>, Associate Professor Joanne McVeigh<sup>1,2</sup>

<sup>1</sup>Curtin University, Bentley, Australia, <sup>2</sup>University of Witwatersrand, Johannesburg, South Africa

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** To synthesise literature on physical activity (PA) levels in people living with Type 2 Diabetes Mellitus (T2DM) related lower limb complications (i.e. foot ulcer, peripheral neuropathy (DPN), and amputations).

**Methods:** A scoping review following the JBI methodology was conducted using six databases: Medline, Embase, PubMed, Cochrane Library, SPORTDiscus and CINAHL. Search terms were categorised into three concepts: 1) diagnosis (T2DM); 2) outcome (PA), and population (people living with diabetes-related lower limb complications). We included observational studies that primarily examined PA levels in people living with diabetes-related lower limb complications. We excluded reviews, intervention studies and studies that examined the association between PA and T2DM risks. All PA types were considered, and no language or date restrictions applied. Data from included studies were charted using a data tool designed for this study to capture information on key study characteristics, participant characteristics, and PA. Findings were collated into tables and summarised and reported narratively.

**Results:** 2549 studies were imported to Covidence, 793 duplicates were removed, and 1756 studies screened by title and abstract. Full text (n=42) was assessed, and 16 studies met inclusion criteria. Included studies were conducted in Nigeria (n=1), USA (n=6), UK (n=4), Canada (n=1), and Australia (n=4). PA was assessed either by questionnaires (n=3) or activity trackers (n=13). Sample size ranged from 10 to 240. Participants had DPN (n=338), foot ulcer (n=203), lower limb amputation (n=82), or peripheral arterial disease (n=47). PA levels were reported as step count (n=8), duration of PA of different intensities (n=7), time spent in various postures (n=3), gait velocity (n=1), step rate (n=1), and activity score (n=1). Mean step counts/day ranged between 1721 (T2DM+amputation) to 7754 (DPN). Mean moderate-intensity PA was reported to be 2min/day (T2DM+amputation) to 37min/day (DPN).

**Conclusions:** People living with diabetes-related lower limb complications engage in low levels of PA and decrease PA with greater complications. Future research should focus on objectively assessing PA levels across the full 24-hour cycle in individuals with diabetes-related lower limb complications. This approach would provide clearer understanding of their activity patterns, helping to develop tailored PA strategies for the management and prevention of these complications.

## The effect of different exercise intensities on inhibition control in children with ADHD

**Miss Kunyi Huang<sup>1</sup>**, Dr. Fenghua Sun<sup>1</sup>, Dr. Michael K. Yeung<sup>1</sup>

<sup>1</sup>The Education University of Hong Kong, Tai Po, Hong Kong, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder characterized by attention deficits and hyperactivity/impulsivity, with inhibitory control dysfunction as a core executive function impairment. Although exercise has been shown to enhance executive function in ADHD children, the optimal exercise intensity for enhancing inhibitory control remains controversial. This study aims to explore the effect of acute aerobic exercise at different intensities on inhibitory control in ADHD children and examine the brain activation related to executive function using functional near-infrared spectroscopy (fNIRS).

**Methods:** A randomized crossover design was employed in this study. Twenty-one children with ADHD aged 8-13 years old participated in this study. They completed 20-minute aerobic cycling sessions at three intensities: low (50%-64% of maximal heart rate [HRmax]), moderate (64%-77% HRmax), and vigorous (77%-94% HRmax) in a randomized order, with a 3-5 day washout period between sessions. HR was continuously monitored to ensure target exercise intensity. Stroop test accuracy and response time were measured. Prefrontal cerebral blood flow was assessed using fNIRS during the Stroop test, with testing occurring before and 15 minutes after each exercise session. Data were analyzed by two-way Repeated-Measures ANOVA.

**Results:** There were 3%, 2%, and 3% improvements in accuracy ( $F_{\text{time}} = 5.775$ ,  $p < 0.05$ ) following low, moderate, and vigorous intensity exercise, respectively. Reaction time improved only after low-intensity exercise ( $F = 6.890$ ,  $p < 0.05$ ), with no significant changes after moderate ( $F = 1.331$ ,  $p = 0.253$ ) or vigorous ( $F = 1.224$ ,  $p = 0.273$ ) exercise. No significant differences were found between the intensities in terms of accuracy rate or reaction time. Significant activation was observed in the frontopolar area ( $0.0017 \pm 0.0031$ ,  $p < 0.05$ ) after vigorous-intensity exercise, in the pars triangularis of Broca's area ( $0.0012 \pm 0.0027$ ,  $p < 0.05$ ) and dorsolateral prefrontal cortex ( $0.0017 \pm 0.0034$ ,  $p < 0.05$ ) after moderate-intensity exercise. No significant activation was detected following low-intensity exercise.

**Conclusion:** These findings may serve as a foundation for future studies investigating the brain mechanisms underlying the effects of exercise on inhibitory control in ADHD. The work described in this paper was supported from The Education University of Hong Kong internal grant (RG58/23-24R )

## Experiences and lessons learned from device-based physical activity surveillance systems: a qualitative study

**Ms. Inge De Wolf<sup>1,2,3</sup>**, dr. Femke van Nassau<sup>1,2</sup>, Ms. Gioia Muru<sup>1,2</sup>, dr. Ellen de Hollander<sup>4</sup>, dr. Maaïke Kompier<sup>3</sup>, dr. Barry Schouten<sup>3</sup>, dr. Barbara Snoeker<sup>4</sup>, dr. Vera Toepoel<sup>3</sup>, dr. Wanda Wendel-Vos<sup>4</sup>, prof. dr. Hidde van der Ploeg<sup>1,2</sup>

<sup>1</sup>Amsterdam UMC, location Vrije Universiteit Amsterdam, Department of Public and Occupational Health, Amsterdam, The Netherlands, <sup>2</sup>Amsterdam Public Health research institute, Health Behaviours & Chronic Diseases, Amsterdam, The Netherlands, <sup>3</sup>Statistics Netherlands, Heerlen, The Netherlands, <sup>4</sup>National Institute for Public Health and the Environment, Bilthoven, The Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Population monitoring of physical activity (PA) using device-based measurements offers more accurate and objective measurements compared to current used questionnaires. However, setting-up and implementing device-based PA surveillance systems presents challenges and requires substantial investments in time, money, and infrastructure. This study aimed to gain more insight into experiences and lessons learned from countries and institutes that have used devices in their surveillance systems.

**Methods:** Nine in-depth interviews with key individuals from different national surveillance systems that included devices to measure PA were conducted, all identified via our review. The interviews were analyzed thematically, in which both an inductive and deductive approach were taken, to identify common challenges and lessons learned.

**Results:** Results were clustered into five themes: road to device-based PA surveillance, recruitment and representativeness, device based outcomes, dissemination of the results and future directions of device-based PA surveillance. Strong advocacy from researchers involved in PA and health ministries was identified as a key driver for initiating and integrating device-based measurements in national PA surveillance systems. Effective integration often required close collaboration between health institutes and universities, alongside securing sustainable funding due to the high costs of devices compared to questionnaires. Methodological challenges such as recruitment, representativeness, and data reduction were found. Necessity and complexity of combining self-reported and device-based data was also addressed. Interviewees emphasized the importance of disseminating results for public engagement and informing policy. Personal activity trackers and improving algorithms may offer promising future advancements despite their current methodological and implementation challenges.

**Conclusions:** The experiences and lessons from the interviewees provide guidance for countries and institutes considering device-based PA surveillance systems. Following proven strategies and avoiding common pitfalls can help integrate device-based PA measurements into surveillance systems and ultimately inform better public health policies and interventions.

## Representativeness in physical activity surveillance: who wants to wear an accelerometer and who owns a personal activity tracker

**Ms. Inge De Wolf**<sup>1,2,3</sup>, dr. Vera Toepoel<sup>3</sup>, dr. Maaïke Kompier<sup>3</sup>, Joris Mulder<sup>5</sup>, dr Femke van Nassau<sup>1,2</sup>, dr. Barry Schouten<sup>3</sup>, dr. Barbara Snoeker<sup>4</sup>, dr. Wanda Wendel-Vos<sup>4</sup>, prof. dr. Hidde van der Ploeg<sup>1,2</sup>

<sup>1</sup>Amsterdam UMC, location Vrije Universiteit Amsterdam, Department of Public and Occupational Health, Amsterdam, The Netherlands, <sup>2</sup>Amsterdam Public Health research institute, Health Behaviours & Chronic Diseases, Amsterdam, The Netherlands, <sup>3</sup>Statistics Netherlands, , the Netherlands, <sup>4</sup>National Institute for Public Health and the Environment, , the Netherlands, <sup>5</sup>Centerdata, , the Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Recent advancements in technology have led to the integration of devices into physical activity research. A key challenge in using accelerometers into population-based surveillance is ensuring representativeness. This issue arises both in the willingness of individuals to wear research-grade devices and in the inclusion of personal activity tracker. Those who are willing to wear accelerometers and those who are not, as well as owners and non-owners of personal activity trackers, may differ in key characteristics. Therefore, this study investigates predictors of willingness to wear accelerometers for physical activity measurement and identifies factors associated with personal activity tracker ownership. Insights gained will enhance understanding of the representativeness of device-based surveillance methods.

**Methods:** Around 3,800 participants in a Dutch probability-based online panel were asked to fill out questionnaires about physical activity and sedentary behavior at two time points with nine months in between. Next to that they were asked about health variables. Socio-demographics of the panel members were known. Willingness to wear an activPAL accelerometer and ownership of a personal activity tracker was predicted using multiple logistic regression analyses.

**Results:** Approximately 2,700 participants completed the two questionnaires, with around half willing to wear an accelerometer. Women, younger individuals, those with higher educational levels, those without chronic diseases, and who adhere to the PA guidelines were more likely to wear an activPAL. First-generation western ethnicities and those without personal activity trackers were less likely to be willing to wear an accelerometer. About 20 percent owned a personal activity tracker. Tracker ownership was associated with being younger, higher educated, healthier, and more likely to adhere to PA guidelines, as well as being overweight or obese compared to those of normal weight.

**Conclusions:** This study shows that younger age, higher education, absence of chronic diseases and adherence to the PA guidelines are associated with both willingness to participate in accelerometer-based studies and having a personal activity tracker. In contrast, BMI is only linked to owning a personal activity tracker. These findings highlight key factors that may influence who is represented in PA surveillance when using devices, such as activPAL or personal activity tracker.

# Assessing the Cultural Relevance and Acceptability of an Online Best-Feeding Practices Curriculum for Diverse Communities

**Dr. Jayna Dave**<sup>1</sup>

<sup>1</sup>USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** This study aimed to assess the cultural relevance and acceptability of Food, Feeding, and Your Family (FFYF), an online best-feeding practices curriculum, among diverse populations. By exploring participant perspectives, the study sought to identify strengths, areas for improvement, and potential modifications to enhance cultural responsiveness and accessibility.

**Methods:** A qualitative, cross-sectional design was employed to gather data through interviews and surveys. Participants were residents of Harris and Fort Bend counties, Texas, with children aged 4–8, who were either enrolled in or eligible for the Expanded Food and Nutrition Education Program (EFNEP). Interviews were conducted via Zoom, and surveys were administered via RedCap. Two trained staff members independently coded interview transcripts using a modified focused coding and grounded theory approach to identify recurring themes. Survey data were analyzed descriptively to complement qualitative findings.

**Results:** A total of ten individuals participated, with the majority identifying as Hispanic (70%) or African American (30%), aligning with the dominant minority populations in the study region. FFYF was generally well-received, with participants appreciating its accessible format and emphasis on best-feeding practices. However, several concerns emerged, including the portrayal of mothers as the sole caregivers, the challenge of maintaining traditional household feeding practices in fast-paced modern environments, and generational differences in parenting and feeding perspectives. Many participants expressed a need for more inclusive representations of caregivers, as well as content that acknowledges cultural variations in feeding practices and family dynamics.

**Conclusions:** This study underscores the need for culturally responsive nutrition education curricula that reflect the diversity of caregivers and family structures. Incorporating broader caregiver roles, addressing the realities of modern family life, and integrating generational perspectives are crucial for improving program effectiveness. The findings provide valuable insights into how FFYF can be adapted to better serve underrepresented communities, ensuring its relevance and impact. By making these adjustments, FFYF has the potential to become a more inclusive and effective resource for promoting best-feeding practices among diverse populations.

## Examining toddlers' longitudinal movement behaviours using novel machine learning algorithms

**BSc Thijs Valk**<sup>1,2</sup>, Prof. Kylie Hesketh<sup>1</sup>, Dr. Matthew Ahmadi<sup>3</sup>, Dr. Katherine Downing<sup>1</sup>, Prof. Carry Renders<sup>2,4</sup>, Dr. Simone Verswijveren<sup>1</sup>

<sup>1</sup>Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia, <sup>2</sup>Department of Health Sciences, Faculty of Science, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands, <sup>3</sup>Faculty of Medicine and Health, School of Health Sciences, The University of Sydney, Sydney, Australia, <sup>4</sup>Department of Health Sciences, Faculty of Science, Vrije Universiteit Amsterdam, Amsterdam Public Health Research Institute, Amsterdam, The Netherlands

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Understanding how toddlers' movement behaviours change over time is essential for developing effective health interventions. This study applies novel machine learning techniques, specifically Random Forest activity classification models (RF), to classify movement behaviours from accelerometer data. RF has already been shown to effectively identify movement categories at a single time point in free-living settings and better classify movement behaviours levels compared to cut-point-based approaches. However, this is the first study to apply RF longitudinally to track changes in toddlers' activity. Additionally, it examines whether these behavioural changes differ by sex.

**Methods:** This longitudinal cohort study is a secondary analysis of the Let's Grow dataset, focusing exclusively on the usual practice control group. The sample includes Australian toddlers aged 18–35 months who were walking independently. Data were collected at baseline (T0; n = 685), 6 months (T1; n = 618) and 12 months (T2; n = 556). Toddlers wore ActiGraph GT3X+ accelerometers on the hip continuously for eight days at each time point and were included if they had at least three days of valid wear time. RF classified accelerometer data into six movement behaviours: sedentary time, light activities and games, moderate-to-vigorous activities and games, walking, running, and sleep (minutes/day). Changes in these behaviours over time are being analysed using multi-level mixed-effects models in R, adjusting for sex (whole sample only), age, and BMI. Models will also be run separately for boys and girls.

**Results/Findings:** Toddlers were, on average, 27 months old (SD = 4.11) at baseline, with 48% being girls. At 6 months, the average age was 34.5 months (SD = 4.37), with 47% being girls. Twelve-month demographic data is currently being cleaned. Results from the multi-level mixed-effects models will quantify trends in sedentary time, physical activity, and sleep over time, identifying behavioural changes and differences by sex. Results of analyses will be available prior to the conference.

**Conclusions:** By introducing a novel classification system for toddlers free-living movement behaviours and tracking longitudinal changes, this study advances early childhood movement behaviour research. The findings will provide valuable insights for designing evidence-based interventions and policies to support healthy child development.

## Longitudinal changes in young children's 24-hour movement compositions: A secondary data-analysis of the INFANT Study

**Miss Stephanie De Block<sup>1,2</sup>**, Prof. Kylie Hesketh<sup>1</sup>, Dr. Jill Hnatiuk<sup>1</sup>, Prof. Carry Renders<sup>2</sup>, Dr. Simone Verswijveren<sup>1</sup>

<sup>1</sup>Institute for Physical Activity and Nutrition, Deakin University, Geelong, Australia, <sup>2</sup>Department of Health Sciences, Faculty of Science, Vrije Universiteit Amsterdam, Amsterdam Public Health Research Institute, Amsterdam, Nederland

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Physical activity and sedentary behavior are key components of a child's 24-hour movement cycle. Understanding how these behaviors evolve over time is essential for shaping early childhood health guidelines. However, longitudinal evidence tracking these behaviors in young children remains limited. This study aims to examine changes in young children's waking movement compositions between 20 months and 5 years of age, utilizing compositional data analysis (CoDA) to assess shifts in the relative distribution of movement behaviors.

**Methods:** This study is a secondary analysis of the INFANT intervention study, which recruited 542 children at baseline (4 months old). Accelerometer-based movement data and parent-reported sleep and screen time data were collected at 3 time-points (approx. 20 months [n=296], 3.6 years [n=144] and 5 years of age [n=140]). Data from the ActiGraph GT1M accelerometers was processed using count-based cut-points into daily sedentary time, light-intensity and moderate-to-vigorous physical activity. These daily times in intensities will be expressed as two isometric log ratios as part of the CoDA before using them in a multivariable response linear mixed model, adjusted for sex, the highest level of maternal education, intervention arm and child age. These models will assess changes over time. All analyses will be conducted in R and completed before the conference.

**Results:** Of the baseline sample, 48.6% were male and approximately half of their mothers had a university degree (51.0%). Across the time-points, most time was spent in sedentary bouts (237.3 – 253.9 minutes), followed by light-intensity physical activity (110.1 – 121.4 minutes), and moderate-to-vigorous physical activity (11.3 – 30.5 minutes). Findings from the linear mixed models will present longitudinal changes in movement behaviors, examining potential shifts in the relative distribution of movement behaviors across the early childhood period.

**Conclusion:** This study will contribute to 24-hour movement research by addressing the lack of longitudinal evidence on young children's movement compositions. Findings will inform interventions aimed at reducing sedentary time and promoting balanced movement behaviors and benefit refinements in early childhood movement guidelines.

## A novel approach to self-reporting leisure sedentary screen time

**Dr. Jennifer Copeland<sup>1</sup>**, Milena Zdjelar<sup>1</sup>, Haley Dennis<sup>1</sup>

<sup>1</sup>University of Lethbridge, Lethbridge, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Excessive sedentary time is associated with health risks and leisure screen time may be more detrimental than other sedentary behaviours. While device-based measurements can accurately assess total sedentary time, also accounting for screen time may help predict health risks. Screen time questionnaires can be burdensome due to the ubiquitous nature of screens in daily life. We tested a simple visual analog scale (VAS) for self-reporting screen time that could be used to complement device-based measurements of sedentary time.

**Methods:** Healthy volunteers (n = 86, 67% women, 40.5±16.0 yrs.; BMI: 27.1 ±7.0 kg·m<sup>-2</sup>) wore an ActivPAL™ inclinometer for seven days to measure total sedentary time. Screen time was assessed using a questionnaire that asked about typical weekly use of TVs, computers, smartphones, and tablets, and using the Screen Time VAS (STVAS). The STVAS asked participants to indicate on a line how much daily leisure time they spend using screens while sedentary, with “none of my leisure time” and “all of my leisure time” as anchors. STVAS scores were recorded as a fraction. All measures of sedentary time were repeated for a second week. Spearman’s correlations were used to examine associations between the STVAS, device-based total sedentary time, the screen time questionnaire, and BMI.

**Results:** Participants accumulated 9.0 (±1.7) hours per day of sedentary time and reported 6.0 (±3.5) hours per day of screen time. The STVAS scores ranged from 0.1-.98, with a mean of 0.5 (±.2), indicating 50% of sedentary leisure time was screen time. There was no significant difference in any measure of sedentary time between weeks. STVAS values were significantly correlated with the screen time questionnaire (ρ=.56, p<.001) and total sedentary time (ρ=.27, p<.05). Total sedentary time was correlated with BMI (ρ=.23, p<.05) but STVAS was not.

**Discussion and Implications:** The STVAS correlated with screen time from a more detailed questionnaire and total sedentary time from an inclinometer. These preliminary results suggest that the STVAS could benefit sedentary behaviour research by providing a fast and simple assessment of screen time to refine measurements of total sedentary time. Future research will determine if the STVAS can predict health risks.

## A 12-week fitness training with frame runners improves cardiorespiratory function in individuals with moderate to severe spastic cerebral palsy – preliminary findings

**Ms. Ana Kunštič<sup>1</sup>**, Nina Mosser<sup>1</sup>, Philipp Birnbaumer<sup>1</sup>, Martin Svehlik<sup>2</sup>, Markus Tilp<sup>1</sup>, Mireille van Poppel<sup>1</sup>, Linnéa Corell<sup>3</sup>, Ferdinand von Walden<sup>3</sup>, Annika Kruse<sup>1</sup>

<sup>1</sup>Department of Human Movement Sciences, Sport and Health, University of Graz, Graz, Austria,

<sup>2</sup>Department of Orthopaedics and Trauma, Medical University of Graz, Graz, Austria, <sup>3</sup>Department of Women's and Children's Health, Karolinska Institutet, Division of Pediatric Neurology, Stockholm, Sweden

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: J. Young Adults**

Spastic cerebral palsy (SCP) is a childhood-onset disability affecting 2 to 3 per 1000 live births. Individuals with moderate to severe SCP (Gross Motor Function Classification System (GMFCS) III-IV) experience reduced mobility, cardiorespiratory fitness and increased sedentary behavior, leading to a high risk of developing non-communicable diseases (NCDs). Frame Runners (FRs) are assistive devices that enable individuals with locomotor impairments to engage in physical activity. However, information on the effects of training with FRs is limited in individuals with SCP. The aim of this study was to gain insights into the impact of a 12-week fitness training with FRs on the cardiorespiratory fitness in young adults with moderate to severe SCP who are naïve to Frame Running. Six young adults with SCP (GMFCS III-IV; age:  $22 \pm 3$  years; body height:  $150 \pm 9$  cm; body weight  $51 \pm 13$  kg) participated in a longitudinal study as a part of a project (Grant-DOI 10.55776/V992, NCT06330922). They completed a 12-week control period, followed by a 12-week training period with FRs. The training was performed two times a week for 60 min. The participants were assessed at baseline (T0), after the control period (T1), and after the training period (T2). Cardiorespiratory fitness was determined with the 6-Minute Frame Running Test (6-MFRT, distance, speed), combined with gas exchange assessments (peak oxygen uptake ( $VO_{2peak}$ )). Repeated Measures ANOVA was applied to analyze differences over time. The comparison of baseline values with those obtained after the control period, showed no significant differences in any parameter ( $p > 0.05$ ). However, there was a significant increase in  $VO_{2peak}$  following the 12-week training period ( $+17.0\%$ ;  $p = 0.026$ ). Moreover, the speed and the distance covered in the 6MFRT also increased significantly after the training (speed:  $+123.0\%$ ;  $p = 0.009$ ; distance:  $+122.8\%$ ;  $p = 0.010$ ). Preliminary findings suggest that a 12-week fitness training with FRs has the potential to significantly enhance the cardiorespiratory fitness of young non-ambulatory adults with SCP. While a larger sample size is needed to confirm these findings, the results indicate that FRs seem to be effective assistive devices to improve physical fitness and to reduce sedentary times in individuals with locomotor impairments.

## Zero Fare Policies and Public Health - Initial Reflections Through System Dynamics

**Dr. Ricardo De Oliveira<sup>1,2</sup>**, MSc Heloant Abreu Silva de Souza<sup>1</sup>

<sup>1</sup>UNIVERSIDADE DO ESTADO DO RIO DE JANEIRO, Rio De Janeiro, Brazil, <sup>2</sup>Laboratório de Vida Ativa - LaVA/UERJ, Rio De Janeiro, Brazil

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** N. Systems Science

**Purpose:** Zero Fare (ZF) policies in public transport have been increasingly implemented in Brazilian municipalities, currently reaching 7 million people. By eliminating the cost of public transportation, ZF policies enhance the democratization of access to urban opportunities, including public health, cultural, and leisure services and facilities. Given its innovative and cross-cutting nature, ZF policy is understood as a complex system that warrants investigation. The purpose is to identify, through system dynamics, the relationships between ZF policies and public health in a context of social vulnerability.

**Methods:** A workshop was conducted with 20 experts from 14 institutions, representing academia, civil society, and the federal government, in fields related to urban mobility, public health, physical activity, nutrition, economics and equity. The procedures were based on the Group Model Building theory, comprising the following steps: a) variable elicitation; b) graphs over time; c) point voting; d) connection circles; e) construction of causal loop diagrams.

**Results:** From 37 elicited variables, four reinforcing loops were identified, illustrating the impacts of ZF policies: (1) increased disposable household income, affecting food behaviors; (2) greater access to urban opportunities, including health facilities and parks and open spaces, again influencing food behaviors and leisure physical activity; (3) improvement in the quality and demand for public transportation, reducing average travel times; (4) decreased use of individual transportation, leading to lower CO2 emissions and traffic accidents.

**Conclusion:** The results underscore the innovative and disruptive nature of ZF policies, given the cross-cutting nature of their potential impacts, whether economic, social, cultural, or health-related. The causal loop diagram allowed observation of the relationships between ZF policies and various health-related behaviors capable of significantly impacting public health in Brazil. Future studies are needed to confirm these findings.

## Factors associated to active commuting to school among vulnerable brazilian adolescents

**Dr. Ricardo De Oliveira<sup>1,2</sup>**, Dr. Rodolfo Silva<sup>1</sup>

<sup>1</sup>UNIVERSIDADE DO ESTADO DO RIO DE JANEIRO, Rio De Janeiro, Brazil, <sup>2</sup>Laboratório de Vida Ativa - LaVA-UERJ, Rio De Janeiro, Brazil

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Active commuting to school has been regarded as an effective way to increase physical activity levels among school children. The present study investigated the factors related to student perceptions of the built environment along the route and in the neighborhood of the school that are associated with walking to school among 2,875 brazilian vulnerable adolescents aged 13 to 16 years.

**Methods:** Data were obtained through sociodemographic assessments, the administration of a structured questionnaire, and geospatial analyses by using an ecological model. Univariate and multivariate logistic regression analyses were conducted, with walking to school at least once a week as the dependent variable.

**Results:** After adjustments for distance, the multivariate models demonstrated that age [OR 1.09 (95% CI 1.01 – 1.19)], backpack weight [OR 0.88 (95% CI 0.79 – 0.99)], being of black or brown ethnicity [OR 1.48 (95% CI 1.11 – 1.97)], not having a family car [OR 1.82 (95% CI 1.33 – 2.55)], and meeting physical activity recommendations [OR 1.67 (95% CI 1.25 – 2.24)] increased the odds of adolescents walking to school. When considering variables related to the route to school, students with more favorable perceptions regarding the existence of safe places to cross the street and personal safety [OR 2.28 (95% CI 1.31 – 3.96)] had greater odds of walking. In contrast, after adjustments for distance, no variables related to perceptions of the neighborhood around the school were associated with walking to school. Among the variables analyzed, the home-to-school-home distance exhibited the highest odds ratio for walking. When compared to students living in more than 1.26 km from the school, those living below this distance had approximately 12 times greater odds of walking to school [OR 11.7 (95% CI 8.70 – 15.8)].

**Conclusion:** These results suggest that public policies aimed at promoting active commuting should consider sociodemographic differences, with particular attention to black and brown students, as well as investments in safety and urban infrastructure along routes to school.

# Effectiveness of the Health4Me text message intervention to improve adolescent physical activity or nutrition behaviours: a randomised controlled trial

**Dr. Rebecca Raeside<sup>1,2</sup>**, Miss Allyson R Todd<sup>1,2</sup>, A/Prof Stephanie R Partridge<sup>1,2</sup>, The Health4Me Team<sup>1</sup>

<sup>1</sup>Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, The University of Sydney, Camperdown, Australia, <sup>2</sup>Charles Perkins Centre, Camperdown, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Adolescence presents an opportunity to develop health promoting behaviours (e.g. good nutrition, physical activity) to reduce future risk of non-communicable diseases (NCD) and poor mental health. Text message interventions are effective in reducing NCD risk factors in adults with chronic conditions (e.g. cardiovascular disease), but effectiveness in adolescent populations is unknown. Text messaging holds potential as texts are low-cost, equitable and accessible, and 91% of Australian adolescents own a mobile phone. This study aimed to determine effectiveness of the Health4Me text message program to improve physical activity or nutrition behaviours over 6-months among adolescents, compared to usual care.

**Methods:** Virtual randomised controlled trial (RCT, 1:1, intervention: control) among adolescents (n=390) 12-18 years old living in Australia. Intervention received 6-month co-designed, semi-personalised text message intervention (4-5 text messages per week) encouraging behaviour change. Control received usual care. Primary outcomes were change in moderate to vigorous physical activity (MVPA) min/day (collected via GeneActiv accelerometers) OR change in proportion of participants meeting vegetable intake guidelines (>3 serves/day, collected via Australian Child and Adolescent Eating Survey). Secondary outcomes include self-reported physical measures (weight, height) and validated questionnaires for physical and mental health outcomes. At 6-months post intervention, outcomes will be collected and analysed using ANOVA and independent t-test or Wilcoxon rank sum test for normally distributed and skewed continuous outcomes, respectively, and chi-squared test for categorical outcomes. Further, analysis of covariance (ANCOVA), and log-binomial regression will be used for continuous and categorical variables respectively, adjusting for the outcome values at baseline. All analyses will be conducted according to intention to treat principle. ANZCTR: 12622000949785.

**Results/findings:** 390 participants were randomised (mean age $\pm$ SD=16.4 $\pm$ 1.3), 69% (268/390) were female, 17% (65/390) spoke a language other than English. 78% (305/390) lived in major cities, 20% lived in regional/remote areas. 79% (309/390) completed 6-month follow-up. Final participant completed the intervention October-24 and full dataset is under analysis. Primary and secondary outcomes will be available by mid-2025.

**Conclusions:** Full results from the Health4Me RCT will be presented, demonstrating whether the Health4Me text message intervention was effective for improving physical activity or nutrition behaviours among adolescents in Australia.

## Food and Screens: A Camera's View of Adolescents' Evening Meals

Dr Alice Cox<sup>1</sup>, Prof. Rachael Taylor<sup>1</sup>, Professor Barbara Galland<sup>2</sup>, Dr. Kim Meredith-jones<sup>1</sup>, **Dr. Claire Smith**<sup>3</sup>

<sup>1</sup>Department of Medicine, University Of Otago, Dunedin, New Zealand, <sup>2</sup>Department of Women's and Children's Health, University of Otago, Dunedin, New Zealand, <sup>3</sup>Department of Human Nutrition, University of Otago, Dunedin, New Zealand

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The social context of eating can influence both the types and quantities of food consumed. This study aimed to explore the contextual factors surrounding evening meals among adolescents in New Zealand measured using automated wearable cameras. Specifically, it examined meal timing, location, the presence and use of screens, and social interactions, comparing these factors by age, gender, and between weekdays and weekends. This innovative approach provides unique insights into real-life eating behaviors.

**Methods:** Adolescents aged 13 to 17 years (n=167) in Dunedin, New Zealand, wore automated cameras (Brinno TLC120) for three evenings from 5 pm until bedtime. The cameras captured images every 15 seconds. Data collection was completed between September 2017 and May 2019. Images were reviewed to identify evening meals and coded manually for contextual factors, including location, screen use, and social presence using TimeLapse2 software (version 2.1.0.6). Data were analysed using general linear models to compare contextual factors by age, gender, and day of the week.

**Results:** Nearly all (93%) participants wore the camera for one or more evenings and 149 participants had images for at least one evening meal, capturing 357 meals. Older adolescents (15–17 years) were more likely to eat meals alone (65%) compared to younger adolescents (13–14 years; 80%,  $p=0.012$ ) and were more likely to eat on their beds (17% vs. 5%,  $p=0.08$ ). Over half of all meals were consumed at the same time as actively using or viewing a screen (64%), with television being the most common screen use while eating (48%). Screen use patterns showed some gender differences, with boys more likely to game during meals (6%) compared to girls (1%,  $p=0.015$ ). Contextual factors did not significantly differ between weekdays and weekends.

**Conclusions:** This research highlights the utility of wearable cameras for capturing detailed, real-world information on eating contexts. Findings suggest that contextual factors such as social presence and eating location vary by age and gender in New Zealand adolescents. These insights could inform interventions targeting healthy eating behaviors, particularly in adolescents' social and digital environments.

# School Meal Participation Among U.S. Pacific Islander Families: The Impact of Perceptions

**Dr. Lori Spruance<sup>1</sup>**, Dilany Santamaria<sup>1</sup>

<sup>1</sup>Brigham Young University, Provo, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** School meals in the U.S. provide documented health and academic benefits. Parent perception is a key predictor of participation, yet certain racial/ethnic groups, including Pacific Islanders, are underrepresented in research. This study aimed to examine Pacific Islander parents' perceptions of school meals and their association with school meal participation.

**Methods:** A cross-sectional survey was conducted with 150 Pacific Islander parents recruited via Qualtrics' survey panel. Eligibility criteria required participants to identify as Pacific Islander, have at least one child enrolled in a K-12 public school in the U.S. (excluding Hawaii), and meet other demographic requirements. The survey, developed using previously published literature, assessed child school breakfast and lunch participation (outcomes) and various predictors, including perceptions of school meals (positive and negative), perceived benefits for families, urbanicity, child grade level, eligibility for free/reduced-price meals, and the number of children enrolled in K-12.

**Results:** Over one-third (37.3%) of participants were born in the U.S., and 70% reported qualifying for free/reduced-price meals. More than one-third (33.3%) identified as Samoan. Nearly half (49.3%) had two children enrolled in K-12. Daily school breakfast participation was reported by 50% of respondents, while only 36% reported daily school lunch participation. Positive perceptions of school meals were significantly associated with daily school breakfast participation; as positive perceptions increased, so did the odds of participation ( $p < .0001$ ). Similarly, perceiving school meals as beneficial to families was strongly linked to daily breakfast participation ( $p < .0001$ ). Negative perceptions were also significantly associated with participation, suggesting complex attitudes toward school meals ( $p < .0001$ ). For lunch, positive perceptions and perceived family benefits were significantly associated with higher daily participation ( $p < .0001$ ). Negative perceptions also correlated with participation patterns ( $p < .0001$ ). Eligibility for free/reduced-price meals strongly predicted higher daily school lunch participation ( $p < .0001$ ).

**Conclusions:** Parent perceptions of school meals play a crucial role in participation among Pacific Islander families. Increasing awareness of school meal quality, nutritional standards, and program benefits may enhance participation rates, ensuring more students receive the health and academic benefits of school meal programs.

## Exploring the Role of Built Environment Features on Children's Active Commuting to School in a Mexican Urban Periphery

**Dr. Eugen Resendiz<sup>1,2</sup>**, Dr. Aleksandra Krstikj<sup>1</sup>, Dr. Ryan Anders Whitney<sup>1</sup>, Prof. Erica Hinckson<sup>3</sup>

<sup>1</sup>*School of Architecture, Art, and Design, Tecnológico de Monterrey, Mexico City, Mexico*, <sup>2</sup>*Center for the Future of Cities, Tecnológico de Monterrey, Monterrey, Mexico*, <sup>3</sup>*Auckland University of Technology, Auckland, New Zealand*

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Over 65% of children in Mexico do not meet physical activity (PA) guidelines. While studies have identified built environment (BE) features that promote active commuting to school (ACS) and increased PA, most research has been conducted in high-income countries, raising concerns about relevance in low- and middle-income countries. Latin American megacities, especially peripheral areas, face unique challenges, including inadequate infrastructure and high marginalization. These factors hinder mobility and drive active transport primarily out of necessity. This study examines how BE features impact ACS in children from Atizapán de Zaragoza, an urban periphery of Mexico City with significant wealth inequality and a population of 523,674, 15% under 19 years and 34.4% living in poverty.

**Methods:** A cross-sectional study was conducted in Atizapán de Zaragoza (June to July 2024), where children in grades 1-6 (ages 6-12) completed at-home surveys about their walking to school experiences. ACS was operationalized as active, non-active, and mixed commuting. Based on previous evidence, ten BE features and two neighborhood-level covariates were ascertained using GIS. Unadjusted multinomial logistic regression models assessed the relation between each feature and ACS, followed by partially adjusted models for significant features. To address the small analytic sample (N= 76), bias-corrected bootstrapping with 2,000 resamples was used.

**Findings:** The Walkability Index was marginally significant in the single-environmental variable model (p-value=0.059); however, there were no statistically significant associations between any examined BE characteristics and active or mixed commuting to school (p>0.05).

**Conclusion:** This study is one of the first to explore the BE's role in ACS among elementary school children in a Mexican periphery. The null findings, inconsistent with studies from central areas of other Mexican cities, suggest that children's ACS in peripheral regions differ from those in central areas. In Mexico, children often undertake walking trips under challenging infrastructure and social conditions. Although we did not directly assess PA, our results imply a need to explore further whether a necessity-based model for ACS exists. Therefore, our next step will involve reviewing the qualitative data on children's walking experiences to understand our results better and determine if their walking is primarily motivated by necessity.

## Food insecurity among students attending a university-based food pantry

**Prof. Fiona Mckay<sup>1,3</sup>**, Dr Penelope Pitt<sup>4</sup>, Associate Professor Eric Lau<sup>1,2,3</sup>, Associate Professor Matthew Dunn<sup>1,3</sup>

<sup>1</sup>Deakin University, Burwood, Australia, <sup>2</sup>School of Public Health, Li Ka Shing Faculty of Medicine, University of Hong Kong, , Hong Kong, <sup>3</sup>Institute for Health Transformation, Faculty of Health, Deakin University, , Geelong, Australia, <sup>4</sup>Deakin University Student Association, Geelong, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Food insecurity is a problem among students attending post-secondary institutions in high income countries. Food insecurity is associated with a range of stressors and can negatively impact academic performance. The aim of this cross-sectional study was to explore the experiences of students who attend a university food pantry.

**Method:** This cross-sectional online survey focused on students who attended the food pantry. While in line waiting for their food, students were approached by a student association staff member and provided information about the survey. Surveys included basic demographic questions, standard questions related to food insecurity, and coping, financial stress, housing, wellbeing, and academic achievements. Data were collected between March and October 2024 across 4 university campuses. Data were analysed via basic descriptive statistics and tests for associations. Students who complete the survey were given the opportunity to go into a draw for one of five \$100 gift cards. Surveys took approximately 20-30 mins to complete.

**Findings:** Complete data for 386 students were analysed. Most students self-identified as female (n=259, 67%), were international students (n=327, 85%) and were enrolled in a postgraduate degree (n=224, 58%). More than two-thirds of students reported low (n=137, 36%) or very low food security (n=135, 35%), indicating that they are experiencing a reduction in quality, variety or desirability of diet, or disrupted eating patterns and reduced food intake. Students engaged in a range of coping strategies to manage their household food supply. The most common strategy was shopping around and purchasing the cheapest food available (56%, always or most of the time), followed by avoiding buying expensive foods like fruit and vegetables (35% always or most of the time), eaten more food when it was available (23% always or most of the time), and avoiding having guests over (20% always or most of the time). Very few students engaged in activities such as scavenging, skipping paying bills, avoiding paying bills, or watering down infant food.

**Conclusions:** Students attending a food pantry are experiencing high food insecurity and report a range of coping strategies to manage this situation.

## Population surveillance of 24-hour movement behaviours in Slovenia: validation of the survey items

**Dr. Kaja Kastelic<sup>1,2</sup>**, Ms. Tjaša Knific<sup>3</sup>, Prof. Nejc Šarabon<sup>1,4</sup>

<sup>1</sup>Andrej Marušič Institute, University of Primorska, Koper, Slovenia, <sup>2</sup>InnoRenew CoE, Izola, Slovenia,

<sup>3</sup>National Institute of Public Health, Ljubljana, Slovenia, <sup>4</sup>Faculty of Health Sciences, University of Primorska, Izola, Slovenia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** The National Health-related Lifestyle Survey of Slovenia has been adapted to include 24-hour movement behaviours (i.e., time spent in physical activity, sedentary behaviour, and sleep). The aim of this study was to examine the test-retest reliability and construct validity of these new items.

**Methods:** A sample of 104 Slovenian adults (58% females,  $45 \pm 14$  years of age) was recruited among participants who took part in the National Health-related Lifestyle Survey in 2024. They were asked to complete 10 items on 24-hour movement behaviours on two occasions (to examine 1-week test-retest reliability using intraclass correlation coefficient) and to wear an activPAL4 accelerometer for 7 days (to examine construct validity using Spearman's correlation coefficient). The items assess time spent in domain-specific moderate- to vigorous-intensity physical activity (recreational, occupational, transportation, domestic), muscle strengthening, balance and walking activity, sedentary behaviour, recreational screen time, and sleep in the usual week.

**Results:** Participants reported spending on average 53 min/day in moderate- to vigorous-intensity physical activity, 383 min/day in sedentary behaviour, and 432 min/day sleeping, which leaves 579 min/day for light-intensity physical activity. The reliability correlation coefficients ranged between 0.51 and 0.71, and the validity correlation coefficients ranged between 0.45 and 0.71. The time spent in moderate- to vigorous-intensity physical activity (mean difference (d) = -27 min/day; 95% CI: -35, -18), sedentary behaviour (d = -224 min/day; 95% CI: -264, -185), and sleep (d = -11 min/day; 95% CI: -20, -2) were significantly lower when assessed using survey item compared to activPAL, while time spent in light-intensity physical activity (d = 271 min/day; 95% CI: 234, 308) was significantly higher.

**Conclusions:** The new survey items assessing 24-hour movement behaviours showed adequate test-retest reliability and construct validity for use in population surveillance. However, discrepancies between self-reported and device-measured estimates should be considered when interpreting population levels of 24-hour movement behaviours. The National Health-related Lifestyle Survey will allow for monitoring adherence to the 24-hour movement guidelines currently under development in Slovenia.

# The Realities of Conducting Behaviour Change Clinical Trials in Unprecedented Times: Insights from the “OPTIMISE Your Health” Study

**Prof. David Dunstan**<sup>1,2</sup>, Mrs Ruth Grigg<sup>1</sup>, Dr Elisabeth Winkler<sup>3</sup>, Dr Christian Brakenridge<sup>5</sup>, Prof Neville Owen<sup>1,5</sup>, Prof Elizabeth Eakin<sup>3</sup>, Prof Stuart Biddle<sup>4</sup>, Prof Robin Daly<sup>1</sup>, Prof Daniel Green<sup>6</sup>, Prof Marj Moodie<sup>1</sup>, A/Prof Neale Cohen<sup>2</sup>, Dr Paul Gardiner<sup>3</sup>, Prof Genevieve Healy<sup>3</sup>

<sup>1</sup>Deakin University, Burwood, Australia, <sup>2</sup>Baker Heart and Diabetes Institute, Melbourne, Australia, <sup>3</sup>The University of Queensland, Brisbane, Australia, <sup>4</sup>University of Southern Queensland, Springfield, Australia, <sup>5</sup>Swinburne University, Melbourne, Australia, <sup>6</sup>The University of Western Australia, Perth, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** The COVID-19 pandemic impacted clinical trials and may have induced declines in physical and psychological health and health behaviours, with slow recovery thereafter. The ‘OPTIMISE Your Health’ trial aims to improve glycaemic control among office workers with type 2 diabetes by reducing sedentary behaviour and promoting physical activity. Here, we report differences in characteristics of participants recruited (June 2019–March 2024), and their changes without intervention, across a timeline of pandemic disruptions and necessary protocol adaptations.

**Methods:** Participants (n=145) were compared in their baseline levels and controls (n=72) were compared in their 6-month changes in HbA1c (%), measured BMI (kg/m<sup>2</sup>), self-reported anxiety and depression (DASS scores, 0-21), activPAL-assessed sedentary time (% of waking day), prolonged (>=30 min continuous) sedentary (% of waking day), and moderate-vigorous (stepping >=100 steps/min) activity (min/d). Comparisons were made across data collected during time periods labelled: 1 pre-pandemic (<03/05/2020); 2 pandemic study shutdown (no recruitment; remote assessments (03/05/2020–18/10/2021); 3 pandemic study reopening (19/10/2020–20/10/2021); and, 4 the new normal (>=21/10/2021). We used linear models adjusted for age, sex and baseline BMI.

**Results:** Participants (47% female) were aged 52±7.6 years. There were significant (p<0.05 two-tailed) differences between time periods (2/3/4) in control 6-month changes in sitting (6.1 [1.7, 10.5]%/ -4.5 [-9.7, 0.8] %/ -2.6 [-4.7, -0.4] %); p=0.002), prolonged sitting (10.9 [5.4, 16.5] % / -6.3 [-13.0, 0.4] % / -3.1 [-5.8, -0.4]%; p<0.001); and, moderate-vigorous activity (-10.9 [-19.3, -2.5] / 6.3 [-3.7, 16.4] / 5.6 [1.4, 9.7]; p=0.003), with the least favourable changes during the study shutdown. Differences in baseline values and other changes were all p>0.05.

**Conclusion:** Over different time periods throughout the trial, control participants experienced notable and varied changes in sedentary behaviour and physical activity, consistent with what has generally been reported about the pandemic. Our findings showed the background comparison for intervention in our ‘OPTIMISE Your Health’ trial was anything but stable, unlike similar trials before the pandemic, and suggest that single-group trials conducted early in the pandemic are at risk of failing to detect relative improvements (from lesser declines) while those conducted during pandemic recovery risk the reverse.

# Student-led Nutrition and Physical Activity Program to Promote Healthier Aging

**Dr. Marni Shoemaker<sup>1</sup>**, Megan Northrup<sup>1</sup>, Dr. Allison Barry<sup>1</sup>

<sup>1</sup>South Dakota State University, Brookings, USA

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

## **SIG - Primary Choice: A. Ageing**

**Purpose:** Physical activity (PA) and healthy eating patterns are key components to reduce risk of chronic diseases and sarcopenia. Nutrition and PA behavior change may be enhanced with intergenerational social interaction through increased enjoyment and accountability. Students leading an intervention may improve motivation for improving nutrition and PA behaviors that are essential for healthier aging such as protein, vegetable, and fruit intake, skeletal muscle mass, strength, and function.

**Purpose:** Examine the effectiveness of a student-led PA and nutrition intervention in older adults to improve dietary and PA outcomes related to sarcopenia and healthier aging.

**Methods:** This quasi-experimental pilot study examined protein, vegetable, and fruit intake via 3-day recalls, skeletal muscle mass (SMM) via bioelectrical impedance (BIA), handgrip strength, and short physical performance battery (SPPB) before and after participating in a student-led program in older adults (n=14; age=72.4±6.2yrs) aged 60 years or older. Students led 60-min PA sessions (warm-up, strength training, conditioning, stretching) twice per week and 60-min nutrition education sessions once per week for 6 weeks. Nutrition education included how to incorporate more protein, vegetables, and fruits into daily life SMART goals. Paired sample t-tests compared pre-and post-assessment results.

**Results/Findings:** SMM increased by 1.1 kg (p=0.010), with no other significant differences in protein, vegetable, and fruit intake, handgrip strength, and SPPB (p>0.05). For individual responses, 57%, 43%, and 36% of participants increased protein, vegetable, and fruit intake, respectively. Handgrip strength and SPPB increased individually in 57% and 71% of older adults, respectively.

**Conclusions:** A 6-week student-led PA and nutrition program successfully improved SMM in older adults but did not result in positive findings for dietary intake, handgrip strength, and SPPB. This indicates that even short-term PA can be impactful for attenuating sarcopenia but was not able to result in improvements in strength or performance. The nutrition education did not result in an overall increase in protein, vegetables, or fruits. However, since positive individual responses were observed, future programs of longer duration, larger sample size, and more specific focus on students teaching participants skills to promote behavior change, such as food purchasing and preparation, should be studied for effectiveness.

## Neighbourhood Greenness and Physical Activity: Associations by Residency Status

Dr. Hasti Masihay Akbar<sup>1</sup>, **Dr. Levi Frehlich**, Dr. Gavin McCormack<sup>1</sup>

<sup>1</sup>University of Calgary, Calgary, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Adult immigrants in Canada engage in lower levels of leisure physical activity (LPA) and higher levels of transportation physical activity (TPA) compared to their non-immigrant counterparts. Evidence also suggests that the associations between built environment features, including walkability, and physical activity (PA) may differ according to residency status. However, to date, associations between neighbourhood greenness—an important built feature linked to numerous health benefits—and PA have not been explored in relation to residency status. This study aimed to examine whether associations between neighbourhood greenness and PA differ by residency status (non-immigrants, recent immigrants, and established immigrants) among adults in Canada.

**Methods:** We conducted a cross-sectional analysis using nationally representative data from the Canadian Community Health Survey (CCHS; 2017/2018) linked to neighbourhood greenness (Normalized Difference Vegetation Index; NDVI 2016) using postal codes. Participants included urban-dwelling adults aged  $\geq 18$  years, categorized as non-immigrants, recent immigrants ( $< 10$  years), and established immigrants ( $\geq 10$  years). Participants self-reported their weekly TPA and LPA participation and duration. NDVI was averaged within a 1 km buffer around residential postal codes. NDVI values range from 0 (no vegetation) to 1 (dense vegetation). Covariate-adjusted Generalized Linear Models estimated the associations between greenness and PA outcomes (odds ratios [OR] for participation and  $\beta$  coefficients for duration), while testing for greenness-by-residency status interactions. All analyses incorporated sampling and bootstrap replicate weights.

**Results/Findings:** The weighted sample ( $n=22,352,016$ ) consisted of 71.1% non-immigrants, 7.8% recent immigrants, and 21% established immigrants. Greenness-by-residency interactions were only statistically significant ( $p<.05$ ) for TPA participation and LPA duration. A 0.1-unit increase in NDVI was associated with significantly lower odds of TPA participation across all residency groups (non-immigrants:  $OR=0.79$ ; recent immigrants:  $OR=0.81$ ; established immigrants:  $OR=0.91$ ). A 0.1-unit increase in NDVI was significantly associated with greater LPA duration among recent ( $\beta=12.7$  minutes/week) and established immigrants ( $\beta=9.3$  minutes/week) but not among non-immigrants.

**Conclusions:** The impact of neighbourhood greenness on PA appears to vary by activity domain (transportation versus leisure-time) and differs by residency status. Health promotion interventions should consider the differential effects of neighbourhood greenness according to residency status to prevent widening disparities in PA across population subgroups.

# Application and evaluation of a train-the-trainer (TTT) strategy for the promotion of Light Volleyball (LVB) in Hong Kong and Mainland China

**Dr. Ka Man Leung<sup>1</sup>**, Dr. Yu Chen Shi<sup>2</sup>

<sup>1</sup>The Education University of Hong Kong, Hong Kong, Hong Kong, <sup>2</sup>The Macau University of Science and Technology, Macau, China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Physical inactivity among older adults remains a critical public health concern in Hong Kong and Mainland China. Light Volleyball (LVB), a modified group-based sport tailored for older adults, offers a promising solution. This study evaluated the effectiveness of a Train-the-Trainer (TTT) strategy to build community capacity for LVB promotion, addressing gaps in scalable, sustainable physical activity (PA) interventions for older adults.

**Methods:** A total of three hundred twelve participants (trainers) joined our TTT workshops (4 workshops in HK and 8 workshops in Mainland China). These workshops (6 hours), led by certified LVB coaches and principal author, covered LVB skills, rules and regulations, injury and safety precautions, and instructional practices for older adult's LVB. Pre- and post-workshop surveys measured changes in their knowledge and self-efficacy toward older adults' LVB, using 6-point Likert scales, as well as their intentions to instruct older adults' LVB, measured on a 5-point scale. Wilcoxon signed-rank tests were used to analyze the pre- and post-training differences and effect sizes were calculated.

**Results:** Participants showed significant improvements in their LVB knowledge (pre:  $4.23 \pm 1.39$  and post:  $5.13 \pm 0.74$ ;  $p < .01$ , large effects), self-efficacy to instruct LVB in older adults (pre:  $4.29 \pm 1.30$  and post:  $5.06 \pm 0.78$ ;  $p < .01$ , medium effects), and attitudes towards older adult's LVB (pre:  $5.20 \pm 0.79$  and post:  $5.50 \pm 0.45$ ;  $p < .01$ , medium effects). Over 90% reported high satisfaction and intent to implement LVB programs. The dropout rate of 8.24% indicated the feasibility of the program.

**Conclusion:** The TTT approach effectively enhanced trainers' competencies and intentions to promote LVB for older adults, demonstrating the potential for future large-scale, sustainable PA interventions. TTT addresses resource limitations by leveraging community partnerships while fostering ageing-friendly PA promotion. Findings advocate for policy and organizational support to integrate TTT models into aging-in-place strategies, thereby expanding the reach of LVB in broader contexts. **Keyword:** Train-the-trainer, Older adults, Community sports, Promotion This work was supported by the Research Impact Fund of the University Grants Committee [Project Number: R2010-18]

# The effectiveness of creative Active Break on improving physical activity, sedentary behavior, physical function and cardiometabolic health among older adults with or without knee pain: A feasibility study

**Dr. Bonny Yee-man Wong<sup>1</sup>**

<sup>1</sup>Hong Kong Metropolitan University, , Hong Kong

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Creative Active Breaks (CAB) during prolonged sitting may be a feasible strategy to shorten sedentary bouts, reduce total sedentary behaviours (SB), and increase physical activity (PA), benefiting forgetful older adults regardless knee pain. However, no studies were found on CABs. Objectives are: to examine the feasibility, appropriateness, and acceptability (FAA) of the CABs, and its effectiveness in improving PA, SB, physical function and cardiometabolic health in older adults and to compare its FAA and effectiveness between older adults with and without knee pain.

**Methods:** This is a post-hoc analysis of an interventional study. A 12-week intervention, based on Self-Determination Theory, was conducted in community setting and recruited 21 older adults (≥65 years), who were smartphone users and could independently walk with or without assistive devices. Participants were supported in practicing CABs via three workshops and WhatsApp messenger. A smartwatch prompted participants to take CABs every hour of sitting. Participants were encouraged to create CAB(exercise) tailored to their abilities. Outcomes were PA and SB(accelerometer), physical functions(physical performance tests), blood pressure and glucose(portable monitors), and FAA(questionnaire). Descriptive statistics examined the FAA of CABs; independent sample t-test examined differences in FAA between participants with and without knee pain. General Linear Model examined the change in PA, SB, physical functions, blood pressure and glucose and difference in these outcomes between pain groups.

**Results:** Twenty-one participants (Pain(P):10 and Non-pain(NP):11) were primarily female (P:67 and NP:92%) with mean age of 76(P) and 73(NP) years (SD=7.2 and 8.2). All participants attended 3 sessions, responded in WhatsApp messenger, completed the post-test, highly rated the program (Feasibility:4.5(SD:0.55), Appropriateness: 4.5(SD:0.63) and Acceptability:4.5(SD:0.50)). There were significant improvement in physical functions(SPPB, five-time-chair-to-stand, handgrip), PA(number of steps), standing time and decrease in SB(total amount, bout duration) after intervention( $p < 0.05$ ); no differences in these outcomes between groups and no changes in blood pressure and glucose were found( $p > 0.05$ ).

**Conclusion:** Creative Active Break is novel, feasible, appropriate, and acceptable way to increase PA and decrease SB among older adults regardless knee pain. Preliminary evidence supports its effectiveness in improving physical function, physical activity and decreasing sedentary behaviours regardless knee pain. Future definitive RCT should confirm the results.

## Validation of the Fibion SENS Accelerometer for Measuring Physical Behaviour in Preschool-Aged Children

**Mr. Zhenying Wu<sup>1</sup>**, Dr. Wendy Y. Huang<sup>1,2</sup>, Dr. Bjorn T. Tam<sup>1,2</sup>, Dr. Fenghua Sun<sup>3</sup>

<sup>1</sup>Academy of Wellness and Human Development, Hong Kong Baptist University, , China, <sup>2</sup>Dr. Stephen Hui Research Centre for Physical Recreation and Wellness, Hong Kong Baptist University, , China,

<sup>3</sup>Department of Health and Physical Education, The Education University of Hong Kong, , China

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Thigh-worn devices are reported to have advantages over wrist-worn devices in distinguishing sedentary behaviours from other physical activities. However, participant compliance with thigh-worn devices tends to be low. A novel thigh-worn accelerometer shows potential in addressing the compliance issues. While this device has been validated for school-aged children and adolescents, it has yet to be validated for preschoolers. Given the distinct activity patterns of preschoolers, this study aimed to evaluate the performance of this thigh-worn device for measuring physical behaviour for preschoolers.

**Methods:** Thirty preschool-aged children (aged 3 to 4.2 years, 50% boys) were fitted with a Fibion SENS accelerometer (12.5 Hz; 7g) on their thigh during a 25-minute semi-structured session and a two-hour free-living session. Both sessions were video recorded within a kindergarten. The semi-structured session included sitting, standing, walking and moderate-to-vigorous physical activity (MVPA). Videos were annotated and cross-validated using VIA annotation software. Spearman's correlations ( $r$ ) were performed to examine the relationships between the direct observations and accelerometer data across all overlapping data points with a 5-second epoch. Sensitivity and specificity were assessed to evaluate the performance of Fibion SENS for assessing sitting, standing, walking and MVPA.

**Results:** A total of 28.4 hours activity data from sixteen children were analysed. A significant correlation was observed between the direct observations and the accelerometer across all overlapping data points ( $r = 0.575$ ,  $p < 0.01$ ). In the semi-structured setting, sensitivity for sitting and walking was 0.958 and 0.836, respectively, whereas sensitivity for standing and MVPA was relatively low (standing = 0.286; MVPA = 0.646). In the free-living setting, sensitivity dropped for all activities (stand = 0.129; walking = 0.596; MVPA = 0.277), while sitting maintained a relatively high value of 0.800. Notably, specificity demonstrated comparatively higher values for all activities compared to sensitivity (sitting = 0.717; walking = 0.797; standing = 0.973; MVPA = 0.976).

**Conclusion:** The study suggests that the Fibion SENS is valid for distinguishing sitting from other activities in preschool-aged children. However, further calibration is needed to enhance its capabilities in measuring standing, walking and MVPA for this age group.

## Junior parkrun pilot in Australia: A real world evaluation

**Dr. Erin Mathieu**<sup>1</sup>, Associate Professor Anne Grunseit<sup>2,3</sup>, Dr Bridget Foley<sup>3</sup>, Dr Lindsey Reece<sup>3</sup>

<sup>1</sup>Sydney School of Public Health, The University Of Sydney, Australia, <sup>2</sup>School of Public Health, University of Technology, Australia, <sup>3</sup>Sydney School of Public Health, Charles Perkins Centre, The University of Sydney, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Regular physical activity is important for children's health. Parkrun supports communities to deliver free, weekly, 5 km events in 22 countries around the world and is the largest physical activity model delivered at scale in the world. Junior parkrun aims to encourage children aged 4–14 years to be active out-doors through providing safe, cost-free and non-competitive weekly timed walk, run or jog over a 2-km distance. The aim of this study is to evaluate the junior parkrun pilot in Australia.

**Methods:** A process evaluation was conducted using routinely collected data of junior parkrun participants, as well as a self-completed questionnaire.

**Results:** A total of 1827 children had registered and participated in at least one junior parkrun over the course of the pilot period. Participants had, on average, attended 10% of the junior parkrun events including and subsequent to their first participation by the end of the study period. Majority of parents (61%) said that junior parkrun had increased their child's physical activity either a little or a lot, and most agreed or strongly agreed that junior parkrun was fun (90%), enjoyable (91%), energising (85%) and challenging (70%).

**Conclusion:** The junior parkrun pilot appears to show promise in Australia for enabling children to engage in physical activity, in their local communities in a fun and inclusive way. Parkrun junior can co-exist with other organised sports programs; however, it can also specifically target those not participating in any sports, given the high levels of enjoyment in a non-competitive, non-team environment.

## Conceptualizing Community Resilience in Three First Nations

**Mr. Cameron Hare<sup>1</sup>**, Mrs. Brittany McBeath<sup>1</sup>, Dr. Alex McComber<sup>2</sup>, Dr. Treena Delormier<sup>2</sup>, Dr. Brittany Wenniser<sup>1</sup>, Iostha Jock<sup>2</sup>, Dr. Dave Bergeron<sup>3</sup>, Mr. Colin Baillie<sup>1</sup>, Dr. Lucie Lévesque<sup>1</sup>  
<sup>1</sup>Queen's University, Kingston, Canada, <sup>2</sup>McGill University, Montreal, Canada, <sup>3</sup>Université du Québec à Rimouski, Rimouski, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** Community resilience plays a critical role in health and well-being, yet its conceptualization varies across Indigenous contexts. This study explores how three First Nations communities in Manitoba define and mobilize resilience by identifying key strengths and resources grounded in community-identified priorities. Findings will inform strategies to guide culturally relevant, community-driven approaches to health promotion and wellbeing.

**Methods:** A participatory concept mapping approach (Kane & Trochim, 2007) guided community-led exploration of resilience. Open invitations were extended to community members interested in well-being promotion. Talking circles were conducted in each community (C1=5, C2=9, C3=6 participants). Data were recorded and transcribed, and resilience statements were extracted. In a subsequent data collection phase, community members (C1=13, C2=15, C3=7) categorized statements based on thematic similarity and then rated them for importance and practicality.

**Findings:** Community members generated 254 resilience statements (C1=101, C2=81, C3=72) reflecting locally relevant strengths, resources, and strategies for well-being. These two phases highlighted distinct yet interrelated priorities across the three communities, with some shared themes emerging alongside unique, context-specific perspectives. For example, all communities emphasized the significance of cultural teachings and land-based activities in fostering resilience, but the ways in which these were enacted varied depending on historical experiences and local governance structures. Additionally, while some communities prioritized youth engagement as a pathway to strengthening resilience, others emphasized the role of Elders in knowledge transmission and community cohesion. Statements ranked as most practical to implement or promote in the community harnessed existing community resources, whereas those rated most important required broader collaboration across individuals and groups. Findings emphasized the revitalization of cultural values and practices as key leverage points to address challenges and nurture community wellbeing. The final phase of the concept mapping process, scheduled for completion in the coming months, will involve member checking and community validation of the emerging cluster maps. This final step will ensure that the conceptual framework accurately represents community perspectives and aligns with their lived realities.

**Conclusions:** This research advances understanding of how Indigenous communities conceptualize resilience and how this conceptualization can be leveraged to inform mobilization efforts for health and well-being.

## Association between Baseline Physical Activity and Changes in Older Adults' Activity Levels Over 10 Months

**Mx. Harunobu Usui<sup>1</sup>**, Assistant Professor Kosuke Hamada, Prof. Mayumi Kato

<sup>1</sup>Aichi Medical College For Rehabilitation, Kiyosu, Japan

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Increasing physical activity is essential for older adults to maintain their health. We have proposed a program wherein older adults can learn about health. However, according to our past research, older adults' physical activity tends to decrease regardless of having health education or not. We investigated the characteristics of physical activity in older adults. This study aimed to reveal the association between original physical activity and 10 months after physical activity in this population.

**Methods:** We analyzed 139 older adults who participated in our health education programs between 2017 and 2023. The program was held from May to February each year. These participants completed the International Physical Activity Questionnaire before and after the program. We calculated the difference between the physical activities executed in February and May as the amount of change. Next, we investigated the correlations between ages, amount of change, and May physical activity. Additionally, we calculated the May physical activity quartile and integrated the average amount of change differences in each May physical activity quartile range using the analysis of variance. Moderate-intensity physical activities were employed in all physical activity data.

**Results:** The correlation coefficient was  $-0.31$  between May physical activity and the amount of change,  $0.06$  between age and the amount of change, and  $0.14$  between ages and May physical activity. The first quintile, median, and third quintile of May physical activity were 1035, 1950, and 3010 metabolic equivalent of task (METs)  $\times$  min/week, respectively. Regarding the average amount of change, the first, second, third, and fourth quintiles were 974.6, 308.2,  $-211.2$ , and  $-988.0$  METs  $\times$  min/week, respectively. In addition, the results showed a significant effect ( $p < 0.05$ ).

**Conclusions:** The original physical activity may be related to the amount of change in physical activity after a few months. Age and physical activity did not seem to be related. If the original physical activity was insufficient, the number of months for evaluation after the initial physical activity should have been increased. Furthermore, ways on how to maintain physical activity in physically active older adults should be determined.

## Using research evidence to create healthy retail food environments through government policy, voluntary action by retailers and public accountability

**Prof. Adrian Cameron<sup>1</sup>**, Prof Gary Sacks<sup>1</sup>, Prof Anna Peeters<sup>1</sup>, Prof Simone Pettigrew<sup>2</sup>, A/Prof Megan Ferguson<sup>3</sup>, Prof Kathryn Backholer<sup>1</sup>, Prof Steven Allender<sup>1</sup>, A/Prof Serene Yoong<sup>1</sup>, A/Prof Jaithri Ananthapavan<sup>1</sup>, Dr Miranda Blake<sup>1</sup>, Ms Jasmine Chan<sup>1</sup>, Dr Carmen Vargas<sup>1</sup>, Dr Gunjeet Kaur<sup>1</sup>, Dr Simone Sherriff<sup>4</sup>, Dr Shaan Naughton<sup>1</sup>, Ms Sarah Dean<sup>1</sup>, Ms Julia Thompson<sup>1</sup>

<sup>1</sup>Deakin University, Burwood, Australia, <sup>2</sup>The George Institute, Sydney, Australia, <sup>3</sup>The University of Queensland, Brisbane, Australia, <sup>4</sup>The University of Sydney, Sydney, Australia

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** In obesity prevention research, voluntary action by the food industry has been criticised as ineffective, while both voluntary industry action and government policy responses have been slow. The Centre of Research Excellence in Food Retail Environments for Health: Next Generation (RE-FRESH: Next Generation) was established on the premise that both can be effective targeting different aspects of the retail food environment, and with public accountability. Here we describe our research program targeting all three simultaneously to create healthy retail food environments.

**Methods:** The three streams of work in RE-FRESH: Next Generation include: 1) Informing government policy (the policy laboratory) - we are building the research and economic evidence to support the design, adoption and implementation of government policy, including through a series of round table discussions with national, state and local government policy partners. 2) Supporting voluntary action - we work with retailers of different size and across multiple settings in Australia and internationally to support the design, implementation, scale up and sustainment of voluntary healthy food retail initiatives. 3) Accountability – using multiple mechanisms, including regular monitoring, benchmarking initiatives, recognition schemes and partnerships with investors and non-government organisations, we are incentivising food retailers and governments to adopt healthier policies and practices.

**Results/findings:** The partner engagement strategies, research design and preliminary study and impact outcomes from our research will be described, including: - The design of our first food policy laboratory roundtable with state and national governments - A collaboration with UNICEF to support voluntary action globally - Randomized controlled trials with local government partners to support healthy food retail initiatives - Advocating for public policy to support healthy stores by the Coalition for Healthy Remote Stores in the Northern Territory - Monitoring of policies and practices of governments (local, state and national) and retailers

**Conclusions:** Our three-pronged approach to creating healthy food retail settings is both nuanced and comprehensive, with impact observed at local, national and international levels. With retail being the primary interface between the community and the food system, it represents hope for a healthier future.

# Does the physical literacy cycle predict physical activity in adolescents?

**Dr. Jean Buckler<sup>1</sup>**, Mr Emmett Sihoe<sup>1</sup>, Dr Ryan Rhodes<sup>1</sup>, Dr Megan Ames<sup>1</sup>

<sup>1</sup>University of Victoria, Victoria, Canada

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Physical literacy is defined as the physical competence, confidence, motivation, knowledge, and understanding to engage in physical activity behaviours, built on past psychological and developmental theories. Physical literacy has gained traction as a lens through which to understand physical activity behaviours. However, current research focuses primarily on pre-adolescence (ages 5-12 years), despite evidence that adolescence is a time of significant physical activity drop out. The physical literacy cycle, where physical competence feeds into confidence, confidence feeds into motivation, and motivation feeds into participation in physical activity, has been proposed as a mechanism through which physical literacy predicts physical activity behaviour. However, there are no studies exploring the utility of this model among adolescents. Therefore, the purpose of this study was to examine the predictive capability of the physical literacy cycle on physical activity behaviours in adolescents.

**Methods:** The methodology for this project was co-developed alongside a youth community advisory board, who provided insights and advice on the data collection process. Adolescents aged 13-17 years living in the Greater Victoria, BC area were recruited to participate. Physical literacy constructs were assessed at baseline using existent measurement tools. Physical competence (overhand throw, supine to stand, squat), confidence (Multi Process Action Control [M-PAC] Framework, perceived capability), affective motivation (M-PAC) were assessed at baseline. Participants then wore a Fitbit for 14 days to assess physical activity (steps). Descriptive statistics and regression analyses were run in R Studio to determine the predictive value of the model.

**Results:** Fifty-eight adolescents participated in the study (mean age=14.9 years, 29% boys, 64% girls, 7% gender diverse individuals). Confidence data were highly skewed (-0.65). Regression models indicated significance for all identified relationships in the physical literacy cycle, where physical competence (mean percent scores: 69%) predicted confidence (mean: 13.7/15;  $p = 0.017$ ), confidence predicted motivation (mean=13.9/18;  $p = 0.005$ ), and motivation predicted mean steps/day over 14 days (mean=9419,  $p = 0.001$ ).

**Conclusions:** Preliminary evidence indicates that the physical literacy cycle has predictive value on the physical activity behaviours of adolescents. Continued research in this area is needed to test alternative methods of assessing the components of physical literacy to ensure greater specificity.

## School's out, Rules Out: Parent rule changes over summer. Findings from the What's UP (Undermining Prevention) with Summer Observational Cohort Study.

**Ms. Emily Eglitis<sup>1</sup>**, Dr Elizabeth Adams<sup>2</sup>, Dr Sarah Burkhart<sup>2</sup>, Dr Christopher Pfladderer<sup>3</sup>, Dr R. Glenn Weaver<sup>2</sup>, Dr Bridget Armstrong<sup>2</sup>, Dr Keith Brazendale<sup>4</sup>, Dr Xuanxuan Zhu<sup>2</sup>, Dr Alexander McLain<sup>2</sup>, Dr Gabrielle Turner-McGrievy<sup>2</sup>, Dr Russell Pate<sup>2</sup>, Dr Andrew Kaczynski<sup>2</sup>, Dr Amanda Fairchild<sup>2</sup>, Dr Brian E. Saelens<sup>6</sup>, Hannah Parker<sup>2</sup>, Dr Amy L. Yaroch<sup>7</sup>, Dr Carol Maher<sup>1</sup>, Dr Michael Beets<sup>2</sup>

<sup>1</sup>Alliance for Research in Exercise, Nutrition and Activity (ARENA), University of South Australia, Adelaide, Australia, <sup>2</sup>Arnold School of Public Health, University of South Australia, Columbia, United States, <sup>3</sup>UTHealth Houston, School of Public Health, Austin, United States, <sup>4</sup>Department of Health Sciences, University of Central Florida, Orlando, United States, <sup>5</sup>College of Arts and Sciences, University of South Carolina, Columbia, United States, <sup>6</sup>Seattle Children's Research Institute, Seattle, United States, <sup>7</sup>Center for Nutrition & Health Impact, Omaha, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Background:** Parent rules/routines are potentially modifiable drivers of children meeting health behavior guidelines (e.g., sleep, screen-use). During the academic year, children are exposed to a highly structured school environment. During summer, less external structure is present. The level of structure during school versus summer may influence the family/home environment, particularly how parents enforce rules at home. Existing research on family rules/routines focuses on the school year, assuming consistency year-round but if parents relax their rules/routines in summer, this could lead to less healthy behaviors observed in summer.

**Methods:** This study used data from the What's UP (Undermining Prevention) with Summer study (NIH R01DK116665) designed to understand effects of summer on unhealthy weight gain among elementary-aged children in the United States. This longitudinal observational cohort followed elementary-aged children across three years (2021, 2022, and 2023). Children were recruited from 17 elementary schools in a mid-sized metropolitan area in the southeastern United States. Parents of 1,203 children (age range 5–14 years, 48% girls) completed surveys during school (April) and summer (July) each year for a total of 6 timepoints. Surveys items assessed parental rules related to dietary behaviors (6 questions), limits placed on screen-use (weekdays and weekends, 3 questions each) and sleep rules (weekdays and weekends, 3 questions each). Mixed-effects models examined changes in parenting rules from school year to summer controlling for SES (income-poverty ratio, parent education), child age and sex.

**Results:** Compared to the school year, parent rules in summer decreased for weekday screen-use ( $B = -0.31$ , 95% CI  $-0.34, -0.28$ ), weekend screen-use ( $B = -0.09$ , 95% CI  $-0.13, -0.06$ ), weekday sleep ( $B = -0.81$ , 95% CI  $-0.84, -0.78$ ) and weekend sleep ( $B = -0.21$ , 95% CI  $-0.24, -0.17$ ). There was no significant change in diet-related rule behaviors ( $B = -0.01$ , 95% CI  $-0.02, 0.00$ ). Parents enforced fewer rules for weekend screen-use and sleep.

**Conclusions:** Parents enforce fewer sleep and screen rules as children get older. The gap in summertime versus school-time sleep rules widen as children get older. This suggests attending

structured settings external to the home, like school, help parents maintain rules/routines within the home that manage important health behaviors in children.



# Barriers and facilitators to structured, out-of-school physical activity participation among rural youth in the United States: A systematic review

**Dr. Ashleigh Johnson<sup>1</sup>**, Dr. Tyler Prochnow<sup>2</sup>, Dr. Cassandra Beattie<sup>3</sup>, Dr. Lora Peterson<sup>4</sup>, Dr. Carissa R Smock<sup>4</sup>, Dr. Zachary Townsend<sup>5</sup>, Dr. M. Renée Umstattd Meyer<sup>3</sup>, Dr. Christopher Pfledderer<sup>6</sup>

<sup>1</sup>San Diego State University, San Diego, United States, <sup>2</sup>Texas A&M University, College Station, United States, <sup>3</sup>Baylor University, San Diego, United States, <sup>4</sup>National University, San Diego, United States, <sup>5</sup>Salisbury University, Salisbury, United States, <sup>6</sup>University of Texas Health Science Center, Austin, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Most American youth fail to meet physical activity guidelines. Further, there is evidence showing lower physical activity levels among rural versus urban youth due, in part, to fewer opportunities and resources for physical activity in rural areas. Out-of-school physical activity programs have the potential to reduce geographic disparities in activity levels, yet often require financial resources, transportation, and parental support. However, little is known about the participation factors among rural youth for organized physical activity opportunities outside of school time. This systematic review aimed to identify barriers and facilitators to participation in structured, out-of-school physical activity for United States youth living in rural areas.

**Methods:** A systematic search of six databases (Medline, PubMed, SPORTDISC, Web of Science, APA Psycinfo, CINHA) was conducted in November 2024 for articles published between 2000-2024. Inclusion criteria comprise peer-reviewed, English-language articles 1) conducted among rural populations within the United States and 2) examine barriers and/or facilitators to out-of-school, structured physical activity participation among youth ages 6-17. Structured activities were defined as those that are planned and directed by adults (e.g., organized sports, after school programs). Articles were excluded if they included participants with additional needs. Eight reviewers screened titles and abstracts using Covidence, with two reviewers discussing conflicts until 100% agreement was reached.

**Results:** The systematic literature search yielded 2245 results following the removal of duplicates. After excluding 2046 articles based on title and abstract screening, 186 full-text studies were assessed for eligibility, resulting in 48 articles. The full text review is currently underway, which will be followed by a narrative synthesis of eligible studies.

**Conclusions:** This systematic review aims to address critical gaps in understanding the factors influencing rural youth participation in structured, out-of-school time physical activity programs. Findings will provide evidence-based insights that can inform policy and program design among this population. Understanding key barriers and facilitators is essential for designing equitable and effective programs that address geographic disparities in access to youth physical activity opportunities.

## Public bike share an important resource to address social determinants among college students

Dr. Amanda Grimes<sup>1</sup>, Dr. Michael Frisch, Dr. Joey Lightner

<sup>1</sup>University of Missouri-Kansas City, Kansas City, United States

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Bike share programs on college campuses can improve students' social determinants of health by increasing physical activity and transportation access. However, limited research has examined college students' experience using a pre- post- study design and trip-level data from free-floating e-bikes in a public bike share system. This study explores adoption rates, predictors of use, and usage trends of a free public bike share system at an urban university.

**Methods:** Students at a midwestern urban university in the US were invited to complete a transportation and health survey. Participants could choose either a \$10 gift card (control group (CG)) or a one-year bike share membership (\$150 value, bike share group (BSG)), which provided 80 minutes of daily ride time. Descriptive statistics analyzed trip data and demographics, while linear regression examined predictors of BSG participation. Paired sample t-tests compared pre- and post-intervention biking frequency. GPS data mapped trip destinations.

**Results:** Access to a car ( $B = .208, p < .001$ ) and confidence in cycling ( $B = -.272, p < .01$ ) significantly predicted opting into BSG; no other demographic factors were significant. Over 12 months, 6,438 trips were taken, with 36.7% of BSG participants completing at least one trip. Individual's trips ranged from 2 to 503 during the study period, with a mean of 102 trips per student. The average trip duration was 11 minutes (range: 1 min – 1 hr 42 min). BSG participants biked significantly more post-intervention ( $t = -2.206, p < .05$ ). Most trips started and ended within 2.5 miles of campus, with common destinations including campus, residential areas, shopping centers, and grocery stores. Health indicators, bike share perceptions, and barriers were also assessed.

**Conclusion:** Bike share proved valuable for a subset of students, with some averaging more than one trip per day. Given the adoption rate, future interventions should include educational initiatives and targeted messaging to promote use. Addressing barriers to bike share could maximize its potential. Offering free access to bike share may be a cost-effective strategy for improving student transportation and health.

## Environmental self-identity, pro-environmental behaviour and active travel among adults and children

**Prof. Anna Timperio**<sup>1</sup>, Prof Jenny Veitch<sup>1</sup>, Dr Venurs Loh<sup>2</sup>, Dr Lauren Arundell<sup>1</sup>, Ms Melinda Herfet<sup>1,3</sup>, Dr Shannon Sahlqvist<sup>1</sup>

<sup>1</sup>Deakin University, Geelong, Australia, <sup>2</sup>Victoria University, Footscray, Australia, <sup>3</sup>University of Bayreuth, Bayreuth, Germany

**Coffee Break and Poster Session: P1. Ageing | Children and families | Policies and environments | Young Adults | Indigenizing Wellbeing Research Early care and education, June 12, 2025, 11:00 AM - 12:00 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study aimed to examine associations between environmental self-identity and pro-environmental behaviour related to travel choices among caregivers, and associations with frequency of their own and their child's usual travel behaviours. Active travel has important co-benefits for health and the environment, however rates of active travel are low in Australia. Environmental self-identity (seeing oneself as the kind of person who acts in environmentally friendly ways) and pro-environmental behaviour via switching travel modes could be important influences on sustainable travel.

**Methods:** Cross-sectional study of 228 caregivers of primary school children. Caregivers completed three items on environmental self-identity and pro-environmental behaviour, respectively, and reported their own travel behaviour using the International Physical Activity Questionnaire, and their child's usual school travel behaviour. Logistic regression predicted associations between caregiver environmental self-identity and pro-environmental behaviours, and between these variables and motorised travel (everyday), and walking ( $\geq 5$  days/week) and cycling ( $\geq 1$  day/week) for travel among caregivers (adjusted for age, gender, area-level SES), and school travel via private vehicle (all trips), walking ( $\geq 5$  trips/week) and bike ( $\geq 1$  trip/week) among children (adjusted for child age and gender, area-level SES, distance to school).

**Results:** Mean caregiver environmental self-identity score was 4.5 (SD 1.3). Environmental self-identity was associated with higher odds of choosing to walk or cycle instead of using a car when they can (OR=1.8, 95%CI=1.4-2.2) and switching to walking or cycling instead of driving for short, regular journeys (OR=1.4, 95%CI=1.1-1.8) over the past 12 months. It was also associated with lower odds of travel by motorised travel every day among caregivers (OR=0.8, 95%CI=0.6-1.0,  $p=0.055$ ) and children (OR=0.8, 95%CI=0.6-1.0,  $p=0.098$ ), and higher odds of regular walking for transport among caregivers (OR=1.3, 95%CI=1.0-1.8,  $p=0.057$ ) and any cycling to/from school among children (OR=1.4, 95%CI=0.9-2.1,  $p=0.095$ ). Count of pro-environmental behaviours was also associated with lower odds of motorised travel (caregivers: OR=0.6, 95%CI=0.5-0.8; children: OR=0.6, 95%CI=0.4-0.8) and higher odds of walking (OR=1.9, 95%CI=1.3-2.7; children: OR=1.4, 95%CI=0.9-2.0,  $p=0.097$ ) and biking (caregivers: OR=1.7, 95%CI=1.2-2.3; children: OR=2.3, 95%CI=1.4-3.8).

**Conclusions:** Appealing to environmental concerns may be a promising way to promote active travel and help accumulate physical activity.

## Identifying determinants influencing the sustainability of health programs in Australian primary schools

**Mr. Edd Riley-gibson**<sup>1,2,3,4</sup>, Dr Adam Shoesmith<sup>1,2,3,4</sup>, Dr Cassandra Lane<sup>1,2,3,4</sup>, Mr William Pascoe<sup>1,2,3,4</sup>, Dr Alix Hall<sup>1,2,3,4</sup>, Prof. Nicole Nathan<sup>1,2,3,4</sup>, Prof Rachel Shelton<sup>5</sup>, Mr Christophe Lecathelinais<sup>1,2,3,4</sup>, Dr Rebecca Hodder<sup>1,2,3,4</sup>, Prof Luke Wolfenden<sup>1,2,3,4</sup>, Ms Carly Gardner<sup>1,2,3,4</sup>, Dr Kate O'Brien<sup>1,2,3,4</sup>, Dr Emma Pollock<sup>1,2,3,4</sup>, Dr Rachel Sutherland<sup>1,2,3,4</sup>

<sup>1</sup>University of Newcastle, Newcastle, Australia, <sup>2</sup>National Centre of Implementation Science, Newcastle, Australia, <sup>3</sup>Hunter Medical Research Institute, Newcastle, Australia, <sup>4</sup>Hunter New England Population Health, Newcastle, Australia, <sup>5</sup>Columbia University, New York, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** This Australian implementation study aims to uncover the factors that influence the sustainability of school-based physical activity and nutrition programs. The presentation will discuss findings of a distributed survey based on the Integrated Sustainability Framework. The goal is to support the longevity of school-based health programs to garner the most from their respective benefits.

**Methods:** A cross-sectional study was undertaken with 201 Australian primary schools currently implementing physical activity and nutrition programs. Factors perceived to be influential to program sustainment were assessed using a 28-item measure of sustainability determinants developed by the research team. This reflected five domains of the Integrated Sustainability Framework. A 5-point Likert scale was used, and domain scores were calculated for each school by averaging item responses. Determinants were ranked according to their perceived influence on program sustainment. Linear mixed regressions were conducted to evaluate associations between measure domains and length of program delivery, and ordinal analysis was conducted to compare program type to categories of sustainment.

**Results:** Preliminary findings indicate an average program sustainability of 7.4 years, with differences observed between physical activity and nutrition programs. Top determinants influencing program sustainment varied between physical activity and nutrition programs, highlighting contextual specificity.

**Conclusions:** The study provides critical insights into sustaining school-based health programs, emphasising the need for tailored strategies to address program-specific challenges. Understanding distinct determinants enables targeted strategies to support program sustainment and maximise health outcomes. The study underscores the importance of considering context-specific determinants in sustaining health program delivery, offering valuable lessons for policymakers and practitioners involved in school-based health initiatives. Addressing identified determinants can enhance the effectiveness and longevity of school-based physical activity and nutrition programs, contributing to improved population health outcomes. Future efforts should prioritise developing sustainability strategies tailored to the unique challenges faced by physical activity and nutrition programs in school settings, with emphasis on outer contextual factors such as leadership support and funding availability.

## Mapping Physical Activity Engagement: A Cross-Sectional Study in a Multicultural Metropolis

**Mrs. Syeda Bushra Ali Rizvi<sup>1</sup>**, Dr. Anne Elliott<sup>1</sup>, Dr. Rhonda Cohen<sup>1</sup>, Prof Tim Evans<sup>1</sup>, Dr. Huw Jones<sup>1</sup>

<sup>1</sup>Middlesex university London, Hendon, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, Stalls and Balcony Foyer, June 13, 2025, 10:30 AM - 11:30 AM**

### **SIG - Primary Choice: B. Motivation and behavior change**

**Background:** Physical inactivity and its associated health challenges, including metabolic syndrome and non-communicable diseases, are global concerns. Dubai, a rapidly developing emirate in the UAE, faces these worldwide issues within its unique, multicultural context. Understanding perceptions of physical activity (PA) across Dubai's diverse population is crucial for addressing these health challenges effectively.

**Purpose:** This study aimed to expand on previous qualitative findings by examining perceptions of PA, lifestyle factors, and cultural influences across various ethnic groups in Dubai, reflecting the emirate's role in tackling a global health issue.

**Methods:** A comprehensive survey was conducted with 410 participants representing Dubai's diverse ethnic backgrounds. The survey explored aspects of PA, health perceptions, and cultural impacts using validated questionnaires. Preliminary data analysis included descriptive statistics and content analysis. Further statistical analysis is ongoing to provide more in-depth insights.

**Results:** The study revealed patterns of sedentary behavior that mirror global trends, with variations among different ethnic groups. Awareness of the relationship between non-communicable diseases and PA differed across the population. Cultural factors, including collectivism and power distance, influenced PA engagement for some participants. Barriers to exercise included personal circumstances, health concerns, environmental factors, and work-life balance challenges - issues common worldwide but manifesting uniquely in Dubai's context. Facilitators of exercise encompassed support and motivation, accessibility of resources, time management strategies, and health awareness.

**Conclusions:** The findings highlight how Dubai's multicultural population experiences and responds to global physical inactivity challenges, emphasizing the importance of culturally informed approaches to health promotion. **Practical implications:** These insights can inform the development of strategies to promote PA in Dubai that are both globally relevant and locally tailored. Such approaches could serve as a model for other multicultural urban centres worldwide facing similar challenges. **Funding:** This study was self-funded by the researcher.

## Perceptions of Physical Activity in Combating Metabolic Syndrome in a Multi-ethnic Population

**Mrs. Syeda Bushra Ali Rizvi<sup>1</sup>**

*<sup>1</sup>Middlesex university London, Hendon, United Kingdom*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, Stalls and Balcony Foyer, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Background:** The observed prevalence of Metabolic Syndrome (MetS) in 3212 young adults (aged 18-40 years) in the UAE was 37.4%, which is much higher than the global estimates for the same age group. MetS is the primary cause of the development of non-communicable diseases (NCDs) posing a substantial health challenge contributing significantly to premature mortality.

**Purpose:** The study aimed to explore and evaluate stakeholders' perceptions of physical activity (PA) to reduce the occurrence of MetS and investigate strategies to enhance engagement and adherence to PA within Dubai's multiethnic framework. **Methods:** Data was collected through semi-structured interviews with 20 stakeholders concerned with MetS (10 men, 10 women; age range: 32-58 years). The sample included senior policy officials, gym owners, personal trainers, gym members, and inactive individuals.

**Results:** The findings of the research were investigated using three separate analyses. The horizontal stakeholder analysis revealed two main themes: existing interventions to increase PA and Lack of MetS awareness, and vertical analysis revealed four 'barriers': cost, socio-cultural calendar prioritisation, life-work balance, and prolonged sedentary behaviour counteracting PA advantages. The content analysis through Hofstede's framework revealed the cultural influence on participants' participation in PA. "The Implications of Living as an Expat" and "The Impact of Dependence" emerged as recurring themes.

**Conclusions:** Analysis shows the lack of awareness surrounding MetS has resulted in it not being given the level of attention it deserves by the general population. The dynamic relationship between cultural and social norms has a significant impact on an individual's attitudes, beliefs, and actions towards PA. **Practical implications:** The findings suggest evaluating the public's understanding of PA-MetS correlation, deleterious effects of prolonged sitting and social interdependency could be researched further to help put in place strategies and implementations to address the problem. **Funding:** The author declares that this research was supported by personal funds.

## When We Sit: Textile Electromyographic Evidence on Muscle Activity During Prolonged Sitting and Effects of Active Interruptions to Sitting Time

**Dr. Christian Brakenridge<sup>1,2,3</sup>**, Ms. Suvi Lamberg<sup>3</sup>, Dr. Timo Rantalainen<sup>4</sup>, Prof. Taija Juutinen<sup>4</sup>, Prof. Ying Gao<sup>5</sup>, Dr. Paddy Dempsey<sup>2,6</sup>, Dr. Michael Wheeler<sup>2,6</sup>, Dr David Dunstan<sup>2,6</sup>, Prof. Genevieve Healy<sup>7</sup>, Prof. Neville Owen<sup>1,2</sup>, Prof. Sebastien Chastin<sup>8,9</sup>, Dr. Arto Pesola<sup>3</sup>

<sup>1</sup>Centre for Urban Transitions, Swinburne University of Technology, Melbourne, Australia, <sup>2</sup>Baker Heart and Diabetes Institute, Melbourne, Australia, <sup>3</sup>Active Life Lab, South-Eastern Finland University of Applied Sciences, Mikkeli, Finland, <sup>4</sup>Faculty of Sport and Health Sciences, University of Jyväskylä, Jyväskylä, Finland, <sup>5</sup>Department of Sports Science, College of Education, Zhejiang University, Hangzhou, China, <sup>6</sup>Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences Deakin University, Melbourne, Australia, <sup>7</sup>School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Australia, <sup>8</sup>School of Health and Life Sciences, Glasgow Caledonian University, Glasgow, United Kingdom, <sup>9</sup>Department of Movement and Sport Science, Ghent University, Ghent, Belgium

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**Purpose:** Prolonged sitting is pervasive and increases risk of type 2 diabetes, heart disease and some cancers. Skeletal muscle inactivity is central to the proposed mechanistic pathways to risk, but has not been investigated. Using fabric-embedded wearable electrodes (electromyography; EMG) we examined the activity of thigh muscles when we sit.

**Methods:** Activity of the thigh muscles was measured with surface EMG shorts (Myontec Oy), using data from three separate studies: EMG24 (30 women, 25 men, mean age [SD]: 43.1 [16.8], mean BMI: 23.3 [3.1]), BREAK (14 women, age: 20.8 [1.3], BMI: 28.7 [3.0]), and OPTIMUS (10 women, 5 men, age: 63.1 [8.1], BMI: 32.2 [4.7]). Muscle activity was defined by periods when mean EMG amplitude was above signal baseline (3  $\mu$ V) during synchronised accelerometer-estimated sitting bouts. First, sitting EMG activity levels were calculated by mean epoch to depict an aggregate timeline of all sitting bouts. Second, overall participant-level and sitting bout-level summary variables were created for sitting bout durations, preceding activity bout durations, and previous activity bout intensities. These were examined with EMG during sitting time accounting for intra-individual effects using mixed models with random intercepts.

**Results:** EMG activity during 7,684 sitting bouts was obtained for the 84 participants in the three studies. Muscle activity declined the longer the duration of a sitting bout. Those with longer usual sitting bout durations ( $\geq 25$  min) had the lowest sitting EMG levels compared with those with shorter bout durations. For the EMG24 and BREAK studies (but not for the OPTIMUS study of older participants with type 2 diabetes), compared to shorter preceding activity durations, longer durations of activity preceding a sitting bout were associated with higher sitting EMG levels. More intense preceding activities also predicted higher sitting EMG levels than did lower intensity preceding activities.

**Conclusions:** When we sit, there is decreasingly-detectable thigh muscle activity. More frequent and intense interruptions can result in 5 more muscle activity minutes per hour of sitting. These findings provide new insights into the adverse metabolic health effects of prolonged sitting and potential ways to counteract them, which may be more challenging in those with type 2 diabetes.

## Barriers and Enablers to a Healthy Lifestyle in People with Infertility: A Mixed-Methods Systematic Review

Ms. Sophia Torkel<sup>1</sup>, Dr. Rui Wang<sup>1</sup>, Prof. Robert Norman<sup>2</sup>, Ms. Lijun Zhao<sup>2</sup>, Ms. Kai Liu<sup>2</sup>, Ms. Dana Boden<sup>1</sup>, Ms. Wentong Xu<sup>1</sup>, Prof. Lisa Moran<sup>1</sup>, **Dr. Stephanie Cowan<sup>1</sup>**

<sup>1</sup>Monash University, Clayton, Australia, <sup>2</sup>The University of Adelaide, Adelaide, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**Purpose:** While there is a recognised role of optimising lifestyle (diet and physical activity) behaviours in the management of infertility, best practice remains unknown and factors influencing the lifestyle of people with infertility are not well understood. This systematic review evaluated barriers and enablers to a healthy lifestyle in people with infertility, from the perspectives of people with infertility and health professionals, in order to inform optimal behavioural change strategies.

**Methods:** Ovid MEDLINE(R), PsycINFO, EMBASE, EBM Reviews, and CINAHL were searched from inception to 28th August 2023. Eligible studies were qualitative and quantitative primary studies that explored barriers and/or enablers to lifestyle for infertility management. Quality assessment was performed using the Centre for Evidence-Based Management Critical Appraisal of a Survey Tool and the Critical Appraisal Skills Programme Qualitative Checklist. Data were analysed by thematic analysis with themes mapped to the Capability, Opportunity, Motivation and Behaviour (COM-B) model and Theoretical Domains Framework (TDF).

**Results:** After screening 12,326 abstracts and 99 full texts, 27 studies were included (12 quantitative, 6 qualitative and 9 mixed-methods) with 22 studies on women with infertility (n = 2,524), 11 on men with infertility (n = 1,407) and 6 on health professionals (n = 372). We identified barriers and enablers relating to capability (e.g. strategies for behaviour change), opportunity (e.g. limited time, resources and money) and motivation (e.g. interplay between lifestyle and emotional state). Based on the identified themes, suggested intervention components to integrate into lifestyle management of infertility include facilitating development of self-management skills to support lifestyle change (e.g. self-monitoring, action planning and goal setting) and incorporating mental health strategies (e.g. providing information about the benefits of healthy lifestyle behaviours for mental health and encouraging patients to reframe healthy lifestyle behaviours as self-care strategies).

**Conclusions:** Findings have identified important factors that influence lifestyle management in people with infertility and have suggested relevant intervention components to consider when designing interventions. Given the paucity of qualitative studies identified, more research is needed to further understand the complex and interacting factors that shape lifestyle during the fertility journey.

# Examining the Efficacy of Exergaming Dance and Aerobic Dance on Young Adults' Enjoyment, Situational Motivation, and Physical Activity Levels

**Prof. Zan Gao<sup>1</sup>**, Dr. Kai Tan<sup>2</sup>, Dr. Suryeon Ryu<sup>1</sup>, Dr. Kun Tao<sup>2</sup>

<sup>1</sup>The University of Tennessee, Knoxville, USA, <sup>2</sup>Huaihua University, Huaihua, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**Purpose:** Exergaming has emerged as a novel and engaging approach to enhance young adults' enjoyment and motivation during physical activity. However, limited research has compared its effectiveness to traditional exercise modalities with identical content. This study aimed to explore differences in young adults' self-efficacy, enjoyment, situational motivation, and physical activity between two content-identical exercise formats: exergaming aerobic dance and traditional aerobic dance.

**Methods:** A total of 40 young adults (20 females; Mage = 20.38) from a Chinese university participated in two separate 12-minute dance sessions: 1) a non-stop exergaming aerobic dance using the Xbox 360 Kinect Just Dance - Just Sweat Around the World, and 2) a traditional aerobic dance led by an experienced instructor. Self-efficacy, enjoyment, and situational motivation (including intrinsic motivation, integrated regulation, external regulation, and amotivation) were assessed using validated questionnaires after each session. Physical activity levels were measured using a research-grade pedometer to track steps. A MANOVA with repeated measures was conducted to compare the outcomes between the two dance modalities, with a significance level set at 0.05.

**Results:** Significant differences were observed between the two dance sessions for the overall model, Wilks' Lambda = 0.44,  $F(7,33) = 6.07$ ,  $p < 0.01$ ,  $\eta^2 = 0.56$ . Specifically, participants reported significantly higher enjoyment during the exergaming dance session ( $M = 3.54$ ,  $SD = 0.56$ ) compared to the traditional aerobic dance ( $M = 3.31$ ,  $SD = 0.60$ ),  $F(1,39) = 3.59$ ,  $p = 0.05$ ,  $\eta^2 = 0.08$ . In terms of situational motivation, intrinsic motivation was significantly higher for exergaming dance ( $M = 6.11$ ,  $SD = 0.98$ ) than for traditional format ( $M = 5.62$ ,  $SD = 1.32$ ),  $F(1,39) = 3.82$ ,  $p < 0.05$ ,  $\eta^2 = 0.09$ . Conversely, participants achieved significantly more steps per minute in the traditional aerobic dance ( $M = 136.39$ ,  $SD = 9.84$ ) compared to the exergaming session ( $M = 118.20$ ,  $SD = 17.39$ ),  $F(1,39) = 39.79$ ,  $p < 0.01$ ,  $\eta^2 = 0.51$ . No other significant differences were found for the remaining outcomes.

**Conclusion:** The findings indicate that exergaming dance may enhance perceived enjoyment and intrinsic motivation, though it results in fewer steps per minute compared to traditional aerobic dance. These results hold practical relevance for promoting long-term physical activity through game-like exercises, as higher enjoyment and motivation play a crucial role in maintaining physical activity. However, further research is necessary to explore strategies for increasing physical activity levels during exergaming sessions to maximize its health benefits.

## A Qualitative Study Exploring Fathers' Preferences for Digital Resources on Child Feeding to Prevent Early Childhood Obesity in Home Visiting Programs

**Ms. Jamie Zeldman<sup>1</sup>**, Dr. Karla P. Shelnutt<sup>1</sup>, Dr. Danielle E. Jake-Schoffman<sup>1</sup>, Dr. Deepthi S. Varma<sup>1</sup>, Dr. Amy R. Mobley<sup>1</sup>

<sup>1</sup>University of Florida, Gainesville, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**Purpose:** The objective of the study was to determine preferences of fathers for content, features, learning approaches and usefulness of digital resources for child feeding specifically targeted for fathers to enhance a developing obesity prevention curriculum for home visiting programs.

**Methods:** An exploratory qualitative research design with a phenomenological approach was used. Fathers (n=13) participated in a one-time, 60-minute interview via Zoom with a trained researcher using a semi-structured script based on constructs from the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). Interviews were audio-recorded, deidentified, transcribed verbatim and coded by two trained researchers using an inductive thematic analysis approach based on TAM and TPB constructs.

**Results:** Fathers had mostly positive attitudes about developing resources tailored to them in the context of home visiting programs and shared several preferred module topics and features to consider. Specifically, fathers noted feeding and nutrition guidelines by age (e.g., how often, how much, what to feed), introducing solid foods (e.g., foods to avoid), and the important role of fathers in feeding. Fathers also suggested incorporating visual aids, short videos, interactive components or games, and opportunities to network with other fathers as possible features that may enhance their intention to engage with resources. Notably, fathers identified several key barriers, such as a lack of awareness and accessibility, lack of time, resistance to change and the perception that resources are unnecessary, which could affect their perceived behavioral control in using child feeding resources. To help address these barriers and increase father engagement, fathers indicated that the resources should be easily accessible, free, and intentionally tailored to incorporate father-specific components, such as representation of fathers in the imagery and videos, a father-only discussion board, and specific language highlighting that the resources are made for fathers.

**Conclusions:** Fathers had positive attitudes about having tailored digital modules related to child feeding to effectively meet their needs and preferences and shared key considerations for increasing their engagement. Future research is needed to determine the acceptability and usability of the digital modules for fathers of young children.

## Creating an implementation plan for RuFIT-NZ: Process and challenges

**Dr. Elaine Hargreaves<sup>1</sup>**, Ms. Maria Pearson<sup>1</sup>, Dr. Amanda Calder<sup>2</sup>, Nick Draper<sup>3</sup>, Prof. Ralph Maddison<sup>4</sup>

<sup>1</sup>University of Otago, Dunedin, New Zealand, <sup>2</sup>University of Auckland, Auckland, New Zealand,

<sup>3</sup>University of Canterbury, Christchurch, New Zealand, <sup>4</sup>Deakin University, Melbourne, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**Purpose:** Results of the RuFIT-NZ trial showed the programme successfully improved men's health. To enable more men to benefit from RuFIT-NZ, and capitalise on research investment, the programme should be implemented in public health promotion. An implementation strategy, created with stakeholder input, is required to ensure the implementation context is appropriate and any necessary adaptations are made to enable the successful transition from research trial to practice. Using the Consolidated Framework for Implementation Research (CFIR), the objective of this study was to identify the most appropriate implementation context, and funding source for RuFIT-NZ to be scaled as a health promotion initiative in New Zealand (NZ).

**Methods:** Focus groups were held with personnel from stakeholder groups identified as having potential influence over RuFIT-NZ implementation: Sport NZ, Rugby NZ, Super Rugby Franchises, Regional Sport Trusts (RST), Provincial Rugby Unions, Ministry of Health, Health NZ, and past participants. We asked their views on whether RuFIT-NZ was worth being implemented at scale, and if so, the organisations best placed to deliver the programme, the barriers and facilitators to each organisation's involvement with implementation, and opinions on funding sources. Transcripts were analysed deductively using the CFIR codebook.

**Results:** All stakeholders agreed that RuFIT-NZ was well-designed, provided substantial benefits to men, and would bring added value to organisations (CFIR Innovation Domain). They believed it would have greater community reach and organisational benefit if based regionally, in partnership with RSTs or local rugby clubs where relationships exist, and RuFIT-NZ's purpose aligned with their strategic imperatives. Capacity issues (staff, facilities, finances) were the main barriers to implementation, meaning external funding would be required to deliver and manage the programme. No organisation believed it was their responsibility to fund (CFIR Outer & Inner Domain).

**Conclusions:** RuFIT-NZ was deemed valuable, with a Type I scale-out (same population, different delivery system) appropriate through a regional organisation-local community partnership. The main challenges to its effective scale-out are the lack of a funding source, and its focus on improving men's health which isn't prioritised in many organisation's strategic goals. Future research will evaluate implementation outcomes of RuFIT-NZ using this delivery context.

## Zero-fare public transportation: A systematic review of outcomes

**Dr. Joseph Lightner**<sup>1</sup>, Ms. Nancy Ziegler<sup>2</sup>, Dr. Tyler Prochnow<sup>3</sup>, Ms. Samantha Ford<sup>1</sup>, Dr. Jordan Carlson<sup>4</sup>, Ms. Mallory Moon<sup>4</sup>, Dr. Jannette Berkley-Patton<sup>1</sup>, Dr. Steven Chesnut<sup>1</sup>, **Dr. Amanda Grimes**<sup>1</sup>

<sup>1</sup>University of Missouri-Kansas City, Kansas City, USA, <sup>2</sup>University of Kansas Medical Center, Kansas City, USA, <sup>3</sup>Texas A&M University, College Station, USA, <sup>4</sup>Children's Mercy Hospital, Kansas City, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**Purpose:** Access to quality, affordable public transportation has been shown to increase physical activity and improve overall health outcomes. The user cost (fares) of public transportation may impact people's behavior and the outcomes they experience. Many cities are currently experimenting with eliminating fares (zero-fare or fare-free). The purpose of this study was to conduct a systematic review of research on the health-related outcomes associated with fare-free interventions.

**Methods:** A systematic literature search of original, peer-reviewed research studies was conducted. To be included, studies must have been published before August 1, 2023, be original research, and describe an intervention or program that provided free public transportation.

**Results:** Our searches identified 416 peer-reviewed articles. After reviewing the abstract and full text, 45 articles were included in this study. Studies were grouped into four categories based on the outcomes of the free-fare policy: city-wide populations, older adults, youth/students/universities, and other special populations. Across studies, outcomes of fare-free public transit interventions include increased access and use of public transportation, increased physical activity and active lifestyles (especially for older adults), increased social connections, and improved equity of transportation access.

**Conclusions:** Evidence is sufficient to suggest that reducing the cost of public transportation for users can lead to increased use of public transportation, increased physical activity, and improved social connectedness. These improvements seem to be higher for racial and ethnic minorities, older adults, and other vulnerable populations. Future studies should assess the long-term impacts of fare-free public transportation on chronic disease and other health outcomes.

## The Benefits and Concerns of Riding the Bus and the Impact of a Zero-Fare Bus Policy

**Dr. Jannette Berkley-Patton<sup>1</sup>**, Ms. Mariah Pratt<sup>1</sup>, Ms. Samantha Ford<sup>1</sup>, Dr. Joseph Lightner<sup>1</sup>, Dr. Jordan Carlson<sup>2</sup>, Dr. Amanda Grimes<sup>1</sup>

<sup>1</sup>University of Missouri-Kansas City, Kansas City, USA, <sup>2</sup>Children's Mercy Hospital, Kansas City, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**Purpose.** Policies intended to increase public bus ridership have potential to improve residents' access to essential places (e.g., jobs, grocery stores, schools, medical appointments) and lifestyles (e.g., physical activity, social connectedness). However, few studies in the U.S. have explored bus rider and non-bus rider bus use experiences/perspectives, particularly when zero-fare bus policies have been established.

**Methods:** Focus groups were conducted with bus riders and non-bus riders to explore their bus riding experiences/perspectives, and impacts of Kansas City, MO's (KCMO) zero-fare bus policy (instated during the COVID-19 pandemic) on their daily lives. Participants were recruited from community-based organizations that serve residents in low-resource KCMO communities. Focus group transcripts were analyzed by two coders who achieved 84% intercoder agreement.

**Results:** Participants (N=34) were primarily: female (62%), aged >40 years (59%), White (50%) and African American (32%), and bus riders (53%). Bus riders' primary bus destinations included medical appointments, shopping/errands, recreation, and work. Their bus riding concerns included: wait times, delayed/cancelled buses, illegal behavior on buses, lack of bus driver respect, and unsafe bus stops for walking/waiting (no/poor shading, curbing, sidewalks, and pedestrian lanes). Most stated they would incur a significant monetary burden if zero-fares ended, especially those with children. Most non-bus riders were in favor of zero-fare bus policies, but were not bus riders due to: inconvenience, longer transit times, and not having control where/when they wanted to go. Zero-fare policy benefits stated across both groups mostly focused on finances (less vehicle costs/stress [e.g., purchase, maintenance, parking]; more personal discretionary funds; fewer costs accessing medical appointments, grocery stores, jobs, and recreational activities; affordability of families riding together) and bus behavior (e.g., less boarding time, fewer bus driver and passenger disputes, more social connections with new bus riders). Strategies for increasing bus ridership focused on awareness media campaigns on bus benefits using testimonials, billboards, decorated buses, and incentives.

**Conclusion:** The KCMO zero-fare bus policy was highly valued by bus riders and non-riders, with importance of reduced transportation costs, improved bus experiences, and access to essential places including recreational activities, with suggestions to use diverse media campaigns to promote the benefits of bus ridership.

## Impact of Free Summer Day Camp on Physical Activity Behaviors of Elementary-Age Children from Low-Income Households: A Randomized Clinical Trial

Dr. Keagan Kiely<sup>1</sup>, **Dr. Michael W. Beets<sup>1</sup>**, Dr. Sarah Burkart<sup>1</sup>, Dr Christopher Pfladderer<sup>2</sup>, Dr. Elizabeth L. Adams<sup>1</sup>, Dr. Robert Weaver<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Prof. Keith Brazendale<sup>3</sup>, Dr. Zhu Xuanxuan<sup>1</sup>, Dr. Brian Chen<sup>1</sup>, Dr Alexander McLain<sup>1</sup>, Dr. Anthony Holmes<sup>1</sup>

<sup>1</sup>Arnold School of Public Health, University of South Carolina, Columbia, USA, <sup>2</sup>School of Public Health, UT Health Houston, Houston, USA, <sup>3</sup>Department of Health Science, University of Central Florida, Orlando, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Summer vacation is a period associated with accelerated gains in body mass index (BMI) among children, disproportionately effecting children from low-income households. Less structure (e.g., no school) during the summer is hypothesized to lead to obesogenic behaviors, including reductions in physical activity (PA) and increases in sedentary time. An alternative form of structure during summer is summer day camps (SDCs), yet SDCs operate predominately on a fee-for-service basis, creating a financial barrier for children from low-income households. One solution to promote PA and reduce time spent sedentary during summer is providing free access to existing SDCs.

**Methods:** In summers 2021-2023, children from seven elementary schools were randomized to one of two conditions: summer as usual (control, n=199) or free SDC for 8-10 weeks (intervention, n=223). Outcomes included children's PA (moderate-to-vigorous PA [MVPA]) and time spent sedentary measured via 14-day wrist-placed accelerometry during April/May (school) and July (summer). Intent-to-treat analysis examined changes in MVPA and time spent sedentary between school and summer in those who were randomized to SDC, compared to summer as usual group. As treated models examined differences in MVPA and sedentary time during summer on days when children attended vs. did not attend a SDC.

**Findings:** A total of 371 children (8.2±1.5yrs, 48% female, 51% Black, 69% at or below 200% Federal Poverty Level, 30% food insecure, 170 control; 201 intervention) provided accelerometry data. Intent-to-treat models indicated in the summer children in the intervention group accumulated more MVPA per day (+14.8 minutes, 11.5 to 18.2) and spent less time sedentary per day (-33.2 minutes, -42.1 to -24.3), compared to the summer as usual group. In the as treated models, on days when children attended SDC, they accumulated more MVPA (+22.1 minutes/day, 18.2 to 26.0), and spent less time sedentary (-53.2 minutes/day, -63.4 to -43.0), compared to days when children did not attend SDC.

**Conclusion:** The findings of this study show that providing free access to SDC may be an effective way to reduce obesogenic behaviors among children from low-income households. Policies should target structural factors, such as universal access to existing community SDCs.

## Black/African American adults attended more nutrition classes when offered online versus in-person in the 12-week NEW Soul study

**Dr. John Bernhart<sup>1</sup>**, Alexis Bell<sup>1</sup>, Claudia Sentman<sup>1</sup>, Dr Sara Wilcox<sup>1</sup>, Dr A. Caroline Rudisill<sup>1</sup>, Dr. Gabrielle Turner-McGrievy<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Restaurants may be a valuable resource for offering nutrition programs. The Nutritious Eating with Soul (NEW Soul) study partners with Black/African American owned vegan, soul food restaurants to implement a 12-week nutrition intervention. Restaurant needs and other contextual factors influence whether interventions are delivered in person or online. The primary purpose of this presentation is to compare NEW Soul intervention attendance when offered in-person versus online. The secondary purpose is to compare differences in participants picking up a free weekly meal, which was a benefit of program participation.

**Methods:** The NEW Soul study lasts for 12 weeks and is led by a Black/African American nutrition instructor from the community. A prior 2-year study informed the selection of topics for the 12 classes. Black/African American participants at risk for cardiovascular disease attended up to 12 classes (one per week) and could pick up one free meal from the restaurant each week (maximum of 12). Restrictions from the COVID-19 pandemic required online intervention delivery in 2020-2021 (n=43 participants) and to go meal pick up. In 2023-2024, restaurant partners elected to offer in-person intervention delivery (n=71 participants) with meal pick up. Weekly attendance and meal pick up for all participants were tracked. A separate generalized linear model compared attendance or meal pick-up between the intervention modalities.

**Results/findings:** Participants (N=114, 76% female, mean age 49.5 years) attended a mean of  $9.2 \pm 3.3$  out of 12 classes and picked up a mean of  $7.5 \pm 3.7$  meals. Attendance was higher for online (LSM = 10.5) versus in-person (LSM = 8.6) classes ( $t = -2.72$ ,  $p = 0.008$ ), controlling for age, sex, and education. Number of meals picked up did not differ between online (LSM = 7.3) vs. in-person (LSM = 7.6) classes ( $t = 0.42$ ,  $p = 0.68$ ).

**Conclusions:** Based on high attendance in the online modality, the research team planned to conduct future cohorts online. However, discussions with new restaurant partners revealed a desire for in-person intervention delivery. While attendance differed between modalities, participant engagement through weekly meal pick-up was moderate. Even with COVID-19 restrictions lifted, these results highlight that attendance at a 12-week intervention may be higher when delivered online.

# Barriers and Enablers to Interrupting Sedentary Behaviour when Working from Home in a Desk-Based Occupation: A Qualitative Exploration of the Older Employee Experience

**Ms. Lily Mott<sup>1</sup>**, Dr Amelia Parchment<sup>1</sup>, Dr Annemarie Money<sup>1</sup>, Professor Sheena Johnson<sup>2</sup>, Professor Chris Todd<sup>1</sup>

<sup>1</sup>The University of Manchester, Manchester, United Kingdom, <sup>2</sup>Alliance Manchester Business School, The University of Manchester, UK, Manchester, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Those employed in desk-based occupations sit for large amounts of their working day, often in long uninterrupted bouts, exposing them to the health risks associated with sedentary behaviour (SB). The number of older workers ( $\geq 50$ ) is increasing and it is vital to promote healthy ageing in the workplace to ensure this population are not put at increased risk due to occupational sitting. With more workplaces offering home-working options, it is important to explore how this environment influences SB. This study aimed to use the Theoretical Domains Framework (TDF) alongside the Capability, Opportunity, Motivation-Behaviour (COM-B) model to identify the barriers and enablers to interrupting SB in older employees ( $\geq 50$ ) working from home in desk-based occupations. Targeting older employees in the homeworking environment is an understudied area of research.

**Methods:** Twenty-two semi-structured interviews were conducted online with older employees (aged  $\geq 50$ ) from a local council in Greater Manchester who regularly work from home. Inductive reflexive thematic analysis was used to identify themes before deductively mapping these to the TDF and COM-B model.

**Results:** Six themes were identified: 1) Ambiguous knowledge of sedentary behaviour 2) Nature and demand of professional role in conflict with behaviour change 3) Lack of conscious action in relation to sedentary behaviour 4) Health as potential motivator for older employees 5) There is hope for targeting workplace sitting at home and 6) Interrupting sedentary behaviour not actively embedded in homeworking culture.

**Conclusions:** SB is influenced by a range of complex and interacting factors for those working from home. The unique blend of conducting work tasks in one's own home was found to play an important role in SB and future work should consider how interventions can be implemented across such varying homeworking environments. The experience and needs of older employees in the workforce, especially those relating to health, should be taken into account and used to target motivation. Future work should use these findings to develop a suitable intervention for the target population.

# Secular trends in society-, school-, individual-level factors related to physical activity under health ecological models and associations with elevated blood pressure among 0.6 million children and adolescents

**Dr. Jieyu Liu<sup>1</sup>**

<sup>1</sup>Peking University, Beijing, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Physical activity (PA) is a key modifiable factor for elevated blood pressure (EBP), we aimed to elucidate the evolving relationship of multi-level factors related to PA under ecological models with childhood EBP.

**Methods:** National data was extracted from 2010, 2014 and 2019 cycles of Chinese National Survey on Students' Constitution and Health, using a multistage stratified cluster sampling design. We defined EBP by the updated Chinese reference, obesity by sex-age-specific BMI cutoffs. Inadequate PA was defined as <1 hour/day; ecological factors at society-, school-, and individual-level were collected through questionnaire. Logistic regression, interaction analyses and population attributable fractions were used to evaluate associations between multi-level ecological factors related to PA and EBP.

**Results:** We included 642,386 participants (7~18 years). The EBP prevalence increased from 13.6% to 17.9% alongside increasing obesity, while inadequate PA decreased in prevalence. Inadequate PA was associated with EBP in 2010, with the OR of 1.16 (95%CI=1.03, 1.21) but attenuated during 2010-2019. The healthful scores' group at multi-level factors related to PA displayed interactions to reduce EBP risk ( $P$  for interaction<0.05). At society-level, urban residence was protective while lacking exercise facilities posed a risk factor. Inadequate physical education and sports competitions at school-level, coupled with unhealthy dietary lifestyles at individual-level, all contributed to EBP ( $p$ <0.05). The contributions of individual-level ecological factors related to PA decreased but of societal- and school-level increased on EBP, independent of obesity.

**Findings:** A rise in EBP burdens contrasted with increased PA during 2010-2019. PA-related ecological factors across society-, school-, and individual-level exhibited complex interactions on EBP. Though the individual-level lifestyles' impact on EBP was waning and the main concern remained obesity, there were increased recognition of societal- and school-level's ecological factors related to PA during 2010-2019. Promoting PA should comprehensively consider facilitating and inhibiting factors, which is crucial for healthy BP.

## Effect of qigong exercise on quality of life and cortisol in patients with cancer: A non-randomised controlled trial

Dr Yuxia Wang<sup>1</sup>, **Ms. Ruirui Xing**<sup>2</sup>, Prof Renwei Wang<sup>3</sup>, Dr Benshila Marley Mberi Mabiri<sup>3</sup>, Prof Yong Gao<sup>4</sup>, Prof Weimo Zhu<sup>5,6</sup>

<sup>1</sup>Hainan Tropical Ocean University, , China, <sup>2</sup>Victoria University, , Australia, <sup>3</sup>Shanghai University of Sport, Shanghai, China, <sup>4</sup>Boise State University, , USA, <sup>5</sup>Yunnan Plateau Thermal Health Industry Innovation Research Institute, , China, <sup>6</sup>University of Illinois at Urban-Champaign, , USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** The effect of mind-body exercise interventions in cancer patients has been investigated. However, there is a paucity of research focusing specifically on the long-term impacts of Guolin Qigong in cancer patients, particularly in the domains of quality of life and cortisol level. The aim of this study was to investigate the effect of a six-month Guolin Qigong on quality of life and serum cortisol among patients with cancer.

**Methods:** This study was a two-arm and non-randomized controlled trial. Forty-nine patients with cancer who were over 18 years of age and diagnosed with cancer were enrolled in this study and assigned to either the Guolin Qigong intervention group (IG, n = 26) or the usual care group (UC, n = 23) for six months. During the Guolin Qigong exercise, the participants completed a training program consisting of five sessions per week and 40-60 minutes per session. The UC group maintained their usual lifestyle. The main outcomes included self-reported quality of life (European Organization for Research and Treatment of Cancer, EORTC-QLQ-C30) and well-being (General Well-Being Schedule, GWB). The second outcome was stress-related hormone serum cortisol measured by enzyme-linked immunosorbent assay. All measurements were assessed at baseline and six months.

**Results:** Forty-nine participants (57.4% females, 26 in IG vs 23 in UC) were enrolled in the study, and forty-five participants completed all tests after the six-month intervention (48.9% females, 25 in IG vs 20 in UC). Compared to the UC group, quality of life, physical function, and pain significantly improved in the IG ( $P < 0.05$ ). Similarly, some sub-scales of GWB improved in IG group compared to the UC group, especially for cheerful distracted and overall score ( $P < 0.05$ ). However, there was no significant difference in serum cortisol between the two groups either at baseline or after intervention ( $P > 0.05$ ).

**Conclusions:** Six-month Guolin Qigong could improve quality of life, physical function, and pain, and have a beneficial effect on the well-being of cancer patients. Yet, further randomized controlled studies are warranted to assess the effects of Guolin Qigong exercise on hormone indicators.

## Tools to assess motivational interviewing fidelity in a veterinary training programme: A critical review

Miss Laura Gribben<sup>1,2</sup>, Ms Alison Burrell<sup>3</sup>, **Professor Moira Dean<sup>1</sup>**, Dr Bryan Hartzler<sup>4</sup>, Dr Áine Regan<sup>2</sup>

<sup>1</sup>Queen's University Belfast, Belfast, United Kingdom, <sup>2</sup>Teagasc, Athenry, Ireland, <sup>3</sup>Animal Health Ireland, Carrick-on-Shannon, Ireland, <sup>4</sup>University of Washington, Seattle, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Motivational interviewing (MI) is a collaborative communication methodology shown to support behaviour change in the fields of substance misuse, lifestyle counselling, and, more recently, livestock veterinary medicine. Irrespective of the field in which MI is applied, tools assessing practitioners' MI fidelity are needed for both quality assurance and training purposes. Although several MI assessment tools have been developed, they possess differing amounts of psychometric evidence and have variable administration procedures. As the authors are delivering a MI training programme to livestock veterinarians, this paper aims to identify a reliable, valid and practical MI assessment tool, which can be adapted for and delivered within this emerging context.

**Methods:** A critical review was conducted to identify a suitable MI assessment tool to be used in the context of a veterinary MI training programme. Review articles in English were sourced from Scopus, Web of Science and Medline databases. Each tool was evaluated based on its available psychometric information (validity, reliability) and administration procedures (preparation, delivery, scoring).

**Results:** Seven tools were identified. Most tools had a high burden of administration involving either the hiring of actors for simulated conversations or the recording of real-life conversations, which is expensive, resource-intensive and time-consuming. VASE-R (Video Assessment of Simulated Encounters Revised) was selected as the most appropriate tool, as it is psychometrically supported and has a low administration burden suitable for a training context. VASE-R scenarios provided in the original version were able to be adapted to reflect common livestock animal health issues requiring veterinary advice, through consultation with veterinarians. The adapted VASE-R was then reviewed to assess face validity by a certified MI trainer, two veterinarians and one of the VASE-R original authors. Based on this, six items were added to reflect recent advances in MI theory with regards to affirmations, identifying change talk and responding to change talk.

**Conclusions:** The adapted VASE-R was found to be a promising tool to assess veterinarians' MI fidelity within a training context. Future work is needed to provide additional psychometric evidence to support its use.

## Exploring Expert Opinions on Self-Monitoring Feedback Content and Frequency: A Delphi Study

**Dr. Rebecca Krukowski<sup>1</sup>**, Ms. Katherine Paulikonis<sup>1</sup>, Ms. Theresa Markwalter<sup>1</sup>, Dr. Kathryn M. Ross<sup>2</sup>

<sup>1</sup>University of Virginia, School of Medicine and Comprehensive Cancer Center, Department of Public Health Sciences, Charlottesville, USA, <sup>2</sup>University of Florida, College of Public Health & Health Professions, Department of Clinical & Health Psychology, Gainesville, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Participants in behavioral weight management programs are typically provided with weekly interventionist-crafted self-monitoring feedback to support both greater adherence to self-monitoring and to help them interpret the self-monitoring data to set effective behavioral goals. However, there is a lack of empirical evidence regarding optimal feedback construction, which is critical given that interventionist time remains one of the most expensive aspects of behavioral weight management programs and personalized feedback is time-intensive to construct. Thus, it is critical to better understand experts' perspectives on the content and frequency of feedback messages.

**Methods:** The current study addressed these gaps through a Delphi study. With each round, descriptive and thematic analyses were conducted. Experts were surveyed two times via Qualtrics until consensus was reached.

**Results:** In Round 1, the experts (N=67, 73% identifying as female, representing 7 professional disciplines and 6 countries) rated all 8 listed feedback elements as important, with little variation, and suggested 7 additional potential self-monitoring feedback components. Views on the optimal modality (e.g., email, text, app notification) varied, and participant preference was frequently noted as the key consideration in this choice. Experts preferred the feedback "sandwich" (with both positive comments and strategies for change), with a greater focus on the "sandwich" approach with those experiencing weight loss challenges (99% endorsement). In Round 2 experts (N=61, 91% retention) were asked to rank their top 5 most essential feedback elements to include, the following 7 feedback components were ranked to be most important (out of 15 possibilities): 1) weight trajectory; 2) frequency of diet tracking; 3) calorie intake goal attainment; 4) diet quality; 5) physical activity goal attainment; 6) goal setting; and 7) problem solving. Overall, 82% of experts noted that personalized feedback was important, but that they were not able to provide it in all programs due to time restrictions /personnel cost (75% identified these as key barriers).

**Conclusions:** Experts indicated that while personalized self-monitoring feedback was viewed as important, efficiency in crafting this feedback is necessary. These expert opinions on the most important elements for self-monitoring feedback can serve as the basis for future experimental studies.

## The effectiveness of an evidence-informed, community-based diabetes prevention program on long term clinical outcomes in individuals at high risk of type 2 diabetes

**Dr. Mary Jung**<sup>1</sup>, Dr Kaela Cranston<sup>1</sup>, Dr. Tineke Dineen<sup>1</sup>, Dr. Megan MacPherson<sup>3</sup>, Dr. Alexandre Santos<sup>1</sup>, Ms Natalie Grieve<sup>1</sup>, Dr. Alex Colyer<sup>2</sup>, Mr Joseph Kelly<sup>1</sup>, Dr. Jessica Bourne<sup>1</sup>  
<sup>1</sup>University of British Columbia, Kelowna, Canada, <sup>2</sup>Imperial College London, London, United Kingdom, <sup>3</sup>Fraser Health Authority, , Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Nearly six million people in Canada are living with prediabetes, of which 40% will progress to type 2 diabetes (T2D) if left untreated. Reducing this progression is essential to reduce the negative macro- and microvascular complications and health care costs associated with T2D. Small Steps for Big Changes (SSBC) is a 4-week evidence-based diabetes prevention program developed in a laboratory setting and scaled up to community settings for delivery by non-professionals. This study evaluated the effectiveness of SSBC when delivered in three YMCA facilities at reducing clinical risk factors associated with T2D progression 12-months post-program.

**Methods:** A total of 395 individuals at high risk of developing T2D were enrolled in SSBC (mean age=58.8, IQR 55-64; 84% White; 75% female), with a 97% program completion rate. Paired samples t-tests were conducted to examine change in clinical outcomes from baseline to 12-months post-program.

**Results:** Twelve months after completing the SSBC diabetes prevention program, there were significant reductions in HbA1c (Meandifference=-0.19%, 95% CI= -0.13, -0.25, d=0.64), weight (Meandifference=-8.17lbs, 95% CI= -5.11, -11.24, d = 0.20), waist circumference (Meandifference= -4.62cm, 95% CI= -3.21, -6.04, d=0.33) and systolic blood pressure (Meandifference= -4.22, 95% CI= -1.67, -6.78, d= 0.33).

**Conclusions:** SSBC is a brief, low-cost diabetes prevention program that is effective at reducing clinically relevant risk factors associated with T2D 12-months post-program when delivered in a community setting, by non-professionals. The changes in clinical outcomes, including HbA1c, are comparable to more time-intensive and costly diabetes prevention programs that are currently being delivered around the world. These findings support broader implementation of SSBC in community settings across Canada, with the potential to significantly reduce the national burden of T2D.

## Determinants of scale-up of a whole-school physical activity and sedentary behaviour intervention, TransformUs Primary: implications for equity and powers at-play

**Ms. Elly Ganakas<sup>1</sup>**, Dr Jiani Ma<sup>1</sup>, Prof Jo Salmon<sup>1</sup>, Dr Penelope Love<sup>1</sup>, A/Prof Harriet Koorts<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Intervention scale-up has the potential to address or exacerbate inequities in physical activity. Stakeholders involved in the scale-up process are well positioned to identify equity-relevant implementation and scale-up determinants due to their strong knowledge of community realities and existing relationships with community members. Understanding how determinants may impact equity can be advanced by exploring power dynamics which influence scale-up. Nonetheless, the role of power in scale-up of whole-school physical activity interventions has received little attention in research. TransformUs Primary, a whole-school physical activity and sedentary behaviour intervention, was used as a case study example to explore equity-relevant determinants of implementation and scale-up. Aim 1 was to understand stakeholder perspectives of factors that influence implementation and scale-up of TransformUs Primary and their relevance to equity. Aim 2 was to map identified determinants to Moon et al.'s (2019) typology of power to identify the different forms of power that may mediate equity in scale-up.

**Methods:** Representatives from seventeen formal and informal partner organizations that supported the statewide scale-up of TransformUs Primary were invited to participate in semi-structured in-depth interviews, informed by constructs from the Consolidated Framework for Implementation Research (CFIR). A directed content analysis approach will be used for data analysis. Findings will be presented descriptively and visually via an Alluvial diagram, to illustrate relationships between identified determinants and Moon et al.'s power taxonomy.

**Results/findings:** Thirteen individuals representing twelve partner organisations (either at present or in a previous role) participated in interviews. This novel approach will result in dual benefits. Firstly, the visualisation of findings will enhance usability of the research for implementation professionals, stakeholders, and policymakers by providing a practical overview of key determinants to consider for equitable scale-up. Secondly, exploring the types of power which operate across determinants will help to further the field of theoretically critical implementation science and provide a deeper understanding of the role of power in implementation and scale-up.

**Conclusions:** Findings of this research will help identify factors to consider for equity in scale-up of whole-school physical activity interventions, and which types of power may be mediated or strategically employed by stakeholders to facilitate this.

## Adapting 'Small Changes, Healthy Habits' promotes healthy eating and physical activity behaviors in a Latin American community

**Dr. Elizabeth Gollub<sup>1</sup>**, Jean Pierre Enriquez<sup>2</sup>, Dr. Adriana Hernandez<sup>3</sup>

<sup>1</sup>Louisiana State University AgCenter, School of Nutrition and Foods Sciences, Baton Rouge, United States, <sup>2</sup>Louisiana State University, School of Nutrition and Foods Sciences, Baton Rouge, United States,

<sup>3</sup>Zamorano University, Valle del Yeguaré, Honduras

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Small Changes, Healthy Habits (SCHH) is a community-based nutrition education curriculum originally developed in and for Louisiana, to teach adults food skills, small behavioral changes, and habit formation techniques that support routine physical activity, healthy eating, and establishing a healthy home food environment. Translated and adapted, SCHH (Pequeños Cambios Hábitos Saludables) was recently piloted in Valle del Yeguaré, Honduras to determine its influence on adoption of positive food and fitness behaviors among adults in this community.

**Methods:** SCHH was conducted in four-sessions, mornings or evenings, over four-weeks, by trained nutrition specialists (native or Hispanic), actively engaging a convenience sample (n=60) of Central or South American adult volunteers affiliated with Zamorano University. A pre-post participant survey with 7 core items was used to evaluate outcomes associated with program topic areas (consumption of key foods/beverages; confidence in critical healthy meal preparation/kitchen skills, reading/using nutrition facts labels, physical activity/inactivity). A 3-month follow-up survey was used to assess ongoing behaviors/use of information. Pre-post changes were analyzed using the Wilcoxon signed-rank test,  $p < 0.05$ ; follow-up response data were summarized.

**Results/Findings:** A total of 49 participants (39 male, 21 female; ages 18-74 years; all with > high school education) completed pre- and post-program surveys, 40 of whom also completed the follow-up survey. Post program, participants reported increased consumption of fruits ( $p < 0.01$ ), vegetables ( $p < 0.01$ ), whole grains ( $p < 0.01$ ); consumption of less and/or healthier fats ( $p = 0.04$ ); increased confidence in ability to determine which foods are healthier ( $p < 0.01$ ) and to create a healthy home food environment ( $p < 0.01$ ); increased frequency of reading/using nutrition facts labels ( $p < 0.01$ ); increased time being physically active ( $p < 0.01$ ). At follow-up, 98% of participants reported [still] using SCHH information and maintaining healthier behaviors (food selection, preparation, consumption; physical activity); 93% of the participants shared SCHH information with friends/family.

**Conclusions:** The SCHH/Pequeños Cambios Hábitos Saludables program positively affects healthy eating and physical activity behaviors and appears to support maintenance of these behaviors among participants. Globally, high rates of chronic disease are attributed in part to poor diet and limited physical activity. The SCHH approach to community nutrition education supports chronic disease risk reduction, good health and wellness.

## Orthorexic behaviors in postpartum women : Application of the Tripartite Influence Model.

**Miss Carolanne Verdon**<sup>1,2</sup>, Miss Natalène Séjourné<sup>3,4</sup>, Prof. Nelly Goutaudier<sup>5,6</sup>, Miss Siobhan Vicente<sup>5,6</sup>, Dr. Noémie Carbonneau<sup>1,2</sup>, Prof. Amélie Rousseau<sup>3,4</sup>

<sup>1</sup>Université du Québec à Trois-Rivières (UQTR), Trois-rivières, Canada, <sup>2</sup>Institut sur la Nutrition et les Aliments Fonctionnels (INAF), Québec, Canada, <sup>3</sup>Université de Toulouse Jean Jaurès, Toulouse, France, <sup>4</sup>Centre d'Études et de Recherches en Psychopathologie et Psychologie de la santé (CERPPS), Toulouse, France, <sup>5</sup>Université de Poitiers, Poitiers, France, <sup>6</sup>Centre de Recherches sur la Cognition et l'Apprentissage (CeRCA), Poitiers, France

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** The Tripartite Influence Model of body image and eating disturbance (Thompson et al., 1999) is widely used to explain the development of pathological eating behaviors, positing that eating disorders arise through the interplay of sociocultural pressures, internalization of appearance ideals, social comparison, and body dissatisfaction. However, its application to orthorexic behaviors (OB)—characterized by an obsession with the consumption of nutritious foods and an excessive focus on food properties (Koven & Abri, 2015)—has not been explored in postpartum women. This study investigates the applicability of the Tripartite Influence Model to OB in postpartum women, with the following objectives: (1) to examine associations between the model's variables and OB, and (2) to explore differences in the associations between healthy (HOB) and nervosa (NOB) orthorexic behaviors.

**Methods:** A sample of 377 French postpartum women (mean age = 32.7 years, SD = 3.87, mean age of the last child = 11.5 month, SD = 7.33) was recruited through advertisements on social media and completed an online questionnaire, which included sociodemographic information and four rating scales: the Sociocultural Attitudes Towards Appearance Questionnaire-4 (sociocultural pressures and internalization), the Physical Appearance Comparison Scale (social comparison), the Body Shape Questionnaire (body dissatisfaction), and the Teruel Orthorexia Scale (HOB and NOB). Structural equation modeling was conducted using AMOS software to analyze the associations among the study variables.

**Results:** The results showed that peer ( $B = .17, p < .05$ ) and media ( $B = .32, p < .001$ ) pressures were positively associated with the internalization of appearance ideals, whereas only media pressure was significantly linked to social comparison ( $B = .40, p < .001$ ). Both internalization of appearance ideals ( $B = .16, p < .001$ ) and social comparison ( $B = .35, p < .001$ ) were positively correlated with body dissatisfaction, which was in turn positively linked to NOB ( $B = .46, p < .001$ ) and negatively linked to HOB ( $B = -.23, p < .001$ ).

**Conclusions:** These findings support the relevance of the Tripartite Influence Model for understanding OB in postpartum women, highlighting that the associations with body dissatisfaction differ between HOB and NOB. Interventions aimed at educating postpartum women on reducing exposure to body-focused media may help lower the risk of NOB.

# Confounder selection in observational studies investigating the association between physical activity and health-related outcomes: a meta-epidemiological review

**Dr. Terry Boyle**<sup>1</sup>, A/Prof Barbara Jefferis<sup>3</sup>, Leonessa Boing<sup>6</sup>, Prof Shaea Alkahtani<sup>4</sup>, A/Prof Derrick Bennett<sup>5</sup>, Elli Kontostoli<sup>7</sup>, Dr Matthew McLaughlin<sup>8,9</sup>, A/Prof Philip von Rosen<sup>10</sup>, Dr Kabir Sadarangani<sup>11,12</sup>, Dr Lin Yang<sup>13</sup>, Aoko Oluwayomi<sup>14</sup>, Dr Yuzi Zhang<sup>15,16</sup>, Dr Stephanie Prince Ware<sup>17</sup>, A/Prof Brigid Lynch<sup>2</sup>

<sup>1</sup>University of South Australia, , Australia, <sup>2</sup>Cancer Council Victoria, , Australia, <sup>3</sup>University College London, , United Kingdom, <sup>4</sup>College of Sport Sciences and Physical Activity, King Saud University, , Saudi Arabia, <sup>5</sup>Nuffield Department of Population Health, University of Oxford, , United Kingdom, <sup>6</sup>Santa Catarina State University, , Brazil, <sup>7</sup>Health Promotion Research Group, University of East Anglia, , United Kingdom, <sup>8</sup>Centre for Child Health Research, The University of Western Australia, , Australia, <sup>9</sup>School of Medicine and Public Health, University of Newcastle, , Australia, <sup>10</sup>Division of Physiotherapy, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, , Sweden, <sup>11</sup>School of Kinesiology, Faculty of Health and Dentistry, Universidad Diego Portales, , Chile, <sup>12</sup>Universidad Autónoma de Chile, , Chile, <sup>13</sup>Department of Cancer Epidemiology and Prevention Research, Cancer Care Alberta, Alberta Health Services, , Canada, <sup>14</sup>Human Kinetics and Health Education, University of Lagos, , Nigeria, <sup>15</sup>School of Public Health, The University of Texas Health Science Center at Houston (UTHealth Houston), Austin, United States, <sup>16</sup>Michael & Susan Dell Center for Healthy Living, Austin, United States, <sup>17</sup>Centre for Surveillance and Applied Research, Public Health Agency of Canada, , Canada


**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management


**Purpose:** Many studies in physical activity epidemiology are observational. Failing to adequately consider and account for confounders in observational studies can lead to biased estimates due to uncontrolled/residual confounding and/or collider bias, and may result in misleading or imprecise estimates of the effect of physical activity-related exposures (such as physical activity, sedentary behaviour and muscle-strengthening exercises) on health outcomes. There are many different confounder selection approaches and it is considered best practice, and recommended by reporting guidelines (such as STROBE), that the choice of confounders is described and justified. This review aimed to describe current practices in confounder selection in studies using observational data to estimate the effect of physical activity-related exposures on health outcomes.

**Methods:** A structured search strategy was used to identify original research studies estimating the effect of a physical activity-related exposure on a health-related outcome, published in 2022 or 2023. A total of 1353 articles were identified in the screening process. Of these, a random sample of 300 studies was selected for full-text screening and data extraction. Data extracted included the approach(es) used to select confounders, and various study characteristics.

**Results/Findings:** Of the 300 randomly selected articles, 279 were eligible. Most (61%) did not describe their approach to choosing confounders. Around 27% of studies used a confounder selection approach based on prior knowledge or theory, and a further 3% used a directed acyclic graph. The remaining studies used a data-driven approach, with confounder selection based on statistical associations with the outcome (8%) and stepwise methods (3%) as the most common.



Conclusions: Most published studies that aim to estimate the effect of physical activity-related exposures on health outcomes do not report the method they used to choose confounders. This goes against reporting guidelines, and negatively impacts transparency and reproducibility. These results suggest that more training and awareness is required among people conducting observational studies in physical activity epidemiology, and/or that greater adherence to reporting guidelines is required by study authors, reviewers and journal editors.



## The role of diet and nutrition in prostate cancer survivorship: Practitioner perspectives, advice and guidance

**Dr. Asmita Patel**<sup>1</sup>, Professor Grant Schofield<sup>2</sup>, Associate Professor Justin Keogh<sup>3</sup>

<sup>1</sup>South Pacific College of Natural Medicine, Auckland, New Zealand, <sup>2</sup>Auckland University of Technology, Auckland, New Zealand, <sup>3</sup>Bond University, Gold Coast, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Epidemiological data based on geographical location provides some evidence that diet could be a risk factor for prostate cancer (PCa) incidence and recurrence. With an increase in survivorship post PCa diagnosis, a growing focus has been placed on modifiable lifestyle behaviours, such as physical activity and diet that can help maintain and improve the health-related outcomes of PCa survivors. Prostate cancer patients and survivors are receptive to receiving dietary advice from their healthcare practitioners. This study had two main aims: (1) to identify practitioners' perspectives on the role that diet and nutrition can have in supporting PCa survivorship, and (2) to ascertain what dietary and nutritional advice practitioners provide to their PCa patients.

**Methods:** Participants were 16 Auckland-based healthcare practitioners, comprising of medical oncologists, a radiation oncologist, an oncology nurse specialist, urologists, a urology nurse specialist, a radiation therapist, general practitioners (one of whom was also a practising acupuncturist) and acupuncturists. Participants were individually interviewed. Interview transcripts were analysed using an indicative thematic approach.

**Results:** Practitioners perceived dietary factors to have an important role in PCa survivorship. Dietary advice was provided to help PCa patients counteract treatment-related side effects, especially those relating to hormone suppression treatment. Practitioner advice also focused on the important role that diet can have in promoting cardiovascular health.

**Conclusions:** A PCa diagnosis can lead to a teachable moment, where men are receptive to making healthy dietary changes. Healthcare practitioners are ideally positioned to provide dietary information. Dietary advice pertaining to a heart-healthy diet is beneficial for PCa survivorship, as survivors of PCa are at increased risk for cardiovascular disease. A healthy diet (focusing on vegetables, fruit, and healthy fats) post PCa diagnosis can provide a range of physical health benefits, as well as enhancing wellbeing.

## Through the Lens of TikTok®: A New Perspective to Improving Food and Nutrition Literacy in Adolescents

**Dr. Henna Muzaffar<sup>1</sup>**, Ms. Devin Ebeling-Hammond<sup>1</sup>, Dr. Melani Duffrin<sup>1</sup>

<sup>1</sup>Northern Illinois University, DeKalb, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** This study aims to explore innovative methods for teaching adolescents about food, nutrition, and physical activity, focusing on the use of short videos as a teach-back tool. This method provides insight into students' retention and understanding of food and nutrition literacy and offers the potential to influence audiences beyond the classroom. The study addresses a few key questions: What are students' attitudes toward food, nutrition, and physical activity pre-and-post intervention? How do students perceive their ability to influence others' health habits, along with their views on TikTok creation and usage?

**Methods:** An exploratory pilot study was conducted with 24 adolescents aged 10–13 years participating in the DeKalb Summer Camp Program at Northern Illinois University. Students were divided into two cohorts and received 16 hours of education over four days. Lessons emphasized inclusive and meaningful learning by employing the brain-based learning theory. Fun, interactive activities were used and students created short educational videos to showcase what they learned. Data collection included a pre-and-post-intervention survey with 25 Likert scale questions and three open-ended questions. Observational data tracked engagement, enjoyment, discussion, and enthusiasm during lessons. Descriptive statistics—mean, percentage, frequency, minimum, maximum, and standard deviation—were used to analyze quantitative data, while qualitative responses were recorded verbatim. Inclusion criteria were participation in the DeKalb Summer Camp Program, signed consent forms, and completion of pre-and-post surveys.

**Results:** At least half of the 25 questions showed a moderate increase in positive responses or reduced variance in answers across both cohorts. Additionally, questions 6–9 and 19–24 displayed less improvement, with neutral or negative outcomes. Observational data revealed strong interest in active games, experiments, and cooking lessons, while art projects and video creation/editing elicited less enthusiasm. Qualitative responses highlighted enhanced knowledge and enjoyment but noted reluctance to share created videos.

**Conclusions:** This study demonstrates the potential of alternative teaching methods to impart food, nutrition, and physical activity knowledge effectively. Larger sample sizes and validated tools could strengthen findings and support more reliable conclusions. Refining instructional approaches can better engage students, promote healthier choices, and deepen understanding of nutrition-related topics.

## Delivering and evaluating a motivational interviewing training programme for veterinarians

Miss Laura Gribben<sup>1,2</sup>, Ms Alison Burrell<sup>3</sup>, **Professor Moira Dean<sup>1</sup>**, Dr Bryan Hartzler<sup>4</sup>, Dr Áine Regan<sup>2</sup>

<sup>1</sup>Queen's University Belfast, Belfast, United Kingdom, <sup>2</sup>Teagasc, Athenry, Ireland, <sup>3</sup>Animal Health Ireland, Carrick-on-Shannon, Ireland, <sup>4</sup>University of Washington, Seattle, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Livestock veterinarians play a key role assisting farmers to safeguard animal health and welfare. However, the communication style of livestock veterinarians has been shown to influence the nature of the farmer-veterinarian relationship and the enactment of veterinary advice. Motivational interviewing (MI) has shown promise in the field of livestock veterinary medicine, as a means of supporting farmer-veterinarian interactions and behaviour change on-farm. Accordingly, this study aims to deliver and evaluate the feasibility of a brief MI training programme for livestock veterinarians.

**Methods:** A mixed-methods case study was conducted. The programme consisted of a 2-hour online module, two full day face-to-face workshops (n=12) and a reflective practice session (n=5). The programme was facilitated by a certified MI trainer based in the animal health setting, along with a private veterinary practitioner trained in MI. Evaluation consisted of assessing veterinarian satisfaction post-workshop via questionnaire, along with MI skills using an adapted version of VASE-R (Video Assessment of Simulated Encounters Revised). Additionally, trainers completed reflective logs and veterinarians participated in focus groups/interviews five months after the workshop. The quantitative data was descriptively analysed. While qualitative data was thematically analysed.

**Results:** Descriptive analysis found veterinarians were highly satisfied with the programme (mean = 4.4 out of 5-point Likert scale). Thematic analysis determined three themes: valuable activities, takeaways, and programme evolution. Scenario-based skills practice and open discussions were identified as important to the learning process. Veterinarians reported developing a greater awareness of their own personal communication patterns and learning how to use MI skills, such as reflections, which promote deeper listening and better understanding of others. This finding was supported by at least half of participants achieving beginner proficiency in VASE-R 'Reflective Listening' and 'Summary' sub-scale scores. Finally, incorporating additional skills practice and reflective activities into the curriculum was deemed beneficial.

**Conclusions:** Brief motivational interviewing training can help veterinarians become more aware of their own communication patterns and promote positive changes in communication skills. The findings are of relevance to those involved in veterinary continuing professional development, as a way of enhancing the skills of veterinarians to support farmers to enact behaviour change on-farm.

## Implementation of wearable activity trackers to promote physical activity in hospital rehabilitation: a feasibility study

**Mrs. Kimberley Szeto<sup>1</sup>**, Dr John Arnold<sup>1</sup>, Dr Ben Singh<sup>1</sup>, Mr Peter Diestel-Feddersen<sup>2</sup>, Ms Dominique Edwards<sup>2</sup>, Mrs Shannon Cheary<sup>2</sup>, Mr Matthew Lo Basso<sup>2</sup>, Professor Carol Maher<sup>1</sup>

<sup>1</sup>Alliance for Research in Exercise, Nutrition and Activity, University of South Australia, Adelaide, Australia, <sup>2</sup>Division Rehabilitation, Aged Care & Palliative Care, Southern Adelaide Local Health Network, Adelaide, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Physical inactivity during and after hospitalisation is associated with poorer health outcomes. Wearable activity trackers (WATs) show promise for increasing physical activity (PA) in healthcare settings, however, evidence for their successful implementation in routine care remains limited. This feasibility study evaluated WAT integration during inpatient and outpatient rehabilitation by assessing: (1) feasibility metrics including uptake and retention rates; (2) patient and clinician perceptions; (3) implementation factors; and (4) changes in PA during rehabilitation.

**Methods:** A single-arm, feasibility study was conducted in two rehabilitation settings at a major teaching hospital. Patients were provided with a WAT to wear throughout their admission, which was used to monitor daily step counts and aimed to meet step goals. Feasibility was assessed based on recruitment, retention, and data completeness rates. Patient and clinician experiences, satisfaction and perceptions were evaluated through surveys. Effect sizes were calculated for change in PA from baseline to follow-up for daily step counts, light PA, moderate-vigorous PA, and sedentary behaviour, using Cohen's d, and matched-pairs rank-biserial correlation (rW).

**Results/Findings:** Of 36 invited patients, 26 participated, (mean age: 72 years; SD: 13; range: 33-93; 72% uptake rate). Data completeness was high (92%), with no devices lost or broken. Most patients reported WATs helped increase walking (68%) and achieve rehabilitation goals (64%), with 84% willing to use WATs again in rehabilitation. All clinicians (n=6) found WATs easy to use, though perspectives varied on therapy enhancement. Large effect sizes were observed for increased daily steps in both inpatient (1433 to 1819 steps/day, rW=0.595) and outpatient (5062 to 5983 steps/day, rW=0.532) settings. The simplicity of the approach and patient/clinician materials were identified as factors contributing to the success of implementation, though the recruitment approach revealed challenges, mostly related to clinical complexities and time pressures.

**Conclusion:** WAT implementation was feasible and acceptable in both settings, with promising PA outcomes. The simplicity of the approach was identified as a key contributor to success, although challenges were identified requiring future modification in the recruitment approach. Future research should evaluate effectiveness through service-level implementation and large controlled trials, while exploring applications across diverse clinical settings.

# Contextual Nudging for Healthier Behaviors: Exploring Real-Time, Location-Based Interventions in Obesogenic Environments

**Ms. Suzan Evers<sup>1</sup>**, Prof. Astrid Kemperman<sup>1</sup>, Dr. Pieter van Gorp<sup>2</sup>

<sup>1</sup>*Built Environment, Eindhoven University of Technology, Eindhoven, the Netherlands*, <sup>2</sup>*Industrial Engineering and Innovation Sciences, Eindhoven University of Technology, Eindhoven, the Netherlands*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** The rising prevalence of obesity, particularly among young adults, has spurred interest in understanding how exposure to obesogenic environments affect health behaviors. Such environments are characterized by easy access to unhealthy food and limited opportunities for physical activity (PA). They are thought to promote unhealthy lifestyle habits, especially during formative years. At the same time, digital health interventions largely overlook the role of contextual cues. Therefore, this study will examine how young adults respond to real-time, location-based nudges from wearable health technology aimed at promoting healthier behaviors, comparing responses in obesogenic versus health-promoting environments.

**Methods:** From November 2024, we will collect data over a two-week period from 50 young adults (aged 18-25) living in Eindhoven, the Netherlands. During this intervention phase, participants will receive nudges through a commercially available wearable running custom experience sampling and prompting software, called *Experiencer*. Geofencing is used to prompt at predefined obesogenic (e.g., fast-food outlets) and health-promoting (e.g., parks) locations. The nudge content will vary (e.g., motivational, warning, informational) to assess participants' preferences and responsiveness. Participants will receive a maximum of 10 nudges daily, followed by a brief survey on prompt acceptance, emotional state (e.g., valence, arousal, stress), and social context. Embedded sensors (i.e., pedometer, GPS) will continuously track participants' PA levels and location.

**Findings:** Data analytics will focus on adherence (e.g., response rates), nudge acceptance, and preliminary indicators of behavior change. Mixed models will assess how environmental exposures and psychological states influence PA over time, adjusting for individual effects. Geo-spatial analyses will examine patterns of exposure and activity levels. We hypothesize that mood and stress will moderate nudge effectiveness, with responses varying depending on environmental and social context.

**Conclusions:** This study offers a novel approach to context-sensitive interventions in obesogenic environments using wearable technology, location-based nudges, and real-time data. By evaluating nudge acceptance and contextual influences on behavior, this feasibility study aims to inform the design of scalable, personalized public health strategies. The findings will provide valuable insights into the dynamic interplay between environmental exposures, mood, and behavior, with the potential to guide future tailored interventions and policies aimed at reducing obesity rates.

## A phase II randomised controlled basket feasibility trial of a personalised, remote-delivered exercise programme on disease-free survival among early-stage, high-risk cancers in Yorkshire: CANFit study protocol

**Dr. Cynthia Forbes<sup>1</sup>**, Dr Alex Bullock<sup>1</sup>, Prof Judith Cohen<sup>1</sup>, Dr Chao Huang<sup>1</sup>, Dr Gillian Jackson<sup>1</sup>, Prof Michael Lind<sup>1</sup>, Prof Mark Pearson<sup>1</sup>, Prof Gerry Richardson<sup>2</sup>, Prof John Saxton<sup>1</sup>, Dr Maureen Twiddy<sup>1</sup>

<sup>1</sup>University Of Hull, Hull, United Kingdom, <sup>2</sup>University of York, York, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Lung, breast, and bowel cancers account for ~40% of new cancers and 38% of cancer-related deaths in the UK. Although there have been advances in cancer diagnosis and treatments, an urgent unmet need to improve management and recovery from cancer treatments remains. Evidence suggests a 38% risk reduction in breast and bowel cancer-specific mortality with more exercise, however, most of this evidence is observational. More clinical trials are needed to build strong evidence for exercise's impact on recurrence and survival.

**Methods:** This UK-based, multicentre randomised controlled basket feasibility trial compares personalised, remote-delivered exercise programmes supported by trained exercise professionals, against usual care (Registration: ISRCTN97662203). Potential participants are approached if they meet inclusion criteria: age 18 or over, diagnosed high-risk, early stage breast, bowel, or lung cancer, and within 24 weeks of completing primary curative treatments. Consented participants complete objective measures of physical function (submaximal cardiovascular fitness, endurance, muscle strength, balance), body composition (bioelectrical impedance), and self-reported outcomes (total physical activity, sleep quality, general quality of life (QoL), cancer-related QoL, exercise confidence/motivation). The 12-week programme is delivered remotely with trainer contact tapering off over the subsequent 12 weeks (24 weeks total). Hospital case-note review provides disease-free survival outcomes at 6-, 12- and 24-months. This study is currently recruiting with a goal of 660 participants.

**Analysis:** Descriptive statistics will be reported for feasibility outcomes: recruitment, adherence, retention rates, data collection quality, adverse events, intervention acceptability and fidelity. For disease-free survival, Kaplan–Meier curves will be plotted and median survival calculated for each arm. To determine intervention impact, we will conduct a log-rank test (unadjusted) to compare the 2-year disease-free survival between the groups within and among cancer types. Secondary outcomes (physical function status, general and cancer-specific QoL, determinants of meeting activity guidelines) will be reported at each timepoint.

**Implications:** This trial will strengthen the evidence of exercise as a complimentary cancer treatment to help improve survival among those with a higher risk of early recurrence. It will inform feasibility of a definitive phase III effectiveness and cost-effectiveness trial of personalised exercise programmes that could be implemented as standard cancer care.

## Social Support as a Driver of Behavior Change in Older Adults: Outcomes from the Walk With Ease Intervention

**Mr. Mingyue Zhang<sup>1</sup>**, M.S. Abbie Coniglio<sup>1</sup>, Dr. Nicholas Lamoureux<sup>2</sup>, Dr. Gregory Welk<sup>1</sup>  
<sup>1</sup>Iowa State University, Ames, USA, <sup>2</sup>University of Nebraska at Kearney, Kearney, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Background:** Social support is considered as an important correlate of physical activity behavior, but it has proven challenging to understand the underlying mechanisms of influence. The study evaluated the impact of social support on psychosocial outcomes from a group-based version of the established Walk With Ease (WWE) intervention.

**Purpose:** This study specifically examined how social support influences changes in psychosocial correlates of physical activity among older adults in WWE.

**Methods:** A sample of 53 older adults ( $\geq 65$  years) participated in the 6-week WWE intervention, and 42 completed the 6-week intervention, baseline evaluation, and post-evaluation. Psychosocial outcomes included physical activity enjoyment (PACES-S), self-efficacy, habit formation, and intrinsic motivation (based on BREQ-3). A semi-structured interview was conducted at the post-evaluation to explore participants' perceptions related to social support. Independent t-test and effect size( $d$ ) were used to evaluate differences in psychosocial correlates when stratified by subjective responses to the three key interview questions. The coding themes were anchored to constructs from the Physical Activity Social Support Scale: emotional support, informational support, instrumental support, companionship, and validation support.

**Results:** The interview revealed differences in perceived gains in social support from the program. Individuals reporting improvements in social support (42.5%) had small to moderate gains in self-efficacy ( $d = 0.38 - 0.50$ ) compared to individuals not reporting improvements; however, changes in other indicators were negligible. Interview findings revealed that 'Learning from Others' was associated with positive gains in physical activity enjoyment ( $d=0.95$ ), habit formation ( $d = 0.92 - 1.05$ ), and motivation ( $d = 0.14 - 0.81$ ). Reported 'Group Interactions' were associated with Habit Formation ( $d = 0.07 - 0.48$ ), but 'Making Friends' was not related to any of the changes. Participants identified 'Learning from Others' as providing more informational support and validation support, while 'Group Interactions' and 'Making Friends' were more associated with companionship and emotional support.

**Conclusion:** The WWE intervention positively impacted habit formation in older adults, and preliminary evidence suggests that social support may contribute to these effects. Specific aspects of social support, such as informational support and validation support, may serve as drivers of physical activity enjoyment, habit formation, and motivation.

## Development and pilot testing a weight-inclusive intervention to promote dietary and physical activity behaviour change among adults at risk for type 2 diabetes and cardiovascular disease

**Dr. Sara Styles<sup>1</sup>**, Dr. Meredith Peddie<sup>1</sup>, Ms. Sharon Sutton<sup>1</sup>, Mr. Dan Houghton<sup>1</sup>, Ms. Alice Young<sup>1</sup>, Ms. Tegan Mills<sup>1</sup>, Ms. Briar Adams<sup>1</sup>

<sup>1</sup>Department of Human Nutrition, University of Otago, Dunedin, New Zealand

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** This pilot study aimed to develop a group-based weight-inclusive cardiometabolic risk reduction programme, Well\_Being for Life, and explore the feasibility of recruitment, retention and assessments, and acceptability of the intervention.

**Methods:** Adults living in Dunedin, New Zealand aged 18+ years who had at least one cardiometabolic risk factor were recruited for a 9-month single-arm pilot intervention study. The intervention was developed by a multidisciplinary team and focused on changing dietary and physical activity behaviour. Principles of intuitive eating and Acceptance and Commitment Therapy processes underpinned the intervention. Group sessions, lasting 60-90 minutes, were held weekly for 12 weeks, fortnightly for 1 month and monthly for 5 months. Individual consultations occurred at baseline, 12 weeks and 9 months. The recruitment target was at least 10 participants into the first group session, with at least 8 participants in the group retained at 9-months. Intervention acceptability was explored in focus groups conducted at 12 weeks. Self-report questionnaires measured dietary habits, physical activity, psychosocial outcomes at baseline, 12 weeks and 9 months. Objective measurements at these timepoints included blood lipids, blood pressure, glycated haemoglobin (HbA1c) and weight.

**Results:** Twenty-one participants, mean age 47±8 years, mostly female (n=18) and New Zealand European or Other ethnicity (n=19), completed baseline assessments. Eighteen participants completed 12-week assessments. Nine participants completed 9-month assessments, and of these, 6 participants were still attending sessions at 9-months. Study attrition after 12 weeks was the main reason for missing data. Participants reported the principles of a healthy lifestyle were perceived to be realistic and achievable and the tone of the programme was perceived to be positive, supportive, empowering and inspiring. There was no consensus on the preferred intervention structure after 12 weeks and no consensus on how to facilitate engagement between group sessions.

**Conclusions:** Initially, a weight-inclusive cardiometabolic risk reduction intervention is appealing to New Zealand adults and it is feasible to collect subjective and objective data at baseline and 12 weeks. Modifications to the intervention delivery after 12 weeks are needed to maintain engagement in the study for the 9-month duration.

## Increasing participation in resistance training using outdoor gyms: A study protocol for the ecofit type III hybrid effectiveness implementation trial.

**Prof. Ron Plotnikoff**<sup>1,2</sup>, Dr. Anna K. Jansson<sup>1,2</sup>, Prof. Mitch J. Duncan<sup>1,2,3</sup>, Dr. Jordan J. Smith<sup>1,2</sup>, Prof. Adrian Bauman<sup>4</sup>, Prof. John Attia<sup>3</sup>, Mrs. Sara L. Robards<sup>1</sup>, Dr. Emily R. Cox<sup>1,2,5</sup>, Mr. Sam Beacroft<sup>1</sup>, Prof. David R. Lubans<sup>1,2,6</sup>

<sup>1</sup>Centre for Active Living and Learning, School of Education, University of Newcastle, Callaghan, Australia, <sup>2</sup>Active Living and Learning Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>3</sup>School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, <sup>4</sup>School of Public Health, University of Sydney, Camperdown, Australia, <sup>5</sup>School of Biomedical Sciences and Pharmacy, University of Newcastle, Callaghan, Australia, <sup>6</sup>Faculty of Sport and Health Sciences, University of Jyväskylä, Jyväskylä yliopisto, Finland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** This abstract outlines the protocol for an implementation-effectiveness trial of ecofit, a multi-component mHealth intervention aimed at increasing participation in resistance and aerobic physical activity using outdoor gyms and social support. Previous studies have shown ecofit's efficacy and effectiveness in insufficiently active individuals, including those at risk of type 2 diabetes and general community-dwelling adults. This trial seeks to compare the effects of two implementation support models—'Low' (app) and 'Moderate' (app, face-to-face sessions, and QR codes)—on program reach, uptake, dose received, impact, and fidelity.

**Methods:** We conducted a hybrid type III implementation-effectiveness study using a two-arm randomized controlled trial across 18 outdoor gym locations in two large municipalities in New South Wales, Australia. Locations were pair-matched by socioeconomic status (high versus low) and randomized to receive either Low or Moderate implementation support. A simple media campaign was conducted to promote ecofit across the region. The ecofit app offers tailored, progressive workouts across four difficulty levels, including a self-assessment tool, social support features, and location-specific adaptations based on available equipment. In the Moderate support group, three group-based, on-site exercise sessions led by trained fitness professionals, along with QR codes, provided additional support to engage participants with the app and equipment. Primary outcome 'reach' was measured using a modified version of the System for Observing Play and Recreation in Communities (SOPARC), which captures interaction with outdoor gym equipment. Secondary outcomes, including uptake, dose received, and impact, were tracked via app metrics, and fidelity was assessed during face-to-face workout sessions.

**Results/Findings:** Data collection will be concluded in March 2025 to determine potential differences between the support levels in program reach, participant engagement, and outdoor gym usage frequency. Generalized linear models will be used for statistical analysis of the primary outcome, adjusting for baseline outcome values and socioeconomic stratification.

**Conclusions:** This implementation-effectiveness trial will assess the impact of different support levels on participation in resistance-focused physical activity using mHealth and outdoor gyms. Findings may guide future efforts by councils nationwide to promote outdoor gym use,

supporting scalable and sustainable strategies for community-based physical activity interventions.



## Association between Physical Activity Levels and Cognitive Function in Children and Adolescents with Disabilities: A Cross-Sectional Study

**Miss Jingsi WEN<sup>1</sup>**, Prof. Cindy Hui-ping SIT<sup>1</sup>, Prof. Stephen Heung-sang WONG<sup>1</sup>, Prof. Raymond Kim-wai SUM<sup>1</sup>, Dr. Wen YANG<sup>2</sup>, Dr. Jie FENG<sup>1</sup>

<sup>1</sup>The Chinese University of Hong Kong, HONGKONG, China, <sup>2</sup>Hubei University, Wuhan, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** This study investigated the association between physical activity (PA) levels and cognitive function in children and adolescents with disabilities in Hong Kong. By examining accelerometer-measured PA levels, we aimed to identify whether higher PA levels are correlated with better cognitive performance.

**Methods:** A total of 209 children and adolescents with disabilities (Mean age =  $13.18 \pm 3.79$  years) were recruited from 21 special schools in Hong Kong. Participants included individuals diagnosed with physical disabilities (50.2%), intellectual disabilities (45.9%), and hearing impairments (3.8%). PA levels (light PA [LPA], moderate to vigorous PA [MVPA]) were measured using GENEActiv accelerometers and expressed in minutes per day. Cognitive function was assessed by two computer-based tasks (picture task and dots task), which measured accuracy and reaction time. Demographic information (age, sex, disability type, and parental education levels) was reported by parents. Body mass index (BMI) was calculated from objectively measured height and weight. Generalized linear models were employed to examine the associations between PA levels and cognitive function, adjusting for demographic variables and BMI.

**Results:** On average, children and adolescents with disabilities participated in  $222.82 \pm 102.99$  minutes of total PA per day, including  $26.62 \pm 30.22$  minutes of MVPA. Favorable associations were found between MVPA and reaction time in both the picture task ( $\beta = 1.44$ , 95%CI [0.16, 2.72],  $p = 0.027$ ) and the dots task ( $\beta = 1.30$ , 95%CI [0.18 to 2.42],  $p = 0.023$ ), suggesting that higher MVPA is related to shorter reaction time. However, no association was observed between MVPA and accuracy. Additionally, LPA showed no significant relationship with reaction time or accuracy in the picture or dots task.

**Conclusion:** The findings indicate that higher levels of MVPA may be positively correlated with cognitive function, as reflected in shorter reaction time among children and adolescents with disabilities. No significant association was reported between LPA and cognitive function. These results suggest the potential cognitive benefits of promoting MVPA and underscore the need for tailored PA interventions to support cognitive development in children and adolescents with disabilities. Future research should further explore the associations between different PA levels and underlying mechanisms.

## Promoting physical activity during recess in small sized elementary school through space analysis technology

**Prof. Yang Liu<sup>1</sup>**, Dr. Yiping Yan<sup>1</sup>

<sup>1</sup>Shanghai University of Sport, Shanghai, 中国

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Many elementary schools in Chinese urban area are in small size with rather large amount of students which limit the possibility of schoolchildren's physical activity (PA) during recess. Therefore, the purpose of this study was to examine the effect of structured and unstructured recess intervention based on space analysis technology on promoting PA levels among schoolchildren attending small sized elementary school.

**Methods:** A small sized elementary school (4.82 m<sup>2</sup> per child) in Suzhou, China, was explored in this study with 1162 students (mean age: 10.15 ± 1.20 years; boys: 48.4%). The effect of intervention was assessed by self-controlled experiment. Structured and unstructured recess intervention is the change of activity type and the addition of games markings based on spatial analysis respectively. Duration and number of PA behavior was measured by ActiGraph wGT3X-BT and direction observation respectively.

**Results:** For both boys and girls, post-intervention demonstrated a significant increase the duration of moderate to vigorous physical activity (MVPA) ( $p < 0.05$ ), as well as significant improvement in vigorous physical activity (VPA) during structured recess ( $p < 0.05$ ). Significant increases ( $p < 0.05$ ) in the duration of VPA were showed among boys during unstructured recess; The number of students observed in added markings spaces increased from 182 to 344; Significant increases ( $p < 0.05$ ) in the proportion of MVPA were showed in added markings spaces of gate and playground.

**Conclusions:** Activity type change to Tabata exercise improved PA during structured recess of all students. Added games markings based on spatial analysis technology increased participation number in PA during unstructured recess. This low cost intervention through space analysis technology is useful to promote schoolchildren's PA during recess in elementary schools with small area in China.

# Sugar-Sweetened Beverage Taxation in Low- and Middle-Income Countries: A Scoping Review of Policy Implementation and Behavioural Responses

**Ms. Payao Phonsuk**<sup>1,2</sup>, Associate Professor Sirinya Phulkerd<sup>3</sup>, Ms. Jintana Jankhotkaew<sup>4</sup>, Professor Anne Marie Thow<sup>1</sup>, Dr. Penny Farrell<sup>5</sup>

<sup>1</sup>Menzies Centre for Health Policy & Economics, Faculty of Medicine and Health, University of Sydney, Sydney, Australia, <sup>2</sup>Department of Health Education and Behavioural Sciences, Faculty of Public Health, Mahidol University, Bangkok, Thailand, <sup>3</sup>Institute for Population and Social Research, Mahidol University, Nakhon Pathom, Thailand, <sup>4</sup>International Health Policy Program, Ministry of Public Health, Nonthaburi, Thailand, <sup>5</sup>School of Public Health, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Sugar-sweetened beverage (SSB) taxation is a key policy intervention for addressing non-communicable diseases and improving population dietary behaviors. While implementation faces challenges in low- and middle-income countries (LMICs) due to limited resources and industry opposition, understanding its impact on consumption patterns and dietary choices is crucial. This scoping review examined SSB tax policy implementation in LMICs, with particular focus on consumer behavioral responses, industry response, implementation dynamics, and their implications for dietary change.

**Methods:** A systematic search of five databases (Medline, Web of Science, Scopus, Global Health, CINAHL) was conducted for peer-reviewed articles published between 2014-2023. Studies focusing on SSB tax policy implementation or response in LMICs were included. Data on study characteristics, methods, and key findings were extracted and synthesized. The review process adhered to PRISMA-ScR guidelines, with screening and data management conducted using Covidence software.

**Results:** The scoping review included twenty-four eligible studies. Two qualitative studies on the SSB tax policy implementation revealed limitations related to data access, with reliance on publicly available information. The remaining 22 studies primarily employed quantitative methods to evaluate the reactions of consumers and industry. Consumer behavioral analyses revealed significant changes in purchasing and consumption patterns, particularly among lower-income groups who showed greater price sensitivity and shifts in beverage choices. Industry responses included product reformulation and price adjustments, potentially influencing consumer choice architecture. Implementation studies identified key barriers including limited data access, insufficient monitoring systems, and industry opposition. While tax design was well-documented, crucial aspects of behavioral impact remained underexplored, including long-term dietary changes, substitution behaviors, and the relationship between implementation approaches and consumption patterns across different LMIC contexts.

**Conclusions:** This review highlights critical research gaps in understanding how SSB taxation influences dietary behaviors and consumption patterns in resource-limited settings. Future research should prioritize longitudinal studies of behavioral impacts, implementation science approaches, and comprehensive stakeholder analyses. Innovative methodologies are needed to

capture both policy implementation complexities and their effects on population-wide dietary behaviors. These insights are crucial for enhancing the effectiveness of SSB taxation as a dietary intervention and informing broader public health strategies in LMICs.



# Associations of body mass index (BMI) with climate change perceptions, physical activity, mental health, and political identity

**Dr. Semra Aytur<sup>1</sup>**, Dr. John Bucci, Glenn Rose  
<sup>1</sup>University of New Hampshire, Durham, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The purpose of this study was to assess whether Body Mass Index (BMI) was associated with perceptions about climate change, mental health, political identity, and walking to specific destinations such as parks.

**Methods:** Surveys were distributed to 2,000 homes in two northeastern U.S. cities. One hundred households were randomly selected within each neighborhood, generating a sample size of  $n=700$  adults from 22 neighborhoods. Perceptions about climate change were assessed by asking respondents whether they agreed that global warming was an issue that human behavior could affect. Respondents self-rated their mental health on a 4-point scale, and reported whether they were able to walk to a park, natural area, or open space in their community. Models were adjusted for political identity, sociodemographic factors, built environment factors, and other covariates. Multi-level models with appropriate link functions were used to account for clustering within neighborhoods.

**Results/Findings:** In adjusted models, BMI was inversely associated with perceptions that climate change was an issue that human behavior could affect ( $(\beta) = -1.26$ ; 95% Confidence Interval (CI): -2.48, -0.04); walking to parks ( $\beta = -1.19$ ; 95% CI: -2.36, -0.01), and mental health ( $\beta = -1.36$ ; 95% CI: -2.21, -0.51; all  $p < 0.05$ ). Political identity was not a statistically significant covariate.

**Conclusions:** Results suggest that lower BMI is independently associated with perceptions about climate change, walking to parks, and better mental health, after adjusting for political identity and other sociodemographic covariates. Findings align with behavior change theories, such as the Theory of Reasoned Action, Theory of Planned Behavior, and Social Cognitive Theory which posit that individuals' positive or negative feelings about a behavior (e.g., perceiving that walking may benefit planetary health as well as reduce the risk of obesity and improve mental health) can support behavior change initiatives. Results are being used to inform collaborative climate action, communities of practice, urban/rural planning, and related behavioral health interventions.

## **Wearables and smartphones for tracking modifiable risk factors in metabolic health: a scoping review**

**Ms. Victoria Brügger<sup>1</sup>**, Dr. Prof. Tobias Kowatsch<sup>1,2,3</sup>, Dr. Mia Jovanova<sup>1</sup>

<sup>1</sup>*School of Medicine, University of St. Gallen, St. Gallen, Switzerland*, <sup>2</sup>*Centre for Digital Health Interventions, ETH Zurich, Zurich, Switzerland*, <sup>3</sup>*Institute for Implementation Science in Health Care, University of Zurich, Zurich, Switzerland*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

Metabolic diseases, such as cardiovascular diseases and diabetes, are leading causes of death worldwide. Wearable devices and smartphones are increasingly used to monitor modifiable risk factors, including lifestyle behaviors such as nutrition, physical activity, stress, sleep, and substance use, as well as physiological markers, which can improve the management of metabolic diseases. This review will systematically scope the current literature to identify which modifiable (lifestyle and physiological) risk factors are most frequently studied in wearable and smartphone-based metabolic health research and to what extent measures of these risk factors are consistent across studies, particularly regarding measurement methods. A scoping review will be conducted to overview how wearable and smartphone-based studies measure modifiable risk factors related to metabolic diseases. Five databases (Scopus, Web of Science, PubMed, Cochrane Central Register of Controlled Trials, and SPORTDiscus) from 2019 to 2024, with search terms related to wearables, smartphones, and modifiable risk factors associated with metabolic diseases. Eligible studies will use smartphones and/or wearables (worn on the wrist, finger, arm, hip, and chest) to track physiological and/or lifestyle factors related to metabolic diseases. The review will follow reporting standards from PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) and JBI guidance on scoping review methodology. Two reviewers will independently screen articles for inclusion and extract data using a standardized form. Data collection is expected to begin in November; data analysis in the first quarter of 2025, and submission to a peer-reviewed journal by the second quarter in 2025. We expect to identify the degree to which wearable and smartphone-based studies track modifiable risk factors collectively (versus in isolation). Additionally, we will scope the consistency and variation in how modifiable risk factors are measured across existing studies. Results are expected to inform standardized guidelines on wearable and smartphone-based measurements, with the goal to aid cross-study comparison. The final report is planned for submission to a peer-reviewed journal. This review is among the first to systematically overview how wearables and smartphones measure modifiable risk factors associated with metabolic diseases and gaps in the measurement of these factors in digital metabolic health research.

## Using Commercial Wearables for Lifestyle and Metabolic Phenotyping : A Study Protocol of the GLOW UP Study

**Ms. Victoria Brügger<sup>1</sup>**, Prof. Dr. Tobias Kowatsch<sup>1,2,3</sup>, Dr. Mia Jovanova<sup>1</sup>

<sup>1</sup>School of Medicine, University of St. Gallen, St. Gallen, Switzerland, <sup>2</sup>Institute for Implementation Science in Health Care, University of Zurich, Zurich, Switzerland, <sup>3</sup>Centre for Digital Health Interventions, ETH Zurich, Zurich, Switzerland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

The GLOW UP (GLucose Observation and Wearable Utilisation Project) study assesses the predictive value of wearable-based lifestyle factors (e.g., physical activity, sleep, diet) for preventing type 2 diabetes (T2D). The study examines prediabetes primarily based on HbA1c and other glucose metabolism indicators, such as fasting plasma glucose and insulin resistance. By leveraging real-world data from commercially available wearables, the study explores whether lifestyle factors monitored in free-living conditions can predict early glucose metabolism abnormalities. The study also aims to assess the relative importance of each lifestyle factor, offering insights into personalized glucose dynamics and lifestyle patterns, potentially advancing personalized T2D prevention. This prospective case-control study involves 12 weeks of continuous lifestyle monitoring using wearables. Participants are adults aged 45 and above from Switzerland, selected based on specific criteria. Lifestyle behaviors, including physical activity, sleep, diet, stress, and substance use, are tracked via smartwatches and smartphone applications. Blinded continuous glucose monitoring is used to capture glucose profiles. Baseline and follow-up measurements include HbA1c, fasting glucose, insulin levels, and other metabolic markers. Predictive modeling, incorporating machine learning techniques like LASSO and time series models, will assess the relationship between lifestyle factors and glucose metrics. Additional clustering and regression analyses will examine the association between glucose profiles and metabolic characteristics. The study will evaluate the performance of wearable-derived lifestyle data in predicting HbA1c classifications as the primary outcome. Secondary outcomes include the predictive performance of wearable data on other metabolic markers (e.g., fasting plasma glucose, insulin resistance) and the feasibility of wearable-based individualized glucose profiling. Further analysis will explore lifestyle patterns across metabolic profiles, associations between lifestyle factors and glucose levels, and feature importance across metabolic subgroups. Findings are expected to provide detailed insights into how real-time lifestyle data can inform T2D risk at the individual level. The GLOW UP study has the potential to contribute to behavioral nutrition and physical activity fields by introducing a data-driven approach to T2D prevention through digital biomarkers. Anticipated findings may support the development of personalized, data-driven strategies for early T2D risk assessment and preventive healthcare in Switzerland and beyond.

# School contexts' promotion of adolescents' physical activity as a means of responding to the intensified well-being agenda – A cross-paradigmatic analysis

**Mrs. Sara Hoy<sup>1</sup>**

*<sup>1</sup>The Swedish School of Sport and Health Sciences (GIH), Stockholm, Sweden*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: M. Mental Health and Wellbeing**

**Purpose:** Recent research has advised us to rethink how to promote 'more' physical activity (PA) in school-settings including context-sensitive approaches. However, school contexts are also arenas for 'competing' paradigmatic interest between scientific communities. Here, the question that arises is how are school contexts for adolescents' PA thought of and articulated as a means of responding to the intensified well-being agenda across interventionist, pedagogical, and critical research?

**Methods:** The current study is part of a larger dissertation project and build off of individual studies. These studies include: i) a multiple-case ethnographic work including a comparative analysis and a mixed-methods social network analysis, ii) a cross-sectional design with data from surveys, accelerometers, and national registries, and iii) a systematic review evaluating how quantitative measurements assess school contexts. Theoretical approaches taken include ecological and critical perspectives addressing the dialectic/relational aspects of agency and structure. This methodological combination is both novel and cross-paradigmatic when studying PA during the school day for young people in middle school. Here, specifically in a Swedish context.

**Findings:** There are several ways school contexts' promotion of PA as a means of responding to the intensified well-being agenda are thought of and articulated. First, PA during the school day is negotiated at several (ecological) levels, where agency is enabled and hindered across, between, and within individual school contexts. Second, PA behaviors relate to the intersections of various social categories, such as gender, social position, and school segregation. Third, educational logics and sociocultural aspects of school environments have strong influences on how PA is expressed. Fourth, how to assess school contexts in quantitative measures is both under contest and construction.

**Conclusions:** There are different ways of thinking about PA connected to school contexts, driven by diverse epistemological and methodological concerns. The tension between interventionist, pedagogical, and critical perspectives put us up for both challenges and opportunities in the rethinking of PA in school contexts.

## Protocol for the implementation and referral of the ecofit physical activity intervention within Diabetes Alliance Program Plus among regional, rural and remote people with type 2 diabetes in a primary care setting.

**Prof. Ronald C. Plotnikoff<sup>1,2</sup>**, Dr. Anna K. Jansson<sup>1,2</sup>, Mr. Sam Beacroft<sup>1</sup>, Prof. Mitch Duncan<sup>1,2,3</sup>, Dr. Emily Cox<sup>1,2,4</sup>, Mrs. Sara Robards<sup>1</sup>, Mrs. Wendy Ferris<sup>1</sup>, A/Prof. Alexis Hure<sup>3,5</sup>, A/Prof. Shamasunder Acharya<sup>3,6</sup>

<sup>1</sup>Centre for Active Living and Learning, School of Education, University of Newcastle, Callaghan, Australia, <sup>2</sup>Active Living and Learning Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>3</sup>School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, <sup>4</sup>School of Biomedical Sciences and Pharmacy, University of Newcastle, Callaghan, Australia, <sup>5</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>6</sup>Hunter New England Local Health District, New Lambton Heights,

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** This protocol outlines the ecofit implementation-effectiveness trial, a multi-component mHealth intervention designed to increase resistance and aerobic physical activity (PA), among adults with type 2 diabetes (T2D) in primary care settings. This study will be conducted as part of the Diabetes Alliance Program Plus (DAP+), a large-scale integrated health service intervention in a large health district in Australia. The ecofit program has previously demonstrated efficacy and effectiveness in insufficiently active people with or at risk of T2D and community dwelling-adults, respectively. The aim of this study is to assess the reach (primary outcome), adoption, appropriateness, feasibility and fidelity of the implementation of ecofit and the overall effectiveness of the intervention.

**Methods:** General practices enrolled in DAP+ are visited by a specialist team (endocrinologist and diabetes educator). As part of these visits, the specialist team provides education to local clinicians as well as running person-centred case-conferencing with individuals with T2D (local general clinicians also attend). Prospective ecofit participants are adults diagnosed with T2D, who attend primary care settings enrolled in DAP+, and are referred to ecofit by a local primary care clinician or a member of the DAP+ specialist team. To support clinician promotion of ecofit, primary care clinicians will receive training, an information package, and various promotional resources. Ecofit will also be promoted through other DAP+ education events, including multi-disciplinary conferences, webinars, masterclasses, and online content. The ecofit platform provides users with tailored resistance and aerobic workouts, instructional videos, self-monitoring tools, and educational resources. Participants can choose workouts based on four levels of difficulty and location (e.g., park, home, outdoor gym) and receive motivation and informational material to improve physical activity engagement.

**Results:** Data collection is ongoing and will continue until late 2025. Single-timepoint outcomes, such as reach and adoption, will be analyzed descriptively, while paired t-tests or Wilcoxon signed-rank tests (for non-normal distributions) will be applied to assess changes in outcomes between baseline and follow-up.

Conclusion: This study will evaluate the implementation of ecofit among adults with T2D within the primary care setting. The results may help improve T2D lifestyle interventions in primary care settings across Australia.

## What is Nature? A qualitative exploration of how people describe nature in the context of physical activity and health

**Dr. GINA BESENYI<sup>1</sup>**, Dr. William Miller<sup>2</sup>, Dr. Courtney Schultz<sup>3</sup>

<sup>1</sup>Kansas State University, Manhattan, United States, <sup>2</sup>Northwestern University, Evanston, United States,

<sup>3</sup>Health and Technology Partners, LLC, Oconomowoc, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Growing evidence links nature exposure and nature-based physical activity (PA) to beneficial physical, mental, and social health outcomes.<sup>1,2</sup> Yet quantifying nature exposure for health and wellbeing presents theoretical and empirical challenges.<sup>3-5</sup> This study qualitatively explored how people describe nature in the context of a national survey to better understand access to and time spent with nature on peoples' wellbeing.

**Methods:** Data were collected in May 2022 via a national survey distributed through Forthright (Bovitz, 2023). Adults (18+ years) were recruited from the 1/3 highest and lowest poverty brackets from the 100 largest metropolitan statistical areas across the U.S. Participants were asked an open-ended question, "In a few words or phrases, when you hear the word nature, what comes to mind?" followed by a list of descriptions they consider as nature (check all that apply). Three trained researchers coded open-ended responses. Codes were developed, refined, and analyzed using a structured thematic approach that identified key themes and concepts through an iterative inductive process.

**Results:** Distributed across the U.S., participants (n=1558) were mostly White, non-Hispanic (55.1%), male (49.8%), married or in a domestic partnership (47.2%), employed (58.9%), living in a single-family home (58.3%), with a Bachelor's degree or higher (41.2%). Most respondents described nature itself or an experience or motivation to be in nature. Ten overall themes emerged: Living/Organic Things (flora, fauna), Non-Living Things or Forces (dirt, gravity), Ecosystems/Environments (forests, water features, celestial, weather, parks/protected areas), Feelings/Senses (peaceful, sounds, colors), Spiritual/Holistic (God's creation), Absence of Human Impacts (unspoiled, away from people), All Encompassing (great outdoors, universe), Engaging in an Activity (camping, hiking), Health and Safety (mental health, allergies), and Outdoors/Outside. Trees, animals, and outdoors were the most frequently used terms to qualitatively describe nature. The most commonly selected choices to describe nature supported qualitative findings: Lakes, ponds, rivers, streams, or oceans (n=1407, 90.3%), nature and forest preserves (n=1393, 89.4%), wild animals (n=1300, 83.4%), state and national parks and trails (n=1299, 83.4%) and sounds (n=1204, 77.3%).

**Conclusion:** Gaining insight into how people describe nature can inform measurement and ensure nature and PA prescription programs use language that resonates with community members.

## Preliminary Analysis of a Refined College-Service Learning Implementation Strategy in a Low-Socioeconomic Rural Middle School

**Ms. Megan Kwaiser<sup>1</sup>**, Mrs. Janette Watkins<sup>1</sup>, Dr. Janelle Goss<sup>1</sup>, Dr. Vanessa Martinez-Kercher<sup>1</sup>, Dr. Kyle Kercher<sup>1</sup>

<sup>1</sup>Indiana University - Bloomington, Bloomington, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Many physical activity interventions have been developed, but few are sustained. Moreover, health disparities in rural populations are due in part to limited access and participation in physical activity. This study aimed to assess the feasibility of a refined implementation strategy using undergraduate students as program implementers. The primary objective was to evaluate the feasibility of delivering a refined sport-based physical activity intervention in a rural middle school. The secondary objective was to compare physical activity levels between test and control groups. The exploratory objective was to examine the influence of psychological needs on physical activity.

**Methods:** We conducted an 8-week controlled feasibility study with 6th-8th grade students from an under-resourced rural middle school in the Midwestern United States, including n=78 participants. The Hoosier Sport intervention, led by trained college students in a service-learning course, involved enhanced physical education classes with volleyball and flag football, each featuring weekly positive youth development lessons. The control group participated in standard health classes. Primary outcomes assessed feasibility indicators for children and college student implementers, while secondary outcomes focused on physical activity and sedentary behavior. Data was analyzed using linear mixed effects models for physical activity and psychological needs satisfaction.

**Results:** At baseline, higher satisfaction of competence was significantly associated with lower screen time in both the test ( $p=0.002$ ) and control ( $p=0.030$ ) groups. Inhibitory control was negatively associated with screen time in both groups (control:  $p=0.040$ ; test:  $p=0.003$ ). Physical activity levels did not differ significantly between groups ( $p=0.072$ ), but the control group reported lower anxiety than the test group ( $p=0.004$ ). Post-intervention, we anticipate increased physical activity and reduced sedentary behavior in the intervention group, as well as associations between psychological need satisfaction and relatedness with college student mentors.

**Conclusion:** This preliminary analysis is part of a two-semester, 1-year controlled feasibility study. We are currently conducting post-data collection for Phase 1 of the study. The results will help inform the full study's outcomes. The refined implementation strategy could serve as a model for future initiatives promoting physical activity and healthy lifestyles in rural communities.

## Evaluation of a College Student-Based Physical Activity Implementation Strategy in a Rural Middle School

**Ms. Megan Kwaiser<sup>1</sup>**, Mr. Andrew Medellin<sup>1</sup>, Mrs. Janette Watkins<sup>1</sup>, Dr. Janelle Goss<sup>1</sup>, Mr. James Hobson<sup>2</sup>, Dr. Vanessa Martinez-Kercher<sup>1</sup>, Dr. Kyle Kercher<sup>1</sup>

<sup>1</sup>Indiana University - Bloomington, Bloomington, USA, <sup>2</sup>White River Valley School District, Switz City, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Physical inactivity in the U.S. poses a significant risk of developing chronic health factors associated to cardiovascular disease. Children from rural communities are especially vulnerable to inactivity. The Hoosier Sport program aims to address this by working to increase physical activity in 6th-7th grade students in a rural Indiana middle school. Hoosier Sport uses the power of sports coupled with nutrition education delivered by college-service learning students to establish healthy behaviors that children can sustain throughout their life.

**Methods:** This prospective program evaluation study utilized The Consolidated Framework for Implementation Research (CFIR) to assess feasibility outcomes such as recruitment, retention, fidelity, attendance, acceptability, and cost. CFIR was incorporated through surveys completed by Hoosier Sport team members to identify facilitators and barriers. Fidelity was measured using SOSPAN and SOFIT tools. SOSPAN (System for Observation of Staff Promotion of Activity and Nutrition) monitored staff interactions with children during physical education classes. SOFIT (System of Observing Fitness Instruction Time) evaluated the duration and type of activities in each lesson context.

**Results:** All feasibility measures met or exceeded the a priori threshold, indicating high success. Fidelity was high among college student implementers and child participants. SOSPAN showed that staff did not use physical activity as punishment, engaged in physical activity 62.5% of the time, provided verbal encouragement 87.5% of the time, and used elimination games only 2.5% of the time. SOFIT revealed significant promotion of moderate-to-vigorous physical activity, with 94% during the 4-week strength training intervention and 95% during the 4-week basketball intervention. The barrier buster tool identified general agreement with most statements, indicating promising systems-level acceptability.

**Conclusion:** The study results demonstrate successful feasibility, high fidelity, and promising systems-level acceptability. These findings underscore the importance of continued refinement and repeated evaluation of the program in alignment with the ORBIT model. The use of college student implementers presents a sustainable model that benefits all participants involved.

## Estimating Energy Expenditure from Monitor-Independent Movement Summary (MIMS) Scores in Free-Living Settings

Mr. Jimmy Duhamahoro<sup>1</sup>, Mr. Zeng Chengpeng<sup>1</sup>, Dr. Paul R. Hibbing<sup>2</sup>, Dr. Nicholas Lamoureux<sup>3</sup>, Dr. Emily Berg<sup>1</sup>, **Dr. Greg Welk<sup>1</sup>**

<sup>1</sup>Iowa State University, Ames, USA, <sup>2</sup>University of Illinois Chicago, Chicago, USA, <sup>3</sup>University of Nebraska at Kearney, Nebraska, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** The Monitor-Independent Movement Summary (MIMS) score is an open-source, summary metric for processing raw accelerometer data. Research to date has not characterized relationships with energy expenditure (EE) or potential for evaluating 24-hour movement profiles. This study developed and evaluated a translation model to relate MIMS to EE using 24-hour profiles collected from the Free-Living Study for Health (FLASH).

**Methods:** A sample of 153 participants (age  $24.34 \pm 8.8$ , BMI  $24.75 \pm 4.56$ , 64.05% female) wore an ActiGraph and a SenseWear armband on their nondominant arm for 24 hours and reported their 24-hour movement profile via the ACT24 web survey the following day. The ACT24 groups data into physical behaviors based on category and Metabolic Equivalents (METs) values from the Compendium of PA. A total of 113 specific activities were reported and categorized as Sleep ( $n=1$ ), Sedentary ( $n=21$ ), Light PA ( $n=59$ ), Moderate PA ( $n=29$ ) or Vigorous PA ( $n=3$ ). A model predicting Sensewear METs was developed using interactions and fixed effects from summed MIMS units, age, gender, BMI, and body fat percentage (while considering clustering by individual and activity). The overall utility of the model for estimating METs was evaluated using a hold-out sample of 80 participants. Equivalence testing, mean absolute percent error (MAPE), and correlations were used to assess the agreement and performance.

**Results:** The MIMS data were strongly correlated with observed METs ( $r = 0.70$ ), but stronger correlations were observed after calibration with predicted METs ( $r = 0.88$ ). Approximately 37% of the variance was explained by the fixed effects alone in the hold-out sample. However, when accounting for specific activities and individual variability, the model's performance increased, explaining 83% of the variance in the observed METs. Further exploration of the observed and predicted METs values revealed statistically equivalent bands across all physical behaviors. Agreement in different ACT24 activity classifications indicated variations in MAPE (11-48%).

**Conclusion:** The results showed high accuracy in predicting energy expenditure using MIMS for all physical behaviors. Although SWA is not a gold standard measure of energy expenditure, it provided the advantage of being able to train against minute-by-minute samples collected in free-living.

## Impact of a multi-component implementation strategy to increase outdoor free play opportunities in early childhood education and care (ECEC) services

**Dr. Sze Lin Yoong**<sup>1,2,3,4</sup>, Ms Nicole Pearson<sup>2,3,4,5</sup>, Mr Luke Giles<sup>5</sup>, Ms Hannah Lamont<sup>5</sup>, Prof Luke Wolfenden<sup>2,3,4,5</sup>, Dr Jannah Jones<sup>2,3,4,5</sup>, Mr Christophe Lecathelinais<sup>5</sup>, Prof Patti-Jean Naylor<sup>6</sup>, Prof Anthony Okely<sup>7,8,9</sup>, AProf Nicole Nathan<sup>2,3,4,5</sup>, Dr Kathryn Reilly<sup>2,3,4,5</sup>, Dr Rebecca Lorch<sup>2,3,4,5</sup>, Prof John Wiggers<sup>2,3,4,5</sup>, Dr Jacklyn Jackson<sup>2,3,4,5</sup>, Dr Melanie Lum<sup>1,3,4</sup>, Ms Karen Gillham<sup>5</sup>, Dr Alice Grady<sup>2,3,4,5</sup>

<sup>1</sup>Global Centre for Preventive Health and Nutrition, Institute for Health Transformation, Deakin University, Burwood, Australia, <sup>2</sup>School of Medicine and Public Health, College of Health, Medicine and Wellbeing, University of Newcastle, Callaghan, Australia, <sup>3</sup>National Centre of Implementation Science, University of Newcastle, Callaghan, Australia, <sup>4</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>5</sup>Hunter New England Population Health, Wallsend, Australia, <sup>6</sup>School of Exercise Science, Physical and Health Education, University of Victoria, Victoria, Canada, <sup>7</sup>Early Start, Faculty of the Arts, Social Sciences and Humanities, University of Wollongong, Wollongong, Australia, <sup>8</sup>School of Health and Society, Faculty of the Arts, Social Sciences, and Humanities, University of Wollongong, Wollongong, Australia, <sup>9</sup>Western Norway University of Applied Sciences, Sogndal, Norway


**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability


**Purpose:** Increasing the amount of outdoor free play time in early childhood education and care (ECEC) services is recommended to support child health and development. Despite this, there have been no previous studies assessing how to increase outdoor free play in ECEC. This study therefore sought to understand the impact of a multi-component implementation strategy (Get Outside Get Active) on ECEC service provision of opportunities for outdoor free play.

**Methods:** This was a randomised controlled trial with 84 ECEC services located in one region of New South Wales, Australia. Forty-one services were randomised to a 6-month multi-component implementation strategy or to a usual care group (n=43). Services in the intervention arm received the Get Outside Get Active program consisting of 5 implementation strategies (preparing a champion, educational materials, preparing an implementation blueprint, providing local technical assistance, performance review and feedback) to increase their scheduling of outdoor free play opportunities. The primary trial outcome, mean minutes per day of outdoor free play opportunities provided in ECEC services, was measured at baseline, 6-months (primary endpoint) and 18-months. Secondary outcomes were mean minutes of indoor-outdoor free play only and proportion implementing indoor-outdoor free play for the full day. The quality of the movement environment was assessed using direct observations in 30 ECECs at 6-months only.

**Results:** At 6-months, the intervention group showed a significant increase in mean daily minutes of outdoor free play (p=0.019) and indoor-outdoor free play (p=0.019) relative to the control group. However, no significant between-group differences were observed at 18-months. The proportion implementing a full-day indoor-outdoor program (p=0.196) and the quality of movement environments did not differ between groups at 6-months.



Conclusions: The implementation strategy significantly increased outdoor free play opportunities in ECEC services post-intervention, though the effects were not sustained at 18-months. Future research should focus on understanding factors driving the long-term impact of implementation strategies and explore reasons for reduction of effect.



# Implementing the Victorian Government's Healthy Choices Policy Directive in a Rural Hospital Café: A case study in Australia

**Dr Carolina Venegas Hargous<sup>1</sup>**, Dr. Jillian Whelan<sup>1</sup>, Ms Felicity Grainger<sup>1</sup>, Ms Pamela Marshman<sup>2</sup>, Ms Brigitte Annois<sup>3</sup>, Prof. Colin Bell<sup>1</sup>, Dr. Carmen Vargas<sup>1</sup>

<sup>1</sup>*Global Centre for Preventive Health and Nutrition (GLOBE), Institute for Health Transformation, Faculty of Health, Deakin University, Geelong, Australia,* <sup>2</sup>*Grampians Health, Horsham, Australia,*

<sup>3</sup>*Healthy Eating Advisory Service, Nutrition Australia, Vic Division, Melbourne, Australia*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** The State government in Victoria, Australia mandated the implementation of the Healthy Choices: policy directive (the Policy directive) to ensure public health services provide healthier foods and drinks in their retail food outlets. This case study aims to report the implementation of the Policy directive in a rural hospital café and views from consumers (i.e., hospital staff and visitors).

**Methods:** An instrumental case study was used to report the Policy directive implementation conducted between June 2021 and October 2023. It integrates data from progress meeting minutes and management reports, pre-and post-online surveys and food and drink audits.

**Results:** A policy mandate, internal and external support, and ongoing monitoring enabled the Policy directive implementation and compliance. However, the hospital's rural location, COVID-19-related pressures and competing priorities, limited infrastructure within the Heartbeet Café, staff shortages, and intermittent high-level management support, delayed the policy implementation. Thirty-eight per cent (n=13) of customers who answered the post-implementation survey noted an increase in healthy options. While 67% (n=23) reported a moderate to high level of contentment with the range of healthy options available, 27% (n=10) suggested the number of unhealthy options should increase. Compliance with drinks was achieved in August 2022, and food targets were achieved in October 2023.

**Conclusions:** Despite some challenges and delays, the Policy directive was successfully implemented, resulting in full compliance. A better understanding of how the Policy directive was translated into practice, including barriers and facilitators, can guide implementation and sustainment in other Australian healthcare facilities.

## Habit-based lifestyle app for the general adult population: effects and effect modifiers of a quasi-experimental real-world intervention

**Dr. Eeva Rantala**<sup>1</sup>, M.Sc. Mikko Valtanen<sup>1,2</sup>, Dr. Ilona Ruotsalainen<sup>3</sup>, Dr. Hilikka Liedes<sup>3</sup>, M.Sc. Adil Umer<sup>3</sup>, Prof. Jaana Lindström<sup>1,4</sup>

<sup>1</sup>Department of Public Health, Finnish Institute for Health and Welfare, Helsinki, Finland, <sup>2</sup>Department of Mathematics and Statistics, University of Turku, Turku, Finland, <sup>3</sup>VTT Technical Research Centre of Finland Ltd, Kuopio, Oulu, and Tampere, Finland, <sup>4</sup>Institute of Public Health and Clinical Nutrition, University of Eastern Finland, Kuopio, Finland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Digital interventions provide a scalable approach to promote health, but their population-level effects remain poorly understood. This study examined the effects and effect modifiers of a three-month digital lifestyle intervention offered for a subgroup of a nationally representative sample of adults in Finland.

**Methods:** Participants received a link to a web-based app designed to support the formation of diverse healthy lifestyle habits. The app provided personalised behavioural suggestions that translated evidence-based guidelines into contextualised, easily repeatable actions. Users could browse and select the suggested actions and report and monitor their performances. Effects were assessed in a pre-post design using data collected with questionnaires (months 0, 1.5, 3) and the app log. Linear mixed-effects models explored (a) the associations between the intervention (=interaction of time and app use) and changes in self-reported diet quality (Healthy Diet Index [HDI]; 0=low, 100=high quality) and BMI, and (b) the modification of these associations by baseline characteristics. App use metrics comprised the percentage of days with logins and the logarithmic number of reported performances (total, HDI-, and BMI-related). Baseline characteristics reflected sociodemographics, lifestyle, health, and e-service use.

**Results:** Of 6975 invitees, 1282 (18.4%) accepted the invitation, and 389 (69% women; mean age 51 [SD 15]) completed at least one follow-up questionnaire. Median percentage days with logins was 5.6% (IQR 3.3%-11%) and the medians of reported performances were 22 (IQR 3-67) in total, 3 (IQR 0-9) related to HDI, and 13 (IQR 2-49) related to BMI. At baseline, 1.5, and 3 months, the mean (SD) HDI was 53.1 (10.8), 56.1 (10.8), and 54.6 (9.8), and the mean (SD) BMI 27.8 (5.6), 27.4 (5.2), and 27.6 (5.7). Total and BMI-related number of performances were significantly associated with reduced BMI (both models:  $\beta$  -0.08, 95% CI -0.15, -0.00). Other associations between the intervention and outcomes were non-significant. No significant association modifiers were detected.

**Conclusions:** This explorative analysis suggests that an easily scalable, low-intensity digital intervention for healthy habits could have beneficial effects on BMI. While minor, the effects could be important at the population level. The findings need to be confirmed in a more robust study design.

## Effectiveness and Long-term Impact of Web-based HIIT and CR Program on Physical Activity in Workers with MetS

**Ms. Fumiko Murai<sup>1</sup>**, Dr. Rina So<sup>1</sup>, Dr. Tomoaki Matsuo<sup>1</sup>

<sup>1</sup>National Institute of Occupational Safety and Health, Japan, Kawasaki, Japan

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Physical inactivity is a critical issue among middle-aged workers that contributes to the high prevalence of metabolic syndrome (MetS). Busy work schedules make it challenging for workers to incorporate sufficient physical activity into their daily routines. Therefore, effective and time-efficient interventions are needed to help workers increase and sustain physical activity levels, thereby reducing the risk of MetS. This study aimed to evaluate the effectiveness of web-based high-intensity interval training (HIIT) and caloric restriction (CR) programs on the physical activity levels of workers, focusing on changes during the intervention and whether these improvements were sustained progressively.

**Methods:** Thirty-six workers who met the Japanese criteria for MetS participated in an 11-week intervention program that included web-based CR lectures, HIIT sessions, and motivational support. Data were collected at baseline, post-intervention, and one-year follow-up. The measured outcomes included body composition, MetS-related factors (body weight, waist circumference, blood pressure, triglyceride levels, HDL cholesterol, and fasting plasma glucose), and physical activity levels (sedentary behaviour, light physical activity, and moderate-to-vigorous physical activity [MVPA]). All types of physical activities were assessed using an accelerometer (HJA-750C; Omron Healthcare Co., Kyoto, Japan) worn on the waist. Valid data required at least seven days of wear, with a minimum of 10 h/day. Data were analysed using paired t-tests and repeated measures ANOVA.

**Results:** After the 11-week intervention, significant improvements were observed in several MetS-related markers, including body weight, waist circumference, blood pressure, and triglyceride levels. Some of these benefits were sustained at one-year follow-up. Regarding physical activities, MVPA bouts of > 10 min significantly increased at post-intervention, with the proportion of participants achieving 150 min of weekly MVPA (in bouts of ≥ 10 minutes) rising from 20% to 40% ( $P < 0.01$ ). Despite these improvements, at one-year follow-up, MVPA in bouts and overall physical activity levels returned to baseline.

**Conclusion:** Web-based HIIT and CR programs improved the risk of MetS and increased physical activity levels in the short term. However, declined physical activity levels at one-year follow-up highlights the need for continued support to help workers sustain their increased levels.

## From barriers to best practice: worker, team leader and stakeholder perspectives of health promotion in contact centre workplaces

**Dr. Charlotte L. Brakenridge<sup>1,2</sup>**, Professor Genevieve N. Healy<sup>2</sup>, Dr. Jane Gifkins<sup>1</sup>, Elyse Arthur<sup>2</sup>, Lynn Gunning<sup>3</sup>, Melanie Gam<sup>4</sup>, Dr. Ana D. Goode<sup>2</sup>

<sup>1</sup>Centre for Work, Organisation and Wellbeing, Griffith University, Brisbane, Australia, <sup>2</sup>School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Australia, <sup>3</sup>Comcare, Canberra, Australia, <sup>4</sup>Queensland Health, Brisbane, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Contact centre workers experience high levels of sedentary behaviour, poor diets and weight gain, making these workers a key target for health promotion. However, implementing initiatives can be difficult in contact centres with staff turnover and shift work evident. This qualitative study aimed to explore the factors affecting uptake and implementation of health promotion in contact centre workers.

**Methods:** Six semi-structured focus groups (n=42) and two interviews were conducted with contact centre workers, team leads, and stakeholders (64% women, aged=41 years (SD=12)) from public and private organisations. Participants were asked about what factors they thought impacted their health behaviours and their experiences with health promotion in the workplace. Focus groups and interviews were recorded, transcribed and coded using thematic analysis.

**Results:** Common barriers included high workloads and low autonomy for breaks, inconsistent promotion and low staff awareness of available health promotion initiatives, and limited access to facilities and programs when working from home and working night shift. Some managers expressed competing demands of maintaining productivity and improving employee wellbeing. Barriers to workers eating well were managers using unhealthy food to reward and engage workers and short breaks which promoted snacking. Barriers to standing at work were issues with noisy, manual sit-stand desks that were perceived to interrupt colleagues or customers, hot desks that took too long to set up ergonomically, and not having a sit-stand desk when working at home. Strategies that might work in other work settings were not suitable or were less feasible in the contact centre, e.g., not being able to walk around on calls due to privacy concerns or being able to walk at lunch with colleagues. Facilitators to health promotion uptake and implementation were employee-driven initiatives, a supportive collegial environment, and organisational support of interventions through funding and giving staff time off phones.

**Conclusions:** Organisational buy-in is essential for health promotion in contact centres. Health promotion strategies should be built into the workday and be suitable for the contact centre environment, including remote and shift work. Improvements to both the psychosocial and physical environment of contact centres are warranted to facilitate better worker health.

## **Lifestyle coaching for people living with physical disabilities: exploring perceptions of clients and professionals on receiving, delivering and implementing an adapted evidence-informed lifestyle coaching service**

**Dr. Trynke Hoekstra<sup>1</sup>**, J. Helmy Douma<sup>1</sup>, Jesse Nijboer<sup>1</sup>, Martin Fluit<sup>3</sup>, Dr. Femke Hoekstra<sup>2</sup>  
<sup>1</sup>Vrije Universiteit Amsterdam, Amsterdam, Netherlands, <sup>2</sup>University of British Columbia, Vancouver, Canada, <sup>3</sup>Stichting Special Heroes, Utrecht, Netherlands

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** To inform the implementation of a new Dutch lifestyle coaching service (Healthy Habits Coaching) for people living with physical disabilities (PLWD), we aimed to explore experiences and perceptions of clients and professionals on receiving, delivering and implementing lifestyle coaching.

**Methods:** This qualitative study was conducted in partnership with a Dutch community organization using a pragmatic approach. Semi-structured interviews were conducted with clients (n=9) who received lifestyle coaching, and professionals (n=10) who delivered and/or implemented lifestyle coaching to PLWD. Data were analyzed using reflexive thematic analysis.

**Results:** Both clients and professionals elaborated on the importance of client-centered coaching and reciprocal responsibilities within a client-coach relationship. Clients emphasized the value of stepwise guidance on behavior change and mentioned that the coaching evoked feelings of meaning, autonomy and improved capability. Professionals highlighted the importance of implementing lifestyle coaching tailored to PLWD. While professionals were generally positive about the implementation of Healthy Habits Coaching, they had mixed opinions about the added value and core components of the service. They underlined that for successful adoption and implementation in Dutch rehabilitation and community settings, the added value, scientific foundation, financial basis and organizational structure of the service should be clearly communicated.

**Conclusions:** We identified three key characteristics that may contribute to a successful lifestyle coaching service for PLWD: 1) establishing a reciprocal coach-client relationship, 2) using a client-centered approach, and 3) incorporating action planning techniques. We provide directions for how, where and by whom an adapted lifestyle service for PLWD could be implemented in Dutch rehabilitation and community settings. This study demonstrates an example of how an evidence-based lifestyle service, targeting PLWD can be prepared for implementation in a new setting. **Significance:** Lifestyle Medicine is a valuable addition to conventional medicine, aiming to prevent, treat and/or reverse the progression of chronic conditions. Lifestyle Medicine focusses on multiple lifestyle behaviours, including physical activity, nutrition and sleep. Client-centered lifestyle coaching can promote and support healthier lifestyles, especially in PLWD.

# Beyond the Body: Shaping Trauma-Informed Practice in Exercise Professions

**Miss Grace Ike<sup>1</sup>**

*<sup>1</sup>The School of Human Movement, The University of Queensland, St Lucia, Brisbane, Australia, <sup>2</sup>School of Educational Psychology and Counselling, Monash University, Clayton, Australia, <sup>3</sup>School of Rural Health, Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Australia*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

Trauma-informed practice (TIP) is a strength-based approach to addressing the diverse needs and goals of consumers in movement-based settings. Despite its potential, TIP remains poorly understood and inconsistently implemented within exercise professions. This study aimed to understand the fundamental principles that shape TIP in exercise professions, the current approaches and challenges to implementing TIP and the educational strategies required to equip exercise professionals with the skills to employ a TIP approach. This study used a qualitative method by conducting semi-structured interviews with 14 exercise professionals, including exercise physiologists, physiotherapists, occupational therapists, and yoga instructors. Participants were recruited based on their experience in trauma informed practice within movement-based settings and delivery of clinical education to colleagues and tertiary students. During the interviews, participants were asked about their views on TIP within exercise professions, challenges within current care model, and recommendations for effective training programs. Participant responses to the interview questions were analysed using Braun and Clarke's thematic analysis, which revealed a number of key themes. Participants perceive principles such as safety, collaboration, understanding lived experiences, empathy, and empowerment as essential guiding TIP principles for Exercise Professions to employ. Participants highlighted that there is a general shift away from the biomedical approach towards more holistic care, however the implementation of TIP remains largely experimental. Furthermore, participants highlighted that limited research and training, and constraints within existing treatment options pose as challenges to implementing TIP. These insights provide a foundation for shaping a comprehensive understanding of TIP and its implementation among Exercise Professions.

## Understanding What Shapes Effective Dietetic Weight Management Practice: A COM-B Analysis

**Ms. Amira Hassan<sup>1,2</sup>**, Ms Lynne Williams<sup>1,3</sup>, Dr Megan E. Rollo<sup>1</sup>, Laureate Professor Clare E Collins<sup>4,5</sup>, Professor Barabara A. Mullan<sup>1,6</sup>, Mrs Hayley Breare<sup>1</sup>, Associate Professor Christina M. Pollard<sup>1,2,6</sup>, Professor Deborah A. Kerr<sup>1,2</sup>, Associate Professor Andrea Begley<sup>1,2</sup>

<sup>1</sup>Curtin School of Population Health, Faculty of Health Sciences, Curtin University, Perth, Australia,

<sup>2</sup>Curtin Health Innovation Research Institute, Curtin University, Perth, Australia, <sup>3</sup>WA Country Health Service, Wheatbelt, Australia, <sup>4</sup>School of Health Sciences, College of Health, Medicine and Wellbeing, University of Newcastle, Callaghan, Australia, <sup>5</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>6</sup>Enable Institute, Faculty of Health Sciences, Curtin University, Perth, Australia


**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change


**Purpose:** Dietitians are key healthcare providers in weight management, yet limited research has explored their practice in this area. Identifying factors influencing dietitians' weight management practice is crucial for determining training, resource, and support needs. The Capability, Opportunity, and Motivation Behaviour (COM-B) model offers a comprehensive framework for understanding behavioural influences, making it ideal for examining factors influencing dietitians' ability to provide effective weight management practice. This study therefore used the COM-B model to explore these influences.

**Methods:** A qualitative descriptive study underpinned by interpretivist philosophy was conducted. Semi-structured interviews were undertaken with dietitians practising in Australia, recruited through purposive and snowball sampling. Interviews were audio-recorded and transcribed. Data were initially analysed with an inductive approach to content analysis, where categories were constructed and subsequently mapped onto the COM-B model framework.

**Results:** The study included fourteen participants, predominantly female (93%, n=13), aged between 20-50 years (79%, n=11), with over 9 years of dietetic practice experience (57%, n=8). Eight categories were constructed and mapped to the COM-B domains of Motivation (2), Capability (3), and Opportunity (4). For Motivation, dietitians showed strong professional commitment to providing effective weight management support ('Professional Drive'), recognising the importance of tailoring approaches to clients' needs ('Client-Centred Strategies'). However, capability and opportunity barriers constrained their ability to translate this motivation into effective practice. In Capability, while dietitians demonstrated an understanding of weight management's multifaceted nature ('Understanding Weight Complexity') and thus focused on sustainable weight management approaches ('Holistic Practice Approaches'), they found addressing the complex psychosocial factors influencing clients' behaviour change challenging, expressing a strong desire to enhance skills in behaviour change counselling ('Psychosocial Influences'). Under Opportunity, constraints were amplified, with limited access to dietitians (number of visits, duration) in primary care ('System Constraints'). Dietitians, therefore, often defaulted to multidisciplinary collaboration for addressing clients' psychosocial needs ('Multidisciplinary Approach') and using digital health tools to overcome practice constraints ('Digital Solutions').



Conclusions: This study revealed critical gaps between motivation and factors influencing practice capabilities and opportunities. Key recommendations include enhancing dietitians' psychosocial counselling capabilities through targeted training, establishing more supportive clinical pathways, and leveraging digital health solutions.



# Evaluating the Impact of the SantEscalade Program on Children's Physical Activity, Healthy Eating Habits, and Motivation

**Dr. Julien Chanal<sup>1</sup>**, Manon Pesse<sup>1</sup>

<sup>1</sup>University of Geneva, Geneva, Switzerland, <sup>2</sup>Distance Learning, Brig, Switzerland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** This study aims to evaluate the effectiveness of the SantEscalade program, a health promotion initiative in the Canton of Geneva targeting children aged 6 to 15. The program combines regular after-school physical activity sessions with education on balanced nutrition, promoting healthy lifestyles and providing access to locally sourced healthy food. With annual participation ranging from 5,000 to 8,000 children and over 40,000 participants in the Escalade race, this program represents a significant public health initiative.

**Methods:** The objective was to maximize the number of evaluations conducted for this intervention program. To achieve this, we developed a questionnaire to assess motivation to participate in the program, motivation for physical activity, as well as healthy motivation, nutritional and physical activity habits, and knowledge about nutrition. The questionnaire was administered both at the beginning and the end of the program. The Motivational items were grounded on Self-Determination Theory, while items about nutritional and physical activity habits were adapted on HSBC survey and CAPAS questionnaire. Additionally, project leaders were encouraged to conduct physical assessments of the children participating in the program during one of the eight scheduled sessions planned. Cardiorespiratory fitness was measured using the multistage fitness test (shuttle run). To monitor physical activity levels during sessions, Polar heart rate monitors were randomly assigned to participants. Participation rates in the program and performance in the Escalade race (December 7–8) will also be considered as key outcome measures.

**Results/Findings:** Data collection is ongoing. Analyses will examine number and characteristics of participants, evolution of motivations and habits, before and after the program, and race participation and performance.

**Conclusions:** This initial attempt to evaluate the program will provide us with some insights into the participants' profiles and the program's impact on them. More importantly, it will allow us to assess the feasibility of distributing questionnaires and conducting evaluations across the various sites and project leaders involved. This will give us a clearer understanding of the potential to conduct a more detailed evaluation of the program in the coming years.

## Validation of the Fitbit Charge 6 for Measuring Physical Activity in Lung Cancer Survivors: Results from Laboratory and Free-Living Condition

**Dr. Roberto Benzo**<sup>1,2</sup>, Rujul Singh<sup>2</sup>, Dr. Carolyn J. Presley<sup>1,3</sup>, Dr. Zachary L. Chaplow<sup>4</sup>, Dr. Chloe Hery<sup>2</sup>, Macy K. Tetrack<sup>2</sup>, Allison Cleveland<sup>2</sup>, Jane Yu<sup>5</sup>, Dr. Vipul Lugade<sup>6</sup>, Dr. Peter Washington<sup>7</sup>, Dr. Electra Paskett<sup>1,2</sup>, Dr. Emma Fortune<sup>8</sup>

<sup>1</sup>Comprehensive Cancer Center, The Ohio State University, Columbus, USA, <sup>2</sup>Division of Cancer Prevention and Control, Department of Internal Medicine, College of Medicine, The Ohio State University, Columbus, USA, <sup>3</sup>Division of Medical Oncology Department of Internal Medicine, College of Medicine, The Ohio State University, Columbus, USA, <sup>4</sup>Kinesiology, Department of Human Sciences, College of Education and Human Ecology, The Ohio State University, Columbus, USA, <sup>5</sup>College of Medicine, The Ohio State University, Columbus, USA, <sup>6</sup>Division of Physical Therapy, Binghamton University, Binghamton, USA, <sup>7</sup>Department of Information and Computer Sciences, University of Hawaii at Manoa, Honolulu, USA, <sup>8</sup>Division of Health Care Delivery Research, Robert D. and Patricia E. Kern Center for the Science of Health Care Delivery, Mayo Clinic, Rochester, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Wearable activity monitors (WAMs) like the Fitbit Charge 6 provide insights into physical activity (PA) and are widely used in behavioral interventions and cancer survivorship research. However, validation studies primarily focus on healthy adults, with limited research on cancer survivors. Patients with lung cancer (LC) may present unique movement patterns that challenge sensor accuracy. This study evaluates the Fitbit Charge 6's validity in measuring PA under laboratory conditions and its agreement with research-grade WAMs in free-living conditions among LC survivors.

**Methods:** Fifteen adults diagnosed with LC (stage I-IV) will participate in laboratory and free-living protocols, wearing a Fitbit Charge 6, activPAL 3 micro, and ActiGraph LEAP simultaneously. During a two-hour lab session, participants will complete structured activities (walking, sitting, standing, lying down) and functional tests (5X Sit-to-Stand, Short Physical Performance Battery). Activities will be video-recorded for validation. In the free-living protocol, participants will wear the devices continuously for seven days except during water-based activities. WAM-based outcome measures will include step count, time spent at light, moderate, and vigorous PA intensity levels, and sedentary behavior. Lab-based validity measures will compare WAM data to video-recorded observations. We will measure sensitivity, specificity, positive predictive value, agreement, mean absolute percentage errors (MAPE), and conduct equivalence testing. Free-living agreement between devices will be assessed using Bland-Altman plots, mean absolute deviation (MAD), and regression analyses.

**Results:** Six participants (66.7% female, mean age 62.7 years) have completed the study thus far, with study completion anticipated by Spring 2025. MAPEs for Fitbit and direct observation were 45.0%, 12.6%, and 16.0% for 5-, 15-, and 30-second walking tasks, respectively. Preliminary data indicates that longer wear periods may yield lower MAPE compared to shorter durations. In free-living conditions (n=4 with ≥1 valid wear day), Fitbit-reported daily activity minutes were: sedentary (including sleep) 1,034.4 (SD = 64.0), light PA 212.7 (SD = 95.5), moderate PA 5.4 (SD = 6.6), and vigorous PA 20.6 (SD = 31.0).

Conclusions: This study will provide critical insights into the accuracy and reliability of WAMs for assessing PA in LC survivors, which are essential for interpreting clinical research and informing future interventions.

## Motives for veganism and their associations with demographic factors in European countries

**Dr. Joyce Haddad**<sup>1</sup>, Dr. Selma Kronsteiner-Gicevic<sup>2,3</sup>, Ms. Natalie Bez<sup>1</sup>, A/Prof Maria Wakolbinger<sup>2</sup>, Dr. Marek Kuzma<sup>8</sup>, Professor Maira Bes-Rastrollo<sup>4,5</sup>, Professor Stefaan De Henauw<sup>7</sup>, Professor Markus Keller<sup>10</sup>, Professor Eva Schernhammer<sup>2,11</sup>, Dr. Jan Gojda<sup>6</sup>, Dr. Isabelle Herter-Aeberli<sup>12</sup>, Dr. Leonie H Bogl<sup>1</sup>

<sup>1</sup>Bern University of Applied Sciences, , Switzerland, <sup>2</sup>Medical University of Vienna, , Austria, <sup>3</sup>University of Vienna, , Austria, <sup>4</sup>University of Navarra-IdiSNA, Pamplona, Spain, <sup>5</sup>Biomedical Research Networking Center for Physiopathology of Obesity and Nutrition, , Spain, <sup>6</sup>Charles University, , Czech Republic, <sup>7</sup>Ghent University, Ghent, Belgium, <sup>8</sup>Institute of Microbiology of the CAS, , Czech Republic, <sup>9</sup>Palacky University, , Czech Republic, <sup>10</sup>Research Institute for Plant-Based Nutrition, Biebertal, Germany, <sup>11</sup>Harvard TH Chan School of Public Health, Boston, USA, <sup>12</sup>ETH Zürich, , Switzerland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Plant-based diets have gained popularity as a means of reducing the environmental footprint of the diet and promoting human health and animal welfare. No quantitative study has identified if motives for following a vegan diet differ by demographic characteristic. The aim of this study was to describe motives for veganism in selected European countries and to examine whether demographic variables such as age, gender, country of residence, living in urban or rural areas, education, employment status, financial situation, years since adopting a vegan diet, and marital status are associated with motives for veganism.

**Methods:** A cross-sectional observational study was conducted across Europe (Belgium, Czech Republic, Germany, Spain, Switzerland) as part of the VeganScreener study. Self-reported healthy vegan adults were recruited between November 2022 and April 2023. Participants reported their socio-demographic information and motive for veganism. Associations of socio-demographic variables with participants' motives (ethical, ecological, health and other) were analysed using one-way ANOVA or chi-square tests.

**Results:** The sample comprised 378 adults (mean age: 35.8 years, SD=10.2), 58% female). The most common reasons reported for following a vegan diet were animal-welfare ethical concerns (75%), followed by ecological reasons (12%) and health reasons (10%). A significant relationship was found between motive for veganism and both age ( $p = 0.002$ ) and employment status ( $p < 0.001$ ). The mean age of those reporting ethical concerns as a primary motive was 35.3 years, ecological reasons was 33.3 years, and health reasons was 40.7 years. The ecological motive was more frequently reported by students (23.9%) compared to those in paid work (10.9%). No significant associations were found for the other examined demographic characteristics.

**Conclusions:** Motives for veganism may be dependent on age and employment status. Understanding the drivers behind following plant-based diets can help clarify how such diets are perceived, adopted, and maintained within diverse populations. Further studies can build upon our findings to examine how motives and demographic variables affect dietary adherence and health outcomes in vegan populations. This research may also help improve nutrition and sustainability messages that better align with the values of vegan individuals.

## Protocol for a process evaluation and economic evaluation of a physical activity promotion intervention and tailored implementation strategies

**Ms. Belinda Wang<sup>1</sup>**, Assoc Prof Leanne Hassett<sup>2</sup>, Prof Cathie Sherrington<sup>1</sup>, Dr Abby Haynes<sup>1</sup>, Dr Jennifer Baldwin<sup>1</sup>, Ms Kate Purcell<sup>1</sup>, Ms Roslyn Savage<sup>1</sup>, Prof Anne Tiedemann<sup>1</sup>, Ms Sakina Chagpar<sup>1</sup>, Mr Daniel Cheung<sup>2</sup>, Dr Marina Pinheiro<sup>1</sup>

<sup>1</sup>*School of Public Health, University of Sydney, , Australia*, <sup>2</sup>*School of Health Sciences, University of Sydney, , Australia*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** The Promotion of Physical Activity by Health Professionals trial aims to deliver implementation strategies to teams of health professionals (n=30 clusters) to address barriers and leverage facilitators within their clinical context and promote physical activity among their patients (n=720). This hybrid type 1 effectiveness-implementation trial will investigate the effect of this support on moderate-to-vigorous physical activity in patient participants compared to waitlist control. We will conduct a process evaluation and economic evaluation alongside this trial. The process evaluation will explore implementation within the trial and seek to identify mechanisms that help explain the findings. The economic evaluation will help to determine whether the delivery of the implementation strategies and intervention represents value for money.

**Methods:** Our mixed methods process evaluation will evaluate a range of implementation outcomes and determinants, guided by McKay's implementation evaluation roadmap. Implementation outcomes will include adoption, reach, fidelity and dose. Implementation determinants will include feasibility and acceptability. Data will be collected using surveys, interviews and focus groups with health professionals and patients. Quantitative data will be summarised using descriptive statistics. Qualitative data will be analysed thematically. Our cost-effectiveness and cost-utility analyses will be conducted from the healthcare, aged care and disability care funders' perspective. A within-trial analysis will be conducted over the 6-month trial duration, and a modelled analysis over two years. Data on intervention costs (trial records) and healthcare utilization (data linkage) will be collected for both groups. Incremental cost-effectiveness ratios (ICERs) will be reported for physical activity and quality-adjusted life-years outcomes. Bootstrapping will be used to explore uncertainty around the ICERs and report 95% confidence intervals.

**Results:** will be presented on a cost-effectiveness plane.

**Discussion:** The process evaluation will improve understanding of implementation within the study and mechanisms which may impact MVPA among patient participants. Results of these economic evaluations will indicate whether these interventions represent value for money considering varying willingness-to-pay thresholds. Information on intervention costs will help with future planning and intervention implementation. The findings of the process and economic evaluation will guide future implementation and scale-up of the implementation strategies and intervention to suit varied clinical contexts and future research.

## Ready to Move: From Theory to Action-Bridging the Gap through Experiential Learning

**Ms. Kathleen N. Heeter<sup>1</sup>**, Ms. Claire Dannelley<sup>1</sup>, Ms. Samantha Schaefer<sup>1</sup>, Ms Angela Reese<sup>1</sup>, Ms Betty Klein<sup>1</sup>, Dr. Jonathan T. Macy<sup>1</sup>, Dr. Kyle A. Kercher<sup>1</sup>, Dr. Vanessa M. Martinez Kercher<sup>1</sup>  
<sup>1</sup>Indiana University, Bloomington, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Despite the rise in lifestyle-related chronic illnesses, educational courses for public health professionals on guiding patients through sustainable behavior change remain limited. Health and wellness coaching (HWC) is an emerging strategy integrating behavior-change theories, including self-determination theory, motivational interviewing, and social cognitive theory. While training in behavior change strategies like HWC is recommended, public health curricula often lack education on interpersonal communication and behavior skills. The Ready to Move (RTM) program, and the focus of this study, address this gap by providing public health students with 5 weeks of self-determination theory and behavior change technique (BCT) training, followed by 8 weeks of supervised coaching with university employees. This study aims to examine changes in BCT use confidence during a physical activity behavior change course.

**Methods:** Data from 70 students were collected during the 16-week RTM study. Utilizing Qualtrics surveys, BCT competency was assessed at three timepoints throughout the study: at baseline (Week 0), after a classroom mock-client practical (Week 5), and after 8 weeks of application-based coaching with a university employee. All post-program data was collected at the end of the course (Week 16). Repeated-measures ANOVA assessed the change in BCT competency between baseline, post instruction, and post practical experience. Additionally, a Tukey post hoc analysis was conducted to assess changes between each timepoint.

**Results:** Results of the repeated measures ANOVA indicated statistically significant changes between all three timepoints of the study ( $p < 0.05$ ). Post hoc analysis indicated BCT competency increased significantly ( $p < 0.05$ ) between all three timepoints. The significant change between the midpoint and post study indicates students gained additional confidence from application-based experience.

**Conclusion:** These findings highlight the importance of experiential learning in developing public health trainees' proficiency in BCTs. While classroom instruction effectively builds foundational knowledge, the significant gains observed after hands-on, application-based coaching demonstrate the critical role of practical experience in enhancing skill confidence and competence. This progression suggests integrating real-world practice into public health education can better prepare trainees to support positive health behavior changes, particularly in sedentary populations, such as university employees.

## Physical Activity to Reduce Cardiometabolic Risk in Adults with Serious Mental Illness (PARCS): Interim Analysis of a Randomized Clinical Trial

**Dr. GINA BESENYI<sup>1</sup>**, Mr. Andrew Argie<sup>1</sup>, Mr. Andre Soares<sup>2</sup>, Dr. Wei-Wen Hsu<sup>3</sup>, Mr. Omotayo Onanuga<sup>1</sup>, Dr Joseph McEvoy<sup>2</sup>, Dr. Catherine Davis<sup>2</sup>

<sup>1</sup>Kansas State University, Manhattan, USA, <sup>2</sup>Augusta University, Augusta, USA, <sup>3</sup>University of Cincinnati, Cincinnati, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Approximately 15.4 million US adults have serious mental illness (SMI), with a decreased lifespan by 13-30yrs.<sup>1,2</sup> Outdoor physical activity (PA) improves health in adults with SMI.<sup>3-5</sup> Peer counseling services provide a sustainable opportunity for integrating outdoor PA. Grounded in Social Cognitive Theory, the PARCS Study is a randomized controlled trial to test the effectiveness of integrating park-based PA into weekly peer group mental health services. This analysis explores primary feasibility and acceptability outcomes (attendance, enjoyment), secondary (self-efficacy for exercise, goal setting, social support, PA, fitness) and exploratory (anxiety, depression, SMI symptoms, quality of life (QOL)) outcomes.

**Methods:** Adults with SMI were recruited through peer counseling programs at two locations (Midwest (MW), South (S)) from 2021-2024. Participants were randomized into intervention (INT) or waitlist (WL) conditions. The 12-week intervention included PA sessions in local parks (45 min, 2-3 days/week) led by a peer specialist and supervised by a certified fitness instructor. Sessions included warm-up, body weight resistance, walking, and cool down. Pre/post measures included 6MWT, PACSQ, RAPA, and WHO-QOL. Descriptive statistics and Mann-Whitney U or t-tests explored changes in outcomes between INT and WL conditions.

**Results:** Participants (n=48, INT=27, WL=21) were mostly female (51%), Black (46%) with a mean age of 42.1 (SD=13.9) with no differences between study conditions. Attendance goals were met (overall=67%, MW=73%, S=60%). INT participants reported high levels of enjoyment for each session (M=4.6/5) and overall (M=7.5/8). There were no statistically significant differences in secondary outcomes, although in the INT group goal setting and PA improved slightly and there was a clinically significant improvement in six-minute walk test<sup>6</sup> (M=30.2 meters, SD=50). There were no significant differences in exploratory outcomes; however, health and physical, psychological, environmental, and overall QOL improved slightly in the INT group.

**Conclusions:** Attendance goals were met, and participants reported high levels of enjoyment supporting feasibility and acceptability of the intervention. The clinically significant improvement in fitness and QOL and PA improving slightly in the INT group are promising. Analyses with the full sample will be completed at the end of the trial.

**Results:** built support for integrating outdoor PA into mental health care services.

## Tracking participants in the Jackpot.fit program and progress in dissemination of the Austrian sport promotion initiative

**Bernhard Novak<sup>1</sup>**, Mrs. Sylvia Titze<sup>1</sup>

<sup>1</sup>University of Graz, Institute of Human Movement Sciences, Sport and Health, Graz, Austria

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** In 2015 a co-operation between the social insurance and the organized sport has been established in order to install Jackpot.fit, a standardized sports club based program, initially in 8 regions in Styria, a federal state of Austria. Inactive adults receive information about the long-term exercise program during a 3-week residential stay in a health resort. We aim to investigate who attends Jackpot.fit, exemplify the adherence to the program in the year 2019 as well as the progress of dissemination of Jackpot.fit since 2016.

**Methods:** Participants' personal data were collected by telephone at the registration. Instructors documented the participants' attendance each single session with a standardized form. The number of participating regions as well as courses within the regions were monitored by the evaluator.

**Results:** Between 2016 and 2019 2624 people (70.8% female; age: M = 57.1, SD 9.1 years; BMI = 25.8, SD 4.3 kg/m<sup>2</sup>) registered for Jackpot.fit and 84.3% (n=2212) attended as participants in at least one session. Between September and December 2019, 824 people registered for the courses with an adherence rate as follows: 291 (35.3%) visited 75% or more, 200 (24.3%) between 50% and 74.9% and 232 (28.2%) less than 49.9% of all 638 provided sessions. 101 (12.3%) registered but never attended once. The number of regions rose from 8 in 2016 to 28 in 2019 and the number of courses from 25 to 55 over the same period.

**Conclusions:** According to the total numbers of participants, regions and courses - the dissemination moves forward. Further strategies to improve adherence must be developed.

## Development of a resistance training curriculum for schools: Adaptation of the Athletic Motor Skill Competency Curriculum

**Dr. Sarah Kennedy**<sup>1,2</sup>, Professor David Lubans<sup>2,6</sup>, Dr Jordan Smith<sup>2</sup>, Dr Angeliek Verdonschot<sup>2</sup>, Professor Rhodri Lloyd<sup>3,4,5</sup>

<sup>1</sup>Western Sydney University, Darug Country, Australia, <sup>2</sup>University of Newcastle, Callaghan, Australia, <sup>3</sup>Cardiff Metropolitan University, Cardiff, Wales, <sup>4</sup>AUT University, Auckland, New Zealand, <sup>5</sup>Waikato Institute of Technology, Hamilton, New Zealand, <sup>6</sup>University of Jyväskylä, Jyväskylä, Finland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** There are unique barriers to the implementation of resistance training (RT) programs in schools, including: skills, confidence, equipment or space availability, and the erroneous misconceptions that youth RT is unsafe. To overcome these barriers and facilitate RT engagement, strategic implementation of school-based programs is required, tailored to the specific needs of schools and student populations. This study aimed to incorporate the Athletic Motor Skill Competencies (AMSC) in a revised RT curriculum for delivery within schools through the Resistance Training for Teens (RT4T) program.

**Methods:** RT4T is an evidence-based program designed to provide adolescents with the competence, confidence, knowledge and motivation to participate in RT. Program delivery resources for RT4T include teacher training and provision of 68 circuit cards (e.g., squats, push-ups, tuck jumps). The AMSC battery includes a variety of foundational motor skills that underpin all athletic movements. Four researchers with expertise in design, development, and delivery of school-based RT programs were involved in the adaptation of the “AMSC for Schools”. Consultation and consensus methods were part of the interactive decision making, incorporating teacher feedback from a previous version of the RT4T program. The lead researcher performed initial exercise mapping to update the RT4T circuit cards in line with the AMSC, before the research team conducted multiple rounds of ‘think-aloud’ online workshops to finalise the curriculum.

**Results/findings:** Consultation and consensus utilised in this study resulted in the development of 96 resistance-focused cards, aligned to five of the AMSC movement pattern categories, including: upper body push and pull, lower body bilateral and split, and core stability. All movements and individual exercises were developed for implementation in diversified school and student contexts, with proficiency levels 1-4, and various resistance equipment, included to promote progression from beginner to more advanced.

**Conclusions:** The revised RT curriculum provides teachers with a ready to use implementation resource. Strategic implementation approaches tailored to the specific needs of schools and student populations are required, as well as the identification of adaptations that may be needed (e.g., mental/physical disabilities) to enhance program effectiveness and sustainability. As such, this curriculum presents an adaptable resource to deliver RT in schools.

## National Databank of Lifestyle Front Offices: Collaboration of lifestyle front Offices in dutch Hospitals to bridge lifestyle medicine Related questions on working mechanisms for lifestyle-related diseases and to improve future Treatment (COHoRT project)

Dr. Judith Jelsma<sup>1</sup>, Dr. Mayte Sanchez-van Kammen<sup>1</sup>, Mrs. Marlinde Lianne van Dijk<sup>1</sup>, **Dr. Joyce Vrijzen**<sup>2</sup>, Dr. Inge Scheek<sup>2</sup>, Prof. Willem van Mechelen<sup>1</sup>, Dr. Adrie Bouma<sup>2</sup>, Prof. dr. Rienk Dekker<sup>2</sup>, Femke Van Nassau<sup>1</sup>, Hidde Van Der Ploeg<sup>1</sup>

<sup>1</sup>Amsterdam UMC, Amsterdam, The Netherlands, <sup>2</sup>UMCG, Groningen, The Netherlands

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Lifestyle medicine intends to support patients with healthcare problems to cure or reduce disease burden, complications and the intake of medicine. Recently lifestyle medicine is integrated in routine clinical care through a lifestyle front office (LFO) in The Netherlands across 15 hospitals. These LFOs are currently setting up a uniform national databank in which usual care data is stored and can be used for research purposes. The aim of this study is to present the set up of this national databank and the lessons learned and choices made in this process.

**Methods:** A minimal dataset to be used across all LFOs was iteratively developed as following; 1) an open request to all 15 LFOs to provide constructs and measurement instruments; 2) a literature search for additional valid and reliable measurement instruments with low completion time; 3) adaptation based on multiple input from LFOs on the suggested constructs and measurement instruments; 4) adaptation based on pilot testing in usual care. Furthermore, all legal, ethical and organizational documentation were developed.

**Results:** In the lifestyle front office it was decided that we collect data at intake, after 3-6 months, and in some LFOs after 12 months of follow-up. The minimal dataset include questions on: Previous lifestyle interventions (1 item); Physical activity (2 items); Diet (9 items); Smoking (1-3 items); Alcohol use (1-3 items); Sleep (3 items); Quality of life (2 items); Motivation (1 item); Anthropometrics (3 items); Health literacy (1 item); Sociodemographic; Medication; Implementation (4 items). This is supplemented by data on medical history and consultation at the LFO from the electronic patient record. In some LFOs more extensive data or additional constructs are measured. Pilot testing showed a response rate of 69%. Datacollection was rated useful by 82% of patients and understandable by 77%. The total number of questions was thought sufficient (71%).

**Conclusion:** This project will result in a national prospective data cohort, which can now and in the future be used to gain insight in generic workingmechanisms and care delivery in LFOs. Results can directly impact care delivery, future research and policy for delivery of appropriate lifestyle care.

## Ready to Build Relationships : Evolution of Empathy and Rapport Building Skills in Students Using Behavioral Change Techniques

**Ms. Claire Dannelley<sup>1</sup>**, Ms. Kathleen N. Heeter<sup>1</sup>, Ms. Samantha Schaefer<sup>1</sup>, Ms. Angela Reese<sup>1</sup>, Ms. Betty Klein<sup>1</sup>, Dr. Kyle A. Kercher<sup>1</sup>, Dr. Vanessa M. Martinez Kercher<sup>1</sup>

<sup>1</sup>Indiana University, Bloomington , USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Health and Wellness Coaching (HWC) has been identified as an effective multimodal approach to health promotion, integrating mental, physical, and emotional well-being to encourage positive health behaviors. Key components of HWC include behavior-change techniques (BCTs), such as motivational interviewing, which aim to foster sustainable health behavior changes. While research supports the efficacy of BCTs in HWC, limited studies focus on preparing public health trainees to apply these techniques in real-world settings. This study seeks to fill this gap by evaluating a 16-week service-learning course designed to teach public health trainees BCTs. More specifically, we assessed the trainees' development in effectively using BCTs. Our study explores the change in confidence and rapport building through the application of BCTs.

**Methods:** A total of 74 public health trainees' enrolled in a service-based learning course within Kinesiology participated in the study and worked with a university employee who voluntarily enrolled in the study, referred to as Ready to Move (RTM). RTM is a collaboration between a course developed for Kinesiology majors (i.e., trainees) and the university worksite wellness program (i.e., clients). Data were collected in trainee's pre-course instruction (week 0) and post-course instruction (week 16) via a Qualtrics survey. R-studio was used to conduct paired t-tests on 11 specific BCTs. We specifically focused on trainee's competency in learning and applying BCT's empathy and rapport-building.

**Results:** Results indicated confidence in BCTs related to rapport-building and empathy with clients increased significantly. Statistical analyses revealed a marked improvement in confidence scores for both rapport-building ( $t = -5.6113$ ,  $p < 0.001$ ) and empathy ( $t = -5.1772$ ,  $p < 0.001$ ).

**Conclusion:** These findings suggest that education and hands-on experience in BCT can significantly enhance students' confidence in key relational skills, such as rapport-building and empathy. Specifically, students reported greater confidence in acknowledging clients' feelings and perspectives and demonstrating empathy, both critical to effective client interactions. This highlights the potential of similarly structured training programs to foster the development of essential interpersonal skills among future professionals in fields where rapport-building is crucial.

# Preserving Evaluation Standards Amidst Scale-Up Growth: A Study of Coder Agreement in a Community-based Diabetes Prevention Program

**Ms. Rebecca Reitsma<sup>1</sup>**, Dr. Mary Jung

<sup>1</sup>University of British Columbia, Kelowna, Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Scaling up community-based diabetes prevention programs requires training community members to effectively deliver the intervention as intended. Small Steps for Big Changes (SSBC) is a diabetes prevention motivational interview-informed counselling program that certifies coaches through online modules, knowledge test, and a mock session. During the mock session, an experienced member of the SSBC research team portrays a “mock” participant living with prediabetes, and the coach-in-training attempts to counsel and deliver session 1 content. After the recorded mock session, the experienced research team member evaluates the session using a rubric that utilizes the Abbreviated Motivational Interviewing Competency Assessment (A-MICA). As SSBC expands across Canada, the responsibility for conducting and evaluating mock sessions shifted from the research lab to regional research coordinators (RRCs) to foster long-term sustainability. RRCs were trained to deliver and code mock sessions using the evaluation rubric. This study aimed to assess whether this brief training for RRCs is effective.

**Methods:** Level of agreement was evaluated in 23 mock session audio recordings. Each session was independently coded by a member of the research team (a research coordinator with over 100 evaluations of mock sessions) and an RRC using the A-MICA informed evaluation rubric. Pass criteria for coaches included an A-MICA total score of  $>2.5$  and demonstrated adequate delivery of 24 components of SSBC session 1 content. Interrater reliability was assessed using intraclass correlation coefficients (ICC) for A-MICA scores and Cohen's kappa for pass/fail decisions.

**Results:** Coder agreement for total A-MICA scores between RRCs and the affiliated research coordinator was found to be moderate ( $ICC=0.71$ ). There was substantial agreement between RRCs and research coordinators on whether coaches passed or failed the mock session ( $\kappa=0.74$ ).

**Conclusions:** The brief training provided to RRCs resulted in moderate-to-substantial agreement in evaluating coach competency, suggesting its potential effectiveness in maintaining assessment quality during program scale-up. However, further refinement of the training process may be necessary to achieve higher levels of agreement. These findings highlight the importance of evaluation procedures in all aspects of implementation when expanding community-based interventions.

## Pragmatic implementation assessment of exercise referral through the Exercise is Medicine® – On Campus program

**Dr. Erin Howie**<sup>1</sup>, Mrs. Kristin Jett<sup>1</sup>, Dr. Samantha Harden<sup>2,3</sup>

<sup>1</sup>University of Arkansas, Fayetteville, United States, <sup>2</sup>Virginia Tech, Blacksburg, United States, <sup>3</sup>Virginia Tech Carilion School of Medicine, Roanoke, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

Exercise is Medicine® – On Campus (EIM-OC) is an international initiative to assess and promote physical activity in university settings. Few EIM-OC programs report information on the implementation of exercise referral, which includes the assessment of physical activity and referral to an exercise professional to improve physical activity.

Purpose: To report on the two years of pragmatic implementation of EIM-OC exercise referral utilizing the interactive Practical, Robust, Implementation and Sustainability Model (iPRISM).

Methods: EIM-OC exercise referral was implemented at the University of Arkansas in October 2023. Students, faculty and staff are recruited through multiple campus channels to complete the Physical Activity Vital Sign (PAVS), perform a fitness assessment, participate in motivational interviewing, and return for a follow-up fitness assessment the following semester. iPRISM includes 10 domains of PRISM (assessing contextual factors for implementation) and 5 dimensions of RE-AIM (reach, effectiveness, adoption, implementation, and maintenance) and was used to assess outcomes. Complete implementation metrics will be compared by gender and role in 2025. The iPRISM tool has guided program development and will be completed by team members in 2025.

Results: In year one of implementation, 112 (n=85, 76% female) participants completed PAVS. Of these, 61 (54%) were undergraduate or graduate students, 37 were staff (33%), and 14 were faculty/administration (13%). 37.5% of participants met U.S. Physical Activity Guidelines including strength training recommendations. 60% heard about PAVS from an email news story, 14% from a friend or other student, 8% from a healthcare professional, and 7% from class. Of the 112, 79 were invited for a fitness assessment, 36 completed the initial fitness assessment, 8 have completed at least one motivational interviewing session to date, and 5 have completed 6-month follow-up fitness assessments to date. The current rate of successful follow-ups (starting fitness assessment) is 46% with scheduling of the most recent participants ongoing.

Conclusions: Although half of the referred participants have completed a fitness assessment, fewer have participated in motivational interviewing and follow-up assessments to date. Additional efforts may be needed to increase participant diversity and to improve successful follow-up rates to make sustainable changes in campus physical activity levels.

## Effectiveness of a parent targeted m-Health text messaging program (Healthy Beginnings for Hunter New England Kids) for improving child nutrition and physical activity outcomes: a cross-sectional analysis at 12 months.

**Dr. Jacklyn Jackson<sup>1,2,3</sup>**, Ms Nayerra Hudson<sup>1,2,3</sup>, Dr Alison Brown<sup>1,2,3,4</sup>, Ms Jessica Pinfold<sup>2</sup>, Ms Rebecca Liackman<sup>1,2,3</sup>, Mr Christophe Lecathelinais<sup>1,2,3</sup>, Associate Professor Rachel Sutherland<sup>1,2,3,4</sup>

<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Local Health District, New Lambton Heights, Australia, <sup>3</sup>Hunter Medical Research Institute, Newcastle, Australia, <sup>4</sup>National Centre of Implementation Science, Callaghan, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Healthy Beginnings for Hunter New England Kids (HB4HNEKids) is a text-messaging program that provides families with easy to access evidence-based age and stage related preventive health information across the first 2000 days. The program includes practical information promoting best practice infant feeding, child nutrition, movement behaviours, family/carer wellbeing and reminders for immunisation and health and development checks. The aim of this study is to explore the effectiveness of HB4HNEKids on child nutrition and physical activity outcomes at 12 months.

**Methods:** This study is a cross-sectional survey conducted with birthing parents who had received HB4HNEKids and a concurrent non-randomised comparison group that did not receive the program. The survey was conducted August 2023-July 2024 and included birthing parents that were 12-14 months post-partum, residing in the Hunter New England Region of New South Wales, Australia. Child serves of fruit, vegetables and discretionary foods were assessed using items adapted from the Children's Nutrition Questionnaire. Child active play, restrained time and screentime was assessed using the Movement Behaviour Questionnaire. Mixed linear regression analyses were conducted to calculate mean differences (MD) and odds ratios (OR).

**Results:** A total of 283 birthing parents completed the survey, including 104 (37%) who had received the HB4HNEKids program. Child daily intake of fruit serves, and vegetable serves was significantly higher in the HB4HNEKids group (Fruit MD: 0.28 (95% CI: 0.05, 0.50),  $p=0.015$ ; Vegetable MD: 0.21 (95% CI: 0.05 to 0.36),  $p=0.009$ ) compared with the comparison group. Despite trends for lower frequency of discretionary food intake/week (MD: -0.18 (95% CI: -0.42, 0.06),  $p=0.15$ ) and higher proportion of children meeting physical activity recommendations (OR: 1.69 (95% CI: 0.88, 3.25),  $p=0.12$ ) compared with the comparison group, these differences were not statistically significant.

**Conclusion:** The first 2000 days represents a critical window in supporting parents to establish healthy behaviours in children. Our pragmatic evaluation of the HB4HNEKids program indicates its promise as an effective, feasible and scalable program for new parents. Further evaluation of the program including a larger proportion of HB4HNEKids participants is required.

## Perspectives of older adults with memory decline participating in a prolonged nightly fasting (PNF) pilot study: A qualitative exploration

**Dr. Dorothy Sears<sup>1</sup>**, Dr. Dara James<sup>2</sup>, Dr. Erica Ahlich<sup>3</sup>, Dr. Molly Maxfield<sup>2</sup>, Dr. Sarah James<sup>4</sup>, Dr. Alexis Koskan<sup>1</sup>

<sup>1</sup>College of Health Solutions, Arizona State University, Phoenix, USA, <sup>2</sup>Edson College of Nursing and Health Innovation, Arizona State University, Phoenix, USA, <sup>3</sup>Department of Psychology, University of South Alabama, Mobile, USA, <sup>4</sup>Mayo Clinic, Phoenix, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Cognitive decline and sleep concerns are significant health issues among the majority of older adults. Non-pharmacological, low-burden/low-cost treatments to address these concerns are needed. Evidence suggests that prolonged nightly fasting (PNF), a subset of intermittent fasting, may be one such intervention that is associated with improvements in sleep, health-related outcomes, and metabolic and cognitive changes; little research has investigated the use of PNF among older adults. The aim of the current study was to understand and document the experiences of older adults with subjective memory decline participating in an eight-week PNF intervention.

**Methods:** This single-group pilot study was conducted as a fully-remote, eight-week, pre/post intervention. We conducted semi-structured qualitative exit interviews with participants (N = 16; ≥65 years) asking open-ended questions about their experiences during the PNF intervention. Exit interviews lasted approximately 20-30 minutes and were conducted by trained study staff. Transcribed audio recording data were analyzed by Ph.D. level experts using an open coding approach to identify themes.

**Results/Findings:** The two major themes that emerged from the data were engagement with the PNF intervention and perceived effects of the PNF intervention. Within these two themes, nine total subthemes emerged. Six engagement subthemes emerged including: 1) increased accountability; 2) use of the day off; 3) high feasibility; 4) engagement with intervention tools; 5) use of basic strategies; and 6) barriers/facilitation around timing/routine. Additionally, three perceived effects subthemes included the increase of: 1) awareness; 2) self-efficacy and 3) health-related outcomes (e.g., sleep, digestion). These results provide a robust understanding of participant experience which indicated intervention acceptability and sustainability.

**Conclusions:** This body of qualitative work adds a unique approach and critical understanding to the field of PNF, particularly with respect to participant experience. It offers nuanced insights into the personal, psychological, and social factors that influence engagement, adherence, perception, and outcomes to PNF. This low-cost, low-burden, low-tech intervention which improves both sleep quality and cognition appears to be safe and scalable. Future research should explore strategies to optimize acceptability, implementation and sustainability, ensuring that the benefits and positive impact of PNF can be effectively realized across diverse populations and settings.

## Novel co-creation research to assess the impact of school food programs on students: Learnings from a pilot study in Toronto, Canada

Ms. Nicole Weber<sup>1,2</sup>, Ms. Nina Trask<sup>1,2</sup>, Ms. Selina Mae Quibrantar<sup>1,2</sup>, Ms. Annette Blais<sup>1,2</sup>, **Dr. Mavra Ahmed**<sup>1,2</sup>, Dr. Daniel Sellen<sup>1,2,3</sup>

<sup>1</sup>Department of Nutritional Sciences, University of Toronto, Toronto, Canada, <sup>2</sup>Joannah and Brian Lawson Centre for Child Nutrition, University of Toronto, Toronto, Canada, <sup>3</sup>Department of Anthropology, University of Toronto, Toronto, Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** In 2024, the Canadian federal government committed \$1 billion to implement a national School Food Program (SFP) with the goal of ensuring more equitable access to nutritious food for children nationwide. Current evidence on the impact of SFPs on students' diet and health outcomes in Canada is lacking. Furthermore, school food policies in Canada that failed to incorporate evidence and stakeholder perspectives have demonstrated poor uptake and implementation. Through previous research on SFP Coordinator perspectives, key stakeholders in the Toronto District School Board (TDSB) were approached to engage in a co-creation project with the aim of assessing the impact of SFPs on students, address gaps in gathering student perspectives, and updating existing evidence.

**Methods:** With a co-creation research design with embedded considerations of the RE-AIM and socio-ecological health promotion frameworks, this study leverages critical stakeholder partnerships to enhance evidence gathering of SFPs in Canada. The research team collaborated with TDSB's Nutrition Liaison Officers (NLO) to co-create methodology to assess and compare the impact of SFP modalities on students' academic achievement, health and emotional well-being, dietary intake, and food and nutrition knowledge, attitudes and behaviours. This was further refined by engaging the TDSB's research committee and community partners such as non-profit school food organizations and public health units.

**Findings:** Co-creation and collaboration activities resulted in: 1) creation of a Project Advisory Committee (PAC) which includes the research team, TDSB research committee staff, an executive superintendent, the NLOs, principals, teachers, SFP Coordinators and 2) successful implementation of a pilot study in June 2024. The PAC ensures the incorporation of diverse perspectives to reflect school-level realities in the research design, while the pilot study informed contextual adaptations for a full study launched in the 2024-2025 school year.

**Conclusion:** This co-creation study design supports the identification of essential partnerships within the school and community that contribute to the success of SFP implementation. As key informants possess the necessary lived experience, expertise, skills, and commitment, these partnerships will inform multi-level strategic planning to implement more culturally appropriate, sustainable, and equitable SFPs that are effectively managed for students, staff, and the broader community.

## Multi-behaviour associations of sleep, physical activity, and nutrition (SPAN) with major adverse cardiovascular events

**Dr. Nicholas Koemel**<sup>1,2,3</sup>, Dr. Leandro Rezende<sup>4</sup>, Dr. Raaj Biswas<sup>1,2,3</sup>, Dr Matthew Ahmadi<sup>1,2,3</sup>, Dr. Tian Wang<sup>5</sup>, Prof Clara Chow<sup>6</sup>, Prof Luigi Fontana<sup>3,7</sup>, Professor Adrian Bauman<sup>3</sup>, Prof Stephen Simpson<sup>3,8</sup>, Prof Margaret Allman-Farinelli<sup>3,9</sup>, Prof. Peter Cistulli<sup>3,10,11</sup>, Professor Emmanuel Stamatakis<sup>1,2,3</sup>

<sup>1</sup>Mackenzie Wearables Research Hub, Charles Perkins Centre, The University of Sydney, Sydney, Australia, <sup>2</sup>School of Health Sciences, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>3</sup>Charles Perkins Centre, The University of Sydney, Sydney, Australia, <sup>4</sup>Department of Preventive Medicine, Escola Paulista de Medicina, Universidade Federal de São Paulo, São Paulo, Brazil, <sup>5</sup>The George Institute for Global Health, Sydney, Australia, <sup>6</sup>Westmead Applied Research Centre, University of Sydney and Department of Cardiology, Westmead Hospital, Sydney, Australia, <sup>7</sup>Department of Endocrinology, Royal Prince Alfred Hospital, Sydney, Australia, <sup>8</sup>School of Life and Environmental Sciences, Faculty of Science, The University of Sydney, Sydney, Australia, <sup>9</sup>Nutrition and Dietetics, School of Nursing, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>10</sup>Northern Clinical School, Faculty of Medicine and Health, University of Sydney, Sydney, Australia, <sup>11</sup>Department of Respiratory and Sleep Medicine, Royal North Shore Hospital, Sydney, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Sleep, physical activity, and nutrition (SPAN) are major modifiable risk factors for the prevention of cardiovascular disease. We examined the combined multi-behaviour associations of SPAN with the risk of major adverse cardiovascular events (MACE) and its subtypes (incident myocardial infarction, heart failure, and stroke).

**Methods:** This prospective cohort analysis included 53,242 participants from the UK Biobank (median age: 63.0 years; 34.0% male) who wore trackers for 7 days and self-reported dietary data. Wearable-measured sleep (hours/day) and moderate to vigorous physical activity (MVPA; mins/day) were calculated using a machine learning based algorithm. A 10-item diet quality score (DQS) assessed the intake of vegetables, fruits, whole grains and refined grains, unprocessed and processed meats, fish, dairy, vegetable oils, and sugary beverages (0-100 for all components with higher values indicating higher quality). Cox proportional hazards models were used to estimate hazard ratios (HR) for MACE risk across 27 separate joint tertile combinations of SPAN behaviours with the lowest tertile for all three behaviours as the referent group. We examined dose-response associations of SPAN with MACE using a composite score from 0-100. Each behaviour was equally weighted, with higher scores reflecting more optimal levels of each exposure.

**Results/findings:** Over the 8.0-year median follow-up time, 2,034 MACE events occurred. Compared to the referent group of combined SPAN exposure (lowest tertiles for all three), the optimal SPAN combination involving high sleep duration (8.0-9.4 hours/day), high MVPA (42-104 mins/day), and a DQS between 32.5 and 50.0 was associated with an HR of 0.43 (95% CI: 0.30-0.62). Compared to the minimum SPAN score of 17.8, a median SPAN score of 52.8 was associated with a 41% reduced risk of MACE (HR: 0.59; 95% CI: 0.49, 0.70). For specific subtypes, the median SPAN score corresponded to an HR of 0.53 (95% CI: 0.38, 0.75) for heart failure, 0.65 (95% CI: 0.50, 0.84) for myocardial infarction, and 0.52 (95% CI: 0.38, 0.71) for stroke.

Conclusions: This study highlights the combined health importance of SPAN for the prevention of MACE. Future public health strategies may benefit from adopting multi-behavioural approaches that leverage the synergistic effects of SPAN.

## Understanding Older Adults' Experiences with Functional Assessment: Insights for Community Programmes

**Dr. Lay Khoon Lau<sup>1</sup>**, Ms. Jia Ying Tang<sup>1</sup>, Dr Nien Xiang Tou<sup>1</sup>, Ms Qing Wang<sup>1</sup>, Ms. Yue Xuan Lee<sup>2</sup>, Ms Elianna Lee<sup>2</sup>, Associate Professor Yew Yoong Ding<sup>1,3,4</sup>, Associate Professor Yee Sien Ng<sup>1,5</sup>

<sup>1</sup>Geriatric Education and Research Institute, , Singapore, <sup>2</sup>Health Promotion Board, , Singapore, <sup>3</sup>Tan Tock Seng Hospital, , Singapore, <sup>4</sup>Nanyang Technological University, , Singapore, <sup>5</sup>Singapore General Hospital, , Singapore

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The increased risk of physical incapacity among older adults is often linked to declines in muscle strength, function, and balance. While functional assessment (FA) is standard in clinical settings, it is rarely conducted among community-dwelling older adults. To promote active aging in Singapore, routine FA including assessments of muscular strength, balance, and endurance has been implemented alongside community-based exercise programs to educate older adults about their physical performance. This study aimed to identify the behaviours of older adults regarding the implementation of routine FA, focusing on barriers and motivators to participation and the subsequent effects on exercise behaviour.

**Methods:** Semi-structured interviews were conducted with 18 older adults (mean age: 72.7±6.3 years) who participated in the exercise programs and were involved in the FA. The data were thematically analysed using both inductive and deductive approaches, guided by the Theoretical Domains Framework (TDF).

**Results/findings:** Older adults' behaviours, barriers, and motivators regarding FA implementation were most prominent in six TDF domains: knowledge, skills, beliefs about capabilities, beliefs about consequences, motivation and goals, and behaviour regulation. The desire to understand their physical performance was the primary motivator for the older adults, with some believing that FA could better inform targeted interventions. While FA was generally viewed as manageable, the older adults faced challenges with endurance and balance tests. They demonstrated an understanding of their FA results but feelings of self-doubt were common. Specifically, poor self-efficacy and low self-esteem were prevalent, especially among those with poorer performance or perceived lack of improvement. Involvement in FA appeared to foster self-monitoring among some older adults and facilitated changes in their exercise behaviour.

**Conclusion:** Managing older adults' expectations and enhancing their self-efficacy are crucial for improving their experiences with FA. Future research should explore whether routine FA in the community serves as a catalyst for exercise behaviour modification, particularly among sedentary individuals. Additionally, individuals' preferences for types of exercises should be considered. These findings provide valuable insights for implementers seeking to introduce FA in community settings.

## Occupational and non-occupational factors associated with sedentary behavior and physical activity among working adults in Canada aged 18-75: Analysis of Canadian Health Measure Survey Cycles 5-6

Dr. Sungwon Park<sup>1</sup>, **Dr. Taru Manyanga<sup>2</sup>**, Dr. Philip Veliz<sup>1</sup>, Ms. Larine Sluggett<sup>2</sup>, Ms. Nicole White<sup>2</sup>, Dr. Richard Neitzel<sup>1</sup>, Dr. Oi Saeng Hong<sup>3</sup>

<sup>1</sup>University of Michigan, Ann Arbor, USA, <sup>2</sup>University of Northern British Columbia, Prince George, Canada, <sup>3</sup>University of California San Francisco, San Francisco, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Occupations shapes daily activity patterns, including sedentary job tasks that are linked to health risks and physical activity (PA) which contributes to improved health. Given the lack of consensus on how occupations influence sedentary behavior (SB) and PA, we aimed to estimate SB and PA by occupation and identify occupational and non-occupational factors affecting activity levels.

**Methods:** Accelerometry data from working adults in Canada aged 18-75 who participated in the 2016–2019 Canadian Health Measure Survey were analyzed (n=40,284,246). Occupational classification was based on (1) the National Occupational Classification - Statistics 2016 (NOC-S) and (2) the North American Industry Classification System 2017 (NAICS). SB and PA were measured using accelerometry, with other variables derived from the survey data. Survey data analysis included descriptive statistics, multivariable regression with post hoc sensitivity analyses.

**Results/findings:** Using NOC-S, “Trades, Transport, and Equipment Operators and Related Occupations” had the highest SB ( $585.26 \pm 102.65$  min/day) and lowest moderate to vigorous PA [MVPA] ( $23.59 \pm 23.54$  min/day). Using NAICS, “Transportation and Warehousing” workers exhibited the highest SB ( $604.04 \pm 94.55$  min/day), while the Construction sector had the lowest MVPA ( $20.69 \pm 19.34$  min/day). Younger workers, workers with poorer self-perceived health, better mental health, and those adhering to PA guidelines (i.e., engaging in at least 150 minutes of MVPA per week), exhibited low SB and high PA. Similar patterns were observed among workers in occupations where SB was lower or MVPA was higher than the average across all occupations.

**Conclusions:** Transportation-related occupations consistently showed high SB, but it’s unclear whether this is due to transportation tasks or other roles in these sectors. Further research is needed to differentiate these impacts. Strategies to reduce SB and increase MVPA should focus on older workers, workers with better self-perceived health but worse mental health, those not meeting PA guidelines, and workers in occupations characterized by high SB and low MVPA.

## Demographic Predictors of Sleep Quality in Breast Cancer Survivors Enrolled in Supervised Exercise Trials

**Ms. Cami Christopher<sup>1,2</sup>**, Ms. Mimi Perez<sup>1</sup>, Mr. Danny Nguyen<sup>1</sup>, Dr. Rebekah Wilson<sup>1,3</sup>, Ms. Mary Norris<sup>1</sup>, Dr. Christina Dieli-Conwright<sup>1,2,3</sup>

<sup>1</sup>Dana-Farber Cancer Institute, Boston, United States, <sup>2</sup>Harvard T.H. Chan School of Public Health, Boston, United States, <sup>3</sup>Harvard Medical School, Boston, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Poor sleep quality is common among breast cancer survivors (BCS), often exacerbated by cancer treatments, sedentary behavior, and psychological distress, leading to impaired quality of life and increased risk of co-morbidities during survivorship. Sleep quality is further complicated by racial and ethnic disparities, with non-White and Hispanic/Latina BCS experiencing a higher prevalence of poor sleep health outcomes compared to non-Hispanic White counterparts. While exercise and lifestyle interventions show promise for improving sleep and addressing health disparities, the potential effects across diverse cancer populations remain under-explored. This exploratory analysis aims to identify demographic predictors of pre-intervention sleep quality among sedentary BCS enrolled in two ongoing exercise randomized controlled trials (NCT03091842 and NCT04717050).

**Methods:** This cross-sectional analysis included BCS who completed the Pittsburgh Sleep Quality Index (PSQI) pre-intervention. Global PSQI scores (range: 0-21) were calculated by summing component scores for subjective sleep quality, latency, duration, efficiency, disturbances, medication use, and daytime dysfunction, with scores >5 indicating poor sleep quality. Stepwise multiple linear regression identified demographic factors associated with PSQI scores, and two-sample t-tests compared scores between subgroups.

**Results:** Participants (n=67) were  $54 \pm 10$  years old, predominantly Hispanic/Latina (61%), White (58%), post-menopausal (76%), with a BMI of  $30 \pm 4.8$  kg/m<sup>2</sup>. Pre-intervention PSQI scores averaged  $7.00 \pm 4.40$ , with 63% of BCS classified with poor sleep quality. Non-White race, Hispanic/Latina ethnicity, and post-menopausal status were significant predictors of PSQI scores (Multiple R<sup>2</sup>=0.16, p=0.01). PSQI scores were significantly higher among non-White vs. White BCS ( $2.15 \pm 1.04$ , p=0.04) and post-menopausal vs. pre-menopausal BCS ( $2.22 \pm 0.90$ , p=0.02). In stratified analyses among post-menopausal BCS, the greatest disparities were observed in Hispanic/Latina BCS, who had significantly higher PSQI scores than their non-Hispanic/Latina counterparts ( $3.17 \pm 1.21$ , p=0.01).

**Conclusions:** Poor sleep quality is prevalent among sedentary BCS, particularly among non-White, Hispanic/Latina, and post-menopausal women. These findings highlight the need to address sleep as a critical component of survivorship care, especially in underserved and minority BCS. Exercise and lifestyle interventions hold promise improving sleep quality, and future research should prioritize tailored lifestyle interventions to enhance equity in survivorship health outcomes.

## Summer Day Camps as Health Interventions: Expanding Capacity for Impact

**Dr. Lauren von Klinggraeff<sup>1</sup>**, Alexis Edge<sup>1</sup>, Dr. Sarah Burkart<sup>2</sup>, Dr. Peter Stoepker<sup>3</sup>, Dr. Keith Brazendale<sup>4</sup>

<sup>1</sup>Augusta University, School of Public Health, Augusta, USA, <sup>2</sup>University of South Carolina, Columbia, USA, <sup>3</sup>Kansas State University, Manhattan, USA, <sup>4</sup>University of Central Florida, Orlando, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Attending structured summer programming (i.e., summer day camp; SDC) is associated with healthy weight-related behaviors and outcomes. However, demand for SDC currently exceeds capacity in the southeastern United States, presenting challenges to scaling SDC as a health promotion intervention. This study aimed to identify and describe contextual factors influencing SDC capacity.

**Methods:** We conducted semi-structured interviews guided by the Consolidated Framework for Implementation Research. Participants were SDC directors in Georgia or South Carolina with at least one year of experience in their roles. SDC were defined as non-specialized camps serving elementary-aged children (6-11 years) without overnight stays. Interviews were conducted June to November 2024. Rapid qualitative analysis was used to summarize key findings.

**Findings:** Interviews (n=30) lasted 49 minutes on average (SD 12min). The majority of directors were female (73%) and white (60%). SDC ran an average of 6 weeks (range 4-10) with 154 children (range 20-1000). Camps were run by parks and recreation departments (23%), and non-profits serving predominantly low-income (26%), and middle/high-income (33%) families. Most directors reported enrolling the maximum number of children, maintaining waitlists, and expressed a desire to serve more children. While each camp faced unique challenges and had varied facilities and resources, maintaining camp quality was often the primary consideration when determining the number of children a SDC could enroll. Directors considered camp quality to be a product of programming, staff-to-camper ratios, and the number of children that could safely move around in the space provided. However almost all directors reported operating at child-to-staff ratios that were lower than state policy, indicating directors' perceptions of quality, rather than external policy, were a driving factor for capacity. Directors reported needing additional buildings, qualified staff, and funding to expand capacity.

**Conclusions:** Given the diversity in resources across SDCs, and importance of directors' perceptions in determining capacity, tailored approaches to increasing each camps' capacity may be the most acceptable and potentially effective. Research should explore potential strategies for increasing capacity with a focus on providing both high-resource and low-resource strategies.

## Are participants really complying with their food prescription? Preliminary findings of food utilization from a produce prescription program among high-risk pregnant mothers in Houston, Texas

**Dr. Shreela Sharma<sup>1</sup>**, Dr Nalini Ranjit, Naomi Tice, Wesley Gibson

<sup>1</sup>UTHealth Houston School of Public Health, Center for Health Equity, Houston, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** No studies have attempted to measure how much of the food provided to patients through produce prescription programs is actually consumed by the targeted patient versus others in the household. The purpose of our study is to quantify consumption of produce box contents and improvements in diet quality in a home-delivery based Produce Prescription program targeting pregnant mothers.

**Methods:** 200 low-income women in high-risk pregnancies, recruited before 20 weeks of gestational age, and randomized to either: Arm 1: Bi-weekly home delivery of fresh produce with standard nutrition education, through 2 months postpartum (~ 9 months) Arm 2: Bi-weekly home delivery of fresh produce plus tailored nutrition education delivered using an interactive AI chatbot To quantify consumption of produce, participating women received text messages within one week of receiving the produce box with a survey asking them about utilization of the produce items in the box.

**Results/Findings:** The 20 lb. (~50 servings) produce box includes a minimum of five (5) core fruits and vegetables (FVs) and three (3) FVs curated to include key vitamins, fiber, and minerals needed during pregnancy. At the time this abstract was submitted, we have 82 patients recruited with data analyzed from 67 patients. Recruitment will be complete in Feb 2025 and results of the utilization survey from a majority of the sample will be available to present in June 2025. Preliminary findings of the utilization survey indicate that about 20% of produce is not consumed (likely wasted). About 70% is consumed by patient, and about 10% by the rest of the household. Correlation between fruit and veggie consumption by patient is relatively low: 0.38. Overall household consumption (fruit and veggie) is greater among Hispanics, those with larger household sizes or number of children, food insecure, nutrition insecure, those who cook > 5 days a week. Sharing of fruit is higher among those with household size > 5, those with children, food secure. Sharing of vegetables is higher among those with household size 4-5, those with 1-2 children, those that cook infrequently, food insecure.

**Conclusion:** This study has implications for implementation design of produce prescription programs.

## Co-design and Adaptations for a Student-led Model of the Small Steps for Big Changes Diabetes Prevention Program

**Miss Katherine Heseltine<sup>1</sup>**, Dr Ana Goode<sup>1</sup>, Dr Sjaan Gomersall<sup>1,2</sup>, Mr Denis Giguere<sup>3</sup>, Ms Fiona Mason<sup>3</sup>, Dr Mary Jung<sup>4</sup>, Professor Genevieve Healy<sup>1</sup>

<sup>1</sup>The University of Queensland, School of Human Movement and Nutrition Sciences, Brisbane, Australia,

<sup>2</sup>The University of Queensland, School of Health and Rehabilitation Sciences, Brisbane, Australia, <sup>3</sup>UQ Health Care, Logan Healthy Living, Logan, Australia, <sup>4</sup>The University of British Columbia, School of Health and Exercise Sciences, Vancouver, Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Small Steps for Big Changes (SSBC) is a 4-week community-based diet and exercise counselling intervention for individuals with prediabetes. Unlike other diabetes prevention programs, SSBC was designed for delivery by non-health professionals. Developed in Canada, SSBC is currently being implemented and evaluated in Australia for the first time. As part of SSBC Australia, a novel student-led delivery model is being explored within a community-based clinic that specialises in providing interventions for individuals with and at risk of type 2 diabetes via a student-infused approach. This study aims to describe the co-design process and associated outputs to prepare for the student-led delivery and evaluation of SSBC Australia at the clinic.

**Methods:** A user-centred co-design process was used to iteratively: 1) understand the context; 2) specify requirements from site- and student-perspectives; 3) design solutions; and 4) pilot test solutions. Three participant groups were involved: academic researchers; clinic leads; and, students undertaking placement at the clinic. Participants were involved across all four steps, using the following questions: step 1 “how would the program fit within the existing workflow?; step 2 “what resources were required to support student delivery?; step 3 “what will these solutions look like?; step 4 “what was the acceptability of these resources?”. The outputs were pilot tested with two undergraduate physiotherapy students. Data collected via surveys, observations, formal and informal discussions, were synthesised and used to iteratively develop and improve the resources.

**Results:** Several outputs were co-designed for students, including: orientation workbook, journey maps, ‘ready to coach’ checklist, Australian-specific infographics, and surveys relating to their placement and careers. Pilot testing revealed minimal usability issues, and informed design improvements, including: rewording confusing terms, and adding more examples. Overall, the design and outputs were regarded as highly appropriate, implementable, sustainable and effective by students.

**Conclusions:** The co-design process and outputs generated provided valuable insights into how to effectively deliver and evaluate a student-led model of SSBC Australia. The results will inform future service delivery of SSBC Australia at the clinic, and, expand the knowledge base on the appropriateness and effectiveness of lower-intensity diabetes prevention programs delivered by non-health professionals.

## Improving Health Behaviors in Underserved College Students Through a Brief Wellness Intervention

**Dr. Yang Bai<sup>1</sup>**, Dr. Ryan Burns<sup>1</sup>, Ms. Lingyi Fu<sup>1</sup>, Ms. Yuhuan Xie<sup>1</sup>, Dr. Timothy Brusseau<sup>1</sup>, Dr. Julie Lucero<sup>1</sup>

<sup>1</sup>University of Utah, Salt Lake City, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** College students face unique health challenges, including lower physical activity levels, higher sedentary behaviors, poorer dietary habits, problems with sleep, elevated stress, and increased substance use compared to their peers. This study evaluated the effectiveness of a brief intervention designed to improve multiple health behaviors, including physical activity, sedentary behaviors, diet, sleep, stress management, and substance use, among underserved college students.

**Methods:** A single-arm, repeated-measures study was conducted over 8 weeks. The intervention included three components: a survey, a 45-minute health coaching session utilizing motivational interviewing, and a 15-minute goal-setting session. Participants were provided with Fitbits for the duration of the study. Follow-up assessments were conducted at 2- and 6-weeks post-intervention to evaluate changes in different health behaviors from baseline. Linear mixed-effects models were used to analyze within-subject changes, while compositional data analysis (CoDA) examined shifts in physical activity, sedentary behavior, and sleep from device-based data.

**Results:** 170 participants enrolled in the study and 100 (58.8%) completed the health coach session (27% Hispanic, 53% non-White). Statistically significant improvements were observed in general health (coef. = 5.2, 95% CI: 2.7–7.8), and emotional wellness (coef. = 5.3, 95% CI: 2.4–8.2). Absolute person-level reductions in substance use were observed including a 3-person reduction in cigarette use, a 22-person reduction in marijuana use, a 7-person reduction in e-cigarette use, a 23-person reduction in alcohol use, and a 4-person reduction in hookah use. Positive trends included a 26.6% reduction in sugar consumption, a 13.6% increase in fruit intake, a 12.5% increase in vegetable intake, an 8.9% decrease in sitting time, and a 3.3% reduction in stress. However, these changes did not reach statistical significance. No significant physical activity, sedentary behavior, and sleep shifts within 24 hours were observed from CoDA.

**Conclusions:** This study highlights the potential of a brief, multi-component intervention to improve health behaviors among underserved college students, showing significant gains in general health, emotional wellness, and reductions in substance use. While some behavioral changes, such as improved diet and reduced sedentary time, were not statistically significant, the trends suggest the value of tailored wellness programs for this population.

## Rural Play Streets Implementation Strategies: Domains within the Consolidated Framework for Implementation Research

Dr. Cassandra Beattie<sup>1</sup>, Prof. M. Renée Umstattd Meyer<sup>1</sup>, **Dr. Marilyn Wende<sup>3</sup>**, Dr. Jacob Szeszulski<sup>2</sup>, Jacqueline Vigil<sup>1</sup>, Dr. Jessica Stroope<sup>4</sup>, Serena Enriquez<sup>1</sup>, Dr. Denise Holston<sup>4</sup>, Dr. Keisha Pollack Porter<sup>5</sup>

<sup>1</sup>Baylor University, Waco, USA, <sup>2</sup>Texas A&M University, College Station, USA, <sup>3</sup>University of Florida, Gainesville, USA, <sup>4</sup>Louisiana State University AgCenter, Baton Rouge, USA, <sup>5</sup>John Hopkins University, Baltimore, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Youth in rural U.S. communities accumulate less physical activity compared to their urban counterparts and are at a heightened risk for chronic disease, this is in part due to disparities in physical activity opportunities and resources in rural communities. Given rural disparities, it is important to understand effective implementation strategies of feasible initiatives to increase access to physical activity opportunities. Play Streets – temporary closure of streets or use of publicly accessible areas (e.g., parking lot, field) that create safe places for active play for a specified time period – are an effective way to engage rural youth in physical activity. However, there is limited research investigating how to most effectively implement and sustain Play Streets initiatives. This study uses the Consolidated Framework for Implementation Research (CFIR) to identify commonly used implementation strategies, by CFIR domain, among extension agents implementing Play Streets in rural America.

**Methods:** In spring 2024, twelve semi-structured interviews, informed by CFIR, were conducted with cooperative extension agents (n=12) across 11 rural Louisiana parishes previously involved in implementing Play Streets. All interviews were recorded and transcribed verbatim, and deductively coded using CFIR constructs and the outcomes addendum. A content analysis will be used to identify and describe implementation strategies to address barriers in CFIR domains (i.e., innovation, outer setting, inner setting, individual, and implementation process). Following initial group coding to ensure consensus and interrater reliability across all codes (n=6 researchers), one research team member will deductively code all transcripts based on CFIR domains, with 15% of transcripts coded by two independent researchers.

**Results/Findings:** Results will describe implementation strategies employed by CFIR domain to highlight which domains and strategies are the most common. Identification of additional domains not currently be used will also be discussed, highlighting possible strategies to consider in the future.

**Conclusions:** This study will inform the development and testing of implementation strategies to reduce CFIR identified barriers to the implementation of Play Streets in rural communities.

## A qualitative study exploring South African office workers' perceptions and experiences following a 12-month Ukumela Impilo randomised control trial.

**Dr. Merling Phaswana<sup>1</sup>**, Prof Philippe Gradidge<sup>1</sup>

<sup>1</sup>University of the Witwatersrand Faculty of Health Sciences, Johannesburg, South Africa

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Office workers often lead sedentary lifestyles, spending most of their working hours seated, which is strongly associated with increased cardiometabolic risks such as obesity, hypertension, and type 2 diabetes. Despite this well-established link, sedentary behaviour remains prevalent in office environments, driven by job demands and a lack of strategies to promote regular movement. This study thus seeks to gain a deeper understanding of the perceptions and experiences of South African Office-based workers following a 12-month standing desk intervention.

**Methods:** Using a deductive qualitative study design, we conducted semi-structured interviews to explore the experiences of a 12-month standing desk intervention. The study recruited eligible participants from the intervention arm of the Ukumela Impilo trial. Our trial evaluated the effectiveness of sit-stand desks in reducing sedentary behaviour and improving cardiometabolic health among South African office workers. Interviews were conducted in 2024 with all eighteen South African office-based workers with a mean age of 42.5. Each interview lasted approximately 20–60 minutes. Discussions were thematically analysed using Atlas—ti24 software. The study received ethical approval from the University of the Witwatersrand (certificate number: M190224).

**Findings:** The semi-structured interviews yielded several themes and subthemes on the participants' personal experiences with the height-adjustable sit-to-stand desks. The first theme was related to the influence on health and well-being, which included changes in physical discomfort, energy levels, and overall well-being. The most identified barriers to implementation included technical issues, lack of support from management, and personal resistance to change. Facilitators included human factors such as wellbeing, work productivity, workplace culture, and habit formation.

**Conclusions:** This study identified key barriers and facilitators to effectively implementing height-adjustable sit-to-stand workstations. We intend to use the data to inform the development of strategies that will more effectively address the problem of prolonged sitting in the office workers

## Smart Health, Adaptive Support: A Sequential, Multiple Assignment, Randomized Pilot Trial of LvL UP

**Ms. Shenglin Zheng**<sup>1,2</sup>, Dr. Oscar Castro<sup>2</sup>, Dr. Jacqueline Louise Mair<sup>2</sup>, Dr. Sarah Yi Xuan Tan<sup>1,2</sup>, Mr. Ahmad Ishqi Jabir<sup>2</sup>, Dr. Xiaoxi Yan<sup>3</sup>, Dr. Bibhas Chakraborty<sup>3,4</sup>, Dr. E Shyong Tai<sup>1,5</sup>, Dr. Rob M. van Dam<sup>1,6</sup>, Dr. Florian von Wangenheim<sup>7,2</sup>, Dr. Elgar Fleisch<sup>7,8,2</sup>, Dr. Konstadina Griva<sup>9</sup>, Dr. Tobias Kowatsch<sup>11,10,7</sup>, Dr. Falk Müller-Riemenschneider<sup>2,12</sup>

<sup>1</sup>Saw Swee Hock School of Public Health, National University of Singapore and National University Health System, , Singapore, <sup>2</sup>Future Health Technologies, Singapore-ETH Centre, Campus for Research Excellence And Technological Enterprise (CREATE), , Singapore, <sup>3</sup>Centre for Quantitative Medicine, Duke-NUS Medical School, , Singapore, <sup>4</sup>Department of Statistics and Data Science, National University of Singapore and National University Health System, , Singapore, <sup>5</sup>Yong Loo Lin School of Medicine, National University of Singapore and National University Health System, , Singapore, <sup>6</sup>Department of Exercise and Nutrition Sciences, Milken Institute School of Public Health, George Washington University, Washington DC, USA, <sup>7</sup>Centre for Digital Health Interventions, Department of Management, Technology, and Economics, ETH Zurich, Zurich, Switzerland, <sup>8</sup>Institute of Technology Management, University of St. Gallen, St. Gallen, Switzerland, <sup>9</sup>Office of Research, Lee Kong Chian School of Medicine, Nanyang Technological University, , Singapore, <sup>10</sup>School of Medicine, University of St. Gallen, St. Gallen, Switzerland, <sup>11</sup>Institute for Implementation Science in Health Care, University of Zurich, Zurich, Switzerland, <sup>12</sup>Digital Health Center, Berlin Institute of Health, Charité-Universitätsmedizin Berlin, Berlin, Germany

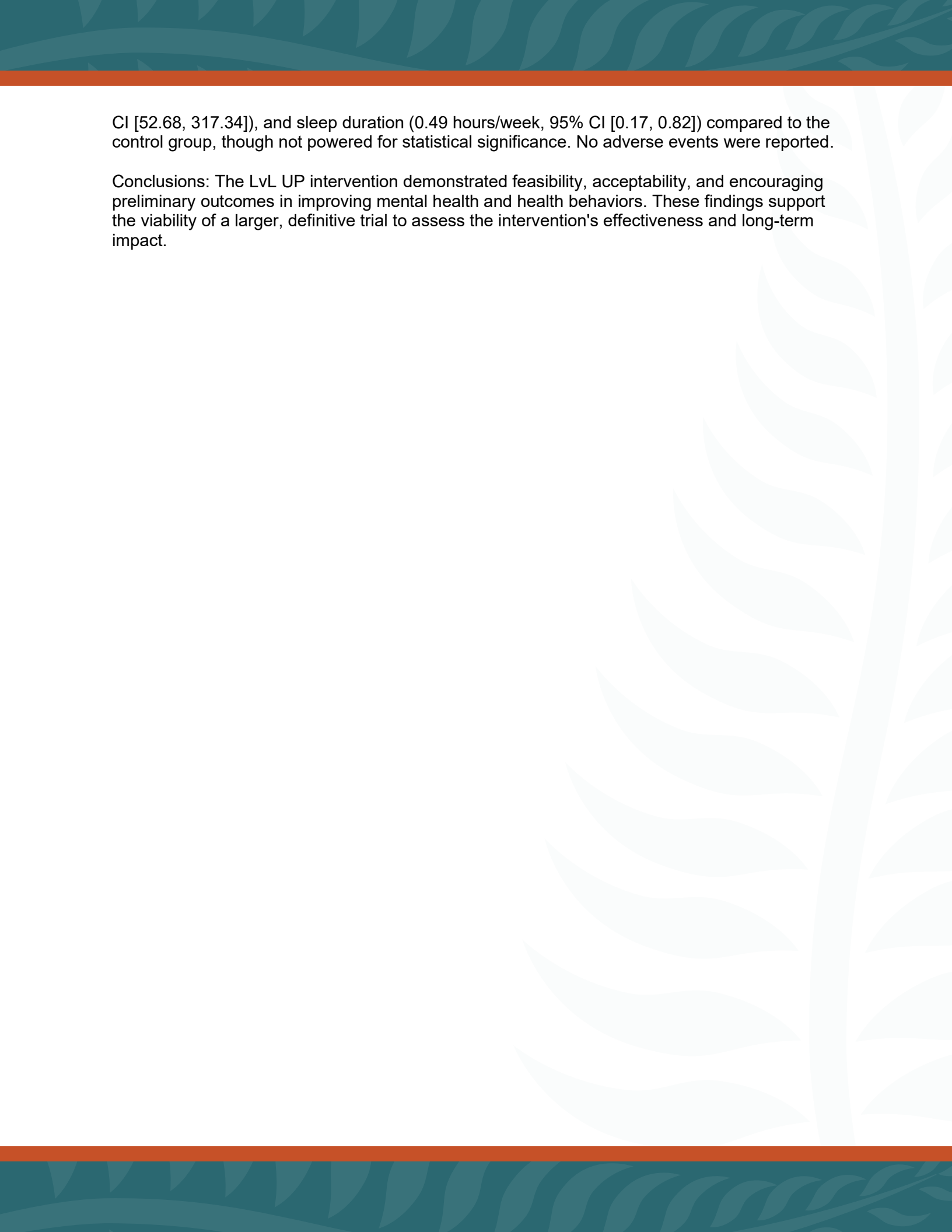
**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** LvL UP is a mobile health intervention designed to prevent chronic disease and improve mental health. It provides scalable reach using a smartphone app while enabling human support when needed. This study assessed the feasibility and preliminary effectiveness of LvL UP using a sequential, multiple assignment, randomized trial design.

**Methods:** The 8-week pilot trial (April–July 2024) recruited Singaporeans aged 21–59 at risk of chronic conditions. Participants were randomized 2:1 to the intervention group (LvL UP app plus buddy support) or control group (mock app). After 4 weeks, intervention participants meeting predefined non-response criteria (completion of fewer than six digital coaching sessions or usefulness rating below 4 out of 5) were re-randomized to either continue the initial intervention or receive augmented motivational coaching via WhatsApp. Primary outcomes assessed feasibility, including recruitment, retention, app engagement, and user satisfaction. Secondary outcomes evaluated preliminary effectiveness on mental well-being and health behaviors.

**Results:** A total of 458 individuals were screened, 394 were eligible, and 123 were enrolled (intervention: n=82; control: n=41). The intervention group also included 78 enrolled buddies. After 4 weeks, 39 participants were re-randomized (continue: n=20; augmented: n=19), with 79% of the augmented group attending at least one of three WhatsApp coaching sessions. Retention rates at 8 weeks were high: 91.5% in the intervention group and 90.2% in the control group. Participants in the intervention group logged into the app an average of 24 days (SD = 17). User satisfaction was positive, with a Net Promoter Score of 15.6 (scale: -100 to +100, where scores above 0 indicate more promoters than detractors). Preliminary effectiveness data demonstrated trends toward improvement in mental well-being (change over time difference: 2.12, 95% CI [-0.58, 4.82]), moderate-to-vigorous physical activity (185.01 minutes/week, 95%



CI [52.68, 317.34]), and sleep duration (0.49 hours/week, 95% CI [0.17, 0.82]) compared to the control group, though not powered for statistical significance. No adverse events were reported.

Conclusions: The LvL UP intervention demonstrated feasibility, acceptability, and encouraging preliminary outcomes in improving mental health and health behaviors. These findings support the viability of a larger, definitive trial to assess the intervention's effectiveness and long-term impact.

## Public attitudes toward students wearing school sports uniform every day: a multi-methods content analysis.

Ms. Belinda Peden<sup>1,2,3,4</sup>, **Dr. Cassandra Lane**<sup>1,2,3,4</sup>, Dr. Alix Hall<sup>1,2,3,4</sup>, Dr. Emma Pollock<sup>1,2,3,4</sup>, Prof. Nicole Nathan<sup>1,2,3,4</sup>

<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Population Health, Wallsend, Australia, <sup>3</sup>Population Health Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>4</sup>National Centre of Implementation Science, Callaghan, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Studies have shown that in countries with mandatory school uniforms, students, particularly girls, identify formal school uniforms as a barrier to participating in physical activity. To avoid voltage drop when scaling complex physical activity interventions, simple, low-cost school-based interventions are needed to address low physical activity levels among children and adolescents. Allowing students to wear sports uniform every day is one such approach, however, school principals have reported community expectations that students wear formal uniform as a barrier. This study sought to assess public sentiment relating to students wearing sports uniforms every day from available responses and reactions to media and social media posts.

**Methods:** A multi-methods content analysis of public responses on media and social media posts in Australia was undertaken. Quantitative analysis was applied to responses and reactions to determine public sentiment and qualitative content analysis was conducted to uncover reasons for supporting or not supporting daily sports uniform wear.

**Results/findings:** Data from 12 media and social media sources identified overall that the majority of the public (76%) were in support of schools allowing students to wear sports uniform every day. Majority support was also reflected across the individual sources with three quarters having >70% support and only one quarter below 60% support. Themes identified supporting sports uniform wear were: 1) Student impacts: positive educational and health outcomes, increased autonomy, and support for equity and inclusion; 2) Parent benefit: provides time efficiencies in dressing and washing and cost savings with sports uniform cheaper than formal uniforms; 3) Societal viewpoint: formal uniforms are an antiquated notion and represent outdated concepts as well as reflecting elitist values focused on image rather than student and learning outcomes. Themes against were 1) Societal viewpoint: formal uniforms symbolise prestige, reinforce discipline and respect, and prepare children for future employment.

**Conclusions:** Community expectation that students wear formal uniforms has been reported by principals as a reason they do not support allowing students to wear sports uniform every day. This study provides important information to inform strategies to address this barrier to a simple and scalable population-wide intervention to increase physical activity at school.

# Assessing Beverage Consumption among Adolescents in Jakarta: Implications for Healthy Food Marketing and Policy Interventions

**Dr. Avita Usfar<sup>1</sup>**, Ms. Nadhila Beladina<sup>1</sup>, Ms. Ester Novalia<sup>1</sup>, Ms. Azka Fitri<sup>1</sup>, Mr. Iwan Ariawan<sup>1</sup>

<sup>1</sup>Reconstra Utama Integra Research, Jakarta, Indonesia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Non-Communicable Diseases (NCDs) are the leading cause of death globally, accounting for 38% of all deaths. In Indonesia, NCDs have similarly become the leading cause of death, responsible for nearly three out of four deaths. This rise is directly linked to poor diets, characterized by increased availability of cheaper, energy-dense, and low-nutrient products. According to the national health survey, about half of junior and senior high school students consume sugar-sweetened drinks more than once a day. Our study assessed the consumption practices of ready-to-drink and packaged beverages among adolescents to understand their choices better.

**Methods:** Four small Focus Group Discussions (FGDs) were conducted with two groups of junior and two groups of senior high school students in November 2024, involving a total of 19 students. The schools were purposively selected, and each FGD lasted approximately 1.5 hours.

**Findings:** The school canteen played a crucial role in providing healthy food and drinks, as students spent 5 to 7 hours at school. Water remained the primary drink for the students, with most bringing water from home in plastic tumblers. Once their water was finished, they purchased bottled water from the school canteen. Most students purchased sugary-sweetened drinks daily, including ready-to-drink iced tea, coffee, chocolate drinks, and packaged tea or carbonated drinks. Social media trends on platforms like Instagram and TikTok influence students' consumption of sugar sweetened beverages outside the school. These include bottled (i.e. sodas, flavoured milks and teas, electrolyte waters) as well as fast-food options like (boba, iced coffee, and ice cream), which students often consume 3–5 times a week with friends. Affordable options from cafes and street vendors make these drinks easily accessible. Factors such as positive online reviews by food critics, visually appealing ambiances, Instagram-worthy spots, innovative products, vibrant colors, and unique packaging, influence their frequent purchases.

**Conclusions:** Greater access to free and safe drinking water at schools is essential. Healthier beverages with no or low sugar content should be made available in school canteens, allowing students to personalize their drinks. The promotion of healthy drinks should target both students, school authorities, and canteen vendors.

# Effect of Eight-hour Time-restricted Eating (16/8 TRE) on Glucose Metabolism and Lipid Profile in Adults: A Systematic Review and Meta-Analysis

**Mr. Po San WONG<sup>1</sup>**, Mr. Kewen WAN<sup>2</sup>, Ms. Zihan DAI<sup>1</sup>, Prof. Eric Tsz-chun POON<sup>1</sup>, Prof. Stephen Heung-sang WONG<sup>1</sup>

<sup>1</sup>Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Shatin, China, <sup>2</sup>Academy of Wellness and Human Development, Faculty of Arts and Social Sciences, Hong Kong Baptist University, Kowloon Tong, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Eight-hour time-restricted eating (16/8 TRE) is a dietary approach that limits the eating window to eight hours without imposing calorie restrictions. Despite its widespread popularity among the general population, there is a lack of evidence regarding the effectiveness of 16/8 TRE on certain metabolic parameters in adults. This systematic review and meta-analysis examined the effects of 16/8 TRE on glucose metabolism and lipid profile in adults, compared with non-TRE diet.

**Methods:** Four electronic databases were searched for relevant studies. Randomized controlled trials examining the effect of 16/8 TRE on glucose metabolism and lipid profile in adults were included. All results in the meta-analysis were reported as mean difference (MD) or standardized mean difference (SMD) with 95% confidence interval (CI). Subgroup analyses were performed to examine the influence of the study population, gender, physical activity (PA) level, and baseline mean BMI on glucose metabolism and lipid profile.

**Result:** Twenty studies with a total of 965 participants were included. The 16/8 TRE intervention significantly reduced fasting glucose (SMD: -0.30; 95%CI: -0.48 to -0.12;  $p=.001$ ), HOMA-IR (MD: -0.17; 95%CI: -0.32 to -0.01;  $p=.04$ ), and insulin levels (SMD: -0.28; 95%CI: -0.54 to -0.01;  $p=.04$ ). However, 16/8 TRE did not have significant effect on lipid profile when compared to non-TRE diet. Results from subgroup analysis suggested gender differences in triglycerides ( $p=.04$ ), and high-density lipoprotein cholesterol (HDL-C;  $p=.03$ ), as significant improvements in triglyceride (SMD: -0.52; 95%CI: -1.04 to 0.01;  $p=.05$ ), low-density lipoproteins cholesterol (LDL-C; SMD: -0.41; 95%CI: -0.75 to -0.07;  $p=.02$ ), and HDL-C (SMD: 3.70; 95%CI: 0.80 to 6.60;  $p=.01$ ) were found in studies with only male participants. Moreover, subgroup differences were also found in HOMA-IR when categorized by baseline BMI ( $p=.05$ ) with overweight/obese population demonstrating a greater improvement. Differences were also observed in LDL-C based on participants' PA level ( $p=.006$ ) with those who have a regular PA habit showing a better improvement.

**Conclusions:** 16/8 TRE shows an overall improvement in HOMA-IR, fasting glucose and insulin level significantly when compared to non-TRE diet. However, while improvements in lipid profiles were observed in male participants, the overall impact of 16/8 TRE on lipid parameters remains inconclusive.

## Willingness to reduce cancer risk through nutrition-related behaviour: an application of the health belief model

**Dr. Tony Benson<sup>1</sup>**, Prof. Moira Dean<sup>1</sup>

<sup>1</sup>Queen's University Belfast, Belfast, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Despite well-established associations between nutrition and health related outcomes such as obesity, diabetes, and cancer, individuals continue to make poor dietary decisions. Using the Health Belief Model (HBM) as a theoretical framework, the current study aimed to explore the acceptability of different nutrition-related behaviours to reduce the risk of cancer from arsenic in rice. At present, research results in this area are limited and use specific samples. Using a diverse sample across multiple countries, this study aimed to identify whether a) adopting a specific cooking method, b) using a newly developed rice cooker, or c) buying reformulated rice, might be most acceptable to consumers. The suitability of the HBM to predict these behaviours was also examined.

**Methods:** A total of 3,081 individuals across six European countries completed a cross-sectional online survey (nationally representative to +/- 5%). Alongside relevant sociodemographic questions, participants answered questions measuring the constructs of the HBM: perceived severity, perceived susceptibility, benefits, barriers, and self-efficacy. Structural Equation Modelling (SEM) was used to explore the application of the HBM to the data.

**Results:** Participants were most willing to use reformulated food as a method of reducing risk (70%), compared with the specific cooking method (61%) and the new cooker (52%). Frequency of rice consumption and knowledge were consistent significant predictors of all three behaviours. In addition, gender was a significant predictor of using the specific cooking method and reformulated rice, and age was a significant predictor of using the new cooker and the cooking method. Country was a significant predictor of using the cooker. The HBM variables accounted for 70-81% of the variance in intentions for the behaviours. Perceived benefits was the strongest significant predictor of intentions for each of the behaviours, accounting for 67-89% of the variance in intentions.

**Conclusions:** The majority of participants would prefer to reduce their risk of disease using the most convenient method rather than changing cooking behaviour at the individual level. Thus future efforts to change nutrition-related behaviour or consumption might be best placed at the environmental or industry level.

## Understanding intentions to regularly consume foods based on plant protein using the theory of planned behaviour

**Dr. Tony Benson<sup>1</sup>**, Ms. Sinan Dong<sup>1</sup>, Prof. Moira Dean<sup>1</sup>, Dr. Anne Nugent<sup>1</sup>

<sup>1</sup>Queen's University Belfast, Belfast, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Food and drink production and consumption are major contributors to climate change. One effective way of minimising environmental impacts from these is to diversify protein intake, moving from animal to plant based protein sources. Consumers are the ultimate end-users of foods based on plant protein (FBPP) and it is therefore crucial to understand their intentions to consume such foods. While previous research has examined and identified drivers of consumer acceptance, there is a lack of research on this for the island of Ireland, which due to its climate is somewhat limited in the sustainable plant proteins that can be produced. In addition, there is a lack of research on consumer trust and awareness and knowledge in this area.

**Methods:** A cross-sectional survey was completed by a nationally representative island of Ireland sample of 998 individuals. Questionnaire sections included environmental concern, sustainability knowledge, trust, beliefs, and theory of planned behaviour (TPB) variables (attitudes, subjective norms, perceived behavioural control). SPSS was used to perform hierarchical multiple regression to identify the significant predictors of consumers' intentions to regularly consume FBPP.

**Results:** Participants had a slightly above average environmental concern score and average knowledge with regards to the environmental impact of food. There were generally favourable attitudes, beliefs, and trust towards FBPP, however, intention to regularly consume them was relatively low. The extended TPB model explained 66% of the variance in intentions to regularly consume FBPP. Attitudes were the strongest significant predictor of intentions ( $\beta = 0.45$ ,  $p < 0.001$ ), followed by subjective norms, perceived behavioural control, environmental concern, trust in FBPP products, and trust in farmers.

**Conclusions:** To increase intentions to regularly consume FBPP, efforts should pay attention to consumers' attitudes towards the products. A focus on the stronger beliefs linked to attitudes relating to the taste, healthiness and environmental friendliness of FBPP may be most effective in increasing intentions and ultimately changing behaviour.

# Exploring Barriers, Facilitators, Needs, and Preferences Towards a Suitable Approach for (Sustained) Lifestyle Changes in Individuals with Multimorbidity: A Delphi Study of Healthcare Stakeholders

**Ms. Bo Brummel<sup>1</sup>**, Prof. Dr. Sabita Soedamah-Muthu<sup>1</sup>, Dr. Mirela Habibovic<sup>1</sup>, Dr. Meeke Hoedjes<sup>1</sup>

<sup>1</sup>Center of Research on Psychological disorders and Somatic diseases, Department of Medical and Clinical Psychology, Tilburg University, Tilburg, the Netherlands

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The aging population coincides with a rise in lifestyle-related chronic diseases, including type 2 diabetes, cardiovascular disease, and cancer. These conditions often co-exist, as they share common lifestyle-related risk factors, such as poor diet, physical inactivity, and overweight. This growing prevalence of multimorbidity, the presence of two or more chronic conditions in an individual, places added strain on the healthcare system. Lifestyle behaviors can play a crucial role in prognosis, and managing these behaviors can significantly improve health outcomes. However, current lifestyle interventions often focus on each separate chronic disease, while suitable approaches for achieving (sustained) behavioral changes in individuals with multimorbidity are lacking. Therefore, this study aims to identify the barriers, facilitators, and preferences for lifestyle promotion by incorporating the perspectives of various healthcare stakeholders working with individuals experiencing multimorbidity.

**Methods:** The study uses a Delphi design, following the CREDES guidelines. Three iterative rounds of online questionnaires will be used, each lasting six weeks, with the final round ending in March 2025. Experts, including dietitians, physiotherapists, lifestyle coaches, and physicians will share their insights on the challenges and needs individuals with multimorbidity face in adopting favorable lifestyle changes. Round one will gather open-ended responses to identify relevant factors, which will be analyzed using a qualitative thematic approach. Round two will verify these factors using Likert scales, and round three will prioritize factors and reach a consensus.

**Results/Findings:** Around 30 experts from various disciplines are expected to participate. Analysis of round one responses will identify key themes such as the lack of patient motivation, limited access to resources, and the need for more personalized care. In round two, these factors will be refined and verified through Likert scale ratings. The final round will prioritize the results, aiming for consensus on the most important factors related to promoting lifestyle changes in multimorbid individuals. Consensus will be considered achieved when 75% agreement is reached on key factors.

**Conclusions:** The findings of this study are intended to guide the development of more effective, tailored approaches to improve lifestyle behaviors, ultimately improving health outcomes for multimorbid patients and reducing the overall healthcare burden.

## Preliminary findings from a scoping review of physical activity promotion studies in Thailand

**Dr. Katika Akksilp**<sup>1,2</sup>, Dr. Thitikorn Topothai<sup>2,4</sup>, Dr. Nopphadol Pimsarn<sup>1</sup>, Miss Ploynaphas Chinnapanwanich<sup>1</sup>, Dr. Cynthia Chen<sup>2,3</sup>, Dr. Falk Müller-Riemenschneider<sup>2,3</sup>, Dr. Yot Teerawattananon<sup>1,2</sup>

<sup>1</sup>HITAP, Muang Nonthaburi, <sup>2</sup>Saw Swee Hock School of Public Health, National University of Singapore and National University Health System, Singapore, Singapore, <sup>3</sup>Yong Loo Lin School of Medicine, National University of Singapore and National University Health System, Singapore, Singapore, <sup>4</sup>International Health Policy Program (IHPP), Muang Nonthaburi, Thailand

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

The preliminary findings of this scoping review aim to explore the landscape of interventions targeting the promotion of physical activity or the reduction of sedentary behavior and in Thailand, highlighting their key characteristics, methodologies, and emerging trends. This scoping review adhered to PRISMA-P guidelines and involved comprehensive searches across five international databases as well as Thai-specific databases between January and June 2024. Studies were included if they targeted participants from the general Thai population. Exclusion criteria applied to studies involving populations with pre-existing medical conditions, pregnant women, individuals with disabilities, or athletes. The search yielded 17,604 articles, of which 168 studies met the inclusion criteria after screening. Among these, exercise-based interventions were the most prevalent (76 studies), followed by multi-component approaches (72 studies). The multi-component interventions combined diverse strategies such as device-based approaches, educational activities, environmental modifications, goal setting, reward systems, and community or group support, aiming to enhance intervention effectiveness and sustainability. Most interventions lasted 6–12 weeks, revealing a limitation in tracking long-term outcomes. A notable trend in recent years has been the increasing use of advanced digital technologies, particularly wearable devices to collect physical activity data for outcome assessment. This shift was evident during the periods 2016–2020 and 2021–2025. Outcome measurements predominantly focused on physical activity alone (38 studies), while fewer studies assessed both physical activity and sedentary behavior together (11 studies) or exclusively sedentary behavior (1 study). A major limitation of the studies was that, despite most interventions aiming to promote physical activity, many failed to collect data on increases in physical activity levels or adherence to the intervention. This gap makes it challenging to fully interpret and evaluate the effectiveness of the interventions. These findings underscore a strong emphasis on promoting physical activity within policy and research contexts in Thailand. We found growing trend toward more device-based physical activity data collection. Despite this progress, gaps remain in addressing sedentary behavior directly, evaluating long-term outcomes, and collecting physical activity and intervention adherence data. This review offers valuable insights to guide the design of more robust and comprehensive research studies in Thailand.

## SureStep: Improving mobility in hospitals – Part 1 Adaptation of an effective and cost-saving program

Ms. Melody Cheuk Yin Leung<sup>1,2</sup>, Cathie Sherrington<sup>1,2</sup>, Abby Haynes<sup>1,2</sup>, Dr Daniel Treacy<sup>3</sup>, Professor Peter Youssef<sup>1,2,4</sup>, Leanne Hassett<sup>1,2</sup>, Dr Stephen Gilbert<sup>1,2</sup>, Ms Rhuta Gole<sup>5</sup>, Mr Braydon Finnerty<sup>5</sup>, Dr Tony Youssef<sup>5</sup>, Mr Joshua Wakefield<sup>3</sup>, Ms Lucy Haver<sup>6</sup>, Ms Whitney Harris<sup>6</sup>, Ms Ying Wang<sup>6</sup>, Ms Karlee Mueller<sup>6</sup>, Ms Jenny Rayner<sup>7</sup>, Ms Pamela Charlton<sup>7</sup>, Ms Alexandra Edmondson<sup>1,2</sup>, Mrs Charlotte McLennan<sup>1,2</sup>, Dr. Raaj Kishore Biswas<sup>5</sup>, Dr Marina B Pinheiro<sup>1,2</sup>, **Prof. Anne Tiedemann**

<sup>1</sup>The University of Sydney, Camperdown, Australia, <sup>2</sup>Institute for Musculoskeletal Health, Camperdown, Australia, <sup>3</sup>Prince of Wales Hospital, Randwick, Australia, <sup>4</sup>Royal Prince Alfred Hospital, Camperdown, Australia, <sup>5</sup>St George Private Hospital, Kogarah, Australia, <sup>6</sup>South Eastern Sydney Local Health District, Sydney, Australia, <sup>7</sup>No current organisational affiliation, ,

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Poor balance and mobility limitations are associated with increased risk of inpatient falls, compromising patient outcomes and increasing hospital burden. SureStep, a group-based 2-week mobility programme, was found to be effective and cost-saving in improving balance and physical performance at one hospital in Sydney, Australia. The aim of this study (Part 1) is to adapt SureStep with clinicians and consumers for delivery in two other hospitals. This will inform Part 2, where the impact of the adapted programme will be investigated.

**Methods:** This qualitative study will explore barriers and enablers to delivering SureStep in selected wards of two hospitals primarily via observations, interviews and focus groups. We plan to recruit as many clinicians as possible and 20-30 current/past patients using purposive sampling to gather diverse stakeholders' perspectives. On-site observations will focus on current exercise sessions and ward workflow. Interviews and focus groups will examine both clinicians' and patients' experiences with delivering and receiving exercises, as well as their perceptions of SureStep implementation. Primary outcomes are adaptation of SureStep protocol and implementation strategies. Secondary outcome is the development of a protocol to evaluate the impact of the adapted programme in Part 2. Using framework analysis, data from interviews and focus groups will be summarised in a simple matrix under heading categories, which will be guided by established frameworks such as TDF and further developed inductively. Two researchers will independently review and constantly refine the data based on further transcript reviews. The summary of the key findings will be provided to clinicians during a follow-up workshop to finalise the adaptation and implementation strategies.

**Results/findings:** The study protocol is currently under human research ethics review.

**Conclusions:** This pre-implementation study is the first that aims to explore and extend the benefits of SureStep observed in a previous hospital. The study aims to collaboratively adapt SureStep and develop the protocol for Part 2 with consumers and clinicians. This will facilitate Part 2 of the larger project where we will test the impact of the adapted intervention in a stepped wedge trial, ensuring suitability for various hospital/ward contexts by adopting strategies developed from Part 1.

## Staff and student acceptability and feasibility of an evidence-based physical activity and mental wellbeing program in Australian secondary schools: a pilot study

**Dr. Rebecca Hodder<sup>1</sup>**, Ms Jessica Wrigley<sup>2</sup>, Dr Tara Clinton-McHarg<sup>6</sup>, Mrs Emma Ainsworth<sup>5</sup>, Ms Katrina McDiarmid<sup>1,2,3,4</sup>, Dr Kate O'Brien<sup>1,2,3,4</sup>, Dr Nicole Nathan<sup>1,2,3,4</sup>, Dr Kate Bartlem<sup>2,4</sup>, Mr Daniel Groombridge<sup>2</sup>

<sup>1</sup>School of Medicine and Public Health, the University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>3</sup>National Centre of Implementation Science, The University of Newcastle, Wallsend, Australia, <sup>4</sup>Population Health Research Group, Hunter Medical Research Institute, Wallsend, Australia, <sup>5</sup>Community Health Service, Northern Territory Health, Big Rivers Region, Australia, <sup>6</sup>School of Population and Global Health, the University of Melbourne, Parkville, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Physical inactivity and mental health are key health and wellbeing priorities for adolescents due to their considerable short-term and lifelong health impacts. Schools, with their extensive reach and infrastructure are ideal settings for interventions targeting these outcomes. Previous research has demonstrated bi-directional associations between improved adolescent physical activity and mental health. Effective school-based interventions targeting adolescent physical activity and mental health, if combined, may deliver enhanced effects on these outcomes and address curriculum-space implementation barriers. A study was conducted to assess the acceptability, feasibility, perceived effectiveness, and factors influencing implementation of an evidence-based physical activity and mental wellbeing program in Australian secondary schools.

**Methods:** A pilot study of a teacher-delivered 5-week physical activity and mental wellbeing program for Year 7 students in two NSW schools. Surveys and focus groups collected teacher and/or student data regarding implementation fidelity, acceptability, feasibility, confidence to deliver, perceived effectiveness and factors influencing implementation.

**Results:** Seven teachers (64%) and 87 students (58%) participated. Both schools implemented all program components. Teachers reported the program was acceptable (40%-100%) and feasible (71%), implementation support acceptable (71%-86%) and were confident to deliver all components (71%-100%). Students reported program information was acceptable (74%-78%). Teachers and students believed most components positively impacted student health and wellbeing (40%-83%). Teachers identified two main implementation barriers: sufficient financial resources (86%) and recognition for program implementation (71%). Student-reported factors to increase participation included: active rather than theoretical lessons, peer and teacher participation, and autonomy in lesson activities.

**Conclusions:** The physical activity and mental wellbeing program was acceptable and feasible, and potential implementation barriers and factors to improve student participation were identified. Findings support a controlled study to assess effects on student health outcomes.

# Creating a Novel Short Nutrition Literacy Scale for Adults in the United States (SNLS-US) to Improve Nutrition Literacy Assessment

**Dr. Jamie Baum<sup>1</sup>**, Dr. Aubree Hawley<sup>1</sup>, Sydney Boudrey<sup>1</sup>, Dr. Eric Calloway<sup>2</sup>, Dr. Eliza Short<sup>2</sup>, Dr. Erin Howie Hickey<sup>3</sup>

<sup>1</sup>University of Arkansas System Division of Agriculture, Fayetteville, USA, <sup>2</sup>Center for Nutrition and Health Impact, Omaha, USA, <sup>3</sup>University of Arkansas, Fayetteville, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** To create a short tool measuring functional, interactive, and critical nutrition literacy (NL) in adults living in the United States.

**Methods:** The Short Nutrition Literacy Scale for Adults in the United States (SNLS-US) was developed using a formative approach. A systematic review of existing NL assessment tools was conducted by three independent reviewers using Covidence software to identify relevant questions and gaps in the literature. Identified items were adapted to reflect an internally developed NL framework and concepts culturally appropriate for U.S. adults. An expert review panel, consisting of dietitians (n=3), public health professionals (1), and nutrition and health literacy specialists (n=3), rated items on a 3-point Likert scale ("Very Important," "Neutral," and "Not Important") with 1.0, 0.5, and 0-point values, respectively, with an opportunity for open-ended feedback. Based on mean scores, items were categorized by priority for inclusion in the assessment tool: high priority (1.0–0.7 points), neutral (0.69–0.5 points), and low priority (0.5–0.0 points). Low priority items indicated a need for modifications or removal.

**Results/Findings:** The systematic review of NL assessment tools identified 30 instruments, with 7 assessing NL in the U.S. Only one U.S. instrument evaluated functional, interactive, and critical NL, though it was developed for college students. Based on expert review, a 4th–6th grade reading level was recommended for most items, while more advanced questions were kept to distinguish individuals with higher NL. This resulted in a prioritized list of 35 questions: 25 functional, 17 interactive, and 16 critical NL items. Of these, 29 questions scored 0.7 or higher. The final scale includes 35 questions across three domains, 2 objective levels, and 10 subjective levels of NL.

**Conclusions:** The Short Nutrition Literacy Scale for US Adults is a novel instrument tailored to the needs of US adults, that comprehensively measures function, interactive, and critical NL. Future analysis plans include cognitive interviews of the target population, pilot testing, and psychometric analysis. Such work can help inform interventions and programs to address NL more fully.

## Developing a new nutrition literacy framework: A scoping review

**Dr. Jamie Baum**<sup>1</sup>, Dr. Aubree Hawley<sup>1</sup>, Sydney Boudrey<sup>1</sup>, Dr. Erin Howie Hickey<sup>2</sup>

<sup>1</sup>University of Arkansas System Division of Agriculture, Fayetteville, USA, <sup>2</sup>University of Arkansas, Fayetteville, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** To create a nutrition literacy (NL) conceptual framework encompassing distinct domains, levels, and dimensions, specifically tailored for adults living in the United States.

**Methods:** This scoping review was conducted using Covidence software. A literature search of Web of Science, CINAHL, PubMed, and Google Scholar using the terms “Nutrition Literacy”, and “Food Literacy” was completed on 05 September 2024. We searched for peer-reviewed documents in English, from all geographic areas focused on adults describing NL frameworks, conceptual models, interventions, assessment tool development, and program evaluations. The initial search found 691 hits. Two independent reviewers screened titles and abstracts for selection. The search resulted in 97 papers for full review. Fifty-four studies were included for data extraction. All articles were examined for definitions of NL domains, levels, and dimensions. Data was extracted by two independent reviewers with a third reviewer providing consensus using a standardized evidence table. Utilizing techniques used in conceptual analysis, these NL concepts and components were compared, color coded, and extracted for conceptual overlap, and we identified both the shared and distinct elements.

**Results/Findings:** Of the 54 studies identified, 45 defined NL, 12 focused on NL programs or interventions, 24 focused on assessment tool development, and 1 created a framework. The remaining 18 papers discussed NL as a concept. We identified 16, 15, and 14 varying definitions of functional, interactive and critical NL with 106 differing themes or levels. According to our conceptual analysis, we built a framework containing three domains: 1) functional, 2) interactive, and 3) critical NL; 11 levels: knowledge, understand, obtain, apply, advanced cognitive and application skills, motivation, communicative, appraisal, advocacy and translational; and 2 dimensions: skill and cognitive with explicit examples reflective of each level.

**Conclusions:** This NL framework can be used as a novel template to examine whether existing NL assessment tools, interventions, programs and/or policies address the spectrum of NL and identify gaps in available services. A critical next step will be to test the relevance and validity of the framework with diverse audiences and nutrition experts.

## Assessing Team Thrive diabetes prevention curriculum implementation by Utah health teachers

**Mx. Mickey Bolyard**<sup>1</sup>, Madeleine French<sup>1</sup>, Amy Loverin<sup>1</sup>, Shannon Jones<sup>1</sup>, Dr. Joshua Christensen<sup>2</sup>, Dr. Paul Estabrooks<sup>1</sup>

<sup>1</sup>University of Utah, Salt Lake City, United States, <sup>2</sup>Brigham Young University - Hawaii, Laie, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** There is limited information the use of evidence-based type 2 diabetes prevention interventions focusing on youth in school settings. The purpose of this presentation is to describe teacher adoption decisions and implementation of Team Thrive—an effective type 2 diabetes risk reduction intervention for high school students.

**Methods:** We distributed a survey of use of Team Thrive to high school teachers (n=51) to determine decision-making factors for adopting health curricula and fidelity of delivering health curricula components. Teachers included those who have previously taught Team Thrive (n=28) and teachers who have never taught Team Thrive but have previously taught health curricula (n=23). The survey included questions related to adoption decisions as well as implementation fidelity to core intervention components.

**Findings:** When asked to rank factors contributing to decision-making, Team Thrive teachers prioritized factors such as the curriculum being fully packaged, no-cost, online, easy to deliver, and aligned with state educational standards. Improving student health outcomes was the lowest prioritized factor contributing to decision-making on curriculum adoption. A majority of Team Thrive teachers delivered program components related to student goal setting and encouragement and assessing student health behavior change progress. However, less than half of Team Thrive teachers reported using team-based competition, incentives, and activities. Additionally, peer mentoring had a relatively low level of implementation. Compared to non-Team Thrive teachers, Team Thrive teachers completed more standard-aligned learning objectives. On average, most Team Thrive teachers reported that the program aligned with their expectations and perspectives for health and well-being curricula and thought that their perspectives related to the decision to use Team Thrive again. Additionally, Team Thrive teachers reported that the program aligned with the available resources and curricular structure of the courses they teach.

**Conclusions:** Health and well-being teachers valued Team Thrive as a fully packaged, no-cost, online, easy to deliver curriculum that aligns with educational standards and teacher expectations for health and well-being curricula.

## Community driven adaptations: typologies of an evidenced-based obesity prevention intervention for Native American families

Mx. Teresa Warne<sup>1</sup>, **Dr. Emily Tomayko**<sup>1</sup>, Dr. Paul Estabrook<sup>2</sup>, Dr. Alex Adams<sup>1</sup>

<sup>1</sup>Montana State University, Bozeman, USA, <sup>2</sup>University of Utah, Salt Lake City, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Turtle Island Tales is an evidence-based obesity prevention intervention that was developed, tested, and adapted using an asset-based approach to highlight Indigenous values and practices. Turtle Island Tales demonstrated effectiveness when mailed monthly to families for home implementation over one year. Recently, partnering communities proposed to delivery and implement Turtle Island Tales in new contexts that may promote program scalability. The primary purpose of this study is to describe community-identified and led delivery and implementation pathways of Turtle Island Tales based on the local context.

**Methods:** Turtle Island Tales implementation was planned with two tribal communities in Oregon and Wisconsin. Monthly community implementation team meetings, feedback checklists, and focus groups were conducted with community partners (e.g., Head Start teachers/administrators). Data generated from these activities were organized and analyzed using two frameworks. The Consolidated Framework for Implementation Research and RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) guided understanding barriers and facilitators to implementation and related outcomes in new contexts.

**Results/findings:** Five typologies of Turtle Island Tales were identified during community-led implementation: (1) Central Distribution, mailing Turtle Island Tales directly into family homes from central location, as tested; (2) Classroom Distribution; mailing program to early childhood educational settings for further distribution to families (e.g., send home in child backpack); (3) Hybrid Distribution; same as Classroom Distribution plus some intervention delivery in the classroom (e.g., reading the monthly program book during circle time); (4) Classroom Only; no program delivery to families, materials used in classroom only (e.g., adopted as nutrition curriculum); and (5) Blended, program components delivered in classroom alongside additional nutrition education.

**Conclusions:** While the scale-up (i.e., broader implementation in similar population/setting as tested) of Turtle Island Tales was planned, community-led implementation has led to scale-out, or adapting and delivering the intervention through different delivery systems. Five typologies of implementation of Turtle Island Tales were identified, but less is known about the effectiveness of the program across the typologies or associated cost differences. Understanding community-driven adaptations to program delivery is essential to increasing reach through equitable implementation of Turtle Island Tales for Native American families.

# ASSOCIATION BETWEEN SEDENTARY BEHAVIOUR, SLEEP, AND WELLBEING IN ADOLESCENTS

**Ms. Gunchmaa Nyam<sup>1</sup>**, Assoc Prof Natalie Lander<sup>1</sup>, Dr Claudia Strugnell<sup>1</sup>, Dr Ana Maria Contardo Ayala<sup>1</sup>, Distinguished Prof Jo Salmon<sup>1</sup>

<sup>1</sup>Deakin University, Burwood, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Adolescence is a critical period of development. Reduced sedentary behaviour (SB), sufficient sleep, and positive wellbeing are essential for healthy development. This study aims to explore the associations between specific SB types, sleep, and wellbeing among secondary school adolescents.

**Methods:** Baseline data from the TransformUs Secondary effectiveness trial were used. The trial recruited adolescents (Years 7-10) from 8 Victorian secondary schools between Aug 2023 - Mar 2024. The Adolescent Sleep Wake Scale and EPOCH (engagement, perseverance, connectedness, optimism, and happiness) survey assessed sleep quality and wellbeing. SB was derived from the Youth Activity Profile questionnaire, and sleep duration measured the previous week's recall. Linear regression models explored associations between these behaviours, wellbeing dimensions, and sleep. Models were adjusted for age and gender.

**Results:** The sample consisted of 178 adolescents (13.77 years  $\pm 1.01$ ; 49.44% male). Most were born in Australia (80.90%), with English as the main language at home (79.21%). Mean sleep quality score was 33.74 ( $\pm 8.59$ ) (range 0-60); average sleep durations were 8.15 hours ( $\pm 1.31$ ) on weekdays and 8.65 hours ( $\pm 1.84$ ) on weekends. Males were more likely to engage in video gaming, while females tended to use mobile phones more frequently. When examining correlations between SB types, demographic factors, and wellbeing domains, age was negatively associated with engagement ( $\beta = -0.135$ , 95% CI = -0.254, -0.016), computer use negatively affected connectedness ( $\beta = -0.086$ , 95% CI = -0.169, -0.003, and overall sedentary behaviours at home were linked to lower perseverance ( $\beta = -0.219$ , 95% CI = -0.350, -0.087). Video/online gaming was associated with lower sleep quality and difficulties in going to bed ( $\beta = -0.156$ , 95% CI = -0.278, -0.034). Mobile use negatively affected overall sleep quality, bedtime, and falling asleep. Weekday sleep was negatively associated with video/online gaming, while weekend sleep was positively associated with TV watching ( $\beta = 0.325$ , 95% CI = 0.072, 0.579) and negative with gaming ( $\beta = -0.204$ , 95% CI = -0.401, -0.007).

**Conclusions:** These findings highlight that SB types negatively affect sleep quality and feeling of connectedness. Engaging in less SB may benefit adolescents in improving sleep and psychological wellbeing.

## Unwrapped Food for Thought: Family Perspectives on Packing Nutritious, Eco-Friendly Lunchboxes

**Dr. Neha Lalchandani<sup>1,2</sup>**, Clare Hume<sup>2</sup>, Professor Caroline Miller<sup>2,3</sup>, Dr Shona Crabb<sup>2</sup>

<sup>1</sup>Deakin University, Geelong, Australia, Institute for Health Transformation, Global Centre for Preventive Health and Nutrition, School of Health and Social Development, Faculty of Health, Melbourne, Australia,

<sup>2</sup>School of Public Health, University of Adelaide, Adelaide, Australia, <sup>3</sup>Health Policy Centre, South Australian Health and Medical Research Institute (SAHMRI), Adelaide, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** There is limited understanding of factors influencing the preparation of nutritious, low-waste school lunchboxes in home environments. This study explored the perceptions and practices of South Australian families regarding lunchbox preparation, focusing on the interplay between food choices and packaging. The key question guiding the research was: What factors affect the prioritisation of environmental sustainability in lunchbox preparation alongside nutritional goals?

**Methods:** This qualitative study involved semi-structured online interviews with 16 South Australian families, primarily parent-child dyads. Interviews were audio-recorded, transcribed verbatim, and thematically analysed using a reflexive, inductive approach through a critical realist lens. Data were coded to identify key themes.

**Results:** Participants included 16 parents (94% mothers) and their primary school-aged children (years 3-6; ages 8-12 years; 60% female, 40% male) from public (75%) and private schools (25%) across medium (38%) and high (62%) socioeconomic backgrounds. Three key themes were identified: (1) Extrinsic factors and school environment structures; (2) Intrinsic factors and the 'Hierarchy of Motivations'; (3) Responsibility for change. Findings indicated that school-level structural factors, such as the presence or absence of initiatives like the 'nude food' policy and waste bins, influenced consumption of minimally packaged foods. Conversely, allergy policies and lack of refrigeration or heating facilities were some of the discouraging factors. Personal priorities, including convenience and children's preferences, often took precedence over environmental concerns. The influence of school culture on lunchbox foods, despite being packed at home, underscores the need for school-level reforms. Additionally, parents expressed some inclination to enhance children's autonomy and involvement in the lunchbox packing process.

**Conclusions:** This study contributes to the growing discourse on school food research, highlighting how eco-friendliness adds another layer of complexity to the already challenging task of packing lunchboxes, while also ensuring children's preferences are catered for. Reducing the environmental impact of lunchbox waste requires coordinated efforts at personal, familial, and institutional levels. Leveraging on and strengthening existing initiatives that promote co-benefits for both children's nutrition and planetary health, alleviating structural barriers, and ensuring parents feel supported rather than pressured in their lunchbox preparation efforts, could be effective approaches.

# Qualitative Exploration of How Teachers' Perceived Motivation and Habit Formation Influences Sustained Delivery of a Physical Activity Initiative in New South Wales Schools

**Mr. Will Pascoe**<sup>1,2</sup>, Dr Alix Hall<sup>1,2</sup>, Dr Alison Zucca<sup>1,2</sup>, Dr Adam Shoesmith<sup>1,2</sup>, Mr Edd Riley-Gibson<sup>1,2</sup>, Associate Professor Nicole Nathan<sup>1,2</sup>

<sup>1</sup>University of Newcastle, Newcastle, Australia, <sup>2</sup>Hunter New England Health, Newcastle, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Money, time, and resources are wasted each year as physical activity initiatives fail to sustain. Behaviour change theories, like the COM-B, highlight motivation's pivotal role in behaviour, making implementer motivation critical for physical activity initiative success. However, research often neglects implementer motivation and what impacts it. Teachers commonly state their non-reflexive (conscious) motivation to teach is driven by helping children, career progression, and personal beliefs. However, it is unclear if these motivating factors extend to implementing physical activity initiatives. Further, evidence regarding implementers' reflexive (unconscious) motivation and habit use for sustainment is limited. This study qualitatively explores teachers' perceived motivation and their process of scheduling daily physical activity 12 months into the PACE program. Interviews focus on the role of habit formation and comparing motivation between high- and low-scheduling teachers.

**Methods:** The study accompanied the PACE RCT that tests the effectiveness of sustainability strategies at sustaining an increase in teachers' scheduling of physical activity in New South Wales schools. Teachers and school champions participated in 30-minute semi-structured interviews 12 months into the sustainability trial. Interviews focus on teachers' perceived motivation to schedule Energisers and potential reflexive-motivation processes, such as habits. Framework analysis is used to answer the research objectives. Participant characteristics, such as high-vs-low scheduling, are analysed following coding.

**Results:** Data is currently undergoing analysis and will be available for presentation in June. Preliminary analysis suggests support for habit formation and that a range of different factors support teachers' sustained delivery of physical activity. Reoccurring topics of discussion include the benefits of organisational routine and whole-school buy-in, how school champions engage teachers, and cues teachers use for habit formation. Teachers differ in their levels of perceived reflexive and non-reflexive motivation.

**Implications:** Evidence-based studies have presented the importance of motivation in personal health behaviours and clinical settings, but the role of teachers' motivation and habit formation to sustain physical activity initiatives in community settings is understudied. This study will present findings that begin to piece this puzzle together.

## Dual Careers in Adolescent Athletes – A Qualitative Study on Perceived Support, Obstacles and Coping Strategies

**Ms. Birgit Helmlinger<sup>1</sup>**, Mr David Altmann<sup>2</sup>, Dr. Matteo Sattler<sup>2</sup>

<sup>1</sup>Medical University of Graz, Department of Neurology, Graz, Austria, <sup>2</sup>University of Graz, Institute of Human Movement Science, Sport and Health, Graz, Austria

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Balancing professional sports and academics is challenging and linked to career success and health. Additionally, mental health among adolescents is declining, yet little is known about the supportive environments for young athletes. This study explores the needs, perspectives, social support, and coping strategies of adolescent athletes to guide health promotion and prevention efforts.

**Methods:** Semi-structured interviews were conducted with eight adolescent professional tennis players (aged 14–18 years) with experience in high-level tournaments. Athletes discussed challenges, the impact of dual careers, support systems, and performance expectations. Data were analyzed using qualitative content analysis.

**Results:** Participants reported some positive effects of tennis training on school performance (e.g., improved concentration and discipline) but noted increased stress and impaired performance when school and tournament pressures coincided. Most had considered quitting either school or tennis due to these pressures. Social support roles varied: friends and family provided emotional support, parents facilitated balance, and coaches offered individualized plans and mental/technical support. While high performance expectations were common, participants emphasized the need for balanced encouragement to sustain motivation and avoid burnout. They highlighted realistic goal setting, flexible expectations, and the importance of self-evaluation, initiative and the ability to make independent decisions for personal growth and resilience. Relying solely on parents or coaches was seen as limiting. Coping strategies included relaxing music, walking, and breathing exercises, with experienced athletes favoring mental training and proper diets to manage stress and enhance performance.

**Conclusions:** Adolescent athletes assign distinct roles to social support systems (family, friends, coaches) and increasingly adopt a holistic approach to health and performance, incorporating mental training, active coping strategies, and a healthy diet. Promoting self-evaluation and independence in decision-making is vital for the development of young athletes.

## Implementation of a Games-Based Physical Activity and Professional Development Intervention to improve Physical Activity, Movement Skills, and Self-Perceived Physical Literacy outcomes in Moroccan Primary School Students: A Pilot RCT

**Miss Kayla Elliott<sup>1</sup>**, Dr Mehdi Azlaf<sup>2</sup>, Distinguished Professor Anthony Okely<sup>1</sup>, Dr Nezha Zahir<sup>2</sup>, Dr Myrto Mavilidi<sup>3</sup>, Dr Zhiguang Zhang<sup>1</sup>, Dr Asmaa EL Hamdouchi<sup>4</sup>, Professor Abdesselam Mili<sup>2</sup>

<sup>1</sup>Early Start, School of Social Sciences, University of Wollongong, , Australia, <sup>2</sup>Ministry of National Education, Preschool and Sports, Rabat, Morocco, <sup>3</sup>Early Start, School of Education, University of Wollongong, , Australia, <sup>4</sup>Unité de Recherche Nutrition et Alimentation, CNESTEN, Rabat, Morocco

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Children in Morocco lack regular opportunities for physical activity (PA) in primary schools. No formal intervention evaluations have been conducted to guide implementation efforts. The primary purpose of this study was to evaluate the implementation of a games-based PA manual and professional development program in improving student PA, movement skills and self-perceived physical literacy outcomes in Morocco.

**Methods:** A three-arm (manual, manual + professional development, and control), randomised controlled trial (RCT) was conducted across 9 primary schools. During the 9-week intervention, classroom teachers implemented skill-based physical activity games from the provided manual for 20 minutes, three times a week. Teachers in the professional development group also participated in sessions aimed at improving teacher knowledge and self-efficacy and enhancing the implementation of the games. Teachers in the control group continued with their normal activities. At baseline and follow-up, children wore Axivity AX3 accelerometers for seven consecutive days, participated in an agility course, and completed a self-perceived physical literacy questionnaire. Implementation fidelity was assessed using SOFIT assessments across intervention schools, comparing teachers who received professional development with those who did not. At follow-up, focus groups were conducted with students and teachers to determine the feasibility and acceptability of intervention implementation. Accelerometry data will be processed in R using the package GGIR, segmented by class time, break time and the after-school period. Linear mixed models, accounting for class-level clustering, gender, age, and accelerometry wear time, will be conducted in SPSS to determine treatment by time effects on PA, movement skills and self-perceived physical literacy. Focus group recordings will be transcribed verbatim. Thematic analysis of the focus group data, using both deductive and inductive coding processes, will determine barriers and facilitators to implementation feasibility and acceptability.

**Results:** Data were collected from 520 students aged 9-13 years old. We hypothesise that children in the manual + professional development group will demonstrate greater improvements in PA, movement skills, and self-perceived physical literacy, driven by optimised intervention implementation.

Conclusions: This study's findings will inform strategies to implement effective PA interventions in Moroccan primary schools, providing actionable insights for policymakers and educators to enhance children's PA outcomes.

## The influence of nature imagery in combination with social cues on perceptions of trust, aesthetics, purchase intentions, and food naturalness in an online grocery store

Ms. Jessica Piper<sup>1,2</sup>, Associate Professor Marc Adam<sup>2,3</sup>, **Dr. Nienke de Vlieger**<sup>1,2</sup>, Professor Simone Dohle<sup>4</sup>, Prof. Clare Collins<sup>2,5</sup>, Prof. Tamara Bucher<sup>1,2,6</sup>

<sup>1</sup>School of Environmental and Life Sciences, College of Engineering, Science and Environment, The University of Newcastle, Ourimbah, Australia, <sup>2</sup>Food and Nutrition Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>3</sup>School of Information and Physical Sciences, College of Engineering, Science and Environment, The University of Newcastle, Callaghan, Australia, <sup>4</sup>Institute of General Practice and Family Medicine, University Hospital Bonn, University of Bonn, Bonn, Germany, <sup>5</sup>School of Health Sciences, College of Health, Medicine and Wellbeing, The University of Newcastle, Callaghan, Australia, <sup>6</sup>Department of Health Professions, Bern University of Applied Sciences, Bern, Switzerland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Due to the inherent link to nature of food products, early evidence is showing that images of nature within the digital eating environment can influence consumers' perceptions and even food choices. This study aims to investigate the effect of nature and social cues on consumer perceptions in an online food shop setting.

**Methods:** In an online survey, participants were exposed to an image of a fictitious online food shop. They saw one of eight possible images: a shop with yoghurts or cornflakes, with social cues present or absent and nature cues present or absent. After, participants answered questions measuring perceived nature presence, perceived social presence, trust, aesthetics, purchase intentions, and naturalness. In addition, another small sample was recruited for an online eye tracking part of the study. FacereaderOnline was used to inform us what participants look at, and for how long, when presented with one of the images referred to above.

**Results:** A total of 396 participants were recruited, with an additional 30 for the eye tracking part. All data will be analysed using R4.3.2. Descriptive statistics will be used to explore the survey and face reader data (means, standard deviations etc). The effectiveness of randomisation will be checked using Chi-square analyses or Analysis of Variance (ANOVA). An ANOVA will determine if there are any differences in nature or social cue presence between the experimental groups. OLS regressions will determine how the levels of cues and control variables impact perceptions of nature presence. CB-SEM will be performed to analyse paths between nature presence, social presence, trust, aesthetics, naturalness, and intention to purchase. Several control variables will be tested to determine any significant predictors. Colour cluster analysis and OLS regressions will be used to determine whether the colours present in the images had an impact on perceptions of nature presence.

**Conclusions:** This study will provide us with valuable information on how nature and social cues impact consumers perception in online food shops. With the insight gained from this study we will be able to add to the growing body of knowledge concerning healthy food choices in the digital space.

## Association between adherence to 24-Hour Movement Guidelines and Self-Perceived Health in Adolescents: the MOVESCHOOL study

Dr. Miguel Vaquero-Solís<sup>1,2</sup>, **Dr. Daniel Camiletti-Moirón**<sup>1</sup>, Ms. Fátima Martín-Acosta<sup>1</sup>, Mr. Francisco J. Bandera-Campos<sup>1</sup>, Dr. David Sánchez-Oliva<sup>1,2</sup>, Dr. Alberto Grao-Cruces<sup>1</sup>

<sup>1</sup>GALENO Research Group, Department of Physical Education, Faculty of Education Sciences, University of Cadiz, Puerto Real, Spain, <sup>2</sup>ACAFYDE Research Group, Department of Didactics of Musical, Plastic and Body Expression, Faculty of Sports Sciences, University of Extremadura, Cáceres, Spain

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Previous research has linked 24-hour movement behaviors (i.e., physical activity, sedentary behavior, and sleep) to physical and psychological health indicators. However, the association between adherence to 24-hour movement guidelines and self-perceived health in adolescents remains underexplored. Therefore, this study aims to examine the association between adherence to 24-hour movement guidelines and self-perceived health in this age group.

**Methods:** A total of 488 adolescents ( $12.5 \pm 0.7$  years; 47.1% female) from 11 Spanish secondary schools participated in the study. Assessments were conducted at baseline (October 2023) and follow-up (May 2024). Adolescents wore wrist-mounted accelerometers for eight consecutive days to assess adherence to the 24-hour movement guidelines for physical activity (1) and sleep (2). Compliance with the recreational screen time (3) guideline was assessed using self-reported data on time spent watching TV, playing video games, or using tablets and smartphones. Self-perceived health was measured using a single-item question where participants rated their health from poor to excellent. Based on their adherence to the 24-hour movement guidelines, participants were categorized into four groups: no behaviors met, one behavior met, two behaviors met, and all three behaviors met. One-way ANOVAs with post-hoc were conducted to analyze differences in self-perceived health (both at baseline and at 7-month follow-up) between the four cited adherence groups at baseline.

**Results:** Cross-sectional results showed that participants who were not adhering to any of the three guidelines reported lower self-rated health scores compared to those who met the guidelines for one ( $p < 0.01$ ), two ( $p < 0.001$ ), or all three behaviors ( $p < 0.01$ ). Likewise, participants who met only one guideline detailed lower self-rated health than those who met two or three guidelines (both,  $p < 0.05$ ). Additionally, after the 7-month follow-up, participants in the group that met two behaviors still showed higher self-perceived health than those who did not meet any of the guidelines ( $p < 0.05$ ).

**Conclusions:** The number of movement guidelines adhered to was positively associated with self-perceived health in adolescents, and this association may persist over several months in some cases.

## A Mobile App to Reduce Chronic Disease Risk in Urban Blue-Collar Adult Workers: Feasibility and Usability Study

**Dr. Basheerah Enahora**<sup>1</sup>, Ms Tori Wierzchowski<sup>2</sup>, Dr. Gena Gerstner<sup>2</sup>, Mr. Kanishk Harde<sup>1</sup>, Mr. Manan Patel<sup>1</sup>, Dr. Alice S. Ammerman<sup>2</sup>

<sup>1</sup>North Carolina State University, Raleigh, USA, <sup>2</sup>University of North Carolina at Chapel Hill, Chapel Hill, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** This pilot study aimed to assess the feasibility and usability of a multi-component mHealth approach to potentially promote health behaviors to reduce chronic disease risk among urban, adult blue-collar workers.

**Methods:** Adults working in blue-collar worksites in urban NC communities were recruited to use the theory-based Good Bowls mobile app and receive text messaging. The mobile app used the social cognitive theory and self-determination theory constructs to provide health knowledge and enable participant goal setting, self-monitoring, extrinsic motivation, and reinforcements through educational health messages, videos, a dynamic meal planner, competitions, social interaction, and text messages. Mobile app feasibility and usability were measured via weekly active app usage, text message open rates, and an eight-item participant questionnaire administered eight weeks after pilot study enrollment.

**Results/findings:** Twenty-six obese (mean BMI=31.57), majority male (88.46%), 19-64 years old, majority non-Hispanic White (42.3%), non-Hispanic Black (34.6%), and Hispanic-White (11.5%) participants downloaded the Good Bowls mobile app to their personal Android or iPhone. Participants used the following app features most: social interaction/competition on the community page (30.6%), meal planner/recipes (22.5%), weight tracking (20.7%), goal setting (17.1%), and educational videos (9.1%). Two weeks after downloading the app, nine users were actively engaged (users who opened and accessed at least three app features weekly). Six users were engaged after four weeks, and three were active after eight weeks. The text message open rate was 99%, with one user opting out of receiving bi-weekly text messages encouraging mobile app usage. Participants reported positive experiences and agreement with “I learned about healthy eating in the app” (100.0%) and “I would recommend the app to a friend” (100.0%). Participants reported less favorable responses to “I enjoyed using the app” (50.0%), “The app was easy to use” (50.0%), and “I found the app useful in daily life” (50.0%).

**Conclusions:** This pilot trial of the Good Bowls mobile app demonstrated feasibility and identified limitations in usability, particularly in ease of use, daily utility, and sustaining mobile app usage among blue-collar NC workers. Future improvements may include simplifying app navigation and refining features users find appealing in ways that increase retention and effectiveness.

## Understanding cultural adaptations for training Australian health coaches in the Small Steps for Big Changes diabetes prevention program

Dr. Ana Goode<sup>1</sup>, Associate Prof. Sjaan Gomersall<sup>1</sup>, Prof. Mary Jung<sup>2</sup>, Ms Noell Burgess, **Prof Genevieve N Healy**<sup>1</sup>

<sup>1</sup>The University of Queensland, Brisbane, Australia, <sup>2</sup>The University of British Columbia, , Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Small Steps for Big Changes (SSBC) is a Canadian-developed diet- and exercise-counselling program for people at risk of type 2 diabetes. It is designed for delivery by lay health coaches, who receive training in program delivery. This study aimed to understand, from multiple perspectives, the suitability and appropriateness of the health coach training for an Australian context and to identify any required cultural adaptations.

**Methods:** Three participant groups took part in this qualitative research: staff (n=12) from five implementation sites; tertiary students (n=10) from a variety of health-related disciplines; and, allied-health professionals and students who identify as Aboriginal and/or Torres Strait Islander (n=3). Data were collected via interviews and think alouds. All participants were asked about the suitability and appropriateness of the training and to identify any adaptations required. Data were coded with themes identified and synthesised.

**Results:** Overall, the SSBC coach training was seen as appropriate and suitable by all participants. Important adaptations identified by all were the inclusion of Australian-specific diet and physical activity guidelines and tailoring to ensure cultural safety within the Australian context. Holding additional group-based training sessions for health coaches to practice relevant skills was also suggested.

**Conclusions:** Gaining multiple perspectives provided important insights into the suitability and appropriateness of the training for an Australian context. Findings will be used to adapt training for Australian delivery, including for a student-led model

## Exploring the relationships between implementer intervention knowledge and implementation self-efficacy, and implementation fidelity of a family healthy weight program.

Dr. Caitlin Golden<sup>1</sup>, Jennie Hill<sup>1</sup>, Dr. Kate Heelan<sup>2</sup>, Dr. Bryce Abbey<sup>2</sup>, Ms. Ali Malmkar<sup>2</sup>, **Ms. Mickey Bolyard**, Dr. Paul Estabrooks<sup>1</sup>

<sup>1</sup>University of Utah, Salt Lake City, USA, <sup>2</sup>University of Nebraska Kearney, Kearney, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Implementer intervention knowledge and implementation self-efficacy are hypothesized to be potential mechanisms of implementation fidelity. The purpose of this study was to explore these relationships within the context of a 12-week family healthy weight program, Building Healthy Families (BHF).

**Methods:** 32 individuals with roles in supporting the delivery of BHF completed weekly trainings and intervention knowledge was assessed through session specific assessments (i.e., knowledge checks) prior to implementing each session. Individuals were also asked to rate their confidence (i.e., self-efficacy) implementing the program content for each session on a 5-point scale (1= strongly disagree to 5= strongly agree). Implementation fidelity was assessed through direct observation and measured adherence to the core components (traffic light eating plan [TLEP], self-regulation, physical activity), participant engagement, and quality of delivery. An overall fidelity score was operationalized as learning objectives completed by sessions delivered. Pearson's correlation coefficients were used to examine the relationships between average implementer intervention knowledge and implementation self-efficacy, and implementation fidelity.

**Results:** Knowledge check scores showed weak and negative correlations with most fidelity outcomes and a moderate negative correlation for adherence to the TLEP curriculum ( $r = -.46$ ). However, knowledge check scores were positively and moderately correlated ( $r = .41$ ) with adherence to the self-regulation component of BHF. Self-efficacy demonstrated positive correlations with the fidelity outcomes adherence to participant engagement ( $r = .39$ ), self-regulation ( $r = .54$ ), and a strong correlation with quality of delivery ( $r = .60$ ). Overall fidelity scores indicated negative correlations with knowledge check scores ( $r = -.36$ ) and weak correlations with self-efficacy scores ( $r = .08$ ).

**Conclusion:** This small study provides some evidence that implementer intervention knowledge and implementation self-efficacy may be related to different implementation outcomes. However, the surprising findings of negative correlations observed between knowledge check scores and fidelity outcomes highlight that knowledge alone may not be sufficient to predict effective program implementation. Self-efficacy may be a more reliable predictor of implementation fidelity, highlighting its importance of ensuring sufficient implementer training and support to optimize program delivery in community settings.

# The Design Process of a Multi-component Scale-up Intervention for the National Scale-up of an Effective Healthy Lunchbox Program – SWAP IT

**Dr. Anna Rayward**<sup>1,2,3,4</sup>, Associate Professor Rachel Sutherland<sup>1,2,3,4</sup>, Associate Professor Nicole Nathan<sup>1,2,3,4</sup>, Professor Andrew Milat<sup>5</sup>, Dr Jannah Jones<sup>1,2,3,4</sup>, Dr Li Kheng Chai<sup>7</sup>, Professor Corneel Vandelanotte<sup>8</sup>, Emeritus Professor Adrian Bauman<sup>1,5</sup>, Dr Courtney Barnes<sup>1,2,3,4</sup>, Associate Professor Louise Freebairn<sup>5,12</sup>, Dr Christopher Oldmeadow<sup>1,3</sup>, Dr Tameka McFadyen<sup>1</sup>, Dr Penny Reeves<sup>1,3</sup>, Ms Juliet Bociulis<sup>9</sup>, Ms Laura Paulsen<sup>10</sup>, Ms Ellie Wood<sup>6</sup>, Professor Philip Morgan<sup>1,3</sup>, Professor Luke Wolfenden<sup>1,2,3,4</sup>

<sup>1</sup>University of Newcastle, Wallsend, Australia, <sup>2</sup>Hunter New England Population Health, Wallsend, Australia, <sup>3</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>4</sup>National Centre of Implementation Science, Callaghan, Australia, <sup>5</sup>University of Sydney, Camperdown, Australia, <sup>6</sup>NSW Ministry of Health, St Leonards, Australia, <sup>7</sup>Health and Wellbeing Queensland, Milton, Australia, <sup>8</sup>Central Queensland University, Rockhampton, Australia, <sup>9</sup>Preventive Health SA, Adelaide, Australia, <sup>10</sup>Cancer Council Victoria, East Melbourne, Australia, <sup>11</sup>Department of Health Western Australia, Perth, Australia, <sup>12</sup>Australian National University, Canberra, Australia


**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Governments make substantial investments in scaling-up school-based health promotion programs. However, a lack of clear evidence regarding effective scale-up strategies and how to select interventions that are suitable for delivery at scale, are the main barriers to successful scale-up. This presentation will present the process undertaken to develop a theoretically designed, multi-component strategy to increase the adoption of a scalable, effective, school nutrition program (SWAP IT) within primary (elementary) schools, across Australia, designed to address this critical evidence-gap.


**Methods:** A multi-step process was undertaken to design the scale-up strategy: i) SWAP IT was optimised for scale-up through repeated randomised controlled trials (RCTs) to enhance its reach, reduce cost, while retaining key elements and effectiveness; ii) a systematic review identified models and success factors for scale-up of public health interventions; iii) best-practice scale-up guidance was followed (i.e., conduct scalability assessment, develop scaling-up plan, secure resources and stakeholder support, implement the scale-up plan); iv) an evidence-based approach identified determinants of school adoption and mapped these against a consolidated theoretical framework to create six specific scale-up strategies (including local facilitation, local opinion leaders, audit and feedback, educational materials, sector support and endorsement, and program integration) and; v) stakeholders were engaged at each stage of scale-up co-design, including researchers (with expertise in dietetics, public health, implementation and scale-up, technology, parenting, education), end-users (e.g., parents/principals) and leading prevention partner agencies in six Australian state jurisdictions.

**Results:** Four jurisdictions are actively testing the scale-up strategy. A parallel RCT design is being used with schools randomised to receive either a 6-to-9-month multi-component scale-up strategy or waitlist-control. The primary outcome is school adoption of SWAP IT in response to scale-up strategies, assessed via electronic enrolment records on the SWAP IT website. Secondary outcomes include population-level effects on child nutrition and obesity, program



sustainment, and economic evaluation. Extensive process evaluation at multiple levels will be employed.

Conclusion: This research will provide high quality evidence to address a fundamental evidence-gap and inform policy and practice decision-making about how best to scale-up health promotion programs in schools.



## Australian decisionmakers' perspectives and preferences on healthy eating and physical activity policies and practices delivered in Early Childhood Education and Care settings: a cross-sectional study.

**Ms. Ana Renda<sup>1,2,3</sup>**, Mrs Jessica Bell<sup>1,3,4</sup>, Dr. Rebecca Hodder<sup>1,3,4</sup>, A/Prof Serene Yoong<sup>3,5</sup>

<sup>1</sup>University of Newcastle, Callaghan, Australia, <sup>2</sup>Sydney Local Health District, Forest Lodge, Australia, <sup>3</sup>National Centre of Implementation Science, Newcastle, Australia, <sup>4</sup>Hunter New England Local Health District, Wallsend, Australia, <sup>5</sup>Deakin University, Burwood, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Early Childhood Education and Care (ECEC) settings in an important setting to deliver programs to improve child healthy eating and physical activity practices. Poor diet and physical inactivity are major risk factors of preventative diseases. Despite the evidence for healthy eating and physical activity interventions in ECEC, their implementation at scale remains challenging. Systematic review evidence and guidelines support the delivery of evidence-based practices and policies to create healthier environments. To deliver at scale, intervention effectiveness and ECEC decision-makers' perspectives must be considered. As such, this study aims to describe Australian ECEC decision-makers' perspectives on domains of importance for healthy eating and physical activity policy and practice decisions in childcares, their preferences and ranking of these practices to be implemented at scale.

**Methods:** A cross-sectional study will be conducted with Australian decisionmakers related to the ECEC setting via an online survey. Snowball technique to increase recruitment is used. Decision-makers' demographics and their perspective on domains based on the Intervention Scalability Assessment Tool: implementation infrastructure, feasibility, sustainability, acceptability, and cost will be assessed. Twelve healthy eating and physical activity practices will be assessed against these domains. Followed by an assessment of prioritisation preferences for each practice.

**Results:** Data collection is underway, and it is expected 100 participants will be recruited by April 2025. Results will show ECEC decision-makers' perspectives on which healthy eating and physical activity practice to implement based on cost, acceptability and sustainability. They will also show the proportion of decision-makers recommending implementation of these practices and the priority ratings for each practice. Results will be available to present at the conference.

**Conclusion:** This study will include decision-makers' perspectives on scalability domains and on the suitability for implementation of healthy eating and physical activity practices in the Early Childhood Education and Care setting in the Australian context.

## "It's therapy without words": Participation motives and perceived psychological benefits of Conscious Dance participants

**Dr. Ineke Vergeer<sup>1</sup>**, Dr. Sarah E. Hennelly<sup>2</sup>, Dr. Kelsey T. Laird<sup>3,4</sup>

<sup>1</sup>University of Southern Queensland, Springfield Central, Australia, <sup>2</sup>Oxford Brooks University, Oxford, United Kingdom, <sup>3</sup>California Institute of Integral Studies, San Francisco, USA, <sup>4</sup>David Geffen School of Medicine at UCLA, Los Angeles, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Holistic movement practices are forms of physical activity that have been purposefully designed to achieve more than just physical benefits, often including mental, emotional, social and/or spiritual elements. Conscious Dance is a free-form based holistic movement practice, defined as “unchoreographed, intentionally non-evaluative mindful movement, commonly practiced in a group setting for purposes of authentic self-expression, self-discovery, interpersonal connectedness, and personal healing or growth”. While mental health benefits of dance are increasingly documented, Conscious Dance itself has thus far received limited attention. The purpose of the present study was to explore participation motives and perceived benefits of participants of Conscious Dance modalities.

**Methods:** A convenience sample of 859 Conscious Dance participants completed an online survey in which they provided responses to two open-ended questions: “What motivates you to participate in conscious dance?” and “What impact has conscious dance had on you? Please describe any effects you have noticed resulting from your participation.” Data analysis comprised reflexive thematic analysis, using an inductive, semantic, and realist perspective.

**Results:** As motives reflected experienced benefits, responses were combined and five themes were developed: psychological benefits, physicality, attention and awareness, connection, and liberation. “Psychological benefits” was the most prominent theme, with subthemes “feeling good”, “relationship with self”, and “therapeutic and transformative effects”. Enhanced and ecstatic moods were often mentioned. Moreover, many dancers felt that the practice helped them to better understand and accept themselves, including an improved relationship with their body. There was also frequent mention of how Conscious Dance helped to process and release long held trauma, aided in difficult life transitions, and had a transformative effect.

**Conclusion:** Participants reported clear psychological benefits to their engagement in Conscious Dance, which acted as a strong motivation to continue dancing. As a holistic movement practice that purposefully uses free-form movement as a vehicle to facilitate mental, emotional, and transformational effects, Conscious Dance offers promise in the field of physical activity and mental health. Further research needs to address if the perceived benefits can be reproduced in intervention studies and whether motives and/or effects may be different for different subpopulations.

## Participants' responses to a family-centered diabetes self-management education program delivered by digital technologies and facilitated by Community Health Workers

**Dr. Deborah Parra-Medina<sup>1</sup>**, Dr. Vanessa Errisuriz<sup>2</sup>, Dr. Heather Cuevas<sup>3</sup>, Dr. Minyu Zhang<sup>3</sup>, Dr. Jing Wang<sup>4</sup>, Dr. Zenong Yin<sup>5</sup>

<sup>1</sup>University of Colorado Anschutz Medical Campus, Denver, United States, <sup>2</sup>Santa Clara University, Santa Clara, United States, <sup>3</sup>University of Texas at Austin, Austin, United States, <sup>4</sup>Florida State University, Tallahassee, United States, <sup>5</sup>University of Texas at San Antonio, San Antonio, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** The high prevalence of diabetes and associated complications disproportionately affect low-income Latin adults with diabetes. An academic-community partnership was established to develop an evidence-based diabetes self-management education (DSME) program for low-income Latino adults. The DSME program was designed to enhance social support, improve program accessibility and availability using digital technologies and e-learning, include cultural tailoring, and address linguistic inequities. This study reported the impacts of and participant's responses to the multi-component DSME program.

**Methods:** Latino adults were recruited to participate in Salud Salud, a 12-week evidence-based DSME program in two YMCA locations servicing low-income residents in Austin, Texas. The DSME program included four primary components: a) 13 one-on-one counseling sessions; b) 8 online education lessons and text messaging; c) family support in diabetes management; and d) weekly self-monitoring. Trained Community Health Workers (CHWs) delivered the program using a digital technology-based platform. Participants' glycemic control (i.e., HbA1c) and body mass index (BMI; kg/m<sup>2</sup>) were assessed at baseline and 12-week posttest (i.e., immediately following program completion). High participation in the four components was indicated with 70% or higher completion of program activities.

**Results/Findings:** Eighty-one participants enrolled in the program with 70% identifying as Latino, 70% female, 47% aged 50 years or older, 60% with less than high school education, 48% employed, and 37% U.S.-born. Preliminary analysis of 41 participants with complete data revealed that compared to the baseline value, HbA1c ( $p < 0.07$ ; Cohen's  $d = 0.24$ ) and body weight ( $p < 0.01$ ; Cohen's  $d = 0.41$ ) were lower at the 12-week posttest (one-sided t-test). Furthermore, results of multiple regression showed that a reduction in BMI was associated with a high level of participation in weekly self-monitoring ( $p < .003$ ) and a low level of participation in counseling sessions ( $p < .04$ ). In contrast, levels of participation in the four program components did not predict the reduction in HbA1c at the 12-week posttest.

**Cautions:** Salud Salud demonstrated great promise in improving diabetes-related outcomes in low-income Latinos with diabetes. Future studies should investigate optimizing the uptake of evidence-based strategies and enhancing participant engagement in diabetes self-management practices.

# A Remotely-Delivered Resistance Training Program for Cognitive Function in Prostate Cancer Survivors: A Feasibility Study

**Ms. Sarah O'Rourke<sup>1</sup>**, Dr. Catherine Sabiston<sup>1</sup>, Dr. Lori J. Bernstein<sup>2,3</sup>, Dr. Linda Trinh<sup>1</sup>

<sup>1</sup>Faculty of Kinesiology and Physical Education, University of Toronto, Toronto, Canada, <sup>2</sup>University Health Network, Princess Margaret Cancer Centre, Toronto, Canada, <sup>3</sup>Department of Psychiatry, University of Toronto, Toronto, Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

Prostate cancer and its treatment are associated with many long-term adverse effects including cognitive symptoms. Studies have shown that supervised, integrative aerobic and resistance training (RT) can improve patient-reported cognitive function in men treated with androgen deprivation therapy (ADT). Yet, RT alone has shown promise in managing cognitive decline in older adults without a cancer history, and may also help address functional deficits, bone density loss, muscle mass loss, and increases in cardiometabolic risk factors in prostate cancer survivors (PCS) with a history of ADT.

**Purpose:** To assess the feasibility of an 8-week, supervised, remotely delivered RT program versus usual care for PCS. Secondary objectives include examining changes in 1) objective cognitive function; 2) self-reported cognitive function; 3) objective physical function; 4) self-reported exercise; and 5) self-reported fatigue. It is hypothesized that the trial will be feasible, and improvements in all secondary measures will favour the RT group.

**Methods:** This two-arm, parallel group pilot RCT compares an 8-week RT intervention to usual care. Participants randomized to the RT group will receive a remotely-delivered program 2 days/week for 8 weeks. The usual care group will receive exercise guidelines for cancer survivors. Primary outcomes will be assessed through feasibility indicators (i.e., enrollment, adherence, attrition, safety) throughout the intervention, and participant satisfaction will be collected at post-intervention. All secondary outcomes will be assessed pre- and post-intervention. Objective measures of cognitive function will be assessed using the National Institutes of Health Toolbox Cognition Battery and PsyToolkit. Subjective measures of cognitive function will be assessed using the Functional Assessment of Cancer Therapy- Cognitive Function Version 3. Physical function will be measured using the 30s sit-to-stand test. Self-reported exercise will be measured using the Godin Leisure-Time Exercise Questionnaire. Self-reported fatigue will be measured using the Functional Assessment of Chronic Illness Therapy- Fatigue Scale.

**Implications:** The trial results may be used to inform a larger RCT and demonstrate that a remotely-delivered RT program could effectively supplement intervention strategies to manage long term treatment-related adverse effects in PCS.

# Associations Between Nature Engagement and Risk Factors for Cardiovascular Disease : A Study of Behavioral and Demographic Predictors

**Dr. GINA BESENYI**, Mr. omotayo onanuga<sup>1</sup>

<sup>1</sup>Kansas State University, Manhattan, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Cardiovascular disease (CVD) remains a leading cause of death globally, influenced by different risk factors, and disparities linked to race, gender, and socioeconomic status.<sup>1,2</sup> Exposure to natural environments enhances cardiovascular health by reducing stress and promoting physical activity.<sup>3</sup> This study employed nominal regression analysis to examine CVD risk factors and assess the impact of demographic variables and time spent in nature (TSN) on these risks.

**Methods:** Data were collected in 2022 via a national survey distributed through Forthright, examining the relationship between TSN and demographic, lifestyle, contextual, and health factors. Adults (aged 18+) from the top 1/3 and bottom 1/3 of poverty level were sampled from the 100 largest U.S. metropolitan statistical areas. The International Physical Activity Questionnaire (IPAQ) was modified to assess respondents estimated TSN during May 2022 and an average week in 2021. The survey included 11 demographic questions on gender identity, race/ethnicity, education, marital status, residence type, and employment status.

**Results:** Among the 1,200 participants, 25% (n = 300) reported one or more CVD risk factors, with 60% (n = 180) being males and 40% (n = 120) females. The highest prevalence was observed in the Black/African American group at 30% (n = 90). The model fit was robust, indicated by a significant likelihood ratio test ( $\chi^2 = 278.079$ , df = 132,  $p < .001$ ). Key findings revealed significant interactions for TSN in both 2021 (Wald  $\chi^2 = 50.673$ , df = 9,  $p < .001$ ) and 2022 (Wald  $\chi^2 = 10.086$ , df = 3,  $p < .018$ ), showing that increased nature engagement correlated with a lower likelihood of CVD risk factors. Notably, race (Wald  $\chi^2 = 32.963$ , df = 18,  $p = .017$ ) and marital status (Wald  $\chi^2 = 50.673$ , df = 9,  $p = .001$ ) were significant predictors of CVD risk.

**Conclusions:** The study highlights higher prevalence in CVD risk factors among males and Black/African Americans. Increased TSN is associated with a reduced likelihood of risk factors, emphasizing its protective role. Some demographic factors also play crucial roles, underscoring the need for equitable access to nature and tailored interventions to improve public health outcomes.

## Diet quality varies by race and ethnicity in adult cancer survivors: an NHANES 2011 – 2020 study.

Dr. Adaora Ezeani<sup>1</sup>, **Dr. Tanya Agurs-Collins<sup>1</sup>**, Dr. Marissa Shams-White<sup>2</sup>

<sup>1</sup>National Cancer Institute, Rockville, United States, <sup>2</sup>American Cancer Society, Washington, DC, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** High diet quality may prevent co-morbidities and reduce health disparities among cancer survivors. This study aimed to describe the diet quality among cancer survivors from a nationally representative sample using the Healthy Eating Index (HEI)-2020 and to determine the association between demographic characteristics and health behaviors and HEI-2020 by race and ethnicity.

**Methods:** This was a secondary analysis of the cross-sectional National Health and Nutrition Examination Survey (NHANES) 2011–2020. Participants were 1,844 cancer survivors ≥20 years. Diet quality was measured using HEI-2020, calculated from the average of two 24-hour dietary recalls (score range 0–100, with higher scores indicating greater alignment). Weighted chi-square tests were employed to test associations between sociodemographic and health behavior variables with race and ethnicity. Multivariate linear regression was utilized to investigate the association between sociodemographic and health-related characteristics with total HEI-2020 scores overall and stratified by race/ethnicity.

**Results/findings:** The total sample was comprised of 55% women, 89% non-Hispanic White, mean age of 63.3 (SD 14.0) years, college graduates (38.1%), married or living with a partner (42.8%), and reported a family poverty-to-income ratio (PIR) of >3.5 (47.4%). There were significant group differences between racial and ethnic groups by age ( $p < 0.001$ ), marital status ( $p = 0.045$ ), education ( $p < 0.001$ ), family PIR ( $p < 0.001$ ), BMI ( $p = 0.032$ ), smoking status ( $p = 0.019$ ), alcohol use ( $p < 0.001$ ). The mean HEI-2020 score among cancer survivors was 60.9 (SD: 10.9,  $p < 0.05$ ); Hispanic/Mexican Americans reported the highest mean score (62.2, SD: 19.7). For individual components, total protein and vegetables had the highest mean component scores, whereas lower component scores were observed for refined grains and added sugars. Within racial and ethnic groups, key sociodemographic factors and health behaviors were significantly associated with lower quality diet among non-Hispanic Black (e.g., high BMI and smoking status) and Hispanic/Mexican American adults (e.g., marital status, education, family poverty-to-income ratio, and alcohol use).

**Conclusions:** Study findings indicated low diet quality among adult cancer survivors, with significant differences observed by race/ethnicity. Research is needed among racially/ethnically diverse groups of cancer survivors to elucidate factors impacting nutrition health disparities and to inform more tailored interventions and dietary guidance to support positive, long-term health outcomes.

## Priority actions to support disabled people to be physically active

**Dr. Shelby Carr<sup>1</sup>**, Dr Andrew Atkin<sup>1</sup>, Dr Karen Milton<sup>1</sup>

<sup>1</sup>University of East Anglia, Norwich, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Many disabled people want to be more physically active yet feel there is inadequate support to do so. Whilst there are many barriers to participation for disabled people, evidence on the tangible actions disabled people want implemented to address these barriers is limited. Subsequently, the aims of this study were to explore the barriers and facilitators to physical activity for disabled people and to identify the key actions that would best support their participation.

**Methods:** Twenty-one disabled people (62% >45 years, 48% male) from across the United Kingdom were purposively sampled to participate in a focus group. Participants reported experiencing a variety of impairment types, most commonly mobility (n=13, 62%) and mental health (n=10, 48%). Six focus groups were undertaken online using a semi-structured guide, with transcripts thematically analysed.

**Results/findings:** Thirteen themes were identified across four different levels of the ecological model - interpersonal, institutional, community, and policy. Priority actions included mandatory in-person training on how to support disabled people, improvements to the accessibility of facilities and equipment, improved frequency of public transport to activity centres, reduced cost of activities, and actions to improve societal attitudes towards disabled people.

**Conclusions:** Urgent action is needed to support disabled people to be physically active. Policymakers, non-government organisations (NGOs), and practitioners have a vital role in creating environments and opportunities to ensure equitable access to physical activity for disabled people. This research highlights tangible actions that can be taken by a range of stakeholders to support disabled people to be physically active.

## Association of total sitting time per day with healthcare costs at midlife: a Northern Finland Birth Cohort 1966 study

**Ms. Sanaz Akhavan Rad<sup>1</sup>**, Professor Raija Korpelainen<sup>2</sup>, Professor Kristiina Patja<sup>1</sup>, Dr Frank Kiwanuka<sup>3</sup>, Dr Anna Maiju Leinonen<sup>1</sup>, MSc Mikko Vaaramo<sup>2</sup>, Dr Paulus Torkki<sup>1</sup>

<sup>1</sup>University of Helsinki, Helsinki, Finland, <sup>2</sup>University of Oulu, Oulu, Finland, <sup>3</sup>University of Eastern Finland, Kuopio, Finland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** The purpose of this study was to determine the extent of daily sitting time and its association with healthcare costs among the Northern Birth Cohort at midlife (46 years).

**Methods:** This was a secondary data analysis which utilized data from the Northern Finland Birth Cohort 1966. Participants (n=7147) were Finnish at the age of 46 years. Sitting time per day was self-reported. Costs were computed from self-reported healthcare visits including public, private, and occupational primary healthcare costs. The unit cost of each healthcare visit was estimated according to the Finnish Institute for Health and Welfare.

**Result:** The mean overall total sitting time per day was 7.31 hours (SD=3.25). Among participants who incurred healthcare costs (mean=429 euros), there were more participants who spent 4-8 hours of sitting time. Participants with low sitting time (less than 4 hours) had the least average costs (mean = 388 €).

**Conclusions:** This study sheds light on the association between total sitting time per day and total healthcare costs at midlife. Our findings underscore the importance of interventions aimed at reducing prolonged sitting and mitigating associated economic burdens. Our findings suggest that addressing sedentary behaviors, particularly prolonged sitting, may offer opportunities for reducing healthcare costs at midlife. Workplace-based interventions aimed at reducing sitting time could be a cost-effective strategy in promoting overall health and well-being among adults.

## Retreat-based leisure time physical activity design and impact: Human connection and personal growth experiences of gay and queer men

**Mr. Jesse Elkins<sup>1</sup>**, Dr. Lorenzo N. Hopper<sup>1</sup>, Dr. Meagan C. Zarwell<sup>1</sup>, Dr. Candace S. Brown<sup>1</sup>

<sup>1</sup>Department of Epidemiology and Community Health at the University of North Carolina at Charlotte, Charlotte, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** This study explores the narratives of gay and queer men participating in a yoga retreat in Greece to identify access points to leisure time physical activity (LTPA) and inform retreat designs that address health outcomes beyond the physical benefits of PA. Grounded in the Social Ecological Model and Health Belief Model, we identify culturally responsive access points to LTPA in leisure spaces. By investigating the retreat's immediate impact on feelings of personal growth, social belonging, and well-being, the study offers insights for designing interventions that address the nuanced psychosocial and cultural needs of gay and queer male communities. This study addresses the scarcity of research on leisure and wellness-related programs for gay and queer men, the role of community-centered LTPA spaces, and prevailing health disparities that may make access to such spaces untenable while perpetuating negative health outcomes among gay and queer men.

**Methods:** Using a qualitative, sequential explanatory design, we conducted health history surveys and in-depth semi-structured interviews with 10 self-identifying gay and queer cisgender men, recruited through convenience sampling at a yoga retreat in Greece. We used thematic analysis to examine participants' intrinsic motivators, social support, and additional access points to the retreat setting. We also analyzed participants' retreat experiences and expectations to assess their perceived immediate health impact.

**Results:** Three key themes emerged from the thematic analysis: (1) Intrinsic motivation and social support were central retreat access points. (2) The retreat fostered community building and space for personal growth emphasizing impactful areas of retreat programming. (3) Participants reported immediate benefits, including emotional freedom, deeper social connections, and healing, which extended well-being narratives beyond traditional physical health metrics (e.g., appearance-focused wellness).

**Conclusion:** This study offers insights to improve retreat-based LTPA interventions, incorporating programmatic elements to address psychosocial and physical health disparities among gay and queer men. Our findings challenge mainstream wellness narratives and underscore the need for culturally inclusive approaches that center community building, personal growth, and emotionally healing modalities. This research contributes novel insights for program development, offering a framework for inclusive health promotion and advancing equity in the LTPA field for gay and queer men.

# **“Who leads the talk?” Using artificial intelligence-based fully-automated conversational agents to promote youth’s engagement to physical activity: a meta-analysis of evidence in last decade**

**Dr. Fenghua Sun<sup>1</sup>**, Dr. Yuan Fang<sup>1</sup>, Dr. Zixin Wang<sup>2</sup>

<sup>1</sup>Education University of Hong Kong, Tai Po, Hong Kong, <sup>2</sup>Chinese University of Hong Kong, Shatin, Hong Kong

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** This study aimed to (1) systematically review and quantify the effects of AI-based fully-automated conversational agents (CAs) on both device-measured and self-perceived PA levels, physical health, and fitness among children/adolescents; (2) explore potential moderators; and (3) summarize the design of these CAs.

**Methods:** An extensive literature search in the databases of PubMed, Web of Science, Scopus, and EBSCOhost was conducted to identify eligible intervention studies for meta-analysis. A descriptive account of the features of the studies is provided. Standardized mean difference (SMD) with 95% confidence intervals (CIs) were calculated with random effects models to compare post-intervention effects.

**Results:** A total of 13 true-/quasi- experiments published between 2014 and 2024 were included in the meta-analysis. Among them, 496 children (2-12 years), 743 adolescents (12-18 years), and 351 families/parents participated in the evaluation of AI-based fully-automated CAs (644 boys and 595 girls). Apart from one CA evaluated by a single session, others were tested with long-term use (72 hours to 6 months). Regarding the role of CAs, five served as assistants, four acted as buddies, and the other four played as supervisors. In terms of the efficacy of PA promotion, when they were compared with inactive/sham controls, reviewed CAs exhibited a marginal small effect on promoting device-measured MVPA levels among children/adolescents (SMD: 0.31,  $p=0.050$ ;  $I^2=76\%$ ,  $p<0.001$ ). The subgroup analysis indicated that the CA role potentially moderated the effect on MVPA levels of children/adolescents ( $P_{\text{subgroup}}=0.005$ ). Notably, CAs playing the role of exercise supervisor/buddy showed a medium significant effect on increasing MVPA levels (SMD: 0.65,  $p=0.005$ ;  $I^2=81\%$ ,  $p<0.001$ ), whereas those serving as an assistant presented a non-significant trivial effect (SMD: -0.08,  $p=0.490$ ;  $I^2=0\%$ ,  $p=0.510$ ). Consistently, a significant small effect of CAs was revealed on reducing sedentary behaviors (SMD: -0.33,  $p<0.001$ ;  $I^2=1\%$ ,  $p=0.39$ ) and enhancing the perceived PA levels in children/adolescents (SMD: 0.23,  $p=0.020$ ;  $I^2=7\%$ ,  $p=0.37$ ). However, CAs exhibited non-significant trivial effects on increasing daily steps, reducing BMI, or elevating the fitness level of children/adolescents.

**Conclusion:** AI-based fully-automated CAs are promising in promoting youth’s PA levels. The CA role may be a moderator influencing the intervention efficacy.

## Lived experience as a form of evidence in urban food-related policy making processes: Research and evidence communication experiences from South Africa and the UK

**Dr. Mark Spires<sup>1,2</sup>**, Dr Jane Battersby<sup>3</sup>, Dr Corinna Hawkes<sup>4</sup>, Professor Christina Vogel<sup>2</sup>, Dr Sabine Parrish<sup>6,2</sup>, Professor Tessa Pollard<sup>5</sup>

<sup>1</sup>University of Greenwich - NRI - Centre for Food Systems Research, Chatham, United Kingdom, <sup>2</sup>Centre for Food Policy, City St Georges University of London, London, United Kingdom, <sup>3</sup>University of Cape Town, Cape Town, South Africa, <sup>4</sup>Food and Agriculture Organization of the United Nations (FAO), Rome, Italy, <sup>5</sup>University of Durham, Durham, United Kingdom, <sup>6</sup>University of Aberdeen, Aberdeen, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Diet-related NCDs are a leading cause of death globally, particularly for those living in low-income contexts. Food environments (FEs) directly shape food-related practices and consequent health outcomes, yet these spaces typically fail to make nutritious diets achievable for most. There is a need to better understand how FEs influence food-related practices, and how policy and related actions can in turn improve them, particularly in urban settings where over 50% of the world's population reside. Authors conducted community-based participatory research studies in Cape Town (South Africa) and London (UK) to better understand low-income households' lived experience (LE) of FEs.

**Methods:** Nourished Child Study (Cape Town): A series of facilitated WhatsApp group engagements with 15 low-income caregivers were carried out in two urban communities to better understand how caregivers in these settings experience their food (and related) systems. Family Food Environment Study (London): 'Go-along' interviews were conducted with 23 low-income families across four London boroughs. These engagements involved caregivers leading researchers on their various everyday journeys, with the researcher observing while prompting participants to talk about related food practices. In both instances, thematic analysis was conducted to identify emerging themes.

**Results:** Findings from both studies serve to highlight the need for the full picture of people's LEs to be considered for policies and interventions to improve healthy food access and diets for all. Specific aspects of LE that need to be considered include: identities and meanings; social relations; liking; literacy; ease of availability; prompts and promotions; trust; cost; financial insecurity; time and labour; household and material resources; and emotional, mental, and physical health. Evidence from both studies has been translated and communicated to local policymakers and communities in the form of various engaging outputs (e.g., policy briefs, infographics, videos, and a comic strip). A 'LE evidence generation and utilisation for policy impact' framework has also been developed to inform similar research moving forward.

**Conclusions:** Evidence of LE has shown to be effective in informing policy making processes and helping to effectively communicate the need for whole-of-society and systems-based approaches to improving food access and diet-related health outcomes, particularly for low-income households.

## Scoping review to assess the reach, effectiveness, and impact of government-funded and population-based physical activity initiatives in Australia.

**Mrs. Charuni Dissanayaka Mudiyanselage**<sup>1</sup>, Dr. Stephanie Chappel<sup>1,2,3</sup>, Doctor Sidney Irwin<sup>1</sup>, Miss Gabrielle Fisher<sup>4</sup>, Dr. Alyson Crozier<sup>5</sup>, Prof. Corneel Vandelanotte<sup>1</sup>

<sup>1</sup>Appleton Institute, School of Health, Medical and Applied Sciences, Central Queensland University, Adelaide, Australia, <sup>2</sup>School of Nursing and Midwifery, Faculty of Health, Deakin University, Burwood, Australia, <sup>3</sup>Centre for Quality and Patient Safety Research – Alfred Health Partnership, Institute for Health Transformation, Deakin University, Burwood, Australia, <sup>4</sup>Population Health Division, Preventive Health SA, Adelaide, Australia, <sup>5</sup>Alliance for Research in Exercise, Nutrition and Physical Activity, Allied Health and Human Performance, University of South Australia, Adelaide, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Abstract Purpose:** In Australia, physical activity initiatives are often implemented by state and federal governments to improve population physical activity levels. Given the complexity and variability of government-funded physical activity programs, a scoping review is needed to synthesise the available evidence to identify the gaps in initiatives. The aim of this project is to explore the reach, effectiveness, and impact of government-funded population-based physical activity initiatives in Australia through a scoping review.

**Methods:** This scoping review followed the PRISMA extension for Scoping Reviews (PRISMA-ScR). PubMed, Scopus, Web of Science, MEDLINE, and ProQuest Public Health were searched from January 2000 to April 2024. Search terms included relevant terms surrounding the main topics of 'physical activity', 'intervention', 'population-based', 'government-funded', and 'Australia'. Grey literature sources were collected from websites of relevant organisations, health agencies of Australian states and territories, and other government departments. A manual search of references listed in primary sources was conducted to find journal articles missed by the search. A narrative synthesis of included studies was conducted.

**Results:** In total, 6,127 sources were identified, with 71 sources included in the final review. The peer review studies, and grey literature evaluation reports identified physical activity initiatives across all Australian states and at the national level. However, Queensland and Victoria provided more physical activity interventions, strategies, and action plans compared to other states. The most common intervention strategies employed were digital platforms and a combination of multiple strategies. Most of these initiatives increased physical activity, however the overall reach of initiatives to the broader Australian population was limited. The initiatives also had positive impacts on individuals' health (e.g., weight, mitigating chronic diseases) and wellbeing (e.g., developing social connections).

**Conclusion:** Although these initiatives have demonstrated improvements in physical activity and community health and wellbeing, they have only reached a small fraction of the Australian population. While many states have published high-quality strategies and actions, there is a pressing need for actual implementation of initiatives and evaluations to assess effectiveness. Future research should focus on standardising evaluation frameworks and exploring strategies to enhance initiative sustainability and effectiveness, particularly in diverse populations.

## Examining the Influence of Food-Related Information Seeking and Parental Mediation on Youths' Food Choices: A Comprehensive Study

Professor May Lwin<sup>1</sup>, Ms Ysa Marie Cayabyab<sup>1</sup>, **Ms. Allison Seet<sup>1</sup>**

<sup>1</sup>Nanyang Technological University, Singapore, Singapore

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: B. Motivation and behavior change**

As food-related information becomes more accessible, youths are exposed to diverse messages that shape their dietary choices. While this exposure may influence youth's eating behaviors, parents remain as key figures in guiding their children towards healthier consumption habits. Existing research highlights the role of parental mediation, but its interaction with food information seeking remains under explored. Thus, this study examines the effects of food information seeking on youths' food consumption, and the mediating role of active and restrictive parental mediation in shaping both healthy and unhealthy eating behaviors. A cross-sectional survey was conducted with 790 students (aged 8-16 years) in Singapore. Participants reported their food consumption habits (healthy and unhealthy), food information-seeking behaviors, and perceptions of parental mediation styles (active and restrictive). The PROCESS Macro mediation model was employed to analyze the direct and indirect effects of food information seeking on dietary behaviors, while accounting for parental influence. Food information seeking directly increased unhealthy food consumption ( $\beta = 0.05$ ,  $p = 0.007$ ) and decreased healthy food consumption ( $\beta = -0.08$ ,  $p = 0.027$ ). It also positively predicted both active ( $\beta = 0.22$ ,  $p < .001$ ) and restrictive ( $\beta = 0.15$ ,  $p < .001$ ) parental mediation. Notably, active parental mediation reduced unhealthy food consumption ( $\beta = -0.05$ ,  $p = 0.014$ ) and increased healthy food consumption ( $\beta = 0.12$ ,  $p = 0.003$ ). Mediation analysis further revealed that active mediation had a negative indirect effect on the relationship between information seeking and unhealthy food consumption, and a positive indirect effect between information seeking and healthy food consumption. Meanwhile, restrictive mediation had no significant effect on either interaction. Amid ongoing debates on the most effective parental mediation strategy for promoting healthy eating in children, this study underscores the importance of active parental mediation. In particular, it highlights its key role in guiding youths' food choices and mitigating the negative effects of food information exposure. These findings provide valuable insights for public health initiatives, emphasizing the need for parental education programs that equip caregivers with effective strategies that foster balanced eating habits while counteracting the risks of unhealthy food messaging.

## Postponing school's start time, moderate sleep duration range and elevated blood pressure, the role of catch-up sleep

**Dr. Jieyu Liu<sup>1</sup>**, Prof. Yanhui Dong<sup>1</sup>, Prof. Jun Ma<sup>1</sup>, Prof. Yi Song<sup>1</sup>

<sup>1</sup>Peking University, Beijing, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Sleep occupies approximately one-third of an individual's lifespan, yet its role as a determinant of elevated blood pressure (EBP) remains under-explored. We aimed to investigate chronotype combined with sleep duration range and EBP, while also delving into the contributions of catch-up sleep.

**Methods:** Utilizing propensity score matching, we obtained data from the Chinese National Survey on Students' Constitution and Health in 2019. Wake-up and bedtimes were gathered by questionnaires, categorizing chronotype into morning-, intermediate-, and evening-types based on midpoint, and classifying sleep duration as "inadequate", "moderate" or "excessive". Their nonlinear relationships with EBP were explored by restricted cubic splines. Logistic regressions were utilized to assess their combined effects. Stratified analyses were conducted to examine the roles of catch-up sleep.

**Results:** 15,612 children aged 7-12 from 504 schools nationwide were included. Wake-up of 6:30~8:00 AM., bedtimes of 9:00~10:00 PM. and sleep duration of 9~11 hours are beneficial for BP health. Both morning-types (OR=1.10, 95% CI=1.02-1.18) and evening-types (OR=1.11, 95% CI=1.02-1.21), inadequate or excessive sleep duration, exhibited "U-shaped" associations with EBP. Intermediate-types paired with moderate duration associated with the lowest odds of EBP. Catch-up sleep mitigates EBP in sleep-deprived "morning larks" and "night owls", particularly in girls, children with normal weight and low social jet lag.

**Conclusions:** Delaying school start's time emerges beneficial to BP, while EBP caused by morning- or evening- chronotypes can't be alleviated by sufficient sleep. A reasonable range of sleep duration should be established for children in China. Catch-up sleep mitigates EBP in sleep-deprived "morning larks" and "night owls".

## Correlation between executive functions and gross motor coordination, basic coordination abilities of children aged 9-10

**Miss Yinggen Da<sup>1</sup>**

<sup>1</sup>Shanghai University of Sport, Shanghai, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** To study the correlation and gender differences between executive functions and gross motor coordination, basic coordination ability of children aged 9-10. This study simultaneously tests and analyzes gross motor coordination and basic coordination ability, increasing the diversity of test methods for coordination ability.

**Methods:** This is a cross-sectional study involving 237 children aged 9-10 (51% are girls). We use the BRIEF scale to measure executive functions, the KTK test to measure gross motor coordination, the target standing board jump test to measure kinesthetic differentiation, the numbered medicine ball running test to measure spatial orientation, the single-leg standing test and Y-Balance Test to measure balance ability, the reaction time test to measure motor reaction, and the rhythmic sprint test to measure rhythmic ability. Data statistical analysis is carried out using EXCEL 2010 and SPSS26.0 software. Independent sample T-test is used to analyze the differences under different gender groups. The correlation between executive function and gross motor coordination, basic coordination ability is obtained by applying Pearson correlation coefficient.

**Results:** Inhibition ( $T = 2.585$ ,  $P = 0.010$ ), walking backward ( $T = -3.656$ ,  $P = 0.000$ ), jumping sideways ( $T = 2.354$ ,  $P = 0.019$ ), numbered medicine ball running ( $T = 2.288$ ,  $P = 0.023$ ), single-leg standing ( $T = -2.821$ ,  $P = 0.005$ ), and rhythmic sprint ( $T = -5.964$ ,  $P = 0.000$ ) have gender differences. Executive functions are correlated with gross motor coordination ( $r = -0.291$ — $0.136$ ,  $P < 0.05$ ), kinesthetic differentiation ( $r = 0.141$ ,  $P = 0.030$ ), static balance ability ( $r = -0.215$ — $0.157$ ,  $P < 0.05$ ), and rhythmic ability ( $r = 0.137$ ,  $P = 0.034$ ).

**Conclusions:** There are differences in inhibition, walking backward, jumping sideways, spatial orientation, static balance ability and rhythmic ability of children under different gender groups. Executive functions are positively correlated with gross motor coordination, static balance ability, kinesthetic differentiation and rhythmic ability. We hope that our research can enrich the empirical research on the correlation between children's executive functions and gross motor coordination and basic coordination ability.

## The Role of EGameFlow Subdimensions in Adherence to a Mobile App-Based Behavioral Intervention

**Miss Halide Zeynep Aydin<sup>1</sup>**, Amber Buckingham, Dr. Gabrielle Turner-McGrievy, Dr. Kelli DuBois, Dr. Carolina Delgado-Diaz, Dr. Sara Wilcox, Dr. Homayoun Valafar, Dr. Courtney Monroe

<sup>1</sup>University of South Carolina, Columbia, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Adherence is essential for maximizing the benefits of digital behavioral interventions. This study examines how game-based engagement elements, measured by the eGameFlow scale, influence adherence in the Mobile Lifestyle Intervention for Food and Exercise (mLife), a 12-month mobile app-based weight loss intervention. Specifically, we investigate whether cognitive and motivational factors—such as concentration, goal clarity, and challenge—predict adherence.

**Methods:** The mLife study was a 12-month, remote, randomized controlled trial (RCT) evaluating dietary tracking, physical activity monitoring, social gaming, and support. Participants were randomized into the mLife+points group (earning points for social support activities) or the mLife group (no points for activities). Both groups were instructed to self-monitor their diet daily. Of 243 participants, 162 (control:  $n = 74$ ; intervention:  $n = 88$ ) completed the 12-month survey and were included in analyses. Adherence was assessed by the total number of days participants engaged with the app. eGameFlow dimensions included concentration (focused attention, minimal distraction, and engagement with app tasks), goal clarity (understanding objectives and progress), feedback (immediate and continuous progress updates), challenge (progressively increasing difficulty levels), and social interaction (community support and engagement). A general linear model (GLM) in SPSS, adjusting for sex, age, and group assignment, tested the hypothesis that higher eGameFlow subdimension scores would predict greater adherence.

**Results:** The GLM model was significant ( $F(9,153) = 93.9$ ,  $p < .001$ ), explaining 84.7% of adherence variance ( $R^2 = 0.847$ , adjusted  $R^2 = 0.838$ ). Age, sex, and group-adjusted results indicated that concentration ( $B = 35.7$ , 95% CI [19.1, 52.2],  $p < .001$ ) and goal clarity ( $B = 26.0$ , 95% CI [12.5, 39.5],  $p < .001$ ) significantly predicted adherence, with higher scores associated with increased app usage days. No significant adherence difference was observed between groups ( $F(2,153) = 2.203$ ,  $p = 0.114$ ).

**Conclusions:** Cognitive engagement factors, particularly concentration and goal clarity, positively influenced adherence. Future digital interventions should enhance these elements to optimize user engagement and long-term adherence.

## Interrupting evening sitting with regular activity breaks doesn't change interstitial glucose responses: Results from a free-living pilot and feasibility study.

**Dr. Meredith Peddie<sup>1</sup>**, Associate Professor Elaine Hargreaves<sup>2</sup>, Dr Jillian Haszard<sup>3</sup>, Dr Jennifer Gale<sup>1</sup>

<sup>1</sup>Department of Human Nutrition, University of Otago, Dunedin, New Zealand, <sup>2</sup>School of Physical Education, Sport and Exercise Sciences, Dunedin, New Zealand, <sup>3</sup>Haszard Biostatistics, Kaka Point, New Zealand

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Regularly interrupting evening sedentary time with short bouts of resistance exercise (activity breaks) in a highly controlled laboratory setting results in acute improvements in postprandial glycemia. This study aimed to assess the effect of interrupting evening sitting with regular activity breaks on interstitial glucose concentrations in a free-living context.

**Methods:** Eighteen participants (mean age  $34 \pm 12$  years, 90% female) completed this study, which included a baseline assessment period, and a 2-week intervention period. During the intervention participants were asked to perform short bouts (2-3 min) of activity ~ every 30 min in the evening during a prolonged period (of approximately 3 hours) where they usually sat uninterrupted. Participants were supported to make this change using a mobile application (Moova™) to prompt and provide activity ideas, and a variety of evidence-based behaviour change techniques. Participants wore a FreeStyle Libre Pro iQ continuous glucose monitor (Abbott Laboratories, Johannesburg, South Africa) for the 7 days of the baseline assessment period, and the entire 2-week intervention period. Mean, standard deviation (as a measure of glycemic variability) and area under the curve of the interstitial glucose concentrations were calculated for each 24 h, and for the participant identified ~3 h evening period, and compared using mixed effects regression analysis.

**Results/Findings:** Participants were normoglycaemic at baseline (mean glucose  $5.2 \pm 0.5$  mmol/L), and self-reported performing an average of 3.6 (range 0.2 to 5.9) activity breaks each evening (where 6 would be considered 100% compliance). There were no meaningful changes in mean glucose, glycaemic variability or AUC as a result of the intervention (standardised mean difference: -0.1, 0.02 and 0.04 respectively). However, small reductions in medians and interquartile ranges across a variety of metrics were observed.

**Conclusions:** The consistent effects of activity breaks on glucose response seen in a controlled lab setting were not replicated in a free-living setting, in normoglycaemic individuals. Enhancing compliance may be an important aspect of future studies investigating the long-term effects of interrupting evening prolonged sitting with regular activity breaks.

## Exploring factors of sport participation among rural, Hispanic girls in Southwestern United States: A qualitative study

**Dr. Ashleigh Johnson<sup>1</sup>**, Dr. Jason Bocarro<sup>2</sup>, Dr. Emily Kroshus-Havril<sup>3</sup>, Dr. Elva Arredondo<sup>1</sup>

<sup>1</sup>San Diego State University, San Diego, United States, <sup>2</sup>North Carolina State University, Raleigh, United States, <sup>3</sup>University of Washington, Seattle, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Sport is one of the best investments for promoting youth physical activity, yet less than 40% of American children play sport regularly, and gender, geographic, and ethnic disparities persist. Girls drop out at twice the rate of boys by age 14, and both rural and Hispanic girls participate in lower numbers and enter at a later age than their counterparts. Still, sport participation factors among rural youth, particularly Hispanic girls, are understudied. This study aimed to explore barriers and facilitators of sports participation among rural, Hispanic girls, considering the perspectives of girls, parents, community stakeholders.

**Methods:** We conducted a qualitative descriptive study in Southern California, United States from July-October 2024. We collected data using semi-structured individual interviews with girls (n=15), parents (n=18), and coaches and out-of-school program staff (n=4). Interviews were conducted in Spanish or English. Two theoretical frameworks guided analysis: Self-Determination Theory and Framework for Understanding Youth Sports Participation. We used an iteratively developed codebook to code, thematically analyze, and synthesize data.

**Results/findings:** Participants included girls (8-11 years, 100% Hispanic and speaking a language other than English at home); parents (26-48 years, 83% female, 100% Hispanic, and 89% speaking a language other than English at home); and community stakeholders (22-54 years, 100% female, 75% Hispanic). Themes included participation barriers (e.g., limited or long-distance sport opportunities, lack of time, high cost, high temperatures); participation facilitators (e.g., social connections, close proximity to opportunities, low cost); benefits (e.g., developing life/social skills, staying active/reducing screen time, improved health, reducing risk behaviors); perceptions around female sport participation; and opportunities to improve girls' participation (e.g., all-female teams/coaches; affordable programming; variety of sports).

**Conclusions:** Findings from this study highlight key sports participation factors among rural, Hispanic girls. While challenges such as limited access, financial constraints, and environmental factors hinder engagement, social connections and affordable, nearby opportunities serve as key motivators. Addressing gender- and culturally-specific barriers, expanding access to female-led programs, and increasing affordable sport opportunities may enhance participation rates. These insights can inform tailored interventions to promote sports engagement and physical activity among rural, Hispanic girls through efforts that meet language, cultural, and logistic needs.

## Get active now or later? The association between physical activity and risk and time preferences

**Dr. Estelle Watson<sup>1</sup>**, Dr Nicky Nicholls<sup>2</sup>

<sup>1</sup>Department of Exercise Science, University of Auckland, Auckland, New Zealand, <sup>2</sup>Department of Economics, University of Pretoria, Pretoria, South Africa

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Despite the well-established link between physical activity and positive health outcomes, much of the world's population remains inactive. Many people don't invest in health behaviours, such as physical activity, in the present, despite the long-term benefits. The aim of this study was to assess the relationship between physical activity levels and risk and time preferences in university students.

**Methods:** We used an incentive compatible experiment design for eliciting both risk and time preferences. Preferences were elicited using a series of pairwise choice questions over monetary lotteries where the probabilities of different payment amounts varied (risk attitudes) or between an earlier and a later payment (time preferences). A maximum likelihood model was used to jointly estimate risk and time preferences, and to examine the relationship between these preferences and self-reported (single-item physical activity measure) physical activity.

**Results:** Sixty-nine undergraduate economics students underwent the decision-making experiment. Physically active individuals reported statistically significantly better overall health than those who are less physically active ( $8.43 \pm 1.36$  versus  $7.46 \pm 1.56$ ; Wilcoxon rank-sum test:  $p < 0.01$ ). Physically active individuals made more patient (LL) choices on the time preference task than those who are less physically active (average of  $9.86 \pm 8.77$  versus  $6.81 \pm 7.61$  choices for the LL option,  $p = 0.22$ ); but made fewer safe choices on the risk attitude task ( $36.38 \pm 16.99$  versus  $42.98 \pm 12.66$  safe choices,  $p = 0.18$ ). However, neither of these differences was statistically significant. There is some evidence of discounting of future payments in our sample. Those who are physically active have discount rates closer to 1 ( $\delta = 0.95$  for physically active respondents, versus 0.78 for the reference group),  $p < 0.1$ .

**Conclusion:** Physically inactive people appear to discount the future more than physically active people do. Physically active people appear to make slightly more risky choices, although this directional relationship was not statistically significant. The link between time preferences and physical activity suggests that further research on behavioural strategies such as commitment devices, nudging or temptation bundling may be helpful in increasing physical activity for individuals who discount the future in favour of more immediate benefits.

# The Psychosocial Correlates of Sustainable Healthy Nutrition

**Dr. Brigita Mieziene<sup>1</sup>**, Natalija Glazunova<sup>1</sup>, PhD candidate Mindaugas Snarskis<sup>1</sup>

<sup>1</sup>*Lithuanian Sports University, Kaunas, Lithuania*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose.** This study aims to explore the direct and indirect relationships between sustainable healthy nutrition and factors such as sustainable food literacy, and the perception of social norms related to sustainable healthy nutrition. It is hypothesized that greater sustainable food literacy and social norms are related to more sustainable and healthy nutrition.

**Methods:** A cross-sectional study was conducted involving 302 participants aged 18 to 68 years, with a mean age of 38.8 (8.6). The sample consisted predominantly of women, representing 91% of participants. Data were collected using a snowball sampling approach. A sustainable healthy diet was assessed using the SHED index (Tepper et al., 2021). Sustainable healthy diet literacy was evaluated through four scales derived from the Sustainable Food Literacy questionnaire (Teng & Chih, 2022): Sustainable Food Knowledge (9 items), Food Skills (6 items), Attitudes (4 items), and Action Intent (7 items). Social norms were measured using a 4-item scale developed by Coker et al. (2022).

**Results:** Hierarchical linear regression analysis demonstrated that, after controlling for gender, age, financial status, body mass index (BMI), and family status, sustainable food literacy and social norms collectively contributed an additional 30% to the variance explained in sustainable healthy diet adherence. Among the direct predictors, action intent ( $\beta = .420$ ,  $p < .001$ ), food skills ( $\beta = .196$ ,  $p < .001$ ), and social norms ( $\beta = .146$ ,  $p = .005$ ) emerged as significant determinants of sustainable healthy nutrition. Action intent was identified as a mediating factor between sustainable food knowledge (CSIE = .25, 95% CI [.17, .35]), attitudes (CSIE = .36, 95% CI [.27, .46]), social norms (CSIE = .14, 95% CI [.06, .23]), and food skills (CSIE = .17, 95% CI [.09, .25]) in relation to sustainable healthy nutrition. Among the covariates, older age and lower BMI were associated with greater adherence to sustainable healthy nutrition.

**Conclusion:** Educating society, fostering positive attitudes, enhancing sustainable food preparation and consumption skills, and cultivating social norms that support sustainable healthy nutrition can directly and/or indirectly - through the reinforcement of action intent - promote practices that are more beneficial for both individual and environmental health.

## Young women's experiences using technology for physical activity engagement and its potential impact on physical literacy: A qualitative study

**Mrs. Kimberley Watson-Mackie<sup>1</sup>**, Lauren Arundell<sup>1</sup>, Associate Professor Natalie Lander<sup>1</sup>, Associate Professor Fiona H McKay<sup>1</sup>, Professor Lisa M Barnett<sup>1</sup>

<sup>1</sup>Deakin University, Burwood, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Most Australians, particularly young women aged 13-24, do not meet physical activity (PA) guidelines. Barriers such as lack of motivation, confidence, knowledge, and social support hinder their engagement in PA and development of physical literacy (skills and behaviours that can support PA). Technology-supported PA (interactive digital tools that promote PA) may help overcome these barriers, enhancing PA participation and physical literacy. This study examines young women's experiences with technology-supported PA, their views on its role in PA promotion, and its alignment with the Australian Physical Literacy Framework.

**Methods:** Fourteen young women, identified as users of technology-supported PA in an earlier study, participated in online individual semi-structured interviews. An inductive/ deductive approach was used to analyse the interviews. Initially, data drove codes and themes were generated through inductive thematic analysis. These codes were subsequently mapped deductively to the elements of the four domains (Physical, Psychological, Social, and Cognitive) of the Australian Physical Literacy Framework.

**Results/findings:** The participants were young women who had reported using technology-supported PA three years ago, when they were aged 13-24 years. Of the 14 participants, 12 were still using technology-supported PA, while 2 had discontinued its use. Their experiences and perspectives on technology-supported PA were mapped to four elements across three domains of the Australian Physical Literacy Framework: (1) Engagement and enjoyment, and (2) Motivation within the Psychological Domain; (3) Relationships within the Social Domain; and (4) Content knowledge within the Cognitive Domain. No findings were identified that aligned with the Physical Domain.

**Conclusions:** Young women's experiences with technology-supported PA are associated with four elements within three of the domains of the Australian Physical Literacy Framework, with none associated with the Physical domain. Young women consider technology-supported PA to be an effective form of PA promotion while also stressing that its impact could be either positive or negative depending on an individual's mindset. It appears that the use of technology-supported PA can address some common barriers to young women's PA, help them improve their PA engagement and increase their physical literacy.

## Trends in After-School Activity Participation from 2019–2022

**Mr. Mi Zhou<sup>1</sup>**, Dr. Dot Dumuid<sup>1</sup>, Prof. Carol Maher<sup>1</sup>, Prof Sally Brinkman<sup>1</sup>, Mrs Cools Juliette<sup>2</sup>

<sup>1</sup>University of South Australia, Adelaide, Australia, <sup>2</sup>Department for Education, Adelaide, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** To describe trends in students' participation in after-school activities from 2019 to 2022.

**Methods:** Longitudinal data from the Well-being and Engagement Collection census collected annually in South Australian schools (Grades 4-12) were used. Students' engagement in thirteen after-school activities ("How many times do you engage in [activity] per week?") was self-reported using six frequency categories (0 – 5 days/week). Proportional odds logistic regression models for each activity examined time effects and test interactions with six sociodemographic variables.

**Results:** were presented as odds ratios (ORs) and yearly predicted percentages for each frequency category. Longitudinal changes in participation were visualized.

**Results:** A total of 126,853 participants contributing 279,213 observations were included for analysis. Overall, a significant change in after-school activity participation was observed between 2019 and 2020, particularly in the highest (5 days/w) and lowest (0 days/w) participation categories, while intermediate frequencies (2–4 days/w) showed little variation. Participation in all activities either decreased or remained stable, except for social media, which increased significantly. Higher social media engagement was 190% more likely in 2020 compared to 2019, with this trend persisting post-pandemic (OR = 1.78–2.02). The increases in social media participation were compensated for by reductions in reading for fun (OR = 0.61–0.62), homework/study (OR = 0.68–0.81), hanging out with friends (OR = 0.73–0.82), organized sports (OR = 0.71–0.78), music (OR = 0.75–0.82), and arts activities (OR = 0.71–0.74). These activities remained stable at lower levels since the pandemic. In contrast, participation in electronic gaming (OR = 1.02–1.17), chores (OR = 0.95–1.02), and TV watching (OR = 0.93–1.04) remained consistent over time. Moderation analyses identified some significant demographic differences were consistent across time, however, interaction effects across time were not observed.

**Conclusion:** The pandemic had a significant impact on students' after-school activity participation patterns, leading to an increased allocation of time to social media at the expense of beneficial activities. This shift has persisted post-pandemic with little sign of attenuation. Future research should focus on designing targeted interventions to promote a healthier after-school activity profile.

## Demographics, Mental Health, and Health Behaviors Influence Self-Weighing Practices among Pregnant Californian Women with Overweight or Obesity: Findings from the GROWell Trial.

**Dr. Leigh Ann Simmons<sup>1</sup>**, Jennifer Phipps<sup>1</sup>, Dr. Sebastian Castro-Alvarez<sup>1</sup>, Dr. Victoria Keeton<sup>1</sup>, Mx. Paige Smith<sup>1</sup>, Ms. Courtney Overstreet-Benoit<sup>2</sup>, Ms. Alina Patrikeyeva<sup>2</sup>

<sup>1</sup>Betty Irene Moore School of Nursing, Sacramento, United States, <sup>2</sup>Obstetrics & Gynecology Research, Sacramento, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Regular self-weighing facilitates weight management, however, few studies have examined self-weighing during pregnancy and postpartum. Excess gestational weight gain and postpartum weight retention are preventable risk factors for midlife chronic disease, and self-weighing may mitigate these risks. We examined factors associated with prenatal and postpartum self-weighing behaviors to better optimize self-weighing in future trials.

**Methods:** Data were from a randomized control trial of GROWell, a mobile app to improve diet quality among people who entered pregnancy with BMI=25-42. Weights via Bluetooth scale were requested at baseline, 26-28 and 36-38 weeks gestation, and 3 and 6 months postpartum and recorded if the participant self-weighed unprompted with their phone in Bluetooth radius. Self-weighing was measured as 1) the number of times participants stepped on the scale and 2) the number of times participants adhered to self-weighing per protocol. Linear Poisson regression models were used to examine sociodemographic and health-related factors associated with self-weighing.

**Results:** For N=453 participants (N=216 intervention, N=237 control), the median number of times any participant self-weighed was 6 (range 1-135) and the median number of times participants adhered to protocol self-weighing was 4 (range 0-5). Compared to controls, intervention participants self-weighed more frequently (IRR = 1.523, 95% CI [1.441, 1.610],  $p < 0.001$ ), but groups did not differ on adherence to prescribed study weights. Older participants (IRR = 1.039, 95% CI [1.031, 1.047],  $p < 0.001$ ), those who identified as non-Hispanic Black (IRR = 1.296, 95% CI [1.154, 1.450],  $p < 0.001$ ), and those with higher physical activity levels (IRR = 1.001, 95% CI [1.000, 1.001],  $p < 0.001$ ) self-weighed more frequently. Participants with less education (IRR = 0.926, 95% CI [0.868, 0.987],  $p < 0.05$ ), higher BMI (IRR = 0.988, 95% CI [0.981, 0.994],  $p < 0.001$ ), better diet quality (IRR = 0.993, 95% CI [0.989, 0.997],  $p < 0.01$ ), and more symptoms of depression/anxiety (IRR = 0.975, 95% CI [0.968, 0.982],  $p < 0.001$ ) self-weighed less frequently.

**Conclusions:** Self-weighing behaviors differed based on intervention group and key demographic, mental health, and behavioral factors. Future studies that include self-weighing should identify and implement strategies to address barriers to adherence, including educating on its benefits and minimizing possible negative psychological effects.

# The Causal Relationship Between Physical Activity and Adolescent Idiopathic Scoliosis: A Mendelian Randomization Study

**Mr. Guoyang Qin<sup>1</sup>**, Professor Yang Liu<sup>1,2</sup>

<sup>1</sup>Shanghai University of Sport, Shanghai, China, <sup>2</sup>Shanghai Research Center for Physical Fitness and Health of Children and Adolescents, Shanghai, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: K. Participatory Research in Health Promotion**

**Purpose:** The prevalence of adolescent idiopathic scoliosis (AIS) in China has increased yearly. Compared with surgery or brace correction, physical activity intervention for AIS has advantages such as high compliance and long-term benefits. However, the causal relationship between different intensities of physical activity and AIS is still unclear. Therefore, this study used Mendelian randomization (MR) to analyze the causal effect between the two.

**Methods:** In this study, overall physical activity, different intensities of physical activity, and strenuous sports were selected as exposure variables, and AIS was selected as the outcome variable. This study conducted univariate, multivariable, and mediation MR analyses to validate causal hypotheses and causal pathways. And causal effects were evaluated by using inverse variance weighting, weighted median, and MR-Egger regression, and sensitivity tests such as Cochran's Q test, MR-Egger intercept test, and leave one out test were used to assess the stability of the results.

**Results:** 1) Firstly, The results of univariate Mendelian randomization indicated that there was no causal relationship between total physical activity and AIS ( $\beta=-0.262$ , OR=0.770, 95%CI=0.494~1.199, P=0.247). Secondly, there was no causal relationship between light physical activity ( $\beta=0.001$ , OR=1.000, 95%CI=0.989~1.011, P=0.970), moderate physical activity ( $\beta=0.052$ , OR=1.053, 95%CI=0.492~2.256, P=0.894), vigorous physical activity ( $\beta=-0.284$ , OR=0.753, 95%CI=0.426~1.331, P=0.329), moderate to vigorous physical activity ( $\beta=0.093$ , OR=1.098, 95%CI=0.691~1.744, P=0.692) and AIS. Finally, there was a causal relationship between the increase in strenuous sports and the reduction in the prevalence of AIS ( $\beta=-0.694$ , OR=0.500, 95%CI=0.291~0.859, P<0.05). 2) The results of multivariable MR indicated that after adjusting for body mass index, osteoporosis, and vitamin D level respectively, a causal association still existed between the strenuous sports and AIS. 3) Mediation MR analysis reveals no evidence of a mediating effect in this causal relationship.

**Conclusions:** Strenuous sports has a causal relationship with the prevention and correction of AIS. This discovery contributes to a deeper understanding of the relationship between physical activity and AIS, providing genetic evidence for AIS intervention.

## Measurement properties of sedentary behavior questionnaires for children: an updated systematic review

**Miss Zhenwen Xie<sup>1</sup>**, Miss Huan Chen<sup>1</sup>, Mr Guoyang Qin<sup>1</sup>, Mr Yang Liu<sup>1,2</sup>

<sup>1</sup>Shanghai University of Sport, Shanghai, China, <sup>2</sup>Shanghai Research Center for Physical Fitness and Health of Children and Adolescents, Shanghai, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Sedentary behavior is an independent risk factor for children's physical, social, and mental health. Accurate measurement is essential for monitoring sedentary behavior trends, quantifying health effects and examining the effectiveness of interventions. This review aimed to update a previous review and summarize the measurement properties of self-report or proxy-report sedentary behavior questionnaires for children aged 0-18 years. Additionally, an overview of the characteristics of the assessed questionnaires were provided.

**Methods:** PubMed, EMBASE, and SPORTDiscus databases were searched for terms related to sedentary behavior, questionnaire, measurement property and children. The COnsensus-based Standards for the Selection of Health Measurement INstruments (COSMIN) Guidelines for Systematic Reviews of Patient-Reported Outcome Measures was followed for conducting and reporting this systematic review. The study population, questionnaire type, and measurement properties including reliability and validity were analyzed. Moreover, the development trends and characteristics of these sedentary behavior questionnaires were summarized.

**Results:** Thirty-seven studies examining a total of 36 questionnaires were included in this review. The majority of the included studies were of fair or poor methodological quality. The reliability of most questionnaires was acceptable, but the validity was generally poor and reported less frequently. The sedentary behavior questionnaires for children were in the early stages of development with relatively limited measurement properties being analyzed.

**Conclusions:** Both valid and reliable questionnaires assessing children's sedentary behavior are lacking. Furthermore, the lack of studies evaluating both validity and reliability of questionnaires in the same population makes it difficult to determine the best tools. Future research with high methodological quality investigating more measurement properties of sedentary behavior questionnaires for children are needed, and more emphasis should be placed on the validity of the questionnaires.

## Physical Literacy Development: A Cross-Sectional Comparison between Chinese and U.S. Youth

**Dr. Yang Liu<sup>1,2</sup>**, Dr. Senlin Chen<sup>2</sup>, Dr. Yan Chen<sup>3</sup>, Dr. Marcus Henning<sup>3</sup>, Mr. Yuhuai Wang<sup>1</sup>, Mr. Yangyang Li<sup>4</sup>, Ms Baoxuan Jin<sup>1</sup>, Ms Lu Liu<sup>1</sup>, Dr. Hongxian Yu<sup>1</sup>

<sup>1</sup>*School of Physical Education, Wuhan University of Technology, Wuhan, China,* <sup>2</sup>*School of Kinesiology, Louisiana State University, Baton Rouge, The United States of America,* <sup>3</sup>*School of Medicine, The University of Auckland, Auckland Central, New Zealand,* <sup>4</sup>*College of Sport Sciences, Chung-Ang University, Dongjak District, South Korea*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The purpose of this study was to conduct a cross-sectional comparison of physical literacy (PL) and four PL domains between children and adolescents sampled from China and U.S..

**Methods:** Participants (aged 8-12) from Central China (n=195) and South U.S. (n=206) completed the validated Canadian Assessment of Physical Literacy (CAPL- II ) inventory. The CAPL- II assesses four PL domains (i.e., cognitive, affective, physical, and behavioral), with a total of 100 points reflecting an overall PL score. A paper-based survey was administered to collect gender and age. Body weight and height were measured using physician scales, which were converted to body mass index (BMI). A general linear model was applied to examine group (i.e. country) differences in PL and four PL domains between Chinese and U.S. youth, with marginal means being estimated after adjusting for age, gender, BMI, and class. Group differences were also examined by gender. Effect size (Cohen's d) was calculated using marginal mean and standard error of the mean difference.

**Results:** A significant group difference was found for the behavioral domain (M[China] vs. M[U.S.]: 18.17 vs. 10.28;  $p=0.03$ , Cohen's  $d=2.20$ ) between Chinese and U.S. youth; and a marginal significant group difference was found for the physical domain (M[China] vs. M[U.S.]: 15.81 vs. 19.58;  $p=0.07$ , Cohen's  $d=1.81$ ). By gender, significant differences were found in girls' behavioral domain favoring Chinese youth (M[China] vs. M[U.S.]: 19.55 vs. 9.68;  $p=0.04$ , Cohen's  $d=2.13$ ) and in boys' physical domain favoring U.S. youth (M[China] vs. M[U.S.]: 13.26 vs. 22.54;  $p < 0.01$ , Cohen's  $d=3.34$ ). Additionally, significant gender difference in PL was only observed in the physical domain in U.S. sample (no gender difference in the Chinese sample), favoring boys ( $p=0.01$ , Cohen's  $d=2.84$ ).

**Conclusion:** These two samples of youth demonstrated different development patterns for PL across China and U.S., especially in the physical (favoring U.S. boys) and behavioral domains (favoring Chinese girls). These differential patterns of PL warrant comparative research with focus on formal and informal programs and opportunities at both countries, which may impact children and adolescents' PL development. Purposeful interventions across settings (e.g., school, home, community) should collectively foster balanced PL developments across four PL domains.

## Effects of integrating physical literacy into school-based physical exercise intervention on physical fitness in Chinese children

**Dr. Dangling Zhang**<sup>1,2</sup>, Pro. Yang Liu<sup>2,3</sup>

<sup>1</sup>Academy of Wellness and Human Development, Hong Kong Baptist University, , China, <sup>2</sup> Shanghai Research Center for Physical Fitness and Health of Children and Adolescents, Shanghai University of Sport, , China, <sup>3</sup>School of Physical Education, Shanghai University of Sport, , China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Background/Objective:** The aim of this study was to examine the effects of school-based physical exercise intervention integrating physical literacy (PL) on physical fitness (PF) in Chinese children.

**Methods:** Three hundred fifty-three children were recruited from two schools, which were randomly allocated to the intervention group (IG) and the control group (CG). The IG consisted of 172 children, and 181 children were in the CG. Children in the IG received a 10-week PL-integrated intervention conducted through school-based physical exercise. Two hundred forty children completed the full intervention and measurements. The IG consisted of 112 children (mean age:  $7.30 \pm 0.72$  years; boys: 53.6%), and the CG consisted of 128 children (mean age:  $7.13 \pm 0.69$  years; boys: 53.1%). In the CG, children continued with their regular daily activities over the 10 weeks. A generalized estimating equation was used to compare the effects of the IG and CG on PF.

**Results:** Regarding to PF, there was a significant group  $\times$  time interaction on vital capacity ( $\beta = -420.30$ ,  $SE=39.88$ ,  $p < 0.001$ ), 50-m run ( $\beta = 0.83$ ,  $SE= 0.13$ ,  $p < 0.001$ ), 20-m shuttle run ( $\beta = -2.87$ ,  $SE= 0.72$ ,  $p < 0.001$ ), rope skipping ( $\beta = -22.65$ ,  $SE = 3.94$ ,  $p < 0.001$ ) and grip strength ( $\beta = -1.12$ ,  $SE= 0.30$ ,  $p < 0.001$ ). There were a significant group interaction on vital capacity ( $\beta = 217.65$ ,  $SE = 42.44$ ,  $p < 0.001$ ), sit and reach ( $\beta = 1.41$ ,  $SE = 0.55$ ,  $p < 0.01$ ), rope skipping ( $\beta = 23.49$ ,  $SE = 4.02$ ,  $p < 0.001$ ), 20-m shuttle run ( $\beta = 2.15$ ,  $SE = 0.85$ ,  $p < 0.05$ ) and grip strength ( $\beta = 1.41$ ,  $SE = 0.31$ ,  $p < 0.001$ ).

**Conclusion:** This study suggested that integrating PL into school-based interventions could improve PF in Chinese children. Future research was recommended to scale up school-based physical exercise interventions with PL.

# Comparing Immersive Virtual Reality and Video-Guided Workouts on Heart Rate, Energy Expenditure, and Perceived Exertion among College Students

**Dr. Kun Wang**, Feng Zhang, Yuxin Wang, Dr. Tao Huang, Dr. Wenxi Liu<sup>1</sup>

<sup>1</sup>Department of Physical Education, Shanghai Jiao Tong University, Shanghai, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

The integration of Immersive Virtual Reality (IVR) technology into workout regimens has shown potential in enhancing engagement and adherence to physical activity, particularly among college students. Despite this, a comprehensive comparison of the physiological and psychological effects of IVR workout versus video-guided (VG) workout in young adults is scarce in the current literature. This study aimed to address this gap by evaluating the differential impacts of IVR and VG workout on college students. A total of 77 healthy college students (Mage = 20.62 years, SD = 2.68, 32 females, MBMI = 20.9, SD = 2.28) participated in a cross-sectional, within-subject experimental-study design, in which participants completed two 20-minute workout sessions in random order: one using immersive IVR and the other, a VG workout. Physiological measures included continuous heart rate monitoring and energy expenditure assessment, while psychological measures were based on the ratings of perceived exertion (RPE) and The Game Experience Questionnaire. Results demonstrated that both IVR (MHR = 127.04, SD = 17.01) and VG (MHR = 136.64, SD = 15.30) workout sessions achieved moderate intensity levels. The average energy expenditure for participants during IVR workout (mean=155.12, SD = 37.10), compared to VG workout (mean=171.01, SD = 36.29) suggests that VG workout leads to a relatively higher energy expenditure compared to IVR workout. Participants in the IVR group reported lower RPE as compared to the VG group (mean = 1.553,  $p < 0.001$ , Cohen's  $d = 0.75$ ), suggesting that participants perceived lower exertion during IVR workout as compared to VG workout. No significant differences were found between males and females in terms of heart rate, energy expenditure, RPE, or game experience dimensions ( $p > 0.05$ ). The findings suggest that while both IVR and VG workouts can reach moderate intensity, VG workout may be more physically demanding. IVR workout could be a valuable addition to VG workout routines, especially for populations where motivation and adherence are concerns, and IVR workout is equally accessible and beneficial for both males and females. However, further research is needed to understand the long-term effects and the optimal integration of IVR into workout routines.

# Individual physical activity preferences of adolescents in the Czech Republic and Poland: a 14-year comparative study reflecting the gender trends and prospective responses to global lifestyle challenges

**Dr. Michal Kudlacek<sup>1</sup>**, Prof. Karel Fromel<sup>1,2</sup>, assoc. prof. Dorota Groffik<sup>2</sup>, prof. Josef Mitas<sup>1</sup>  
<sup>1</sup>Palacký University Olomouc, Olomouc, Czech Republic, <sup>2</sup>Akademia Wychowania Fizycznego im. Jerzego Kukuczki w Katowicach, Katowice, Poland

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The global decline in physical activity (PA) among the youth has been exacerbated by the pandemic's impact on their lifestyles. Addressing these adverse effects post-pandemic by supporting preferred physical activities among young individuals is crucial. The aim of the study is to investigate and compare the long-term trends in PA preferences among individuals in Poland and the Czech Republic, exploring the impact of global lifestyle challenges over the past 14 years, including the pandemic, on PA behaviors and choices.

**Methods:** The study design is cross-sectional and data gathering was in the period between 2007 and 2020, this research encompassed 19,235 participants aged 15 to 26. PA preferences were gauged using the Questionnaire on Physical Activity Preferences, while actual PA levels were measured through the International Physical Activity Questionnaire-Long Form. Crossing table, Kruskal-Wallis ANOVA, binary logistic regression and effect size coefficients were conducted.

**Results:** Among the participants, individual physical activities were favoured by 24% of Czech and 25% of Polish boys, and 23% of Czech and 25% of Polish girls. A positive correlation was found between the preference for running and higher levels of recreational, vigorous, and overall weekly PA. Additionally, an increased preference for running was associated with a higher likelihood of meeting weekly PA recommendations for both girls (OR = 1.82, CI = 1.62–2.04,  $p < 0.001$ ) and boys (OR = 1.61, CI = 1.44–1.82,  $p < 0.001$ ) in both countries.

**Conclusions:** Over a 14-year period, swimming, cycling, and running emerged as the most preferred PA across both Czech and Polish youth, with a notable increase in running, especially among Czech boys. Polish boys and girls also showed a growing preference for running, while Polish girls demonstrated a notable increase in badminton and ice-skating. The preference for running was associated with a higher likelihood of meeting PA recommendations, especially among Polish boys and Czech girls. Notably, activities like running, swimming, and cycling exhibited resilience to both pandemic-related restrictions and broader global lifestyle challenges, underscoring the importance of long-term monitoring of PA preferences for effective health promotion.

# Changes in Weight and Cardiovascular Outcomes After Integrating Medication with App-Based Behavioral Coaching in Asia: Real-World Implementation of GLP-1 RA in a Metabolic Health Clinic in Singapore

**Dr. Shahmir H. Ali<sup>1</sup>**, Dr Michelle Lee<sup>2,3</sup>, Dr Kyle Xin Quan Tan<sup>1,2</sup>, Ms Chu Jing Wong<sup>2</sup>, Dr Joanne Tay<sup>2</sup>, Dr Ian Yi Han Ang<sup>1</sup>, Dr Sue Anne Toh<sup>2,3</sup>

<sup>1</sup>National University of Singapore, Singapore, Singapore, <sup>2</sup>NOVI Health, Singapore, Singapore, <sup>3</sup>Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Obesity and cardiometabolic diseases are rising in Singapore and Southeast Asia, necessitating scalable interventions. GLP-1 receptor agonists (GLP-1RA) were recently introduced in Asia for weight loss, but their real-world impact in the region, particularly when combined with diet and physical activity-based coaching, remains unclear. This study evaluates the effectiveness of an integrated weight loss program in Asia combining GLP-1RA therapy with structured app-based counseling.

**Methods:** This retrospective cohort study analyzed individuals enrolled in a metabolic health program in Singapore between March 30, 2022, and June 30, 2024. The intervention included physician-directed GLP-1RA therapy, structured diet and physical activity counseling, and digital engagement through a mobile app that facilitated self-monitoring of dietary intake and physical activity, asynchronous messaging with health coaches, and personalized educational content. Anthropometric and cardiometabolic outcomes were analyzed using linear mixed models adjusting for demographic and clinical factors.

**Results:** Overall, 727 clients who completed at least 3 months of the program and had at least 2 weight measurements were analyzed. Participants (mean age: 42.1 years, 64.6% female) had a baseline BMI of 31.9 kg/m<sup>2</sup>. The median program duration was 240 days (IQR: 120-300). Higher engagement was associated with Singaporean nationality (AOR=2.05, 95%CI:1.41, 3.02) and dyslipidemia (AOR=1.59, 95%CI:1.11, 2.29), while males engaged less. At 12 months, mean weight loss was -12.4% (95%CI:-13.4, -11.4), systolic blood pressure declined by -11.8 mmHg (95%CI:-14.1, -9.5), body fat percentage by -10.7% (95%CI:-12.3, -9.2), triglycerides by -13.1 mg/dL (95%CI:-18.6, -7.7), and HbA1c by -0.5% (95%CI:-0.6, -0.4). Higher app engagement was significantly associated with greater weight loss, with the highest quartile of total app logs losing an additional -1.99% (95%CI: -2.36, -1.63) body weight, more frequent messaging linked to -1.49% (95%CI: -1.86, -1.11), and greater time spent using the app to -2.15% (95%CI: -2.52, -1.79).

**Conclusions:** A novel weight loss program in Asia integrating GLP-1RA therapy with digital counseling achieved significant 12-month weight and metabolic improvements. Higher engagement with the app-based intervention was linked to better outcomes, highlighting the importance of continued emphasis of lifestyle coaching and active program engagement in the context of the potential rise in GLP-1RA use in Asia.

## A Scoping Review on Cheat Meals as an Intermittent Dieting Strategy in Weight Management: What Has Been Done and Where to Next?

**Ms. Jaclyn Tsang<sup>1</sup>**, Dr Eric Tsz-Chun Poon<sup>2</sup>, Dr Eric. T. Trexler<sup>3</sup>, Prof Stephen Heung-Sang Wong<sup>2</sup>, Dr Chen Zheng<sup>1</sup>, Dr Fenghua Sun<sup>1</sup>

<sup>1</sup>The Education University of Hong Kong, Hong Kong, Hong Kong, <sup>2</sup>The Chinese University of Hong Kong, Hong Kong, Hong Kong, <sup>3</sup>Duke University, Durham, United States of America

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Cheat meals are characterized as a pause from energy restriction to allow relaxed ad-libitum energy intake in a short period of time, usually as a single meal, a single day, or meals spread across multiple days, i.e., over the weekend. This strategy gained popularity in the diet and fitness communities, with individuals often indulging in large meals containing energy-dense foods. Proponents suggest that intermittent breaks from prolonged dieting might serve as a “mental break,” “boost metabolism,” or enhance exercise performance. This review examines the physiological and psychological responses to cheat meals incorporated during weight reduction.

**Methods:** A comprehensive search was conducted across PubMed, Web of Science, Scopus, SPORTDiscus, and PsycINFO databases. The inclusion criteria of physiological studies were clinical trials involving participants on an energy-restricted diet with short bouts of ad-libitum intake, including body composition outcomes measured. Psychological-related studies were eligible for inclusion when psychological issues associated with using cheat meals in the context of restricted dietary regimens were described. Of the 3,191 records identified, four physiological studies and four psychological studies met the inclusion criteria. Data extracted included study characteristics, outcome measures and observed phenomena.

**Results/Findings:** The available data provided some evidence that short, intermittent bouts of ad-libitum dietary intake may facilitate effective weight reduction. However, its evidence on lean mass retention, attenuation of metabolic adaptation, or the improvement of exercise performance during weight reduction was mixed. When framed as a goal-directed behavior, ad-libitum intake positively impacted eating behaviors, such as reducing hunger and enhancing satisfaction. However, the analysis revealed that framing cheat meals as contradictory to one’s goals or normalizing cheat meals as a form of reward for committing to a strict diet regimen could be associated with the manifestation of eating disorder behaviors.

**Conclusions:** While cheat meals might offer physiological and/or psychological benefits in some circumstances or applications, they also pose risks of fostering unhealthy eating patterns. The present review offers some novel insights into the evidence surrounding this popular strategy, yet further rigorous research is imperative to establish robust evidence for the safe and effective incorporation of cheat meals into a weight reduction regimen.

## Implementation of an evidence-based diabetes prevention program for adults with obesity and pre-diabetes in primary healthcare settings

**Dr. Mandy Ho<sup>1</sup>**, Miss Renee Chu<sup>1</sup>

<sup>1</sup>*School of Nursing, The University of Hong Kong, Hong Kong, Hong Kong*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Obesity and pre-diabetes are the major risk factors of type 2 diabetes. Lifestyle intervention aiming for weight loss is an evidence-based strategy for reducing diabetes risks. This study aimed to examine the implementation of a 6-month evidence-based diabetes prevention program delivered by multi-disciplinary team in primary healthcare settings.

**Methods:** The research team trained five non-governmental organizations to deliver an evidence-based diabetes prevention program (include diet and PA interventions) for Chinese adults at risk of diabetes. Chinese adults with obesity ( $\text{BMI} \geq 25 \text{ kg/m}^2$ ) and pre-diabetes were recruited from primary healthcare settings. Participants received six monthly group-based lifestyle modification sessions delivered by nurses, dietitians and physical trainers, as well as two individual diet counseling sessions, during the first 6 months from baseline. The interventions targeted for  $\geq 150$  moderate PA/week and 5% weight loss in six months. Body weight, total body fat, waist circumference and HbA1C were assessed at baseline and 6-month. A self-administered questionnaire was used to collect feedbacks from participants.

**Results:** A total of 448 Chinese adults (26.8% males, mean age =  $55.1 \pm 5.8$  years) completed the 6-month interventions. The interventions led to a significant reduction in the mean BMI from 28.3 (SD 3.6)  $\text{kg/m}^2$  to 27.3 (SD 3.7)  $\text{kg/m}^2$ ,  $P < 0.001$ ; total body fat from 36.5% (SD 7.8) to 35.1% (SD 8.0); and waist circumference from 95.9cm (SD 16.2) to 91.4cm (10.9). The mean HbA1C reduced from 6.0% (SD 0.3) to 5.9 % (SD 0.4),  $P < 0.001$ . Nearly all participants (99%) reported increased knowledge on diabetes prevention; increased awareness of health status (98%); improved dietary habit (98%) and increased physical activity (97%).

**Conclusions:** This community-based diabetes prevention program delivered by multidisciplinary team demonstrates that evidence-based lifestyle interventions effectively achieved behavioral changes, weight loss and reduction of diabetes risks in Chinese adults with prediabetes. Future studies should assess the long-term effects of similar program on reducing the incidence of diabetes.

## Effect of Time-Restricted Eating Combined with Exercise on Inflammation in Adults with Central Obesity

**Dr. Chen Zheng**<sup>1</sup>, Dr. Xiang-ke Chen<sup>2</sup>, Dr. Feng-Hua Sun<sup>1</sup>, Prof. Stephen H.S. Wong<sup>3</sup>

<sup>1</sup>The Education University of Hong Kong, Hong Kong, China, <sup>2</sup>The Hong Kong University of Science and Technology, Hong Kong, China, <sup>3</sup>The Chinese University of Hong Kong, Hong Kong, Hong Kong, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** A higher percentage of central obesity is a serious public health concern in Hong Kong, which increases the risk of non-communicable diseases. Both time-restricted eating (TRE) and aerobic exercise have been examined as effective strategies to treat obesity, while limited studies compare the individual and combined effects of these two strategies, especially for inflammation-related outcomes. Therefore, this study investigated the isolated and combined effects of TRE and aerobic exercise on inflammation in adults with central obesity.

**Methods:** A total of 80 participants ( $33.3 \pm 1.0$  years) with central obesity (waist circumference:  $98 \pm 5.7$  cm; body mass index:  $28.5 \pm 2.9$  kg/m<sup>2</sup>) were randomly assigned to one of four groups for 16-week intervention. In the TRE group, participants could eat ad libitum during an 8-hour eating window of their choice and fast for the remaining 16 hours. In the exercise group, they completed three 40-minute aerobic exercise sessions each week. The combined group followed both the TRE strategy and exercise regimen. C-reactive protein (CRP) levels were measured by ELISA. Interferon-gamma (IFN- $\gamma$ ), interleukin-1 alpha (IL-1a), IL-1 $\beta$ , IL-8, and tumor necrosis factor-alpha (TNF-a) were tested using a Luminex assay kit. Change scores among the four groups were evaluated using a linear mixed model.

**Results:** All three intervention groups significantly reduced body weight after intervention (TRE:  $-2.04 \pm 0.52$ ; exercise:  $-2.19 \pm 0.38$ , combined:  $-4.25 \pm 0.48$  kg). Compared with the control group, CRP levels were significantly lower in all three intervention groups, with lower levels in the combined group than in the TRE group ( $-1.11 \pm 0.33$  vs.  $-0.18 \pm 0.28$  ug/ml,  $p=0.033$ ). Lower levels of IFN- $\gamma$ , IL-1a, and IL-1 $\beta$  were found in TRE, exercise, and combined group than control group ( $P<0.05$ ) after 16-week intervention. For TNF-a, the reduction was only observed in TRE ( $p=0.007$ ) and exercise group ( $p=0.019$ ) than in the control group. No significant result was found in IL-8.

**Conclusion:** All three intervention groups significantly reduced body weight and inflammation levels in adults with central obesity, and the combined group showed little additional benefits. These results provide valuable information for public health regarding the management of central obesity.

# Healthy Horizons: A Nutrition Programme to Support Adolescent Survivors of Cancer

**Ms. Niamh O'Callaghan<sup>1</sup>**, Dr Mairéad Cantwell<sup>2</sup>, Dr Laura Keaver<sup>1</sup>

<sup>1</sup>Department of Health and Nutritional Science, Atlantic Technological University, Sligo, Ireland.,

<sup>2</sup>Department of Sport and Health Sciences, Technological University of the Shannon: Midlands Midwest, University Road, Athlone, Ireland.

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** This study aims to implement an evidence-informed, family-centred nutrition education and food skills intervention (Healthy Horizons) with self-management nutrition resources to support adolescents (aged 12–18) who have completed active cancer treatment. The project includes five work packages (WPs) and a Patient Advisory Group (PAG) of three adolescent cancer survivors and their parents (n=3) to guide and inform the intervention's development, ensuring it meets the specific needs of this population.

**Methods:** The study follows the Medical Research Council's Framework for Complex Interventions, including development, feasibility, and evaluation phases. A literature review (WP1) will assess the nutritional challenges and effectiveness of dietary interventions for adolescent cancer survivors. A cross-sectional survey (WP2) will collect data from survivors (n=100) on nutrition-impact symptoms, dietary quality, aversions, and preferences for intervention. These findings will inform the development of Healthy Horizons (WP3), a group-based nutrition education and food skills programme refined through the PAG co-design. A pre- and post-test study (WP4) will evaluate the programme across four locations in Ireland (n=48). WP5 includes qualitative debriefing interviews with parents and photovoice methodology with adolescents to refine the intervention. The mixed-methods design will combine quantitative analysis with qualitative insights, enhancing the evaluation.

**Results:** As data collection has not yet commenced, this abstract outlines the study's analysis plan and expected contributions. In WP4, the primary outcome is quality of life (QoL), with secondary outcomes including dietary quality, nutrition knowledge, and food skills, assessed using validated measures at baseline, post-intervention, and three-month follow-up. Qualitative data will be analysed using Braun and Clarke's thematic analysis to identify key themes, capturing participants' experiences. The co-design approach, incorporating input from survivors and parents, will enhance the intervention's relevance and sustainability.

**Conclusion:** Healthy Horizons represents the first nutrition-focused intervention for adolescent cancer survivors in Ireland, addressing a critical gap in survivorship care. The findings will contribute to behavioural nutrition, offering evidence-based strategies to improve dietary quality, food skills, and QoL in this population. This research has the potential to inform clinical practice by embedding nutrition support within survivorship care, ultimately improving health outcomes.

## From Policy to Practice: School Stakeholder Perspectives on Alternative Breakfast Implementation in Utah.

**Mr. Devin Killian<sup>1</sup>**, Dr. Lori Anderson Spruance<sup>1</sup>, Dr. J. Mitchell Vaterlaus<sup>2</sup>

<sup>1</sup>Brigham Young University, Provo, United States, <sup>2</sup>Montana State University, Bozeman, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** The School Breakfast Program (SBP) provides both academic and nutritional benefits to children in the US. Alternative breakfast models have been shown to increase participation, leading many states to implement policies requiring their use in schools with a high proportion of low-income students. However, public policy research highlights that passing a policy does not ensure effective implementation. This study aimed to examine factors and barriers affecting policy-driven implementation of alternative breakfast among school stakeholders.

**Methods:** This qualitative study recruited a convenience sample of school stakeholders in Utah (n=32) whose schools were required to implement an alternative breakfast model under newly enacted state policy. Participants were contacted by research assistants and qualitative interviews were conducted. A semi-structured interview guide was developed to explore implementation experiences and perceived support of alternative breakfast models at their school. Trained research assistants used qualitative content analysis for coding interviews.

**Results:** Three themes were constructed through qualitative content analysis. Theme 1, Accessibility and Awareness of the Smart Start Utah Program, focused on the need to feed children, awareness of the program, and different models of implementation, while considering challenges related to stigma and participation. Theme 2, Perceived Support and Feasibility of Alternative Breakfast Models, conveyed administrator support (and perceived support), resources, and feasibility of implementing various models, as well as challenges related to classroom meals and ensuring all children are served. Theme 3, Food Quality and Waste in School Breakfast Programs, addressed perceptions of food waste, food choices, and the nutritional quality of food offered in alternative breakfast models, focusing on the food served and its perceived impact on students.

**Conclusion:** Results highlight key factors affecting policy implementation. School stakeholders identified multiple factors influencing implementation including logistical challenges, awareness, and administrative support. Without effective implementation policy-driven programs may lack sustainability and fail to achieve their intended outcomes.

## Youth in Action for Health Equity: Youth Participatory Action Research Approach to Assessing Physical Activity, Mental Health and Screen Time

**Dr. Annette Aalborg**<sup>1</sup>, Latara Harris<sup>1</sup>, Leyna Nguyen<sup>1</sup>, Dr. Jessica Schwind<sup>2</sup>, Anthony Brown<sup>1</sup>, Valeria Garcia<sup>1</sup>, Assata Gui'Chard<sup>1</sup>, Kenna Williams<sup>1</sup>, Sonia Mahi<sup>1</sup>, Mariella Dela Cruz<sup>3</sup>, Matt Ristow<sup>3</sup>, Erin Sunga<sup>3</sup>, Anthony Orias<sup>3</sup>, Betzayda Gonzalez<sup>3</sup>, Vy Phan<sup>3</sup>

<sup>1</sup>Touro University California, Vallejo, United States, <sup>2</sup>Georgia Southern University, Statesboro, United States, <sup>3</sup>Jesse Bethel High School, Vallejo, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** The Youth in Action for Health Equity Project (YIA) utilizes a Youth Participatory Action Research (YPAR) approach to engage low-income, ethnically diverse high school 10-12 grade students in a BioMedical Pathways program at an urban high school in Vallejo, CA in health promotion, advocacy, and policy solutions using the socioecological model. YIA collaborated with student Peer Health Promoters (PHPs) to explore student levels of physical activity (PA), sedentary time, and mental health, to assess potential correlation between key variables, and to engage students in developing action strategies.

**Methods:** A cross-sectional baseline survey was administered in Fall '24 (n=212). Standardized measures of PA, sedentary time, and mental health were adapted from the California Healthy Kids Survey. Associations between key variables were analyzed using Spearman's rank correlation. PHPs (n=25) participated in all aspects of the study, including survey development, analysis, and sharing results with the larger student population.

**Results:** Around 55% of respondents stated their current mental health status negatively affected school performance; 82% of respondents did not meet guidelines for daily moderate PA; 77% of respondents exceeded the recommended two hours of screen time per day. We found no statistically significant association between our measures of PA and mental health; however, higher screen time had a weak, negative relationship with sadness (Spearman's Rho = -0.1596, p= 0.0203) and anger (Spearman's Rho = -0.1439, p= 0.0372). This implies screen activity may serve as a stress-relief mechanism in this population. In response to these findings, PHPs recommended strategies to promote PA among students including organized promotion of school sports, and facilitating sports clubs with buddy systems to increase student safety and engagement.

**Conclusion:** Further research is required to determine what level and form of screen use contributes to these findings and to assess the benefits of using a YPAR approach in school-based adolescent health projects. YPAR appears to be a promising approach to increase student engagement, research, advocacy, and health promotion skills. Implementing and expanding the reach of this approach may lead to improved student health outcomes over time.

## Lights, Camera, Screen: The Story of Adolescents' Evening Digital Behaviour

**Dr. Claire Smith<sup>1</sup>**, Prof. Rachael Taylor<sup>2</sup>, Dr Alice Cox<sup>2</sup>, kim meredith-jones<sup>2</sup>, Prof. Barbara Galland<sup>3</sup>

<sup>1</sup>Department of Human Nutrition, University Of Otago, Dunedin, New Zealand, <sup>2</sup>Department of Medicine, University of Otago, Dunedin, New Zealand, <sup>3</sup>Department of Women's and Children's Health, University of Otago, Dunedin, New Zealand

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Screen use among adolescents is a growing concern due to its potential impact on health and wellbeing, including sleep. Different screen behaviours may affect these outcomes differently. This study used wearable cameras to objectively quantify evening screen use and describe screen behaviours among adolescents.

**Methods:** Adolescents aged 13–17 years (n=167) were recruited between 2017 and 2019 for the SNAP IT (Sleep, Nutrition, Activity Using Photo Images in Teens) study. Participants wore a Brinno TLC120 automated camera for three evenings (5 pm to bedtime), including one weekend evening. Cameras captured images every 15 seconds and were coded for device types and activities. Screen activities were categorized into passive (e.g., watching videos), interactive (e.g., gaming), and communication (e.g., texting). Multiple screen use, defined as using two or more devices simultaneously, was also identified.

**Results:** A total of 437 evenings were captured for 156 participants (58% girls), with a median of 1,030 images per participant (IQR: 774, 1,280) and a mean of 258 min (SD: 100) per evening. Screens accounted for 58% of evening time, with only two participants reporting no screen use during any evening. Phones (21%), televisions (18%), and laptops (11%) were the most common devices. Most participants (84%) engaged in multiple screen use, averaging 40 min per evening. Boys spent more time on interactive screen activities (mean difference 36 min; 95% CI: 23, 50) compared to girls, and girls spent slightly more time on passive (mean difference 12 min; 95% CI: -4, 28; p=0.052) and communication (mean difference 15 min; (8, 23, P<0.001) activities. Screen time was higher on weekends than weekdays (mean difference 25 min; 95% CI: 9, 42) although the types of screen behaviours were consistent across days.

**Conclusions:** This study highlights the value of wearable cameras as a tool for objectively capturing real-world screen behaviours. Adolescents spent over half their evenings on screens, with widespread use of multiple devices.

## Perceptions of Exercise Beliefs and Behaviors of Career and Volunteer Firefighters

**Dr. Allison Barry**<sup>1</sup>, Ashtyn Abraham<sup>1</sup>, Dr. Marni Shoemaker<sup>1</sup>, Halle Brin<sup>2</sup>, Dr. Tanis Walch<sup>3</sup>, Dr. Nathan Dicks<sup>4</sup>, Dr. Kathryn DeShaw<sup>5</sup>

<sup>1</sup>South Dakota State University, Brookings, United States, <sup>2</sup>Kansas State University, Manhattan, United States, <sup>3</sup>University of North Dakota, Grand Forks, United States, <sup>4</sup>North Dakota State University, Fargo, United States, <sup>5</sup>Loras College, Loras, United States

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Firefighters frequently experience sudden and rapid initiation of on-duty tasks that strain the cardiovascular system, and coupled with the increased prevalence of physical inactivity, obesity, and poor fitness, leads to a higher risk of adverse cardiac events. It is imperative to investigate why many firefighters are inactive when occupational performance relies heavily on fitness levels. Thus, the purpose of this study is to examine perceptions of exercise beliefs and behaviors of career and volunteer firefighters.

**Methods:** The survey was disseminated through Redcap and sent through the South Dakota Firefighter's and Fire Chief's Associations. Participants self-reported demographics, exercise levels, and perceptions of exercise via the Health Belief Model Scale for Exercise (HBMS-E). Descriptive statistics (mean  $\pm$  standard deviations, and frequencies) were calculated for demographic variables and exercise behaviors. Independent t-tests were conducted to investigate demographic differences between career and volunteer firefighters. Separate one-way ANOVAs were conducted to investigate differences in Health Belief Model (HBM) constructs between the career and volunteer groups (SPSS, version 28).

**Results:** A total of 138 firefighters completed the survey (Career: n=69, Volunteer: n=69). Firefighter groups resulted in differences between age (Career:  $37.8 \pm 9.3$ , Volunteer:  $45.8 \pm 13.0$ ;  $p < 0.01$ ), Body Mass Index (BMI) (Career:  $28.8 \pm 5.8$ , Volunteer:  $31.4 \pm 6.0$ ,  $P < 0.01$ ) and years of service (Career:  $13.7 \pm 9.0$ , Volunteer:  $18.1 \pm 12.9$ ;  $P < 0.05$ ). The HBMS-E reported career firefighters to have significantly higher perceived severity ( $p = 0.001$ ) and self-efficacy levels ( $p < 0.01$ ), while volunteer firefighters had substantially higher objective ( $p < 0.01$ ) and subjective barriers to exercise ( $p < 0.01$ ). While 90% of career firefighters reported engaging in resistance training, only 36.2% of volunteers did. For aerobic exercise, 97.1% of career firefighters participated, compared to 52.2% of volunteer firefighters.

**Conclusion:** The HBMS-E constructs of subjective barriers and perceived severity were key predictors of participating in exercise. Career firefighters reported significantly higher levels of self-efficacy, lower barriers, and stronger beliefs in the importance of exercise to reduce the impact of future health risks. Career firefighters also reported a lower BMI on average than volunteers, aligning with their higher overall reported exercise levels.

## Exploring how external stakeholders engage with state government physical activity strategies and initiatives: A qualitative study.

**Mrs. Charuni Dissanayaka Mudiyanselage<sup>1</sup>**, Doctor Stephanie Chappel<sup>1,2,3</sup>, Doctor Sidney Irwin<sup>1</sup>, Ms Gabrielle Fisher<sup>4</sup>, Doctor Alyson Crozier<sup>5</sup>, Professor Corneel Vandelanotte<sup>1</sup>  
<sup>1</sup>Central Queensland University, Adelaide, Australia, <sup>2</sup>School of Nursing and Midwifery, Deakin University, Burwood, Australia, <sup>3</sup>Centre for Quality and Patient Safety Research – Alfred Health Partnership, Institute for Health Transformation, Deakin University, Burwood, Australia, <sup>4</sup>Population Health Division, Preventive Health SA, Adelaide, Australia, <sup>5</sup>Alliance for Research in Exercise, Nutrition and Physical Activity, Allied Health and Human Performance, University of South Australia, Adelaide, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Aligned with the Global Action Plan on Physical Activity, in 2021, a South Australian state government agency developed a multi-pronged population-based physical activity portfolio, which included four main initiatives. External stakeholders play a critical role in shaping and executing state government activities by promoting these initiatives within their networks and communities. Assessing stakeholder engagement not only recognizes the extent of their involvement, but also can identify challenges to effective collaboration, and understand their diverse perspectives. Therefore, this study aimed to explore how external stakeholders interacted with a state government agency's physical activity portfolio of initiatives, and examined key factors influencing its implementation, including challenges and opportunities to optimize future implementation.

**Methods:** In-depth, semi-structured interviews (n = 18) were conducted with stakeholders working at relevant agencies in South Australia. Interviews were audio-recorded, transcribed verbatim and analysed thematically using NVivo. A hybrid approach of inductive and deductive coding was employed to identify key themes related to stakeholder interaction and implementation insights.

**Result:** Results identified four key themes related to: (1) awareness and engagement, (2) benefits and barriers to participation, (3) benefits and barriers to organisational partnerships, and (4) opportunities to enhance implementation. Findings under the main themes highlighted that active engagement with familiar initiatives did not necessarily translate into comprehensive awareness or engagement across all initiatives. Funding support emerged as an important factor influencing the promotion and engagement of these initiatives. While networking opportunities and effective communication facilitated collaboration with government agencies, communication challenges created gaps in stakeholder engagement. Expanding funding opportunities, enhancing decision-making, and implementing state-wide physical activity initiatives require comprehensive data collection, with stakeholders emphasising transparency and the importance of monitoring and evaluation.

**Conclusion:** This study highlighted the diverse roles external stakeholders play in the success of state government physical activity initiatives. While funding, networking with other organisations, and effective communication facilitated engagement with initiatives, challenges in fundings and

communication highlight the need for more inclusive frameworks to optimise stakeholder involvement. These findings provide policymakers with critical insights into stakeholder relationships and emphasize the importance of strengthening collaborative approaches to enhance stakeholder contributions to government-led physical activity initiatives.

## Addressing the unpleasantness of exercise in early adolescence

**Ms. Lana Chisholm<sup>1</sup>**, Dr Conal Smith, Dr Charlotte Jelleyman<sup>1</sup>, Professor Erica Hinkson<sup>1</sup>, Professor Scott Duncan<sup>1</sup>

<sup>1</sup>Auckland University of Technology, , New Zealand

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

Despite global concern about declining youth physical activity, little is known about how, with whom, and where New Zealand youth experience exercise. This study describes early adolescent experiences of exercise using a novel youth-adapted ecological momentary assessment (EMA) tool and answers the following: 1. What activities do youth report engaging in most often? 2. How do youth affective responses to exercise compare with other daily activities? 3. What social, environmental, and temporal factors are the best targets for promoting physical activity for these youth? This research demonstrates the promise of quantifying youth experienced wellbeing to identify and inform effective health promotion strategies. Employing an intensive longitudinal study design, Auckland intermediate students (12-13 years) were invited to complete 7-9 surveys per day outside school hours for one week. Surveys included: one measure of positive affect (happy); two measures of negative affect (stressed, anxious); and four context questions: who are you with?, what are you doing?, where have you spent the most time in the past 30 minutes?, and how is the weather?. The binary U-index outcome variable was used to combine affect scores and report the unpleasantness of each moment. Affective responses to daily activities were modelled using fixed effects logistic regression and the marginal effect of exercise was subsequently compared with social and environmental factors. Eighteen youth (F=60% ) provided 188 responses. Participants predominantly engaged in positive activities: playing (68%), resting (30%), eating (17%), and working (17%), with minimal exercise (10%). Schoolwork ( $\beta = 1.545$ ,  $se = 0.777$ ,  $p < 0.05$ ), and exercise ( $\beta = 2.086$ ,  $se = 1.111$ ,  $p < 0.1$ ) were the most unpleasant activities. In models focussed on physical activity, youth reported exercise as strongly unpleasant ( $\beta = 5.973$ ,  $se = 2.291$ ,  $p < 0.01$ ) as were weekdays after school ( $\beta = 3.674$ ,  $se = 1.113$ ,  $p < 0.01$ ), and windy weather ( $\beta = 3.783$ ,  $se = 1.315$ ,  $p < 0.01$ ), while exercising outdoors ( $\beta = -6.007$ ,  $se = 2.541$ ,  $p < 0.01$ ) or with family ( $\beta = -6.767$ ,  $se = 2.620$ ,  $p < 0.01$ ) yielded net positive affect. These findings, robust to model specification and supported by extant literature, suggest building positive associations with exercise by playing outside as a family after dinner—wind permitting.

# An expert consensus on the most effective components of integrated motivational interviewing and cognitive behavioural therapy for lifestyle behaviour change: a modified Delphi study

**Dr. Stephen Barrett<sup>1</sup>**, A/Prof Stephen Begg<sup>2</sup>, Mr Ashley Dunford<sup>1</sup>, A/Prof Paul O'Halloran<sup>3</sup>, Mr Kane Rodda<sup>1</sup>, Dr Emily Denniss<sup>4</sup>, Prof Jeff Breckon<sup>5</sup>, Prof Michael Kingsley<sup>6</sup>

<sup>1</sup>Bendigo Health, Bendigo, Australia, <sup>2</sup>La Trobe University, Bendigo, Bendigo, Australia, <sup>3</sup>La Trobe University, Melbourne, Melbourne, Australia, <sup>4</sup>Deakin University, Melbourne, Australia, <sup>5</sup>Teeside University, Newcastle, United Kingdom, <sup>6</sup>University of Auckland, Auckland, New Zealand

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** There are high levels of ill-health across the world, largely due to lifestyle risk factors such as inadequate physical activity, unhealthy diet, and smoking. Integrated motivational interviewing and cognitive behavioural therapy (MI-CBT) is increasingly used to support behaviour change for these risk factors, yet there is no established consensus on its essential components. The aim of this study was to establish expert consensus on the essential elements of MI-CBT interventions for lifestyle behaviour change.

**Methods:** A three-round modified Delphi method was used with an international panel of experts in MI-CBT and lifestyle behaviour change. Using key literature and practice guides, a list of 63 commonly used components in individually delivered motivational interviewing (MI) and cognitive behavioural therapy (CBT) interventions were developed. In each round, participants rated their agreement with each component using a Likert scale. Components achieving ≥80% agreement in Rounds 2 or 3 were included in the final list of necessary components.

**Results:** Thirty experts participated in Round 1. Of these participants, 28 (93%) completed Round 2, and 25 (83%) completed Round 3. The median years of experience among experts was 13 years. Consensus was achieved for 26 components. Of these, eight were (MI) relational components including open-ended questions, affirmations, reflections, summaries, emphasising autonomy and offering emotional support. Sixteen were (cognitive behavioural) content components which included exploring change expectations, identifying and exploring avoidant behaviour, identifying past successes and technical strategies such as activity scheduling and relapse prevention. Finally, two process components emphasised the importance of scheduling sessions flexibly based on client needs, and ensuring MI-CBT is delivered by a therapist who meets recognised standards for MI-CBT training and practice.

**Conclusions:** This study provides the first expert consensus on MI-CBT components essential for lifestyle behaviour change, addressing a key gap in intervention standardisation. These findings strengthen MI-CBT training, improve intervention fidelity, and enhance real-world and research applications targeting physical activity, diet, and smoking cessation. The consensus framework offers a foundation for future trials assessing intervention effectiveness and implementation.

# Behaviour change interventions to improve physical activity in community-dwelling adults: a systematic review of economic evaluations

**Dr. Stephen Barrett<sup>1</sup>**, A/Prof Stephen Begg<sup>2</sup>, Mr Jack Lawrence<sup>1</sup>, Mrs Gabrielle Barrett<sup>1</sup>, Mr Josh Nitschke<sup>1</sup>, A/Prof Paul O'Halloran<sup>3</sup>, Prof Jeff Breckon<sup>4</sup>, Dr Marina De Barros Pinheiro<sup>5</sup>, Prof Catherine Sherrington<sup>5</sup>, Prof Chris Doran<sup>6</sup>, Prof Michael Kingsley<sup>7</sup>

<sup>1</sup>Bendigo Health, Bendigo, Australia, <sup>2</sup>La Trobe University Rural Health School, Bendigo, Australia, <sup>3</sup>La Trobe University Rural Health School, Melbourne, Australia, <sup>4</sup>Teesside University, Middlesbrough, United Kingdom, <sup>5</sup>The University of Sydney and Sydney Local Health District, Sydney, Australia, <sup>6</sup>Central Queensland University, Australia, <sup>7</sup>University of Auckland, Auckland, New Zealand

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Behaviour change interventions (BCIs) are required to help manage the spiralling levels of ill-health due to inactivity and other lifestyle choices. Nevertheless, a broad implementation of BCIs requires significant investment, and the cost-effectiveness of such interventions remains unclear with a lack of evidence available. This makes it difficult for policymakers to justify funding and scaling programs to increase population physical activity (PA) for example, potentially limiting public health investment. The aim of this study was to systematically review economic evaluations of BCIs aimed at increasing PA in community-dwelling adults to help inform policy and funding decisions.

**Methods:** A systematic search (September 2023) identified trial-based economic evaluations comparing BCIs to usual care or alternative interventions. Studies were included if they reported intervention costs and incremental cost-effectiveness ratios (ICERs) for PA or quality-adjusted life years (QALYs). Methodological quality was assessed using the Consensus Health Economic Criteria (CHEC-list). A Grading of Recommendations Assessment, Development and Evaluation style approach was used to assess the certainty of evidence (low, moderate or high certainty)

**Results:** Sixteen studies were included, representing a range of economic perspectives (e.g., health system costs vs. societal costs). Behaviour change interventions varied considerably, with 62% of interventions informed by a theoretical framework (e.g. motivational interviewing, social cognitive theory). The median CHEC-list score was 15 (range: 11–19), indicating moderate to high methodological quality. The median intervention cost was US\$313 per person (range: US\$83–\$1,298). In 75% of studies the interventions were reported as cost-effective for changes in PA (moderate certainty of evidence). For cost per QALY/gained, 45% of the interventions were found to be cost-effective (moderate certainty of evidence). No specific behaviour change framework demonstrated superior cost-effectiveness.

**Conclusions:** This study provides moderate-certainty evidence that BCIs can be cost-effective for increasing PA. However, variability in economic perspectives, intervention costs, and measurement approaches limits direct comparisons and should be considered when interpreting results. To strengthen future economic evaluations, clearer reporting of intervention components, implementation costs, and cost-effectiveness drivers is needed. These findings can guide evidence-based decision-making on resource allocation for PA interventions.

## Understanding the reach of an evidence-based early childhood nutrition and active play intervention at scale: The INFANT Program

**Dr. Rachel Laws**<sup>1,2</sup>, Dr Penny Love<sup>1,2</sup>, Dr Parinaz Mehdipour<sup>3</sup>, Prof Lilianna Orellana<sup>3</sup>, Prof Karen Campbell<sup>1,2</sup>, Dr Megan Adam<sup>1</sup>, Prof Elizabeth Denney-Wilson<sup>2,4</sup>, Ms Heilok Cheng<sup>1,2</sup>, A/Prof Harriet Koorts<sup>1</sup>, Ms Elly Ganakas<sup>1</sup>, Dr Victoria Brown<sup>2,5</sup>, Ms Veronica Graham<sup>6</sup>, Prof Hesketh Kylie<sup>1,2</sup>

<sup>1</sup>Deakin University, Institute for Physical Activity and Nutrition, Melbourne, Australia, <sup>2</sup>NHMRC Centre of Research Excellence in the Early Prevention of Obesity in Childhood-Translate, Sydney, Australia,

<sup>3</sup>Deakin University, Biostatistics Unit, Faculty of Health, Melbourne, Aus, <sup>4</sup>The University of Sydney, Susan Wakil School of Nursing and Midwifery, Sydney, Australia, <sup>5</sup>Deakin University, Deakin Health Economics, Institute for Health Transformation, Melbourne, Australia, <sup>6</sup>Population Health Promotion and Planning, Western Public Health Unit, Western Health, St Albans, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** To describe the equitable reach of an evidence-based early life nutrition and active play intervention when scaled up.

**Methods:** The INFANT program, an evidence-based program to support caregivers with optimal nutrition and active play from birth, was scaled up across Victoria, Australia from 2021. INFANT consists of a free app and group sessions, with organisations having the option to offer the app alone ('app-only') or both components ('app+group'). Implementation organisations within Victorian local government areas (LGAs) were contacted at least 6-monthly to monitor program delivery. Caregiver participation was measured using an online survey required for app access which collected participant characteristics and intentions to attend group sessions. Program reach was estimated as number of intended participants per 1000 babies born. Participant sociodemographic characteristics were compared to Victorian census data for women of reproductive age. Logistic regression models identified factors associated with group session attendance intention.

**Results:** By November 2024, 29 out of 79 (37%) of LGAs offered 'app-only' and 48 (61%) offered 'app+group'. The reach of 'app-only' was higher than 'app+group' across all LGAs (28.3 v 14.3 per 1000 babies born) and in LGAs offering both components (38.5 v 23.3 per 1000 babies born). Compared to the population of Victorian women of reproductive age, a higher proportion of INFANT participants were university educated (72.8% vs 52.8%), spoke English as main language at home (86.6% vs 72.4%), were from more advantaged communities (30.4% vs 20.0%) and lived outside major cities (inner regional: 20.3% vs 14.7%; outer regional: 6.8% vs 2.8%). The proportion of First Nations and Australian-born participants was similar to the broader population. In areas offering both program components, intention to attend group sessions was higher for first time parents, mothers, mothers who were mixed feeding, those in disadvantaged communities and those outside of major cities.

**Conclusions:** This study is one of few to assess the reach of an early life nutrition and active play intervention at scale. Despite INFANT's reach across the majority of Victorian LGAs, further work is needed to reach priority population groups.

## Understanding the choices of high trait anxious individuals in a self-selected exercise intervention: a qualitative study

**Miss Madeleine Connor<sup>1</sup>**, Dr Olivia Harrison<sup>2,3,4</sup>, Dr Elaine Hargreaves<sup>1</sup>

<sup>1</sup>*School of Physical Education, Sport and Exercise Sciences, University of Otago, Dunedin, New Zealand,*

<sup>2</sup>*Department of Psychology, University of Otago, Dunedin, New Zealand,* <sup>3</sup>*Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom,* <sup>4</sup>*Translational Neuromodeling Unit, University of Zurich and ETH Zurich, Zurich, Switzerland*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice: M. Mental Health and Wellbeing**

**Purpose.** Interventions designed to investigate the anxiolytic effects of exercise typically prescribe specific exercise stimuli. This method overlooks individual exercise preferences that may vary day to day depending on psychological well-being and may explain the variation in anxiety outcomes that have been shown in research. The objective of this study was to explore factors influencing the exercise choices high-trait anxious individuals make when given the autonomy to structure their exercise bouts.

**Methods:** Thirteen individuals (M age = 26.8, SD = 7.3) were interviewed at the beginning and end of an 8-week intervention investigating the anxiolytic effects of exercise. Participants completed either aerobic (n = 7) or stretching-based (n = 6) exercise. Individuals were asked what they felt was instrumental in how they chose to exercise during their exercise sessions. Data was analysed using inductive thematic analysis, with a phenomenological framework.

**Results:** Three themes explained the influential factors. 1) Pre-exercise mindset - participant's level of state anxiety, perceived energy levels, and exercise confidence influenced how they structured each session. 2) Proximal desired exercise outcomes - participants structured their exercise based on the energy needed for life events after the exercise, and according to how they wanted to feel during the exercise. For example, choosing exercise that would increase the intensity of their physiological symptoms or arousal, or would allow them to relax and be present with the body, creating a calming experience. 3) Creating structure to achieve exercise goals - individuals created a progressive routine for each exercise session according to what they aimed to achieve from the intervention, and a weekly schedule that fitted exercise into their daily lives to enable a sense of achievement.

**Conclusions:** There are interindividual and intraindividual differences in how trait anxious individuals prefer to exercise on a day-to-day basis and over time. Providing the individual with autonomy over their exercise choices may allow them to manage their anxiety through exercise in a more tailored fashion.

## Understanding adoption, integration and scale-up of evidence-based nutrition and movement behaviour programs in the first 1000 days: A comparative case study

Dr. Jessica Appleton<sup>1,2,3</sup>, Professor Li Ming Wen<sup>1,3,5</sup>, Professor Louise Baur<sup>1,3</sup>, Professor Elizabeth Denney-Wilson<sup>1,3</sup>, Dr Erin Kerr<sup>1,5</sup>, Associate Prof. Rachel Laws<sup>1,4</sup>, **Penny Love<sup>1,4</sup>**, Dr. Konsita Kuswara<sup>1,3,4</sup>

<sup>1</sup>EPOCH-Translate: Early Promotion of Optimal Child Growth, Cross-institutional, Australia, <sup>2</sup>The University of Technology Sydney, Sydney, Australia, <sup>3</sup>The University of Sydney, Sydney, Australia, <sup>4</sup>Deakin University, Melbourne, Australia, <sup>5</sup>Sydney Local Health District, Sydney, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Describe the barriers and facilitators to adoption, integration and scale-up through case study comparison of two evidence-based programs – INFANT and Healthy Beginnings.

**Methods:** Using case study methodology the two program descriptions were compiled from multiple sources including publicly available documentation (e.g. journal articles and program websites), targeted stakeholder interviews and field notes. Case descriptions were guided by the scale-up reflection guide. Interview data were analysed using the template analysis technique, with provisional a-priori themes (informed by implementation science frameworks) that were refined during coding and analysis. The final template of themes for each case was compared.

**Results/findings:** Twenty-six stakeholders were interviewed (case 1 – n=14, case 2 – n=12); ten were researchers involved in the development of the programs, fourteen in the delivery of the program, and four stakeholders were from a healthcare organisation/policy role. One case achieved broader spread with ongoing statewide roll out while the other achieved limited spread within a single local health governance area with further adaptations in trial phase. Factors that facilitated adoption, integration and scale-up were a robust evidence base, positive response to the program from parents, and adaptability of the program features to suit varied contexts. Enthusiasm for the program from delivery staff was also key: ‘the [delivery] staff ...they like champion [the] program and support each other’ Case 2 Policy stakeholder 3. Other organisational and state-wide healthcare system factors that facilitated this process were inclusion within policy documents/strategies and champions at multiple levels of the health system who garnered support and buy-in for the program. Barriers included a perceived high cost of the program, nonflexible interpretation of current service delivery and unclear jurisdictional responsibility in wider the health system: ‘child health is everywhere but nowhere’ Case 1 Research stakeholder 5.

**Conclusions:** To successfully achieve adoption, integration and scale-up of evidence-based nutrition and movement behaviour programs in the first 1000 days programs need to be adaptable to multiple settings and have support and buy-in at multiple levels of the health system. One major barrier is unclear jurisdictional responsibility across this area which spans women, children and family health and social services.

# Computer vision for extraction of environmental characteristics from street images: a scoping review of methods and applications

**Ms. Kyriaki Kokka<sup>1</sup>**

*<sup>1</sup>MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** The built environment shapes diet, physical activity and health through urban design, food retail and green space access. Quantifying such exposures is challenging due to insufficient data. In-person audits provide detail but are costly at scale while virtual audits using street-level images offer an alternative. Automated data extraction from these images could improve efficiency and scale. Computer vision (CV), powered by deep learning, can automatically extract data on exposures from street images. Using a scoping review, we explored the uses and performance of CV on environmental characteristics related to diet and physical activity from street images.

**Methods:** Following an adapted version of Arksey and O'Malley's review process, we used eight diverse databases to identify 11,221 records. Eligible studies were published 2020-2023, reported in English and focused on CV models to identify objects relevant to diet or physical activity from street images. After title, abstract, and full-text screening, we included 106 studies in the review. We conducted a narrative synthesis of findings, supported by harvest plots.

**Results:** Most studies employed pre trained, segmentation models like DeepLabv3 and YOLO, with Cityscapes, and MS COCO benchmark datasets. Research has been concentrated in the United States and China. CV has been used to extract data on environmental characteristics of the built (e.g. sidewalks), natural (e.g. vegetation), transport (e.g. vehicles) and food (e.g. food stalls) environments. Less than half of the studies reported object accuracy.

**Conclusions:** Our findings indicate that the potential of CV in environmental public health is extensive. However, few studies report the performance of the models, which is a concern.

## Exploring Behaviour Change Techniques Used in Food Literacy Interventions: A Narrative Review

**Miss Keely O'Brien<sup>1,2</sup>**, Dr Susan Heaney<sup>3</sup>, Professor Lesley MacDonald-Wicks<sup>1,2</sup>, Dr Kelly Squires<sup>1,2</sup>, Dr Lucy Kocanda<sup>4</sup>, Ms Amy Robinson<sup>3</sup>

<sup>1</sup>University of Newcastle, School of Health Sciences, Callaghan, Australia, <sup>2</sup>Hunter Medical Research Institute, Food and Nutrition Research Group, New Lambton Heights, Australia, <sup>3</sup>University of Newcastle Department of Rural Health, Port Macquarie, Australia, <sup>4</sup>University of Newcastle Department of Rural Health, Tamworth, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

Interventions targeting food literacy utilise behaviour change techniques (BCTs) throughout their programs to support participants in creating sustainable healthy habits however, there is currently minimal research that explores how and which techniques are being used. This narrative review identifies and analyses the BCTs used in food literacy interventions to guide future program development. This review followed Ferrari's framework and built upon a previous scoping review where literature was searched across five databases (Medline, CINAHL, ProQuest Education, Web of Science, AMED) up to August 2023, identifying food literacy interventions using PECO-based inclusion criteria. Articles were independently screened by three reviewers, first by title and abstract and then full text. Included articles underwent analysis following the process by Lorencatto et al where the manuscript was analysed for inclusion of BCTs as defined in the Behaviour Change Taxonomy. BCTs were included if identified by at least two of the three reviewers, and the target behaviours for each technique was mapped to the specific food literacy domain and component of the Vidgen and Gallegos food literacy framework. BCTs were also mapped to intervention functions using the Behaviour Change Wheel (BCW). The most common BCT identified across the seven included studies was Instruction on how to perform a behaviour. The other most common BCTs were from categories including Feedback and Monitoring and Comparison of Behaviour. BCTs that align with the Enablement function of the BCW were also identified across many studies but weren't aligned with a specific FL domain. Instruction on how to perform a behaviour, Demonstration of the behaviour and Behavioural practice/rehearsal were used to address all FL domains, with the primary functions of those BCTs aligning with Training and Modelling BCW functions. The Eat FL domain was also targeted with a broader range of BCTs that aligned with the Persuasion and Enablement BCW functions. This is the first review to summarise the BCTs used across interventions targeting food literacy. The findings of this narrative review will inform the selection of BCTs used to address each aspect of food literacy, and promote consideration of evidence-based behaviour change frameworks when planning future food literacy interventions.

# ASSOCIATION OF THE REGENERATION OF GREEN AND BLUE SPACES WITH PHYSICAL ACTIVITY AND MENTAL HEALTH OUTCOMES: SYSTEMATIC REVIEW AND META-ANALYSIS

**Mrs. Anjani Kalra<sup>1</sup>**

<sup>1</sup>School of Health and Medical Sciences and Centre for Health Research, University of Southern Queensland, Ipswich, Australia, <sup>2</sup>School of Public Health, University of Queensland, Brisbane, Australia, <sup>3</sup>University of Cape Town, Cape Town, South Africa, <sup>4</sup>Manna Institute, Centre for Health Research, University of Southern Queensland, Ipswich, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** The global prevalence of physical inactivity and mental health disorders is increasing rapidly. Interventions targeting the regeneration of green and blue spaces is considered as a strategy to promote physical activity (PA) and improve mental health (MH) outcomes. However, there is limited and conflicting evidence on the relationship between the regeneration of green and blue spaces with PA and MH outcomes. Therefore, the aim of this systematic review is to collate the evidence and evaluate the association between the regeneration of green and blue spaces with PA and MH outcomes.

**Method:** The review included community individuals across all age groups, and all forms of PA and MH outcomes. The intervention was regenerated outdoor spaces. All study designs reporting quantitative measures of associations as odds ratio, relative risks, and/or mean change as the measures of effect were included. The Joanna Briggs Institute (JBI) critical appraisal tool was used to assess the methodological quality of the included studies. During the analysis, the review will assess the potential for a meta-analysis and in that case it will estimate the summary effect size and its 95% CI through a random-effects model due to the anticipated heterogeneity. Between-study association will be estimated with the  $I^2$  metric.

**Results/Findings:** A total of 6,975 articles were identified for title and abstract screening, of which 100 articles were selected for full text review. Results highlighted the diversity of terms and definitions used for the regeneration of green and blue space. Consequently, a clear and consistent definition of regeneration is required. The majority of the papers included in the data analysis focused on green spaces. Preliminary findings suggest a positive association between various aspects of regeneration, such as park renovations and physical characteristics, with increased physical activity and improved mental health outcomes. For example, park characteristics such as pools, playgrounds, and walking paths were associated with higher levels of moderate-to-vigorous physical activity in females.

**Conclusion:** The collated evidence will inform the key gaps in the field of the regeneration of green and blue spaces that will be observed from the aggregated data.

## The Action-RESPOND study - applying implementation science methods to support the delivery of systems-thinking-based obesity prevention strategies in regional communities

**Dr. Gloria Leung<sup>1</sup>**, Dr. Andrew Brown<sup>1,5</sup>, Ms. Monique Hillenaar<sup>1</sup>, Dr. Jennifer David<sup>1,2</sup>, Dr. Josh Hayward<sup>1</sup>, Dr. Michelle Jackson<sup>4</sup>, Prof Steven Allender<sup>1</sup>, Dr. Claudia Strugnell<sup>1,3</sup>, Prof Colin Bell<sup>1,4</sup>, A/Prof Sze Lin Yoong<sup>1</sup>

<sup>1</sup>*Institute for Health Transformation (Global Centre for Preventive Health and Nutrition), Deakin University, Geelong, Australia*, <sup>2</sup>*School of Public Health, University of Sydney, Sydney, Australia*, <sup>3</sup>*Institute for Physical Activity and Nutrition, Deakin University, Geelong, Australia*, <sup>4</sup>*School of Medicine, Deakin University, Geelong, Australia*, <sup>5</sup>*School of Health & Social Development, Deakin University, Geelong, Australia*

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Childhood obesity remains a global public health challenge. Community-based system dynamics approaches have been applied in rural and regional Victoria, to support the development of locally appropriate childhood obesity prevention initiatives. Given the complexity and diversity of these initiatives, implementation science may help enhance implementation processes and promote more equitable outcomes across communities.

**Methods:** This study piloted a multicomponent implementation strategy to support the implementation of initiatives generated by community using systems-thinking. Embedded within a whole-of-systems childhood obesity prevention trial (RESPOND), the strategy was tested in five intervention communities (with five controls) in North-East Victoria, Australia. Informed by the Promoting Action on Research Implementation in Health Services (PARIHS) framework, the strategy addressed key implementation barriers through capacity building and tailored implementation support for local health promotion teams. It was delivered over a 9-month period after all communities had developed their initiatives. At follow-up, health promotion team members from each community completed an online survey assessing 'fidelity' (extent and frequency of initiative delivery) and 'intention-to-adopt' (stakeholders' intent to implement initiatives). Both were scored on a 7-point Likert scale. Practitioners from intervention communities also assessed the strategy's acceptability and feasibility using validated measures. Given the pilot nature of the study, results are presented as mean (range) scores, with higher scores indicating more favourable outcomes.

**Results:** Communities implemented a variety of initiatives, including nature walking tours, nutrition education, community gardens and promotion of existing community sports programs. Fidelity and intention-to-adopt scores were similar between groups, with intervention communities reporting 4/7 (1–6) for both outcomes, while control communities scored 5/7 (2–6) for fidelity and 5/7 (5–6) for intention-to-adopt. Intervention communities rated all strategies as highly acceptable [4/5 (3–5)] and appropriate [4/5 (2–5)] for supporting implementation.

**Conclusions:** This study provides the first practical application of a structured implementation strategy to support the delivery of community-based childhood obesity prevention initiatives generated using systems-thinking. Although health promotion practitioners perceived the

implementation strategy as highly acceptable, future research is needed to determine its effectiveness in improving the implementation of systems-thinking-based initiatives.

## GLP-1 receptor agonist medications for obesity and type 2 diabetes treatment. A rapid review of change in eating behaviours and eating disorder risk.

**Dr. Natalie Lister<sup>1</sup>**, A/Prof Yngvild Danielsen<sup>2</sup>, Ms Isabelle Jardine<sup>1</sup>, Ms Sasha Lorien<sup>1</sup>, Prof Louise Baur<sup>1</sup>, A/Prof Priya Sumithran<sup>3</sup>, Dr Hiba Jebeile<sup>1</sup>

<sup>1</sup>University Of Sydney, Sydney, Australia, <sup>2</sup>University of Bergen, Bergen, Norway, <sup>3</sup>Monash University, Melbourne, Australia

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Systematic reviews of glucagon-like peptide-1 receptor agonists (GLP-1RAs) demonstrate improvements in weight, and cardiometabolic health, while the effects on psychological outcomes are mixed. This review aimed to evaluate the effect of GLP-1RAs on eating behaviours and eating disorder risk.

**Methods:** MEDLINE and Embase databases were searched to 21 January 2025 (PROSPERO CRD42025645199). Randomised controlled trials (RCTs) and longitudinal studies evaluating obesity or type 2 diabetes treatment with a GLP-1RA for adolescents or adults were included. Eligible studies reported on adverse events, changes in eating disorder risk scores, or eating behaviours post-intervention or follow-up. Summary data were extracted and synthesised according to Synthesis Without Meta-analysis guidelines.

**Results:** 1597 records were screened and 25 trials (k) were included. Of two adolescent trials, one RCT (n=251) reported development of eating disorders following liraglutide (n=2/125). One retrospective cohort study (n=24 adolescents) reported reduced uncontrolled eating with no change in other eating behaviours following liraglutide. Twenty-three trials were in adults (>18y, n=8,722). One study reported an eating disorder adverse event, and two studies reported no binge eating adverse events. Liraglutide reduced global eating disorder risk scores, with no differences between groups (k=1). Binge eating episodes reduced following liraglutide (k=1), and semaglutide (k=1), and binge eating scores improved compared to placebo (k=2). Food cravings following liraglutide (k=1) or semaglutide (k=5) were improved (k=5) or unchanged (k=2). Liraglutide (k=9), semaglutide (k=4) and dulaglutide (k=1) improved eating behaviour global scores (k=10) though some subscales remained unchanged (k=3), with no differences between groups (k=3). Eleven conference abstracts were identified. Most reported improvements or no change in eating behaviours. One abstract reported on incidence of eating disorders in adults within two years of GLP-1RA treatment (1.23% of patients with prior mental health history, 0.51% of patients without mental health history).

**Conclusion:** Limited data are available for the effect of GLP-1RAs on eating behaviours and eating disorders. For most, eating behaviours may improve or remain unchanged. Two trials reported development of eating disorders following GLP-1RAs. Comprehensive assessment of eating behaviours and eating disorder risk are needed to understand potential benefits and risks of treatment.

## Developing and Validating the DISH Survey: A Foundation for an AI-Assisted Dietary Intervention Trial

Ms Hemangi Mavadiya, Ms Amy Lam, Ms. Amy Roh, Ms Andrew Ly, **Dr. Yunxia Lu**<sup>1</sup>

<sup>1</sup>University of California Irvine, Irvine, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Adherence to dietary guidelines is associated with decreased chronic disease risks, yet many American adults don't meet the recommendations. Dietary guidelines often overlook individual differences, thus limiting their real-world application. To bridge this gap, we developed an intervention approach featuring diet-related small habits (DISH) that may increase adherence to dietary guidelines.

**Methods:** DISH was conceptualized based on simple and common dietary behaviors. Through extensive literature search and qualitative & quantitative assessment, we identified and refined a series of DISH items and then developed a specific survey to assess relevant perceptions and behaviors. An expert panel comprising registered dietitians, epidemiologists, and clinicians was invited to evaluate the survey, and the content validity index (CVI) was calculated. A pilot study was further conducted to examine test-retest reliability. DISH composite index was computed based on scaled responses to evaluate the status of perception and behaviors in participants.

**Results:** A total of 46 DISH items (46 perception and 46 relevant behaviors, respectively) were evaluated by CVI. Among them, 37 received a score of 0.75 or higher, 6 between 0.50 and 0.75, and 3 less than 0.50. Using Spearman correlation analysis, the test-retest reliability was constant, except for 3 perception items and 1 behavior item. The final survey contained 40 DISH items based on scores and modifications. The average DISH perception index was always higher than the average DISH behavior index in the pilot study, which further indicates the low adherence to healthy behaviors. Moreover, we synthesized and elucidated the underlying mechanisms of DISH and categorized DISH into five domains—Hunger/Satiety, Self-control/Self-awareness, Food composition and amount, Social influence, and Physical activity and sleep (Figure 1). We are currently running a large online survey to collect more respondents' information for explorative factor analysis. Meanwhile, we started developing a DISH AI assistant for personalized intervention at a later stage.

**Conclusions:** The DISH survey evaluates the status of DISH perception and behaviors to design personalized behavior interventions. DISH may have much greater long-term adherence because less motivation and ability are needed. They offer a powerful solution to the challenge of translating abstract dietary guidelines into practical applications.

# Efficacy of High-Intensity Interval Training in Individuals with Type 2 Diabetes Mellitus: An Umbrella Review of Systematic Reviews and Meta-Analyses

**Dr. Eric Poon<sup>1</sup>**, Mr. Hong Yat Li<sup>1</sup>, Prof Alice Kong<sup>1</sup>, Prof Jonathan Little<sup>2</sup>

<sup>1</sup>The Chinese University of Hong Kong, Hong Kong, Hong Kong, <sup>2</sup>University of British Columbia, Kelowna, Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** High-intensity interval training (HIIT) has gained attention as a potentially effective alternative to traditional exercise modalities for individuals with Type 2 Diabetes Mellitus (T2DM). Previous studies have evaluated this exercise strategy with various regimens, comparator groups, and outcomes, limiting the generalizability of findings. We performed a novel umbrella review to generate an up-to-date synthesis of the available evidence regarding the effect of HIIT on glycemic control and other clinically relevant cardiometabolic health outcomes in individuals with T2DM, as compared with traditional moderate-intensity continuous training (MICT) and/or non-exercise control (CON).

**Methods:** This umbrella review followed the Preferred Reporting Items for Overviews of Reviews guideline. Seven databases were searched until August 2024. Systematic reviews with meta-analyses comparing HIIT with MICT and/or CON were included. Literature search, data extraction, and methodological quality assessment (AMSTAR-2) were conducted independently by two reviewers.

**Results:** Ten systematic reviews with meta-analyses, encompassing 76 primary studies and 2,954 unique participants, met the inclusion criteria. The data indicated that HIIT significantly improves glycosylated hemoglobin and cardiorespiratory fitness compared to CON (weighted mean difference [WMD]: -0.83 to -0.39% and 3.35 to 6.38 mL/kg/min) and MICT (WMD: -0.37 to -0.07% and 1.68 to 4.12 mL/kg/min) in individuals with T2DM. HIIT is also effective in improving other glycemic parameters, including fasting blood glucose, fasting blood insulin, and HOMA-IR. Improvement in body composition, lipid profiles, and blood pressure, have also been observed following HIIT. Most systematic reviews received moderate to low AMSTAR-2 score.

**Conclusions:** This umbrella review supports HIIT as an efficacious exercise strategy for improving glycemic control and certain relevant cardiometabolic health outcomes in individuals with T2DM. Our findings offer a comprehensive basis that may potentially contribute to informing physical activity recommendations for incorporating HIIT into T2DM management strategies.

# Randomized Trial Comparing Physical Activity Calorie Equivalent (PACE) and Health Star Rating Labels on Product Perception and Choice

**Prof. Charles Abraham<sup>1</sup>**, Dr Claudia Gascoyne<sup>2</sup>, Dr. Maree Scully<sup>2</sup>, Dr. Zofia Szczuka<sup>3</sup>, Ms. Michelle Yang<sup>4</sup>, Prof Paschal Sheeran<sup>4</sup>, Prof Helen Dixon<sup>2</sup>

<sup>1</sup>School of Psychology, Deakin University, 221 Burwood Highway, Burwood, Victoria 3125, , Melbourne, Australia, <sup>2</sup>Centre for Behavioural Research in Cancer, Cancer Council Victoria, Melbourne, ., Melbourne, Australia, <sup>3</sup>Wroclaw Faculty of Psychology, SWPS University , Wroclaw, Poland, <sup>4</sup>Department of Psychology and Neuroscience, University of 4Department of Psychology and Neuroscience, University of North Carolina, Chapel Hill, North Carolina., Chapel Hill, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** We assessed effects of Physical Activity Calory Equivalent (PACE) and Health Star Rating (HSR) labels on adults' food and beverage perceptions and choices.

**Methods:** In an online experiment, 1,268 Australian adults (18-59 years) were randomized to: no labels (control), PACE, or HSR labels. Participants were shown snack and drink items with varying energy content and nutritional profiles. Participants rated the healthiness and energy content of each item, completed a choice task, and rated labels on cognitive, emotional and motivational measures. Three-between (label condition) by 2-within (high vs. low energy or healthiness of items) ANOVAs were performed on mean ratings of energy and healthiness respectively. Regression and mediation analyses were also conducted.

**Results:** Participants in the PACE condition chose a greater proportion of healthy items than those the No Label condition ( $M = 0.64$  and  $0.58$ ;  $SD = 0.33$  and  $0.33$ , respectively),  $b = 0.06$ ,  $SE = 0.02$ ,  $p = 0.01$ ). There was no difference in the proportion of healthy choices between the PACE versus HSR label ( $M = 0.63$ ,  $SD = 0.33$ ) conditions ( $p = 0.73$ ). Participants in the PACE condition chose a higher proportion of low energy items compared to participants in the No Label ( $b = 0.09$ ,  $SE = 0.02$ ,  $p < .001$ ) and HSR Label conditions ( $b = 0.08$ ,  $SE = 0.02$ ,  $p < .001$ ). Overall, PACE labelling increased choices of healthy and low-energy products while HSR labels did not differ from no-labels. Participants in the PACE condition were more motivated to reduce daily energy intake and take more exercise. Label-induced motivation mediated the effects of labels on product choice.

**Conclusions:** Both label types promoted more accurate product perceptions. PACE labels were most effective in prompting accurate perceptions of energy content and in facilitating healthy and low-energy choices. Mediation analyses suggested that this may be due to greater motivation generated by PACE labels. Future research could investigate easy-to-read labels that communicate multiple dimensions of healthiness, for example, energy density (PACE), nutritional value (HSR) and degree of processing.

## Effects of 8-Week Time-Restricted Eating Combined with Aerobic-Resistance Training on Body Composition and Physiological Function in Obese Elderly

**Ms. Liuyi Wang<sup>1</sup>**, Ms Qianyi Wang<sup>1</sup>, Ms Chen Zheng<sup>1</sup>, Mr Choi Yeung Tse Andy<sup>1</sup>, Mr Fenghua Sun<sup>1</sup>

<sup>1</sup>Department of Health and Physical Education, Education University of Hong Kong, Education University of Hong Kong, Hong Kong, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Time-restricted eating (TRE) has been shown to benefit body composition and improve metabolic health by limiting eating windows, while aerobic-resistance training enhances muscle strength and physical function. However, limited studies examined how combining these two approaches may provide a more comprehensive benefit in improving health among older populations. This study aims to investigate the effects of an 8-week TRE combined with aerobic-resistance training on body composition and physiological function in obese elderly, and to explore the feasibility and safety of this health promotion strategy.

**Methods:** Twenty-four Chinese elderly with obesity (age  $61.3 \pm 5.6$  years, body mass index [BMI]  $26.5 \pm 2.6$  kg/m<sup>2</sup>) were randomly assigned to an intervention group (n = 16) and a control group (n = 8) with the ratio of 2:1. Participants in the intervention group underwent an 8-week daily 8-hour TRE and 70-minute supervised aerobic-resistance training, while the control group maintained their original lifestyle. Body weight, BMI, waist circumference (WC), body fat percentage (Fat%), muscle percentage (Muscle%), blood pressure, and quality of life were assessed before and after intervention. Change scores between two groups were evaluated using T-test.

**Results:** Compared with the control group, participants in the intervention group showed significant improvements in body weight (P = 0.008), BMI (P = 0.005), WC (P = 0.002), and body fat percentage (P = 0.007), with marginal improvement in muscle percentage (P = 0.052). However, no significant changes were observed in systolic blood pressure (P = 0.453), diastolic blood pressure (P = 0.104), sleep quality, or quality of life (including physical, psychological, social relationships, and environmental dimensions, all P > 0.05). The adherence rate to the intervention was around 92%, with no serious adverse reactions reported.

**Conclusion:** TRE combined with aerobic-resistance training can safely and effectively improve body composition in elderly with obesity. However, its effects on blood pressure, sleep quality, and quality of life were limited. The results suggest that this combined strategy has potential application among this population. **Keywords** TRE; aerobic-resistance training; obese elderly; body composition; physiological function

## Effects of Time-Restricted Eating Combined with Aerobic-Resistance Training on Physical Fitness in Obese Elderly

**Ms. Qianyi Wang<sup>1</sup>**, Ms. Liuyi Wang<sup>1</sup>, Ms. Chen Zheng<sup>1</sup>, Mr Fenghua Sun<sup>1</sup>, Mr Choi-Yeung Tse Andy<sup>1</sup>

<sup>1</sup>Department of Health and Physical Education, Education University of Hong Kong, Hong Kong, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Obesity among the elderly has become an increasingly public health issue nowadays. It not only increases the risk of chronic diseases but also leads to declines in physical fitness and reductions in physical activity, which may significantly decrease the quality of life in the elderly. Both time-restricted eating (TRE) and aerobic-resistance training have shown potential in improving metabolic health and body composition. However, research on the combined effects of TRE and aerobic-resistance training on the physical fitness of elderly with obesity remains insufficient. Therefore, this study aims to evaluate the effects of combining TRE with aerobic-resistance training on physical fitness of elderly with obesity.

**Methods:** A randomized controlled trial was conducted with twenty-four Chinese elderly with obesity (age  $61.3 \pm 5.6$  years, body mass index [BMI]  $26.5 \pm 2.6$  kg/m<sup>2</sup>) and randomly divided into an intervention group (n = 16) and a control group (n = 8) for 8-week intervention. In the intervention group, participants conducted supervised 70-minute aerobic-resistance training three times per week combined with an 8-hour TRE strategy. Participants in the control group maintained their usual daily lifestyle. Physical fitness indicators including strength, balance, speed, and endurance, were assessed using standard test before and after the intervention. Statistical analysis was performed using independent sample t-tests.

**Results:** Compared with the control group, the physical fitness levels in the intervention group showed significant improvements, including (intervention group vs. control group): (1) right-hand grip strength ( $26.84 \pm 7.57$  vs.  $23.95 \pm 4.07$  kg,  $P = 0.024$ ) and left-hand grip strength ( $25.85 \pm 8.71$  vs.  $24.57 \pm 5.75$  kg,  $P = 0.042$ ); (2) standing test ( $7.42 \pm 1.95$  vs.  $10.82 \pm 4.29$  seconds,  $P = 0.011$ ); (3) 6-minute walk ( $583.75 \pm 51.05$  vs.  $556.29 \pm 78.70$  meters,  $P = 0.035$ ). However, no difference was observed in the performance of 4-meter walk ( $3.01 \pm 0.54$  vs.  $3.26 \pm 0.44$  seconds,  $P = 0.463$ ).

**Conclusion:** The combination of TRE and aerobic-resistance training can improve physical fitness of Chinese elderly with obesity. Therefore, combining TRE with aerobic-resistance training may be a feasible and safe strategy for health improvement in the elderly population.

# Physical Activity Interventions in Women treated for Endometrial Cancer: A Scoping Review

**Miss Leanne Shearsmith<sup>1</sup>**, Miss Hannah Truscott<sup>1</sup>, Ms Judy Wright<sup>1</sup>, Professor Abigail Fisher<sup>2</sup>, Dr Gemma Traviss-Turner<sup>1</sup>, Professor Emma Crosbie<sup>3</sup>, Professor Andrew Hill<sup>1</sup>, Professor Rebecca J Beeken<sup>1</sup>

<sup>1</sup>Leeds Institute of Health Sciences, University of Leeds, Leeds, United Kingdom, <sup>2</sup>Department of Behavioural Science and Health, University College London, London, United Kingdom, <sup>3</sup>Department of Obstetrics and Gynaecology, St Mary's Hospital, Manchester University NHS Foundation Trust, Manchester, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Endometrial cancer has one of the highest survival rates among cancers, yet cardiovascular disease is the leading cause of mortality in this group. Physical inactivity – a known risk factor for cardiovascular disease - exacerbates these risks. While international guidelines recommend physical activity post-cancer treatment, interventions for endometrial cancer remain less studied than those for breast, colorectal, or prostate cancers. This scoping review maps existing evidence on physical activity interventions for women treated for endometrial cancer and explores key research gaps to inform future intervention development.

**Methods:** A scoping review was conducted following the Arksey & O'Malley framework and JBI data extraction instrument. Seven databases (Medline, EMBASE, Cochrane, Web of Science, PEDro, EThOS, and PsycInfo) were searched for studies published between January 2011-October 2024. Eligible studies included adults ( $\geq 18$  years) post-primary treatment for endometrial cancer, describing an intervention incorporating physical activity. Two reviewers independently screened articles and extracted data, synthesised narratively.

**Results:** Twenty-two studies met eligibility criteria, including 5 pilot studies, 3 feasibility studies, and 2 RCTs. Of the 12 interventions described, 50% focused on physical activity only, 25% incorporated physical activity and diet, and 25% encompassed physical activity, diet, and additional components such as mindfulness or chronic disease prevention. Most studies were conducted in the USA (77%). Sample sizes were small (median  $n=28$ ); 58% of participants sampled were White, or ethnicity was unreported (25%). One RCT reported sustained increases in physical activity and step count, while another showed initial improvements that were not maintained. Most interventions achieved high adherence (80–84%). Quality of life improvements were consistently observed, with several studies reporting improvements in physical function, fitness, and self-efficacy. Qualitative findings described pain, fatigue, and family responsibilities as key barriers.

**Conclusion:** To the authors knowledge, this is the first scoping review to focus on physical activity interventions in women treated for endometrial cancer. It identifies key research gaps, including the need for appropriately powered full-scale RCTs with follow up, and studies that recruit and engage diverse samples. High adherence rates suggest that physical activity interventions are feasible and safe for this population, yet evidence for their effectiveness remains preliminary.

## Adherence to telephone physical activity support and supervised exercise initiated during the prehabilitation phase of treatment and impact on longer-term physical activity behaviours in colorectal cancer patients recruited to the PREPARE-ABC trial.

**Prof. John Saxton**<sup>1</sup>, Mr James Hernon<sup>2</sup>, Dr Allan Clark<sup>3</sup>, Mrs Susan Stirling<sup>4</sup>, Ms Megan Jones<sup>4</sup>, Professor Ann Marie Swart<sup>4</sup>, Dr Jamie Murdoch<sup>5</sup>, Dr David Turner<sup>3</sup>, Dr Samuel Orange<sup>6</sup>, Dr Marie McLaughlin<sup>7</sup>, Professor Simon Bach<sup>8</sup>, Mr Jurgens Nortje<sup>2</sup>, Miss Nicola Fearnhead<sup>9</sup>, Mr Samson Tou<sup>10</sup>, Mr Jonathan Lund<sup>11</sup>, Mr Seamus Kelly<sup>12</sup>, Mr Paul Ziprin<sup>13</sup>, Ms Anna Wordley<sup>14</sup>, Mr William Chambers<sup>15</sup>, Mr Robert Dennis<sup>16</sup>, Mr Alan Stephens<sup>2</sup>

<sup>1</sup>University of Hull, Hull, United Kingdom, <sup>2</sup>Norfolk and Norwich University Hospitals NHS Foundation Trust, Norwich, United Kingdom, <sup>3</sup>University of East Anglia, Norwich, United Kingdom, <sup>4</sup>Norwich Clinical Trials Unit, Norwich Medical School, Norwich, United Kingdom, <sup>5</sup>King's College London, London, United Kingdom, <sup>6</sup>Newcastle University, Newcastle-upon-Tyne, United Kingdom, <sup>7</sup>University of Edinburgh, Edinburgh, United Kingdom, <sup>8</sup>University Hospitals Birmingham, Birmingham, United Kingdom, <sup>9</sup>Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom, <sup>10</sup>University Hospitals of Derby and Burton, Derby, United Kingdom, <sup>11</sup>University of Nottingham at Derby, Derby, United Kingdom, <sup>12</sup>Northumbria Healthcare NHS Foundation Trust, Newcastle-upon-Tyne, United Kingdom, <sup>13</sup>Imperial College Healthcare NHS Trust, London, United Kingdom, <sup>14</sup>East Suffolk and North Essex NHS Foundation Trust, Colchester, United Kingdom, <sup>15</sup>Royal Devon University Healthcare NHS Foundation Trust, Exeter, United Kingdom, <sup>16</sup>North West Anglia NHS Foundation Trust, Peterborough, United Kingdom

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** PREPARE-ABC is a pragmatic multi-centre randomised controlled trial designed to assess the clinical and cost-effectiveness of pre- and post-operative telephone support for physical activity (T-PA) and hospital-supervised exercise (H-Ex) versus standard care (SC) in colorectal cancer patients undergoing surgical resection. Here, we report on the effects of both interventions (initiated during the treatment prehabilitation phase) on physical activity behaviours 6-months post-randomisation.

**Methods:** A total of 645 eligible and consenting patients were randomly assigned (1:1:1) to T-PA (N=222), H-Ex (N=197) or SC (N=226) prior to surgery. Following an initial in-person exercise counselling session, intervention participants were offered either a weekly 15-minute T-PA session (T-PA) or up to three weekly sessions of hospital-supervised aerobic interval and resistance band exercise (H-Ex), pre-operatively. Post-operatively, participants were offered 10 monthly T-PA or H-Ex 'booster sessions' up to 12 months of follow-up, respectively. Outcomes were assessed at baseline (prior to randomisation), 6-months and 12-months. Adherence to T-PA and H-Ex, and 6-month self-reported physical activity data (modified Godin) versus SC are presented here.

**Results/findings:** Adherence to T-PA was higher than for H-Ex, with 71% of patients attending  $\geq 2$  T-PA sessions and 60% of patients attending  $\geq 2$  H-Ex sessions pre-operatively, and 60% of patients attending  $\geq 2$  T-PA sessions versus 44% of patients attending  $\geq 2$  H-Ex sessions post-operatively. At 6-month follow-up, there were increases in weekly minutes of self-reported moderate-intensity ( $P=0.02$ ) and light-intensity ( $P=0.05$ ) aerobic activity for T-PA, and in

vigorous-intensity ( $P=0.04$ ) and moderate-intensity ( $P=0.01$ ) aerobic activity for H-Ex, versus SC. Weekly minutes of resistance exercise were also increased in T-PA and H-Ex versus SC (both  $P<0.0001$ ), but with the increase being greater for T-PA versus H-Ex ( $P=0.04$ ) in an exploratory analysis. Scores derived from the Exercise Identity Scale, showed improvements in Role Identity (adjusted  $P=0.01$ ) and Exercise Beliefs (adjusted  $P=0.03$ ) versus SC only for T-PA.

Conclusions: Higher adherence to T-PA versus H-Ex suggests that it may be a more acceptable intervention for colorectal cancer patients undergoing surgical resection. However, different patterns of longer-term physical activity behaviour change between T-PA and H-Ex could have important implications for strategies to embed physical activity support within colorectal cancer treatment pathways.

## Establishing cut-off scores for routine restraint, compensatory restraint, emotional eating, and external eating in the Chinese version of Weight-related Eating Questionnaire

Ms. Yaqi Wang<sup>1</sup>, **Dr. Mandy Ho<sup>1</sup>**, Dr Pui Hing Chau<sup>1</sup>, Dr Daniel Yee Tak Fong<sup>1</sup>, Dr Susan M. Schembre<sup>2</sup>

<sup>1</sup>University Of Hong Kong, Hong Kong, Hong Kong, <sup>2</sup>Department of Oncology, Georgetown Lombardi Comprehensive Cancer Center, Georgetown University, Washington, DC, United States of America

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Eating behaviors are regulated not only by physiological hunger but also by cognitive, emotional and external factors. Weight-Related Eating Questionnaire (WREQ) is the only tool that collectively measures the two aspects of dietary restraint, routine and compensatory restraint, along with emotional eating and external eating. This study aimed to establish cut-off scores for the Chinese version of WREQ (WREQ-C) to categorize individuals into high and low levels of eating behaviors.

**Methods:** A cross-sectional online survey was conducted, including demographic information, the 13-item WREQ-C, and the 33-item Chinese version of the Dutch Eating Behavior Questionnaire (DEBQ-C), which assesses dietary restraint, emotional eating, and external eating. DEBQ-C was used as criterion variables for WREQ-C subscales. The 80th percentile was used as the cut-off score for DEBQ-C subscales. The dataset was randomly split into two parts (2:1). Receiver operating characteristic (ROC) analysis was conducted on two-thirds of the sample to identify the optimal cut-off values for the WREQ-C subscales, using the p80 scores from DEBQ-C subscales as the criterion variables. Internal validation was performed using the remaining one-third of the sample, with cross-tabulation assessing the sensitivity, specificity, and classification accuracy.

**Results:** A total of 1007 participants were included (mean (SD) age: 33 (13.7) years). ROC analysis identified optimal cut-off values for WREQ subscales as 2.50 for routine restraint (sensitivity = 0.691, specificity = 0.888), 2.83 for compensatory restraint (sensitivity = 0.772, specificity = 0.676), 2.13 for emotional eating (sensitivity = 0.864, specificity = 0.779), and 2.83 for external eating (sensitivity = 0.671, specificity = 0.780). The classification accuracy was 77.6% for routine restraint, 71.5% for compensatory restraint, 80.6% for emotional eating, and 73.4% for external eating.

**Conclusions:** This study identified and validated cut-off scores for WREQ-C subscales. Future research could conduct external validation to further assess the applicability of these scores in identifying individuals at risk of developing dysfunctional eating behaviors that contribute to obesity.

# The Role of Urban Park Characteristics and Physical Activity in Enhancing Subjective Well-Being: A Mediation Analysis

**Dr. Zhanjia Zhang<sup>1</sup>**, Ms. Xinyue Yao<sup>1</sup>

<sup>1</sup>Peking University, Beijing, China

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Urban parks and green spaces are essential components of urban planning, offering residents opportunities for recreation, exercise, and exposure to nature. Previous studies have established a link between urban park visits and subjective well-being. However, the underlying mechanisms connecting urban parks to subjective well-being remain poorly understood. This study aimed to examine the association between urban park characteristics and subjective well-being, with a focus on how within-park physical activity (PA) mediates this relationship.

**Methods:** Data were collected from 401 participants (51.9% female, mean age = 46.01 years) across four urban parks in Beijing. Perceived park characteristics (facilities, condition, access, aesthetics, safety, and management), subjective well-being, within-park PA (walking, moderate-intensity PA, and vigorous-intensity PA), and sociodemographics were measured using self-reported questionnaires. We used multilevel linear regression models to examine the direct associations between park characteristics and subjective well-being, and employed Markov Chain Monte Carlo (MCMC) methods for mediation analyses to determine whether physical activity intensity mediated this relationship, adjusting for sociodemographic variables.

**Results:** Our results indicated significant positive associations between certain perceived park characteristics, including park facilities, accessibility, and aesthetics, and subjective well-being. The mediation analysis revealed that park facilities were positively associated with vigorous-intensity PA, which in turn increased subjective well-being. Walking and moderate-intensity PA within the park were found to partially mediate the relationship between park accessibility and subjective well-being. Furthermore, the relationship between park aesthetics and subjective well-being was partially mediated by walking, suggesting that the aesthetic appeal of parks encourages walking, which in turn enhances subjective well-being.

**Conclusions:** This study highlights the importance of urban park characteristics in promoting physical activity and improving subjective well-being. Different intensities of PA mediate the relationships between various park characteristics and subjective well-being in distinct ways. These findings emphasize the need for urban planners and policymakers to prioritize park design elements that enhance accessibility, facilities, and aesthetics, fostering a range of physical activities to maximize well-being outcomes in urban populations.

# Characterizing Device-Measured Sleep and Health Research Using Compositional Data Analysis: A Systematic Review

**Dr. Christine St Laurent<sup>1</sup>**, Dr. Guilherme Moraes Balbim<sup>2</sup>, Dr. Denver Brown<sup>3</sup>, Dr. Chelsea Kracht<sup>4</sup>, Dr. Christopher Pfladderer<sup>5</sup>, Claire Groves<sup>6</sup>, Carah Porter<sup>3</sup>, Griffin Randolph<sup>7</sup>, Katrina Rodheim<sup>1</sup>, Dr. Sarah Burkart<sup>7</sup>

<sup>1</sup>University Of Massachusetts Amherst, Amherst, USA, <sup>2</sup>The University of British Columbia, Vancouver, Canada, <sup>3</sup>Kansas State University, Manhattan, USA, <sup>4</sup>University of Kansas Medical Center, Kansas City, USA, <sup>5</sup>University of Texas Health Science Center Houston, Austin, USA, <sup>6</sup>University of Texas at San Antonio, San Antonio, USA, <sup>7</sup>University of South Carolina, Columbia, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

Compositional data analysis (CoDA) is widely used to examine the relations between 24-hour movement behaviors (sedentary behavior, physical activity, and sleep) and health outcomes. However, recent reviews have identified notable sleep measurement and reporting gaps, which may hinder understanding of its contribution to health.

**Purpose:** To characterize device-measured sleep data measurement, processing, and reporting in studies using CoDA with 24-hour movement behaviors.

**Methods:** A systematic search was conducted in seven databases, along with supplemental strategies. Observational studies published since 2015 that employed CoDA approaches using isometric log-ratio transformations to examine the associations between compositions of 24-hour movement behaviors (with device-measured sleep) and health outcomes were included. Screening and extraction were completed by two independent reviewers, with a consensus by a third reviewer. Data extraction included items based on sleep actigraphy measurement, processing, and reporting practices recommended by the American Academy of Sleep Medicine. The National Institutes of Health Quality Assessment Tool for Observational Cohort and Cross-sectional Studies was used to measure study quality.

**Results/Findings:** All seventy-three articles reported cross-sectional studies and seven (9.5%) also included longitudinal analyses. As for measurement, most studies (95.6%) described device placement, yet few reported how non-wear time during sleep bouts was detected (12.3%). Most papers (75%) reported one to two methods to process and score sleep data (e.g., software/algorithm, visual inspection, light, manually, event marker, or other), with two studies (2.7%) not reporting processing information. Less than half specifically defined sleep variables (e.g., wake-time, 41.4%), valid sleep period requirements (45.2%), and whether sleep periods were excluded (20.8%). Some specifically discussed limitations relating to sleep considerations (41.1%). All studies were categorized as “fair” for study quality (range = 5 to 11, mean score 7.4 out of max score of 14).

**Conclusions:** This review identified key gaps in the measurement, processing, and reporting of device-measured sleep in studies using CoDA. Inconsistent protocols and reporting on sleep data processing highlight the need for standardized approaches and reporting practices. Future research should prioritize transparency and consistency to improve the validity and

comparability of findings on sleep's role as a compositional component of 24-hour movement behaviors.



## Empowering Adolescents Through Self-Tailored Health Strategies: A Participatory Exploration

**Mr. Timothy Houtman<sup>1</sup>**, Dr. Froukje Sleeswijk Visser<sup>1</sup>, Dr. Amy van Grieken<sup>2</sup>, Dr. Valentijn Visch<sup>1</sup>

<sup>1</sup>Delft University of Technology, Delft, Netherlands, <sup>2</sup>Erasmus Medical Centre, Rotterdam, Netherlands

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Self-tailoring enables health behavior interventions to be adapted through active engagement with the end-recipient, in contrast to system-tailoring, where initial characteristics (e.g., demographics) guide pre-determined pathways. A self-tailoring approach may be especially suited to adolescents, whose motivations and lifestyles change rapidly as they gain autonomy. This study explores self-tailoring as an intervention strategy, examining how adolescents craft self-motivational strategies by using a structured menu of strategy elements, allowing for choices aligned with personal preferences and needs.

**Methods:** We conducted two qualitative studies using participatory methods with Dutch adolescents aged 18–20. In Study 1, participants (N = 9) identified a personal health goal and documented their self-tailored strategies over two weeks. Data were collected through sensitizing booklets, strategy worksheets, motivational timelines, and group discussions. Thematic analysis identified patterns in strategy use. Building on Study 1, Study 2 introduced a strategy menu of 29 elements, categorized into six domains (space, time, symbols, action, social, mind). A separate cohort (N = 20) selected strategies from this menu to support a health goal, rating their feasibility, effectiveness, and longevity while indicating whether they were used before, during, or after the behavior.

**Results:** In Study 1, adolescents naturally used social support, progress tracking, and habit structuring but experienced fluctuating motivation, often declining due to external pressures such as exams. Follow-up sessions produced a “fresh start” effect, restoring motivation. In Study 2, most strategies were used before or during the behavior, with fewer post-behavior strategies (e.g., rewards). The most frequently chosen strategies were “making it enjoyable” (10 times), “removing persuasions” (9), and “time-blocking” (9). The variety in chosen strategies highlights the need for autonomy in behavior change interventions.

**Conclusions:** Self-tailoring offers a promising approach to adolescent health behavior change by promoting autonomy and alignment with personal motivations. Adolescents benefit from the flexibility to experiment with and refine strategies that fit their lifestyles. Integrating self-tailoring mechanisms into interventions may enhance long-term behavior change.

## Mental Health and Nutrition Label Engagement: Associations Between Stress, Depression, and Nutrition Facts Table Awareness and Use in a U.S. sample

**Ms. Indira Gutierrez Orozco<sup>1</sup>**, Dr. James Thrasher<sup>1,2</sup>, Dr. Rachel Davis<sup>1</sup>, Sultan Alsallum<sup>1</sup>, Dai Feng<sup>1</sup>, Dr. Alejandra Jauregui<sup>2</sup>, Christine White<sup>3</sup>, Dr. Rochelle Altman<sup>1</sup>, Dr. David Hammond<sup>3</sup>  
<sup>1</sup>University of South Carolina, Fayetteville, United States, <sup>2</sup>Instituto Nacional de Salud Pública, Cuernavaca, México, <sup>3</sup>University of Waterloo, Waterloo, Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

Nutrition facts tables (NFTs) provide accessible information to promote healthier food choices, yet little is known about whether mental health influences consumers' likelihood of noticing and using NFTs. Reports of stress and depression have increased in recent years, with the COVID-19 pandemic further exacerbating such concerns. Prior research found that people with depressive symptoms show greater awareness of, support for, and emotional reactivity to tobacco warning labels, suggesting that mental health may influence how people process health-related information. This study aimed to examine whether such a relationship exists in a combined sample of Mexican American (MA) and Non-Hispanic White (NHW) adults, which may inform future mental health-responsive nutrition policies and communication strategies. Survey data were obtained from the 2022 International Food Policy Study with NHW (n=2890) and MA (n=3509) adults in the U.S. Outcomes included NFT awareness (noticing NFTs "often/all the time" vs. less often) and NFT use ("often/all the time" vs. less often). Logistic regression models examined associations between these NFT outcomes and self-reported depression diagnosis and stress, adjusting for demographics, nutrition knowledge, and chronic disease. Overall, 76.3% of participants reported noticing NFTs often/all the time, and 45.1% reported using them often/all the time. Depression (OR=1.26, p=.009) and stress (OR=1.12, p=.004) were associated with higher NFT awareness, but neither factor was associated with NFT use. MAs had higher odds of NFT awareness than NHWs (OR=1.27, p=.01) but showed no difference in use. Nutrition knowledge was positively associated with NFT awareness and use. Participants who completed the survey in Spanish had lower odds of being aware of NFTs than those who completed the survey in English (OR=0.68, p=.003). These findings suggest that stress and depression may influence NFT engagement in complex ways, with stress and depression increasing awareness but not use. This pattern raises questions about how mental health influences nutrition-related decision-making. For example, people experiencing stress or depression may notice NFTs more due to a desire to improve well-being but struggle to act. Future research should explore how mental health impacts NFT use and whether mental health-informed interventions could improve engagement with nutrition labeling to support healthy dietary behaviors.

## ASSOCIATION BETWEEN CARDIOVASCULAR FITNESS LEVEL, ADIPOSITY, AND DIABETES STATUS AMONG PRIMARILY LATINO ADULTS

**Ms. Kiria Fraga<sup>1,2</sup>**, Ms. Bianca Vargas Tequida<sup>2</sup>, Dr. Humberto Parada<sup>1,2</sup>, Dr. David Strong<sup>3</sup>, Dr. Noe Crespo<sup>1,2</sup>

<sup>1</sup>San Diego State University, San Diego, USA, <sup>2</sup>Institute for Behavioral and Community Health, San Diego, USA, <sup>3</sup>University of San Diego California, San Diego, USA

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Obesity and cardiovascular fitness (CVF) are important risk factors for type 2 diabetes, disproportionately affecting Latinos. Additionally, fitness may be a strong and independent predictor of diabetes; however, this association has not been well-studied among Latino adults. The study purpose was to examine the relationship between CVF and adiposity on diabetes status among adult Latino adults.

**Methods:** This cross-sectional study used baseline data from the Athletes for Life program, a randomized trial to promote CVF and reduce the risk of cardiovascular disease. CVF was measured using a one-mile run/walk time (seconds) and relative VO2 max (mL/kg/min), estimated using a 3-minute step-test. Adiposity (% total and trunk fat) was measured via dual-energy x-ray absorptiometry (DXA). Glucose level (mg/dL) was measured with a fasting blood draw and analyzed as a continuous and binary variable (normal:<100 mg/dL and above normal:≥100 mg/dL). The associations between CVF, adiposity and glucose levels were estimated using robust linear regression (Betas and 95% CIs) and logistic regression (ORs and 95% CIs) models, adjusting for age and sex.

**Results:** Participants included 147 adults with a mean age of 38.41±7.10 years. Most (93.2%) were female and identified as Latino (95.9%). Mean duration of the mile run was 764.51±167.93 sec, mean relative estimated VO2 max was 42.14±4.42 mL/kg/min, and mean glucose level was 100.05±32.28 mg/dL. Relative VO2 max was not significantly associated with adiposity ( $\beta=-0.160$ ; 95%CI: -0.968-0.648) or glucose levels ( $\beta=-0.344$ ; 95%CI: -1.037-0.349) after adjustment. Greater mile-run time was positively associated with higher glucose levels ( $\beta=0.019$ ; 95%CI=0.002-0.036) and greater odds of diabetes (OR=1.005; 95%CI: 1.002-1.009) independent of adiposity, age, and sex.

**Conclusions:** CVF assessed by the mile run/walk, but not VO2 max was associated with glycemic control and diabetes status independent of adiposity among this sample of Latino adults. Future interventions are needed to understand the impact of promoting CVF versus weight loss on diabetes risk among Latinos.

# Testing Key Pathways of the Multi-Process Action Control (M-PAC) Framework: Factors Predicting Exercise Identity in People Living With and Beyond Cancer

Deema Khalaf<sup>1</sup>, Sarah O'Rourke<sup>1</sup>, Linda Trinh<sup>1</sup>, Dr. Hui Xiao<sup>1</sup>, Dr. Ryan E. Rhodes<sup>1</sup>

<sup>1</sup>University of Toronto, Toronto, Canada

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Background:** Physical inactivity is a prevalent and concerning issue among people living with and beyond cancer (LWBC). Exercise identity, a potential key determinant of exercise maintenance, has received limited attention in cancer survivorship research. According to the Multi-Process Action Control (M-PAC) framework, identity, along with habit, represents the apex reflexive system for sustained behavior. This study aims to test the application of the M-PAC framework in people LWBC to identify key correlates of exercise identity.

**Methods:** A cross-sectional survey was conducted among people LWBC, recruited globally via cancer organizations, social media, and research platforms. Participants completed validated self-reported measures assessing exercise (Godin Leisure-Time Exercise Questionnaire), reflective processes (instrumental/affective attitudes, perceived opportunity/capability), regulatory processes (goal-setting, planning), and reflexive processes (Exercise Identity Scale). Demographic and clinical data, including age, sex, body mass index (BMI), comorbidities, and cancer type/treatment, were collected. Structural Equation Modeling (SEM) was used to assess model fit and relationships between constructs. Regression analyses examined factors associated with exercise identity.

**Results:** SEM demonstrated good model fit (CFI = 0.979, RMSEA = 0.066, SRMR = 0.037). Reflective processes significantly predicted regulatory ( $\beta = 0.696$ ,  $p < 0.001$ ) and reflexive processes ( $\beta = 0.766$ ,  $p < 0.001$ ), while regulatory processes predicted reflexive outcomes ( $\beta = 0.362$ ,  $p < 0.001$ ). Higher exercise identity was associated with reflective ( $\beta = 0.293$ ,  $p < 0.001$ ), regulatory ( $\beta = 0.127$ ,  $p = 0.036$ ), and reflexive processes ( $\beta = 3.036$ ,  $p < 0.001$ ). Higher PA levels ( $\beta = 0.119$ ,  $p = 0.006$ ) and habit score ( $\beta = 0.317$ ,  $p < 0.001$ ) were also significant predictors. In contrast, higher BMI ( $\beta = -0.573$ ,  $p = 0.023$ ) and being married ( $\beta = -0.178$ ,  $p = 0.022$ ) were negatively associated. Prostate/testicular cancer survivors had higher exercise identity ( $\beta = 0.311$ ,  $p = 0.042$ ), while lung cancer survivors had lower identity ( $\beta = -0.540$ ,  $p = 0.023$ ) compared to breast cancer survivors.

**Conclusion:** This study supports the application of the M-PAC framework in people LWBC and identifies key determinants of sustained exercise. Findings provide a theoretical basis for intervention design, emphasizing identity formation as a target for long-term exercise adherence.

## Strengthening provision of nutrition education in community health support services: what do we need to know?

Kathryn Beck<sup>1</sup>, **Cherise Pendergrast**<sup>1</sup>, Pamela Von Hurst<sup>1</sup>, Professor Cathryn Conlon<sup>1</sup>, Bevan Erueti<sup>2</sup>

<sup>1</sup> School of Sport, Exercise and Nutrition, Massey University, , , <sup>2</sup>School of Health Sciences, Massey University, ,

**Coffee Break and Poster Session: P2: Cancer prevention and management | Mental Health and Wellbeing | Implementation and scalability | E- & mHealth | Other, June 13, 2025, 10:30 AM - 11:30 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Green Prescription (GRx) is a community-based service found throughout Aotearoa New Zealand with a 25+ year history of providing support predominantly for physical activity. Since its inception, GRx has incorporated other preventative health support and there is an expectation among clients that nutrition education and advice is provided. This qualitative study explored the perspectives of GRx clients and staff regarding the facilitators and challenges in providing nutrition education as part of the GRx service.

**Methods:** To understand the facilitators and challenges for this provision, semi-structured interviews were conducted to explore the perspectives of 19 clients and 15 staff engaged with 11 GRx service providers from throughout Aotearoa regarding experiences of nutrition education.

**Results:** Following thematic analysis, three themes were identified which encapsulated facilitators and challenges in providing nutrition advice and education in the Green Prescription service. The three themes are: 1). 'Engagement opens the door for change'; 2). 'Developing assets for action'; and 3). 'Doing the best with what we have'. Theme one captured the experiences of clients in their engagement with GRx services; as well as insights from staff about contributions to successful engagement and factors which impeded it. Theme two highlighted developing confidence through knowledge; the benefits of family, 'expert', and peer support; and the value placed on appropriate nutrition information. Finally, theme three identified an attitude of both clients and staff moving forward and creatively meeting challenges and setbacks to do with service provision, limited resources and the balance between ideals and reality.

**Conclusion:** Clients and staff identified provision of nutrition advice within GRx services is appreciated and important, but often fraught with challenges. Encouragement by others, sufficient resources and determination for change are some of the strengths expressed by participants. These contribute to the view that with prioritisation and appropriate support, enhancing nutrition advice provision within Green Prescription services is both needed and possible.

# ORAL PRESENTATIONS

## THE EFFECT OF GENETIC PROFILES ON PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOUR IN CHILDREN – The GECKO Drenthe Cohort

**Ms. Yeliz Eski<sup>1</sup>**, Ms. Lu Yang<sup>1</sup>, Prof. Dr. Harold Snieder<sup>1</sup>, Dr. Eva Corpeleijn<sup>1</sup>, Dr. Ilja Nolte<sup>1</sup>

<sup>1</sup>University Medical Center Groningen, Groningen, The Netherlands

**O.1.01: Building Foundations: Advancing Research in the Early Years, Hunua 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Increasing physical activity (PA) and reducing sedentary behaviour (SB) are important factors in promoting childhood well-being, but also have positive long-term effects on health. Individual differences in PA and SB are partly due to genetic factors. This study aims to investigate how much variance in PA and SB can be explained by polygenic risk scores (PRS) in young children.

**Methods:** We included 536 (52.6% males) children (mean age [SD]=5.65 [0.8]) from the GECKO Drenthe birth cohort. Hip-worn accelerometers (ActiGraph GT3X, wear time  $\geq 600$  min/day,  $\geq 3$  days) were used and generated four device-measured PA traits (time spent sedentary, or lightly, moderately or vigorously physically active). Additionally, questionnaire data on time spent playing outdoors and screen time were collected at 3-4 and 10-11 years of age and sports participation at 10-11 years. Summary statistics from five European genome-wide association studies for adulthood PA and SB outcomes were used to calculate ten PRSs using SBayesRC, which integrates functional annotation. Regression analyses were performed to examine associations between PA and SB levels and standardized PRSs, adjusted for age, sex, wearing time and seasons. Effect of the PRSs was measured by the change in  $R^2$  between models with and without PRS ( $\Delta R^2$ ).

**Results/findings:** We found several significant associations of PRSs with PA and SB outcomes in the expected direction. The strongest associations were observed of PRSs for moderate-to-vigorous PA (MVPA) and metabolic equivalent of task values with vigorous PA, showing higher PA for children with higher PRSs ( $\Delta R^2=2.1\%$  for both;  $p<0.001$ ). Children in the highest MVPA PRS decile were 2.3 times more active (MVPA $\geq 60$  mins/day) than children in the lowest PRS decile ( $P=0.045$ ). No associations were found for any PRS with outdoor play, screen time or sports participation.

**Conclusion:** Adult-based PRSs for PA and SB levels were also associated with device-measured PA in children. These results indicate that genetic predispositions for physical activity are not only present but also measurable early in life. This supports the potential for PRSs to contribute to early risk prediction models for physical inactivity and could help target prevention efforts of adverse health outcomes later in life.

## Pre-service early childhood teacher training to improve early childhood nutrition

**Dr. Alison Spence<sup>1</sup>**, Dr Llewellyn Wishart<sup>2</sup>, Dr Mandy Cooke<sup>2</sup>, Ms Naomi David<sup>3</sup>, Ms Irene Lichomets<sup>1</sup>, Dr Melissa Burton<sup>1</sup>, Dr Natalie Lander<sup>1</sup>, Dr Penelope Love<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), Deakin University, Geelong, Australia*, <sup>2</sup>*Deakin University, School of Education, Geelong, Australia*, <sup>3</sup>*National Indigenous Knowledges Education Research and Innovation (NIKERI) Institute, Deakin University, Geelong, Australia*

**O.1.01: Building Foundations: Advancing Research in the Early Years, Hunua 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Globally, children's diets don't align with recommendations despite early childhood being a critical lifstage. Children spend substantial time in early childhood education and care (ECEC), where ECEC teachers are responsible for mealtimes but have limited nutrition training, typically as workforce professional development rather than pre-service training. The aim of this project was to evaluate a novel intervention incorporating nutrition into the first-year curriculum of tertiary students training to become ECEC teachers.

**Methods:** Food/nutrition curriculum was purpose-designed, through nutrition and education-sector collaboration, to include information about child dietary guidelines, responsive feeding practices, ways to enjoy teaching and learning about food in the classroom, and two related assessment tasks. This curriculum was implemented in two units at one university in 2023 (118 students) and refined in 2024 (113 students). Mixed-methods evaluation included a post-semester Qualtrics survey and two focus groups in 2024. Survey and focus group questions were purpose-designed to assess students' perceptions of translating their university learnings to real world implementation. A pragmatic approach to focus group thematic analysis was applied.

**Results:** Focus group participants (n = 14) reported strong interest and confidence, and good motivation, for implementing their learning in practice, discussing both key knowledge and practical experiences they had gained. Of 35 survey respondents, nearly all (89-97%) thought they would use food related story books, food examples in maths/art/other subjects, a kitchen corner, cooking activities/recipes, gardening, and a centre policy, while 71% thought they would implement non-food rewards, in their work as a teacher. Anticipated challenges to the promotion of child nutrition within the ECEC workplace were prominent, particularly confidence to interact with parents and fellow staff, lack of time, and teachers unwilling to eat with children or eat the same food as children.

**Conclusions:** These tertiary students were highly engaged with the nutrition curriculum in their first-year ECEC studies, and had intentions to implement positive food/nutrition practices in their future work. Future research should assess intentions and confidence at course completion or in the workforce, generalisability to those who did not participate in the research, and opportunities for nutrition and education-sector collaboration beyond this tertiary setting.

## Physical activity, sedentary behaviour and recreational screen time in Australian Out of School Hours Care (OSHC): a cross-sectional study

**Dr. Ty Ferguson<sup>1</sup>**, Dr Jacinta Brinsley<sup>1</sup>, Dr Rachel Curtis<sup>1</sup>, Prof Luke Wolfenden<sup>2</sup>, A/Prof Hayley Christian<sup>3</sup>, A/Prof Nicole Nathan<sup>2</sup>, Prof Anthony Okely<sup>4</sup>, Prof Svetlana Bogomolova<sup>5</sup>, Prof Lucy Lewis<sup>5</sup>, A/Prof Dylan Cliff<sup>4</sup>, Prof Adrian Esterman<sup>1</sup>, A/Prof Rachel Milte<sup>5</sup>, Prof Richard Rosenkranz<sup>6</sup>, Dr Rosa Virgara<sup>1</sup>, Mandy Richardson<sup>7</sup>, Kylie Brannelly<sup>8</sup>, Dr Rebecca Stanley<sup>4</sup>, Dr Natasha Schranz<sup>7</sup>, Perry Campbell<sup>9</sup>, A/Prof Glenn Weaver<sup>10</sup>, Mrs Catherine Simpson<sup>1</sup>, Prof Carol Maher<sup>1</sup>

<sup>1</sup>University of South Australia, Adelaide, Australia, <sup>2</sup>University of Newcastle, Newcastle, Australia,

<sup>3</sup>University of Western Australia, Perth, Australia, <sup>4</sup>University of Wollongong, Wollongong, Australia,

<sup>5</sup>Flinders University, Bedford Park, Australia, <sup>6</sup>University of Nevada, Las Vegas, United States,

<sup>7</sup>Department for Education, Adelaide, Australia, <sup>8</sup>Queensland Children's Activities Network, Woodend,

Australia, <sup>9</sup>Australian Children's Education and Care Quality Authority, Darlinghurst, Australia, <sup>10</sup>University of South Carolina, Columbia, United States

**O.1.01: Building Foundations: Advancing Research in the Early Years, Hunua 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** This study describes current physical activity and screen time scheduling in Australian Out of School Hours Care (OSHC) services according to national guidelines; the proportion of time children spend in physical activity, sedentary behaviour and recreational screen use; and the prevalence of physical activity enabling behaviours by OSHC staff.

**Methods:** A cross-sectional analysis of baseline data from a randomised controlled trial was conducted. Services were recruited from metropolitan and regional South Australia (SA), New South Wales (NSW) and Western Australia (WA). OSHC coordinators completed baseline surveys, capturing service characteristics and activity scheduling. Children and staff behaviours were recorded during OSHC sessions using the System for Observing Play and Leisure Activity in Youth and System for Observing Staff Promotion of Activity and Nutrition tools respectively. Data were analysed descriptively using frequencies, percentages, medians and interquartile ranges (IQRs).

**Results/findings:** 197 OSHC services were recruited (SA= 95, NSW= 24, WA= 78). Nationally, 36% of services met all physical activity and screen time guidelines (SA= 21%, NSW= 58%, WA= 47%). More services met physical activity (68%) than screen time guidelines (57%), with substantial variation by state (Physical activity: SA= 68%, NSW= 83%, WA= 62%. Screen time: SA= 33%, NSW= 71%, WA= 81%). Children were active for a larger portion of after school care sessions compared with before school (median light physical activity (LPA) = 28.9% {IQR = 9.1%} versus 26.3% {IQR= 13.3%} and vigorous physical activity (VPA) = 12.2% {IQR= 9.7%} versus 7.3% {IQR= 9.5%}). Conversely, sedentary behaviour was lower during after school care compared with before school (median = 53.1% {IQR= 16.4%} versus 59.5% {IQR= 18.5%}). Screen time was minimal during both sessions (median after school = 1.6% {IQR= 6.5%} and before school = 0% {IQR= 5.3%}). A small portion of sessions were dedicated to positive physical activity behaviours by staff (median after school = 8.2% {IQR= 16.0%} and before school = 3.3% {IQR= 15.4%}).

Conclusions: Currently, there is a clear guidelines implementation gap coupled with relatively low engagement in and promotion of physical activity by children and staff respectively. State-level variations suggest different jurisdictions may have different implementation barrier or enablers.

## Schools as a potential setting for addressing food insecurity in Australia: The Tasmanian School Lunch Project

Dr Kim Jose<sup>1</sup>, Dr Kylie Smith<sup>1</sup>, Monique Reardon<sup>2</sup>, Kate DePaoli<sup>2</sup>, Claire Galloway<sup>2</sup>, Julie Dunbabin<sup>3</sup>, Dr Laura Sutton<sup>1</sup>, Dr Brooklyn Fraser<sup>1</sup>, Nico Masila<sup>1</sup>, Dr Fiona Proudfoot<sup>1</sup>, **Dr. Verity Cleland<sup>1</sup>**

<sup>1</sup>University of Tasmania, Hobart, Australia, <sup>2</sup>Tasmanian Government Department of Health, Hobart, Australia, <sup>3</sup>School Food Matters, Hobart, Australia

**O.1.01: Building Foundations: Advancing Research in the Early Years, Hunua 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** To address food insecurity among families and children in Tasmania (an Australian state), the Tasmanian government committed \$1.5 million in 2021 to implement the School Lunch Project (SLP). During 2022-23 the SLP provided over 270,000 nutritious cooked lunches to students from Kinder (age 4-5 years) to Grade 10 (age 15-16 years) across 30 schools. This is the first government funded school lunch project in Australia - most students typically bring food from home or buy it from a canteen. This study considers SLP participants' perspectives on the projects' potential to build food security.

**Methods:** We used a developmental evaluation approach with mixed methods to collect data in twelve evaluation schools (full data collection) and eighteen non-evaluation schools (limited data collection) in 2022-23. Data included surveys with parents (N=176) and school staff (N=123) prior to SLP implementation; parent interviews/discussion groups with 39 parents, 97 students, 59 school staff, and 18 implementation team staff following implementation. Survey data were analysed descriptively, and transcripts of interviews/discussion groups were analysed thematically.

**Results/Findings:** Schools had an Index of Community Socio-Educational Advantage less than the national median of 1000 (Range = 790 – 956; more students experiencing disadvantage). The most reported reasons for SLP participation by school staff were ensuring all children have healthy food to eat (88.6%) and ensuring all children have enough to eat (82.1%). Interviews with school staff revealed that addressing food insecurity was a key motivator; “there is a certain element of poverty amongst our students, and it’s really just being able to make sure, for our students, we know they’re getting one really good quality meal”. Some parents and students were aware that for some students, the SLP provided ‘their only meal’. The implementation teams’ vision was to feed all children well at school and build food security.

**Conclusions:** Food insecurity was a concern among the implementation team, school staff, parents and students. School staff were motivated to participate in the SLP to improve students’ access to food. As cost-of-living pressures rise across Australia and internationally, schools may play an important role in addressing food insecurity for Australian families.

# Effects of a School- and Home-based Active Play Intervention Program on Physical Fitness and Fundamental Movement Skills in Preschool Children

**Miss Jintao Hong<sup>1</sup>**, Miss Jingjing Wang<sup>1</sup>, Mr. Sitong Chen<sup>2</sup>, Miss Jie Feng<sup>3</sup>

<sup>1</sup>Shanghai Research Institute of Sports Science (Shanghai Anti-doping Agency), Shanghai, China,

<sup>2</sup>Victoria University, Melbourne, Australia, <sup>3</sup>The Chinese University of Hong Kong, Hongkong, China

**O.1.01: Building Foundations: Advancing Research in the Early Years, Hunua 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Early childhood is a critical period for establishing physical activity habits and promoting lifelong health. The data from the Fifth National Physical Fitness Surveillance revealed a decline in health-related physical fitness among Chinese preschool children aged 3 to 6 years, prompting a widespread demand for effective physical activity intervention strategies for this age group. The aim of this study was to evaluate the impacts of an integrated school- and home-based active play intervention program on the development of physical fitness (PF) and fundamental movement skills (FMS) in 4-6 year-old preschool children.

**Methods:** A total of 56 children ( $5.18 \pm 0.27$  years, 20 boys) participated in the study, which was divided into an experimental group (EG,  $n=26$ , 10 boys) and a control group (CG,  $n=30$ , 10 boys). The EG participated in an 8-week intervention, consisting of planned sports games (3 times/week, 30 minutes/time) taught by coach in kindergarten, and different parent-child games at home (5 times/week). No intervention was conducted in the CG. PF were assessed using the components of China's Fifth National Physical Fitness Surveillance for early childhood (3-6 years old). FMS were evaluated using the Children's Fundamental Movement Skill Test (CFMST). Measurements were conducted at two time points: pre-intervention (T0) and post-intervention (T1). Descriptive statistics and independent samples t-tests were conducted using SPSS 26.0.

**Results:** In the EG, fourteen indicators showed significant changes among sixteen measured indicators. In terms of PF levels, all body composition indicators have significantly improved ( $p < 0.05$ ), and the performances of grip strength ( $T0=5.4 \pm 2.05$ ,  $T1=6.1 \pm 1.52$ ,  $p < 0.05$ ), standing long jump ( $T0=73 \pm 19.3$ ,  $T1=83 \pm 16.3$ ,  $p < 0.05$ ), and sit-and-reach ( $T0=7.6 \pm 6.10$ ,  $T1=9.9 \pm 6.36$ ,  $p < 0.001$ ) also significantly enhanced. All locomotor skills (both  $p < 0.001$ ), manipulative skills (both  $p < 0.001$ ), and stability skills (both  $p < 0.01$ ) improved after the intervention. In the CG, performances of nine indicators were significantly changed ( $p < 0.05$ ). However, the performance of manipulative skill declined ( $T0=24.13 \pm 7.442$ ,  $T1=41.80 \pm 13.322$ ,  $p < 0.001$ ).

**Conclusions:** The eight-week active play intervention in school and home settings was effective in improving PF and FMS in preschool children. Dual-setting interventions incorporated into children's daily routines may help to support the development of essential physical fitness and motor skills.

## Promoting eating regulation in preschools: Results from a pilot Implementation-Effectiveness trial of the Appetite Toolbox in Singapore.

**Dr. Keri Mccrickerd<sup>1,2</sup>**, Dr Kristy Lee<sup>1</sup>, Nazihah Binte Mohamad Pauzi<sup>1</sup>, Stephanie Leo<sup>1</sup>, Dr Lucas Shen<sup>1,2</sup>, Kaylia Tan<sup>1</sup>

<sup>1</sup>Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore, <sup>2</sup>Institute for Human Development and Potential, Singapore, Singapore

**O.1.01: Building Foundations: Advancing Research in the Early Years, Hunua 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Children's eating behaviours are shaped by their caregiving environments. This presentation describes findings from a pilot trial of a universal Educator-led intervention – the Appetite Toolbox (ATB) – designed to promote eating regulation skills in preschool childcare.

**Methods:** A cluster-controlled pilot implementation-effectiveness trial was conducted with Educators and 3–6-year-old children across six childcare centers. Educators delivered the ATB to >300 children in 18 classrooms over six weeks, either as part of an intervention or waitlist control group. Effectiveness outcomes included Educator's self-efficacy, children's appetite awareness and observed food intake at lunch (kcal and grams) pre- and post-ATB. Implementation outcomes included Educator-reported acceptability, appropriateness and feasibility of the ATB captured pre- and post-delivery using established scales. Fidelity was estimated through log-books and in-class observations, and implementation determinants explored in focus group discussions (FGDs) guided by the Consolidated Framework for Implementation Research (CFIR).

**Findings:** Twenty Educators (intervention n=11, control n=9) and 209 children (intervention n=96, control n=113; 56% boys) completed the measures. Educators identified as female, were aged 22-60 years with 2 to > 10 years teaching experience. Perceived knowledge, skills, and resources to teach eating regulation skill was low prior to introducing the ATB, but significantly increased post-training, and remained high after ATB delivery. Post-intervention, Educators were more likely to ask children about their feelings of hunger and fullness before and after mealtimes, and the youngest children demonstrated largest improvements in their ability to use a rating scale to communicate changes in hunger/fullness, relative to control. There was no significant impact of the ATB on children's meal-size. All Educators rated the ATB as acceptable, appropriate, and feasible in their context, although fidelity varied across classrooms. The FGDs revealed the ATB was viewed as high quality, adaptable, and not too complex, while a perceived need, prioritisation from leadership, and alignment to curriculum and teaching values motivated some Educators to overcome barriers to delivery, including time and space constraints.

**Conclusions:** Initial effectiveness, acceptability and appropriateness of the Appetite Toolbox supports further implementation and evaluation efforts in Singapore's early childhood sector, which will be improved through enhanced understanding of implementation barriers and facilitators.

# Scalable Physical Activity Intervention for Youth with Disability: The Burn 2 Learn Adapted Cluster Randomized Clinical Trial

**Prof. David Lubans**<sup>1,2,3</sup>, Prof Nora Shields<sup>4</sup>, A/Prof Narelle Eather<sup>1,3</sup>, Dr Jordan Smith<sup>1,3</sup>, Dr Michael Noetel<sup>5</sup>, Prof Charles Hillman<sup>6,7</sup>, Prof Chris Lonsdale<sup>8</sup>, A/Prof Chris Oldmeadow<sup>3,9</sup>, Dr Ashleigh Stuart<sup>3,9</sup>, Dr Sarah Kennedy<sup>10</sup>, Mr James Boyer<sup>11</sup>, Mr Pierre Comis<sup>12</sup>, Dr Laura Roche<sup>1,3</sup>, Dr Taren Sanders<sup>8</sup>, Ms Tara Finn<sup>1</sup>, Dr Angus Leahy<sup>1,3</sup>

<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>University of Jyväskylä, Jyväskylä, Finland, <sup>3</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>4</sup>Department of Physiotherapy, Podiatry and Prosthetics and Orthotics, La Trobe University, Melbourne, Australia, <sup>5</sup>School of Psychology, University of Queensland, Brisbane, Australia, <sup>6</sup>Department of Physical Therapy, Movement and Rehabilitation Sciences, Northeastern University, Boston, United States of America, <sup>7</sup>Department of Psychology, Northeastern University, Boston, United States of America, <sup>8</sup>Institute for Positive Psychology and Education, Faculty of Health Sciences, Australian Catholic University, North Sydney, Australia, <sup>9</sup>School of Medicine and Public Health, College of Health, Medicine and Wellbeing, University of Newcastle, Callaghan, Australia, <sup>10</sup>School of Health Sciences, Translational Health Research Institute, Western Sydney University, Darug Country, Australia, <sup>11</sup>New South Wales Department of Education, Sydney, Australia, <sup>12</sup>Special Olympics Australia, Concord West, Australia


**O.1.02: Implementation and Scalability in Schools, Hunua 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** E. Implementation and scalability


**Purpose:** Youth with disability are less physically active and more likely to have co-occurring chronic health conditions than those without disability. Schools are ideal settings to address physical inactivity, but youth with disability have been neglected in school-based health promotion efforts. The aim of our study was to assess the effectiveness of a scalable school-based physical activity intervention for youth with disability.

**Methods:** We conducted a cluster randomized controlled trial in 28 secondary schools. The study was conducted across two waves in 2022 and 2023. Trained research assistants completed assessments at baseline, 6- and 9-months. Study participants were older adolescents (aged 15 to 19 years) with any type of diagnosed disability (N = 255) from secondary schools in New South Wales, Australia. The primary outcome was functional capacity assessed using the 6-minute walk test. Secondary outcomes were muscular fitness, body mass index, physical activity (accelerometers), resistance training motor competence, motivation for physical activity, high-intensity interval training self-efficacy, quality of life, and externalizing behaviors. We designed a scalable high-intensity activity break intervention that involved a combination of foundational resistance (e.g., push-ups, body weights squats) and aerobic exercises (e.g., shuttle runs), and sport skills (e.g., catching, dribbling). Special education teachers were provided with training, resources, and support to facilitate the delivery of 2-3 activity breaks per week.

**Results:** Of the 255 participants (26.7% girls, mean [SD] age, 15.7 [1.0] years) from 28 schools, 249 provided baseline data for the primary outcome. At 6-months, the adjusted difference between group over time was 20.3 meters (95% CI, 3.1 to 37.6 meters). After 9-months, the difference was 17.8 meters (95% CI, -0.3 to 36.0 meters). The intervention had a small effect on muscular fitness, motor competence, and high-intensity interval training self-efficacy. No effects were observed for the other outcomes.



Conclusions: Physical activity breaks delivered by special education teachers improved functional capacity and a range of secondary outcomes in youth with disability. Activity breaks need to be longer, more frequent, or more intense to achieve clinically important health effects. Trial registration: Australian New Zealand Clinical Trials Registry Number: ACTRN12621000884808.



# Spillover Effects from a School-based Physical Activity Leadership Program: The Learning to Lead Cluster Randomized Controlled Trial

Prof. David Lubans<sup>1,2</sup>, Prof Mark Beauchamp<sup>4</sup>, Prof. Nicole Nathan<sup>1,2,5</sup>, Dr. Jordan Smith<sup>1,2</sup>, Dr. Angus Leahy<sup>1,2</sup>, Mr Ran Bao<sup>1,2</sup>, Dr. Sarah Kennedy<sup>6</sup>, Mr James Boyer<sup>7</sup>, Dr Thierno Diallo<sup>8</sup>, Mr. Sam Beacroft, **Dr Levi Wade**<sup>1,2</sup>

<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>3</sup>University of Jyväskylä, Jyväskylä, Finland, <sup>4</sup>School of Kinesiology, University of British Columbia, Vancouver, Canada, <sup>5</sup>Hunter New England Population Health, Wallsend, Australia, <sup>6</sup>Translational Health Research Institute, Western Sydney University, Kingswood, Australia, <sup>7</sup>New South Wales Department of Education, Sydney, Australia, <sup>8</sup>School of Social Sciences, Western Sydney University, Sydney, Australia

**O.1.02: Implementation and Scalability in Schools, Hunua 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Leadership is a valuable skill that can be taught in schools, offering benefits both within the classroom and in broader life experiences. The aim of this study was to evaluate the effects of a peer-led physical activity leadership program on student leaders and their younger peers.

**Methods:** We conducted a cluster randomized controlled trial in 20 elementary schools, involving 1,898 students, to assess the impact of the Learning to Lead (L2L) program. The program was implemented in three phases. Phase 1: School champions (teachers) participated in a full-day professional learning workshop. Phase 2: The school champions delivered leadership training to peer leaders (aged 10 to 12 years). Phase 3: Peer leaders delivered a fundamental movement skill program to their younger peers (aged 8 to 10 years). Outcomes among peer leaders included teacher-rated leadership effectiveness (primary outcome), leadership self-efficacy, well-being, and classroom time-on-task. Peers' outcomes included school-based physical activity levels (measured by accelerometers), object control motor competence (TGMD-3), perceived motor competence, cardiorespiratory fitness (multi-stage fitness test), and muscular power (standing long jump).

**Results:** We observed significant group-by-time effects for peer leaders' leadership effectiveness, well-being, and classroom time-on-task. Among peers, improvements were noted in perceived motor competence, school-based physical activity, and cardiorespiratory fitness. However, no significant improvements were found in peers' actual motor competence or muscular power.

**Conclusions:** Our findings highlight the spillover effects of the Learning to Lead physical activity leadership program. In addition to enhancing students' leadership skills, the program positively impacted well-being and classroom engagement. As schools increasingly seek innovative approaches to student development, programs like Learning to Lead offer a promising model that effectively integrates leadership training with physical activity. Trial registration number: ACTRN12621000376842.

## Investigating student perspectives of stigma related to Universal School Meals in a large, low-income school district; Implications for implementation strategy development

**Dr. Gabriella McLoughlin<sup>1</sup>**, Ms. Molly Kerstetter<sup>1</sup>, Ms. Yerusalem Yohannes<sup>1</sup>, Ms Angel Smith<sup>1</sup>, Ms Divya Kulkarni<sup>1</sup>, Ms Garima Adhikari<sup>1</sup>, Prof Shiriki Kumanyika<sup>2</sup>, Prof. Ross Brownson<sup>3,4</sup>, Prof Jennifer Fisher<sup>1</sup>

<sup>1</sup>Temple University College of Public Health, Philadelphia, USA, <sup>2</sup>Perelman School of Medicine, University of Pennsylvania, Philadelphia, USA, <sup>3</sup>Siteman Cancer Center, Washington University School of Medicine, St. Louis, USA, <sup>4</sup>Prevention Research Center, Brown School at Washington University in St. Louis, St. Louis, USA

**O.1.02: Implementation and Scalability in Schools, Hunua 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Addressing inequities in food and nutrition insecurity among school-aged children is a global public health priority, however examples of engaging them in policy development and implementation are lacking. Universal School Meals (USM) aims to combat food and nutrition insecurity, yet barriers to participation persist, and lack of student input in addressing challenges hinders public health impact. The aims of this study were to 1) Explore students' perceptions of stigma and barriers to participating in USM within a low-income school district and 2) Identify potential implementation strategies for addressing challenges.

**Methods:** This study is part of a larger implementation mapping project among 8 schools within the School District of Philadelphia. We utilized validated survey instruments and interviewed students to assess perceptions of USM and stigma, grounded in the Consolidated Framework for Implementation Research, the Getting to Equity Framework (GTE), and the Health Equity Measurement Framework. We observed at least 2 breakfast and lunch periods per school. Survey and observation data were analyzed descriptively; interview data were analyzed deductively using MAXQDA software. Data were mapped onto the GTE framework to facilitate development of implementation strategies. Qualitative rigor was established using an audit trail, peer debriefing, and triangulation.

**Results:** From 8 schools, 55 students participated - in middle (ages 11-14; 65%) and high school (ages 14-18; 35%) grades: 44% identified as Black, 27% as Hispanic, 12% as White, 6% as Asian, 2% as Middle Eastern, and 2% another identity (6%). Three themes arose from the data regarding stigma and culture of school meals: 1) The "freebie" – students feeling embarrassed, 2) Relationship between USM stigma and bullying, and 3) Lack of cultural inclusivity in menus. Results were applied to potential implementation strategies grounded in the GTE which include improving food quality/choices, amplifying student voices, addressing stigma and discrimination/bullying, and improving the school food environment.

**Conclusions:** This may be the first study to prioritize student perspectives within an implementation mapping process and marks a critical step to target inequities in USM implementation. Findings are shaping co-creation of implementation strategies to be tested in a hybrid implementation-effectiveness trial to improve the impact of USM.

## Strategies for enhancing the implementation of school-based policies or practices targeting diet, physical activity, obesity, tobacco or alcohol use.

**Mr. Daniel Chun Wei Lee**<sup>1,2,3,4</sup>, Dr. Kate O'Brien<sup>1,2,3,4</sup>, Dr. Sam McCrabb<sup>1,2,3,4</sup>, Dr. Courtney Barnes<sup>1,2</sup>, Associate Professor Flora Tzelepis<sup>3,4</sup>, Associate Professor Serene Yoong<sup>1,2,5</sup>, Dr. Kate Bartlem<sup>1,4,6</sup>, Professor Luke Wolfenden<sup>1,2,3,4</sup>, Dr. Rebecca Hodder<sup>1,2,3,4</sup>

<sup>1</sup>Hunter New England Population Health, Hunter New England Local Health District, Newcastle, Australia, <sup>2</sup>National Centre of Implementation Science, Callaghan, Australia, <sup>3</sup>School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, <sup>4</sup>Hunter Medical Research Institute Population Health Program, Newcastle, Australia, <sup>5</sup>Global Centre for Preventive Health and Nutrition (GLOBE), Deakin University, Melbourne, Australia, <sup>6</sup>School of Psychological Sciences, University of Newcastle, Callaghan, Australia

### O.1.02: Implementation and Scalability in Schools, Hunua 2, June 12, 2025, 12:00 PM - 1:15 PM

#### **SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** School-based interventions are effective in improving child health behaviours but are frequently not implemented at scale due to various implementation barriers. The purpose of this review was to evaluate the effectiveness, adverse effects, and cost-effectiveness of strategies to improve implementation of school-based interventions, addressing student diet, physical activity, obesity, tobacco or alcohol use.

**Methods:** An update of an existing Cochrane systematic review was conducted, with extensive search methods used (latest search in June 2023). Eligible trials were randomised controlled trials (RCTs) conducted in school settings (including primary, middle and high schools) where the age of students was typically between five and 18 years, with a parallel control group testing a strategy to improve the implementation of evidence-based interventions within schools aimed at improving student health behaviours. A meta-analysis was conducted to determine the effectiveness of implementation strategies in improving implementation.

**Results:** Thirty-nine trials were included in this update (14 new trials; nine RCTs, 30 cluster-RCTs). Most trials tested strategies to implement healthy eating practices (n=12) and physical activity (n=17). All trials used multiple strategies, the most common being educational materials, educational meetings, and education outreach visits, or academic detailing. Pooled analyses found, relative to a control, the use of implementation strategies probably results in a large increase in the implementation of interventions in schools (SMD 0.95, 95% CI 0.71, 1.19; I<sup>2</sup>=78%; 30 trials; 4912 participants; moderate-certainty-evidence). Compared to a control, no adverse effects of interventions were identified in the 11 trials that reported assessing them (1595 participants; moderate-certainty-evidence). Nine trials compared costs between groups with and without an implementation strategy and the results were mixed (2136 participants; low-certainty-evidence).

**Conclusion:** The review found the use of implementation strategies probably results in large increases in implementation of school-based interventions targeting diet, physical activity, obesity, tobacco or alcohol use. While the effectiveness of individual implementation strategies was unable to be determined, such examination will likely be possible in future updates as data from new trials can be synthesised. This will support policymakers advance evidence-based

interventions, with specific implementation strategies that promote scale-up. The review will be maintained as a living systematic review.

# Building Lasting Momentum: A Protocol for a cluster randomised controlled trial to assess the effectiveness of support strategies for sustaining the delivery of a Physical Activity Program in Secondary Schools.

**Dr. Alyce Barnes**<sup>1,2,3,4</sup>, Dr Alix Hall<sup>1,2,3,4</sup>, Dr Alison Zucca<sup>1,2,3,4</sup>, Associate Professor Rachel Sutherland<sup>1,2,3,4</sup>, Mr Edward Riley-Gibson<sup>1,2,3,4</sup>, Ms Jessica Wrigley<sup>1</sup>, Dr Nicole McCarthy<sup>1,3</sup>, Ms Jessica Potts<sup>1,2</sup>, Associate Professor Nicole Nathan<sup>1,2,3,4</sup>

<sup>1</sup>Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>2</sup>School of Medicine and Public Health, College of Health, Medicine and Wellbeing, University of Newcastle, Callaghan, Australia, <sup>3</sup>National Centre of Implementation Science, Wallsend, Australia, <sup>4</sup>Hunter Medical Research Institute, New Lambton Heights, Australia

**O.1.02: Implementation and Scalability in Schools, Hunua 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Despite the well-established benefits of physical activity (PA), globally, 81% of adolescents do not meet recommended activity levels. While implementation of effective evidence-based school PA programs, such as Physical Activity for Everyone (PA4E1), improves student activity levels and prevents unhealthy weight gain, long term sustainment of such programs is a significant challenge. Evidence has shown that only around 20% of health programs are sustained following the withdrawal of initial implementation support, and that failure to sustain effective programs often results in the prevalence of health issues reverting to pre-intervention levels or worse. This study will assess the effectiveness of a package of support strategies on sustainment of the PA4E1 program in secondary schools at baseline to 12- and 24-month follow-up.

**Methods:** A cluster randomised controlled trial will be conducted across approximately 40 NSW secondary schools. Schools successfully implementing will be randomly allocated to a sustainment support intervention, or usual care. A series of intervention support strategies are being systematically developed, guided by a formative evaluation and frameworks for sustainment and behavior change, to address program-specific determinants. The process used to develop support strategies will also be presented. Primary outcome data, measured by an online principal and school champion survey, will be collected at 12- and 24-months after active implementation support is ceased. Analyses will be performed using an intention to treat framework. Mixed models will be used to assess intervention effects on the primary outcome at both follow-up periods.

**Results/findings:** The protocol will be registered with the Australian New Zealand Clinical Trials Registry and submitted for publication as a protocol paper.

**Conclusion:** Sustaining effective public health interventions is one of the greatest challenges of our time. This study will be among the first cluster randomised controlled trials to investigate the effects of a multi-strategy intervention designed to support secondary schools to sustain their delivery of an effective evidence-based physical activity program. By identifying how to sustain school-based public health programs effectively and cost effectively, this research can be used to improve adolescent health, enhance well-being, and lower long-term chronic disease risk.

## Implementation of national school food policy in English non-mainstream schools

**Dr. Marie Murphy<sup>1</sup>**, Dr Iain Brownlee<sup>2</sup>, Dr Jessica Tanner<sup>1</sup>, Estera Sevel<sup>1</sup>, Dr Emily Round<sup>2</sup>, Dr Samantha Friedman<sup>3</sup>, Professor Greta Defeyter<sup>2</sup>, Prof. Miranda Pallan<sup>1</sup>

<sup>1</sup>University of Birmingham, Birmingham, United Kingdom, <sup>2</sup>Northumbria University, Newcastle, United Kingdom, <sup>3</sup>The University of Edinburgh, Edinburgh, United Kingdom

**O.1.02: Implementation and Scalability in Schools, Hunua 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** School food standards (SFS) in England are in place to promote healthy eating in school pupils. Pupils attending non-mainstream schools (e.g. special schools and alternative provision) have a range of physical, cognitive, emotional, social, behavioural and mental health conditions, some of which impact upon dietary and eating behaviours. In addition, non-mainstream schools typically have a high proportion of children eligible for Free School Meals compared to mainstream schools, so school food may make an important contribution to daily dietary intake in this group. We aimed to evaluate levels of compliance with national SFS in non-mainstream state-funded schools. Evaluations in mainstream schools indicate incomplete compliance, but there have been no previous evaluations of implementation in non-mainstream settings.

**Methods:** In this cross-sectional study, we aimed to recruit eight non-mainstream schools across two regions of England (West Midlands and North East) between September and December 2024. Food provision data were collected through menu review and mealtime observation. Compliance with SFS was assessed independently by two researchers. Level of overall compliance was calculated as mean percentage compliance. Standards were grouped according to whether they aimed to 1) increase dietary variety or 2) restrict the provision of high fat, salt and sugar (HFSS) foods/drinks.

**Results/findings:** To date, eight schools have been recruited and food provision data collected from seven, with data from the remaining school to be collected in Dec 2024. Preliminary assessment from these schools indicates incomplete compliance with SFS. Standards restricting HFSS foods/drinks were particularly problematic. Planned menus showed higher compliance than food provision observed by researchers. Full results will be available by January 2025.

**Conclusions:** Like mainstream settings, non-mainstream schools do not fully comply with the national SFS. Some non-compliance related to schools taking a flexible/adaptive approach to provision to meet the specific dietary and feeding needs of individual pupils. This study highlights the additional challenges that non-mainstream schools face in implementing national SFS due to the complex needs of their pupils. Qualitative research on challenges to implementation is required. There is a need for guidance and resources that specifically consider non-mainstream school contexts to influence pupils' dietary intake more positively.

## Performance evaluation of predicting children's sleep via long short term memory (LSTM) models.

Dr. Robert Weaver<sup>1</sup>, Hongpeng Yang<sup>1</sup>, Srihari Nelakuditi<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Rahul Ghosal<sup>1</sup>, Olivia Finnegan<sup>1</sup>, Zifei Zhong<sup>1</sup>, James White III<sup>1</sup>, Hannah Parker<sup>1</sup>, Dr. Sarah Burkart<sup>1</sup>, Dr. Michael Beets<sup>1</sup>, M.D. David Brown<sup>1</sup>, Russell Pate<sup>1</sup>, Dr. Massimiliano de Zambotti, Gregory Welk, Yuan Wang<sup>1</sup>, Elizabeth Adams<sup>1</sup>, Xuanxuan Zhu<sup>1</sup>, Nicholas Niako<sup>1</sup>, Griffin Randolph<sup>1</sup>  
<sup>1</sup>University of South Carolina, Columbia, USA

**O.1.03: From Sensors to Insights: Cutting-Edge Tools in Children's Health Research, Hunua 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Children's free-living sleep is commonly predicted via accelerometry. However, traditional methods for predicting sleep from accelerometry suffer from low specificity (i.e., the ability to predict wake, values typically <70) and cannot detect sleep stages. Long short-term memory (LSTM) is a machine learning algorithm that may address these deficiencies because it assumes that data has dependencies over time (i.e., the current prediction depends on what occurred previously and what follows). This is particularly applicable for sleep because it is phasic (i.e., composed of different phases) and ordered (i.e., N1 comes before N2 and N3 comes before REM). This study evaluated agreement of LSTM sleep estimates from raw accelerometry data with polysomnography (PSG).

**Methods:** A total of 141 children (5-12yrs, 52% male, 46% Black 35% White) participated in an overnight polysomnography in a sleep laboratory. Participants were referred by their primary care physician because of suspected sleep disruptions. Children wore a ActiGraph GT9X accelerometer on their non-dominant wrist during the polysomnogram. LSTM estimated sleep vs. wake and sleep stage (wake, not-REM, REM) using raw accelerometry data for each 30-second epoch. Logistic regression was also used as a benchmark for performance with which to compare the LSTM results. A 10-fold cross validation technique was employed and confusion matrices were constructed and F1 score, sensitivity, and specificity were calculated to assess agreement of research-grade and consumer wearables with the criterion polysomnography.

**Results/findings:** For sleep vs. wake classification LSTM outperformed logistic regression with an F1 score of 94.8 vs. 88.7, sensitivity of 94.4 vs. 87.4, and specificity of 89.4 vs. 83.7. For sleep staging again LSTM outperformed logistic regression with an F1 score of 83.8 vs. 73.7, sensitivity of 83.1 vs. 74.8, and specificity of 85.5 vs 67.0.

**Conclusions:** The findings from this study indicate that LSTM shows considerable promise for improving the specificity of sleep wake detection using accelerometry data. Further, LSTM allowed for sleep stage prediction from raw accelerometry data in this sample of participants. Future, research should explore the performance of LSTM models that include additional physiologic signals (e.g., heartrate), in children without suspected sleep disruptions, and in free-living settings.

## The effects of physical activity, sedentary, dietary and sleep habits on gene–environment interaction between phthalate exposure and pubertal genetic polymorphisms on blood pressure variability in children

**Dr. Jieyu Liu<sup>1</sup>**, Prof. Yanhui Dong<sup>1</sup>, Prof. Zhiyong Zou<sup>1</sup>, Prof. Jun Ma<sup>1</sup>

<sup>1</sup>*School of Public Health, Peking University, Beijing, China*

**O.1.03: From Sensors to Insights: Cutting-Edge Tools in Children's Health Research, Hunua 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Blood pressure (BP) in children can vary, the degree of visit-to-visit BP variability (VVV) is at least partially independent of BP. Lifestyle choices, have been demonstrated to influence VVV. The interactions between phthalates (PAEs) exposure, pubertal-related genetic susceptibility and lifestyles on VVV are not investigated.

**Methods:** This study utilized data from a cohort collected from Oct 2017 to 2020 in Xiamen, China. Seven urine PAE metabolites were measured. The long-term VVV was characterized employing the standard deviation (SD) and average real variability. We constructed a genetic risk score (GRS) of pubertal-related genes and healthy lifestyle scores. We distributed self-administered questionnaires to collect data on lifestyle factors. The survey questionnaire evaluated dietary habits, daily intake of vegetables, fruits, and sugar-sweetened beverages (SSBs). The frequency of breakfast consumption was also recorded. Furthermore, lifestyle habits such as outdoor activities, walking time (walking to and from school or for transportation when going out that involves very low energy expenditure), sedentary behaviours (homework, watching TV or video) and sleep duration were assessed. Each factor was assigned either 0 or 1 point, with a high-risk level receiving 0 points and a low-risk level receiving 1 point. The higher the score, the healthier the lifestyles.

**Results:** Exposed to high levels of mono-2-ethyl-5-hydroxyhexyl phthalate (MEHHP) (OR=1.43, 95%CI=1.07, 1.92) and mono-2-ethyl-5-oxohexyl phthalate (OR=1.36, 95% CI=1.01, 1.83) was related to increased SBP-SD, and the OR for high SBP-SD related to high GRS was 1.38 (95% CI=1.02, 1.85). Compared to participants who had low GRS and low MEHHP exposure, participants exhibiting high GRS and MEHHP levels were more likely to experience high SBP-SD (OR=2.00, P<0.05). Individuals exhibiting low GRS, low MEHHP levels, and adhering to healthy lifestyles were associated with the least probability of experiencing high SBP-SD (OR=0.31, P<0.05).

**Conclusions:** Increased PAEs exposure could elevate childhood systolic VVV, and exacerbated the adverse impact of pubertal-related genetic susceptibility on the high VVV of SBP; however, healthy lifestyles might alleviate these adverse effects. Promoting healthy lifestyles and reducing PAEs exposure for preventing elevated BP variability among children is important, especially for individuals with greater genetic susceptibility to early pubertal onset.

## Refining behavioral biometrics for mobile device use measurement in children: Evaluating characteristics of training data for optimal model performance

**Ms. Olivia FINNEGAN<sup>1</sup>**, Mr. Hongpeng Yang<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Dr. Srihari Nelakuditi<sup>1</sup>, Dr. Rahul Ghosal<sup>1</sup>, Mr. James White III<sup>1</sup>, Dr. Aliye Cepni<sup>2</sup>, Mr. Zifei Zhong<sup>1</sup>, Dr. Yan Tong<sup>1</sup>, Dr. Michael Beets<sup>1</sup>, Dr. Elizabeth Adams<sup>1</sup>, Dr. Sarah Burkart<sup>1</sup>, Dr. Erik Willis<sup>3</sup>, Dr. R. Glenn Weaver<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, United States, <sup>2</sup>University of Houston, Houston, United States,

<sup>3</sup>University of North Carolina Chapel Hill, Chapel Hill, United States

**O.1.03: From Sensors to Insights: Cutting-Edge Tools in Children's Health Research, Hunua 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Passive sensing applications are limited by their inability to determine who is using a device, a critical concern in child mobile device use research, where devices are often shared between siblings or between a child and their parent. Our previous work leveraged behavioral biometrics to identify a target child user; however, it is unknown what type of training data is necessary for optimal model performance. This study evaluated model performance across different characteristics of training data.

**Methods:** Thirty-six children ( $11.3 \pm 0.9$  years, 56% female) self-selected a video or a game on iPads for 10 minutes while laying and for another 5 minutes while sitting. The SensorLog application captured iPad accelerometer and gyroscope data while the child interacted with the device. Machine learning algorithms including Neural Network (NN), Random Forest (RF), and k-Nearest Neighbors (k-NN) were applied to determine the most important aspects of training data to optimize model performance. The aspects of training data evaluated included (1) varying the length (i.e., seconds of training data), (2) varying the user position (i.e., sitting, laying), and (3) varying the time proximity between training and testing data. F1 score was used to evaluate model performance.

**Results/findings:** The NN F1 scores were lowest when the training data was further from the test data (0.07 when training data was 11 minutes away from test data) and highest when training data was close to test data (0.89 when training data was the minute preceding test data). The NN F1 scores were highest when predicting the user laying from laying (0.92) and sitting from sitting (0.92), and lowest when predicting the user sitting from laying (0.04) and laying from sitting (0.01). The length of training data had little impact on performance, with an NN F1 score of 0.84 when training on one minute of data and an NN F1 score of 0.88 when training on twelve minutes of data.

**Conclusions:** Because researchers would likely be predicting users at different timepoints than their training data, research should focus on improving model performance for identifying users independent of time proximity for training and test data.

## Updating norms for school-based cardiorespiratory fitness testing

Lynn Gao<sup>1</sup>, **Dr. Margaret Schneider<sup>1</sup>**, Dr. Veronica Berrocal<sup>1</sup>, Amanda Woodworth<sup>1</sup>

<sup>1</sup>University of California, Irvine, Irvine, USA

**O.1.03: From Sensors to Insights: Cutting-Edge Tools in Children's Health Research, Hunua 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Many schools in the US use the FITNESSGRAM to assess student fitness, but contemporary demographics have changed considerably since the FITNESSGRAM equation for converting Timed Mile Run (TMR) performance into VO<sub>2</sub>max was developed. In addition, current trends in sensitivity around using gender-based norms and resistance to subjecting students to height and weight assessments in the school setting call for challenging the assumption that gender and BMI are needed in the prediction equation. This study leveraged a unique database containing both Timed Mile Run (TMR) data from the FITNESSGRAM conducted in schools and VO<sub>2</sub>max data from a graded exercise test on a cycle ergometer among a diverse sample of middle-school students. Predictions of VO<sub>2</sub>max from TMR were compared using the recommended FITNESSGRAM equation vs a new equation fit to these data.

**Methods:** 177 middle-school students (58% female; 51% Latino, 24% White, 10% Black, 7% Asian) with a mean BMI of 20.69 (SD=4.72) completed a TMR in Physical Education class and a VO<sub>2</sub>max in an on-site exercise lab. The strength of the association between predicted VO<sub>2</sub>max (based on the TMR) and actual VO<sub>2</sub>max (from the exercise test) was compared across a series of equations: 1) the standard FITNESSGRAM equation; 2) a new equation derived from the 177 students in this study; 3) versions of the new equation that omitted gender and/or BMI. The alternative equations were also compared in terms of their accuracy in placing students in one of the 3 FITNESSGRAM Fitness Zones.

**Results:** The newly-derived equation was superior to the traditional FITNESSGRAM equation for predicting VO<sub>2</sub>max based on the TMR, even when gender and/or BMI were removed from the equation. Among the students who were classified as not being in the Healthy Fitness Zone (HFZ) by measured VO<sub>2</sub>max, the traditional FITNESSGRAM equation classified 57% as being in the HFZ, whereas the newly-derived equation only mis-classified 15% as being in the HFZ. Accuracy was similar with gender and/or BMI omitted.

**Conclusions:** A new equation based on a diverse sample performed better than the traditional equation for transforming TMR into VO<sub>2</sub>max, even when omitting gender and BMI.

## Device-based assessment of children's postures and movements: comparisons and future directions

**Prof. Leon Straker**<sup>1,2</sup>, Dr Charlotte Lund Rasmussen<sup>1,2</sup>, Prof Andrew Rohl<sup>1,3</sup>, Dr Danica Hendry<sup>1,2</sup>, Dr Amber Beynon<sup>1,2</sup>, A/Prof Amity Campbell<sup>1,2</sup>

<sup>1</sup>School of Allied Health, Curtin University, Perth, Australia, <sup>2</sup>ARC Centre of Excellence of the Digital Child, Perth, Australia, <sup>3</sup>School of Electrical Engineering, Computing and Mathematical Sciences, Curtin University, , Perth, Australia

**O.1.03: From Sensors to Insights: Cutting-Edge Tools in Children's Health Research, Hunua 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Children's habitual postures and movements are critical to their health, well-being and development. Recent advancements in hardware (accelerometers) and software (decision tree algorithms and machine learning) are increasingly being used to provide more accurate and unbiased estimates of children's 24-hour physical behaviours than previously relied on proxy-/self-report methods. However, there is no consensus on the hardware and software used, the constructs estimated or the definition of key physical behaviour constructs. Differences in each of these aspects can impact findings. This study compares these aspects on recently completed studies of children using accelerometers and suggests ways of enhancing the value of future research.

**Methods:** Studies using algorithms to quantify children's postures and movements from thigh-worn accelerometers were identified from a recent systematic review and an updated scan of similar studies. For each study, data were extracted on the hardware and software protocols, the constructs estimated and the definition of said constructs. Shared features across studies were identified along with critical differences.

**Results/findings:** Recent studies have used a variety of hardware (e.g. Axivity, Sens) and software ranging from single decision tree algorithms (e.g. ActiMotus) through to machine learning models (e.g. random forests, support vector machines) and deep learning models (e.g. convolutional neural networks, self supervised learning). Common constructs have included postures and movements used in adult research (e.g. lying, sitting, standing, walking, running, cycling), along with activity intensity classifications (e.g. light intensity physical activity, moderate/vigorous intensity physical activity). Validation methods and measures of 'accuracy' also varied considerably.

**Conclusions:** This comparison highlighted the disparities between current protocols and constructs in the growing field of device-based assessment of children's postures and movements. Whilst there is clear potential for these methods to provide much needed accurate and detailed information on the critical issue of children's postures and movements, the value of the current methods and findings is being constrained by lack of harmonisation of protocols and constructs. Future work should aim for a consensus on a 'core' set of constructs to enable cross-study comparisons and pooling of data to develop stronger evidence for public health recommendations about physical behaviours for children of all ages.

# An R package for Data Visualization of Time Diaries and Accelerometry

**Nicholas Niako**<sup>2</sup>, Richard Obeng<sup>3</sup>, Michael Beets<sup>1</sup>, Xuanxuan Zhu<sup>2</sup>

<sup>1</sup>Department of Exercise Science, University of South Carolina, Columbia, USA, <sup>2</sup>Department of Epidemiology and Biostatistics, University of South Carolina, Columbia, USA, <sup>3</sup>Department of Computer Science, Wenzhou University, , China

**O.1.03: From Sensors to Insights: Cutting-Edge Tools in Children's Health Research, Hunua 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** In accelerometry-based studies examining physical activity, sleep, and circadian rhythms, participant's time diaries (or logs) provide essential contextual information (e.g., settings/location, who one is with) to complement sensor data. Diaries help researchers bridge the gap between social and environmental changes and behavior, facilitating the development of tailored interventions under which behaviors occur. However, existing visualization tools in open-source packages like GGIR do not seamlessly integrate diary data with accelerometry outputs, leading to fragmented analysis. This study introduces an open-source R-function (referred to as gplot45) designed to create comprehensive visual reports that overlay diary data on accelerometry plots and generate summary statistics of contextual information thereby enhancing data interpretation. We illustrate these functions using daily time diaries collected in a large cohort of children ages 5-12yrs.

**Methods/Results:** The developed function utilizes g.plot5 and visual report functions within the GGIR package to generate annotated accelerometry plots per participant(s). Diary entries containing context/setting information about where children spent their time during waking hours were processed into metadata, synchronizing timestamps to accelerometer data, ensuring accurate overlay. The function computes time spent in each context, generating metadata that supports the creation of summary statistics and visual highlights. Added customization features allow filtering and sorting based on user-defined criteria, enhancing analysis flexibility. This approach facilitates comprehensive visualization and supports exploratory analyses that bridge sensor data with participant-reported context. The result is a PDF report containing summary statistics and individual- and aggregate-level accelerometry plots annotated with diary data. These visualizations provide a dual-layer perspective by showing raw accelerometry outputs overlaid with contexts, enabling researchers to identify patterns and discrepancies between reported and recorded data. This approach enhances the depth of data interpretation, supports validation of diary accuracy, and offers insights into behavior within the context of environmental or temporal changes across the study period.

**Conclusion:** By automating data overlay and generating visual reports, researchers can streamline data interpretation and effectively assess participant behavior with their recorded diary patterns. The tool's ability to merge diary data with sensor outputs addresses current limitations in contextual data integration, empowering researchers to draw more nuanced conclusions from complex data sets.

## Food insecurity and dietary diversity among women living in Dzaleka refugee camp, Malawi

**Prof. Mary Hearst**<sup>1</sup>, Sarah Hoffman, Kaboni Gondwe, Hanan Abusbaitan, Anwar Eyadat, Anne Dressel, Alinane Nyondo-Mipando, Lucy Makandawire-Valhmu

<sup>1</sup>University of Minnesota, Minneapolis, USA

**O.1.04: Environment and health, Waitakere 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** To describe the current food security and dietary diversity available for women and their families living in Dzaleka camp, Malawi.

**Methods:** This is a cross-sectional survey-based study set in the Dzaleka refugee camp in Dowa, Malawi and includes women aged 18 years and older with refugee status. Participants completed a survey with trained data collectors in their preferred language. The UN FAO 8-question food insecurity measures and the household dietary diversity score (HDDS) were asked. Analysis included descriptive statistics, multinomial regression for food insecurity and linear regression for dietary diversity. Independent variables included marital status, years in camp, income, number of people in household, education, and number of children.

**Results:** Three hundred women participated. Sixty percent were married/partnered, half completed primary school or less, and average annual income was equivalent to \$300 USD. Ninety-one percent of women were experiencing severe food insecurity and household dietary diversity was poor with the average household eating only 2-3 different food groups the previous day. There were no significant independent variables when comparing moderate and severe food insecurity to low food security. Better dietary diversity was associated with more time living in the camp, higher income, and fewer children at home.

**Conclusion:** The lack of food security and dietary diversity among refugees is a direct result of inadequate funding and international policies. To keep women and children safe and optimize their life chances, international support needs to be made available.

## Assessing the influence of psychosocial factors on dietary patterns and physical activity habits among Latino farmworkers leveraging a cross-sectional design

**Dr. Benjamin Aceves<sup>1</sup>**, Dr. Nicolas Lopez-Galvez, Mr. Isaiah Casarez

<sup>1</sup>San Diego State University, San Diego, United States

**O.1.04: Environment and health, Waitakere 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Latino farmworkers are disproportionately impacted by social needs and other psychosocial factors. This study aimed to assess the influence of psychosocial factors on dietary habits and leisure-time physical activity (LTPA) among Latino farmworkers.

**Methods:** This study analyzed a subset of data from a larger cross-sectional study where participants answered survey questions regarding participation in LTPA and dietary habits. Three psychosocial predictor measures were analyzed – social risk scores, acculturation, and PHQ-4. Participants were given social risk scores based on their responses to questions in the survey. Participants were categorized as either having ‘No acculturation’ or ‘Some acculturation’ acculturation, and participants were categorized as either having ‘Normal’ or ‘Mild-Moderate’ levels for PHQ-4. Logistic regression was performed to analyze the relationship between the predictor variables and dietary and physical activity habits. The study took place in the Imperial Valley, near the Southern California border connecting the United States and Mexico. This study analyzed the survey responses of 100 participants, ≥18 years old, who were required to have been working in agriculture in Imperial County, California and not be pregnant for study eligibility.

**Results:** Approximately 79% of participants self-reported at least once social needs, 45% reported no acculturation, and 35% reported Mild-Moderate depression levels. The only one, p-value  $0.011 < 0.05$ , revealed that having three-four social risks increased the odds six times, (OR 6.000, 95% CI 1.501 – 23.991) of a ‘Good’ perceived dietary rating compared to individuals with zero social risks.

**Conclusions:** Although this population has been shown to experience more significant health risks and outcomes, the findings may demonstrate that resiliency factors may contribute to better overall self-report health status. Additionally, social factors may also inhibit individuals from centering focus and motivation around changing health behaviors and improving overall dietary patterns and physical activity.

# Clustering Patterns of Unhealthy Lifestyle Behaviours Among Adolescents: A Multi-level Analysis of a Nationally Representative School-Based Survey from 73 Countries

**Mr. Yohannes Tekalegn Efa<sup>1</sup>**, Professor David Roder<sup>1</sup>, Professor Zumin Shi<sup>2</sup>, Dr Ming Li<sup>1,3</sup>

<sup>1</sup>Cancer Epidemiology and Population Health Research Group, Allied Health and Human Performance, University of South Australia, Adelaide, Australia, <sup>2</sup>Human Nutrition Department, College of Health Sciences, QU Health, Qatar University, Doha, Qatar, , Qatar, <sup>3</sup>Faculty of Medicine, University of Queensland, Queensland, Australia, , Australia

**O.1.04: Environment and health, Waitakere 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Adolescence is a crucial stage when young people adopt various lifestyle behaviours that can impact their health. The clustering of lifestyle behaviours among adolescents varied by factors at both the individual and contextual levels. However, most prior research has been limited to individual-level factors and often confined to single districts or countries, missing the broader context of these behaviours. This study aimed to investigate clustering patterns of lifestyle behaviours among adolescents and their determinants across individual, community, and societal levels.

**Methods:** This study utilized nationally representative surveys from the Global School-Based Student Health Survey. The lifestyle behaviours were dichotomized based on specific definitions, and the clustering patterns of multiple unhealthy behaviours were compared at various levels of factors. Multi-level logistic regression analysis was employed to identify individual, community, and societal level determinants of multiple unhealthy behaviours.

**Results:** The study included a total of 293,770 adolescents from 73 countries and territories across five World Health Organization (WHO) regions: 26 from the Americas, 17 from the Western Pacific, 14 from the Eastern Mediterranean, 10 from Africa, and 6 from South-East Asia. The participants' ages ranged from 12-17 years, with 51.1% being males. A total of 32 unique clustering patterns of the behaviours were identified across five lifestyle behaviours: insufficient physical activity, sedentary behaviour, insufficient consumption of fruit and/or vegetables, frequent fast-food consumption, and frequent soft drink consumption. The overall prevalence of one, two, three, four, and five unhealthy behaviours were 6.9%, 29.9%, 36.5%, 21.5%, and 4.5%, respectively. Higher odds of multiple unhealthy behaviours were observed among older and female adolescents, while lower odds were associated with supportive family and peer environments, and food-secure households. Significant variations in the patterns of the behaviours were observed across the WHO regions. The odds of exhibiting multiple unhealthy behaviours were significantly higher among adolescents in countries with high and very high Human Development Indexes (HDI) compared to those in low-HDI countries.

**Conclusion:** The study findings reveal that multiple unhealthy lifestyle behaviours are globally prevalent among adolescents, with distinct clustering patterns shaped by individual characteristics, family and peer environments, and broader socioeconomic and societal contexts.

## Using data poems as a trauma-informed advocacy tool for families living with food insecurity

**Prof. Danielle Gallegos<sup>1</sup>**, Dr Sabine Baker

<sup>1</sup>Queensland University of Technology, South Brisbane, Australia

**O.1.04: Environment and health, Waitakere 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** This research explored the lived experience of food insecurity among families living in Queensland, Australia. The aim was to identify solutions to inform policy and service delivery. This component of the research asked the question - how can we communicate the depth and breadth of the experiences in a trauma-informed way for maximum impact?

**Methods:** This participatory action research was underpinned by the socio-ecological model and lifecourse theory. It involved in-depth interviews and photovoice to explore the lived realities of families with children aged 0-12 experiencing household food insecurity. Interviews were analysed using reflexive thematic analysis. A secondary analysis of a sub-set of cases was undertaken using the Listening Guide. The Listening Guide requires four readings of the interviews to develop data poems. These poems were developed into scripts and edited for flow. Two poems were performed by professional actors and developed into short films.

**Results/findings:** Forty-three semi-structured interviews with predominantly mothers experiencing marginal to severe food insecurity were carried out in person or via zoom. Thematic analysis identified three key themes cognitive load, trust and relationships. Of these four cases were chosen based on maximum diversity with different demographic and health factors, household structures, geographic locations and food insecurity triggers. The process of developing the poems will be discussed. Poems distilled the life narratives into stories that provide nuance to the identified themes, highlighting key triggers and providing insight into lived experience. Poems privileging the voices of participants have been used to advocate for policy solutions.

**Conclusions:** Participants living with disadvantage can experience high levels of anxiety, trauma and cognitive load. They are drawing on extraordinary skills and resilience to feed their families under extreme duress. Innovative methodologies can be utilised to ensure experiences are not masked by using sanitised academic language and the voices of those with lived experience are amplified without contributing to trauma.

## Designing climate impact menu labels and testing effects on sustainability and healthfulness of restaurant orders in an online randomized controlled trial

**Dr. Julia Wolfson<sup>1</sup>**, Dr Aviva Musicus<sup>2</sup>, Mr. Brent Kim<sup>1</sup>, Ms. Nina Carr<sup>1</sup>, Ms Raychel Santo<sup>4</sup>, Ms. Clara Cho<sup>4</sup>, Dr. Alexandria Reimold<sup>3</sup>, Dr. Jennifer Falbe<sup>3</sup>, Dr. Cindy Leung<sup>2</sup>, Dr. Christina Roberto<sup>5</sup>

<sup>1</sup>Johns Hopkins Bloomberg School Of Public Health, Baltimore, USA, <sup>2</sup>Harvard T.H. Chan School of Public Health, Boston, USA, <sup>3</sup>University of California, Davis, Davis, USA, <sup>4</sup>World Resources Institute, Washington, USA, <sup>5</sup>University of Pennsylvania, Philadelphia, USA

**O.1.04: Environment and health, Waitakere 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Reducing food systems related greenhouse gas emissions (GHGE), which comprise one-third of global GHGEs, is an urgent priority to address climate change. More sustainable diets may also improve diet-related health outcomes. While some evidence points to the promise of climate change focused menu labels, evidence is lacking regarding the most effective design, and effects on the GHGEs and healthfulness of food choices.

**Methods:** We estimated the GHGEs of menu items on a fast food restaurant menu (burgers, sandwiches, and salads) and designed four different climate label designs: 1) a warning label for high climate impact items; 2) a traffic light style label indicating low, medium, or high GHGE; 3) a climate grade label indicating the “grade” (A-F) based on GHGE; and 4) a numeric label indicating the numeric GHGE of the menu item. In an online RCT we will compare each of the four climate labels to a control label showing a QR code. We will recruit 6,000 US adult participants using CloudResearch and will randomize them to view a restaurant menu with one of the climate labels. Participants will be instructed to order up to four items from a menu containing main items with climate label (burgers, chicken and fish sandwiches, salads), sides, drinks, and desserts. Menus also display calorie labels and prices. Analyses will use linear regression (continuous outcomes) and logistic regression (binary outcomes). The key independent variable is an indicator of experimental arm. Outcomes include: sustainability of the meal ordered (GHGE), selection of a sustainable main item (binary), healthfulness of the meal ordered Nutrient Profile Index (NPI) score, total calories ordered, selection of a sugar sweetened beverage (binary), and noticeability of the labels and perceived message effectiveness (PME).

**Results/ Findings:** The study will be conducted in December 2024. The presentation will describe our process for estimating the GHGEs of menu items. We will present the results of the online experiment comparing the effects of the label designs on the outcomes described above.

**Conclusions:** Findings will be critical to inform menu labeling policies and voluntary food industry actions to communicate climate impacts of food products to consumers.

## Association between step counts and health outcomes in adults: A systematic review with meta-analyses

Professor Ding Ding<sup>1</sup>, Professor Borja Del Pozo Cruz<sup>2</sup>, Professor Ulf Ekelund<sup>3</sup>, Professor Paddy Dempsey<sup>4</sup>, Dr Binh Nguyen<sup>1</sup>, Miss Tracy Nau<sup>1</sup>, Dr Philip Clare<sup>1</sup>, Professor Anne Tiedemann<sup>1</sup>, Professor Cathie Sherrington<sup>1</sup>, Professor Adrian Bauman<sup>1</sup>, Professor Barbara Jefferis<sup>5</sup>, Dr Zachary Munn<sup>6</sup>, Professory Tony Okely<sup>7</sup>, Professor Stuart Biddle<sup>8</sup>, Elizabeth Calleja<sup>9</sup>, Dr Kar Hau Chong<sup>7</sup>, **Dr. Katherine Owen<sup>1</sup>**

<sup>1</sup>University of Sydney, Sydney, Australia, <sup>2</sup>European University of Madrid, , Spain, <sup>3</sup>Norwegian School of Sport Sciences, , Norway, <sup>4</sup>Deakin University, , Australia, <sup>5</sup>University College London, , England, <sup>6</sup>University of Adelaide, , Australia, <sup>7</sup>University of Wollongong, , Australia, <sup>8</sup>University of Southern Queensland, , Australia, <sup>9</sup>Heart Foundation, , Australia

**O.1.04: Environment and health, Waitakere 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** To examine the relationship between daily steps and health outcomes including all-cause mortality, cardiovascular disease (CVD), cancer, type 2 diabetes, cognitive outcomes, mental health outcomes, physical function, and falls (including fall-related injuries). A secondary aim was to examine the relationship between stepping rates (cadence) and the abovementioned health outcomes.

**Methods:** The electronic databases PubMed and EBSCO CINAHL were searched from 1 January 2014 to 22 March 2024. Eligible longitudinal studies examined the relationship between device-measured step counts/volume or rates/cadence and health outcomes among adults without restrictions on language or publication type. Two reviewers independently performed study selection, data extraction, and risk of bias assessment (using the Newcastle-Ottawa Scale). Hazard ratios (HRs) from individual studies were synthesised using a random-effects meta-analysis. Certainty of evidence was assessed by outcome using Grading of Recommendations Assessment and Evaluation (GRADE).

**Results/findings:** Fifty-three studies from 33 data sources were included. For all-cause mortality, CVD incidence, and falls, an inverse non-linear dose-response association was found, with inflection points at 6,966, 6,159 and 6,179 steps/day, respectively. An inverse linear association was found between steps/day and CVD mortality, type 2 diabetes, and depressive symptoms. For nearly all outcomes, the HR continued to decrease as steps increased, however, the rate at which risk decreased slowed around 6,000-8,000 steps. Compared with 1,000 steps/day, 7,000 steps per day was associated with 33-42% lower risk across health outcomes. Studies on cancer, cognitive outcomes, and physical function reported similar inverse associations with steps/day but could not be meta-analysed. The certainty of evidence was moderate for the relationships between steps/day and all-cause mortality, CVD incidence, type 2 diabetes, mental health, and falls, and low for CVD mortality, cognition, cancer and physical function.

**Conclusions:** A daily target of 7,000 steps/day offers substantial risk reduction across several major health outcomes. This systematic review with meta-analyses provides important new evidence to inform physical activity guideline development, population health surveillance, and public health advice and interventions concerning step counts.

## **“We're all on a journey”: The lived experience of weight management care**

**Dr. Jennifer Brenton-Peters<sup>1</sup>**, Ms. Eva Takinui<sup>1</sup>, Ms. Lisa Blake<sup>1</sup>, Dr. Lolohea Tongi<sup>1</sup>, Ms. Rebekah Nicholas<sup>1</sup>, Dr. Siniva Sinclair<sup>1</sup>

<sup>1</sup>Health New Zealand Te Whatu Ora, Counties Manukau, New Zealand

**O.1.05: Policy and Equity: Shaping Sustainable and Healthy Food Systems, Waitakere 2, June 12, 2025, 12:00 PM - 1:15 PM**

**Purpose:** Weight management (WM) is a complex subject. Body weight and health are often conflated. To achieve Pae Ora (Healthy Futures), this lived experience study empowered people at higher weights, whānau (family) and healthcare providers to share their experiences, challenges, and ideas to shape more equitable, strengths-based WM care. This study sought to enhance understanding of WM care and the persistent inequities in access and outcomes, particularly for those disproportionately affected by weight-related conditions in Counties Manukau.

**Methods:** Qualitative methods were chosen to gather the rich, diverse experiences that may not be fully understood through more rigid quantitative approaches. Healthcare providers were recruited to represent all levels of WM care including hospital, primary care and community providers. People who live at higher body weights were recruited by social media, posters, churches and local iwi (Māori community). Qualitative data was collected through one-on-one or focus groups through utilising culturally appropriate methodology including Kōrero or Wānanga (Tikanga Māori conversation/knowledge sharing), and Talanoa (Pacific inclusive, participatory, and transparent dialogue). Thematic content analysis was used to derive themes.

**Results:** A total of 15 healthcare providers and 11 people living at higher body weight were recruited (45% Pacific, 36% Māori, 18% NZ European). Participants described two main barriers and enablers to WM 1) Access (cost/funding sustainability, convenience, welcoming space,) and 2) Approach (bias, judgement, self-worth, motivation). Ideal WM care was described as holistic, peer group-based, non-judgemental, and facilitated mental and physical health. Healthcare providers further identified the need for more connected services/programmes and more follow-up which is limited due to capacity. An overall theme for health care providers was that there is diversity in experiences, opinion and ideal models and pathways of care depending on the area they worked, with a differing focus on clinical indicators and the importance of peer groups and cultural safety.

**Conclusion:** The results underscore the need for systemic changes that integrate clinical indicators with culturally safe, long-term, and person/whānau centred-care models. The journey of WM needs to be an evolving, person-centred pathway that consists of more than clinical interventions; it necessitates a holistic integrated approach to ensure physical and mental well-being.

## The prevalence and drivers of food insecurity among women in West Africa: A systematic review

**Ms. Chioma Anidi<sup>1</sup>**, Professor Kathryn Backholer<sup>1</sup>, Dr. Christina Zorbas<sup>1</sup>

<sup>1</sup>Global Centre for Preventive Health and Nutrition, Institute of Health Transformation, School of Health and Social Development, Faculty of health, Deakin University, Geelong, Australia

**O.1.05: Policy and Equity: Shaping Sustainable and Healthy Food Systems, Waitakere 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Food insecurity remains a critical issue in West Africa. The gendered nature of food insecurity in the region has not been systematically examined. This study aimed to systematically synthesise existing research on the prevalence and drivers of food insecurity among women in West Africa.

**Methods:** Five academic databases (Global Health, MEDLINE, Web of Science, Academic Search Complete, and Scopus) were searched. Eligible studies reported data on the prevalence or determinants of food insecurity among women in West Africa, published in English between 2000-2023. These included studies measuring the prevalence of food insecurity among women or based on the gender of the head of household, and studies reporting on the drivers of food insecurity among women or drivers of gender inequalities in food insecurity. Data were summarized using a narrative approach, aiming to descriptively present information from each article while accounting for heterogeneity across the studies.

**Results/findings:** Thirty-one studies were reviewed from three West African countries (Nigeria, Ghana, and Benin). Overall, food insecurity among women ranged from 33% to 52% in Ghana and from 23.0% to 75.0% in Nigeria. In Benin, using a score-based scale, food insecurity was 3.2 out of 27 among women. Female-headed households were consistently more at risk of food insecurity than male-headed households. Significant drivers of food insecurity among West African women were categorised according to four socioecological levels: sociocultural and household factors (household size, parity), socioeconomic factors (socioeconomic position, poverty), food supply and agricultural factors (access to credits and agricultural inputs) and individual knowledge and agency regarding food (nutrition knowledge, autonomy)

**Conclusion:** To effectively tackle the high levels of food insecurity among women in West Africa, comprehensive, multi-level interventions will be essential across the socioecological levels of health. This includes actions to reduce the nutritional impacts of gender norms and improve equitable access to economic opportunities, resources, nutrition knowledge and decision-making.

## Modelling dietary policies across the NOURISHING framework: providing evidence of impact

**Dr. Cristina Cleghorn**<sup>1,2</sup>, Professor Tony Blakely<sup>3</sup>, Professor Nick Wilson<sup>1</sup>, Associate Professor Nhung Nghiem<sup>4</sup>, Dr Anja Mizdrak<sup>1</sup>, Professor Cliona Ni Mhurchu<sup>2,5</sup>

<sup>1</sup>Department Of Public Health, University Of Otago Wellington, Wellington, Aotearoa New Zealand,

<sup>2</sup>Epidemiology and Biostatistics, School of Population Health, University of Auckland, Auckland, Aotearoa New Zealand, <sup>3</sup>Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, University of Melbourne, Melbourne, Australia, <sup>4</sup>Clinical Hub for Interventional Research (CHOIR), John Curtin School of Medical Research, Australian National University, Canberra, Australia, <sup>5</sup>The George Institute for Global Health, Sydney, Australia

**O.1.05: Policy and Equity: Shaping Sustainable and Healthy Food Systems, Waitakere 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** There are many approaches to improving dietary intake spanning the WCRF NOURISHING framework: policies that impact the entire food system, the food environment or peoples' individual behaviours. With a focus on reducing chronic disease incidence, we conducted simulation modelling of a range of these policies and interventions through to population health, health equity and health system cost impacts.

**Methods:** We used an established multi-state life-table model with 18 parallel diet-related disease life tables using a 3% discount rate in the Aotearoa New Zealand (NZ) population. We calculated health-adjusted life-years (HALYs) gained, impacts on per capita HALYs by ethnicity and health system costs over the remainder of the lifespan of the NZ population alive in 2011 (n=4.4 million). Public health policies/interventions were specified using the best available evidence of reach and effectiveness and their implementation costs were estimated using information most relevant to the specific policy/intervention.

**Results/findings:** The modelling provides evidence within 4/6 of the food environment policy areas, the food system policy area and all 3 behaviour change communication policy areas. Health gain was highest for policies impacting the food environment, ranging from 697,000 HALYs gained (95% Uncertainty Interval: 519,000 to 944,000) for a sugar tax to 620 HALYs (340 to 1,110) for compulsory healthy food and drinks policies in schools. Under the food system domain, a policy to fund community gardens around the country resulted in 8,040 HALYs (4,720 to 11,800). The more targeted, behaviour change communication policies/interventions had lower health gain ranging from 1,170 HALYs (930 to 1,430) for education about healthy sustainable food, to 170 HALYs (130 to 220) for supporting nationwide garden-to-table programmes in schools. All policies in the food environment domain were net cost-saving to the NZ Government except voluntary Health Star Ratings labels which was cost-effective. Cost impacts for the other domains were mixed. Per-capita health gain was consistently higher for Māori compared to non-Māori, for all policies/interventions.

**Conclusions:** Policies changing the food environment typically generate greater health gains and cost-savings than more targeted dietary policies/interventions. Simulation modelling provides important evidence to encourage policy change to support improvements in nutrition related behaviours.

# Impacts of Increased Cash-Value Benefits on Weight Outcomes of 2-4-year-old Inter Tribal Council of Arizona WIC Participants

Francesco Acciai<sup>1</sup>, Emily Melnick<sup>1</sup>, **Dr. Punam Ohri-Vachaspati<sup>1</sup>**

<sup>1</sup>Arizona State University, Phoenix, United States

**O.1.05: Policy and Equity: Shaping Sustainable and Healthy Food Systems, Waitakere 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Beginning in March 2021, participants in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) experienced an unprecedented increase in cash value benefits (CVBs) for purchasing fruits and vegetables. To understand the long-term impacts of this increase, an evaluation using objective measures and longitudinal data is needed, especially for populations disproportionately affected by food insecurity and adverse health outcomes. American Indian populations, often underrepresented in national studies, experience high rates of obesity and food insecurity, as well as heightened barriers to participating in WIC. We examined whether increased CVBs were associated with a reduction in obesity prevalence among 2-4-year-old Inter Tribal Council of Arizona (ITCA) WIC participants.

**Methods:** We obtained administrative data from ITCA WIC on household CVB benefits redemption and on heights and weights of 2-4-year-old WIC-participating children. Data were collected pre-increase (from March 2019 to February 2020) and post-increase (August 2023 to June 2024). While the CVB benefits increase started in March 2021, children's heights and weights were typically not measured between March 2020 and July 2023, because pandemic-related program waivers allowed for most appointments to be held remotely. Using the CDC protocol, heights and weights were converted into body mass index percentiles to assess child obesity status. All data used in the analysis were de-identified and analyzed using multivariable regression models, adjusting for individual- and household-level control variables and for repeated cross-sectional measurements. We also tested whether associations differed by the dollar amount of CVBs households redeemed by households.

**Results:** Over 11,000 BMI data points were available, 65% of which were from the pre-increase period. Multivariate analyses showed that 30.3% of the children had obesity in the pre-increase period compared to 27.6% at post-increase. The overall decline in obesity prevalence was observed across the entire range of household CVB redemption amounts, both when measured continuously or when categorized into tertiles. Additionally, within each period, obesity was not associated with the amount of CVBs redeemed.

**Conclusion:** The significant reduction in obesity prevalence from pre-increase to post-increase suggests a positive impact of the increased CVBs on 2-4-year-old WIC participants' weight outcomes.

## Food literacy measures for adults: an updated scoping review

Ms Manoja Gamage<sup>1</sup>, Dr Helen MacLaughlin<sup>1</sup>, Dr Darren Wraith<sup>2</sup>, A. Prof Rebecca Byrne<sup>1</sup>, Prof Ranil Jayawardena<sup>3</sup>, **Associate Prof. Helen Vidgen<sup>1</sup>**

<sup>1</sup>*School of Exercise and Nutrition Sciences, Faculty of Health, Queensland University of Technology* <sup>2</sup>*School of Public Health & Social Work, Faculty of Health, Queensland University of Technology, Brisbane, Australia,* <sup>3</sup>*Department of Physiology, Faculty of Medicine, University of Colombo, Colombo, Sri Lanka*

**O.1.05: Policy and Equity: Shaping Sustainable and Healthy Food Systems, Waitakere 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Food decisions: what and how to acquire, prepare, cook, serve, eat, store, share, clean up and allocate food are frequent, multifaceted, situational, dynamic, and complex. The knowledge, skills and behaviour to make these decisions has collectively been described as “food literacy”. Since the term was empirically defined by Vidgen and Gallegos in 2014, instruments to measure food literacy has gradually progressed. This scoping review aims to describe and compare the characteristics of existing measures.

**Methods:** Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines were followed to search seven databases: PubMed®, Embase ScienceDirect®, SciVerse Scopus®, CINAHL® with Full Text, A+ Education, and ProQuest. No date limit was applied. Studies were included if they were original studies that described tools to measure food literacy explicitly or as part of a range of measures. Extracted data included (i) tool characteristics i.e. year of publication; country; tool purpose, number of items; participant characteristics; method of administration; scoring and (ii) tool development and psychometric properties i.e. underlying definition or conceptual framework of food literacy; item generation; content, face and construct validity; and reliability.

**Findings:** Twenty original tools that explicitly measure food literacy were identified. These tools were developed in fifteen different countries and published between 2017-2024 (16 since 2020). These tools varied considerably. They were designed to assess various dimensions of food literacy; across diverse contexts and populations; with different objectives and using diverse definitions and conceptual frameworks of the construct. Validity and reliability of tools was well reported. Another 16 studies have adapted these original tools to other cultures and contexts. Additionally, eleven food literacy questionnaires were identified which measure the construct within a larger tool.

**Conclusions:** Throughout the world, food literacy is considered a factor which impacts on food choice such that its relative contribution is sought to be determined through measurement. The diversity of tools reflects the varied application of the term and contexts of its enactment.

# Impact of Taxes and Labeling on Sugary Beverage Intake Trends in Mexico

**Dr. Alejandra Contreras<sup>1</sup>**, Dr. Adriana Garduño<sup>2</sup>, Dr. Christine M. White<sup>3</sup>, Dr David Hammond<sup>3</sup>, Dr James Trasher<sup>4</sup>, Dr Rachel Davis<sup>4</sup>, Dr Simon Barquera<sup>1</sup>, Dr Alejandra Jauregui<sup>1</sup>  
*<sup>1</sup>National Institute of Public Health, Cuernavaca, Mexico, <sup>2</sup>National Council for Humanities, Science and Technology, Mexico City, Mexico, <sup>3</sup>School of Public Health Sciences, University of Waterloo,, Waterloo, Canada, <sup>4</sup>Arnold School of Public Health, University of South Carolina, , United States*

**O.1.05: Policy and Equity: Shaping Sustainable and Healthy Food Systems, Waitakere 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Introduction:** Mexico implemented a sugar-sweetened beverage (SSB) tax in 2014 and the warning labels (WL) in 2020 to reduce the consumption of unhealthy products. Simulation studies estimate that a reduction of 40 kcal per capita in Mexico could halt increases in obesity prevalence by 2040. This study examines self-reported changes in SSB purchases due to the implementation of these two policies and their associations with intake of SSBs and calories.

**Methods:** We analyzed data from Mexican adults in the International Food Policy Study to examine the tax impact ((2018-2022, n=11,980) and WL impact (2020-2022, n=11,580). Participants reported their intake of various beverage categories over the past seven days, including regular soda, sweetened fruit drinks, flavored waters with sugar, energy drinks or sports drinks with sugar. Later in the survey, participants indicated whether the WL or the SSB tax (each separately) influenced their purchase of those SSB categories. Multilevel logistic regression models were used to evaluate the relationship between the impact of WL or the impact of SSB tax in the reported reductions in SSB purchases with the beverage intake and sociodemographic factors related at individual and food environment perspectives.

**Results:** Overall, 37.6% (95% CI: 36.8-38.4) of participants reported reducing their SSB purchases due to the tax. On average, they consumed 47.5 mL/day (12 kcal/day) less SB compared to those who reported no changes in their SB purchases. Regarding the WL impact, 57% (95% CI: 56.3-58.0) of participants reported reducing their SSB purchases due to the WLs, with reductions higher among women (59.8%, 95% CI: 58.7-60.9) compared to men (54%, 95% CI: 52.8-55.2). On average, those who reported reducing SSB due to the WL had a lower intake of SSB beverages by 137 mL/day (equivalent to 34 kcal/day). Sociodemographic factors and food environment characteristics, such as the density of ultra-processed product retail stores at the municipal level, were analyzed and visualized using country-wide maps.

**Conclusion:** Our findings suggest that both the WL and the SSB tax have been effective in reducing purchases and intake of sugary drinks. These reductions could contribute positively to addressing obesity prevalence among Mexican adults.

## Accelerometry-derived Sleep Differences in Elementary-Age Children During School Vs. Summer: Findings from the What's UP (Undermining Prevention) with Summer Observational Cohort Study

**Dr. Anthony Holmes<sup>1</sup>**, Dr. Michael Beets<sup>1</sup>, Dr. Sarah Burkart<sup>1</sup>, Dr. Christopher Pfladderer<sup>2</sup>, Dr. Elizabeth Adams<sup>1</sup>, Dr. R. Glenn Weaver<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Dr. Keith Brazendale<sup>3</sup>, Dr. Xuanxuan Zhu<sup>1</sup>, Dr. Alexander McLain<sup>1</sup>, Dr. Gabrielle Turner-McGrievy<sup>1</sup>, Dr. Russell Pate<sup>1</sup>, Dr. Andrew Kaczynski<sup>1</sup>, Dr. Amanda Fairchild<sup>4</sup>, Dr. Brian Saelens<sup>5</sup>, Hannah Parker<sup>1</sup>, Dr. Amy Yaroch<sup>6</sup>, Emily Eglitis<sup>7</sup>, Dr. Keagan Kiely<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, USA, <sup>2</sup>UTHealth Houston, School of Public Health, Austin, USA,

<sup>3</sup>Department of Health Sciences, University of Central Florida, , Orlando, USA, <sup>4</sup>College of Arts and Sciences, University of South Carolina, , Columbia, USA, <sup>5</sup>University of Washington and Seattle Children's Research Institute, , Seattle, USA, <sup>6</sup>Center for Nutrition & Health Impact, Omaha, USA, <sup>7</sup>Allied Health and Human Performance, University of South Australia, Adelaide, Australia

**O.1.06: Innovative Community, School, and Summer Research in Child Health, Waitakere 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Poor sleep patterns contribute to excessive weight gain that children experience during summer. Lack of structure during summer may be a key factor influencing sleep health, with few studies comparing sleep behaviors in the same children and adolescents during school and summer. We assessed differences in bed/waketimes and consistency across school and summer over a three-year period in a cohort of school-aged children.

**Methods:** Children (Range: 5-14yrs, n=1,006; 49% female) wore a wrist-placed Actigraph GT9X for 24hrs over 14 days in the Spring (April/May) and Summer (July) for a maximum of 3 years/6 timepoints. Sleep metrics included sleep onset (bedtime), and sleep offset (waketime), processed using the HDCZA algorithm in GGIR (v3.1.2). Bed/waketime consistency was calculated as the individual standard deviation at each timepoint. Mixed effects models examined differences in mean levels and consistency of bed/waketimes for weekday and weekend days across school vs. summer.

**Results:** Analyses included 35,327 days. On weekdays, children went to bed significantly later in summer (11:08pm) vs. school (9:50pm). Similarly, children woke up significantly later in summer (7:55am) vs. school (6:23am). The difference in bedtimes in summer vs. school widened with age, increasing from +53mins/day (5yrs) to +101mins/day (14yrs). Differences in waketimes increased with age, with children waking up +57mins/day (5yrs) to +122mins/day (14yrs) later during summer vs. school. Day-to-day bedtime varied by 70mins/day in summer vs. 54mins/day in school and day-to-day waketime variability was greater in summer (68mins/day) vs. school (40mins/day). Younger children were more similar during summer and school in day-to-day variability (+8min/day at 5yrs) for bedtime - this widened as children aged (+22mins/day at 14yrs). Waketime displayed similar variability with +19mins/day at 5yrs to +36mins/day at 14yrs. There were no significant differences on weekends between school and summer for all outcomes.

**Conclusions:** Children's bed and waketimes are later and less consistent during summer compared to school, and differences widened with age. It's unclear if these differences impact other health behaviors (e.g., activity, screens, diet) or health outcomes (e.g., weight status)

differently during school vs. summer. Additional studies need to examine factors associated with better sleep hygiene during both school and summer.



## Effectiveness of a 15-week healthy lifestyle program (“F.I.T. Family”) on children’s physical activity profile

**Prof. Stephen H. Wong<sup>1</sup>**, Dr. Wendy Yajun Huang<sup>2</sup>, Prof. Cindy H. Sit<sup>1</sup>, Prof. Martin C. Wong<sup>3</sup>, Dr. Sam Wong<sup>4</sup>

<sup>1</sup>Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Shatin, Hong Kong SAR, China, <sup>2</sup>Academy of Wellness and Human Development, Hong Kong Baptist University, Kowloon, Hong Kong SAR, China, <sup>3</sup>Jockey Club School of Public Health and Primary Care, The Chinese University of Hong Kong, Shatin, Hong Kong SAR, China, <sup>4</sup>Physical Fitness Association of Hong Kong, China, , Hong Kong SAR, China

**O.1.06: Innovative Community, School, and Summer Research in Child Health, Waitakere 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The “F.I.T. Family” program is a structured 15-week family-based intervention designed for families. It specifically addresses three indicators with poor grades (Physical Fitness, Family, and Obesity) highlighted in the 2018 Hong Kong’s Active Healthy Kids Report Card on physical activity for children and adolescents. This study aimed to examine its effectiveness in enhancing physical activity levels in children, as measured by accelerometer.

**Methods:** Children aged 6-12 years, and their parents were randomly allocated to an intervention or a wait-list control group. The 15-week intervention, comprising 5 counselling sessions and 10 group practical sessions conducted in hybrid mode, covered a wide range of topics (home-based family physical activity theories and activities, practical movement skills, change in parenting style and in family psycho-social environment). At baseline and after the intervention, children were requested to wear an ActiGraph accelerometer (wGT3X-BT, Pensacola, Florida, USA) on the non-dominant wrist for seven consecutive days. Raw accelerometer data were processed using an open-source R-package GGIR version 3.1.2. The primary outcomes were physical activity volume (average acceleration), intensity distribution (intensity gradient), sedentary time, light physical activity, and moderate-to-vigorous physical activity (MVPA). Intervention effects were examined using linear mixed models with R package lme4 version 1.1-35.5, with an adjustment of the dependency of the repeated measures within an individual and the covariates.

**Results:** A total of 118 children ( $8.2 \pm 1.6$  years, 47.5% boys) were included in the analysis. There were improvements in average acceleration ( $\beta = 11.5$ , 95% confidence interval [CI]: 1.6, 21.5,  $p = 0.024$ ) and light physical activity ( $\beta = 50.0$ , 95% CI: 9.8, 90.2,  $p = 0.015$ ), in the intervention group compared to the control group. The intervention was also effective in reducing sedentary time ( $\beta = -49.8$ , 95% CI: -98.4, -1.2,  $p = 0.045$ ). No group differences were observed in MVPA and intensity gradient.

**Conclusions:** The “F.I.T. Family” program was effective in improving total physical activity volume and light physical activity and reducing sedentary time in children. Future research needs to confirm whether the effects are sustainable in the long term.

## Twelve-month outcomes of a community-based, father-daughter physical activity program delivered by trained facilitators.

**Dr. Lee Ashton**<sup>1,2</sup>, Dr Anna Rayward<sup>3,4,5,6</sup>, Dr Emma Pollock<sup>3,4,5,6</sup>, Miss Stevie-Lee Kennedy<sup>3,4,5,6</sup>, Dr Myles Young<sup>2,7</sup>, Assoc Prof Narelle Eather<sup>1,2</sup>, Dr Alyce Barnes<sup>3,4,5,6</sup>, Mr Daniel Lee<sup>1,2</sup>, Prof Philip Morgan<sup>1,2</sup>

<sup>1</sup>Centre for Active Living and Learning, College of Human and Social Futures, School of Education, University of Newcastle, Callaghan, Australia, <sup>2</sup>Active Living and Learning Research Program, Hunter Medical Research Institute (HMRI), Lot 1 Kookaburra Circuit, New Lambton Heights, Australia, <sup>3</sup>School of Medicine and Public Health, The University of Newcastle, , Newcastle, Australia, <sup>4</sup>The National Centre of Implementation Science (NCOIS), The University of Newcastle, Newcastle, Australia, <sup>5</sup>Population Health Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>6</sup>Hunter New England Population Health, Hunter New England Local Health District., Newcastle, Australia, <sup>7</sup>College of Engineering, Science and Environment, School of Psychology, University of Newcastle, Callaghan, Australia

**O.1.06: Innovative Community, School, and Summer Research in Child Health, Waitakere 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Dads and Daughters Exercising and Empowered (DADEE) is a program targeting fathers/father-figures to improve their daughters' physical activity and well-being. Previous randomised controlled efficacy and effectiveness trials of DADEE demonstrated meaningful improvements in a range of holistic outcomes for both fathers and daughters in the short-term. This study aims to assess the long-term impact (12-months) of the program when delivered in the community by trained facilitators.

**Methods:** Fathers/father-figures and their primary school-aged daughters were recruited from Newcastle, Australia into a single-arm, non-randomised, pre-post study with assessments at baseline, 10-weeks (post-intervention) and 12-months. The 9-session program included weekly 90-min educational and practical sessions, plus home-based tasks. The primary outcome was fathers' and daughters' days per week meeting national physical activity recommendations ( $\geq 30$  mins/day of MVPA for fathers,  $\geq 60$  mins/day MVPA for daughters). Secondary outcomes included physical activity, screen time, self-esteem, father-daughter relationship, social-emotional well-being, parenting measures, and process outcomes (including recruitment, attendance, retention and program acceptability).

**Results:** Twelve programs were delivered with 257 fathers ( $40.0 \pm 9.2$  years) and 285 daughters ( $7.7 \pm 1.9$  years). Mixed effects regression models revealed significant intervention effects for the primary outcome, with fathers increasing the days/week meeting physical activity recommendations by 27% at 10-weeks ( $p < 0.001$ ) and by 19% at 12-months ( $p < 0.001$ ) compared with baseline. Likewise, for daughters there was a significant increase by 25% at 10-weeks ( $p < 0.001$ ) and by 14% at 12-months ( $p = 0.02$ ) when compared to baseline. After conducting a sensitivity analysis with participants unaffected by COVID-19 lockdowns ( $n = 175$  fathers,  $n = 192$  daughters), the primary outcome results strengthened at both time-points for fathers and at 12-months for daughters. Additionally, the sensitivity analysis revealed significant intervention effects at post-program and 12-months for all secondary outcomes in both fathers and daughters. Furthermore, the process outcomes for recruitment capability, attendance, retention and satisfaction levels were high.

Conclusions: Findings provide support for a sustained effect of the DADEE program while delivered in a community setting by trained facilitators. Further investigation is required to identify optimised implementation processes and contextual factors to deliver the program at scale.

## The 'Pau te Hau' cluster-randomised controlled trial: effects on fitness and wellbeing

**Prof. Nigel Harris<sup>1</sup>**, Isaac Warbrick<sup>1</sup>, Dr. Jill Haszard<sup>4</sup>, Dr. Denise Atkins<sup>1</sup>, Prof. Rachael Taylor<sup>4</sup>, Prof. Alex Parker<sup>3</sup>, Mrs. Jacqui Pratt<sup>1</sup>, Dr. Nikki Penetito-Hemara<sup>1</sup>, Prof. David Lubans<sup>2</sup>  
<sup>1</sup>Auckland University of Technology, Auckland, New Zealand, <sup>2</sup>The University of Newcastle, Newcastle, Australia, <sup>3</sup>Victoria University, Melbourne, Australia, <sup>4</sup>University of Otago, Dunedin, New Zealand

**O.1.06: Innovative Community, School, and Summer Research in Child Health, Waitakere 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** This research sought to determine the effects of a school-based high-intensity interval training (HIIT) programme based on indigenous narratives on the fitness and wellbeing of school students.

**Methods:** A cluster-randomised controlled trial was conducted in 2023, set in 13 Aotearoa New Zealand (NZ) schools. The intervention was a HIIT programme known as 'Pau te Hau', consisting of 10-15 minute HIIT sessions delivered 2-3 times per week over 9 weeks during class time (N=401 students, 10.6±1.1 years, 17 classes, 6 schools) by generalist teachers (N=17) using the purpose built Pau te Hau app. The app included exercise and 'pūrākau' videos on which sessions were based. Pūrākau are traditional Māori (indigenous population of NZ) narratives. The prescribed exercise intensity was 90% of heart rate maximum, projected on a classroom screen during sessions. The control schools (N=384 students, 10.7±1.1 years, 17 classes, 7 schools) continued with their standard physical education classes, and were asked to report their general curriculum delivery for the term. Assessments at baseline and post-intervention were cardiorespiratory fitness as the primary outcome (laps completed in the 20m shuttle run test), vertical jump height (cm), and wellbeing scores from the Stirling Children's Wellbeing Scale. Mixed effects regression models were used, with adjustment for baseline and with school as a random effect. Standardised between group mean differences are reported with 95% confidence intervals [CI], and p-values.

**Results/findings:** There were no significant differences between intervention and control groups in any outcome. Cardiorespiratory fitness improved in both groups (-0.08 [-0.25, 0.09], p=0.378). Negligible changes in vertical jump occurred in both groups (-0.15 [-0.34, 0.04], p=0.119). There were very small decreases for wellbeing scores in the control group (ranging from -0.1 to -1.1), and negligible changes in the intervention group (ranging from -0.5 to 0.1). Adherence was generally per-protocol. Most control schools reported an emphasis on 'fitness' for the school term.

**Conclusions:** The Pau te Hau HIIT intervention improved cardiorespiratory fitness over one school term but not to a greater extent than standard physical education practice in this cohort. Pau te Hau HIIT provides an effective, but not exclusively superior option for schools.

## High-intensity interval training incorporating indigenous narratives: Qualitative findings from the 'Pau te Hau' trial

**Prof. Nigel Harris<sup>1</sup>**, Dr. Denise Atkins<sup>1</sup>, Assoc. Prof. Isaac Warbrick<sup>1</sup>, Prof. Rachael Taylor<sup>4</sup>, Prof. Alex Parker<sup>3</sup>, Dr. Jill Haszard<sup>4</sup>, Mrs. Jacqui Pratt<sup>1</sup>, Dr. Nikki Penetito-Hemara<sup>1</sup>, Prof. David Lubans<sup>2</sup>

<sup>1</sup>Auckland University of Technology, Auckland, New Zealand, <sup>2</sup>The University of Newcastle, Newcastle, Australia, <sup>3</sup>Victoria University, Melbourne, Australia, <sup>4</sup>University of Otago, Dunedin, New Zealand

**O.1.06: Innovative Community, School, and Summer Research in Child Health, Waitakere 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** High-intensity interval training (HIIT) delivered in schools has become more common in practice and research. Some provisional findings indicate the potential of enhancing HIIT's value in the school setting by including direct utilisation of indigenous knowledge, particularly in the context of Aotearoa New Zealand (NZ) schools. The purpose of this research was to determine teachers' and students' perceptions of such an approach within a cluster-randomised controlled trial.

**Methods:** Pau te Hau (N=401 students, 10.6±1.1 years) consisted of 10-15 minute HIIT sessions delivered 2-3 times per week in classrooms (N= 17 in 6 schools) by generalist teachers (N=17) using the purpose built Pau te Hau app for 9 weeks. The app included exercise and 'pūrākau' videos on which sessions were based. Pūrākau are traditional Māori (indigenous population of NZ) narratives. Post-intervention interviews were conducted with all teachers, and focus groups with all students to determine their impressions of the mātauranga (indigenous knowledge) aspects of the intervention. These were recorded, transcribed, and subsequently thematically analysed.

**Results/findings:** Students enjoyed the programme, but many did not express a clear understanding of the relevance of the pūrākau connection to the exercises within the Pau te Hau programme, although some stated they found it enriching and engaging. Some teachers were positive and embracing of the use of the pūrākau and their incorporation of te reo (Māori language) as part of "exercise sessions" noting they aligned with the NZ Ministry of Education's stated focus. Some others found the pūrākau to be disconnected to some of the ensuing exercise sessions. Several noted they felt they needed much more support in the form of more detailed specific lesson plans to provide a comprehensive integration of mātauranga into their general physical education curriculum delivery.

**Conclusions:** The Pau te Hau trial contributes further to our understanding of how mātauranga can be incorporated into exercise aspects of the NZ physical education curriculum, specifically within HIIT sessions. Teachers appear willing to embrace such an approach, but connections between mātauranga aspects and the ensuing exercise sessions needs to be made more overt, and include greater implementation support for teachers.

# The Impact of Free Summer Day Camp on Sleep in Children from Low-Income Households: A Randomized Clinical Trial

**Dr. Sarah Burkart<sup>1</sup>**, Dr. Michael W. Beets<sup>1</sup>, Ms. Xuanxuan Zhu<sup>1</sup>, Dr. Christopher D. Pfladderer<sup>2</sup>, Dr. R. Glenn Weaver<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Dr. Keith Brazendale<sup>3</sup>, Dr. Elizabeth L. Adams<sup>1</sup>, Dr. Layton Reesor-Oyer<sup>4</sup>, Dr. Alex McLain<sup>1</sup>, Dr. Brian Chen<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, United States, <sup>2</sup>UTHealth Houston, Austin, United States,

<sup>3</sup>University of Central Florida, Orlando, United States, <sup>4</sup>University of Florida, Gainesville, United States

**O.1.06: Innovative Community, School, and Summer Research in Child Health, Waitakere 3, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Evidence indicates children tend to sleep less and shift bedtime later during summer vacation compared to the school year. These patterns are especially pronounced among children from low-income families. Observational studies suggest this may be due to changes in children's daily structure between school and summer, although experimental evidence is lacking. This study examined whether providing free access to summer day camp (i.e., adding structure) influenced children's sleep patterns from school to summer.

**Methods:** A randomized clinical trial was conducted over three years (2021-2023). Children (n=422) were randomized to receive 8-10 weeks of free summer day camp (SDC) or continue summer as usual (CON). Children wore an Actigraph GT9X accelerometer on their nondominant wrist for 14 days during school (April/May) and summer (July) to assess sleep. Outcomes (i.e., bedtime, wake time, and sleep duration) were determined using the HDCZA algorithm in GGIR (v3.1.2). Linear mixed effects models examined changes in sleep variables by group between school and summer (group-by-time interaction) on weekdays and weekends separately. Covariates included child age, parent education, income to poverty ratio, and food insecurity.

**Results:** Children (n=375; 196 SDC, 179 CON; 8.4±1.6 years, 47% female, 48% Black, 69% at or below 200% Federal Poverty Level) provided valid accelerometry data and were included in analyses. On summer weekdays, children in both groups experienced later shifts in bedtime (SDC +58.7min, CON +77.6min) and wake time (SDC +54.7min, CON +81.2min) compared to school. Significant group-by-time interactions indicated summer impacted SDC and CON children differently. SDC children experienced less of a shift in later bedtime (-18.9 min, 95%CI= -27.2, -10.5) and wake time (-26.6 min, 95%CI= -34.6, -18.5) compared to CON children. A significant group-by-time interaction was also observed for sleep duration (-12.9 min, 95%CI= -20.9, -5.0), such that SDC children slept 2.1 min less and CON children slept 10.8 min longer in summer. No statistically significant changes by group were observed on weekends.

**Conclusion:** Providing free access to summer day camp may mitigate changes in children's sleep during summer. Whether these changes are enough to influence health outcomes such as accelerated summer weight gain must be explored.

## Dose-response associations of device-measured sleep regularity and duration with incident dementia in 82391 UK adults

**Miss Wenxin Bian**<sup>1,2</sup>, Dr. Raaj Kishore Biswas<sup>1,2</sup>, Dr. Matthew Ahmadi<sup>1,2</sup>, Dr. Yu Sun Bin<sup>3,4</sup>, Dr. Svetlana Postnova<sup>4,10</sup>, Dr. Andrew J.K. Phillips<sup>5</sup>, Dr. Nicholas A. Koemel<sup>1,2</sup>, Prof. Jean-Philippe Chaput<sup>8,9</sup>, Prof. Shantha M.W. Rajaratnam<sup>5,6,7</sup>, Prof. Peter A Cistulli<sup>3,4,11</sup>, Prof. Emmanuel Stamatakis<sup>1,2</sup>

<sup>1</sup>Mackenzie Wearables Research Hub, Charles Perkins Centre, University of Sydney, Sydney, Australia,

<sup>2</sup>School of Health Sciences, Faculty of Medicine and Health, University of Sydney, Sydney, Australia,

<sup>3</sup>Northern Clinical School, Faculty of Medicine and Health, University of Sydney, Sydney, Australia,

<sup>4</sup>Sleep Research Group, Charles Perkins Centre, University of Sydney, Sydney, Australia, <sup>5</sup>School of Psychological Sciences and Turner Institute for Brain and Mental Health, Monash University, Clayton, Australia,

<sup>6</sup>Division of Sleep and Circadian Disorders, Departments of Medicine and Neurology, Brigham and Women's Hospital, Boston, USA, <sup>7</sup>Division of Sleep Medicine, Harvard Medical School, Boston, USA,

<sup>8</sup>Healthy Active Living and Obesity Research Group, Children's Hospital of Eastern Ontario Research Institute, 401 Smyth Road, Ottawa, ON K1H 8L1, Canada, <sup>9</sup>Department of Pediatrics, University of Ottawa, 75 Laurier Ave. East, Ottawa, ON K1N 6N5, Canada, <sup>10</sup>Circadian Physics and Sleep Dynamics Group, School of Physics, University of Sydney, Sydney, Australia, <sup>11</sup>Department of Respiratory and Sleep Medicine, Royal North Shore Hospital, St Leonards, Australia

**O.1.07: Ageing and Health (Musculoskeletal, Brain), Limelight 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Sleep is a crucial lifestyle factor with impacts on mental and cognitive health. The associations between objectively measured sleep and risk of incident dementia are not yet fully understood. To evaluate the associations of device-measured sleep duration and regularity with incident dementia and explore whether sleep regularity moderates the association of sleep duration with dementia.

**Methods:** Population-based prospective cohort study of 82,391 adults aged 43 to 79 years from the UK Biobank accelerometry subsample, collected between 2013 and 2016, followed up to 2021. Device-based sleep duration (h/day) and sleep regularity index (SRI), a metric ranging from 0-100 that quantifies a person's sleep regularity, were calculated from wrist-worn accelerometry data recorded over the course of one week. Incident dementia cases were obtained from national hospital admission, primary care and mortality data followed up to 30 November 2022. We used cox proportional hazard models to estimate the hazard ratios (HRs) for incident dementia after adjustment for common demographic and clinical covariates.

**Results/findings:** Over a mean follow-up of 7.9 years, 694 incident dementia cases occurred. We observed a U-shaped association between sleep duration and incident dementia, with only short sleep (<7h) being significantly associated with a higher risk of dementia. The median sleep duration for short sleepers (<7h) of 6.5 hours was associated with HR of 1.19 (95%CI 1.01, 1.40) for incident dementia. Sleep regularity was negatively associated with dementia risk in a near-linear fashion. The sample median SRI of approximately 73, compared to the sample minimum SRI of 51, was associated with an HR of 0.76 (95%CI 0.61, 0.94). The beneficial associations between sleep regularity and incident dementia were present only among participants with short (<7h) and long (≥8h) sleep duration, after stratification by sleep duration groups.

Conclusions: A regular sleep pattern was associated with fewer adverse effects of inadequate sleep duration for dementia risk. Interventions aimed at improving sleep regularity may be a viable option for people not able to achieve the recommended hours of sleep.

## The association of physical activity with dementia and cognitive decline in community-dwelling older adults: the ASPREE Longitudinal Study of Older Persons

**Mr Yang Chen**<sup>1</sup>, Dr Suzanne Orchard<sup>1</sup>, Dr Alice Owen<sup>1</sup>, Ms Shivangi Shah<sup>1</sup>, Prof Joanne Ryan<sup>1</sup>, Assoc Prof Robyn Woods<sup>1</sup>, Prof Dragan Ilic<sup>1</sup>, Assoc Prof Danijela Gasevic<sup>1</sup>

<sup>1</sup>*School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia*

**O.1.07: Ageing and Health (Musculoskeletal, Brain), Limelight 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice: A. Ageing**

**Abstract Purpose:** Older adults aged 70 or above have the highest risk of developing dementia and cognitive decline compared to middle aged or young adults. Evidence indicates that engagement in physical activity (PA) is associated with a lower risk of dementia and cognitive decline. Less is known about the effect of various PA intensities on dementia and cognitive decline risk in this age group, and there is the scarcity of Australian evidence. This study explores the association of PA intensity with dementia and cognitive decline among community-dwelling Australian adults aged 70 years and over.

**Methods:** This prospective cohort study uses data from 11,543 ASPREE study participants (mean age (SD) = 75.0 (4.2) years, 53.4% females) who self-reported PA performed in a typical week (never/rarely, light, moderate, vigorous). Dementia was defined according to the diagnostic and statistical manual for mental disorders, fourth edition. Secondary endpoints included a decline in cognitive score of >1.5 SD decline in global cognition, verbal fluency, psychomotor speed, or delayed recall from baseline on any of the study visit cognitive assessments. Cox proportional hazards regression explored the association between PA with dementia and cognitive decline, after adjustment for age, sex, education, smoking and alcohol status, living status, area-level socio-economic status, annual income, remoteness, body mass index, diabetes mellitus, hypertension, depression, frailty and dyslipidaemia.

**Results:** Participants were followed for a median of 7.7-years during which time 5.6% (n = 650) developed dementia and 26.6% (n = 3,068) cognitive decline. Compared with light PA (HR (95%CI)), the risk of developing dementia and cognitive decline were higher among those who reported rarely/never engaging in PA (Dementia: 1.76, (1.01-2.99); Cognitive Decline: 1.53, (1.16-2.02)). No statistical difference in risk of dementia and cognitive decline was observed between persons engaging in moderate or vigorous activity compared to those engaging in light activity.

**Conclusions:** Engagement in any PA may help lower dementia and cognitive risk in older adults. However, higher PA intensities did not incur a greater protective effect. Older adults should aim to perform physical activity intensity at a level that best suits their physical capacity.

## Ultra-processed food consumption and multiple sclerosis incidence: a longitudinal study of UK Biobank participants

Pavlina Vagner<sup>1</sup>, Barbara Brayner<sup>2</sup>, Fernanda Rauber<sup>3</sup>, Renata Levy<sup>3</sup>, Eszter P Vamos<sup>4</sup>, Kiara Chang<sup>4</sup>, Gavin Abbott<sup>2</sup>, Bruce Taylor<sup>5</sup>, Lucinda Black<sup>2</sup>, **Dr. Priscila Machado<sup>2</sup>**

<sup>1</sup>Deakin University, School of Exercise and Nutrition Sciences, Geelong, Australia, <sup>2</sup>Deakin University, Institute for Physical Activity and Nutrition, Geelong, Australia, <sup>3</sup>Department of Preventive Medicine, School of Medicine, University of Sao Paulo, Sao Paulo, Brazil, <sup>4</sup>Public Health Policy Evaluation Unit, School of Public Health, Imperial College London, London, United Kingdom, <sup>5</sup>Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia

**O.1.07: Ageing and Health (Musculoskeletal, Brain), Limelight 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Emerging evidence suggests an association between ultra-processed food (UPF) consumption and neurodegenerative diseases, but there is limited evidence for multiple sclerosis (MS). Diets rich in UPFs promote inflammation and oxidative stress that both play an important role in modulating the immune system, and thereby, the pathogenesis of MS. This study aimed to investigate the longitudinal association between UPF consumption and MS onset in the UK Biobank cohort.

**Methods:** The study included 185,374 adults in the UK Biobank who had completed at least one valid dietary assessment and did not have MS at baseline (2009-2012). Dietary assessment was conducted using Oxford WebQ, a web-based 24-hour dietary recall, and UPFs were categorised using the Nova food classification system. MS cases were identified based on medical history and linkage to data on hospital admissions (using ICD-coded diagnoses), and self-reported MS diagnosis. Prospective associations between UPF consumption (as a percentage of total food intake in grams per day) and risk of MS onset were assessed using multivariable Cox proportional hazards models adjusted for age, sex, ethnicity, education, Townsend deprivation index, smoking status, energy intake and serum 25-hydroxyvitamin D.

**Results:** Participants had a mean age of 56.0y (SD 8.0) and 54.4% were female. UPFs comprised 21.8% of total dietary grams intake, with carbonated drinks, ready-to-eat/heat meals and industrial-processed breads being the most consumed UPF subgroups. Over a median follow-up of 8.9 years, 376 incident MS cases occurred. Each 10% increase in UPF consumption was associated with an estimated 9% increase in risk of MS (HR 1.09; 95% CI: 1.004, 1.19; p-value=0.04).

**Conclusions:** Higher UPF consumption was associated with an increased risk of MS in UK Biobank participants. This study contributes to the limited body of research on the impact of UPF consumption on MS, and highlights the need for guidance and strategies focused on UPFs. Research to confirm these findings in other population groups and contexts is needed.

## Dietary Inflammatory Index does not predict a change in musculoskeletal health over two years in apparently healthy community dwelling older adults.

Mr. Corey Linton<sup>1,2</sup>, **Associate Prof. Hattie Wright<sup>1,2</sup>**, Mia Schaumberg<sup>1,3,4,5</sup>

<sup>1</sup>University of the Sunshine Coast, Sunshine Coast, Australia, <sup>2</sup>Sunshine Coast Health Institute, Sunshine Coast, Australia, <sup>3</sup>Thompson Institute, Sunshine Coast, Australia, <sup>4</sup>University of Queensland, School of Human Movement and Nutrition Sciences, Brisbane, Australia, <sup>5</sup>Manna Institute, Sunshine Coast, Australia

**O.1.07: Ageing and Health (Musculoskeletal, Brain), Limelight 1, June 12, 2025, 12:00 PM - 1:15 PM**

### **SIG - Primary Choice: A. Ageing**

**Purpose:** Low-grade systemic inflammation associated with ageing is implicated as one mechanism which accelerates the decline of musculoskeletal health. Emerging evidence suggests that diet is a modifiable risk factor for musculoskeletal health by modulating inflammatory cytokines, potentially supporting healthy aging. Therefore, this research aimed to investigate the associations between the dietary inflammatory index (DII), changes in bone mineral density (BMD) and sarcopenia symptomology in community-dwelling older adults over two years.

**Methods:** Adults 65-85 years ( $n=150$ ,  $74.3 \pm 4.7$ , 69.3% female) were recruited. The DII was calculated from three 24hr recalls. Musculoskeletal health was assessed through evaluation of handgrip strength (HGS), physical performance (timed up and go; TUG), appendicular skeletal muscle mass (ASM), lumbar spine and hip BMD via dual-energy x-ray absorptiometry. Participants were grouped into pro- and anti-inflammatory diet groups; differences were assessed through independent samples t-test between these groups. Multiple linear regression investigated associations between DII, and all measures of musculoskeletal health controlling for several covariates.

**Results:** Eighty-eight (58.7%) participants completed the two-year follow up assessment. Participants were sufficiently active (85.3%). At baseline, low BMD was prevalent (78.3%), but sarcopenia symptoms were rare (2.7%). Participants following an anti-inflammatory diet ( $n=48$ , 54.5%) had an average DII score of  $-1.15 \pm 0.9$  and those following a pro-inflammatory diet ( $n=40$ , 45.5%) had an average DII score of  $1.14 \pm 0.8$ . No significant differences in the change in musculoskeletal markers were observed between the anti- and pro-inflammatory diet groups. No associations between baseline DII scores and the change in musculoskeletal health markers were found.

**Conclusions:** Baseline DII was not associated with a change in musculoskeletal health following two years in apparently healthy, community-dwelling older adults. Despite no significant findings reported, the DII may still be able to predict the change in musculoskeletal health. As other factors such as exercise, hormonal status and genetic factors, as well as study limitations such as attrition rate and the size of subgroup analysis might overshadow the effect of dietary inflammation on musculoskeletal health. These findings underscore the need for further research with larger, more diverse cohorts and a longer follow-up period.

## Effects of a Walk With Ease Program Delivered by Telephone on Arthritis-Related Symptoms, Function, and Physical Activity

**Dr. Christine Pellegrini<sup>1</sup>**, Dr. Sara Wilcox<sup>1</sup>, Dr. Yesil Kim<sup>1</sup>, Ms. Katherine DeVivo<sup>1</sup>, Mr. Scott Jamieson<sup>1</sup>, Kailyn Horn

<sup>1</sup>University of South Carolina, Columbia, United States

**O.1.07: Ageing and Health (Musculoskeletal, Brain), Limelight 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** A. Ageing

Walk With Ease (WWE) is a 6-week arthritis-appropriate evidence-based physical activity program traditionally offered in a face-to-face format. However, many populations encounter barriers to in-person programs, thus we modified this program for telephone delivery (WWE-T).

**Purpose:** The purpose was to evaluate the short-term (6 weeks) and long-term (6 and 12 months) effects of WWE-T on arthritis-related outcomes and physical activity.

**Methods:** Adults with arthritis, lupus, gout, or fibromyalgia were randomized to start the program either immediately (WWE-T) or after 1 year (waitlist control). WWE-T consisted of 2 telephone calls/week (1 group and 1 individual call) for 6 weeks, and participants received a WWE Guidebook. Group calls focused on arthritis education and social support. Individual calls focused on problem solving and goal setting. WWE-T outcomes included: pain, fatigue, stiffness, physical function, moderate-vigorous intensity physical activity (MVPA), steps (waist-worn ActiGraph GT9X Link), self-efficacy, depressive symptoms, weight, blood pressure, and work loss/activity impairment. Mixed models, adjusting for covariates, were used to examine differences between groups across time.

**Results:** A total of 267 participants were randomized (92% female, 60% Black, 64.1±9.4 years, BMI of 34.2±7.7 kg/m<sup>2</sup>, 52% had an income <\$52,000). Retention was 93%, 88%, and 84% at 6 weeks, 6 months, and 12 months, respectively. Group calls averaged 52.0±5.6 minutes and individuals calls 12.0±4.0 minutes. At 6 weeks, WWE-T had a greater improvement in fatigue, MVPA, chair stands, self-efficacy, and activity impairment due to health ( $P < 0.05$ ) as compared to control. At 6 and 12 months, WWE-T maintained greater improvements in pain interference, chair stands, self-efficacy, and activity impairment ( $P < 0.05$ ).

**Conclusion:** A WWE program delivered by telephone is effective at improving MVPA, fatigue, function, and self-efficacy in adults with arthritis at 6 weeks. By 6 and 12 months, only changes in pain interference, chair stands, self-efficacy, and activity impairment were maintained in WWE-T. This telephone-delivered program may be an effective alternative for adults with arthritis and other hard-to-reach populations who may face barriers to in-person physical activity programs. Additional strategies are needed to help with MVPA maintenance.

## Effect of Iyengar yoga on falls in older age: unexpected results of the NHMRC-funded Successful AGEing (SAGE) yoga trial

**Prof. Anne Tiedemann**<sup>1</sup>, Dr Juliana Souza De Oliveira<sup>1</sup>, Prof Cathie Sherrington<sup>1</sup>, Prof Stephen Lord<sup>2</sup>, Ms Giane Caon Camara<sup>1</sup>, Ms Shannon Colley<sup>1</sup>, Ms Courtney West<sup>1</sup>, Dr Abby Haynes<sup>1</sup>, Dr Heidi Gilchrist<sup>1</sup>, Dr Wing Kwok<sup>1</sup>, Ms Louise Pearce<sup>1</sup>, Ms Geraldine Wallbank<sup>1</sup>, Professor Adrian Bauman<sup>1</sup>, Prof Kaarin Anstey<sup>3</sup>, Dr Anne Grunseit<sup>4</sup>, Ms Mallory Trent<sup>5</sup>, Prof Kirsten Howard<sup>1</sup>

<sup>1</sup>The University of Sydney, Camperdown, Australia, <sup>2</sup>Neuroscience Research Australia, Randwick, Australia, <sup>3</sup>University of New South Wales, Randwick, Australia, <sup>4</sup>University of Technology Sydney, Ultimo, Australia, <sup>5</sup>New South Wales Ministry of Health, North Sydney, Australia

**O.1.07: Ageing and Health (Musculoskeletal, Brain), Limelight 1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Exercise that challenges balance is proven to prevent falls in older people. Yoga-based exercise is growing in popularity and can challenge balance, but the effect of yoga on falls has not been rigorously tested in an RCT. The NHMRC-funded Successful AGEing (SAGE) yoga trial is the first to fill this evidence gap. The trial evaluated the effect of a yoga-based exercise program on falls compared to a seated yoga relaxation program.

**Methods:** This was a pragmatic, two-arm, parallel, randomised controlled trial. Trial protocol was prospectively registered (ACTRN12619001183178). Recruitment occurred between 2019 and 2021 in NSW, Australia. Inclusion criteria: aged 60+; living independently; not participating in yoga. Exclusion criteria: cognitive impairment (scoring  $\leq 4$  on MIS); insufficient English; inability to walk 10 metres unassisted; progressive neurological disease or medical condition precluding exercise. Participants were randomly allocated to either: (1) group-based, supervised, 80-session SAGE Iyengar yoga program, emphasising standing balance postures (intervention group), or (2) seated yoga relaxation program, delivered in two group-based sessions (control group). Primary outcome was the rate of falls, 12 months after randomisation. Secondary outcomes included mental well-being, physical activity, health-related quality of life, balance self-confidence, physical function, pain, goal attainment and sleep. Primary outcome was analysed with negative binomial regression.

**Results/ findings:** 700 people (mean age 66, SD 5.8) were recruited and randomised. 572 (82%) participants were female, 178 (25%) participants self-rated their balance as fair/poor, and 228 (33%) had fallen in the past year, consistent with population estimates. Four months into the trial the yoga program delivery moved online via Zoom due to COVID-19 restrictions. The rate of falls was 0.87 falls/person-year in intervention group and 0.64 falls/person-year in control group; Incidence Rate Ratio 1.33, 95% CI 1.01-1.75;  $p=0.044$ . We detected improvements in the secondary outcomes of physical activity, balance confidence, and goal attainment favouring the intervention group.

**Conclusions:** Participants in the yoga-based exercise program had a higher fall rate than in the control group, possibly due to improved confidence without a corresponding improvement in physical capacity. Our findings do not support this Iyengar yoga program as a fall prevention intervention in its current form.

## Meal timing and risk of depressive symptomatology in a French cohort

Dr. Gabriela Lugon<sup>1,2</sup>, Ms. Elena Obeid<sup>3,4</sup>, Ms. Xuân Le Folcalvez<sup>3</sup>, Dr. Anna Palomar-Cros<sup>1,5</sup>, Dr. Valentina A. Andreeva<sup>3</sup>, Dr. Alice Bellicha<sup>3</sup>, Prof. Sandrine Péneau<sup>3</sup>, Prof. Serge Hercberg<sup>3,6</sup>, Dr. Mathilde Touvier<sup>3</sup>, Prof. Kyriaki Papantoniou<sup>7</sup>, Dr. Emmanuelle Kesse-Guyot<sup>3</sup>, Dr. Camille Lassale<sup>1,2,8</sup>, **Prof. Bernard Srouf<sup>3,8</sup>**

<sup>1</sup>Barcelona Institute for Global Health (ISGlobal), Barcelona, Spain, <sup>2</sup>Universitat Pompeu Fabra, Barcelona, Spain, <sup>3</sup>Université Sorbonne Paris Nord and Université Paris Cité, INSERM, INRAE, CNAM, Center for Research in Epidemiology and Statistics (CRESS), Nutritional Epidemiology Research Team (EREN), Bobigny, France, <sup>4</sup>EpiDermE EA 7379, Université Paris Est Créteil, Créteil, France, <sup>5</sup>Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina (IDIAPJGol), Barcelona, Spain, <sup>6</sup>Public Health Department, Groupe Hospitalier Paris-Seine-Saint-Denis, Assistance Publique-hôpitaux de Paris (AP-HP), Bobigny, France, <sup>7</sup>Department of Epidemiology, Center for Public Health, Medical University of Vienna, Vienna, Austria, <sup>8</sup>Equally contributed, ,

### O.1.08: Integrative Approaches to Mental Health: Nutrition, Physical Activity, and Community-Based Solutions, Limelight 2, June 12, 2025, 12:00 PM - 1:15 PM

#### **SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Circadian misalignment is a hallmark of depression, but whether circadian disruption linked to meal timing can affect the occurrence of depression has not been studied. The objective was to investigate associations between meal timing and risk of depressive symptomatology.

**Methods:** We included 51726 participants (77% women, mean age 44.9±14.7) from the French NutriNet-Santé cohort (2009-2022), with no prevalent depression or antidepressant use at inclusion or during the first two years of follow-up. Dietary intake was assessed by averaging data from repeated sets of three non-consecutive 24-hour records, administered at inclusion and every six months over two years. Meal timing indicators included: time of first and last food intake, nighttime fasting duration, eating jetlag (difference in eating midpoint between working and non-working days), and the percentage of energy intake after 5 p.m. Depressive symptoms were assessed using the CES-D scale every 2 years, and cases were defined according to French thresholds. Multivariable Cox models, adjusted for sociodemographic, lifestyle factors and dietary patterns were used.

**Results:** During a median follow-up of 8.5y, 9839 incident cases of depressive symptomatology were identified. Compared to those with a first food intake between 7:30-8:30 a.m., participants eating earlier (HR=1.09, 95%CI 1.03–1.14) or later (HR=1.14, 95%CI 1.08–1.20) than this range had higher risk of depressive symptomatology. Having a last food intake after 9 p.m. compared to between 8–9 p.m. was associated with higher risk (HR=1.07, 95%CI 1.01–1.13). Consuming over 60% of daily energy intake after 5 p.m. was linked to a higher risk (HR=1.40, 95%CI 1.23–1.59) compared to consuming ≤35%. A shorter nighttime fasting (≤11 hours) was associated with a higher risk (HR=1.08, 95% CI 1.01-1.15) compared to those with night fasting between 11-12h, only among those with a first meal ≤ 8 a.m. Compared to an eating jetlag intensity ≤ 1h, those with 1-2h had higher risk (HR=1.06, 95%CI 1.01–1.11).

**Conclusions:** This study suggests that altered meal timing patterns may increase the risk of depressive symptoms. These findings, if replicated in other cohorts, unravel a potential role of meal timing as a prevention strategy for mental health.

# Physical activity as a form of weight stigma resistance: Considerations for weight-inclusive movement

**Dr. Garcia Ashdown-franks<sup>1</sup>**

<sup>1</sup>York St John University, London, United Kingdom

**O.1.08: Integrative Approaches to Mental Health: Nutrition, Physical Activity, and Community-Based Solutions, Limelight 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Scholars have proposed that cumulative experiences of anti-fat bias and stigma contribute to social and health inequities among individuals in higher-weight bodies. Anti-fat bias and stigma are pervasive in traditional and weight-normative physical activity (PA) contexts (e.g., sport, fitness, exercise, physical education) and can detrimentally impact PA experiences and lead to PA avoidance, disengagement, or dropout. However, there are also clear mental health and wellbeing benefits of engaging in PA, irrespective of changes to weight or body size. In the context of a growing body and size acceptance movement, engaging in PA without the aim of losing weight can be understood as an act of resistance, though PA as a form of weight stigma resistance has yet to be robustly examined. As such, it is important to explore the ways in which higher-weight individuals navigate resistance in physical activity spaces and contexts.

**Methods:** Nine individuals (4 women, 4 non-binary, 1 man) ranging in age from 24 to 59 who identified as having had negative experiences based on their higher body weight, participated in one-on-one, semi-structured life course interviews. Using reflexive thematic analysis, this research explored narratives and discourses around weight and physical activity, and of identity and resistance.

**Findings:** Participants highlighted the ways in which structures and individuals in sport and activity contexts fuelled anti-fat messaging and discussed the profound lifelong influence this had. Resisting in the context of activity and sport therefore was not always easy, and often individuals grappled with tensions within messaging, narratives and identities in the context of weight and PA. Three themes were identified including: (i) showing up and taking up space, (ii) finding community, and (iii) pleasure and enjoyment in weight-inclusive activity.

**Conclusions:** These findings allude to the ways in which sport, exercise and fitness may be sites of contestation and resistance against weight stigma and body norms. Participants suggested ways that the physical activity, sport and fitness sectors might be more weight inclusive. These findings underscore the importance of, and potential for, co-designing activity spaces and experiences, in order to foster more equitable and accessible participation opportunities for higher-weight individuals.

# Addressing the Mental Health Crisis through Community Nutrition and Physical Activity

Ms. Macy Helm<sup>1</sup>, Dr. Anne Lindsay<sup>1</sup>

<sup>1</sup>University of Nevada, Reno Extension, Las Vegas, USA

**O.1.08: Integrative Approaches to Mental Health: Nutrition, Physical Activity, and Community-Based Solutions, Limelight 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** The prevalence of poor mental health (MH) and illness has steadily increased across the lifespan over the past decade. In the U.S., approximately 16% of children <6 years old have clinically recognized MH problems (AAP, 2023), nearly 50% of adolescents had any mental disorder (Merikangas et al., 2010), and 23% of adults had any mental illness (SAMHSA, 2023). Nutrition and physical activity (NPA) are recognized as causes, modifiers, and mediators of mental well-being. The purpose of this research is to determine the effectiveness of improving markers of MH through community-based NPA programming across the lifespan (primarily low-income).

**Methods:** Four education-based interventions have been implemented across various communities. For preschoolers, an experiential seed-to-table curriculum was implemented in a rural setting. The curriculum exposed young children to growing fruits and vegetables, the food system, and taught plant yoga and breathing techniques; assessments were conducted using a quasi-experimental design. For adolescents a NPA curriculum, rooted in resiliency towards drug prevention, was implemented in a rural community youth setting; assessed within group. In adults, a gender-responsive NPA curriculum was delivered in prisons, and inpatient and outpatient treatment centers serving women recovering from substance use. Finally, a falls prevention curriculum that integrated NPA was implemented with community-dwelling older adults. Outcome measurements and assessment tools varied across each program to align with curriculum content and target population, but all measured some nutrition and/or physical activity component(s) of MH.

**Results:** Qualitative themes in the preschool analysis showed 63% positive ranks at post (compared to 29% comparison group) in techniques to support emotional self-regulation (n=88). Women in recovery (n=1,986) reported significant reductions at post in NPA-related, psychosocial factors such as body image ( $t=-12.566$ ,  $p<.001$ ,  $d=.396$ ), thin-internal idealization ( $t=8.150$ ,  $p<.001$ ,  $d=.268$ ) and weight concerns (reporting significantly less concern that it could be a trigger for “relapse”;  $t=-4.301$ ,  $p<.001$ ,  $d=.129$ ). Older adults (n=303) reported social isolation was significantly reduced ( $t=2.185$ ,  $p=.015$ ,  $d=.125$ ). Adolescent resilience analysis currently in progress.

**Conclusion:** Community-based NPA programming improves lifestyle factors related to MH and is critical to help address the MH crisis, especially for audiences with lower usage and limited access to care services.

# Long-Term Effects of Discrimination on Adolescent Health Behaviors and Well-Being in Four European Countries

**Dr. Christine Emmer<sup>1</sup>**, Anna Neumer<sup>1</sup>, Jutta Mata<sup>1</sup>

<sup>1</sup>University of Mannheim, Mannheim, Germany

**O.1.08: Integrative Approaches to Mental Health: Nutrition, Physical Activity, and Community-Based Solutions, Limelight 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Adolescence is a pivotal foundation for lifelong health and a phase vulnerable to the adverse effects of discrimination. We assessed the impact of perceived discrimination on adolescent well-being over 2 years and the mediating effects of protective (physical activity, nutrition, sleep) and risky (substance use) health behaviors.

**Methods:** Adolescents (N = 9,957; Mage = 14.90 years) from the CILS4EU multinational panel (a longitudinal survey in Germany, England, the Netherlands, and Sweden) were examined across three waves. Direct and indirect relationships were analyzed using path models, adjusting for health behaviors, well-being, and control variables (age, gender, socioeconomic status, migration background, and religious affiliation) assessed in Wave 1.

**Findings:** Adolescents reported the most instances of discrimination within the school environment. Perceived discrimination at Wave 1 was significantly associated with decreased well-being at Wave 3 ( $\beta = -.04$ ,  $p < .001$ ) and decreased protective (physical activity:  $\beta = -.02$ , nutrition:  $\beta = -.04$ , sleep:  $\beta = -.04$ ) and increased risky (substance use:  $\beta = .03$ ) health behaviors at Wave 2. Nutrition and sleep mediated the relationship between perceived discrimination and well-being; no mediation was found for physical activity and substance use.

**Conclusions:** Even in observational data with 1-year assessment intervals, detrimental long-term effects of perceived discrimination on adolescent well-being are apparent, mediated through changes in nutrition and sleep behaviors. These results extend previous research—predominantly focusing on substance use—showing that perceived discrimination also predicted fewer protective health behaviors. Adolescence represents a strategic window for addressing discrimination and promoting healthy behaviors and well-being to mitigate long-term health disparities.

# Examining weight management interventions for eating disorder risk: a systematic review unpacking intervention components

**Dr. Natalie Lister<sup>1</sup>**, Ms Isabelle Jardine<sup>1</sup>, Ms Rabia Khalid<sup>1</sup>, Ms Samantha Pryde<sup>2</sup>, Dr Brittany Johnson<sup>2</sup>, Dr Hiba Jebeile<sup>1</sup>, on behalf of the EDIT Collaboration<sup>1</sup>

<sup>1</sup>University Of Sydney, Sydney, Australia, <sup>2</sup>Flinders University, Adelaide, Australia

**O.1.08: Integrative Approaches to Mental Health: Nutrition, Physical Activity, and Community-Based Solutions, Limelight 2, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** This study aimed to describe the components of adult behavioural weight management trials that are eligible for inclusion in the Eating Disorders In weight-related Therapies (EDIT) Collaboration.

**Methods:** Eligible studies were RCTs of behavioural weight management interventions conducted in adults (aged  $\geq 19$  years at baseline) with overweight or obesity that measure eating disorder risk pre- and post-intervention<sup>1</sup>. Systematic searches were conducted in four databases (MEDLINE, Embase, PsycINFO and Scopus) and two clinical registries. Delivery features (i.e. characteristics of how an intervention is delivered) and intervention strategies (i.e. behaviour change components) were coded from published or publicly available materials following a project-specific coding framework<sup>2</sup>. Data was included in analysis if coding was validated with trial representatives. The results were summarised in a narrative synthesis.

**Results:** Of 11,860 records, 61 studies were identified as eligible, and 26 studies, consisting of 64 intervention arms, conducted between 2002 to 2021 and across 9 countries, had validated data for included in analysis. Interventions focused on weight loss only (52%), targeted individuals (98%) and used a staged-intensity approach (e.g. weekly, then monthly) (47%) or weekly visits (30%). The most common psychological therapy or framework underpinning interventions was cognitive behaviour therapy (CBT) (36%). The median intervention duration was 45 weeks (range 4 to 104 weeks) with a median of 24.5 contact hours. The most frequently included clusters of intervention strategies included nutrition education (89%), dietary behaviour change (83%) and physical activity education (80%). Sixty-one percent of intervention arms encouraged weight-focused goals (61%). The most frequent intervention strategies included education on healthy eating (80%), education on portion size (73%), education to increase physical activity (70%) and problem-solving barriers to dietary change (69%). Few trials addressed weight stigma (16%), sleep health (14%) and psychosocial health-related monitoring (16%). Almost half of interventions addressed disordered eating behaviours and cognitions (44%), only three percent provided referral for support following the intervention.

**Conclusion:** Delivery features and intervention strategies vary greatly between trials, making weight loss interventions complex and intricate. Understanding these interventions is important for redesigning future weight management approaches, to reducing the risk of eating disorders.

## Obesogenic environments and cardiovascular disease incidence: A population-based cohort study of 4.4M adults

Paul Meijer<sup>2,4</sup>, Thao Minh Lam<sup>1,2,3</sup>, Joline Beulens<sup>1,2,3</sup>, Diederick Grobbee<sup>4</sup>, Ilonca Vaartjes<sup>4</sup>, **Dr. Jeroen Lakerveld**<sup>1,2,3</sup>

<sup>1</sup>Amsterdam UMC, Department of Epidemiology and Data Science, Amsterdam, The Netherlands,

<sup>2</sup>Upstream Team, , <sup>3</sup>Amsterdam Public Health research institute, Amsterdam, The Netherlands,

<sup>4</sup>Department of Global Public Health & Bioethics, Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht University, , The Netherlands

**O.1.09: Shaping Health through Spaces: Global Insights into Environmental Impacts, Waihorotiu #1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** To examine the association between combined obesogenic environment exposures with 14-year CVD incidence in adults.

**Methods:** In this population based cohort study we used Dutch national registry data covering 4.4 million Dutch residents aged  $\geq 40$  years, with no recorded history of CVD as of January 1, 2006, who lived at the same address from January 1, 2004, to December 31, 2019. For each individual we calculated their residential combined exposure to obesogenic features (including healthiness of food environments, walkability, drivability, etc.) in an index score ranging from 0-100, with higher scores indicating more obesogenicity. Multivariable Cox proportional hazard models were used to estimate hazard ratios and 95% confidence intervals for the association of the index score at baseline with the 14-year incidence of any CVD, coronary heart disease (CHD), stroke, or heart failure (HF).

**Results:** During 53,118,994 person-years of follow-up, 437,927 (9.9%) individuals were hospitalised due to CVD. We observed that each 10-point higher obesogenic index score was associated with a 1.1% higher risk of any CVD. Individuals in the highest quintile had a 4.9% higher risk of CVD compared to those in the lowest quintile, corresponding to 4,201 (4.7%) attributable CVD events. A 10-point higher OBCT-index score was associated with a 1.0% higher risk of CVD mortality. There were consistent associations found between each 10-point higher OBCT-index score and a 1.1% higher risk of CHD, 0.9% higher risk of stroke, and a 1.2% higher risk of HF. Associations were stronger in the highest compared to the lowest income group, and for high PM<sub>2.5</sub> exposure ( $\geq 15.2$   $\mu\text{g}/\text{m}^3$ ) compared to the low exposure group ( $< 15.2$   $\mu\text{g}/\text{m}^3$ ).

**Conclusions:** Living in a more obesogenic environment was associated with a higher 14-year risk of overall and specific CVD events. If this association is causal, nearly ten thousand CVD events were attributable to obesogenic environment exposure. These findings provide support for the strategies targeting obesogenic environments for population level CVD prevention.

## Sociodemographic and environmental characteristics associated with the healthfulness street food outlets around public schools in a neighborhood in Mexico City: a cross-sectional study

**Dr. Catalina Medina<sup>1</sup>**, Dr. Citlali González<sup>1</sup>, Dr. Ana Laura González-Alejo<sup>2</sup>, MSc. Uzzi López<sup>1</sup>, Dr. Simón Barquera<sup>1</sup>

<sup>1</sup>National Institute of Public Health Mexico, Cuernavaca, Morelos, Mexico, <sup>2</sup>Universidad Nacional Autónoma de México, Ciudad de México, México

**O.1.09: Shaping Health through Spaces: Global Insights into Environmental Impacts, Waihorotiu #1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose.** To identify the sociodemographic and environmental characteristics associated with the healthfulness of street food outlets (SFOs) around schools. We hypothesized that a higher proportion of unhealthy SFOs are closer to schools, particularly in areas with lower social development and a high concentration of people.

**Methods:** A neighborhood that contains 5 marginalization levels was selected, and a random sample of 66 schools was selected. A 500m Euclidean buffer was drawn around the selected schools. SFOs found within the buffer were evaluated using a previously validated survey. The survey includes a checklist of 18 food and beverage (F&V) groups sold in SFOs; these groups were classified as recommended (R) and non-recommended (NR) to be consumed daily based on Eat-Lancet guidelines and Mexican recommendations. Nutritional healthfulness (NH) of SFOs was determined as a percentage of the availability of the above-described F&V groups (0% null-NH, >0% to <51% low-NH, ≥51% high-NH). Crude and adjusted multinomial logistic regression model was used to estimate the sociodemographic and environmental characteristics associated with the healthfulness of SFOs around schools adjusted for covariates (social development index (SDI), distance, total population per block (TPB), and total economic units per block (TEU)).

**Results:** 826 SFOs were found around schools. 12%, 42%, and 46% of SFOs were classified as healthy, low and high NH, respectively. SFOs located in medium and high SDI (RRR 2.13 and 2.83, IC95% 1.01, 2.13, p=0.04 and 1.37, 2.83, p=0.00), located >250-500m (RRR 2.79, IC95% 1.21, 2.79, p=0.00), with a higher proportion of TPB (RRR 2.09, IC95% 1.01, 2.09, p=0.04), and with a higher TEU (RRR 2.75, IC95% 1.27, 2.75, p=0.00) were more likely to be classified as having low-NH relative to null-NH. After adjusting for covariates SDI and TEU remained significant. After adjusting for covariates, SFOs in high SDI areas were more likely to be classified as high-NH relative to null-NH.

**Conclusions:** These findings emphasize that unhealthy SFOs are mainly located in low SDI areas, consistent with previous studies in similar contexts. This study fills the information gap regarding the spatial and social factors influencing informal food availability in the Mexican scholarly context.

## Virtual assessment of physical activity-related built environment in Soweto, South Africa: What is the role of contextual familiarity?

Dr. Motlatso Godongwana<sup>1,2</sup>, Khulu Gama<sup>1</sup>, Vongani Maluleke<sup>1</sup>, Prof. Lisa K. Micklesfield<sup>1</sup>, Damilola Odekunle<sup>3,4</sup>, Yves Florent Wasnyo<sup>5,6</sup>, Boris Elouna<sup>7</sup>, Edwin Ngwa<sup>5,6</sup>, Dr. Adalberto Lopes<sup>8</sup>, Muhammad Rabiul Balarabe<sup>9</sup>, Eva Coringrato<sup>10</sup>, Dr. Alice McGushin<sup>11</sup>, Dr. Tolu Oni<sup>11</sup>, Dr. Louise Foley<sup>11</sup>, **Dr. Tiago Canelas<sup>11</sup>**

<sup>1</sup>SAMRC-Wits Developmental Pathways for Health Research Unit, School of Clinical Medicine, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa, <sup>2</sup>Burden of Disease Research Unit, South Africa Medical Research Council, Tygerberg, South Africa, <sup>3</sup>Department of Urban and Regional Planning, University of Lagos, Lagos, Nigeria, <sup>4</sup>Centre for Housing and Sustainable Development, University of Lagos, Lagos, Nigeria, <sup>5</sup>Faculty of Medicine and Biomedical Sciences, University of Yaoundé 1, Yaoundé, Cameroon, <sup>6</sup>Health of Populations in Transition, University of Yaoundé 1, Yaoundé, Cameroon, <sup>7</sup>Faculty of Arts, Letters and Human Sciences, Department of Geography, University of Yaoundé 1, Yaoundé, Cameroon, <sup>8</sup>Observatory for Urban Health, Federal University of Minas Gerais, Belo Horizonte, Brazil, <sup>9</sup>African Centre for Cities, University of Cape Town, Cape Town, South Africa, <sup>10</sup>RAND Europe, Cambridge, United Kingdom, <sup>11</sup>MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom

**O.1.09: Shaping Health through Spaces: Global Insights into Environmental Impacts, Waihorotiu #1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Introduction:** This study examines the reliability of virtual audits for assessing physical activity-related urban features in Soweto, South Africa. It investigates how auditors' familiarity with local context influences the assessment of the built environment. This work addresses critical gaps in the global application of standardized tools like the Microscale Audit of Pedestrian Streetscapes Global (MAPS-Global) in rapidly urbanizing African cities.

**Methods:** Using Google Street View (GSV), virtual audits were conducted across four neighborhoods in Soweto, representing varying levels of socioeconomic deprivation. The MAPS-Global tool assessed features related to pedestrian infrastructure, crossings, and streetscapes. Auditors (n=8) were categorized into three familiarity groups: those with field familiarity (local auditors who previously conducted in-person audits), contextual familiarity (currently working in Soweto), and no familiarity. Inter-rater reliability (IRR) was calculated using Intraclass Correlation Coefficients (ICC) and Cohen's kappa to determine the association of contextual knowledge with audit outcomes.

**Results:** Auditors with field or contextual familiarity achieved higher IRR across most dimensions compared to those without familiarity. However, some subscales, such as aesthetics and social characteristics, showed poor reliability across all familiarity groups, reflecting challenges in subjective assessment. Notably, GSV limitations, such as incomplete or outdated imagery, and the absence of key urban features (e.g., cycling infrastructure or marked crossings), reduced variability in scores.

**Conclusions:** Virtual audit tools such as MAPS-Global are effective for evaluating the built environment in urbanizing settings, but their applicability is enhanced by auditors' contextual knowledge. Key challenges include adapting global tools to local contexts, addressing coverage gaps, and accounting for rapid urban changes. Current "global" auditing tools require contextual

knowledge, local expertise, and tailored training for effective virtual auditing of built environments in African cities



## Moderators and mediators of the association between the obesogenicity of neighbourhoods and waist circumference in Dutch adults: an OBCT study

**Ms. Jet van de Geest<sup>1</sup>**, Paul Meijer<sup>1</sup>, Dr. Sharon Remmelzwaal<sup>1</sup>, Dr. Jeroen Lakerveld<sup>1</sup>  
<sup>1</sup>Amsterdam UMC, Rotterdam, Netherlands

**O.1.09: Shaping Health through Spaces: Global Insights into Environmental Impacts, Waihorotiu #1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Obesogenic environments may contribute to an individual's weight status by influencing dietary behaviours and physical activity (PA). However, research examining the relationship and pathways between combined indicators of environmental obesogenicity, lifestyle behaviours and weight status remains limited and inconsistent. Furthermore, exposure to obesogenic environments may not be equally important to all population subgroups. Therefore, this study aimed to assess sociodemographic, personality, and psychological moderators, and lifestyle behavioural mediators of the association between obesogenicity of neighbourhoods and weight status in Dutch adults.

**Methods:** This cross-sectional study used baseline data from 150,506 adult participants of the Lifelines study. Lifelines is a multi-disciplinary, prospective, population-based cohort study that includes individuals living in the north of the Netherlands. To quantify obesogenicity of Dutch neighbourhoods, the Obesogenic Built Environment Characteristics (OBCT) index was used, calculated for 1,000m circular buffers around participant's residences. Z-scores of components across food and PA environments were averaged, and rescaled from 0 to 100. Weight status was operationalised as objectively measured waist circumference. Stratified linear regression analyses by (self-reported) sociodemographic factors, perceived stress, impulsivity, self-discipline, and deliberation were conducted when interaction terms were significant ( $P < .01$ ). Mediation by adherence to the Dutch PA guidelines and dietary behaviour was examined using the difference-in-coefficients approach.

**Results/findings:** Every 10% increase in OBCT index was associated with a 0.65 (95%CI [0.59, 0.71]) centimetre larger waist circumference. The association was largest for respondents who were younger, had lower income, the highest educational level, the least self-discipline, the highest impulsivity scores and the most perceived stress. Adherence to PA guidelines and dietary behaviour mediated 13.3% of this association; however, the difference in coefficients was not statistically significant.

**Conclusions:** Obesogenic environments relate to waist circumference partly via lifestyle behaviours in our study, and some population subgroups are more susceptible to obesogenic exposures. This warrants general and tailored health protection of those who need it the most. These results could be used to better target lifestyle interventions, and to guide policymakers and urban planners in promoting health-enhancing environments.

# Scaling Microscale Built Environment Research: AI-Powered Detection of Pedestrian Environment Features Across U.S. Cities

**Prof. Marc Adams<sup>1</sup>**, Mr. Akshar Patel<sup>1</sup>, Dr Lawrence Frank<sup>2</sup>, Dr. Christy Phillips<sup>1</sup>

<sup>1</sup>Arizona State University, Phoenix, USA, <sup>2</sup>Urban Design 4 Health, Rochester, USA

**O.1.09: Shaping Health through Spaces: Global Insights into Environmental Impacts, Waihorotiu #1, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Microscale pedestrian environment features (PEFs) in the built environment (BE) are linked to overall and domain-specific physical activity. However, manual audits of PEFs are time and labor-intensive and expose auditors to hazards such as traffic, crime, and extreme weather. Virtual audits using online omnidirectional images mitigate some risks but still demand substantial human effort, limiting research to small areas. Research on PEFs is crucial for promoting safe and accessible environments that encourage PA and reduce health inequities. Despite their importance, scalable methods to assess microscale PEFs across diverse contexts remain underdeveloped. Developing an unbiased computer vision (artificial intelligence) approach to detect PEFs in omnidirectional images at scale across multiple cities could transform microscale BE research by providing generalizable, large-scale evidence.

**Methods:** Expert human raters labeled the presence/absence of nine PEFs (sidewalks, sidewalk buffers, line and zebra crosswalks, curb ramps, crossing signals, streetlights, bike sharrows, benches) in 116,934 Google Street View images from four US cities (Seattle, San Diego, Phoenix, Baltimore) selected for variance in PEF appearances. Images were split into training (78%), validation (17%), and test/holdout (5%) datasets. Computer vision models were trained for each PEF using the EfficientNetV2 architecture, chosen for its computational efficiency and suitability for large-scale image processing. PEF models were evaluated on precision (positive predictive value), recall (sensitivity), and overall accuracy compared to human raters, and model generalizability across cities was assessed.

**Results:** Classifier models performed well in the test/holdout dataset, with precision, recall, and accuracy comparable to human raters: sidewalks (91.89%, 80.95%, 83.64%), sidewalk buffers (90.21%, 88.38%, 89.58%), line crosswalks (82.47%, 76.92%, 89.59%), zebra crosswalks (94.70%, 88.63%, 91.98%), curb ramps (89.44%, 84.08%, 86.81%), crossing signals (85.46%, 84.27%, 84.99%), streetlights (93.19%, 91.06%, 91.95%), bike sharrows (96.28%, 93.14%, 98.78%), and benches (93.95%, 82.53%, 90.20%). Models performed similarly across cities, with some observed differences.

**Conclusions:** Results demonstrate the potential for rapid and reliable AI-based assessment of urban PEFs and their generalizability across diverse US cities. This innovation enables large-scale audits of millions of omni-directional images, accelerating new research on environmental surveillance, inequities, change, and interventions. Next steps include extending model generalizability to rural and international settings.

## Visualising and quantifying the intersection of built and food environments with climate hazards in four African cities

Dr Tiago Canelas<sup>1</sup>, Dr Feyisayo Wayas<sup>2</sup>, Ms Damilola Odekunle<sup>3,4</sup>, Dr Yves Wasnyo<sup>5</sup>, Dr Motlatso Godongwana<sup>6,7</sup>, Mr Boris Elouna<sup>8</sup>, Dr Felix Assah<sup>8</sup>, Ms Khulu Gama<sup>6</sup>, Mr Vongani Maluleke<sup>6</sup>, Prof Lisa Micklesfield<sup>6</sup>, Prof Estelle Lambert<sup>2</sup>, Dr Victor Onifade<sup>3,4</sup>, Dr Olabode Orelaja<sup>3,4</sup>, Dr Vide Adedayo<sup>10</sup>, Prof Taibat Lawanson<sup>3,4</sup>, Dr Adalberto Lopes<sup>11</sup>, Ms Larissa Lopes Lima<sup>11</sup>, Prof Waleska Caiaffa<sup>11</sup>, Prof Tolu Oni<sup>1</sup>, **Dr. Louise Foley<sup>1</sup>**

<sup>1</sup>MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>Research Centre for Health through Physical Activity, Lifestyle and Sport (HPALS), Division of Physiological Sciences, Department of Human Biology, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, <sup>3</sup>Department of Urban and Regional Planning, University of Lagos, Lagos, Nigeria, <sup>4</sup>Centre for Housing and Sustainable Development, University of Lagos, Lagos, Nigeria, <sup>5</sup>Health of Populations in Transition, University of Yaoundé 1, Yaoundé, Cameroon, <sup>6</sup>SAMRC-Wits Developmental Pathways for Health Research Unit, School of Clinical Medicine, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa, <sup>7</sup>Burden of Disease Research Unit, South Africa Medical Research Council, Johannesburg, South Africa, <sup>8</sup>Faculty of Arts, Letters and Human Sciences, Department of Geography, University of Yaoundé 1, Yaoundé, Cameroon, <sup>9</sup>Faculty of Medicine and Biomedical Sciences, University of Yaoundé 1, Yaoundé, Cameroon, <sup>10</sup>Department of Geography, University of Lagos, Lagos, Nigeria, <sup>11</sup>Observatory for Urban Health, Federal University of Minas Gerais, Belo Horizonte, Brazil


### O.1.09: Shaping Health through Spaces: Global Insights into Environmental Impacts, Waihorotiu #1, June 12, 2025, 12:00 PM - 1:15 PM

#### **SIG - Primary Choice:** H. Policies and environments

**Purpose:** Non-communicable diseases (NCDs) are increasing rapidly in sub-Saharan Africa. In African cities, built and food environments are typically unsupportive of physical activity and a healthy diet, two key NCD drivers, and this is exacerbated by rapid urbanisation and climate change. These 'syndemic hazards' (health hazards that interact and exacerbate one another) are powerful drivers of urban health in Africa. We describe the methodology for assessing syndemic hazards related to physical activity and diet in a cross-sectional study conducted across four African cities.


**Methods:** We used small areas (median size: 4 km<sup>2</sup>) as our unit of analysis, comparing areas with varying levels of deprivation within and across cities. Data collection utilised established tools, including the Microscale Audit of Pedestrian Streetscapes (MAPS) Global version for built environments and the Environmental Profile of a Community's Health (EPOCH) for food environments. With local researchers, we adapted the tools and applied these in small areas. Climatic hazards, including precipitation, flooding, air pollution (PM2.5 and PM10), and urban heat islands, were sourced from secondary data identified with local stakeholders. These climatic variables were processed as spatial data with a 300-metre resolution and overlaid onto small areas.

**Findings:** We collected data on more than 1,000 streets across 23 small areas in four cities. Training local auditors was essential for meaningful data collection. Tool adaptations were minimal to maintain alignment with international standards, primarily focusing on linguistic changes for comprehension. However, local realities required adjustments, such as incorporating paratransit options in public transport assessments and standardising measurements for fruits and vegetables in informal markets. Informality also influenced the inclusion of amenities like bars, and challenges arose in assessing unpaved roads, which were



not accounted for in the original tools. To address logistical and security challenges, data collectors worked in pairs. Additionally, due to rapid urban changes, protocols were developed to account for new buildings and road modifications.

Discussion: We highlight the importance of tailoring methodologies to understand complex interactions between syndemic hazards in rapidly urbanising settings. Striking a balance between standardised tools and local adaptations is crucial for fostering transnational dialogue on healthy and equitable urban environments.



## Excise taxes targeting unhealthy foods in Tonga: Have they worked?

**Dr. Andrea Teng<sup>1</sup>**, Dr Viliami Puloka<sup>1</sup>, Dr Alice Kim<sup>1</sup>, Prof Nick Wilson<sup>1</sup>

<sup>1</sup>University of Otago, Wellington, Wellington, New Zealand

**O.1.10: Transforming Food Access: Policies, Environments, and Behaviors for Healthier Communities, Herald Theatre, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Fiscal policies are recommended by the World Health Organization for promoting a healthy diet. Although sugar-sweetened beverage taxes are common, taxes less commonly target foods. Tonga has some of the highest obesity and diabetes rates in the world and introduced excise taxes on several foods between 2013-18. We examined how these tax increases affected food prices and import supply.

**Methods:** Interrupted time series analysis was used to measure the first-year impacts of each excise increase on taxed food; indicator prices (retail surveys by Tonga Department of Statistics) and import volumes. Nine tax increases were examined, varying from US\$0.17/kg to US\$1.08/kg, with a 28% average increase. A segmented linear model was fitted to monthly data. Observed post-tax trends were compared with projected pre-tax trends, with adjustment for autocorrelation when present, and potential time-varying confounding by GDP, international visitor numbers, month, T\$/US\$ exchange rate, oil prices, and (where relevant) international food prices. For percentage change outcomes, we used bootstrapping to get 95% confidence intervals, and random effects meta-analysis to give average effects across foods.

**Results:** In the first-year post-tax, retail prices increased for eight of nine indicator foods, with an average increase of 8% (95%CI: 3% to 14%). Five price increases were statistically significant: mutton flaps (20% increase), corned beef (20%), ice cream (11%), salted beef (6%) and mayonnaise (3%). Import volumes decreased for eight taxed foods with an overall average decrease of 41% (95%CI: 17% to 58%). Two import decreases were statistically significant: sausages (68% reduction) and ice cream (72%). Of locally produced products, only sausages (taxed at half the level of imports), appeared to have an increasing production trend, but only reached 13% of the total sausage market by volume in 2019. Findings were shared with Tongan stakeholders in mid-2024.

**Conclusions:** Unhealthy food excise taxes in Tonga were associated with increased prices and decreased imports of taxed foods. Findings add to the international evidence that food excise taxes can be effective in raising prices and reducing supply of unhealthy foods.

## Development of a tool to support local government policy and actions to create healthy and sustainable food environments

**Dr. Rana Peniamina**<sup>1</sup>, Prof Louise Signal<sup>2</sup>, Dr. Christina Mckerchar<sup>3</sup>

<sup>1</sup>Department of Preventive and Social Medicine, University of Otago, Dunedin, New Zealand,

<sup>2</sup>Department of Public Health, University of Otago, Wellington, New Zealand, <sup>3</sup>Department of Population Health, University of Otago, Christchurch, New Zealand

**O.1.10: Transforming Food Access: Policies, Environments, and Behaviors for Healthier Communities, Herald Theatre, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This research aimed to develop and trial a tool to support local councils and communities to create healthy and sustainable food environments for better community health and wellbeing.

**Methods:** A new tool, the Local Food Environment Policy Initiatives (Local Food-EPI), was developed to support local government policy and actions that will create healthy and sustainable food environments. The concept and development of the tool were informed by international INFORMAS work and local government work in Toronto and Melbourne. The tool was developed in consultation with representatives from councils, public health, and communities from across Aotearoa New Zealand through interviews, peer review, and trial workshops. Interviews were held with 26 key informants representing 10 local government jurisdictions and two local government experts. In addition, post-interview feedback on the draft tool and overall concept and usefulness of the tool was collected. Data was collated, analysed and used to make improvements to the tool. The draft tool then underwent peer review, which informed the final version used for testing. Trial workshops were held with two councils/communities. Workshop participants, including council and community representatives, trialled the use of the Local Food-EPI to assess the council's current progress; and identify and prioritise future council actions to create healthy and sustainable food environments. A survey was used to gather feedback on the Local Food-EPI and workshop process and the resulting data was used to make further improvements.

**Results/findings:** There was strong interest in the Local Food-EPI concept among councils in Aotearoa New Zealand. The Local Food-EPI comprises background information, instructions, a table of suggested council actions (including national and international examples), workshop process instructions and Powerpoint presentation file, and survey forms (to assess the council's current progress, and to identify future priorities).

**Conclusions:** The Local Food-EPI can be used collaboratively with communities and councils to foster healthy and sustainable food environments that prioritise the needs of the community within a particular locality and take into account what is possible in the context of an individual council.

## Racial/Ethnic & Socioeconomic Differences in Associations between Exposure to Crime at Food Stores and Food Insecurity

**Dr. Chelsea Singleton<sup>1</sup>**, Ms. Danielle Gartner<sup>1</sup>, Dr. Fikriyah Winata<sup>2</sup>, Dr. Diego Rose<sup>1</sup>, Dr. Karen Sheehan<sup>3</sup>, Dr. Sara McLafferty<sup>4</sup>

<sup>1</sup>Tulane University, New Orleans, USA, <sup>2</sup>Texas A&M University, College Station, USA, <sup>3</sup>Northwestern University, Chicago, USA, <sup>4</sup>University of Illinois at Urbana-Champaign, Urbana, USA

**O.1.10: Transforming Food Access: Policies, Environments, and Behaviors for Healthier Communities, Herald Theatre, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** In the U.S., low-income and racially-marginalized populations are exposed to crime more often than their counterparts, especially in community spaces (e.g., schools, parks, food stores). Our team's recent work generated novel evidence on the nutritional consequences of crime exposure at food stores (e.g., grocery stores, dollar stores). We associated exposure to crime at food stores with risk of food insecurity among Black-identifying adults. This study aimed to build upon that work by exploring racial/ethnic and socioeconomic differences in associations between exposure to crime at food stores and food insecurity in diverse sample of U.S. adults.

**Methods:** In 2024, we conducted an online survey of 1,541 adults (mean age: 49.9; 51.7% female; 17.6% non-Hispanic (NH) Black; 18.5% Hispanic; 27.3% SNAP participation). Respondents reported their socio-demographic information and completed the 6-item U.S. Food Security Module. In addition, they answered questions to determine if they 1) avoid food stores in their community due to crime, 2) have witnessed a crime at a food store in their community, or 3) have been victimized while at a food store in their community. We examined multivariable-adjusted logistic regression models to explore associations between our 3 indicators of exposure and food insecurity by race/ethnicity and SNAP participation status.

**Results/Findings:** Respectively, 21.7%, 18.6%, and 9.9% of respondents reported they avoid food stores due to crime, have witnessed a crime at a food store, and have been victimized at a food store. After adjusting for age, sex, race/ethnicity, SNAP participation, education level, and household size, all 3 indicators were associated with increased odds of food insecurity: avoid (OR: 2.96; 95% CI: 2.21-3.97), witness (OR: 2.91; 95% CI: 2.12-3.97), victim (OR: 3.41; 95% CI: 2.19-5.30). Stratified models reveals that all 3 indicators were associated with food insecurity among NH White, NH Black, and Hispanic respondents. Furthermore, all 3 indicators were associated with food insecurity among SNAP participants and non-participants.

**Conclusions:** Exposure to crime at local food stores is associated with increased risk of food insecurity among U.S. adults regardless of their race/ethnicity and SNAP participation status. These findings provide additional evidence on the nutrition consequences of crime exposure.

# Regulating Dollar Stores in the US: A Multiple Case Study of Local Policies to Advance Healthy Food Access

Dr. Samantha Sundermeir<sup>1</sup>, Ms. Julia McCarthy<sup>2</sup>, Dr. Chelsea Singleton<sup>3</sup>, Ms. Treasure Ebikwo<sup>1</sup>, Ms. Karina Khanna<sup>1</sup>, **Danielle Gartner**<sup>3</sup>, Ms. Inngide Osirus<sup>3</sup>, Dr. Joel Gittelsohn<sup>2</sup>, Dr. Megan Winkler<sup>1</sup>

<sup>1</sup>Emory University Rollins School of Public Health, Wilmington, United States, <sup>2</sup>Johns Hopkins University Bloomberg School of Public Health, Baltimore, USA, <sup>3</sup>Tulane University School of Public Health & Tropical Medicine, New Orleans, USA

**O.1.10: Transforming Food Access: Policies, Environments, and Behaviors for Healthier Communities, Herald Theatre, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Dollar stores, which are discount retailers that sell everyday items including food, have been criticized in the US for rapid expansion in low-resourced communities despite their limited healthy food options. While policy action to curb their proliferation has garnered remarkable support from communities and officials, few to date have aimed to address their unhealthy food environments. Using a multiple case study design, this study aimed to examine diverse dollar store policies, contexts, and processes across five US cities to inform the future development of policies that can improve healthy food access.

**Methods:** Five cases were selected for inclusion based on maximum variation in policy stage and mechanism, levels of community engagement and dollar store lobbying activity, and policy motivation: New Orleans, Birmingham, Chicago, Toledo, and Philadelphia. Each case consists of multiple data sources, including policy and news documents, store assessments, and in-depth interviews with policymakers, city agencies, community members, and community organizations. We are preparing a narrative report for each case integrating all data sources collected. Using the Policy Triangle framework, we are using cross-case analysis to understand the context, content, processes, and actors for successful dollar store policy development, implementation, and enforcement.

**Results:** This presentation will highlight key narratives around policy agenda setting, implementation and enforcement, and perceived effectiveness of the dollar store policies across cases. Each case has a unique story behind their dollar store policy purpose, how it became a policy agenda item, and key context and actors that contributed to its successful passage. In addition, each case had varying levels of success with implementation and enforcement, and consequently, have experienced mixed success in improving healthy food access in the intended geographic locations.

**Conclusion:** Dollar store policies that limit proliferation are a key first step in responding to community concerns, but further expansion of such policies is necessary to improve healthy food access. Understanding the influential factors at each phase of the dollar store policy cycle are critical for passing dollar store policies in other locations and improving existing policies to be enforceable and effective.

# From Policy to Practice: Insights into Retailer Compliance with Berkeley's Healthy Checkout Ordinance

**Dr. Alexandria Reimold<sup>1</sup>**, Mr. Ethan Wolf<sup>1</sup>, Ms. Noelle Chin<sup>1</sup>, Dr. Samantha Marinello<sup>2</sup>, Lisa Powell<sup>2</sup>, Dr. Jennifer Falbe<sup>1</sup>

<sup>1</sup>University of California, Davis, Wilmington, USA, <sup>2</sup>University of Illinois Chicago, Chicago, USA

**O.1.10: Transforming Food Access: Policies, Environments, and Behaviors for Healthier Communities, Herald Theatre, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** In 2021, Berkeley, CA passed the world's first Healthy Checkout Ordinance (HCO), limiting items at retail checkouts to: non-food/beverage products, unsweetened beverages (caloric and noncaloric), sugar-free gum and mints, fruits, vegetables, nuts, seeds, legumes, yogurt, cheese, and whole grains with  $\leq 5$  grams added sugars and  $\leq 200$  milligrams of sodium per serving. An evaluation found 83% of products at Berkeley checkouts were HCO-compliant one-year postimplementation. To inform global HCO-implementation efforts aimed at retailer compliance, we aim to characterize the availability of and reasons for noncompliant products remaining at checkout.

**Methods:** We evaluated a census of product facings at sampled checkouts in Berkeley retailers one-year postimplementation using a validated photograph-based tool and publicly available nutrition data to assess compliance. We are also currently conducting semi-structured in-depth interviews with owners and managers of retailers subject to the HCO.

**Results:** Across the 23 HCO-subject stores, 1,254 noncompliant items (17% of products) remained at checkout one-year postimplementation. Items were most frequently noncompliant due exclusively to noncompliant food category ( $n=481$ , 38%), beverage with added sugar ( $n=148$ , 12%), beverage with artificial sweeteners ( $n=123$ , 10%), food containing  $>200$ mg sodium ( $n=25$ , 2%), and food containing  $>5$ g added sugar ( $n=13$ , 1%). Another 37% ( $n=464$ ) of items were noncompliant for multiple reasons, most frequently due to food category and either containing  $>5$ g added sugar ( $n=224$ , 18%) or  $>200$ mg sodium ( $n=198$ , 16%). The most frequent noncompliant foods included candy ( $n=197$ , 20%), chips ( $n=177$ , 18%), mints and gum with added sugar ( $n=161$ , 17%), granola/protein bars ( $n=137$ , 14%), and dried meat/jerky ( $n=68$ , 7%); and the most frequent noncompliant beverages included soda ( $n=67$ , 24%), diet ( $n=53$ , 19%) and regular ( $n=44$ , 16%) energy drinks, sweetened coconut water ( $n=25$ , 9%), and diet flavored water ( $n=23$ , 8%). Data from interviews conducted thus far indicate that retailers are more familiar with nutrient cutoffs than HCO-permitted food/beverage categories. Misunderstanding or forgetting these categories may contribute to noncompliance.

**Conclusions:** Based on noncompliant products and retailer interviews, it appears that incomplete compliance with the HCO is partially due to misunderstanding or misremembering HCO-compliant food/beverage categories. Enhanced technical assistance, clearer policy language, and stronger enforcement may increase retailer compliance with the ordinance.

# Shaping Healthy Food Environments in the Philippines: Insights into Modern and Traditional Food Retail Dynamics

**Dr. Elaine Borazon**<sup>1</sup>, Ms. Adila Fahmida Saptari<sup>2</sup>, Dr. Sameeha Mohd Jamil<sup>3</sup>, Dr. Sirinya Phulkerd<sup>4</sup>, Dr. Helen Trevena<sup>5</sup>, Dr. Anne-Marie Thow<sup>6</sup>, Dr. Poh Bee Koon<sup>3</sup>

<sup>1</sup>IGPEHD, College of Social Sciences, National Sun Yat-sen University, Kaohsiung City, Taiwan,

<sup>2</sup>Reconstra Indonesia, Jakarta, Indonesia, <sup>3</sup>Faculty of Health Sciences Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, <sup>4</sup>Institute for Population and Social Research Mahidol University, Bangkok, Thailand, <sup>5</sup>Ministry of Health, Australia, <sup>6</sup>Menzies Centre for Health Policy University of Sydney, Sydney, Australia

**O.1.10: Transforming Food Access: Policies, Environments, and Behaviors for Healthier Communities, Herald Theatre, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study examines the dynamics of modern and traditional food retailing in the Philippines, focusing on the factors influencing stocking decisions and their implications for creating a healthier food environment. Since the late 1990s, the expansion of retail transnational corporations (TNCs) in Southeast Asia, including the Philippines, has driven significant transformations in the retail sector, reshaping food availability and accessibility.

**Methods:** Semi-structured in-depth interviews were conducted with 48 representatives from a diverse range of food retailers (micro to large) in the National Capital Region of the Philippines. Participants included managers or employees responsible for procurement, sales, marketing, and product placement decisions, each with at least one year of experience in their roles. Data were analyzed using both deductive and inductive approaches to identify themes, linkages, and patterns.

**Results/Findings:** Modern food retailers in the Philippines cater to a diverse consumer base, serving both individual consumers and traditional retailers that reach various income groups. Their stocking decisions are influenced by sales performance, product characteristics, brand image, and consumer demands. In contrast, traditional retailers prioritize fast-moving consumer goods and immediate returns due to limited financial capital. Their stocking choices reflect the preferences of their close-knit residential communities, such as snacks and beverages appealing to children, but often lack considerations for healthiness due to low demand and higher costs of nutritious foods. Barriers to fostering a healthy food environment in the Philippines include challenges related to distribution and logistics, agriculture, regulatory compliance, infrastructure, competition, product quality, and consumer factors like purchasing power, awareness, and market readiness. These systemic issues hinder the availability and promotion of healthy food options.

**Conclusion:** The study identifies strategic opportunities for advancing a healthier food retail environment, such as improving logistics, supporting local agriculture, enhancing governance for food safety and labeling, and leveraging demand-driven approaches to encourage healthier consumer choices. By adopting a systems perspective, these strategies can address the limited availability of healthy foods and promote a more equitable and sustainable food environment in the Philippines. This highlights the critical role of retail systems in shaping public access to healthier food options.

## Self-compassion for weight management in type 2 diabetes: a qualitative study

Mr. Andrew Godfrey<sup>1</sup>, Ms. Gigi Lee<sup>1</sup>, Ms. Milly Akroyd<sup>1</sup>, Dr. Jennifer Brenton-peters<sup>2</sup>, Ms. Anna Milford<sup>1</sup>, Dr. Nathan Consedine<sup>1</sup>, **Associate Prof. Anna Serlachius<sup>1</sup>**

<sup>1</sup>Department of Psychological Medicine, School of Medicine, University of Auckland, Auckland, New Zealand, <sup>2</sup>Te Whatu Ora, Health New Zealand, Auckland, New Zealand

**O.1.11: Motivation in Chronic Disease, Balcony Foyer, June 12, 2025, 12:00 PM - 1:15 PM**

**Purpose:** Guidelines for self-care behaviours and self-management in type 2 diabetes (T2D) are complex and challenging and often inadvertently increase self-criticism and diabetes distress. For this qualitative study, we were interested in exploring the views of adults with T2D and clinicians on an existing self-compassion-based website for weight management.

**Methods:** Seventeen participants (7 adults with T2D and 10 healthcare professionals) were recruited from Auckland, New Zealand. Interviews and focus groups were conducted to assess the website's acceptability, usability and how best it might be tailored for people with T2D. Participants with T2D also completed the Self-Compassion Scale (SCS) and the Problem Areas in Diabetes questionnaire (PAID). Qualitative content analysis was used to analyse the data using a realist epistemology and both a deductive and inductive approach.

**Results:** Overall, the qualitative data demonstrated strong conceptual support for a compassion based digital intervention to assist with weight management and other self-management behaviours in T2D. Themes highlighted the challenges for people with T2D, notably regarding support at the point of diagnosis, the burden of stigma, and lack of mental health support. Feedback regarding tailoring the website for T2D was provided including incorporating more diabetes-management education (especially nutrition and physical activity), translating the website into te reo Māori and Pacific languages, and providing a platform to connect with peers.

**Conclusion:** The qualitative findings from this study demonstrate that the compassion-based, weight-management website is acceptable and has the potential to provide enhanced self-management support and importantly psychological support for people with T2D. Our next steps are to incorporate the recommended feedback to further tailor the website for T2D and to conduct a small pilot to test the website with a focus on reducing self-criticism and self-stigma in adults with T2D.

# Enhancing Pre-Surgical Physical Activity in Patients with Osteoarthritis: A Brief Behaviour Change Intervention Targeting Capability, Opportunity, and Motivation

**Dr. Jessica R Calverley<sup>1,2</sup>**, Dr. Brendon Roxburgh<sup>1,2</sup>, Dr. Kate N Thomas<sup>2</sup>, Dr. Elaine A Hargreaves<sup>1</sup>

<sup>1</sup>*School of Physical Education, Sport and Exercise Science, University of Otago, Dunedin, New Zealand,*

<sup>2</sup>*Department of Surgical Sciences, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand*

**O.1.11: Motivation in Chronic Disease, Balcony Foyer, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

End-stage osteoarthritis patients face challenges to be physically active while awaiting surgery, which is important for pre-surgical health, and require support to change their behaviour. Grounded in the COM-B Model of behaviour change, informed by patient and clinician perspectives on pre-surgical physical activity, and utilising specific behaviour change techniques, a physical activity support resource (PreHAB) was developed to improve capability, opportunity, and motivation (COM) for pre-surgical physical activity. This pilot RCT evaluated PreHAB's impact on COM and physical activity compared to usual care in patients with osteoarthritis awaiting surgery. Sixty-two pre-surgical osteoarthritis patients were randomly assigned to receive the PreHAB intervention resource (n=32) or usual care resource (existing hospital leaflet, n=30) at a designated clinical appointment. Physical activity behaviour and COM variables were assessed using the Stanford 7-Day Physical Activity Recall and Keyworth's adapted COM Questionnaire. Data were collected one week pre-appointment (baseline), and three days, two- and four-weeks (primary timepoint) post-appointment. Analyses (R, Stata) included linear mixed-effects modelling, within-group and between-group comparisons, and regression-based causal mediation analyses to examine whether COM mediated changes in physical activity. PreHAB participants reported significantly increased physical activity from baseline to week four (76 vs. 112 min;  $p=.03$ ), while no change was observed over time in usual care (76 vs. 79 min;  $p=.51$ ). PreHAB significantly improved capability (psychological, physical, knowledge), opportunity (physical), and motivation (reflective) at week four compared to baseline and usual care. Increased physical activity was mediated by increased psychological capability ( $\beta=.34$ ,  $p=.01$ ), knowledge ( $\beta=.41$ ,  $p=.03$ ), and physical opportunity ( $\beta=.27$ ,  $p=.04$ ). Physical capability ( $\beta=.33$ ,  $p=.06$ ) and reflective motivation ( $\beta=.33$ ,  $p=.05$ ) showed trends approaching significance. In the short-term, PreHAB improved COM and physical activity behaviour in comparison to usual care. While short-term, findings suggest that patient-centred behaviour-change interventions like PreHAB can effectively support patients' physical activity during the pre-surgical period by successfully supporting behavioural antecedents (i.e., COM). Results highlight the potential of integrating structured behaviour-change strategies into standard pre-surgical care to enhance patients' physical activity and potential health outcomes. Future research should focus on testing the long-term effects of such interventions and their scalability within health services to better reflect extended pre-surgical durations.

# Can continuous glucose monitoring improve glycemic outcomes within behaviour change interventions? A systematic review and meta-analysis in adults with and without diabetes

**Dr. Michelle Jospe<sup>1</sup>**, Dr Kelli Richardson<sup>1</sup>, Dr Lauren Bohlen<sup>2</sup>, Dr Jacob Crawshaw<sup>3</sup>, Dr Ahlam Saleh<sup>4</sup>, Dr Susan Schembre<sup>1</sup>

<sup>1</sup>Lombardi Comprehensive Cancer Center, Georgetown University, Washington, USA, <sup>2</sup>Center for Health Promotion and Health Equity, Department of Behavioural and Social Sciences, Brown University School of Public Health, Providence, USA, <sup>3</sup>Methodological and Implementation Research Program, Ottawa Hospital Research Institute, Ottawa, Canada, <sup>4</sup>Arizona Health Sciences Library, University of Arizona, Tucson, USA

**O.1.11: Motivation in Chronic Disease, Balcony Foyer, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Continuous glucose monitoring (CGM) shows promise for precision health by enabling real-time biological feedback on dietary and physical activity choices. However, its effectiveness in improving health outcomes within behaviour interventions remains unclear. This systematic review and meta-analysis examines the effectiveness of behaviour change interventions using CGM-based feedback to improve glycemic control, anthropometry, and behaviour in adults with and without diabetes.

**Methods:** We conducted a comprehensive search in Ovid MEDLINE, Cochrane CENTRAL, Embase, PsycINFO, and ProQuest Dissertations & Theses Global through January 2024. Eligible studies included randomised-controlled trials (RCTs) where at least one group received CGM-based feedback, compared to a control group without CGM feedback. Dual screening, data extraction, and bias assessment were conducted independently. Mean differences in outcomes between intervention and comparison groups were analysed using generic inverse-variance models and random effects. Robustness of pooled estimates from random-effects models was considered with sensitivity and subgroup analyses.

**Results:** Our review included 25 RCTs with 2996 participants, including populations with type 2 diabetes (k=17/25, 68%), type 1 diabetes (k=3/25, 12%), gestational diabetes (k=3/25, 12%), and obesity (k=3/25, 12%). Interventions leveraging CGM-based feedback yielded a significantly greater reduction in HbA1c levels of -0.28% (95% CI 0.15, 0.42; p<0.001; I<sup>2</sup>=88%) with no differences across participant or intervention characteristics, including baseline HbA1c, duration of CGM sensor wear, or behaviour tracking. Time in range increased by 7.4% (95% CI 2.0, 12.8; p=0.008; I<sup>2</sup>=80.5%) compared to controls. Other outcomes, including time above range, BMI, and weight did not vary by group assignment. Dietary and physical activity effects were reported too infrequently (k=4/25 and k=5/25) to draw conclusions about behavioural impacts.

**Conclusions:** Behaviour change interventions using CGM-based feedback have favourable, modest effects on indicators of glycemic control in adults with and without diabetes. Further research is necessary to identify the behaviours and mechanisms that drive these effects across varied populations.

## Factors that influence physical activity (PA) behaviour in women with polycystic ovary syndrome (PCOS): Suggestions for PA interventions and beyond

**Dr. Amie Woodward<sup>1</sup>**, Prof Markos Klonizakis<sup>2</sup>, Prof David Broom<sup>3</sup>, Dr Rachel Cholerton<sup>2</sup>, Dr Hilary Piercy<sup>2</sup>

<sup>1</sup>York St John University, York, United Kingdom, <sup>2</sup>Sheffield Hallam University, Sheffield, United Kingdom,

<sup>3</sup>Coventry University, Coventry, United Kingdom

**O.1.11: Motivation in Chronic Disease, Balcony Foyer, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Polycystic ovary syndrome (PCOS) affects up to 13% of reproductive-aged women. PCOS is associated with fertility issues, metabolic disorders, and emotional and mental health issues. Physical activity (PA) is clinically recommended for the management of PCOS. However, adherence to PA interventions is low in this population and long-term uptake of PA is a challenge. We conducted a feasibility trial of two PA interventions for women with PCOS. Within this, we conducted a qualitative evaluation of the trial in tandem with an investigation of factors influencing PA behaviour. We aimed to elucidate factors in the implementation of future PA interventions that develop motivation, encourage behaviour change and promote the long-term uptake of PA behaviour.

**Methods:** Eleven participants with PCOS were purposively sampled from the main sample (n=36) and participated in semi-structured interviews. Interviews lasted 40-60 minutes and were by telephone or face-to-face. Interviews were audio-recorded and transcribed verbatim. Data were analysed using reflexive thematic analysis.

**Results:** Five themes were developed that formed the basis of suggestions for future intervention design. 1) The Changing Nature of Priorities: alignment of the intervention with participants' shifting priorities, 2) The Push and Pull of PCOS Symptoms: relying on weight-related outcomes or negative reinforcement may not be a successful strategy for long-term PA engagement, 3) Focusing Beyond the Scale: participants may be more motivated when they experience positive well-being related outcomes, 4) Knowledge as a Foundation for Change: PCOS-specific educational components may influence motivation, 5) The Balance of Stigma and Social Support: social support that preserves dignity and reduces feelings of shame may facilitate long-term uptake of PA.

**Conclusions:** If health benefits are to be achieved beyond short-term PA interventions in this population, interventions need to be designed with a consideration of the interplay between PCOS and PA behaviour in mind. These findings can be implemented into the design of PA interventions in this population to improve participant experience, motivation, and the long-term uptake of PA behaviour.

## Results of the MOVES Study: A feasibility study MOtivating indiViduals with systemic lupus erythematosus to ExerciSe

**Prof. Dominique Kinnett-Hopkins<sup>1</sup>**, Dr. Linda Ehrlich-Jones<sup>2</sup>, Ms. Chun-Chen Lin<sup>1</sup>, Dr. Rosalind Ramsey-Goldman<sup>3</sup>

<sup>1</sup>School of Kinesiology, University of Michigan, Ann Arbor, United States, <sup>2</sup>Northwestern University, Feinberg School of Medicine, Chicago, United States, <sup>3</sup>Shirley Ryan AbilityLab, Chicago, United States

**O.1.11: Motivation in Chronic Disease, Balcony Foyer, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Physical activity is an evidence-based modifiable behavior that can manage symptoms of systemic lupus erythematosus (SLE). However, rates of physical activity are low among persons with SLE. This study investigated the feasibility of an exercise intervention grounded in social cognitive theory and motivational interviewing for improving patient-reported outcomes and physical function in SLE.

**Methods:** Participants were randomized into the MOVES program or a waitlist control. Eligible individuals were adults with a self-reported diagnosis of SLE, <150 minutes of moderate-to-vigorous physical activity (MVPA) per week, and severe fatigue. The MOVES intervention was a four-month home-based exercise program that included a manual, Fitbit Inspire 2, and resistance bands. Participants completed an orientation session and received six motivational interviewing coaching calls (weeks 3, 5, 7, 10, 13, 16). PROMIS® measures of fatigue, physical function, sleep disturbance, pain interference, anxiety, and depression were measured at baseline, post-intervention, and two-month follow-up. Accelerometers measured daily MVPA minutes (2020+counts) for seven days at baseline and post-intervention. Data were analyzed using descriptive statistics and linear mixed models.

**Results:** Twenty-eight female participants completed baseline, post, and follow-up testing (16 intervention, 12 control; no significant differences at baseline). The mean(SD) age was 46(9.5); 50% Black/African American, 46.4% White, 3.6% Asian; and 85.7% having some college education. The MOVES program showed significantly larger improvements in fatigue and physical function than the control group, both clinically and statistically, at both post-intervention ( $p=0.01$  for both) and follow-up (fatigue  $p=0.01$ , physical function  $p=0.02$ ). While no statistically significant differences were observed for pain interference, anxiety, depression, sleep disturbance, or MVPA, clinically meaningful changes were evident in MOVES program post-intervention. Clinically meaningful changes (Cohen's  $d$ ) were observed for fatigue ( $d=-1.7$ ), physical function ( $d=0.56$ ), pain interference ( $d=-0.99$ ), anxiety ( $d=-0.98$ ), and depression ( $d=-1.16$ ) between baseline and post-intervention. These improvements were maintained at follow-up for fatigue ( $d=-1.7$ ), physical function ( $d=0.52$ ), anxiety ( $d=-0.62$ ), and depression ( $d=-1.09$ ).

**Conclusion:** The MOVES program led to significant and maintained improvements in fatigue and physical function, with clinically meaningful improvements in pain interference, anxiety, and depression. Findings highlight the potential of the MOVES program to address key patient-reported outcomes among persons with SLE.

## Diet Changes After a 6-Month Intervention in the PERsonalised Knowledge to Reduce the Risk of Stroke (PERKS-International) randomised controlled trial.

**Dr. Shabnam Jalili-moghaddam**<sup>1</sup>, Prof Rita Krishnamurthi<sup>1</sup>, Prof Valery Feigin<sup>1</sup>, Ms Katherine Chappell<sup>2</sup>, Emeritus Prof Amanda G. Thrift<sup>3</sup>, Prof Timothy J Kleinig<sup>4,5</sup>, Prof Dominique A. Cadilhac<sup>6</sup>, Dr Derrick A Bennett<sup>7</sup>, Prof. Mark R. Nelson<sup>2</sup>, Dr Tara Purvis<sup>6</sup>, Ms Gemma Kitsos<sup>2</sup>, Prof Seana L. Gall<sup>2</sup>

<sup>1</sup>National Institute for Stroke & Applied Neurosciences, Auckland University of Technology, Auckland, New Zealand, <sup>2</sup>Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia, <sup>3</sup>Epidemiology and Prevention Unit, Monash University, Clayton, Australia, <sup>4</sup>Department of Medicine, The University of Adelaide, Adelaide, Australia, <sup>5</sup>Department of Neurology, Royal Adelaide Hospital, Adelaide, Australia, <sup>6</sup>Translational Public Health and Evaluation Division, Stroke and Ageing Research, Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Clayton, Australia, <sup>7</sup>Clinical Trial Service Unit and Epidemiological Studies Unit, Nuffield Department of Population Health, University of Oxford, Oxford, UK

**O.1.11: Motivation in Chronic Disease, Balcony Foyer, June 12, 2025, 12:00 PM - 1:15 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Stroke is the second leading cause of death globally and the third leading cause of disability among NCDs. Most strokes can often be prevented by managing modifiable risk factors such as diet. Our aim was to evaluate changes of diet in the PERKS-International trial.

**Methods:** This randomised controlled trial was conducted across Australia and New Zealand (NZ). We assessed whether the use of the Stroke Riskometer™ mobile App improves management of stroke risk factors, including diet, at 6-months post-randomisation. Eligible participants were stroke-free, aged 35-75years, had ≥2 modifiable risk factors, and owned a smartphone. The intervention group was provided with the App, while controls received generic online information about risk factors without being informed about the App. Dietary information was collected via an online FFQ at baseline and 6-months. The Dietary Quality Score (DQS, scores range 5-15) was used to evaluate individuals' diet. Linear mixed models adjusted for age, gender, country and social economic status quintile were used to compare diet changes from baseline and 6-months between groups.

**Results:** Among 775 participants, 51% were from NZ, with a median age of 60years; 63% were women. The sex distribution was similar, but the median age differed significantly between Australia and NZ (56 vs 63 years). Eighty-six participants were missing DQS outcome data. The mean DQS was 10.7 at baseline and 10.9 at 6-months. The mean difference in DQS between 6-months and baseline was 0.19, with a range of -4 to +5. Adjusted models indicated a small significant improvement in mean DQS over 6-months of 0.19 (95% CI: 0.05 to 0.32, p=0.01) in the control group, and a difference in this improvement over time in the intervention group compared with the control group of 0.01 (95% CI: -0.18 to 0.19, P-value=0.99). Please note these are preliminary results; final results will be presented at the conference.

**Conclusions:** Based on these preliminary data, we found no significant improvement in DQS scores over 6-months between the intervention and the control groups. Future research should explore additional strategies alongside the Riskometer mobile App to encourage individuals to improve their modifiable risk factors, including diet.

# School Meal Participation Before and After State and Federal Policy Changes in Arizona: An evaluation

Ms Shreya Raval<sup>1</sup>, Sarah Martinelli<sup>1</sup>, **Dr. Punam Ohri-Vachaspati<sup>1</sup>**

<sup>1</sup>Arizona State University, Phoenix, United States

**O.2.12: Enhancing School Environments: Policies, Practices, and Innovations, Hunua 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** In March of 2020, at the start of the COVID-19 pandemic, the US Department of Agriculture (USDA) created a temporary federal Universal Free School Meals (UFSM) program that allowed schools to serve all students meals at no charge. In the fall of 2022, with the end of the federal public health emergency the federal UFSMs program ended and schools returned to the three-tiered system where students from lowest income households get free meals and others pay a reduced-price or full-price based on household income. Starting in January 2023, the state of Arizona expanded access to free school meals to students eligible for reduced-price meals. Two additional federal policies were implemented in 2023-24 to improve access to school meals – the USDA Medicaid Direct Certification that allowed students from Medicaid households to be directly certified for free and reduced-price meals, and expansion of the Community Eligibility Provision (CEP) that allows low-income schools to offer free meals to all students. This project presents results from a comprehensive evaluation of the combined effect of state and federal policies on school meal participation in Arizona.

**Methods:** Data were collected from the Arizona Department of Education starting in August 2022, when the federal HSM4A program ended, through May 2024. Two outcome measures were used to evaluate the impact of policies on school meal participation: average daily participation rate and average number of total meals served per month.

**Results:** After the expansion of free meals to reduced-price eligible students, participation in breakfast among those eligible for reduced-price meals went up by 12% and in lunch by 9%. After the implementation of all three policies, overall participation in school lunch went up from 52% to 57% and for breakfast from 29% to 31%. While the average daily participation rate for free meals stayed stable, the number of breakfast and lunches served for free each month went up by 28% (1.4 million additional meals / month) because more students became eligible for free meals with the federal policies.

**Conclusion:** The combination of state and federal policies has increased access to healthy school meals for Arizona students.

## A Novel Survey for Assessing Health-Promoting School Practices and Capacity: Validation and Adaptability to Specific Health Behaviors

**Dr. Anneke Vang Hjørt<sup>1</sup>**, Prof. Adrian Bauman<sup>2</sup>, Johanne Triantafyllou Lorenzen<sup>3</sup>, Sofie Rolff Carlsen<sup>3</sup>, Dr Charlotte Demant Klinker<sup>3</sup>

<sup>1</sup>Centre For Childhood Health, Copenhagen, Denmark, <sup>2</sup>School of Public Health, Sydney University, Sydney, Australia, <sup>3</sup>Research in Prevention, Health Promotion and Community Care, Copenhagen University Hospital - Steno Diabetes Center Copenhagen, Herlev, Denmark

**O.2.12: Enhancing School Environments: Policies, Practices, and Innovations, Hunua 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** To support the implementation of Health Promoting Schools (HPS) and the Whole School Approach to Physical Activity (WSPA), it is critical to understand current practices and capacities in schools. This study aimed to develop and validate two survey instruments: one for assessing HPS practices and capacity, and another specifically for WSPA evaluation.

**Methods:** The study followed a four-phase process: (1) Concept elicitation, (2) Expert and target group involvement, (3) Survey administration, and (4) Statistical analysis. Content validity was ensured through a comprehensive literature review and input from experts and target groups. Surveys were distributed electronically to teachers in Danish special-needs schools serving vulnerable youth (ages 16–25) during fall 2023. Confirmatory factor analysis (CFA) assessed structural validity, while the Multitrait-Multimethod (MTMM) approach evaluated construct validity. Reliability was measured using Cronbach's Alpha, Omega Hierarchical, and Intraclass Correlation Coefficients.

**Results:** A total of 921 staff members from 78 schools responded (response rate: 72%). The HPS scale comprised 24 items, while the WSPA scale included 21 items across seven subfactors: (1) School policies, (2) School ethos, (3) Collaboration and involvement, (4) School practice, (5) Quality of delivery, (6) Physical and financial resources, and (7) School health services. CFA demonstrated excellent structural validity (e.g., RMSEA = 0.016 for HPS, RMSEA = 0.033 for WSPA), and reliability was deemed acceptable. MTMM analysis confirmed both convergent and discriminant validity.

**Conclusion:** This study is the first to validate instruments specifically for measuring WSPA implementation, addressing a key gap in the field. Additionally, the HPS survey offers a strong, theory-informed approach to evaluating school practices, providing a valuable alternative to existing tools in the field. Both instruments exhibited strong psychometric properties, underscoring their value in monitoring HPS and WSPA implementation, which can identify areas for capacity building and inform policy. A practical outcome of this study is the development of user-friendly guidelines for applying the HPS and WSPA surveys, making them accessible for both researchers and practitioners. These guidelines, which outline how to use the tools to monitor and strengthen implementation efforts, will be shared at the conference.

## A role for nutrient profiling in strengthening school food policy: Evaluating the nutritional quality of Canadian school food programs using the Canadian Food Scoring System (CFSS)

**Ms. Annette Blais**<sup>1,2</sup>, Ms. Sarah Jeong<sup>1</sup>, Dr. Mavra Ahmed<sup>1,2</sup>, Dr. Mary L'Abbe<sup>1,2</sup>, Dr. Daniel Sellen<sup>1,2,3</sup>, Dr. Vasanti Malik<sup>1,2,4</sup>

<sup>1</sup>Department of Nutritional Sciences, University of Toronto, Toronto, Canada, <sup>2</sup>Joannah and Brian Lawson Centre for Child Nutrition, University of Toronto, Toronto, Canada, <sup>3</sup>Department of Anthropology, University of Toronto, Toronto, Canada, <sup>4</sup>Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, United States

**O.2.12: Enhancing School Environments: Policies, Practices, and Innovations, Hunua 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Globally, school food programs (SFPs) influence children's dietary behaviors, health, and academic performance. However, many SFPs lack standardized frameworks for evaluating nutritional quality. While Canada's recently released National School Food Policy emphasizes consistent and transparent monitoring, it does not mandate nutrition evaluation, and the variability among Canadian SFPs complicates routine assessment. This study introduces the Canadian Food Scoring System (CFSS), a nutrient profiling model (NPM) based on Canadian labelling regulations and Canada's Food Guide (CFG) 2019, to evaluate the nutritional quality of food items in Canadian SFPs. NPMs like the CFSS can support policy implementation by providing consistent, policy-driven tools for nutritional assessment, promoting healthier school food environments.

**Methods:** SFP menu data were collected from school food providers across Canada. The nutritional quality of individual food items was assessed using the CFSS. Scores were weighted and summed based on the proportion of the Health Canada-defined Reference Amount (RA) each item contributed to the meal, with the total representing the meal's overall nutritional quality. Based on CFSS scores, meals and food items were classified into one of five categories: "excellent," "good," "fair," "poor," or "very poor" choice. Pearson's correlation was used to compare CFSS scores with Healthy Eating Food Index (HEFI) 2019 scores, an index of dietary quality measuring adherence to CFG 2019.

**Results:** Results from 70 SFPs serving over 20% of Canadian schools revealed CFSS scores of 65% of the maximum score for breakfasts, 56% for lunches, and 67% for snacks. Overall, 60% of food items and 57% of meals were classified as "good" or "excellent" choices, while 26% of food items and 15% of meals were classified as "poor" or "very poor" choices in accordance with CFG 2019 guidance. CFSS scores were moderately correlated with HEFI scores ( $r=0.67$ ).

**Conclusions:** Although Canadian SFPs demonstrate moderate adherence to CFG 2019, a need remains for nationally harmonized systems for monitoring SFPs in Canada, particularly given the resource and capacity constraints faced by many existing programs. The CFSS and other NPMs show potential as tools for routine SFP nutritional quality monitoring both in Canada and as adaptable frameworks for global application.

# Exploring Modifications and Teacher's Experiences in Managing Traditional Recess During Extreme Heat in Arizona Elementary Schools

**Mr. Umar Hassan<sup>1</sup>**, Marissa Schulke<sup>1</sup>, Kylie Wilson<sup>1</sup>, Pamela Kulinna<sup>2</sup>, Allison Poulos<sup>1</sup>

<sup>1</sup>College of Health Solutions, Arizona State University, Phoenix, United States, <sup>2</sup>Mary Lou Fulton Teachers College, Arizona State University, Tempe, United States

**O.2.12: Enhancing School Environments: Policies, Practices, and Innovations, Hunua 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** School recess is critical for supporting children's health and well-being and promoting their social, emotional, and physical growth. However, extreme heat increasingly affects the consistent and equitable provision of recess, resulting in different approaches to managing recess. This study aimed to determine the modifications to traditional outdoor recess in times of heat and understand how heat-related recess modifications affected teachers' experiences.

**Methods:** This cross-sectional study used qualitative data from focus group interviews with 28 physical education teachers in elementary schools in Maricopa County, Arizona (U.S.A.), one of the hottest places on earth with no state policy for recess in extreme heat conditions. Participants were recruited through professional development events. A semi-structured interview guide was used based on the Hierarchy of Controls model framework from the Arizona Department of Health Services. Data were thematically analyzed through an iterative inductive and deductive coding process to identify common themes representing recess modifications due to heat and teachers' experience with heat-related recess practices and policies. Trustworthiness protocols were incorporated to ensure data integrity, including peer debriefing and negative case analysis.

**Results/Findings:** Three themes with sub-themes were identified modifications and accommodations to recess, variability in heat guidance and communication, and challenges with recess in extreme heat. Participants described modifications such as moving recess to indoor spaces, cooling off for outdoor play, and adjustment of recess schedules. One participant noted, 'When we know that it's going to be a heat advisory day, we try and push for early morning recess, 8:00, 8:15 or 8:30.' Additionally, schools faced challenges including limited indoor space, insufficient staff, and limited shade structures and other supporting facilities. Participants expressed concerns regarding children's health and their physical and social well-being, emphasizing the need for formal recess guidelines in times of extreme heat.

**Conclusion:** These findings uniquely address the critical gap in understanding how extreme heat disrupts traditional recess and its implications for equitable strategies to support children's health and well-being. Research aimed at understanding feasible accommodations or interventions is recommended to ensure children receive opportunities for movement during times of extreme heat.

## The associations between meeting the Canadian Physical Activity Guidelines and Intuitive Eating levels: A cross-sectional study in a sample of Canadian adults

**Prof. Tamara Cohen**<sup>1,4</sup>, Ms Claudia Faustini<sup>2</sup>, Ms Celeste Bouchaud<sup>1</sup>, Prof Lisa Kakinami<sup>2</sup>, Prof Hugues Plourde<sup>3</sup>

<sup>1</sup>The University of British Columbia, Vancouver, Canada, <sup>2</sup>Concordia University, Montreal, Canada,

<sup>3</sup>McGill University, Montréal, Canada, <sup>4</sup>BC Children's Hospital Research Institute, Vancouver, Canada

**O.2.12: Enhancing School Environments: Policies, Practices, and Innovations, Hunua 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Evidence suggests that physical activity (PA) is associated with improved dietary intake. PA can also enhance the body's ability to regulate hunger and satiety. Intuitive eating (IE) is a concept that measures an individual's tendency to listen to their internal cues when determining when, what, and how much to eat. It has also been linked to improved health and eating habits. However, it is unknown whether IE and adherence to PA guidelines are associated.

**Methods:** A sample of 2,287 Canadian adults (49.5% female) participated in a nationally representative survey. Participants completed the Intuitive Eating Scale-2 (IES-2) questionnaires, with four subscales: i) Unconditional permission to eat (UPE); ii) Eating for physical reasons rather than emotional reasons (EPR); iii) Reliance on internal hunger and satiety cues to regulate the timing and quantity of food (RHSC), and iv) body-food congruence (B-FCC). Participants reported their total time spent engaging in M/V PA which was categorized as meeting or not meeting the Canadian PA guidelines for adults. Descriptive statistics and t-tests were used to assess for differences among IES-2 scores and PA levels among genders.

**Results:** The majority (n=972 (86%) of men and n=1,001 (89%) of women) did not meet PA guidelines. UPE scores were significantly higher in men ( $3.30 \pm 0.6$ ) and women ( $3.34 \pm 0.6$ ) who did not meet the PA guidelines compared to those who did (men:  $3.12 \pm 0.6$ ; women:  $3.22 \pm 0.6$ ;  $P < 0.05$ ). RHSC scores were significantly higher in men who met ( $3.63 \pm 0.7$ ) compared to not meet ( $3.50 \pm 0.6$ ) PA guidelines ( $p = 0.03$ ). There were no differences in women for RHSC scores. However, B-FCC scores were higher in men ( $3.74 \pm 0.7$ ) and women ( $3.79 \pm 0.8$ ) who met PA guidelines compared to those who did not meet guidelines (men:  $3.42 \pm 0.8$ ; women:  $3.37 \pm 0.8$ ,  $p < 0.0001$ ). ERP scores did not differ among genders and PA levels.

**Conclusion:** Findings suggest that Canadian adults who meet the PA guidelines exhibit higher intuitive eating behaviours, specifically UPE and B-FCC scores. Future studies are needed to determine the impact of PA interventions on changes in IE subscales.

# Investigating Determinants of Physical Activity Maintenance among College Students

**Miss Carah Porter<sup>1</sup>**, Dr. Denver Brown<sup>1</sup>

<sup>1</sup>Kansas State University, Manhattan, United States

**O.2.13: Behavioral Patterns and Health Outcomes: Insights from Physical Activity and Eating Behaviors, Hunua 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Sustained adherence to physical activity (PA) guidelines is essential for experiencing optimal health benefits. However, limited research has focused on identifying determinants of PA maintenance, particularly during college as students navigate a myriad of stressors. This study examined the predictive utility of the reflexive processes (i.e., habit, identity) outlined within the Multi-Process Action Control (M-PAC) framework for explaining PA maintenance among college students.

**Methods:** This four-week prospective observational study included a convenience sample of 272 college students (Mean age =  $18.8 \pm 1.43$  years; 57.4% female, 39.0% Hispanic) who had intentions to meet the PA guidelines (i.e.,  $\geq 150$  min of moderate-to-vigorous PA) each week over the next month, and indicated being in the maintenance stage of change for PA. Participants completed the Self-Report Behavioral Automaticity Index (i.e., habit) and Exercise Identity Scale (i.e., identity) at baseline to assess the reflexive processes outlined within the M-PAC framework, and completed the International Physical Activity Questionnaire-Short Form weekly to assess moderate-to-vigorous PA (MVPA). PA maintenance was characterized as meeting the PA guidelines all four weeks. A logistic regression model was computed to examine predictors of PA maintenance, adjusted for sex and ethno-racial identity.

**Results:** This sample exhibited high consistency in adhering to the PA guideline over a one-month period, as PA maintenance was observed in 75.2% of participants. Habit was significantly associated with greater odds of PA maintenance (OR: 1.29; 95% CI: 1.01, 1.68), whereas identity was not (OR = 1.16; 95% CI: 0.88, 1.52).

**Conclusions:** These findings provide partial support for the M-PAC model in that habit – but not identity – emerged as a significant predictor of self-reported PA maintenance over a one-month period among college students who have met the PA guidelines consistently for an extended period. Interventions aimed at strengthening PA-related habits while at college may be a promising avenue for supporting sustained PA guideline adherence as students navigate the many stressors associated with pursuing post-secondary studies. Further research with longer observation periods is warranted, given that the Transtheoretical Model defines PA maintenance as consistent engagement over at least six months.

# The Eating Behaviours, Eating Attitudes and Body Composition Profiles Associations Among New Zealand Women with Different Chronotypes

**Dr. Carlien Van Der Merwe<sup>1,5</sup>**, Dr Marilize Richter<sup>1</sup>, Prof Mirjam Munch<sup>2,3</sup>, Prof Rozzane Kruger<sup>1,5</sup>

<sup>1</sup>Massey University, School of Sport, Exercise and Nutrition, Auckland, New Zealand, <sup>2</sup>Massey University, Research Centre for Hauora and Health, Wellington, New Zealand, <sup>3</sup>Centre for Chronobiology, Psychiatric Hospital of the University of Basel, Research Cluster Molecular Cognitive Neuroscience, University of Basel, Basel, Switzerland, <sup>4</sup>North-West's University, Centre of Excellence for Nutrition, Potchefstroom, South Africa, <sup>5</sup>School of Health Sciences and Social Work, Griffith Health, Griffith University, Queensland, Australia

## O.2.13: Behavioral Patterns and Health Outcomes: Insights from Physical Activity and Eating Behaviors, Hunua 2, June 13, 2025, 11:30 AM - 12:45 PM

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Late types tend to experience misalignment between their internal circadian timing and external clock times, resulting in eating behaviours and -attitudes that contribute to high body composition profiles. This study examined whether chronotype is associated with eating behaviours, eating attitudes, and body composition among New Zealand (NZ) European and Pacific women.

**Methods:** Healthy NZ women (130 Pacific, 157 NZ European, aged 18–45) participated. Body composition was determined using BMI and body fat percentage (BF%) using DXA. Chronotype (morning- (MT), intermediate- (IT) and evening types (ET)) were determined using the Munich Chronotype Questionnaire. Eating behaviours and -attitudes were assessed using the Three Factor Eating Questionnaire (TFEQ) and Eating Attitude Test-26 (EAT-26), respectively. Linear regression models assessed associations between chronotype, eating behaviour and eating attitudes. Multinomial regression assessed associations between chronotype and eating behaviour combination categories. Analysis was stratified by normal (< 25 kg/m<sup>2</sup>) and high BMI (≥ 25 kg/m<sup>2</sup>) and normal (<35%) and high (≥35%) BF%.

**Results:** In the high BMI group, ET was associated with lower restraint ( $\beta = -1.86$ ), both flexible ( $\beta = -0.84$ ) and rigid control ( $\beta = -0.75$ ), but higher perceived ( $\beta = 1.64$ ) and internal locus for hunger ( $\beta = 0.97$ ), higher habitual disinhibition ( $\beta = 0.66$ ) and higher bulimia & food preoccupation ( $\beta = 1.61$ ), compared with MT-IT (all  $P < 0.05$ ). In the high BF% group, ET was associated with higher internal locus for hunger ( $\beta = 0.38$ ), bulimia & food preoccupation ( $\beta = 1.75$ ) and oral control ( $\beta = 0.29$ ) compared with MT-IT (all  $P < 0.05$ ). ET with high BMI was associated with increased odds for the least ideal eating behaviours combinations of low restraint-high disinhibition (OR = 3.93, 95% CI, [1.20, 12.8]). ETs with normal BMI were associated with decreased odds of the least ideal combination of high hunger-high disinhibition (OR = 0.16, 95% CI [0.03, 0.88] (both  $P < 0.05$ )).

**Conclusion:** In comparison to MT-IT, the ETs exhibited less control over dietary intake paired with higher feelings of hunger and disordered eating attitudes. Such behaviours favour weight gain, potentially resulting in unsuccessful weight loss attempts thereby facilitating adiposity.

## Examining the intrapersonal and interpersonal associations among body esteem, motivation to regulate eating behaviors, and intuitive eating in couples

**Miss Rosalie Lacerte<sup>1,2</sup>**, Dr Genevieve Lavigne<sup>1,2</sup>, Prof Noemie Carbonneau<sup>1,2</sup>

<sup>1</sup>University of Quebec in Trois-Rivieres (UQTR), Trois-Rivieres, Canada, <sup>2</sup>Institute of Nutrition and Functional Foods (INAF), Quebec, Canada

**O.2.13: Behavioral Patterns and Health Outcomes: Insights from Physical Activity and Eating Behaviors, Hunua 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Self-Determination Theory suggests that autonomous motivation (i.e., acting with a sense of volition and personal endorsement) and controlled motivation (i.e., feeling pressured to act in specific ways) have distinct consequences, particularly in the domain of eating behaviors. Individuals with autonomous motivation to regulate eating behaviors typically have a healthier relationship with food, whereas those driven by controlled motivation are more likely to exhibit dysfunctional eating behaviors. While it is well documented that romantic partners influence each other's weight, body image, and eating behaviors, studies examining partners' motivation to regulate eating behaviors from a dyadic perspective remain scarce. This study aims to explore, within couples, how romantic partners' motivation to regulate eating behaviors is associated with each other's body esteem (i.e., self-evaluations of one's body) and intuitive eating (i.e., eating based on hunger/satiety cues).

**Methods:** The study included 151 French-Canadian couples who completed validated self-report questionnaires, including the Regulation of Eating Behavior Scale, the Intuitive Eating Scale-2, and the Body Esteem Scale. To examine actor and partner effects, regression analyses were conducted using the actor-partner interdependence model.

**Results/findings:** Body esteem showed a significant actor effect on controlled motivation ( $b = -.46$ ,  $p < .001$ ), with no significant partner effect. In contrast, body esteem demonstrated a significant partner effect on autonomous motivation ( $b = .30$ ,  $p < .001$ ). Furthermore, autonomous motivation ( $b = .06$ ,  $p < .01$ ) and controlled motivation ( $b = -.18$ ,  $p < .001$ ) showed significant actor effects on intuitive eating, while autonomous motivation also exhibited a significant partner effect on intuitive eating ( $b = .08$ ,  $p < .001$ ).

**Conclusions:** Overall, this study highlights the relevance of both intra- and inter-individual dynamics in understanding eating behaviors within couples. Associations between body esteem and motivation differed at the personal and relational levels, with an actor effect observed for controlled motivation and a partner effect for autonomous motivation. Autonomous motivation was also associated with intuitive eating for both individuals and their partners. These findings suggest that fostering body esteem and autonomous motivation may benefit not only individual eating behaviors but also relational dynamics around food within couples.

## The association between domain-specific Physical behaviors profile and Health: A study on Japanese Workers using accelerometry

**Dr. Rina So<sup>1</sup>**, Fumiko Murai<sup>1</sup>, Prof. Andreas Holtermann<sup>2</sup>, Dr. Tomoaki Matsuo<sup>1</sup>, Nidhi Gupta<sup>2</sup>

<sup>1</sup>National Institute of Occupational Safety and Health, Japan, Kawasaki, Japan, <sup>2</sup>National Research Centre for the Working Environment, Copenhagen, Denmark

**O.2.13: Behavioral Patterns and Health Outcomes: Insights from Physical Activity and Eating Behaviors, Hunua 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Recent research indicates that health might depend on a combination of various physical behaviors across different domains of the day instead of single physical behaviors, like leisure-time moderate-to-vigorous physical activity (MVPA). This study aims to investigate various domain-specific physical behaviors and how these profiles are associated with health indicators among Japanese workers.

**Methods:** A total of 1,326 Japanese workers wore an accelerometer (HJA-750C; Omron Healthcare, Japan) on the waist and completed daily electronic diaries for seven days to measure 24-hour physical behaviors: sedentary, light physical activity (LPA), and MVPA-during work and leisure, and time in bed. We also measured waist circumference, blood pressure, HDL cholesterol, triglycerides, and glucose levels. The physical behavior data were standardized and various patterns were identified using k-means clustering. Optimal clusters were determined using statistical methods (e.g., Elbow plot), and labeled based on physical activity profile of Japanese Pokémon characters. Multiple linear regression models were used to investigate associations between various physical behaviors profile and health indicators, adjusting for confounders, i.e., age, sex, medication, alcohol consumption, smoking and occupation.

**Results:** We identified three profiles labeled as “Pikachu” (n=384), “Snorlax” (n=673), and “Charizard” (n=269). Pikachu had a “balanced” activity profile with 68% sedentary, 28% LPA, and 5% MVPA during work, and 47% sedentary during leisure. In contrast, Snorlax was mostly sedentary at work (78%) and leisure (64%), with lower activity than Pikachu. Charizard was more active at work (39% sedentary, 53% LPA, and 8.7% MVPA) but had higher sedentary time during leisure (58%) than Pikachu. Compared to the Pikachu, both Snorlax and Charizard profile were detrimentally associated with cardiometabolic risk scores (Snorlax  $\beta = 0.21$ , 95% CI [0.13, 0.29]; Charizard  $\beta = 0.22$ , 95% CI [0.12, 0.32]). Snorlax and Charizard were consistently associated with higher waist, triglycerides, and lower HDL cholesterol, indicating a clear detrimental effect.

**Conclusions:** The profile of domain-specific physical activity are associated with various health indicators among Japanese workers. Promoting a balanced approach to domain-specific physical behaviors that considers both occupational and leisure settings may offer an effective strategy for improving workers' health and reducing cardiometabolic risks.

# Eating behaviours of self-reported low-carbohydrate diet users in New Zealand

**Prof. Rozanne Kruger<sup>1,2</sup>**

<sup>1</sup>Griffith University, Gold Coast, Australia, <sup>2</sup>Massey University, Auckland, New Zealand

**O.2.13: Behavioral Patterns and Health Outcomes: Insights from Physical Activity and Eating Behaviors, Hunua 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Low-carbohydrate (low-CHO) diets are commonly used as a weight management strategy among the public. Eating behaviours are a crucial determinant of dietary intake and health, however, their relation to low-CHO diet users has rarely been assessed. The aim of this study was to investigate dietary intake, eating behaviours and body composition of free-living, self-reported low-CHO diet users and how these differed between different CHO intake levels.

**Methods:** Sixty-nine adult (20-45 years) low-CHO diet users completed the Three-Factor Eating Questionnaire, 4-day weighed food records and anthropometric assessments. CHO-intakes were categorised as: moderately low (>100; <150 g/day) (n=10), low (≥50; <100 g/day) (n=20), and very-low (<50 g/day) (n=39).

**Results:** Mean macronutrient intakes as a percentage of total energy intake (%EI) were  $12.5 \pm 8.28\%$  for CHO,  $58 \pm 11.3\%$  total fat,  $22.6 \pm 6.98\%$  saturated fatty acids (SFA), and  $24.5$  (23.3-25.9)% protein. While total fat and SFA (%EI) increased as CHO intake decreased, protein intake was similar between groups, as were mean body fat percentage (BF%) ( $27.9 \pm 9.9\%$ ) and median muscle mass ( $28.0$  [25.2-33.2] kg). Overall, restraint, disinhibition and hunger behaviours were not different between CHO level groups. Restraint was positively associated with %EI of CHO ( $r=0.34$ ,  $p<0.01$ ) and inversely with total fat ( $r=-0.35$ ,  $p<0.01$ ) and SFA ( $r=-0.31$ ,  $p=0.01$ ). CHO intake (%EI) was positively correlated with rigid restraint ( $r=0.27$ ,  $p<0.01$ ) and flexible restraint ( $r=0.34$ ,  $p<0.01$ ). Restraint correlated with BF% ( $r=0.28$ ,  $p=0.02$ ), and each increasing restraint score predicted a 0.6% increase in BF%. As diet duration increased, BMI ( $r = -0.27$ ,  $p = 0.03$ ), WC ( $r = -0.28$ ,  $p = 0.03$ ), and habitual disinhibition ( $r = -0.27$ ,  $p = 0.03$ ) decreased.

**Conclusions:** High restraint and low disinhibition and hunger reflected strong cognitive control typical of self-directed restrictive dietary practices. Macronutrient intakes deviated significantly from recommendations, particularly excessive fat intakes. Level of CHO restriction may not impact eating behaviours, however, voluntary choice of low-CHO diets may uniquely shape dietary restriction and adherence.

# Intergenerational Transmission of Parent Weight Talk and Impact on Child Health and Wellbeing

**Dr. Jerica Berge<sup>1</sup>**

<sup>1</sup>University of Colorado, Aurora, USA

**O.2.14: Balancing Acts: Screen Time, Physical Activity, and Cognitive Growth in the Digital Age, Hunua 3, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Little is known about longterm outcomes of parent weight talk (i.e., talking about a child's weight, shape, or size). This study aimed to examine: (1) whether intergenerational transmission of parent weight talk occurs, (2) contextual factors prompting weight talk, and (3) if parent weight talk is associated with child weight, dietary intake, psychosocial outcomes, and food parenting practices over time.

**Methods:** Children ages 5-9 and their families (n=1307) from six racial/ethnic groups (African American, Hispanic, Hmong, Native American, Somali/Ethiopian, White) were recruited for a longitudinal cohort study through primary care clinics in Minneapolis/St. Paul, MN in 2016-2019. Parents filled out surveys at two time points, 18 months apart. Adjusted regression models examined associations of interest.

**Results/Findings:** Analyses examining intergenerational transmission of weight talk showed that greater exposure to weight talk when growing up was significantly associated with engaging in parental weight talk with one's own child ( $B = 0.12$  (95% CI: 0.07, 0.18),  $p < .001$ ). There were significant differences by household race/ethnicity in the prevalence of weight talk contextual factors regarding when parent weight talk occurred. Parents from Hmong households reported significantly higher prevalence of engaging in weight talk with their children when eating a meal together, when trying on clothing, and when out shopping than parents from households of any other race/ethnicity. Parents from Black and White households reported the highest prevalence of engaging in weight talk with their children after a doctor's appointment, and parents from Native American households reported the highest prevalence of engaging in weight talk with their children when watching TV or a movie. Additionally, significant associations were found between parent engagement in weight talk and higher weight status and poorer psychosocial outcomes in children 18 months later.

**Conclusions:** Parents' exposure to weight talk as children increased the likelihood of engaging in weight talk with their own children and had harmful associations over time with parent restrictive feeding practices and child weight and psychosocial wellbeing. Pediatricians may want to consider both modeling positive health-focused conversations and educating parents about the potential harmful and long-lasting consequences of engaging in weight talk with their children.

## Correlates of digital technology use in children and adolescents: An Umbrella Review

**Dr. Amber Beynon<sup>1,2</sup>**, Dr Charlotte Lund Rasmussen<sup>1,2</sup>, Dr Sarah Stearne<sup>1,2</sup>, Associate Professor Amity Campbell<sup>1,2</sup>, Professor Courtenay Harris<sup>1,2</sup>, Professor Daniel Johnson<sup>2,3</sup>, Associate Professor Dylan Cliff<sup>2,4</sup>, Professor Leon Straker<sup>1,2</sup>, Dr Juliana Zabatiero<sup>1,2</sup>  
<sup>1</sup>*School of Allied Health, Curtin University, Perth, Australia*, <sup>2</sup>*ARC Centre of Excellence for the Digital Child, , Australia*, <sup>3</sup>*School of Computer Science, Queensland University of Technology, , Australia*, <sup>4</sup>*School of Education, University of Wollongong, , Australia*

**O.2.14: Balancing Acts: Screen Time, Physical Activity, and Cognitive Growth in the Digital Age, Hunua 3, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The impact and role of digital technology specifically in the lives of children has been heavily debated. Many systematic reviews have considered a range of correlates of digital technology use. To provide decision-makers with guidance, it is necessary to understand which factors are associated with children's technology use. This umbrella review aimed to synthesize the current evidence on the correlates of children's digital technology use from systematic reviews.

**Methods:** Peer reviewed published systematic review articles considering correlates of digital technology use in children, such as (but not limited to) screen use, television viewing, mobile and tablet use, computer use, and electronic gaming, were included. Systematic searches were performed in MEDLINE, Embase, PsycINFO, Web of Science (Core Collection), CINAHL, Scopus, SPORTDiscus, Cochrane Library, and PROSPERO from inception until June 2023. Search terms were related to the concepts of 'children', 'digital technology', 'correlates' and 'systematic review'. The methodological quality of the included reviews was assessed using the Risk Of Bias In Systematic reviews (ROBIS) tool. The study protocol was prospectively registered with Prospero (CRD42023422858) and the umbrella review was conducted following PRISMA guidelines.

**Results/findings:** Of the 8317 screened articles, 109 systematic reviews were included in the synthesis. The majority of studies measured time spent using digital technology. A summary of the correlates of children's digital technology use based on the categories within a social ecological model was created. Multiple correlates of children's digital technology use were identified including child demographic, general health physical factors; child psychological, cognitive, and emotional factors; child behavioural factors; social and cultural environment factors; and physical environment factors.

**Conclusions:** This review highlights the importance of using a multidimensional approach such as an ecological model that includes social, cultural and environmental factors in addition to individual and family factors. Future studies should consider how factors are potentially interrelated and investigate the potential dose effect of various types of digital technologies. Future studies should also consider the content and context of children's digital technology use to understand how early technology use and family dynamics impact children as they grow, helping shape better guidance for families in a digital age.

## Associations of screen time type, device, content, and context with cognitive development among preschool children

**Prof. Valerie Carson**<sup>1</sup>, Mrs. Madison Boyd<sup>1</sup>, Dr. Yao Zheng<sup>1</sup>, Prof. Christina Rinaldi<sup>1</sup>, Ramiah Moldenhauer<sup>1</sup>, Mrs. Morgan Potter<sup>1</sup>, Jasmine Rai<sup>1</sup>, Mr. Joshua Li<sup>1</sup>, Miss. Kyla Dorn<sup>1</sup>, Prof. Sandra Wiebe<sup>1</sup>

<sup>1</sup>University of Alberta, Edmonton, Canada

**O.2.14: Balancing Acts: Screen Time, Physical Activity, and Cognitive Growth in the Digital Age, Hunua 3, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Screens have become omnipresent in our modern society. Research has not kept pace with the technological and cultural changes, and evidence is lacking about how young children's engagement with this new technology impacts their development. The purpose of this study was to examine the associations between total duration and patterns of screen time (i.e., type, device, content, context) with cognitive development in preschool children.

**Methods:** This cross-sectional study utilized baseline data of the screen TECHnology, parent-child interactions, and cognitive development in early childhood (TECH) project. Participants were 359 preschool children (3, 3.5, or 4 years) and their parents who resided in Western Canada (British Columbia, Alberta, Manitoba, and Saskatchewan). Minutes per day (min/day) of total duration of screen time and screen time patterns (type: show/movie/video, electronic game communication; content: parent-defined educational or entertainment, researcher-defined educational or entertainment; device: mobile (tablet/smartphone); context: co-use with adult, morning, afternoon, or evening timing) were parent-reported using a 2-week online daily diary. Cognitive development (language, response inhibition, working memory, self-control) was assessed via four established short games administered by researchers during a recorded virtual meeting. Demographic covariates were assessed via a parental questionnaire. Regression models adjusted for covariates were conducted.

**Results:** Based on 4744 days of diary data, children engaged in an average of 76.5±52.6 min/day of total screen time. The majority of this screen time was show/movie/video viewing (68.2±48.9 min/day) of entertainment content (54.5±43.7 min/day). Regardless of time of day, higher min/day of total screen time ( $B=-0.1$ ,  $p<0.001$ ), show/movie/video viewing ( $B=-0.1$ ;  $p<0.001$ ), parent-defined ( $B=-0.01$ ;  $p=0.008$ ) and research-defined ( $B=-0.1$ ;  $p=0.002$ ) entertainment content, and mobile device use ( $B=-0.1$ ;  $p=0.028$ ) was associated with poorer response inhibition. Higher min/day of total screen time ( $B=-0.1$ ;  $p=0.020$ ), show/movie/video viewing ( $B=-0.1$ ;  $p=0.017$ ), parent-defined entertainment content ( $B=-0.1$ ;  $p=0.015$ ), mobile device use ( $B=-0.2$ ;  $p=0.014$ ), and afternoon ( $B=-0.2$ ;  $p=0.035$ ) and evening ( $B=-0.2$ ;  $p=0.001$ ) screen time were associated with poorer self-control. Conversely, higher min/day of communication screen time (i.e., video calling;  $B=0.3$ ;  $p=0.023$ ) and electronic game playing ( $B=0.01$ ;  $p=0.027$ ) were associated with better vocabulary.

**Conclusions:** It is important to go beyond total duration when examining associations between screen time and development in young children.

## What digital technology practices parents valued to promote physical activity of their young children?

**Dr. Juliana Zabatiero**<sup>1,2</sup>, Laura Stone<sup>3</sup>, Derek McCormack<sup>4</sup>, David Zarb<sup>5</sup>, Prof Susan Edwards<sup>6</sup>, Prof Leon Straker<sup>1,2</sup>

<sup>1</sup>School of Allied Health, Curtin University, Perth, Australia, <sup>2</sup>ARC Centre of Excellence for the Digital Child, , Australia, <sup>3</sup>Australian Broadcasting Corporation (ABC), ABC Kids Early Education, , Australia,

<sup>4</sup>Raising Children Network, , Australia, <sup>5</sup>Playgroup WA, Perth, Australia, <sup>6</sup>Institute for Learning Sciences and Teacher Education, Australian Catholic University, Melbourne, Australia

### O.2.14: Balancing Acts: Screen Time, Physical Activity, and Cognitive Growth in the Digital Age, Hunua 3, June 13, 2025, 11:30 AM - 12:45 PM

**SIG - Primary Choice:** G. Children and families

**Purpose:** Increased access to digital technology (DT), particularly mobile touch screen devices, resulted in increased opportunities for young children's play, learning and development. However, parents and professionals are concerned regarding the impact of DT use on children's physical activity engagement, and on emotional regulation when transitioning away from screens. This study aimed to identify digital technology practices parents valued to promote physical activity and facilitate smooth transitions away from sedentary screen use for their children.

**Methods:** Parents of ambulatory children under 5 years of age who engaged with a playgroup were included. This study also involved representatives from three organisations that provide services to families with young children, who created a list of digital resources, appropriate to be shared and trialled by parents and young children, about using digital technology to promote physical activity and facilitate transition away from screens. Participants, researchers, and organisation representatives collaboratively developed the intervention during a pre-trial workshop. The intervention involved the weekly delivery of selected resources by email, over 12 weeks. Weekly feedback about participants' experiences was collected, and a post-intervention semi-structured qualitative interview was completed. Feedback and interview data were analysed using thematic analysis, under an interpretive description framework.

**Results:** Thirteen families, with children aged between 15 and 36 months, completed the intervention. Participants reported several valued practices to promote children's physical activity and facilitate transition away from screens. Practices that promoted physical activity included those where DT use reinforced children's ability and enjoyment when physically active, where children engaged with DT while being active, where active play was launched by children's DT interests, and where parents used DT to plan opportunities for physical activity. Practices for supporting transitions away from screens included those where parents strategized how to support smooth transitions using DT, where singing was used to facilitate a transition, and where non-screen activities were inspired by children's DT interest.

**Conclusions:** Several valued practices to promote children's physical activity and help facilitate smooth transitions away from screens were reported by parents. These could be more valuable than restricting time using DT to promote children's health and wellbeing in a digital world.

## Parental Guidance - what do parents want to know about children's screen use?

Dr. Danica Hendry<sup>1,7</sup>, Dr. Juliana Zabatiero<sup>1,7</sup>, Prof. Julian Sefton-Green<sup>3,7</sup>, Prof Louise Paatsch<sup>3,7</sup>, Dr. Andy Zhao<sup>3,7</sup>, Dr. Katrin Langton<sup>3,7</sup>, Dr. Kate Mannell<sup>3,7</sup>, Ms Melissa De La Cruz<sup>3,7</sup>, Dr. Alea Losch<sup>1,7</sup>, Professor Lisa Kervin<sup>2,7</sup>, Dr. Dylan Cliff<sup>2,7</sup>, Dr. Zhiguang Zhang<sup>2,7</sup>, Professor Suzy Edwards<sup>6,7</sup>, Dr. Pauline Roberts<sup>4,7</sup>, Dr. Janelle Mackenzie<sup>5,7</sup>, Laura Stone<sup>8</sup>, Mr. Derek McCormack<sup>9</sup>, Mr. David Zarb<sup>10</sup>, **Prof. Leon Straker<sup>1,7</sup>**

<sup>1</sup>Curtin University, Bentley, Australia, <sup>2</sup>University of Wollongong, Wollongong, Australia, <sup>3</sup>Deakin University, Melbourne, Australia, <sup>4</sup>Edith Cowan University, Perth, Australia, <sup>5</sup>Queensland University of Technology, Brisbane, Australia, <sup>6</sup>Australian Catholic University, Melbourne, Australia, <sup>7</sup>ARC Centre of Excellence for the Digital Child, , Australia, <sup>8</sup>ABC Kids, , Australia, <sup>9</sup>Raising Children Network, , Australia, <sup>10</sup>Playgroup WA, , Australia

### O.2.14: Balancing Acts: Screen Time, Physical Activity, and Cognitive Growth in the Digital Age, Hunua 3, June 13, 2025, 11:30 AM - 12:45 PM

#### **SIG - Primary Choice:** G. Children and families

**Purpose:** Current Australian screen use guidelines (embedded within the Australian Sedentary Behaviour Guidelines) focus on rigid time limits and are developed by expert panels with no input from end-users - parents and families. The purpose of this study is to understand what information parents of 0–8 year-old children would like to access about screen use for their children, and how they would like to access this information.

**Methods:** An interpretative descriptive framework was applied to semi-structured qualitative focus groups conducted online and in person exploring this topic. Focus groups consisted of parents of 0–8 year-old children (n=38), professionals working with children and their families and in child-related industry (n=25), and members of the community more broadly (n=16), including grandparents, parents of older children and adults without children.

**Results:** Findings highlight that parents would like to access information around quality screen-related content, harnessing the benefits while mitigating the risks of screen use, the development of screen use skills, strategies for transitioning away from screens, and fostering connection and relationships when using screens. Online sources, health professionals and schools were identified as some of the key sources that parents would like to be able to access this information from. Further, parents would like credible information that empowers them in navigating screen use with their families in formats that are short, accessible and up to date. However, preliminary findings also suggest that while some parents commonly access information, for many it is the community that families live within that inform family screen use practices.

**Conclusion:** These findings suggest a need for screen use guidelines in Australia to shift from rigid time limits to more nuanced guidance that reflects the current digital landscape and aims to empower parents in navigating raising children in an ever-evolving digital world. These findings can support policy makers by providing reputable data from the guidelines' end-users to influence transdisciplinary policy on how to use technology well, and can also support tailored service provision by organisations that support parents.

## Six-month intervention effect of a digital movement behavior intervention on parenting: Let's Grow randomized controlled trial

Johanna Sandborg<sup>1</sup>, Dr. Katherine Downing<sup>1</sup>, Prof. Liliana Orellana<sup>2</sup>, Prof. Rachael Taylor<sup>3</sup>, Lisa Barnett<sup>1,4</sup>, Prof. Valerie Carson<sup>5</sup>, **Prof. Kylie Hesketh<sup>1</sup>**

<sup>1</sup>Institute for Physical Activity and Nutrition, Deakin University, Geelong, Australia, <sup>2</sup>Biostatistics Unit, Faculty of Health, Deakin University, Geelong, Australia, <sup>3</sup>Edgar Diabetes and Obesity Research Centre, University of Otago, Dunedin, New Zealand, <sup>4</sup>School of Health and Social Development, Deakin University, Geelong, Australia, <sup>5</sup>Faculty of Kinesiology, Sport, and Recreation, University of Alberta, Edmonton, Canada

### O.2.14: Balancing Acts: Screen Time, Physical Activity, and Cognitive Growth in the Digital Age, Hunua 3, June 13, 2025, 11:30 AM - 12:45 PM

**SIG - Primary Choice:** G. Children and families

**Purpose:** Parental-focused interventions often aim to improve child health behaviors by targeting parenting practices and cognitions, however, impact on these intermediary outcomes is rarely reported. This study aimed to investigate the effect of a digital intervention (Let's Grow app) to help parents promote healthy movement behaviors in 2-year-old children, on parenting behaviours and cognitions.

**Methods:** Data were from participants in the Let's Grow randomized controlled trial, recruited Australia-wide and randomized to usual care or intervention (Let's Grow app). Participants with data on at least one intermediary outcome at baseline and mid-intervention (6-months) were included (usual care, n=618; intervention, n=547). Parenting outcomes, assessed via an online survey, were cognitions (knowledge, self-efficacy, confidence) and behaviors (co-participation, role modelling, family rules and routines, presence of screens in child's bedroom) related to movement behaviors and general parenting. Linear regression compared between-group outcomes adjusting for baseline values. Whether changes in the outcomes between baseline and follow up were associated with intervention engagement (Web app analytics) was also explored.

**Results:** The intervention group had higher knowledge of child movement behaviors (mean difference= 0.41, P=0.002) at 6-months, compared to control. Difference in knowledge of child movement behaviors was driven by an overall shift in two out of three of the individual components (mean differences 0.12 for physical activity, P=0.028, and 0.27 for sleep scores, P=0.003). No significant intervention effect was observed for any other parenting outcomes. Amongst the intervention group, higher levels of intervention engagement were associated with improvements in several parental cognitions (knowledge of child movement behaviors and physical activity, parenting confidence, and ease of parenting) and behaviors (family rules for movement behaviors and screen time, less parental screen time) (all P<0.05).

**Conclusions:** Although the Let's Grow intervention positively influenced parental knowledge of physical activity and sleep at 6 months, parents might need more support to improve knowledge of sedentary behaviour and other parenting cognitions and behaviors. Engagement appears to enhance intervention effects on intermediary outcomes, highlighting the importance of strategies to optimize engagement.

## Predicting children's sleep via raw accelerometry and heart rate consumer wearable data: Performance evaluation of a device-agnostic approach.

Dr. Robert Weaver<sup>1</sup>, Hongpeng Yang<sup>1</sup>, Zifei Zhong<sup>1</sup>, Srihari Nelakuditi<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Rahul Ghosal<sup>1</sup>, Olivia Finnegan<sup>1</sup>, **James White III<sup>1</sup>**, Hannah Parker<sup>1</sup>, Dr. Sarah Burkart<sup>1</sup>, Dr. Michael Beets<sup>1</sup>, M.D. David Brown<sup>1</sup>, Russell Pate<sup>1</sup>, Dr. Massimiliano de Zambotti<sup>2</sup>, Gregory Welk<sup>3</sup>, Yuan Wang<sup>1</sup>, Elizabeth Adams<sup>1</sup>, Xuanxuan Zhu<sup>1</sup>, Meghan Savidge<sup>1</sup>, Nicholas Niako, Griffin Randolph<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, USA, <sup>2</sup>Oura Health Oy, Oulu, Finland, <sup>3</sup>Iowa State University, Ames, USA

**O.2.15: Technology and Tools for Tracking and Understanding Health Behaviors, Waitakere 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Consumer wearables have features that are ideal for researching free-living sleep with children, but the proprietary nature of sleep estimates from these devices limits their utility. A device-agnostic approach using consumer wearable data (i.e., raw accelerometry and high granularity heartrate [HR] data) to predict sleep could address this issue. This study examined sleep estimates from research grade and consumer wearable devices data relative to criterion values from polysomnography.

**Methods:** A total of 238 children (5-12yrs, 52% male, 50% Black, 32% White) participated in an overnight polysomnography, which included a 3-lead ECG, and concurrently wore two of three consumer wearables (Apple Watch Series 7, Garmin Vivoactive 4S, Fitbit Sense) and a research-grade accelerometer (ActiGraph GT9X) on their non-dominant wrist. Random forest estimated sleep vs. wake and sleep stage (wake, non-REM, REM) using raw accelerometry and HR data for each 30-second epoch. A 10-fold cross validation technique was employed and F1 score, sensitivity (i.e., proportion of correctly classified sleep epochs), and specificity (i.e., proportion of correctly classified wake epochs) assessed agreement of each device with the criterion polysomnography. For sleep staging weighted sensitivity & specificity considering the frequency of each stage was calculated.

**Results/findings:** For sleep vs. wake classification, the research grade devices (ActiGraph GT9X and 3-lead ECG) achieved an F1 score of 89.8 (sensitivity=88.8, specificity=81.3), Apple achieved 89.9 (sensitivity=89.0, specificity=83.1), Fitbit achieved 89.9 (sensitivity=88.8, specificity=81.5), and Garmin achieved 89.2 (sensitivity=88.4, specificity=80.3). For sleep stages, the research grade devices achieved an F1 score of 70.3 (sensitivity=68.1, specificity=77.5), Apple achieved 73.3 (sensitivity=70.9, specificity=81.5), Fitbit 71.4 (sensitivity=69.3, specificity=78.8), and Garmin achieved 70.9 (sensitivity=68.6, specificity=81.7).

**Conclusions:** The raw accelerometry and HR data collected from consumer wearable devices were comparable to research-grade devices. Further, across all devices, agreement was lower for sleep staging compared to binary sleep vs. wake prediction, indicating that alternative data processing algorithms may be needed to predict sleep staging accurately.

## Platform for Accurate Tracking of Children's Health (PATCH): Comparing Predictive Models of Energy Expenditure Estimation in Children

**Dr. Bridget Armstrong**<sup>1</sup>, Dr. Rahul Ghosal<sup>1</sup>, Hannah Parker<sup>1</sup>, Michal Smith<sup>1</sup>, Sydney Hill<sup>1</sup>, Jacob Vaught<sup>1</sup>, Dr. Russ Pate<sup>1</sup>, Dr. Abbi Lane<sup>3</sup>, Dr. R. Glenn Weaver<sup>1</sup>, Dr. MVS Chandrashekhar<sup>2</sup>

<sup>1</sup>University of South Carolina, Columbia, USA, <sup>2</sup>Morgan State University, Baltimore, USA, <sup>3</sup>University of Michigan, Ann Arbor, USA

**O.2.15: Technology and Tools for Tracking and Understanding Health Behaviors, Waitakere 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** G. Children and families

**Background:** Accurate assessment of children's energy expenditure (EE) is essential to study children's health. However, existing devices that measure EE are not designed for children and may be distracting or uncomfortable. Furthermore, data from existing devices is often proprietary, meaning it cannot be validated for children. Therefore, we developed the PATCH (Platform for Accurate Tracking of Children's Health), an open-source device to measure children's EE using heartrate (HR) and acceleration. This study examines three models to estimate children's EE using HR and acceleration collected from the PATCH compared to a criterion of indirect calorimetry.

**Methods:** Fifty-two children aged 3-8 (mean age 8.6yrs, 50% Female, 67% White) completed a semi-structured protocol ranging in intensity from inactive (e.g., using iPad) to vigorous (e.g., running). The PATCH was attached to the chest and PATCH HR was measured using photoplethysmography and acceleration was measured using a 3-axis accelerometer ( $\pm 16$  G). The criterion (Cosmed K5) measured breath by breath oxygen uptake ( $\text{VO}_2/\text{min/kg}$ ). Data was aggregated at the minute level. We used cross-sectional time series (CSTS) models, generalized additive mixed models (GAMM) and random forest (RF) to predict EE from a combination of HR, acceleration and participant characteristics (biological sex, age, weight, height). We used 10-fold cross-validation, testing each fold and training on the rest, repeated for robustness. Model fit was assessed using mean bias, mean absolute error (MAE), mean absolute percent error (MA%E) and variance explained ( $R^2$ ).

**Results:** Mean bias for CSTS was -0.014, GAMM was 0.009 and RF was 0.078. MAE was 1.54, 1.56 and 1.99 for CSTS, GAMM and RF, respectively. MA%E was 10% for both GAMM and CSTS, and 13% for RF. Based on the 10-fold cross validation, the CSTS predicted 86% (SD 4.8%) of the variance in EE, GAMM predicted 86% (SD 4.9%) and RF predicted 81% (SD 6%).

**Conclusions:** CSTS, GAMM and RF models produce similarly accurate estimates of children's EE using data from the open-source PATCH device compared to the criterion. Additional validation of the PATCH EE estimation in a larger sample and in free living conditions is needed to generalize beyond a laboratory setting.

## Predicting children's activity type and physical activity energy expenditure from consumer wearable raw accelerometry and heart rate data

**Mr. James White III<sup>1</sup>**, Dr. R. Glenn Weaver<sup>1</sup>, Ms. Olivia L. Finnegan<sup>1</sup>, Dr. Aliye B. Cepni<sup>2</sup>, Dr. Keagan Kiely<sup>1</sup>, Ms. Hannah Parker<sup>1</sup>, Dr. Xuanxuan Zhu<sup>1</sup>, Mrs. Meghan Savidge<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Dr. Michael W. Beets<sup>1</sup>, Dr. Elizabeth L. Adams<sup>1</sup>, Dr. Sarah Burkart<sup>1</sup>, Dr. Srihari Nelakuditi<sup>1</sup>, M.D. David Brown<sup>3</sup>, Dr. Massimiliano de Zambotti<sup>4</sup>, Dr. Gregory J. Welk<sup>5</sup>, Dr. Yuan Wang<sup>1</sup>, Dr. Rahul Ghosal<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, United States, <sup>2</sup>University of Houston, Houston, United States,

<sup>3</sup>University of South Carolina School of Medicine, Columbia, United States, <sup>4</sup>SRI, Center for Health Science, Menlo Park, United States, <sup>5</sup>Iowa State University, Ames, United States

### O.2.15: Technology and Tools for Tracking and Understanding Health Behaviors, Waitakere 1, June 13, 2025, 11:30 AM - 12:45 PM

#### **SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Including activity type (e.g., lying down, walking) in regression equations can improve estimates of physical activity energy expenditure (PAEE). Yet, studies that include activity type using the raw accelerometry and heart rate (i.e., [HR] at second-level resolution) data available from consumer wearables are lacking. Therefore, it is important to investigate whether and to what extent estimates of PAEE can be enhanced by adding activity type to raw accelerometry and HR at second-level resolution from research-grade and consumer wearable devices.

**Methods:** Children (n=186, 5-12 years, 51.6% male, 55.8% White, 35.1% Black) completed a 60-minute protocol consisting of 5-minute activities (e.g., seated card games, playing tag) ranging in intensity while wearing a COSMED K5 as a criterion measure of PAEE (i.e., VO2 ml/kg/min). Children wore two of three consumer wearables (Apple Watch Series 7, Fitbit Sense, Garmin Vivoactive 4S randomly placed) and a research-grade accelerometer (ActiGraph GT9X placed proximal to the consumer wearables) on their non-dominant wrist, and a chest-placed, research-grade HR monitor (Actiheart 5, ECG) concurrently. Activities were categorized into Lying Down, Enrichment (e.g., seated coloring), Locomotor (e.g., trampoline jumping), and Sports/Games (e.g., soccer). To predict activity type, random forest models were trained and tested on the whole data using 34 features derived from raw accelerometry and HR data from consumer wearables and combined research-grade devices (i.e., ActiGraph accelerometry with Actiheart HR). Cross-sectional time series regression models with and without activity type were then developed to estimate minute-level PAEE using the raw accelerometry and HR data from the devices and subject characteristics (i.e., age, sex, weight, height, and skin tone). R<sup>2</sup> was calculated to evaluate model performance.

**Results/findings:** Equations with activity type produced higher R<sup>2</sup> values [Apple (76.6%), Garmin (69.1%), combined research-grade (68.2%), and Fitbit (53.8%)] than device-based equations without activity type information [Apple (72.3%), combined research-grade (65.8%), Garmin (64.9%), and Fitbit (51.7%)].

**Conclusions:** Findings suggest including predicted activity type in regression equations with raw accelerometry and HR from consumer wearables modestly improves estimates of children's PAEE. Future studies should evaluate this approach to estimate children's free-living PAEE using raw accelerometry and HR from consumer wearables.

## Does technology assist physical activity engagement in young women? - Repeated cross-sectional study

**Mrs. Kimberley Watson-Mackie<sup>1</sup>**, Dr Lauren Arundell<sup>1</sup>, Other Natalie Lander<sup>1</sup>, Associate Professor Fiona H McKay<sup>1</sup>, Professor Lisa Barnett<sup>1</sup>, Dr. Gavin Abbott<sup>1</sup>, Prof. Anna Timperio<sup>1</sup>, Prof Jenny Veitch<sup>1</sup>, Kate Parker<sup>1</sup>, Associate Prof. Nicola Ridgers<sup>2</sup>

<sup>1</sup>Deakin University, Burwood, Australia, <sup>2</sup>University of South Australia, Adelaide, Australia

**O.2.15: Technology and Tools for Tracking and Understanding Health Behaviors, Waitakere 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Current physical activity (PA) guidelines recommend those aged 18-64 years complete 150-300 minutes of PA per week (approximately 30+ minutes 5 days/week) and those aged 13-17 years complete ≥60 minutes of PA daily. Most Australians are not meeting PA guidelines, with some of the lowest levels seen in young women 13-24 years. Technology-supported PA (interactive digital technology that encourages PA) may help facilitate young women's PA. This study investigated the association and potential dose-response relationship between technology-supported PA and PA in young women.

**Methods:** Repeated cross-sectional analysis of self-reported data collected via online surveys at four-time points: T1 (Australia's COVID-19 national restrictions, May 2020, n=900), T2 (state-specific restrictions, August 2020, n=432), T3 (as restrictions eased, May 2021, n=206), and T4 (post-restrictions, May 2022, n=203). Variables included; technology-supported PA (yes/no), frequency of use (number of sessions/week), number of days meeting PA guidelines (conceptualised as number of days performing 60+ minutes of PA (<18-year-olds) or 30+ minutes of PA (>18-year-olds)) and covariates (age, socio-economic status, state of residence). Adjusted Poisson regression models compared days meeting PA guidelines between technology users and non-users and the relationship between frequency of use and days/week of guideline adherence (dosage).

**Results/findings:** The sample was primarily adolescents at T1 (age 17.5±2.5 years) and T2 (age 17.7±2.7 years) then young adults at T3 (age 19.0±2.5 years) and T4 (age 19.5±2.2 years). Technology-supported PA use varied across timepoints T1 (24.1%), T2, (57.2%) T3 (37.6%) and T4 (28.0%). Technology users met PA guidelines on more days at T1 (IRR 1.36 p<0.001), T2 (IRR 1.54 p<0.001), T3 (IRR 1.26 p<0.001), and T4 (IRR 1.33 p<0.048) than non-users. A dose-response relationship was also found at each timepoint: T1 (IRR 1.07 p<0.001), T2 (IRR 1.07 p<0.001), T3 (IRR 1.09 p<0.001) and T4 (IRR 1.07 p=0.027).

**Conclusions:** Technology-supported PA may support young women's PA, with these results suggesting a dose-response relationship between technology use and PA guideline adherence. Additionally, it appears this association was sustained post-COVID-19 restrictions. Non-pandemic exploration to understand real world use could shape future research utilising technology-supported PA in interventions seeking to increase young women's PA.

## A novel interactive interface for translation of complex, interdependent relationships of diet, physical activity and sleep behaviours with health outcomes.

**Dr. Dot Dumuid<sup>1</sup>**, Dr Ashley Yamanaka<sup>2</sup>, Dr Kar Hau Chong<sup>3</sup>, Prof Anthony Okely<sup>3</sup>, Prof Lynne Wilkens<sup>2</sup>, Dr Yuri Shvetsov<sup>2</sup>, Dr Chloe Lozano<sup>2</sup>, Prof Rachel Novotny<sup>2</sup>

<sup>1</sup>University of South Australia, Adelaide, Australia, <sup>2</sup>University of Hawaii at Manoa, Honolulu, USA,

<sup>3</sup>University of Wollongong, Wollongong, Australia

**O.2.15: Technology and Tools for Tracking and Understanding Health Behaviors, Waitakere 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Diet and 24-hour activity behaviours are compositional, interrelated and may interact with each other in their relationships with health outcomes. Due to the complexity of these relationships, coefficients from statistical models are not readily interpretable in a meaningful way. We present an interactive interface that translates results from dual-compositional (diet and activity) statistical models into meaningful effect sizes.

**Methods:** The interactive interface was built in R ShinyApp. To demonstrate its utility, we used cross-sectional data the Children's Healthy Living Program (n=674, 6-8 years, 50% girls). Dietary intake (total energy intake and %energy from saturated fat, unsaturated fat, protein, added sugar and other carbohydrates) was from 2 days of caregiver-completed food records, and 24-h activity (moderate-to-vigorous physical activity [MVPA], light physical activity, sedentary time and sleep) was from 5 days of wrist-worn accelerometry. Multilevel dual-compositional regression, adjusted for clustering (communities within jurisdictions) and age, sex, parental education, and indigenous status was used. Independent variables included total energy intake, macronutrient composition and 24-h activity composition. The dependent variable was body mass index z-score (zBMI), derived from directly measured anthropometrics. Statistically significant ( $p < 0.05$ ) interactions between behaviours were retained. Regression coefficients were interpreted for diet/activity reallocations selected via the interactive interface.

**Results:** In the example dataset, there was a significant interaction between total energy intake, macronutrient composition, and sex ( $F[4,428]=3.3$ ,  $p=0.01$ ). 24-h activity composition was significantly associated with zBMI ( $F[3,395]=4.6$ ,  $p=0.003$ ), with no sex interaction. There was no interaction between diet and activity compositions. The interactive interface displays the expected difference in zBMI for user-selected behavioural adjustments. For example, in both sexes 10% less sleep and 10% less MVPA was associated with higher zBMI (+0.08 and +0.05, respectively). Among boys, 10% higher total energy intake, combined with 10% more %saturated fats was associated with +0.05 zBMI, but no difference in girls.

**Conclusion:** Interactive interfaces allowing the user to explore the health associations of selected behaviour adjustments that are of interest to them can overcome the translation barrier posed by complex statistical methods. They may be a useful intervention tool to support the dissemination of evidence-based lifestyle advice in a meaningful way.

## Fragmentation patterns of smartphone screentime among parents: A descriptive analysis

Dr. Joshua Culverhouse<sup>1</sup>, Andrew de Arellano<sup>1</sup>, Ms. Olivia L. Finnegan<sup>1</sup>, Hannah Parker<sup>1</sup>, Dr. Rahul Ghosal<sup>1</sup>, Dr. Sarah Burkart<sup>1</sup>, Dr. Anthony Holmes<sup>1</sup>, Dr. Keagan Kiely<sup>1</sup>, Dr. Elizabeth L. Adams<sup>1</sup>, Dr. Michael W. Beets<sup>1</sup>, Dr. Robert Weaver<sup>1</sup>, **Dr. Bridget Armstrong<sup>1</sup>**

<sup>1</sup>University of South Carolina, Columbia, USA

**O.2.15: Technology and Tools for Tracking and Understanding Health Behaviors, Waitakere 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Screentime research traditionally focuses on total duration, without considering how screentime is accumulated. Examining the pattern of screen interactions, including how frequently and briefly people engage with their devices, may provide additional insights into health and wellbeing. Frequent, brief interactions, or “fragmented” usage, may either indicate or contribute to stress and reduced focus, potentially affecting family interactions and daily functioning. This study aimed to describe parents’ smartphone screentime fragmentation patterns to better characterize smartphone use.

**Methods:** Using data from a feasibility study, passive smartphone screentime data from 39 parents (92.3% female; mean age  $37.1 \pm 8.7$  yrs) were collected via the Chronicle app for 30 days. Daily screentime metrics included total duration (hours), number of screentime bouts, and average bout duration (minutes). We calculated a daily fragmentation score as the number of bouts divided by total screentime duration, yielding an index in bouts per hour of screentime. For example, to accumulate an hour of screentime, an individual with high fragmentation would do so through frequent and short bouts, whereas one with low fragmentation would do so through fewer, longer bouts. We used mixed-effects models and variance components analysis (VCA) to estimate within- and between-subject variance in fragmentation.

**Results:** Across 902 participant-days (mean per participant:  $21.4 \pm 8.8$  days), the average daily duration of screentime per participant ranged from 1.0 to 14.9 hours with a median of 6.1 (IQR: 3.2). Average daily number of bouts per participant ranged from 8 to 171, with a median of 89 (IQR: 40). The average bout duration per person ranged from 1.8 to 26.0 minutes, with a median of 4.2 (IQR: 3.5). Average fragmentation scores ranged from 5 to 35 bouts per hour of screentime, with a median of 16 (IQR: 11). VCA revealed that 63% of fragmentation variance was due to stable differences between individuals, with the remaining 37% reflecting day-to-day fluctuations within individuals.

**Conclusions:** This study highlights considerable variability in screentime accumulation patterns, both between and within individuals. Future research should explore associations between screentime patterns and health outcomes, advancing a nuanced understanding of screen use in behavioral and public health contexts.

## Design and evaluation of the “Feel Good” Feasibility Study – A multi-component fruit and vegetable intervention in children measuring cognitive and mental health outcomes

**Dr. Nicola Gillies<sup>1</sup>**, Dr Jeanette Rapson<sup>1</sup>, Dr Amy Lovell<sup>1</sup>, Prof Karen Waldie<sup>1</sup>, Prof Clare Wall<sup>1</sup>  
<sup>1</sup>University of Auckland, Auckland, New Zealand

**O.2.16: From Adolescence to Adulthood: Studies on Lifestyle Behaviors and Mental Health Outcomes, Waitakere 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Observational evidence suggests that increasing fruit and vegetable (FV) intake has the potential to improve children’s cognitive function and mental well-being, but this has not yet been empirically tested in intervention research. This study assessed the feasibility and acceptability of a multi-component FV intervention, informed by behaviour change science, which measures mental and cognitive health outcomes in children.

**Methods:** The ‘Feel Good Study’ was a cluster-randomised wait-list controlled feasibility study conducted in four New Zealand primary schools, with equal allocation of schools to intervention and wait-list control arms. The intervention group received a 10-week FV intervention which included a programme informed by behavioural theory. designed to improve FV availability and acceptance. The wait-list control group received a simplified 5-week version of the intervention. Dietary, cognitive, and mental health outcomes were completed by children and parents/caregivers at the start and end of the 10-week study period. Primary outcomes of this feasibility study were recruitment, retention, and data collection rates. Process evaluation captured measures of intervention fidelity and dose, acceptability, reach, and barriers or facilitators to implementation.

**Results:** Seventy children were recruited (79% recruitment rate), with an average retention rate of 89%. Diet, cognitive, and mental health data collection procedures were feasible, with all data valid for analysis except for 6% of children’s dietary questionnaires. All intervention components were delivered (100% dose delivered), with high levels of fidelity (82% - 100% of components implemented as planned). All teachers and parents strongly agreed that they would recommend other schools/families take part in the study, indicating high levels of acceptability. The process evaluation revealed areas for refinement, including more cohesive connections between school- and home-based intervention components, enhancing or adding new intervention components, and simplifying enrolment procedures with extended recruitment periods.

**Conclusions:** The key feasibility and acceptance measures in the Feel Good Study were met. We recommend refining the intervention and progression to a definitive trial. This will allow for the first evaluation of the impact of increased FV intake on children’s for mental health and cognitive function.

# Clusters of healthy lifestyle behaviours are associated with symptoms of depression, anxiety, and psychological distress: A systematic review and meta-analysis of observational studies

**Dr. Matthew Bourke**<sup>1</sup>, Ms. Hui Fei Wendy Wang<sup>1</sup>, Prof. Sarah McNaughton<sup>1</sup>, Dr. George Thomas<sup>1</sup>, Dr. Joseph Firth<sup>2</sup>, Dr Mike Trott<sup>1</sup>, Prof. John Cairney<sup>1</sup>

<sup>1</sup>The University of Queensland, St Lucia, Australia, <sup>2</sup>The University of Manchester, Manchester, UK

**O.2.16: From Adolescence to Adulthood: Studies on Lifestyle Behaviors and Mental Health Outcomes, Waitakere 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Engagement in healthy and unhealthy lifestyle behaviours is related to a range of mental health outcomes. Most existing research has focussed on individual lifestyle behaviours, so the extent to which clusters of healthy lifestyle behaviours are related to mental health outcomes is unclear. Therefore, this study aimed to systematically review and quantitatively synthesise research that has examined the association between clusters of lifestyle behaviours with symptoms of depression, anxiety, and psychological distress.

**Methods:** A systematic search of five electronic databases was conducted to identify studies which used person-centred approaches (e.g., cluster analysis, latent class analysis) to identify subgroups of participants based on at least two unique lifestyle behaviours (i.e., physical activity/sedentary behaviours, diet, sleep, alcohol/tobacco/drug use) and examined differences in symptoms of depression, anxiety, or psychological distress between clusters. Clusters from individual studies were ranked from healthiest to least healthy based on the combinations of multiple lifestyle behaviours within each cluster and differences in symptoms of depression, anxiety, or psychological distress was examined between the healthiest cluster and the less healthy clusters using a correlated and hierarchical random effects meta-analysis.

**Results/findings:** A total of 75 studies reporting on nearly one-million individual participants were included in the review. Results demonstrated that participants who engaged in the healthiest clusters of lifestyle behaviours reported significantly fewer symptoms of depression (SMD = -0.42), anxiety (SMD = -0.47) and psychological distress (SMD = -0.33) compared to participants engaging in less healthy combinations of lifestyle behaviours. A dose response relationship was observed across outcomes whereby the difference in symptoms between the healthiest and least healthy clusters was significantly greater than the difference in symptoms between the healthiest and remaining clusters.

**Conclusion:** These results demonstrate that there is a moderate-to-strong relationship between engaging in clusters of healthy lifestyle behaviours and mental health outcomes and demonstrate the importance of considering healthy lifestyle as a whole instead of as individual parts. These results highlight how targeting multiple healthy lifestyle behaviours may potentially be more effective than targeting individual lifestyle behaviours alone.

# An ethno-phenomenology-based approach to understanding physical activity enjoyment for mental wellbeing

**Mr. Indra Carey<sup>1</sup>**, Prof Ivanka Prichard<sup>1</sup>, Prof Eva Kemps<sup>1</sup>

<sup>1</sup>Flinders University, Bedford Park, Australia

**O.2.16: From Adolescence to Adulthood: Studies on Lifestyle Behaviors and Mental Health Outcomes, Waitakere 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Enjoyment of physical activity is not only vital for maintaining physical activity practice, but it is also linked to improved mental wellbeing. However, there are gaps in our understanding of what makes certain physical activities enjoyable. Furthermore, there are many different types of physical activities that adults engage in that may provide a deeper insight into the relationship between adherence, enjoyment and wellbeing. Therefore, qualitative research on enjoyment across a range of physical activities will aid understanding of how physical activity can be enjoyed and maintained, ultimately leading to improved wellbeing.

**Method:** This study used an ethno-phenomenological approach, where the primary researcher first engaged in each participant's physical activity with them before conducting semi-structured interviews. This approach extends standard phenomenological methods by situating the researcher in each participant's world, enhancing the human-to-human relationship with participants and the quality of interviews. A reflexive thematic analysis was conducted on the interview transcripts to capture the diversity of experiences and to develop themes across the dataset of the phenomenon of physical activity enjoyment and its relationship with wellbeing.

**Results/Findings:** Eleven participants were included, each from different physical activity disciplines (e.g., Eskrima, track). The researchers developed three themes that relate to how individuals enjoyed their physical activities and the effects of these aspects on their wellbeing. Theme one "Operating at the right level" relates to the importance of ability level, quality coaching, and others' abilities around them and expanded to individuals' confidence in their ability beyond their physical activity. Theme two "Freedom of expression" shows the importance participants place on their choice of activity, both as a form of identity for themselves and in their community, and as it relates to the diversity of aspects in their activity that kept them engaged. Theme three "Active meditation" expresses how individuals engage in their activity as a form of physical meditation.

**Conclusion:** This study sheds light on aspects of physical activity enjoyment that individuals find important and how these relate to their wellbeing in day-to-day life. Therefore, focusing on these themes may aid interventions that aim to improve wellbeing through physical activity.

# Can peer-led, school-based lifestyle interventions improve adolescents' mental health and wellbeing? A systematic review and meta-analysis.

**Dr. Jacinta Brinsley<sup>1</sup>**, Matthew Schmidt<sup>1</sup>, Dr Rachel Curtis<sup>1</sup>, Ms Catherine Simpson<sup>1</sup>, Ms Emily Eglitis<sup>1</sup>, Elizabeth Taddeo<sup>1</sup>, Michael Broad<sup>1</sup>, Bryony Jardine<sup>2</sup>, Georgia Gosse<sup>1</sup>, Dr Prerna Banati<sup>3</sup>, Professor Carol Maher<sup>1</sup>

<sup>1</sup>Alliance for Research in Exercise, Nutrition and Activity (ARENA), University of South Australia, Adelaide, Australia, <sup>2</sup>Centre for Social Impact, Flinders University, Adelaide, Australia, <sup>3</sup>Department of Maternal, Newborn, Child & Adolescent Health & Ageing, World Health Organization, Geneva, Switzerland

## O.2.16: From Adolescence to Adulthood: Studies on Lifestyle Behaviors and Mental Health Outcomes, Waitakere 2, June 13, 2025, 11:30 AM - 12:45 PM

### SIG - Primary Choice: M. Mental Health and Wellbeing

**Purpose:** Adolescent mental health is a global public health issue, with 15% of young people experiencing a mental health condition and only half accessing care. These early-life challenges not only impair immediate wellbeing but also impact long-term health, including increased cardiometabolic risks and higher rates of premature mortality. Evidence-based, accessible strategies are urgently needed. Schools provide an important context for health education and early intervention and peer-led interventions are a popular delivery format to engage adolescents. Addressing lifestyle behaviours such as physical activity can prevent and treat mental ill-health, however, no review has examined the effectiveness of peer-led lifestyle interventions on mental health outcomes in adolescents.

**Methods:** This review was prospectively registered with PROSPERO (CRD42024511031). Following PRISMA guidelines, six databases were searched for randomised controlled trials that evaluated peer-led lifestyle interventions (e.g., physical activity, diet, sleep) delivered within a school setting to adolescents aged 10-19 and reported a mental health outcome. Narrative syntheses and meta-analyses were conducted to examine intervention effects on each outcome. Risk of bias was assessed using the Cochrane Risk of Bias tool.

**Results:** Seven studies met inclusion criteria, encompassing 7,060 adolescents from 151 schools across the UK, USA, Canada, and Norway. Interventions varied in frequency and duration, with six focusing on physical activity and one on nutrition. Meta-analyses revealed non-significant effects on emotional and behavioural health (MD = 0.60, 95% CI -3.52 to 4.72;  $p = 0.32$ ,  $k = 2$ ), wellbeing (SMD = 0.0, 95% CI -2.94 to 2.94;  $p = 1.0$ ,  $k = 2$ ), and self-efficacy for physical activity (SMD = 0.18, 95% CI -3.08 to 3.44;  $p = 0.61$ ,  $k = 2$ ), with high heterogeneity across all analyses.

**Conclusion:** This systematic review revealed a significant knowledge gap in peer-led lifestyle interventions reporting mental health outcomes, with only seven eligible studies identified. Meta-analyses, though limited by small sample sizes, suggest non-significant effects across outcomes, including an unexpected negative trend in wellbeing. These preliminary findings, while requiring cautious interpretation, highlight the pressing need for more comprehensive research to better understand the impact of peer-led interventions on mental health outcomes.

## Is participation in different types of leisure-time physical activity in adolescence associated with adulthood depressive and anxiety disorders?

**Ms. Kelcie Miller<sup>1</sup>**, Dr Brooklyn Fraser<sup>1,2</sup>, Associate Professor Seana Gall<sup>1,3</sup>, Professor Kristy Sanderson<sup>4</sup>, Professor Terence Dwyer<sup>5,6</sup>, Professor Alison Venn<sup>1</sup>, Associate Professor Verity Cleland<sup>1,7</sup>

<sup>1</sup>Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia, <sup>2</sup>Alliance for Research in Exercise, Nutrition and Activity (ARENA), Allied Health and Human Performance, University of South Australia, Adelaide, Australia, <sup>3</sup>School of Clinical Sciences, Monash University, , Australia, <sup>4</sup>School of Health Sciences, University of East Anglia, , UK, <sup>5</sup>Nuffield Department of Women's & Reproductive Health, University of Oxford, , UK, <sup>6</sup>Murdoch Children's Research Institute, Melbourne, Australia, <sup>7</sup>School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia

**O.2.16: From Adolescence to Adulthood: Studies on Lifestyle Behaviors and Mental Health Outcomes, Waitakere 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Mental health (MH) disorders comprise one of the top ten contributions to global disease burden, directly affecting 16% of the world's population each year. It is well established that leisure-time physical activity (LTPA) participation is associated with favourable MH outcomes. Understanding which specific types of LTPA best promote long-term MH benefits could contribute to establishing more targeted public health interventions. Despite this, relationships between adolescent LTPA types and adulthood MH are not yet known. As such, this study aimed to determine if adolescent participation in specific types of LTPA is associated with adulthood MH status.

**Methods:** This study utilised data from the Childhood Determinants of Adult Health (CDAH) study, a large 34-year Australian prospective cohort study spanning childhood to adulthood. Participation in 28 types of LTPA at age 15-19 years was collected retrospectively using the Historical Leisure Activity Questionnaire (HLAQ) at age 26-36 years (CDAH-1). Participants were followed up aged 31-41 years (CDAH-2) and 36-49 years (CDAH-3). At each timepoint, participants completed the WHO Composite International Diagnostic Interview (CIDI-Auto 2.1) to assess the prevalence of DSM-IV mood and anxiety disorders. Log-binomial regression was adopted for analysis.

**Results/findings:** A total of 2,384 participants provided historical LTPA data at CDAH-1, and MH assessments at a minimum of one timepoint at CDAH-1, CDAH-2 or CDAH-3. Participation in adolescent team LTPA was associated with a 17% lower risk of mood disorders and 25% lower risk of anxiety. In males, football (RR=0.78, 95% CI=0.61, 0.99) and weight training (RR=0.70, 95% CI=0.50, 0.98) were associated with a lower risk of poor MH in adulthood. In females, action sports (RR=0.72, 95% CI=0.53, 0.97) and ball and hoop activities (RR=0.83, 95% CI=0.72, 0.96) were associated with a lower risk of adulthood MH disorders.

**Conclusions:** This study was the first to report on the long-term associations of specific LTPA types in adolescence and MH outcomes. While associations varied by type, a number of leisure activities were associated with better MH outcomes in adulthood, with differences observed by sex. This suggests there may be specific LTPA types best targeted for promotion in adolescence to observe long-term MH benefits.

## Type 2 Diabetes Nutrition Education and a Food Security Resource at an Urban Indian Clinic in the United States: Experiences from American Indian Program Participants

Dr. Sarah Stotz<sup>1</sup>, Mrs. Kelli Begay<sup>4</sup>, Dr. Michelle Dennison<sup>2</sup>, Ms Robyn Sunday-Allen<sup>2</sup>, Ms Danielle Duran<sup>3</sup>, Dr Luciana Hebert<sup>5</sup>, Jessica Lafromboise<sup>6</sup>, Mr. Nick Begick<sup>2</sup>, Ms Barbara Cunningham<sup>2</sup>, Aisa Trice<sup>2</sup>, Dr. Carmen Byker Shanks<sup>7</sup>, Dr. Seth Berkowitz<sup>8</sup>, Dr Luohua Jiang<sup>9</sup>, Dr. Spero Manson<sup>3</sup>

<sup>1</sup>Colorado State University, Fort , USA, <sup>2</sup>Oklahoma City Indian Clinic, Oklahoma City, USA, <sup>3</sup>University of Colorado Anschutz Medical Campus, Aurora, USA, <sup>4</sup>Maven Collective Consulting, LLC, Oklahoma City, USA, <sup>5</sup>Washington State University , Seattle, USA, <sup>6</sup>Wewoka Indian Health Center, Wewoka, USA, <sup>7</sup>Center for Nutrition and Health Impact, Omaha, USA, <sup>8</sup>University of North Carolina Chapel Hill, Chapel Hill, USA, <sup>9</sup>University of California Irvine, Irvine, USA

**O.2.17: Indigenous research, Waitakere 3, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** In partnership with Native communities, we developed an American Diabetes Association (ADA)-sponsored diabetes nutrition education curriculum entitled “What Can I Eat?” Healthy Choices for American Indians and Alaska Natives with T2D” (WCIE). WCIE is a 5 class, culturally tailored diabetes education curriculum that focuses on the ADA diabetes plate method and traditional Native foods. The objective of this study was to understand participant’s experiences with WCIE and a food security resource (FSR) as part of a randomized controlled trial.

**Methods:** Participants were recruited the Urban-based Indian clinic and randomized into three intervention arms: WCIE+FSR, WCIE alone, and FSR alone. The FSR was a weekly \$30.00 gift card to a local grocery for 12 weeks. After each of the five WCIE classes, participants (n=67) completed a short satisfaction survey and a subset (n=46) engaged in post-intervention focus groups to further discuss their experiences with WCIE and the FSR. Focus groups were conducted at the clinic and were led by a trained Native moderator. Surveys were analyzed descriptively. Focus groups were analyzed through thematic analysis.

**Results/findings:** This multiple method study included data from post-class surveys (n=251) and focus groups (n=9). Descriptive results showed most participants enjoyed the class (94.9%), felt the class taught them about their diabetes (83.7%), felt things related to their culture were presented in a respectful way (86.2%), and did not feel the class information was difficult to understand (79.6%). Qualitative themes included 1) nutrition education empowered participants to make healthier choices when meal planning, food shopping, or eating at social gatherings; 2) food security resources are critical to support access to healthy foods discussed in class; 3) creative exercise activities helped to promote enjoyment in physical activity; 4) cultural adaptation of the WCIE curriculum was meaningful for incorporating traditional foods into healthy meal planning. Recommendations for improvement included broadening traditional food discussions to incorporate more tribe-specific foods, expanding class outreach efforts to include more tribal communities, and improving access to classes by offering additional class times or virtual options.

**Conclusions:** Participant experiences with WCIE and the FSR were largely positive and support a future hypothesis-driven efficacy trial.

## Moving Toward Wellness: A study of the Tidda Talk program's influence on physical activity and social and emotional wellbeing.

**Miss Madeleine English**<sup>1</sup>, Associate Professor Karla Canuto<sup>2</sup>, Dr Danielle Manton<sup>1</sup>, Professor Cristina Caperchione<sup>1</sup>

<sup>1</sup>University of Technology Sydney, Moore Park, Australia, <sup>2</sup>Flinders University, Casuarina, Australia

**O.2.17: Indigenous research, Waitakere 3, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** This study evaluated the Tidda Talk program, an 8-week social and emotional well-being intervention for young Aboriginal and Torres Strait Islander women aged 11–16 years. The study aimed to examine the program's impact on physical activity beliefs, social and emotional well-being, and assess the feasibility and acceptability of the Cultural Wellness Index as an evaluation tool.

**Methods:** A single-arm quasi-experimental design with self-report questionnaires (N = 70) measured physical activity self-efficacy, enjoyment, psychological distress, and cultural wellness domains. Paired-sample t-tests were used to analyse outcome data. The feasibility and acceptability of the Cultural Wellness Index were assessed through observational notes and missing data patterns.

**Results:** A small but statistically significant decline in physical activity enjoyment was observed ( $p = 0.04$ ). No significant changes were found in physical activity self-efficacy ( $p = 0.61$ ), psychological distress ( $p = 0.40$ ), or cultural wellness domains ( $p = 0.16$ ,  $p = 0.31$ ,  $p = 0.46$ ,  $p = 0.95$ ,  $p = 0.35$ ,  $p = 0.91$ ). Feasibility assessments revealed moderate acceptability of the Cultural Wellness Index, although six out of 18 items (33%) had missing data exceeding the 10% threshold.

**Conclusion:** Findings suggest that the Tidda Talk program effectively uses physical activity and sport as engagement tools for young Aboriginal and Torres Strait Islander women, though program modifications, such as extended or more intensive delivery, may enhance outcomes. The moderate acceptability of the Cultural Wellness Index highlights the need for refinement to improve usability in similar contexts. This study provides valuable insights for advancing social and emotional well-being programs and evaluation practices tailored to this underserved priority population.

## Yarning with Aboriginal Families about Infant Nutrition and Active Play

**Mrs. Fiona Mitchell**<sup>1</sup>, Dr Sharon Atkinson-Briggs<sup>2</sup>, Dr Penny Love<sup>3</sup>, Dr Jennifer Browne<sup>4</sup>, Associate Professor Rachel Laws<sup>5</sup>

<sup>1</sup>Deakin University, Warrnambool, Australia, <sup>2</sup>Deakin University, Geelong, Australia, <sup>3</sup>Deakin University, Warrnambool, Australia, <sup>4</sup>Deakin University, Geelong, Australia, <sup>5</sup>Deakin University, Burwood, Australia

**O.2.17: Indigenous research, Waitakere 3, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** To explore the views, experiences and preferences of Aboriginal families in Victoria, Australia regarding information and support about infant nutrition and active play during the first 1000 days of life using Indigenous research methodology.

**Methods:** This study was undertaken by an Aboriginal (Mununjali) researcher guided by an Indigenous standpoint approach. Yarning is a culturally safe, collaborative methodology for undertaking qualitative research conversations with Indigenous participants. Data collection involved yarning with 17 Aboriginal parents and carers about their infant nutrition and active play experiences and information and support preferences. One yarning circle (n=6 participants), and 11 individual yarning interviews were undertaken in urban and rural communities across Victoria, Australia. The yarning circle and individual yarns were audio-recorded with participants' consent and then transcribed. Reflexive thematic analysis was used to identify key themes.

**Results:** Participants in the yarning circle and individual interviews included a combination of Aboriginal mothers and grandmothers. Priority topics that Aboriginal families identified in relation to healthy eating information and support included gestational diabetes, information for first time mums, milk production, mums' wellbeing, introducing solids and introducing solid foods with different textures. Priority topics in relation to active play were tummy time, screen time and activities that aren't costly.

**Conclusions:** Culturally safe, accessible and evidence-based information and support is required to support Aboriginal children and families during the critical first 1000 days. This research has identified priority nutrition and active play topics and will contribute to the development of targeted information and support for Aboriginal families. Optimising nutrition in the first 1000 days will contribute to improved health outcomes for Aboriginal and Torres Strait Islander children and their families.

## Stitching research pathways: An interdisciplinary approach capturing Cook Islands women's narratives in Aotearoa, New Zealand

**Ms. Martine Matapo-kolisko**<sup>1</sup>, Dr Justin Richards, Dr Lara Andrews

<sup>1</sup>*Te Herenga Waka, Victoria University of Wellington, Wellington, New Zealand*

**O.2.17: Indigenous research, Waitakere 3, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** L. Indigenizing Wellbeing Research

**Purpose:** This project seeks to explore methods for conducting qualitative research on physical activity among Cook Islands women. Traditional health promotion approaches often fall short in capturing the unique experiences and perspectives of this group, as they may not align with a Cook Islands worldview. The aim is to develop and apply culturally appropriate research methods that generate context-specific insights, deepening our understanding of physical activity participation in this population.

**Methods:** Identifying effective tools to explore topics within a Cook Islands context is essential for ensuring that findings are grounded in local relevance and for avoiding the homogenisation of Pacific experiences. This project focuses on Cook Islands women in Te Whanganui-a-Tara, Aotearoa New Zealand, specifically those involved in an Ura (Cook Islands dance) group. Methodologies were developed through an interdisciplinary approach, drawing on insights from both Pacific Studies and Physical Activity disciplines. The project is underpinned by the Tivaevae Research Model (Futter-Puati & Maua-Hodges, 2019), a Cook Islands methodology that draws on the tradition of Tivaevae quilting, symbolising the interweaving of images, narratives, and perspectives. This model served as a guiding framework for weaving together participants' stories. While Tivaevae offered valuable cultural insights, its effectiveness in promoting and evaluating physical activity within this context remained unclear. The project returned to the principles of Pacific Studies: understanding place, people, and context. A critical examination of both indigenous and non-indigenous knowledge systems is essential for meaningful research, ensuring that power dynamics and diverse epistemologies are treated with equal rigour. When working with Pacific peoples, the aim is to use the most appropriate tools for authentic storytelling, avoiding a simplistic binary of dominant versus culturally specific frameworks. Instead, the project embraces a more integrative approach, blending knowledge systems to uncover nuanced findings.

**Conclusions:** This project contributes to the development of effective methods for promoting physical activity among Pacific peoples. It provides valuable insights into selecting culturally appropriate and context-specific approaches that better capture the unique experiences of Cook Islands women. By refining these methods, the project enhances the representation of their participation in physical activity, ensuring that interventions are both relevant and meaningful.

## Effect of 8-month ballistic versus conventional resistance training on functional performance and body composition in postmenopausal women: the REPROOF trial

**Dr. Elisa A Marques<sup>1,2,3</sup>**, Dr. Ogulcan Caliskan<sup>2,3</sup>, Dr. Katherine Brooke-Wavell<sup>2,3,4</sup>, Prof. Jonathan Folland<sup>2,3,4</sup>

<sup>1</sup>College of Sport Science, University of Kalba, Kalba, United Arab Emirates, <sup>2</sup>School of Sport, Exercise, and Health Sciences, National Centre for Sport and Exercise Medicine, Loughborough University, Loughborough, United Kingdom, <sup>3</sup>Versus Arthritis, Centre for Sport, Exercise and Osteoarthritis, Loughborough University, Loughborough, United Kingdom, <sup>4</sup>National Institute for Health and Care Research (NIHR) Leicester Biomedical Research Centre, Leicester, United Kingdom

**O.2.18: Ageing and Health (Metabolic, Cardiovascular), Limelight 1, June 13, 2025, 11:30 AM - 12:45 PM**

### **SIG - Primary Choice: A. Ageing**

**Purpose:** Current recommendations aimed at reducing neuromuscular and functional loss in aged muscle have identified muscle power as a key target for intervention trials. High-velocity resistance training (RT) may offer greater improvements in functional performance in older adults than conventional RT, but evidence remains inconclusive due to study limitations. This study compared functional performance and body composition improvements following low-load and fast-velocity (ballistic RT, BRT) versus high-load and moderate-velocity (conventional RT, CRT) in postmenopausal women as part of the Resistance Exercise Programme on Risk of Osteoporosis and Osteoarthritis in Females (REPROOF) study.

**Methods:** 109 healthy postmenopausal women (50–70 years) were randomized to BRT (20–50% 1RM), CRT (55–80% 1RM), or control (CON). BRT and CRT groups completed a supervised lower-body progressive RT program (same exercises) twice weekly for 30 weeks. The primary outcome was functional performance (4-meter usual walk, 5-time chair stand, and timed up-and-go (TUG)). Secondary outcomes were body composition (DXA), participant-reported exercise efficacy (using a 5-point Likert scale, ranging between much worse and much better), and knee symptoms/function (Knee injury and Osteoarthritis Outcome Score – KOOS). To assess between-group differences in changes over time, linear mixed-model analysis with random intercept and a variance components covariance structure was used.

**Results/findings:** Eighty-two participants completed the trial. Both RT groups had similar session attendance rates (98%). The results show that BRT is equally effective compared to CRT for improving 5-time chair stand performance over CON (+17.2%, +20.3%, and +8.5%, respectively). Only BRT significantly improved total lean mass (+1.7%) and reduced body fat percentage (-2.6%). No significant changes were observed in usual walking speed, TUG, total fat mass, knee-related symptoms, and musculoskeletal pain ( $p > .05$ ). Both RT groups reported improvements in physical function (particularly strength) and psychological well-being.

**Conclusions:** Ballistic RT is as effective as conventional RT for improving physical function while also enhancing body composition. These findings provide practical implications for designing RT programs that can promote participation by offering an alternative to high-load RT. Trial registration: NCT05889598

## Wearable Device-Based Health Equivalence of different Physical Activity Intensities against mortality, cardiometabolic disease, and cancer

**Dr. Raaj Kishore Biswas<sup>1,2</sup>**, Dr Matthew Ahmadi<sup>1,2</sup>, Professor Adrian Bauman<sup>2</sup>, Dr Karen Milton<sup>3</sup>, Dr Nicholas Koemel<sup>1,2</sup>, Professor Emmanuel Stamatakis<sup>1,2</sup>

<sup>1</sup>Mackenzie Wearables Research Hub, Charles Perkins Centre, The University of Sydney, Sydney, Australia, <sup>2</sup>School of Health Sciences, Faculty of Medicine and Health, The University of Sydney, NSW, Australia, Sydney, Australia, <sup>3</sup>Norwich Medical School, University of East Anglia, Norwich, United Kingdom

**O.2.18: Ageing and Health (Metabolic, Cardiovascular), Limelight 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** The health benefits of physical activity vary by intensity—light (LPA), moderate (MPA), and vigorous (VPA). Conventional guidelines, based on self-reported data and broad health outcomes, suggest 1 minute of VPA equals 2 minutes of MPA. Using a large wearables dataset and a machine learning-based intensity classifier with 10-second epochs, we examined the equivalence of LPA and MPA to 1 minute of VPA.

**Methods:** Data from 73,485 participants in the UK Biobank accelerometry sub-study were analyzed over a mean follow-up of 8.0 (1.0) years. Each activity epoch was categorized by a validated two-stage classifier. We assessed associations with six outcomes: all-cause mortality (ACM), cardiovascular disease (CVD) mortality, major adverse cardiovascular events (MACE), type 2 diabetes incidence, and cancer mortality and incidence. Equivalence ratios for LPA and MPA compared to VPA were derived using Cox proportional hazards and Fine-Gray models across risk reductions of 5%–35%.

**Results:** For a 5%–35% risk reduction, the median minutes of MPA equivalent to 1 minute of VPA were 4.2 (ACM), 7.8 (CVD mortality), 5.4 (MACE), 9.3 (type 2 diabetes), and 3.5 (cancer mortality). LPA equivalence ratios were substantially higher, ranging from 53 minutes (ACM) to 92 minutes (type 2 diabetes). Cancer mortality differed notably, with 1 minute of VPA corresponding to 156 minutes of LPA. This reflects the generally weaker dose-response relationship between LPA and health outcomes, particularly for non-cancer conditions.

**Conclusion:** Each minute of VPA was approximately equivalent to 4–9 minutes of MPA and 53–156 minutes of LPA, diverging significantly from self-report-based conventions. These results can inform future guidelines and wearables-based lifestyle interventions and can help improve the algorithm used in consumer-grade wearables to quantify the health benefits of each minute of physical activity or exercise.

## Standing breaks during prolonged sitting improve glycemic control and endothelial function: a crossover laboratory trial

**Mr. Jeffrey Patterson**<sup>1</sup>, Shannon Wilson<sup>1</sup>, Theresa Jorgensen<sup>1</sup>, Minaxi Trivedi<sup>2</sup>, Lindsay Dillon<sup>2</sup>, Vanessa Garcia<sup>1</sup>, Mario Hernandez<sup>1</sup>, Rong Zablocki<sup>2</sup>, Heather Anderson<sup>1</sup>, Luis Castellanos<sup>2</sup>, Matthew Allison<sup>2</sup>, James Sallis<sup>2</sup>, Simon Schenk<sup>2</sup>, David Dunstan<sup>3,4</sup>, Neville Owen<sup>3</sup>, Jacqueline Kerr<sup>2</sup>, Andrea LaCroix<sup>2</sup>, Loki Natarajan<sup>2</sup>, Dorothy Sears<sup>1</sup>

<sup>1</sup>Arizona State University, Phoenix, USA, <sup>2</sup>University of California San Diego, La Jolla, USA, <sup>3</sup>Baker Heart and Diabetes Institute, Melbourne, Australia, <sup>4</sup>Deakin University, Melbourne, Australia

**O.2.18: Ageing and Health (Metabolic, Cardiovascular), Limelight 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Older adults are less likely to meet physical activity guidelines and spend more time sitting than younger adults. Aging adults have elevated cardiometabolic disease and cancer risk, which can be exacerbated in postmenopausal women due to hormonal shifts and increased adiposity. The postural change of standing increases muscle contractions and arterial blood flow, and induces compensatory changes in heart rate, vascular resistance, and blood pressure. Thus, interrupting prolonged sitting with brief standing breaks may be a feasible approach to improve aging-associated metabolic and vascular health outcomes.

**Methods:** Postmenopausal women with overweight or obesity ( $n = 79$ ; mean age  $67 \pm 7$ y) were enrolled in a three-condition, randomized crossover trial. Participants completed three supervised, 5-h experimental conditions: Prolonged sitting (Control), frequent Sit-to-Stands (STS – 2 min stand every 15 min), and Hourly Standing Breaks (HSB – 8 min stand every hour). Each standing break condition included 40 min of total standing time but varied in number and duration of breaks. Standardized liquid meals were consumed at 0 min (M1) and 180 min (M2). Blood samples were collected across the condition periods to determine the incremental area under the curve (iAUC) for glucose and insulin during the total and post-meal periods: 0-300 min, 0-120 min, and 180-300 min. Condition impact on superficial femoral artery endothelial function was assessed using flow-mediated dilation (FMD). Linear mixed models compared iAUC and FMD ratio (5 h-to-baseline) values between experimental and control conditions.

**Results:** There was no evidence of between-condition differences ( $p > 0.05$ ) for insulin and glucose iAUCs from 0-300 min. However, STS significantly lowered 2-hr postprandial blood glucose excursion after M2 compared to after M1 by -13.4% ( $p = 0.04$ ). Control and HSB had significantly higher 2-hr postprandial insulin excursions after M2 compared to after M1 (+10.9%,  $p = 0.03$ ; +11.5%,  $p = 0.02$ , respectively). Both STS and HSB significantly mitigated the negative effect of prolonged sitting on FMD-measured endothelial function observed in the control (+17.9%,  $p < 0.001$  and +22.5%,  $p < 0.001$ , respectively).

**Conclusion:** Brief interruptions of sitting time with low intensity standing breaks acutely improve endothelial functioning in older women. Suggestive benefit of using standing breaks to improve glucose regulation warrants additional investigation.

## Nutrition Throughout the Life Course and Women's Cardiovascular Health: Evidence from a 30-Year Cohort Study

**Ms. Marisa Tsai<sup>1</sup>**, Dr. Dorothy Chiu<sup>1,2</sup>, Dr. Elissa Epel<sup>2</sup>, Dr. Barbara Laraia<sup>1</sup>

<sup>1</sup>University of California, Berkeley, Oakland, United States, <sup>2</sup>University of California, San Francisco, San Francisco, United States

**O.2.18: Ageing and Health (Metabolic, Cardiovascular), Limelight 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Cardiovascular disease (CVD) is the leading global cause of death among women, and it is well-established that dietary habits are associated with CVD risk. Dietary habits are often developed during childhood but research on the role of adolescent diet patterns on adult CVD risk is sparse. This study explores the relationship between adolescent diet patterns, midlife diet quality, and midlife metabolic health to understand the pathways through which adolescent diet can affect adult cardiovascular health.

**Methods:** This study followed a cohort of Black and White girls (age 9-10 years) from socioeconomically diverse backgrounds for 10 years (1987-1997) and conducted a midlife follow-up 20 years later (2016-2019, average age 39.5 years) (n=624), collecting data on nutrition and health. A novel, a priori-developed Cardiovascular Nutrient Index score measured diet quality; 9 component nutrients were selected based on relevance to metabolic and cardiovascular health. Dietary trajectory patterns, reflecting participants' adolescent diets, were identified using group-based trajectory modeling. Midlife metabolic health was represented in two ways: a metabolic risk score composed of metabolic health markers (i.e., waist circumference, glucose, triglycerides, cholesterol, blood pressure and body mass index (BMI)), ranging from 0-1; and presence of class II obesity (BMI $\geq$ 35). Causal mediation analysis was performed to estimate confounder-adjusted associations between adolescent dietary patterns and midlife metabolic health, and potential mediating and moderating effects by midlife diet.

**Results/findings:** Group-based trajectory modeling identified three adolescent dietary patterns: "consistently unhealthy" (n=259); "healthy to unhealthy" (n=233); and "consistently healthy" (n=132). Compared with the "consistently unhealthy" group, women with a "consistently healthy" trajectory had a lower CVD risk score (Difference: -0.09; 95%CI: -0.15, -0.02) and greatly reduced relative risk (RR) of having a BMI $\geq$ 35 (RR: 0.47; 95%CI: 0.28, 0.78). There were no significant associations found with the "healthy to unhealthy group" and no significant mediating or moderating effects from midlife diet.

**Conclusions:** Using a life course perspective, this study finds that a healthy diet during adolescence is associated with lower CVD risk in adulthood. Findings highlight adolescence as a critical and sensitive developmental period for women's midlife metabolic health. Diet during adolescence could play a more pivotal role in CVD prevention than in adulthood.

## Cardiovascular stress-related physical activity properties and cardiovascular risk in adults with hypertension: a device-based study

Dr. Matthew Ahmadi<sup>1</sup>, Dr. Angelo Sabag<sup>1</sup>, Dr. Raaj Kishore Biswas<sup>1</sup>, Professor Borja Del Pozo Cruz<sup>2</sup>, Prof. Clara Chow<sup>1</sup>, Prof. John O'Sullivan<sup>1</sup>, Prof. Thijs Eijssvogels<sup>3</sup>, **Dr. Nicholas Koemel**, Prof. Emmanuel Stamatakis<sup>1</sup>

<sup>1</sup>University of Sydney, Sydney, Australia, <sup>2</sup>University of Cadiz, Cadiz, Spain, <sup>3</sup>Radboud University, Radboud, Netherlands

**O.2.18: Ageing and Health (Metabolic, Cardiovascular), Limelight 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** The relationship between the two key cardiovascular stress-related physical activity properties (i.e. intensity and bout length) and major adverse cardiovascular events (MACE) in adults with hypertension remains unclear.

**Methods:** A prospective study of 38,960 participants (62.1 ( $\pm 7.7$ ) years; 58.1% female) with a clinical diagnosis of hypertension from the UK Biobank cohort with wrist-worn accelerometer data. To examine the principle of cardiovascular stress-related physical activity properties, we assessed short bouts of moderate (<3 minutes) and vigorous (<1 minute) intensity, and long bouts of moderate ( $\geq 5$  minutes) and vigorous ( $\geq 2$  minutes) intensity with MACE and constituent subtypes (stroke, myocardial infarction, and heart failure).

**Results:** During an average follow up of 7.9 ( $\pm 1.1$ ) years, there were 1,374 MACE, 394 stroke, 623 myocardial infarction, and 357 heart failure events. Both short and long bouts of moderate intensity was associated with lower MACE risk and its subtypes, with a more pronounced dose-response observed for longer bouts. In comparison, short bouts of vigorous intensity showed a stronger dose response association with all MACE outcomes. For example, a median of 22 minutes/week of short vigorous intensity bouts corresponded to an HR of 0.62 [0.51, 0.76] for MACE, whereas a median 71 minutes/week of long moderate intensity bouts was associated with an HR of 0.79 [0.66, 0.95]. In contrast, long bouts of vigorous intensity showed a linear association for higher stroke risk, with HRs ranging from 2.06 [1.38, 3.07] to 2.80 [1.72, 4.56], and no protective association for other MACE outcomes.

**Conclusion:** We found short bouts of vigorous intensity were more strongly associated with lower risk of MACE and its subtypes than long bouts of moderate intensity alone, suggesting a balance of both intensities, respective to bout length. Our results highlight the importance of the interplay between intensity and bout length as cardiovascular stress-related physical activity properties in adults with hypertension.

## Association between device-measured physical activity and type 2 diabetes in adults: a systematic review and meta-analysis

**Dr. Binh Nguyen**<sup>1</sup>, Dr. Katherine Owen<sup>1</sup>, Tracy Nau<sup>1</sup>, Dr. Mengyun Luo<sup>1</sup>, Dr Philip Clare<sup>1</sup>, Dr. Jakob Tarp<sup>2</sup>, Dr Miguel Adriano Sanchez Lastra<sup>3</sup>, Dr. Knut Eirik Dalene<sup>4</sup>, Professor Ulf Ekelund<sup>2,4</sup>, Melody Ding<sup>1</sup>

<sup>1</sup>The University of Sydney, Camperdown, Australia, <sup>2</sup>Norwegian School of Sport Sciences, Oslo, Norway,

<sup>3</sup>University of Vigo, Vigo, Spain, <sup>4</sup>Norwegian Institute of Public Health, Oslo, Norway

**O.2.18: Ageing and Health (Metabolic, Cardiovascular), Limelight 1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** To date, the association between device-measured physical activity and incident type 2 diabetes has not been systematically synthesized. We conducted a systematic review and meta-analysis to examine the dose-response relationship between device-measured physical activity and type 2 diabetes incidence.

**Methods:** The databases PubMed and EBSCO CINAHL were systematically searched from January 2000 until October 2024. Eligible studies were prospective, with at least two years of follow-up, and examined the relationship between device-measured physical activity (e.g. by pedometer, accelerometer, other devices) and incident type 2 diabetes among adults in a general or community setting. We excluded studies involving participants with type 2 diabetes, patients in a hospital/acute care setting, or athletes. Screening, data extraction and risk of bias assessment (ROBINS-E) were conducted in duplicate. Extracted data included publication year, country, sample size, participant characteristics, follow-up time, physical activity measure, type 2 diabetes outcome, and any measure of adiposity. Where applicable, a random effects meta-analysis to assess the dose-response relationship between different types of physical activity and incident type 2 diabetes was conducted.

**Findings:** A total of 19 studies were included in the systematic review. Most were from the UK (n=10) or US (n=8), and involved the general adult population (n=17). Devices included accelerometers (n=16), fitbits (n=2) and pedometers (n=1). We conducted meta-analyses for daily steps (5 studies; n=4,657; 63% women; 2,432 cases; range for follow-up: 2.6-5.9 years) and MVPA (6 studies; n=384,710; 59% women; 4,835 cases; range for follow-up: 6.2-10.8 years). There was an inverse linear association between the number of steps/day and incident type 2 diabetes (pnonlinearity=0.76; moderate heterogeneity: I<sup>2</sup>=46.6%). There was a non-linear relationship between MVPA and incident type 2 diabetes (pnonlinearity <0.001; substantial heterogeneity: I<sup>2</sup>=68.3%). Compared to 0 minutes, 150 minutes of MVPA was associated with a 20% lower risk of diabetes (HR=0.80, 95% CIs: 0.69, 0.92) and 300 minutes was associated with a 36% lower risk of diabetes (HR=0.64, 95% CIs: 0.51, 0.81).

**Conclusions:** Increasing the amount of MVPA and daily steps can provide important benefits for the prevention of type 2 diabetes. Findings can inform physical activity guideline development, public health advice and future interventions.

## Determining an Effective Strategy to Reduce Excessive Gestational Weight Gain and Infant Adiposity at Birth

**Dr. Michelle Mottola**<sup>1</sup>, Ms. Naomi So<sup>1</sup>, Dr. Roberta Bgeginski<sup>1</sup>, Dr. Taniya S. Nagpal<sup>2</sup>, Dr. Edit Somogyi<sup>1</sup>, Ms. Jennifer Miller<sup>1</sup>, Ms. Shubhika Mahakul<sup>1</sup>, Dr. Harry Prapavessis<sup>1</sup>

<sup>1</sup>University of Western Ontario, London, Canada, <sup>2</sup>University of Alberta, Edmonton, Canada

**O.2.19: Early Childhood Health: Nutrition, Activity, and Sleep, Limelight 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Timing of excessive gestational weight gain (GWG) may predict infant adiposity at birth with higher adiposity leading to childhood obesity. This study compared implementation of different behavioral intervention strategies whereby nutrition and exercise components were introduced simultaneously or sequentially to reduce excessive GWG (early up to 25 weeks gestation to late  $\geq 25$  weeks to term) and infant adiposity at birth. We hypothesized that exercise introduced before nutrition will be more effective in preventing early excessive GWG and lowering infant adiposity at birth than both nutrition and exercise offered simultaneously, or nutrition initiated first.

**Methods:** This parallel randomized controlled trial involved three strategies: Strategy 1 received simultaneous nutrition and exercise components (NE) from baseline (12-18 weeks' gestation) to delivery. Strategy 2 received nutrition at baseline and then introduced the exercise component at 25 weeks' (N+E), and Strategy 3 received exercise at baseline with nutrition introduced at 25 weeks' (E+N), with all strategies following both components until delivery. Participants were  $\geq 18$  years, had a singleton fetus, no exercise contraindications, and were non-smokers. The nutrition and exercise components were part of the Nutrition and Exercise Lifestyle Intervention Program (NELIP) trial (ClinicalTrials.gov NCT02804061). Participants were weighed weekly and birth weight, length and 6 skinfolds (biceps, triceps, subscapular, umbilical, suprailiac and anterior thigh) were measured within 6-18 hours after birth. The primary outcome was timing of excessive GWG in pregnancy (early vs late), whereas newborn adiposity was a secondary outcome. Strategy equivalency check: There was no difference in maternal pre-pregnancy body mass index between the 3 strategies at baseline ( $26.2 \pm 5.1 \text{ kg/m}^2$ ,  $n=25$ ;  $25.9 \pm 5.1 \text{ kg/m}^2$ ,  $n=29$ ;  $26.7 \pm 5.8 \text{ kg/m}^2$ ,  $n=32$ ,  $p=0.83$ ), respectively.

**Results:** There was no difference between groups in early excessive GWG. However, Strategy 2 (N+E) gained more weight in late gestation ( $6.4 \pm 2.7 \text{ kg}$ ) than Strategies 1 (NE;  $5.0 \pm 2.0 \text{ kg}$ ) and 3 (E+N;  $4.3 \pm 1.5 \text{ kg}$ ) ( $F(2,83)=7.981$ ,  $p<0.001$ ), with E+N having the least excessive late GWG. Step-wise linear regression showed that late excessive GWG significantly predicted adiposity at birth in Strategy 3 (E+N;  $F(1,30)=4.21$ ,  $p=0.049$ ).

**Conclusions:** Exercise initiated at 12-18 weeks of gestation, followed by introducing nutrition at 25 weeks gestation (Strategy 3) reduced excessive GWG in late pregnancy which predicted adiposity at birth.

## The feasibility and preliminary efficacy of a potentially scalable physical activity programme in New Zealand Early Childhood Education: A pilot cluster-randomised controlled trial.

**Mrs. Wendy Pirie<sup>1</sup>**, Professor Scott Duncan<sup>1</sup>, Professor Andrew Gibbons<sup>1</sup>, Associate Professor Rachel Jones<sup>2</sup>, Senior Lecturer Tom Stewart<sup>1</sup>, Professor Nigel Harris<sup>1</sup>

<sup>1</sup>Auckland University Of Technology, Auckland, New Zealand, <sup>2</sup>University of Wollongong, Wollongong, Australia

**O.2.19: Early Childhood Health: Nutrition, Activity, and Sleep, Limelight 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Many New Zealand (NZ) children are not meeting physical activity (PA) recommendations and are spending much of their childcare day in sedentary behaviour. There is an urgent need for high-quality PA interventions that are effective in dynamic and complex early childhood education settings, as this is where children spend much of their time. The aim of this study was to investigate the feasibility and preliminary efficacy of a teacher-delivered PA programme designed for Ministry of Education-licensed early childhood education (ECE) centres.

**Method:** Four ECE centres volunteered to participate, inclusive of 46 children ( $3.9 \pm 0.5$  y, Male=22, Female=24), and 22 teachers (Female=22), randomised to either intervention or control. Intervention teachers participated in online professional learning on the Movement-Active-Physical-Play (MAPP) programme including narrated webinars, readings, activities and activity videos. MAPP was designed to provide clear instruction to teachers about why, and how to deliver physical activity during the childcare day. Noticing, recognising and responding to PA as learning were fundamental tenets. The intervention teachers then delivered MAPP for ten weeks in their centres. The control teachers continued with their usual PA curriculum. Preliminary efficacy (primary outcome: time in moderate-to-vigorous-physical activity) was quantified using wrist-worn accelerometry and analysed using generalised linear mixed models. Intervention fidelity was assessed by direct observation, and programme satisfaction was assessed via teacher and child interviews.

**Results:** Accelerometer data determined no overall intervention effect; however, a significant interaction effect was observed in moderate-to-vigorous intensity physical activity ( $P=0.013$ ) and moderate physical activity ( $P=0.031$ ) where girls scores improved, and boys scores reduced. In total, 80% of the MAPP activity sessions were delivered and observations revealed programme adherence. Intervention teachers reported high levels of satisfaction with MAPP and a general intention to utilise the programme in the future. All children were positive about participating.

**Conclusion:** The delivery of MAPP was feasible and high levels of satisfaction were reported by teachers and child participants. Preliminary findings indicated there is potential for MAPP to impact child activity behaviours in ECE centres, and hence a larger study in NZ of the MAPP programme is warranted.

# Application of Co-design in nutrition and physical activity-focused interventions in Early Childhood Education and Care: A scoping review

Dr. Lisa Vincze<sup>1,2</sup>, Ms Lieke Vorage<sup>3</sup>, Dr. Ros Sambell<sup>2,4</sup>, Dr Amy Kirkegaard<sup>5</sup>, **Prof. Danielle Gallegos<sup>6,7</sup>**, A. Prof Rebecca Byrne<sup>2,6,7</sup>, Dr Breanna Lepre<sup>5,8</sup>

<sup>1</sup>School of Health Sciences and Social Work, Griffith University, Gold Coast, Australia, <sup>2</sup>National Nutrition Network - Early Childhood Education and Care, , <sup>3</sup>School of Medicine and Dentistry, Griffith University, Gold Coast, Australia, <sup>4</sup>School of Medical and Health Sciences, Edith Cowan University, Perth, Australia, <sup>5</sup>Centre for Community Health and Wellbeing, The University of Queensland, , Brisbane, Australia, <sup>6</sup>School of Exercise and Nutrition Sciences, Faculty of Health, Brisbane, Australia, <sup>7</sup>Centre for Childhood Nutrition Research, School of Exercise and Nutrition Sciences, Brisbane, Australia, <sup>8</sup>School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Australia

**O.2.19: Early Childhood Health: Nutrition, Activity, and Sleep, Limelight 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Co-design, where interventions are designed with end-users, facilitates deep understanding of lived experience and the development of more practical and empathic solutions. Little is known about co-design methods used in the development, implementation and evaluation of nutrition and physical activity interventions in Early Childhood Education and Care (ECEC) settings. The aim of this scoping review was to identify and describe the application of co-design in nutrition and physical activity interventions in the ECEC setting.

**Methods:** Five electronic databases were searched to September 2024 for articles using co-design to design, implement, and/or evaluate nutrition and/or physical activity-focused interventions in ECEC settings with stakeholders. Data was extracted using a checklist of the key elements of co-design (i.e. elevate lived experience, co-governance, equity centric, diversity, inclusion and build capacity), the stages of the research process to which each element of co-design was applied (i.e. co-decide, co-plan, co-design, co-evaluate, co-disseminate, co-implement), and the level of participation based on the IAP2 International Spectrum (i.e. inform, consult, involve, collaborate and empower).

**Results:** Majority of the 27 included studies were conducted in the United States (n=15). More than half (n=14) did not include a definition of the co-design research method used. ECEC directors and staff were involved in all studies with fewer involving parents (n=13), health care professionals and experts (n=11), universities (n=6) or children (n=1). The elements of co-design were poorly applied across most stages of the co-design process, with co-governance, inclusion and builds capacity least likely to be used. Stakeholder consultation was the most common method used, often via the development of steering committees and community advisory boards. Half of studies (n=13) operated at the “Collaborate” level of participation.

**Conclusions:** This review highlights that there is limited application of comprehensive co-design methods in nutrition and physical activity interventions in ECEC settings. While stakeholder consultation is commonly employed, principal elements of co-design including co-governance, inclusion and capacity building are underutilised, and children, a critical stakeholder group, rarely have agency. These findings highlight the need for robust and inclusive co-design approaches to ensure interventions are equitable, practical, and reflective of diverse ECEC contexts and lived experiences.

## Australian early childhood education and care (ECEC) professionals' knowledge, self-efficacy, views and practices for promoting healthy lifestyle behaviours in young children

**Dr. Jill Hnatiuk<sup>1</sup>**, Dr. Alison Spence<sup>1,2</sup>, Dr. Penelope Love<sup>1,2</sup>, Ms Stephanie Renehan<sup>1</sup>, Dr Nicholas Riley<sup>3</sup>, Prof. Kylie Hesketh<sup>1,2</sup>

<sup>1</sup>*School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia*, <sup>2</sup>*Institute for Physical Activity and Nutrition, Deakin University, Burwood, Australia*, <sup>3</sup>*School of Education, University of Newcastle, Newcastle, Australia*

**O.2.19: Early Childhood Health: Nutrition, Activity, and Sleep, Limelight 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** To assess the knowledge, self-efficacy, views and practices of Early Childhood Education and Care (ECEC) professionals in Australia for promoting healthy lifestyle behaviours (physical activity, sedentary behaviours, sleep and diet) in young children, and to examine differences by ECEC professionals' demographic and employment characteristics.

**Methods:** Participants were recruited between November 2022 and May 2023 through social media advertising, emails to ECEC organisations, and snowball sampling. Eligible participants completed an online survey capturing key demographic and employment characteristics including age, gender, country of birth, ECEC qualifications, workplace postcode (from which socioeconomic position of area was derived; high, mid, low), type of ECEC setting (e.g. long daycare, family daycare, community kindergarten), duration of employment in sector, primary age group of the children they care for (e.g., infants, toddlers, preschoolers, mix of ages), and ECEC professionals' own self-reported health behaviours (from which guideline compliance was calculated; 0-4 guidelines met). Participants' knowledge of 24-hour movement and dietary guidelines for the early years, and their self-efficacy, views and practices for promoting healthy lifestyle behaviours were assessed using reliable scales adapted from the Melbourne InFANT Program. Multivariable linear regression models assessed the associations between ECEC professionals' characteristics and their knowledge, self-efficacy, and views/ practices.

**Results/findings:** ECEC professionals mean (SD) knowledge, self-efficacy and views/practices scores were 4.41 (2.10)[possible range 0-10], 35.77 (6.06)[possible range 11-44] and 67.90 (6.17)[possible range 22-88]. Higher knowledge scores were observed for ECEC professionals who met two lifestyle behaviour guidelines themselves (vs. zero/one)  $\beta(95\%CI)=0.98$  (0.31, 1.65). Lower knowledge scores were observed for those working with infants only (vs. mix of ages)  $\beta(95\%CI)=-1.58(-2.74,-0.42)$  and those with certificate III training (vs diploma)  $\beta(95\%CI)=-1.04(-1.91,-0.17)$ . Self-efficacy was lower for those working predominantly with toddlers  $\beta(95\%CI)=-3.59(-5.90,-1.28)$ , preschoolers  $\beta(95\%CI)=-4.18(-6.55,-1.81)$  and those with postgraduate ECEC qualifications  $\beta(95\%CI)=-3.84(-7.55,-0.13)$ , and higher for those who had been working in the ECEC sector longer  $\beta(95\%CI)=0.25(0.12,0.38)$ . Less favourable views/practices were observed for those working predominantly with preschool children  $\beta(95\%CI)=-4.02(-6.63,-1.42)$ .

**Conclusions:** Opportunities exist to improve ECEC professionals' knowledge, self-efficacy and views/practices for promoting healthy lifestyle behaviours in young children. Future research may use these findings to target and tailor professional development opportunities for ECEC professionals' accordingly.

## Tracking of Physical Fitness, Body Composition, and Physical Activity in Children from Early to Late Primary School Age: A 4-Year Follow-up Study

**Dr. Tomoko Aoyama<sup>1</sup>**, Prof. Yuki Hikihara<sup>2</sup>, Dr. Masashi Watanabe<sup>3</sup>, Dr. Hitoshi Wakabayashi<sup>4</sup>, Mr. Satoshi Hanawa<sup>5</sup>, Prof. Shigeo Tanaka<sup>6</sup>

<sup>1</sup>National Center for Child Health and Development, Setagaya-ku, Japan, <sup>2</sup>Chiba Institute of Technology, Narashino, Japan, <sup>3</sup>Ibaraki University, Mito, Japan, <sup>4</sup>Hokkaido University, Kitaward, Sapporo, Japan, <sup>5</sup>Meiji Yasuda Health Development Foundation, Shibuya, Japan, <sup>6</sup>Kagawa Nutrition University, Sakado, Japan

**O.2.19: Early Childhood Health: Nutrition, Activity, and Sleep, Limelight 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Understanding the tracking patterns of physical fitness, body composition, and physical activity (PA) during childhood is critical for developing effective screening processes and interventions to promote lifelong health. However, few studies have comprehensively examined how these health-related indicators track over time in children. This study aimed to evaluate the stability of physical fitness (cardiorespiratory fitness [CRF] and muscle strength), body composition, and PA among Japanese primary school children from early to late school age.

**Methods:** This four-year longitudinal study followed 248 first-grade children recruited from six primary schools in the Kanto region of Japan. Data from 234 children (143 boys) who completed assessments in both first grade (ages 6–7) and fifth grade (ages 10–11) were analyzed (a follow-up rate of 96.3%). CRF was assessed as peak oxygen uptake (mL/kg/min) during treadmill running, and muscle strength was measured by grip strength (kg). Body fat percentage was determined using dual-energy X-ray absorptiometry. PA was objectively measured using a triaxial accelerometer over 14 consecutive days, and time spent in sedentary behavior, moderate-to-vigorous intensity PA, vigorous-intensity PA, and daily step count were determined. Rank correlation coefficients were calculated to assess stability between first and fifth grades, stratified by sex.

**Results/findings:** Significant positive rank correlations were observed across all variables ( $p < 0.01$ ). Body fat percentage showed moderate correlations in both boys ( $\rho = 0.65$ ) and girls ( $\rho = 0.61$ ). PA indicators exhibited moderate correlations in boys ( $\rho = 0.51$ – $0.59$ ) and girls ( $\rho = 0.48$ – $0.67$ ). However, physical fitness indicators revealed sex-based differences: moderate correlations in boys (CRF:  $\rho = 0.57$ , muscle strength:  $\rho = 0.50$ ) but weaker correlations in girls (CRF:  $\rho = 0.29$ , muscle strength:  $\rho = 0.33$ ).

**Conclusions:** From early school age to preadolescence, PA and body composition showed moderate stability in both sexes. In contrast, the stability of physical fitness differed by sex, with girls showing less stability than boys. Efforts to address obesity and inactivity may benefit from being initiated in early school age. Additionally, approaches to promoting physical fitness might consider potential differences between boys and girls.

## Psychometric properties of SUNRISE Study Parent Questionnaire for assessing pre- schooler sleep and sleep-related family practices

**Dr. Zhiguang Zhang**<sup>1</sup>, Chalchisa Abdeta<sup>1</sup>, Dr Mohamed Chelly<sup>2</sup>, Dr Jesús del Pozo Cruz<sup>3</sup>, Dr Leyna Germana<sup>4</sup>, Dr Fazlollah Ghofranipour<sup>5</sup>, Dr Amy Sau-Ching Ha<sup>6</sup>, Dr Asmaa Hamdouchi<sup>7</sup>, Dr Hong Tang<sup>8</sup>, Dr Mohammed Hossain<sup>9</sup>, Dr Bayasgalan Jambaldorj<sup>10</sup>, Denise Koh<sup>11</sup>, Dr Anna Kontsevaya<sup>12</sup>, Dr Marie Löf<sup>13</sup>, Ms Himangi Lubree<sup>14</sup>, Dr. Alejandra Jáuregui<sup>15</sup>, Mr Tawonga Mwase-Vuma<sup>16</sup>, Mr Amonje Oluchiri<sup>17</sup>, Mr Aoko Oluwayomi<sup>18</sup>, Dr John Reilly<sup>19</sup>, Eva Roos<sup>20</sup>, Amanda Staiano<sup>21</sup>, Dr Adang Suherman<sup>22</sup>, Chiaki Tanaka<sup>23</sup>, Dr Wei-Peng Teo<sup>24</sup>, Dr Ali Turab<sup>25</sup>, Dr Edin Užičanin<sup>26</sup>, Sanne Veldman<sup>27</sup>, Dr E. Kipling Webster<sup>28</sup>, Dr Pujitha Wickramasinghe<sup>29</sup>, Dyah Anantalia Widyastari<sup>30</sup>, Prof. Anthony Okely<sup>1</sup>

<sup>1</sup>University of Wollongong, Wollongong, Australia, <sup>2</sup>University of Manouba, Tunis, Tunisia, <sup>3</sup>University of Seville, Seville, Spain, <sup>4</sup>Muhimbili University of Health and Allied Sciences, , Tanzania, <sup>5</sup>Tarbiat Modares University, , Iran, <sup>6</sup>The Chinese University of Hong Kong, , Hong Kong, <sup>7</sup>National Center for Energy Sciences and Nuclear Techniques, , Morocco, <sup>8</sup>Pham Ngoc Thach University of Medicine's Fund for Science, , Vietnam, <sup>9</sup>Biomedical Research Foundation, , Bangladesh, <sup>10</sup>National Centre for Public Health, Mongolia Ministry of Health, , Mongolia, <sup>11</sup>Universiti Kebangsaan Malaysia, , Malaysia, <sup>12</sup>National Medical Research Centre for Therapy and Preventive Medicine, , Russia, <sup>13</sup>Department of Medicine Huddinge, Karolinska Institutet, , Sweden, <sup>14</sup>KEM Hospital Research Centre, , India, <sup>15</sup>Department of Physical Activity and Healthy Lifestyles, The National Institute of Public Health of Mexico, , Mexico, <sup>16</sup>University of Malawi, , Malawi, <sup>17</sup>University of Lagos, , Nigeria, <sup>18</sup>Wellness for Greatness Kenya, , Kenya, <sup>19</sup>University of Strathclyde, Glasgow, The United Kingdom, <sup>20</sup>Folkhalsen Research Center, Helsinki, Finland, <sup>21</sup>Pennington Biomedical Research Center, Baton Rouge, The United States of America, <sup>22</sup>Universitas Pendidikan Indonesia, Bandung, Indonesia, <sup>23</sup>Tokyo Kasei Gakuin University, Tokyo, Japan, <sup>24</sup>Nanyang Technological University, , Singapore, <sup>25</sup>Precision Health Consultants, Karachi, Pakistan, <sup>26</sup>University of Tuzla, , Bosnia and Herzegovina, <sup>27</sup>Mulier Institute, Utrecht, The Netherlands, <sup>28</sup>University of Tennessee, , The United States of America, <sup>29</sup>University of Colombo, Colombo, Sri Lanka, <sup>30</sup>Mahidol University, , Thailand

**O.2.19: Early Childhood Health: Nutrition, Activity, and Sleep, Limelight 2, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Few questionnaires with established psychometric properties can globally measure sleep in pre-schoolers (3-6 years) and sleep-related family practices. This study aimed to examine 1) concurrent validity of the SUNRISE parent questionnaire against an accelerometer for measuring sleep in pre-schoolers and 2) test-retest reliability of the questionnaire for sleep and related family practices.

**Methods:** Sleep characteristics was measured using the questionnaire and an waist-worn Actigraph GTX3+ accelerometer in 1737 pre-schoolers (4.5±0.6 years) from 30 countries. Parents also reported their sleep-related family practices via the questionnaire. For sleep duration and timing variables, relative validity was examined using correlation analyses between the questionnaire and accelerometer measures, while absolute validity was examined using paired t-tests or Wilcoxon signed-rank tests and Bland-Altman plots. For sleep quality, the correlation between the questionnaire measure and the accelerometer measure of sleep efficiency as a proxy was examined. For sleep variability, dichotomised bedtime and wake-up time variability (<30 min vs. ≥30 min) from the questionnaire were compared with those from accelerometry, and sensitivity, specificity, and accuracy of the questionnaire measure were

calculated. In a subsample of 163 participants ( $4.3 \pm 0.6$  years) from eight countries, 7-day test-retest variability was examined for sleep characteristics and 11 family practice variables.

**Results:** The questionnaire measures of sleep timing and duration variables were correlated with the accelerometer measures ( $r = 0.43-0.75$ ;  $p < 0.001$ ). Although statistically significant mean differences were observed between the questionnaire and accelerometer measures, the difference in nighttime sleep duration had a small effect size ( $-14$  min/d; Cohen's  $d = -0.2$ ). However, the questionnaire was less able to provide adequate measurement for sleep quality and sleep variability. Regarding test-retest reliability, moderate-to-good ICC values ( $0.63-0.83$ ) and moderate-to-substantial Kappa values ( $0.53-0.62$ ) were observed for sleep variables; Good-to-excellent ICC value ( $0.81-0.94$ ) or substantial-to-almost perfect Kappa value ( $0.73-0.86$ ) were observed for sleep-related family practice variables.

**Conclusion:** The SUNRISE questionnaire appears reliable in assessing pre-schoolers' sleep characteristics and related family practices, particularly in disadvantaged settings. It could be used in global surveillance of nighttime sleep duration, as well as in studies examining correlates of sleep timing and duration and associations between these sleep characteristics and health indicators in pre-schoolers.

## From development to scale-up of Choose to Move: Is it possible to optimize costs as scale-up proceeds?

**Dr. Zoe Szewczyk<sup>1,2</sup>**

<sup>1</sup>*School of Public Health, Faculty of Medicine and Health, University of Sydney, Camperdown, Australia,*

<sup>2</sup>*Charles Perkins Centre, The University of Sydney, Camperdown, Australia*

**O.2.20 : Implementation and Scalability, Waihorotiu #1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Choose to Move (CTM) is a scalable, evidence- and choice-based health-promoting program for low active community-dwelling older adults (>60Y) in British Columbia, Canada. CTM has been adapted (e.g., virtual delivery) and effectively implemented at increasingly larger scale, in different contexts over a 9-year period (2015-2024). Our objective was to examine the costs and consequences of implementing adapted versions of CTM across four phases of scale-up while retaining its effectiveness on older adult health outcomes.

**Methods:** We conducted a series of trial-based cost and cost-consequence analyses to identify, measure, and value the costs and health-risk behaviour change associated with scale-up of CTM. We used trial records and economic data to inform optimization of each scale-up Phase. We used a Canadian health service perspective to reflect real-world implementation of CTM. All costs were adjusted for inflation using annual consumer price index and reported in 2024 Canadian dollars (\$CAN).

**Results/Findings:** The cost per participant to deliver the intervention was \$1,617 during Phases 1-2, \$938 during Phase 3, and \$599 during Phase 4 (not including research costs). The cost per participant of CTM Phase 4 is slightly more than one third (37%) of the cost per participant at Phase 1-2, representing a reduction in \$1,018 per participant from Phase 1-2 to Phase 4. Across all phases CTM enhanced participants' engagement in physical activity, increased mobility, and decreased social isolation and loneliness. Positive change in physical activity and mobility were significant across all phases; we observed a small 'voltage drop' in outcomes between Phases 1-2 and Phase 3 (but not between Phases 3 and 4). Outcomes did not differ between CTM delivery modes (in-person vs virtual).

**Conclusion:** We extend the scant literature related to cost and sustainability of scaled-up population health interventions. We demonstrate that the effectiveness of a health promotion program for older adults can be maintained at decreased cost (optimized), as the intervention is adapted and scale-up proceeds across 9 years. As a next step it seems important to identify how best to ensure the intervention is adapted for and implemented with equity deserving groups.

## WISE Babies: Nutrition Promotion for Infants and Toddlers in the Early Care and Education Setting

**Dr. Julie Rutledge<sup>1</sup>**, Dr. Taren Massey-Swindle<sup>2,3</sup>

<sup>1</sup>Louisiana Tech University, Ruston, USA, <sup>2</sup>Arkansas Children's Research Institute, Little Rock, USA,

<sup>3</sup>University of Arkansas for Medical Sciences, Little Rock, USA

**O.2.20 : Implementation and Scalability, Waihorotiu #1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Approximately 30% of children aged 1–2 do not eat fruit daily, and 45% do not eat vegetables daily. Early exposure to fruits and vegetables is crucial for long-term acceptance. Early care and education (ECE) settings can support long-term acceptance of fruits and vegetables by offering repeated sensory-based exposures. Together, We Inspire Smart Eating (WISE) is a program supporting educators in introducing fruits and vegetables to children aged 3–5 and is part of the United States Department of Agriculture SNAP-Ed Toolkit. Through a partner-engaged process, researchers adapted WISE for children aged birth to 36 months, incorporating a curriculum, educator training, parent education, and tailored implementation strategies. Findings from pilot implementation of WISE Babies are presented.

**Methods:** WISE Babies was implemented in 25 classrooms across 8 sites. Educators' perceptions of feasibility, acceptability, and appropriateness were assessed through surveys after training and a year of implementation (N=31). Fidelity observations by trained observers (N=19) captured adherence to four evidence-based practices: (1) using a mascot, Windy Wise the owl, to promote healthy eating; (2) teachers modeling positive food interactions; (3) encouraging children's self-regulation through positive feeding practices; and (4) sensory-based activities with fruits and vegetables ("food experiences"). Focus groups with teachers collected feedback on the implementation process.

**Results:** Teacher surveys showed that 100% agreed or strongly agreed that WISE Babies was appealing, appropriate, and a good fit for their classrooms. Fidelity observations showed that by the end of the school year, 70% of classrooms met fidelity targets for feeding practices and food exposures, while 80% met targets for role modeling. Qualitative feedback suggested teachers appreciated the interactive training, noted the value of the resources provided, and described the benefits of exploring new foods with children in their classrooms.

**Conclusions:** Findings suggest that WISE Babies is acceptable, feasible, and appropriate to teachers and can be delivered with fidelity in classrooms serving children from birth to 36 months. Developing WISE Babies highlighted the challenges of addressing diverse feeding needs in infant classrooms (e.g., breastfed, formula-fed, transitioning to solids). Findings offer insights for developers of nutrition education programs in ECE settings.

## Do train driving environments drive physical behaviours?

**Dr. Stephanie Chappel**<sup>1,2,3</sup>, Professor Anjum Naweed<sup>3</sup>, Associate Professor Janine Chapman<sup>3</sup>, Professor Corneel Vandelanotte<sup>4</sup>, Professor Andreas Holtermann<sup>5</sup>, Professor Leon Straker<sup>6</sup>

<sup>1</sup>School of Nursing and Midwifery, Deakin University, Burwood, Australia, <sup>2</sup>Centre for Quality and Patient Safety Research / Alfred Health Partnership, Institute for Health Transformation, Deakin University, Burwood, Australia, <sup>3</sup>Appleton Institute, School of Health, Medical and Applied Sciences, Central Queensland University, Adelaide, Australia, <sup>4</sup>Physical Activity Research Group, Appleton Institute, Central Queensland University, Rockhampton, Australia, <sup>5</sup>National Research Centre for the Working Environment, Copenhagen, Denmark, <sup>6</sup>School of Allied Health and enAble Institute, Curtin University, Perth, Australia

**O.2.20 : Implementation and Scalability, Waihorotiu #1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** N. Systems Science

**Purpose:** Train drivers are highly sedentary at work. This is linked with poor individual worker health, reduced workforce retention, and increased risk of transport accidents. The Goldilocks Work paradigm proposes that health and sustainability can be promoted through more informed design of the work environment. However, redesign requires an understanding of the physical behaviours associated with each work task. This study aimed to describe the physical behaviours associated with the tasks for passenger train drivers and explore potential factors influencing physical behaviour variations within tasks.

**Methods:** Observations of 10 South Australian passenger train drivers working across different rail routes and shifts in Adelaide were supplemented with driver 'think-aloud' commentary to generate a Hierarchical Task Analysis description of their tasks. Simultaneous thigh worn accelerometry (Axivity AX3) was processed (Acti4 software) to describe driver physical behaviours: sitting, standing, light physical activity (moving, slow walking) and moderate-to-vigorous physical activity (MVPA: fast walking, running, stair climbing).

**Results:** The average composition of driver physical behaviours across a 7.4-hour work shift was: sitting 76%, standing 10%, light physical activity 5% and MVPA 8%. Seven main tasks were identified through the Hierarchical Task Analysis: Pre-Service, Set-Up, Driving, Switching Ends, Pack-Up, Waiting Time, and Breaks. Driving mainly consisted of sitting (99%), as did the task Pack-Up (65%). Standing was the dominant behaviour during Set-Up (42%). Waiting Time, Set-Up and Pre-Service had the highest proportions of light physical activity (15%, 22%, 15% respectively) and MVPA (25%, 24% and 21% respectively). Drivers' physical behaviours varied within particular tasks as a result of work (e.g., passenger characteristics, timetables) and worker characteristics (e.g., motivation).

**Conclusion:** These findings necessarily implicate the work task environment of passenger train drivers as a key determinant of their physical behaviours whilst at work. Importantly, it sheds light on the work and worker characteristics that may be targeted to create additional variations in the physical behaviours of specific tasks. This can inform work redesign interventions aiming for a more Goldilocks Work 'just right' balance of physical behaviours to promote worker health, organisational sustainability and community safety.

## Association of Early Care and Education Teachers' Self-Reflection Frequency to Fidelity of Nutrition-Related Evidence-Based Practices in a Preschool Nutrition Curriculum

Mollie Owens<sup>1,3</sup>, **Dr. Julie Rutledge<sup>1</sup>**, Dr Taren Massey-Swindle<sup>2,3</sup>

<sup>1</sup>Louisiana Tech University, Ruston, USA, <sup>2</sup>Arkansas Children's Research Institute, Little Rock, USA,

<sup>3</sup>University of Arkansas for Medical Sciences, Little Rock, USA

**O.2.20 : Implementation and Scalability, Waihorotiu #1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Research shows that evidence-based practices (EBPs) practices are often adopted slowly in public health, with best practices sometimes taking decades to become routine. Reflective of this challenge, nutrition programs frequently suffer from low fidelity (i.e., the adoption of EBPs as intended). In Implementation Science, fidelity is considered an important outcome of successful EBP uptake and strategies to increase fidelity are studied. While research indicates self-reflection increases adoption of EBPs in healthcare education, the relationship has not been observed in community health settings to support nutrition interventions.

**Methods:** Data from a larger trial examining the effectiveness of an adaptive implementation strategy was analyzed to investigate whether early care and education (ECE) teacher self-reflection influences fidelity to a preschool nutrition program, Together, We Inspire Smart Eating (WISE). The study sample included 91 preschool teachers from 48 sites, with baseline demographic data collected on gender, race, age, education, and teaching experience. Monthly surveys prompted teachers to reflect on their use of the four target EBPs of WISE (role modeling, small groups, mascot use, and positive feeding practices). Teacher fidelity to WISE EBPs was measured through direct observation at two time points by reliable, trained observers. Higher fidelity scores indicated more consistent use of the nutrition EBPs.

**Results:** A multiple regression analysis was conducted to examine whether the frequency of self-reflection predicted endpoint fidelity scores while controlling for race, teaching experience, and baseline fidelity. The regression model significantly predicted endpoint fidelity,  $F(4,64) = 7.22$ ,  $p < .001$ . The total regression model accounted for 27% of the variance in the EOY fidelity outcome ( $R^2 = .27$ ). These analyses showed that self-reflection frequency predicted endpoint fidelity beyond relevant controls, supporting the hypothesis that self-reflection improves adoption of EBPs.

**Conclusions:** Our findings demonstrated that as frequency of teacher self-reflection increases, observed fidelity to nutrition EBPs increases. Thus, this study suggests evidence of the benefit of self-reflection as a strategy to increase fidelity to nutrition EBPs in an ECE setting. Integration of self-reflection in nutrition interventions has the potential to increase long-term adoption of research-based practices in regular practice and routine, leading to increased public health outcomes.

## Effects of changing childhood/adolescent physical activity guidelines on population prevalence, and the use of single item questions to assess meeting guidelines

**Prof. Adrian Bauman**<sup>1</sup>, A/Prof Nicole Nathan, Professor Luke Wolfenden, Dr Kat Owen, A/Prof Justin Richards

<sup>1</sup>The University of Sydney, Sydney, Australia

**O.2.20 : Implementation and Scalability, Waihorotiu #1, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Background:** Many recent WHO/ national reports identified that around 80% of all adolescents do not meet recommended levels of physical activity (PA). The 2020 WHO consensus updated the PA guidelines, to “a change from recommending that children/adolescents do at least 60 min of physical activity per day to at least an average of 60 min per day” (Chaput 2020). This new guidelines implies that attaining 420 minutes of MVPA /week is the minimum PA threshold. **Research questions:** This analysis examined the effects of the changed guideline on the proportion of children/adolescents meeting PA guidelines. A secondary question examines the single item PA questions and determines the optimal number of days of 60 minutes PA that best reflect meeting the new PA Guideline.

**Methods:** Data comprised population-level surveys from Australia and New Zealand, including SPANS survey in New South Wales, regional population data in NSW as part of community interventions, a funded schools intervention in the Newcastle region, NSW and the national representative Active NZ Young People. PA questions included the single item question [days/week of 60 minutes], more detailed PA inventories, and the IPAQ-adolescent measure. The single item analysis used receiver operator characteristics (ROCs) to assess the best fit between the single item and more extensive PA measures, and identified best fit (maximising sensitivity and specificity, reported as Youden’s Index).

**Results:** The prevalence of meeting the old PA guidelines ranged from 28-55%, compared to 35-84% meeting the new guideline. The single item ROC analysis described areas under the curve (AUCs) between 0.73 and 0.91. The best fit (Youden’s index >0.5) was for 4-5 days/week on the single item best classifying children and adolescents as meeting guidelines.

**Conclusions:** On average, 25% more children and adolescents were classified as ‘active’. If generalised, 1.21 million more Australian/NZ children/adolescents would be classified as active, and if applied globally, nearly 500 million more would be classified as physically active. National and WHO estimates should be updated to reflect these higher rates of sufficient physical activity in this age group and can use 4-5 days on the single PA question to classify population activity levels.

## Food and nutrition security and associations with food agency and dietary quality in a large national sample of US adults

**Dr. Julia Wolfson<sup>1</sup>**, Dr. Cindy Leung<sup>2</sup>

<sup>1</sup>Johns Hopkins Bloomberg School Of Public Health, Baltimore, USA, <sup>2</sup>Harvard T.H. Chan School of Public Health, Boston, USA

**O.2.21: Advancing Health Equity Through Food Assistance, Incentives, and Access, Herald Theatre, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Food insecurity is a persistent problem in the United States (US). A robust body of research has shown that food insecurity is associated with lower food agency, poor diet quality, and numerous adverse health outcomes. Nutrition security is a new concept focusing on access to healthy foods that prevent, and if needed, treat disease. In this study, we evaluate associations between food security, nutrition security, and joint food and nutrition security with food agency and diet quality in a large national sample of US adults.

**Methods:** We conducted a web-based survey of US adults (n=4,460) using CloudResearch in November 2023. Food security status was assessed using the 18-item USDA Household Food Security Screener Module. Nutrition security status was measured using the 4-item Gretchen Swanson Center for Nutrition measure. Food agency was assessed using the 11-item Cooking and Food Provisioning Action Scale (CAFPAS-Short). Diet quality was assessed using the Prime Diet Quality Screener-30Day (PDQS). Associations between food security, nutrition security, and joint food and nutrition security with CAFPAS-Short and PDQS outcomes were assessed via multivariable regressions.

**Results/ Findings:** Overall 52.4% of the sample was both food and nutrition secure (FS&NS), 26.8% were both food and nutrition insecure (FI&NI), 4.3% were food secure but nutrition insecure (NS&NI), and 16.5% were food insecure but nutrition secure (FI&NS). Individuals with FS&NS had the highest mean food agency scores (12.2 (se 0.5)) and all other groups had significantly lower scores (FI&NS 11.7 (se 0.8); FI&NI 11.3 (se 0.7). FS&NI 10.7 (se 0.2) (all p's<0.001)). Compared to food secure individuals, food insecurity was associated with lower overall diet quality (coef. -1.03 (95% CI: -1.85, -0.22); p=0.013). Nutrition security was not associated with dietary intake/quality (p=0.075). Compared to FS&NS, only FI&NI was associated with lower dietary intake/quality (coef. 01.21 (95% CI: -2.17, -0.24); p=0.014).

**Conclusions:** Food insecurity, nutrition security, and joint food and nutrition security status are associated with differences in food agency however, only food security status is associated with differences in dietary intake/quality. Questions remain about the added value of focusing on and measuring nutrition security in addition to food security status.

## Using the NEFPAT+ to assess the consumer nutrition environment of the charitable food system in Southern California, USA

**Dr. Denise Payán<sup>1</sup>**, Kalani Phillips<sup>1</sup>, Ellie Dinh<sup>2</sup>, Claudia Keller<sup>2</sup>

<sup>1</sup>University of California, Irvine, Irvine, USA, <sup>2</sup>Second Harvest Food Bank of Orange County, Irvine, USA

**O.2.21: Advancing Health Equity Through Food Assistance, Incentives, and Access, Herald Theatre, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Charitable food organizations (i.e., food banks and pantries) are critical resources to mitigate food insecurity in the United States. Recent evidence suggests they are an important feature of local food environments and a continuous source of food for many food insecure families. Yet charitable food organizations are often excluded from food environment assessments, and few studies have assessed the strategies they employ to improve nutrition and health.

**Methods:** Utilizing a community-engaged approach and cross-sectional study design, we collected consumer nutrition environment data with a validated survey instrument (Nutritional Environment Food Pantry Assessment Tool Plus or NEFPAT+) in food pantries located in Southern California. Eligible pantries obtained food from a partnering regional food bank, were open at least once per week for public distribution, and were located in higher poverty cities ( $\geq 10\%$  poverty rate) with historically marginalized groups ( $\geq 35\%$  Latino residents) in the selected jurisdiction. We used descriptive statistics and exploratory analyses to identify patterns and gaps in food pantry nutrition environments.

**Results:** We collected NEFPAT+ survey data from N=27 (77%) of 35 eligible food pantries between March - June 2024. Participating pantries were located at faith-based institutions (48%; n=13), other community-based organizations (30%; n=8), schools (11%; n=3), or commercial businesses (11%; n=3). The average NEFPAT+ score was 38.2 out of 85 points. Most pantries (81%) offered items from each of the five MyPlate food groups and 63% used the client choice model. A majority did not use healthy food nudges (i.e., recipes, healthy eating signage), and only 15% reported obtaining fresh produce from local sources. Over half said they partnered with external groups or provided referral information to government nutrition assistance or health coverage programs.

**Conclusions:** Charitable food organizations are increasingly prioritizing nutritious foods and fresh produce for clients, as well as partnering with healthcare organizations to support nutrition (e.g., Food is Medicine programs). Policy and programmatic recommendations to further support these efforts include using low/no-cost healthy food nudge strategies to support item selection, partnering with local fresh food sources (i.e., farms, community gardens), and bi-directional referral strategies with healthcare organizations.

# Exploring the Unintended Benefits of a Farmers' Market Fruit and Vegetable Incentive Program for Low-Income Families in the United States

**Dr. Katherine Speirs<sup>1</sup>**, Dr. Ashley Munger<sup>2</sup>, Maadhanki Kasimanickam<sup>3</sup>, Dr. Stephanie Grutzmacher<sup>1</sup>

<sup>1</sup>University of Arizona, Tucson, USA, <sup>2</sup>California State University, Los Angeles, Los Angeles, USA,

<sup>3</sup>Oregon State University, Corvallis, USA

**O.2.21: Advancing Health Equity Through Food Assistance, Incentives, and Access, Herald Theatre, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** In the U.S., the Double Up Food Bucks program (DUF�) is designed to incentivize purchasing fresh produce by doubling the amount that families who receive Supplemental Nutrition Assistance Program (SNAP; near-cash food assistance) benefits can spend on fruits and vegetables, usually at farmers' markets. DUF� expands low-income families' access to and consumption of fresh fruits and vegetables and food security, especially among those already motivated to purchase produce (Atoloye et al., 2021; Durward et al., 2019; Karpyn et al., 2022). We attempted to expand our understanding of DUF� by exploring additional program benefits, specifically around community building and sense of belonging.

**Methods:** To understand multiple perspectives about the benefits of DUF�, we conducted in-depth interviews with 21 market managers, 10 farmers and vendors, and 41 DUF� participants in Oregon between January 2022 and March 2023. Thematic analysis (Braun & Clarke, 2006) was used to analyze the interview data.

**Results/Findings:** All three groups of participants (i.e., market managers, farmers, and DUF� participants) articulated benefits of DUF� beyond the promotion of healthy eating and food security. In particular, all three groups explained that DUF� allowed them to connect with and support other members of their community. Market managers and farmers reported that they were happy to take on the program's extra administrative burden because it allowed low-income families in their community access to fresh fruits and vegetables. DUF� participants felt the program allowed them to support local farmers by purchasing their produce. Market managers and farmers also reported the importance of DUF� for making the farmers' market a space where low-income people felt comfortable despite it often being seen as a space exclusively for higher-income families.

**Conclusions:** DUF� is an important resource that promotes healthy eating and food security. Our findings suggest new benefits of the program not previously considered and can serve as a starting point for additional quantitative analyses to confirm these benefits. A more complete understanding of the benefits of DUF� and how it allows market managers, farmers, and participants to actively and reciprocally engage in their community can be used to expand and sustain the program.

# SNAP Shoppers' Experiences Using Double Up Food Bucks Oregon: A Qualitative Evaluation of a Farmers Market SNAP Nutrition Incentive Program

**Dr. Ashley Munger<sup>1</sup>**, Dr. Stephanie Grutzmacher<sup>2</sup>, Dr. Katherine Speirs<sup>2</sup>, Miss Maadhanki Kasimanickam<sup>3</sup>, Ms. Zoe Teigen<sup>3</sup>, Ms. Mallory Watson<sup>4</sup>, Mr. Joel Caris<sup>4</sup>, Ms. Rachael Ward<sup>4</sup>  
<sup>1</sup>California State University, Los Angeles, Los Angeles, USA, <sup>2</sup>University of Arizona, Tucson, USA, <sup>3</sup>Oregon State University, Corvallis, USA, <sup>4</sup>Farmers Market Fund, Portland, USA

**O.2.21: Advancing Health Equity Through Food Assistance, Incentives, and Access, Herald Theatre, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Double Up Food Bucks Oregon (DUFBO) is a statewide nutrition incentive program that allows Supplemental Nutrition Assistance Program (SNAP) participants to double the value of their near-cash food assistance benefits through a dollar-for-dollar match on fruit and vegetable purchases. DUFBO is currently offered at over 100 farmers markets across the state, yet only a small proportion of Oregon SNAP participants use the program. To strengthen DUFBO and improve its potential for wider-scale adoption, it is important to understand participants' perceptions of the program's benefits and drawbacks and identify factors that support successful program implementation.

**Methods:** In-depth interviews were conducted between October 2022 and March 2023 with 41 SNAP participants who used DUFBO at farmers markets in Oregon. Interviews lasted between 24 and 90 minutes. Participants received a \$25 cash incentive for their time. We used Braun & Clarke's (2021) approach to thematic analysis to analyze transcripts.

**Results/Findings:** For participants, the most important benefit of DUFBO was greater access to fruits and vegetables at a reduced cost. Participants mentioned being able to eat healthier, as well as gaining access to a greater variety, larger quantities, better quality, and more seasonal assortments of fruits and vegetables. Participants also enjoyed being at the market, supporting local businesses, and experiencing a sense of community. Some drawbacks of the program mentioned by participants included not being able to get change for the \$2 DUFBO vouchers, only being able to purchase fruits and vegetables, and experiencing stigma for paying with government-funded benefits. Factors perceived as contributing to the success of the program included clear marketing materials, not having to apply for the program if participants already qualified for SNAP, and education about how the program works.

**Conclusions:** Our findings suggest that participants primarily have positive experiences with DUFBO, and most drawbacks are either minor or can be addressed with small changes. Some drawbacks, such as those that relate to the federal rules around SNAP incentive programs, cannot be addressed without policy changes. Participant experiences and perceptions offer policymakers and program implementers valuable insights to strengthen program implementation, reduce barriers to participation, and improve key outcomes.

# Effects of Reduced Public Transport Fares on Usage and Transport-Related Walking: A Longitudinal Study in Brisbane, Queensland

**Dr. Anthony Walsh<sup>1</sup>**, Dr Shannon Sahlqvist<sup>1</sup>, Dr Tracy Washington<sup>2</sup>, Ms Sheree Hughes<sup>3</sup>, Ms Rachelle Foreman<sup>4</sup>, Professor Anna Timperio<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University, Burwood, Australia*, <sup>2</sup>*School of Architecture and Built Environment, Queensland University of Technology, Brisbane, Australia*, <sup>3</sup>*National Heart Foundation of Australia - Queensland Branch, Bowen Hills, Australia*, <sup>4</sup>*Brisbane North Primary Health Network, Lutwyche, Australia*

**O.2.21: Advancing Health Equity Through Food Assistance, Incentives, and Access, Herald Theatre, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** In August 2024, the Queensland Government reduced public transport (PT) fares to \$0.50 per trip across the Translink network, representing a 70–95% decrease. This study evaluates the impact of this fare reduction on self-reported PT use and transport-related walking (TRW) in Brisbane, while examining potential moderating effects of PT attitudes.

**Methods:** Data were collected from 397 adults (69% female), aged 18-64 (mean 38.6, SD 13.1), in Greater Brisbane through online surveys at two time points: before the fare reduction and 10-14 weeks afterward. Respondents reported transport modes for commuting and other trips, as well as transport-related and leisure-time physical activity (PA) using questions adapted from the Transport and Physical Activity Questionnaire (TPAQ). Demographic and attitudinal factors, including 16 items on PT attitudes, were also assessed. Participants were classified as “Increased PT” or “Increased TRW” if they reported an increase in PT trip legs or weekly TRW minutes at follow-up. Logit regression models identified factors associated with increased PT use and TRW.

**Results:** At follow-up, 25% of the sample (n=99) reported increased PT usage, typically reporting 1-4 additional trips/week, while 43% (n=169) reported increased TRW, with a median increase of 60 mins/week (IQR 30-150). Minimal demographic differences were found between those who reported increased PT or TRW and those who did not. Perceiving PT as reliable (OR=1.47, 95% CI=1.10-1.9, p=0.008) and commuting by active transport at baseline (OR=2.55, 1.06–6.12, p=0.037) were significantly associated with increased PT use. Increased TRW was significantly correlated with increased PT use (OR=2.51, 1.55–4.06, p<0.001), meeting PA guidelines from active travel at baseline (OR=0.45, 0.29–0.71, p=0.001), and not perceiving PT as slow (OR=1.35, 1.14–1.60, p<0.001).

**Conclusions:** This longitudinal study demonstrates that reducing PT fares can increase PT use among individuals who perceive PT as reliable and boost TRW among those who do not perceive PT as too slow. These findings support the public health benefits of increased PT use and provide insights for PT policy development. Fare reductions may effectively increase TRW, and further PT improvements in reliability and speed could amplify these benefits. Future analyses will explore equity implications.

# Healthy retail to advance health equity in communities: The Great Grocer Project

**Dr. Rachael Dombrowski**<sup>1</sup>, Dr. Bree Bode<sup>2</sup>, Dr. Alyssa Beavers<sup>3</sup>, Winona Bynum<sup>4</sup>, Amy Kuras<sup>4</sup>

<sup>1</sup>California State University San Marcos, San Marcos, USA, <sup>2</sup>Michigan Fitness Foundation, Lansing, USA, <sup>3</sup>Wayne State University, Detroit, USA, <sup>4</sup>Detroit Food Policy Council, Detroit, USA

**O.2.21: Advancing Health Equity Through Food Assistance, Incentives, and Access, Herald Theatre, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** The purpose of this presentation is to discuss the successes of the Great Grocer Project (GGP) and how collaborations with local small business owners can promote community health and economic vitality.

**Background:** The food environment in Detroit has a negative reputation, especially in terms of grocery store accessibility, quality of healthy foods and healthy eating. The Detroit Grocery Coalition is a consortium of partners working with Detroit grocers to increase access to, sales and consumption of healthy foods, improve community relationships between stores and neighborhood residents, and connect grocers to training and wellness projects through the Great Grocer Project. The GGP aims to improve the Detroit retail food environment, improve health outcomes of residents and promote economic vitality within low-income communities.

**Methods:** Data was collected in stores over three time points (N=68) to determine criterion for five primary categories in the GGP: Availability; Affordability; and Quality of Healthy Foods; Community participation in events; and Customer Service and Safety. Scores were developed using data collected via the Nutrition Environment Measures Survey, interviews with a sub-sample of store owners (N=20), customer intercept surveys (N=99) and store staff surveys (N=104).

**Results:** Over the past three years, Detroit stores have improved their overall mean scores as well as obtaining a greater number of “carrots” across the five categories. Affordability scores are still a burden for urban grocers to meet given the expense of doing business in the City of Detroit, food inflation and other supply chain issues. Customer surveys also indicate improved service within Detroit grocers with 29% indicating good and 63% indicating very good service.

**Conclusions:** Collaborations with local grocers via the GGP has assisted in improving the local food environment in Detroit, a low-food access setting. Improved grocery retail environments have also shown promise in improving food and nutrition security for local residents. Working with local business owners in low-income communities is a needed yet underutilized area of public health practice. The design, implementation, and success of the GGP can assist other communities in enriching their local grocer environments to improve food security and healthy eating.

## Parsing associations of ultra-processed discretionary versus ultra-processed non-discretionary food intake with health outcomes in the U.S. population

**Dr. Tonja Nansel<sup>1</sup>**, Dr. Amara Channel-Doig<sup>1</sup>, LEAH LIPSKY<sup>1</sup>

<sup>1</sup>National Institute of Child Health and Human Development, Bethesda, United States

**O.2.22: Food Policy, Health, and Equity: Global Perspectives on Nutrition, Pricing, and Inclusion, Balcony Foyer, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Greater intake of ultra-processed foods (UPF) is associated with numerous adverse health outcomes. However, it is unknown whether these associations are attributable to their nutrient composition or their industrial processing; therefore, it is unclear whether policies and guidelines should target reducing all UPF intake or only UPF with minimal nutritional value. This study examined how associations of UPF intake with health outcomes differed by nutritional composition of UPF.

**Methods:** Data on dietary intake, anthropometrics, and cardiovascular biomarkers from participants ages 20–80 years in the 2017–2018 US National Health and Nutrition Examination Survey (n=4095) were included. Foods were classified as discretionary (i.e., low nutritional value) or not based on previously-validated criteria: added sugar >20% energy, sodium >460mg per serving, refined grains >50% of total grains and >10:1 ratio of carbohydrate to fiber content, saturated fat >20% energy (excluding vegetables), total fat >9% by weight (applied only to vegetables, sweets, and snacks), and all alcoholic beverages. Discretionary UPF and non-discretionary UPF intake (percent of energy) were calculated using the NOVA food processing classification system. Linear regression models examined associations of discretionary and non-discretionary UPF intake with BMI, waist circumference, percent body fat, total cholesterol, HDL, LDL, triglycerides, A1c, glucose, insulin, C-reactive protein, and systolic and diastolic blood pressure, controlling for age, gender, race/ethnicity, physical activity metabolic equivalents, and supplement use. Analyses accounted for the complex, multistage sampling design.

**Results:** Discretionary and non-discretionary UPF comprised (mean±SE) 45.6±0.9% and 9.3±0.2% of energy intake, respectively. Greater discretionary UPF intake was associated with higher BMI ( $\beta$ ±SE=0.04±0.01, p=0.0001), waist circumference (0.11±0.02, p=0.0001), % body fat (0.05±0.02, p=0.009), A1c (0.003±0.001, p=0.01), CRP (0.04±0.02, p=0.04), insulin (0.08±0.02, p=0.003), and systolic BP (0.06±0.03, p=0.04), and lower HDL (-0.09±0.02, p=0.003), but was not associated with LDL, glucose, triglycerides, diastolic BP, or total cholesterol. Greater intake of non-discretionary UPF was associated only with lower total cholesterol (-0.21±0.09, p=0.03).

**Conclusions:** Findings indicate that the poor nutritional value of most UPF may drive previously observed associations of UPF intake with adverse health outcomes, suggesting that public health approaches could focus on reducing discretionary UPF without targeting non-discretionary UPF.

## Impact of the sugar-sweetened beverage tax among adults in Newfoundland & Labrador: a comparison with other Canadian provinces in 2021 and 2022

**Ms. Karen Hock<sup>1</sup>**, Dr. Rachel B. Acton<sup>1</sup>, Mrs. Vicki L. Rynard<sup>1</sup>, Dr. Lana Vanderlee<sup>2</sup>, Ms. Christine M. White<sup>1</sup>, Dr. Gary Sacks<sup>3</sup>, Dr. Martin White<sup>4</sup>, Dr. David Hammond<sup>1</sup>

<sup>1</sup>University of Waterloo, Waterloo, Canada, <sup>2</sup>Centre nutrition, santé et société (Centre NUTRISS), Université Laval, Québec, Canada, <sup>3</sup>Institute for Health Transformation, Global Centre for Preventive Health and Nutrition, Deakin University, Burwood, Australia, <sup>4</sup>Medical Research Council Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom

**O.2.22: Food Policy, Health, and Equity: Global Perspectives on Nutrition, Pricing, and Inclusion, Balcony Foyer, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Newfoundland & Labrador (NL) became the first Canadian jurisdiction to implement a dedicated sugar-sweetened beverage (SSB) excise tax on September 1, 2022. This study is among the first to examine reported impact on awareness, cost perceptions, beverage purchases, and policy support in Canada before and after policy implementation.

**Methods:** Data were from the 2021 and 2022 Canadian arm of the International Food Policy Study, an annual repeat cross-sectional survey of adults aged 18-100 years. The sample included 9,009 participants across Canada over the years, including 813 from NL. Regression models examined the odds of participants' awareness of SSB taxes in their province/territory (binary), perception of SSBs costing more than drinks without sugar (multinomial), and support for government sugar tax policies (multinomial) in NL versus the rest of Canada over time. Linear regression models examined self-reported changes in drink purchases for four drink types (taxed, low/no-calorie, diet, and other untaxed drinks) among tax-aware participants in NL (2022 data only). Models also examined associations with sociodemographic and lifestyle factors.

**Results/findings:** Overall, 93% of NL respondents were aware of the tax following implementation. Perceived SSB costs increased to a greater extent in NL versus the rest of Canada ( $p < 0.001$ ). In NL in 2022, respondents reported buying less regular soda (34%), low/no-calorie energy drinks (20%), and diet soda/pop (18%) in response to the tax, whereas reported purchases increased for bottled water (12%) and unsweetened milk or milk alternatives (10%). Across both years, over 30% of NL respondents supported the tax; however, opposition increased to a greater extent than the rest of Canada (27%-41% versus 26%-27%;  $p = 0.016$ ). Nearly 50% of all respondents across years supported SSB taxes when revenue was earmarked for subsidizing healthy foods, with no difference in opposition observed over time between regions (17%-21% in NL versus 19%-18% in the rest of Canada;  $p > 0.05$ ).

**Conclusions:** NL's SSB tax was associated with greater awareness and perceived SSB cost, and appeared effective at reducing taxed beverage purchases; however, complementary policies are likely needed for further reductions. Earmarking tax revenue for healthy food subsidies may help achieve policy support before implementation and maintain support afterwards.

## Equalising power imbalances or a trail of broken promises? Intersectoral perspectives on engaging people with diverse lived experience in food policymaking

**Dr. Carolina Venegas Hargous<sup>1</sup>**, Kevin Kapeke<sup>2</sup>, Prof Kathryn Backholer<sup>1</sup>, Dheepa Jeyapalan<sup>2</sup>, Veronica Nunez<sup>2</sup>, Dr Jennifer Browne<sup>1</sup>, Prof Anna Peeters<sup>1</sup>, Dr Alexandra Chung<sup>3</sup>, Prof Steven Allender<sup>1</sup>, A Prof Victoria Stead<sup>4</sup>, Prof Yin Paradies<sup>5</sup>, Dr Christina Zorbas<sup>1</sup>

<sup>1</sup>Global Centre for Preventive Health and Nutrition, School of Health and Social Development, Institute for Health Transformation, Faculty of Health, Deakin University, Geelong, Australia, <sup>2</sup>Victorian Health Promotion Foundation (VicHealth), West Melbourne, Australia, <sup>3</sup>Department of Nutrition, Dietetics and Food, Monash University, Notting Hill, Australia, <sup>4</sup>School of Humanities and Social Sciences, Faculty of Arts and Education, Deakin University, Geelong, Australia, <sup>5</sup>Alfred Deakin Institute, Faculty of Arts and Education, Deakin University, Geelong, Australia

**O.2.22: Food Policy, Health, and Equity: Global Perspectives on Nutrition, Pricing, and Inclusion, Balcony Foyer, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Achieving nutrition and health equity warrants understanding lived experiences of marginalisation. Yet, people with diverse lived experiences are often inadequately included in food policy advocacy, agenda setting, and development. We aimed to explore intersectoral perceptions of engaging people with lived experiences of marginalisation in food policymaking in Australia, specifically in terms of challenges, enablers, required actions, and potential outcomes of doing so.

**Methods:** We draw on critical theory, including intersectionality; seeking to critique how current social structures drive power imbalances in decision-making. In-depth semi-structured interviews were conducted with 24 people with expertise in food policy and/or community engagement from academic, government, advocacy, and community sectors. Interviews were inductively and deductively coded using the Knowledge-to-Action framework.

**Findings:** Participants identified few food policymaking examples where people with lived experience have been meaningfully engaged. Most participants perceived that engaging people with lived experience requires investment to overcome multiple systemic barriers to their inclusion. Reported barriers included the lack of time, resources, and prioritisation across sectors and the lack of political commitment to inclusive policymaking. Few participants identified enablers for engaging people with lived experience in policymaking. These included having access to successful examples and existing networks of actors with flexible funding systems. Several actions were deemed necessary to effectively engage people with lived experience in food policymaking and improve current practice. These included: 1) having a dedicated budget; 2) enabling true collaboration where people with lived experience are valued, effectively engaged, sufficiently represented, have the opportunity to work alongside decision-makers at all levels, and where power is equalised; 3) striving to do no harm to the people engaged; and 4) ensuring results from engaging people with lived experience are effectively disseminated and used for advocacy. Participants collectively agreed that meaningful engagement of people with lived experience can lead to more impactful and fit-for-purpose food policies.

**Conclusions:** Addressing the barriers to meaningful engagement of people with lived experience of marginalisation in food policymaking requires actions that challenge the status quo and

address systematic exclusion, under-valuing, and under-funding of community engagement. We provide recommendations to guide more inclusive food policymaking into the future.



## Perceptions of drinking water safety and taste and associations with sugary drink intake in 5 countries: evidence from the International Food Policy Study

**Mrs. Virginie Drolet-Labelle**<sup>1</sup>, Karen Hock<sup>2</sup>, Christine M White<sup>2</sup>, Alejandra Jáuregui<sup>3</sup>, Simon Barquera<sup>3</sup>, Rachel Davis<sup>4</sup>, Véronique Provencher<sup>1</sup>, David Hammond<sup>2</sup>, Lana Vanderlee<sup>1</sup>

<sup>1</sup>Centre Nutrition, santé et société, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, Canada, <sup>2</sup>School of Public Health Sciences, University of Waterloo, Waterloo, Canada, <sup>3</sup>Center for Health and Nutrition Research, Instituto Nacional de Salud Pública, Cuernavaca, Mexico, <sup>4</sup>Department of Health Promotion, Education & Behavior, Arnold School of Public Health, University of South Carolina, Columbia, USA

**O.2.22: Food Policy, Health, and Equity: Global Perspectives on Nutrition, Pricing, and Inclusion, Balcony Foyer, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Bottled water can provide a source of clean water in many regions with unsafe tap water, but is not a sustainable beverage choice, as it is more expensive than tap water and has significant environmental impacts. This study examined types of drinking water, perceived taste and safety of tap water, and whether the perceived taste and safety of tap water influence the main type of drinking water and sugary drink consumption.

**Methods:** Adults (>18 y) from Australia, Canada, Mexico, the United Kingdom (UK), and the United States (US) completed cross-sectional online surveys in 2022 as part of the International Food Policy Study. The survey examined participants' primary type of drinking water in their home (tap, boiled tap, bottled, or other), perceived taste, and perceived safety of tap water (n=17,685). Sugary drink intake in the past 7 days was assessed. Logistic regressions tested trends across countries and population subgroups. Multinomial regressions examined the association between perceived safety, taste, and the main type of drinking water. Negative binomial regressions examined associations between each water variable and sugary drink intake.

**Results/findings:** Most participants in the UK (76.8%), Australia (70.3%), and Canada (69.5%), consumed tap water as their main type of drinking water, followed by the US (50.6%), whereas bottled water was more common in Mexico (83.9%). Disliking the taste of tap water and not perceiving it as "very safe" were more common in Mexico and the US than in other countries. Overall, participants with lower perceived income adequacy and education levels, from an ethnic minority, who did not perceive tap water as very safe and disliked its taste had higher odds of having bottled water as their main source of drinking water. Bottled water consumption, as opposed to tap water, was also associated with higher sugary drink consumption in all countries except Australia.

**Conclusion:** Bottled water consumption was associated with perceived safety and taste of tap water and with sugary drink consumption. Improving satisfaction and public confidence in tap water through awareness campaigns and infrastructure investment, especially among specific subgroups and countries such as Mexico, could promote healthy and sustainable beverage choices.

# Assessing government policy responses to rising food prices since the COVID-19 pandemic: A policy analysis

**Dr. Christina Zorbas<sup>1</sup>**, Mr Rahul Maganti<sup>1</sup>, Ms Rebecca Bennett<sup>1</sup>, Dr Carmen Vargas<sup>1</sup>, Professor Kathryn Backholer<sup>1</sup>

<sup>1</sup>Deakin University, Pascoe Vale South, Australia

**O.2.22: Food Policy, Health, and Equity: Global Perspectives on Nutrition, Pricing, and Inclusion, Balcony Foyer, June 13, 2025, 11:30 AM - 12:45 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Healthy diets are key for preventing non-communicable diseases but are increasingly becoming unaffordable for many people around the world. In 2021, the United Nations estimated that more than 3 billion people could not afford a healthy diet. Although political attention to rising food prices has increased in recent years, there is no comprehensive synthesis of the policy measures implemented to address this issue. We aimed to assess the types and framing of policies implemented by governments in high-income countries to address rising food prices since the onset of the COVID-19 pandemic.

**Methods:** Policies were identified through a systematic search of media sources (including Factiva and Google News) and government databases, using the terms 'food price' AND 'policy' AND 'high-income countries'. Articles were included if they were published between January 2019 and July 2024, explicitly identified a policy addressing rising food prices, and focused on a high-income country (using World Bank classifications). Data extraction was guided by Shiffman & Smith's policy analysis framework to examine the ideas, issues, actors, and policy environment influencing policy implementation. Findings were summarised descriptively according to policy types and framework domains.

**Results/findings:** Seven key policy responses were identified to address rising food prices: price controls, food industry supports, price transparency and monitoring (including the improvement of codes of conduct), income support payments, trade policies, emergency food relief, and broader cost-of-living relief measures (e.g., social and economic policies). Short-term measures, such as food price controls and subsidies, were the most frequently adopted by governments to shield consumers from severe price shocks. While less commonly implemented, governments also pursued longer-term policies aimed at increasing local food production and fostering sustainable food systems. The framing of the issue as both an economic and social crisis, combined with factors such as public pressure, political (in)stability, and global agreements, influenced the adoption and implementation of policy actions.

**Conclusions:** Further research is needed to assess the impacts of real-world national food pricing policies, particularly on food security and affordability for different subpopulations. This evidence can guide short- and long-term policy measures to ensure affordable, healthy diets for all during crises.

# A Rapid Review of Australian Outdoor Fitness Equipment Use

**Dr. Alyson Crozier<sup>1,2</sup>**, Dr Tom Wycherley<sup>1,2</sup>, Dr Brad Stenner<sup>1,2</sup>

<sup>1</sup>University of South Australia, Adelaide, Australia, <sup>2</sup>Alliance for Research in Exercise, Nutrition and Activity, Adelaide, Australia

**O.2.23: The Power of Labels: Evaluating Nutrition Warnings, Claims, and Consumer Behavior, Hunua 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study reviewed current evidence on outdoor fitness equipment (OFE) in Australia. The main objectives were to assess OFE usage patterns, user demographics, and the effects of proximity and design factors on usage. A central aim of the study was to address gaps in understanding how OFE promotes physical activity, especially in Australian contexts.

**Methods:** A rapid review methodology synthesized evidence from four databases (MEDLINE, Embase, PsycInfo, SPORTDiscus) to examine OFE usage, demographic characteristics of users, benefits to users, and design considerations. Articles were screened by two independent reviewers and selected if they focused on Australian OFE, as well as user demographics or equipment design.

**Findings:** From 1,255 articles screened, 16 studies met the inclusion criteria, including cross-sectional surveys, observational studies, audits, and process evaluations. OFE is used by a small percentage (<5%) of park visitors, predominantly adult males, with about one-third to half of users engaging weekly, and higher usage seen in mornings, evenings, and on weekends. Proximity to users' homes and the presence of adjacent facilities can enhance the use and safety of OFE. A range of design factors were identified as important facilitators, including having a variety of equipment types, shade and soft-fall surfacing, and clear instructional signage. However, there was limited evidence on optimal design factors and benefits specific to community and cultural contexts.

**Conclusions:** The limited evidence reviewed identified significant gaps in understanding OFE's impact and usage patterns in Australia. With current studies indicating low engagement rates and minimal insight into factors like duration of use, demographic reach, and how OFE design factors and layouts may impact usage, the findings highlight a pressing need for more targeted research to promote use of this community asset in Australia.

## Salt warning labels as a public health policy in the out-of-home food sector: online and real-world randomised controlled trials

**Dr. Rebecca Evans**<sup>1</sup>, Ms Jane Brealey<sup>1</sup>, Dr Natasha Clarke<sup>2</sup>, Dr. Jennifer Falbe<sup>3</sup>, Dr. Amy Finlay<sup>1</sup>, Dr Andrew Jones<sup>4</sup>, Ms Paula Thorp<sup>1</sup>, Dr Rozemarijn Witkam<sup>1</sup>, Professor Eric Robinson<sup>1</sup>  
<sup>1</sup>University of Liverpool, Liverpool, United Kingdom, <sup>2</sup>Bath Spa University, Bath, United Kingdom,  
<sup>3</sup>University of California, Davis, Davis, United States, <sup>4</sup>Liverpool John Moores University, Liverpool, United Kingdom

**O.2.23: The Power of Labels: Evaluating Nutrition Warnings, Claims, and Consumer Behavior, Hunua 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Overconsumption of salt is a significant cause of diet-related disease. The salt content of much food provided in the out-of-home food sector (e.g., restaurants) can be excessive, but policy options to address this are lacking. An emerging policy approach with limited evidence is the use of 'high in salt' warning labels. The present research is the first to examine the effectiveness of salt warning labelling in a UK context, and in a real-world restaurant scenario.

**Methods:** UK consumers took part in (i) a mixed online randomised controlled trial (RCT) to test the perceived message effectiveness (PME) and impact on hypothetical food choice (% of labelled items ordered, total salt ordered) of several salt warning labels (design informed by public consultation) in a supermarket and restaurant context (three scenarios per context; Study 1) and (ii) a real-world between-subjects RCT in a restaurant to test the impact of a menu featuring salt warning labels on PME and food choice (whether a labelled item was selected, total salt ordered) relative to an unlabelled menu (Study 2). Support for the introduction of a salt warning labelling policy was also measured.

**Results:** Study 1 (N = 2391) demonstrated that, in both a supermarket and restaurant context, salt warning labels were perceived to be effective by UK consumers (relative to a control label [QR code]), were supported as a potential public health policy (up to 65% support), and reduced the selection of (i) labelled items (by up to 17%), and (ii) salt (by up to 0.29g across supermarket product scenarios, and 1.07g across restaurant scenarios). Study 2 (N = 454) replicated findings from Study 1 for perceived effectiveness (relative to a standard menu), policy support (66% support), and reduced salt selection (0.54g) in a real-world restaurant setting.

**Conclusions:** Salt warning labelling is a promising policy option to reduce salt selected by UK consumers.

# What does healthy mean? Evaluating foods and beverages that satisfy the “healthy” claim criteria proposed by the US Food and Drug Administration

**Ms. Anna Claire Tucker<sup>1</sup>**, Dr. Julia Wolfson<sup>1</sup>

<sup>1</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, USA

**O.2.23: The Power of Labels: Evaluating Nutrition Warnings, Claims, and Consumer Behavior, Hunua 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** In 2022, the United States (US) Food and Drug Administration (FDA) proposed updates to the “healthy” nutrient claim criteria. To qualify as “healthy,” foods and beverages would have to provide a minimum amount of at least one food group (e.g., whole grains), while not exceeding limits on saturated fat, sodium, and added sugar. The food industry criticized the proposed criteria for being overly stringent. However, it is unclear how many foods and beverages would qualify for the “healthy” claim, and how the criteria compare to existing methods for assessing the healthfulness of foods, including Nova and Nutri-Score.

**Methods:** We applied FDA criteria to all foods and beverages in the Food and Nutrient Database for Dietary Studies that were reported in the National Health and Nutrition Examination Survey waves 2015/16 – 2017/18. We coded items meeting FDA criteria as FDA-aligned (yes/no). We used descriptive statistics to examine the proportion of FDA-aligned items across food categories and Nova categories. We used t-tests to compare mean nutrient content of FDA-aligned versus FDA-unaligned items. We estimated correlation between FDA-alignment and other nutrient profiling systems (Food Compass, Nutri-Score, and Health Star Rating) using point-biserial correlation.

**Results:** Of 6,262 foods and beverages analyzed, 862 (13.8%) met “healthy” criteria. Most FDA-aligned items were minimally processed (86.5%). The majority of FDA-aligned items were classified as vegetables, fruits, nuts/seeds, or legumes (75.3%). One percent of meat, poultry, and eggs were FDA-aligned. FDA-aligned items had higher mean amounts of fiber, magnesium, potassium, vitamin C, and vitamin K; however, B vitamins, choline, iron, and zinc were lower compared to FDA-unaligned items ( $p < 0.001$ ). FDA criteria were most strongly correlated with Food Compass (0.51) and least correlated with Health Star Rating (0.38).

**Conclusions:** Few foods and beverages reported by US adults met the FDA’s proposed “healthy” criteria. Moderate to weak correlation with other nutrient profiling systems highlights inconsistencies that may cause confusion among consumers if the FDA’s “healthy” criteria are finalized. Future research should investigate whether the FDA’s “healthy” criteria are superior to other nutrient profiling systems for improving consumers’ food choices and reducing risk of diet-related chronic diseases.

## Changes in children's adherence to sustainable healthy diets over the period Chile's Food Labelling and Advertising Law was implemented: a longitudinal study (2016-2019)

**Dr. Carolina Venegas Hargous<sup>1</sup>**, Prof Liliana Orellana<sup>2</sup>, A Prof Camila Corvalan<sup>3</sup>, Prof Steven Allender<sup>1</sup>, Prof Colin Bell<sup>1</sup>

<sup>1</sup>Global Centre for Preventive Health and Nutrition, School of Health and Social Development, Institute for Health Transformation, Faculty of Health, Deakin University, Geelong, Australia, <sup>2</sup>Biostatistics Unit, Faculty of Health, Deakin University, Burwood, Australia, <sup>3</sup>Institute of Nutrition and Food Technology (INTA), University of Chile, Santiago, Chile

**O.2.23: The Power of Labels: Evaluating Nutrition Warnings, Claims, and Consumer Behavior, Hunua 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Whilst Chile's Food Labelling and Advertising Law was designed to address childhood obesity, it may also contribute to preventing other forms of malnutrition and mitigating climate change. Empirical evidence of this potential triple-duty effect is lacking. This study estimated the change in adherence to sustainable healthy diets among a cohort of Chilean children (n=698 children aged 3-6 years at baseline) over the period the Law was implemented.

**Methods:** Children's dietary data was collected annually from 2016 to 2019 using single multiple-pass 24-hour dietary recalls. Adherence to sustainable healthy diets was quantified using the Planetary Health Diet Index for Children and Adolescents (PHDI-C). This index comprises 16 components that sum to a total score between 0-150 points. Higher scores indicate better adherence to sustainable healthy diets. Linear mixed models were fitted to estimate the change in PHDI-C total and individual component scores from 2016 to 2019.

**Results:** Mean total PHDI-C score decreased from 50.1 points in 2016 to 48.6, 46.3, and 46.1 in 2017, 2018, and 2019, respectively (p-value <0.001), suggesting children's overall adherence to sustainable healthy diets decreased over time. Intake of legumes, fruits, dark green vegetables, red and orange vegetables, and vegetable oils decreased, while consumption of palm oil, red meats, and animal fats increased, resulting in small but significant declines in eight PHDI-C component scores. Whole cereals intake increased, while consumption of dairy products and added sugars decreased, resulting in improvements in three PHDI-C component scores.

**Conclusions:** Aside from the decrease in added sugars intake, all dietary changes observed in this study were consistent with trends described among children transitioning from pre-school-age to school-age. The Law might have contributed to reducing children's added sugars intake, but further research is required to establish causality. Improving the healthiness and environmental sustainability of Chilean children's diets will require complimentary policies, in addition to the Law, that incentivise consumption of minimally processed plant-based foods and discourage consumption of animal-based foods and ultra-processed products.

## Warning Front of Package Labels (FOPL) are more effective than Nutri-Score labels: A binational eye-tracking experiment

**Prof. Aron Troen<sup>1</sup>**

<sup>1</sup>The Hebrew University of Jerusalem, Rehovot, Israel

**O.2.23: The Power of Labels: Evaluating Nutrition Warnings, Claims, and Consumer Behavior, Hunua 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study aimed to compare the effectiveness of two Front-of-Package Labeling (FOPL) systems—Israel's Warning Labels and Germany's Nutri-Score—in influencing consumer attention, perception, and decision-making, in a controlled laboratory-based eye-tracking study using an identical protocol in Israel and Germany. We investigated visual attention to labels, the perceived healthiness of products, and comprehension of the labeling systems, addressing the influence of familiarity and cultural contexts. Our innovative cross-cultural approach can provide insight into optimizing FOPL systems to promote healthier food choices.

**Methods:** A binational experimental study was conducted with 223 participants (Israel: 111, Germany: 112). Participants viewed mock-up food products labeled with either the Nutri-Score or Warning Labels during an eye-tracking experiment. Measures included fixation counts, duration, and time to first fixation. Subsequently, participants rated perceived healthiness, taste, and purchase likelihood of products and completed surveys assessing label understanding and nutritional knowledge. Statistical analyses included paired and independent t-tests to evaluate label effectiveness and cultural differences.

**Results:** Warning Labels attracted significantly higher attention (mean fixation counts: 1.83 vs. 1.73 for Nutri-Score,  $p < 0.05$ ) and were rated easier to understand (mean score: 3.69 for Warning Labels vs. 3.19 for Nutri-Score,  $p < 0.001$ ). Unfamiliar labels elicited longer fixation durations, highlighting their novelty. Nutri-Score labels led to higher perceived healthiness for less healthy products (mean health score: 3.78 vs. 3.22,  $p < 0.001$ ), potentially creating misleading impressions. Warning Labels were more effective in discouraging unhealthy choices. Products with Israel's green labels were perceived as the healthiest (mean health score: 5.59).

**Conclusions:** Warning Labels demonstrated greater clarity and effectiveness in guiding healthier choices, aligning with public health objectives. Nutri-Score's simplified scoring system influenced perceptions but risked overestimating product healthiness. The findings emphasize the need for culturally adaptable, straightforward FOPL systems to foster healthier dietary behaviors globally. This study contributes a robust methodological framework for cross-cultural FOPL evaluations, supporting the development of evidence-based labeling policies.

## Evaluating the Impact of Mexican Warning Labels on Fruit and Vegetable Consumption: International Food Policy Study (2018-2022)

**Dr. Laura Patricia Arellano Gómez<sup>1,2</sup>**, Dr. Jim Thrasher<sup>3</sup>, Dr. Rachel Davis<sup>3</sup>, Dr. David Hammond<sup>5</sup>, Dr. Lana Vanderlee<sup>4</sup>, Dr. Simón Barquera<sup>2</sup>, M.Sc Larissa Quevedo<sup>2</sup>, Dr. Cecilia Oviedo<sup>2</sup>, Dr. Alejandra Contreras<sup>2</sup>, Dr. Alejandra Jáuregui<sup>2</sup>

<sup>1</sup>Departamento de Psicología, Educación y Salud, ITESO, Universidad Jesuita de Guadalajara, Tlaquepaque, Mexico, <sup>2</sup>Centro de Investigación en Nutrición y Salud, Instituto Nacional de Salud Pública de México, Cuernavaca, México, <sup>3</sup>Department of Health Promotion, Education, and Behavior, Arnold School of Public Health, University of South Carolina, Columbia, USA, <sup>4</sup>School of Nutrition, Université Laval, Quebec, Canada, <sup>5</sup>School of Public Health Sciences, University of Waterloo, Waterloo, Canada

### O.2.23: The Power of Labels: Evaluating Nutrition Warnings, Claims, and Consumer Behavior, Hunua 1, June 13, 2025, 1:30 PM - 3:15 PM

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** In 2020, Mexico implemented front-of-package nutrition warning labels (FoPWLs) for packaged foods to increase the salience and understanding of nutrition information. This study compares trends in fruit and vegetable (FV) consumption and efforts to eat FV among adults in Mexico and the US before and after implementing FoPWLs.

**Methods:** This cross-panel analysis included adult participants who completed online annual surveys from the International Food Policy Study waves 2018-2021. FV intake was measured as daily portions consumed in the last 30 days (excluding juice and potatoes). The "effort to eat FV" was measured as the attempt to consume "more" or "less" FV in the past year. Comparison periods were 1) Initial-policy transition (IPT) vs. pre-policy phase (PP) (2018-2019 vs. 2019-2020) and 2) Full-policy implementation (FPI) vs. PP (2018-2019 vs. 2019-2022). We used difference-in-differences (DinD) regressions (negative binomial for FV consumption and logistic for the effort to consume more FV) to compare slopes across comparison periods and countries, adjusting for post-stratification sample weights and confounders (sex, age, education, income adequacy, ethnicity, and nutritional knowledge).

**Results:** The study included 37,111 participants (≈50% female) from 2018–2022, half from the US. Compared to PP, IPT was associated with a 42% (95%CI: 1.18, 1.71) higher reported consumption of FV in Mexico, while FPI was associated with a 34% (95%CI: 1.09, 1.64) higher reported consumption of FV in the US. DinD estimates showed no differences across countries in the difference observed between comparison periods (IPT vs PP:  $\exp\beta=1.22$ , 95%CI: 0.95, 1.57; FPI vs. PP:  $\exp\beta=1.33$ , 95%CI: 0.97, 1.84). Compared to PP, FPI was associated with lower efforts to eat more FV in the US (OR 0.95, 95%CI 0.92, 0.98). The DinD analysis between PP and FPI indicated larger differences in the effort to consume more FV in Mexico compared to the US (OR1.06, 95%CI 1.01, 1.10).

**Conclusions:** Although FoPWLs regulations are not aimed at increasing FV intake, they may encourage healthier choices in Mexico by raising awareness of unhealthy packaged foods. This shift highlights a potential indirect effect of FoPWLs policies.

## Family meals to support life-course health promotion following gestational diabetes

**Dr. Eloise Litterbach**<sup>1,2,3,4</sup>, Dr Alison Spence<sup>4</sup>, Dr Georgia Middleton<sup>5</sup>, Prof Jane Speight<sup>1,2,3</sup>, Dr Elizabeth Holmes-Truscott<sup>1,2,3,6</sup>

<sup>1</sup>The Australian Centre for Behavioural Research in Diabetes, Melbourne, Australia, <sup>2</sup>School of Psychology, Deakin University, Geelong, Australia, <sup>3</sup>Institute for Health Transformation, Deakin University, Geelong, Australia, <sup>4</sup>Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia, <sup>5</sup>Caring Futures Institute, College of Nursing and Health Sciences, Flinders University, Adelaide, Australia, <sup>6</sup>Australian Centre for Accelerating Diabetes Innovations, Melbourne Medical School, University of Melbourne, Melbourne, Australia

**O.2.24: Family-Based Strategies to Improve Child Health, Hunua 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Gestational diabetes (GDM) affects 17% of pregnancies in Australia and more than doubles maternal and child risk of type 2 diabetes (T2D). Post-GDM, a life-course approach to T2D risk reduction includes nutrition-focused health promotion. This study explores mothers' perceptions of the role of family meals in T2D risk-reduction post-GDM, as well as brief messages to promote optimal nutrition-related behaviours during family meals.

**Methods:** Qualitative, semi-structured video-interviews (60 minutes) were conducted with 16 mothers aged 18+ years, living in Australia, with experience of GDM and at least one child aged <6 years. Participants were recruited via social media. Interviews explored perceptions of family meals and T2D risk and included cognitive debriefing of a suite of collaboratively developed healthy family mealtime messages (e.g., "Try serving the same types of foods to everyone at mealtimes but let them decide on how much of it they eat."). Messages were refined iteratively between interviews. Reflexive thematic analysis was applied to transcripts.

**Results/findings:** Preliminary findings indicate that mothers were aware of their and their child's elevated T2D risk. They tended to prioritise family meals as opportunities to support their child's health, more so than their own. They acknowledged the potential for family meals to support whole family T2D risk-reduction. Overall, mothers perceived the family mealtime messages as relevant and acceptable. They liked that the messages normalised challenging mealtime experiences. Conflicting with best-practice guidelines, some raised concerns that their child would not eat enough if they allowed autonomy around "how much", and/or suggested inclusion of "diet" drinks in recommendations around what to drink. Preferences for message delivery include online (e.g., video) and physical (e.g., posters) resources, via credible sources (e.g., health professionals, diabetes organisations) and teamed with practical resources (e.g., recipes, meal plans).

**Conclusions:** Post-GDM, the family meal appears to be a feasible context for supporting T2D risk-reduction for families. Mothers appear open to using family mealtimes to support nutrition-focused behaviours. The relevance and acceptability of messages highlights potential for supporting family health, though how to ensure best-practice is acceptable remains a challenge. Implementation pathways and ways to action messages may require the inclusion of practical resources.

## Parental experiences of seeking advice regarding child health behaviours and growth in primary care settings: a scoping review

**Ms. Eve House**<sup>1,2,3,4,5</sup>, Professor Louise Baur<sup>1,2,6</sup>, Ms Heilok Cheng<sup>2,4,7</sup>, Professor Elizabeth Denney-Wilson<sup>2,4,7</sup>, Ms Dimity Dutch<sup>2,8</sup>, Ms Danielle Jawad<sup>1,2,3</sup>, Dr Emalie Rosewarne<sup>2,5</sup>, Professor Li Ming Wen<sup>1,2,3,4</sup>

<sup>1</sup>The University of Sydney School of Public Health, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>2</sup>NHMRC Centre of Research Excellence in Translating Early Prevention of Obesity in Childhood (EPOCH-Translate CRE), Sydney, Australia, <sup>3</sup>Health Promotion Unit, Population Health Research & Evaluation Hub, Sydney Local Health District, Sydney, Australia, <sup>4</sup>Sydney Institute for Women, Children and Their Families, Sydney Local Health District, NSW Health, Sydney, Australia, <sup>5</sup>Prevention Research Collaboration, Sydney School of Public Health, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>6</sup>Sydney Medical School, The University of Sydney, Sydney, Australia, <sup>7</sup>Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>8</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Adelaide, Australia

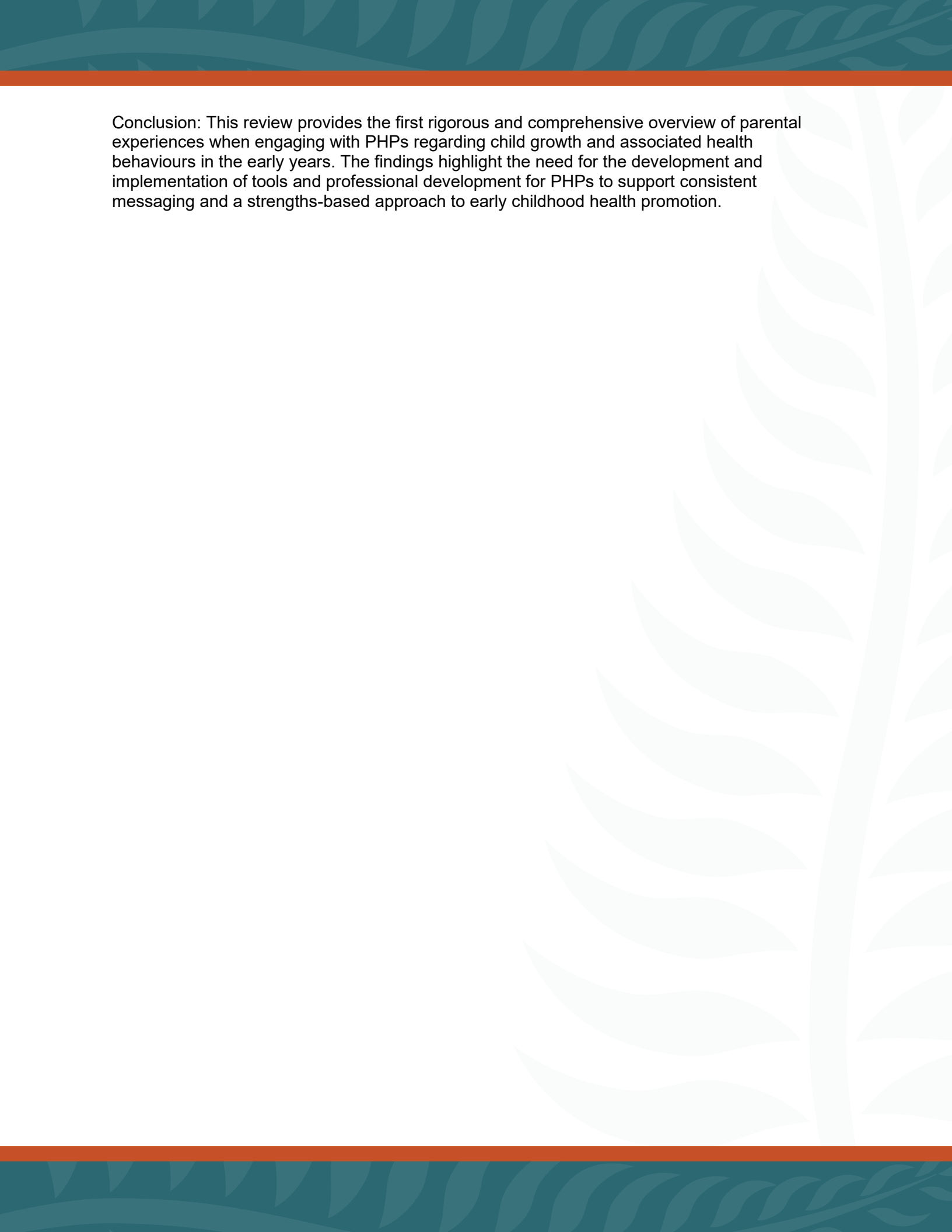
**O.2.24: Family-Based Strategies to Improve Child Health, Hunua 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Primary health professionals (PHPs) are well-placed to help parents establish positive child health behaviours in the first five years of life. This scoping review aimed to assess parents'/carers' experiences of seeking and/or receiving advice from PHPs regarding their young child's (0-5 years) growth and associated health behaviours (nutrition, sleep, physical activity, sedentary behaviour). This review explored: 1) the nature of advice sought/received; 2) barriers and facilitators to seeking and following advice; and 3) whether PHP advice meets parents' needs.

**Methods:** A systematic search of six databases for studies published between 2003 and 2023. Eligible studies explored parent-reported experiences of seeking/receiving advice from PHPs related to their child's (0-5 years) growth or associated health behaviours in primary care settings, including general practice, community health services, child and family health services, allied health clinics, or via telehealth. A convergent integrated approach to evidence synthesis was used.

**Results/findings:** Eighty-seven papers, reporting on 85 unique studies, were included. Most studies were qualitative (n=50) and conducted in the USA (n=17), UK (n=15) or Australia (n=10). Studies most frequently reported experiences of seeking/receiving advice regarding child feeding and nutrition (n=75 studies), followed by growth (n=29). Few studies reported experiences of discussing sleep (n=7), physical activity (n=5), or sedentary behaviour (n=4). Barriers to engagement with PHPs included: receiving ambiguous or inconsistent advice; receiving advice that conflicted with personal values; difficulty accessing services; and insufficient time within appointments to discuss child health behaviours. Parents valued personalised, timely and evidence-based advice from PHPs, supported by appropriate resources, and delivered in a non-judgemental and empathetic manner. Parents reported predominantly satisfactory experiences with PHP support in 25 studies, predominantly negative experiences in 10 studies and, variable levels of satisfaction in 34 studies.



Conclusion: This review provides the first rigorous and comprehensive overview of parental experiences when engaging with PHPs regarding child growth and associated health behaviours in the early years. The findings highlight the need for the development and implementation of tools and professional development for PHPs to support consistent messaging and a strengths-based approach to early childhood health promotion.

## Understanding the impact of deprivation and neighbourhood food environments on home food environments, parental feeding practices, child eating behaviours, food preferences and BMI: The Family Food Experience Study-London

**Dr. Andrea Smith<sup>1</sup>**, Dr Alice Kinimonth<sup>2</sup>, Dr Kristiane Tommerup<sup>3,5</sup>, Mr David Boniface<sup>3</sup>, Ms Chiara Gerricke<sup>3</sup>, Ms Tiffany Denning<sup>3</sup>, Professor Carolyn Summerbell<sup>4</sup>, Professor Christina Vogel<sup>5</sup>, Professor Clare Llewellyn<sup>3</sup>

<sup>1</sup>MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>School of Food Science and Nutrition, Faculty of Environment, University of Leeds, Leeds, United Kingdom, <sup>3</sup>Research Department of Behavioural Science and Health, University College London, London, United Kingdom, <sup>4</sup>Department of Sport and Exercise Sciences, Durham University, Durham, United Kingdom, <sup>5</sup>Centre for Food Policy, City University of London, London, United Kingdom

**O.2.24: Family-Based Strategies to Improve Child Health, Hunua 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Childhood obesity inequalities in England persist despite targeted interventions focused on promoting healthy diets and food environments. This study, part of the Family Food Experience Study-London, aimed to investigate the impact of deprivation and neighbourhood food environments on home food environments, parental feeding practices, child eating behaviours, food preferences, and BMI.

**Methods:** Families (n=728) with primary school-aged children were recruited from four socioeconomically diverse London boroughs in 2022. Data were collected through computer-assisted interviews (30.8% in-person, 69.2% telephone) on home food environment, parental feeding practices, and children's eating behaviours and food preferences. Deprivation was characterised using a composite measure of family and neighbourhood indicators of socioeconomic position. Neighbourhood food environment exposures were derived from individualised activity spaces. Child BMI was measured objectively. Generalised linear models examined associations between deprivation and neighbourhood food environment with family food-related outcomes, adjusting for school-level clustering, child sex, age and ethnicity.

**Results:** Greater deprivation, but not neighbourhood food environments along the commute between home and school, was significantly associated with more 'obesogenic' family food practices, child eating behaviours and child BMI. Deprivation was linked to higher food responsiveness ( $\beta=-0.12$ ,  $p=0.002$ ), emotional overeating ( $\beta=-0.11$ ,  $p<0.001$ ), and increased desire to drink ( $\beta=-0.26$ ,  $p<0.001$ ). Parents in deprived households used more emotional ( $\beta=-0.10$ ,  $p<0.05$ ), instrumental ( $\beta=-0.11$ ,  $p=0.003$ ) and pressuring feeding practices ( $\beta=-0.14$ ,  $p<0.001$ ). Greater deprivation was also associated with a more obesogenic home food environment ( $\beta=-0.19$ ,  $p<0.001$ ) and lower meal structure ( $\beta=0.17$ ,  $p<0.001$ ). Exposure to less healthy neighbourhood food environments around and between home and school were associated with a more obesogenic home food environment ( $\beta=-0.07$ ,  $p<0.01$ ), but no significant associations were found with feeding practices or child outcomes.

**Conclusions:** Family deprivation, rather than neighbourhood food environments, is more strongly linked to obesogenic feeding practices, child eating behaviours and child BMI. Policies focusing on improving neighbourhood food environments may have limited impact without addressing systemic issues related to deprivation. Welfare policies (e.g. reforms to benefit caps)

may help families engage with existing healthy eating interventions. Future research should explore whether adapting local authority interventions to account for these factors could help reduce childhood obesity inequalities.

## Understanding ultra-processed food use and cooking behaviours during pregnancy and postpartum using the COM-B model, a UK and Irish qualitative study

**Dr. Fiona Lavelle**<sup>1,2</sup>, Ms Catherine V. Caro<sup>1,3</sup>, Dr Claire McKernan<sup>2</sup>, Dr Carla A. Martins<sup>4,5</sup>, Dr Vanessa A. Shrewsbury<sup>6,7</sup>, Dr Julia A. Wolfson<sup>8,9,10</sup>, Dr Rachael M. Taylor<sup>6</sup>, Dr Kerith Duncanson<sup>11</sup>, Professor Christopher Elliott<sup>2</sup>, Professor Clare E. Collins<sup>6,7</sup>

<sup>1</sup>Department of Nutritional Sciences, King's College London, London, United Kingdom, <sup>2</sup>Institute for Global Food Security, School of Biological Sciences, Queen's University Belfast, Belfast, United Kingdom, <sup>3</sup>School of Population Health, Royal College of Surgeons Ireland, Dublin, Ireland, <sup>4</sup>Center for Epidemiological Research in Nutrition and Health, University of Sao Paulo, Sao Paulo, Brazil, <sup>5</sup>Institute of Food and Nutrition, Federal University of Rio de Janeiro, Macaé, Brazil, <sup>6</sup>School of Health Sciences, College of Health, Medicine and Wellbeing, The University of Newcastle, Callaghan, Australia, <sup>7</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>8</sup>Johns Hopkins Bloomberg School of Public Health, Department of International Health, Baltimore, USA, <sup>9</sup>Johns Hopkins Bloomberg School of Public Health, Department of Health Policy and Management, Baltimore, USA, <sup>10</sup>University of Michigan, School of Public Health Department of Health Management and Policy, Ann Arbor, USA, <sup>11</sup>School of Medicine and Public Health, College of Health Medicine and Wellbeing, The University of Newcastle, Callaghan, Australia

**O.2.24: Family-Based Strategies to Improve Child Health, Hunua 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Higher maternal diet quality is associated lower risk of adverse pregnancy and infant outcomes. Consumption of convenience and Ultra-processed foods (UPFs) has been associated with a lower diet quality. However, it is unclear if consumers understand what foods qualify as UPFs. Therefore, the aim was to explore awareness, perception, and usage of UPFs during pregnancy.

**Methods:** This ethics approved (Ref No:MHLS 21\_138) study used a qualitative descriptive design. Online focus group discussions with pregnant women and those who had experienced a pregnancy in the UK or Ireland were conducted between February and April 2022. They followed a semi-structured topic guide informed by previous research. Reflexive thematic analysis was conducted, with themes then deductively aligned to the COM-B behaviour model domains (capability, opportunity, motivation).

**Findings:** Seven focus groups with Irish participants (n=24) and six with UK participants (n=28) were completed. Six themes were generated related to Capability - 1) Awareness and understanding of UPFs; 2) Education and learning; Opportunity - 3) The price debate; 4) Time and balance; Motivation - 5) Healthiness – 'but in the grand scheme'; 6) Pregnancy and next generation. Findings highlighted a lack of knowledge in relation to UPFs and therefore participants consumed more UPFs than they thought. The need for upskilling/re-learning cooking skills was emphasised as essential to be able to purchase alternatives and reproduce healthier versions of UPFs at home. Generally cooking was considered cheaper, although an upfront ingredient costs was acknowledged. Convenience products, including UPFs, were seen as a way to negate participant time pressures. Personal health was not a strong driver to deter use of these products. Although, some participants were shocked that some vegetarian/vegan products are UPFs, when they were using these products to be 'healthier.' There was concern that these products have now become the social norm for children.

Conclusions: Further education around UPFs products alongside upskilling/re-learning cooking skills would empower individuals with the knowledge and skills for informed food choices, potentially countering some familial learned behaviours. Wider environmental considerations such as accessibility and affordability of fresh produce could be considered in policy to increase opportunities for cooking behaviours.

## Maternal dietary intake and quality during pregnancy and the association with infant outcomes and healthcare resource use in the perinatal period.

**Dr. Sasha Fenton<sup>1,2</sup>**, Dr. Xenia Dolja-Gore<sup>1,2</sup>, Dr Rachael Taylor<sup>1,2</sup>, Associate Professor Melinda Hutchesson<sup>1,2</sup>, Ms Kee June Ooi<sup>1,2</sup>, Laureate Professor Clare Collins<sup>1,2</sup>

<sup>1</sup>University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter Medical Research Institute, New Lambton Heights, Australia

**O.2.24: Family-Based Strategies to Improve Child Health, Hunua 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** To evaluate associations between maternal dietary intake and quality during pregnancy and infant outcomes and delivery healthcare resource use (mother/infant hospital stay) in a contemporary sample. Infant delivery costs in relation to maternal diet were also investigated.

**Methods:** This secondary analysis used maternal-infant data from two Australian cohorts (2017–2023). Included participants were women  $\geq 19$  years with a singleton pregnancy and complete dietary data who consented to hospital data linkage. Dietary intake, assessed via the validated Australian Eating Survey, provided data on food group servings, core/non-core foods and diet quality based on the Australian Recommended Food Score. Infant outcomes (gestational age, birthweight, delivery type) and hospital resource use (mother/infant stay duration) were extracted from hospital medical records. Logistic, Poisson, multinomial, and multivariable regression assessed diet-infant outcome associations. Infant delivery costs were estimated using Australian Refined Diagnosis Group categories for birth admission and generalized linear models.

**Results:** Among 1,358 women (mean age  $31.9 \pm 5.1$  y, 62% Australian-born), adjusted models estimated those with core food intake in the 50–75% quartile had higher likelihood of caesarean section (OR:1.39, 95%CI 1.01–1.90), and infants with birthweights in the 90th percentile (OR:1.88, 95%CI 1.06–3.37) (but not the 10th percentile, OR:0.93, 95%CI 0.58–1.48) than women with core food intake in the top quartile. Women in the lowest 50% for core food intake had infants with 3.2 times higher special care admission hours (IRR:3.21, 95%CI 1.36–7.58) and higher special care costs (cost difference \$4883, 95%CI \$1,832–\$7,933) compared to women with core food intake in the top quartile. Meeting no core food group recommendations versus  $\geq$ two, was associated with a 14% longer maternal hospital stay (IRR:1.14, 95%CI 1.04–1.24), higher infant special care hours ( $10.5 \pm 57.9$  hours vs  $8.2 \pm 33.3$  hours), and higher hospital costs for both mother (cost difference \$754, 95%CI \$212–\$1297) and infant (cost difference \$1384, 95%CI \$239–\$2529). Maternal diet quality was not associated with infant outcomes or healthcare resource use.

**Conclusions:** Poorer alignment to dietary recommendations was associated with adverse infant outcomes, increased length of stay in hospital and higher hospital costs for mothers and infants. Increased dietary guidance is needed for pregnant women in Australia to optimise their dietary intake.

## How do nutrition interventions targeting parents with young children address parental food literacy? A systematic review.

**Mrs. Kylie Fraser<sup>1</sup>**, Dr. Alison Spence<sup>1</sup>, Associate Professor Kristy A Bolton<sup>1</sup>, Dr. Kathleen E Lacy<sup>1</sup>, Associate Professor Helen Vidgen<sup>2</sup>, Mrs. Kate Dunn<sup>2</sup>, Dr. Penelope Love<sup>1</sup>

<sup>1</sup>Institute for Physical Activity and Nutrition, Deakin University, Burwood, Australia, <sup>2</sup>School of Exercise and Nutrition Sciences, Queensland University of Technology, Brisbane, Australia

**O.2.24: Family-Based Strategies to Improve Child Health, Hunua 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Nutrition interventions, such as cooking programs, are popular public health strategies to improve family dietary quality. However, limited guidance exists on which specific intervention strategies effectively promote parental food literacy. This systematic review synthesises literature on nutrition interventions aimed at parents of young children, using a food literacy framework to identify gaps and opportunities to guide intervention strategy design.

**Methods:** Databases Medline, Embase and CENTRAL were searched for articles published between 2014 and 2024. Experimental and non-experimental interventions targeting parents of children aged 2-12 years and addressing any of the four food literacy domains (plan and manage, select, prepare, eat) were included. Two reviewers screened and extracted data on study characteristics and outcomes related to nutrition and food knowledge, skills and behaviours, diet quality, anthropometry or other diet and food related behaviours. The McGill Mixed Method Appraisal Tool was used for quality assessment. Intervention content was mapped to the four food literacy domains. Due to study heterogeneity, a narrative synthesis was conducted.

**Results/findings:** Of the 3,650 articles screened, 37 studies (from 46 articles) were included in the review. The majority of studies were conducted in Western countries (97%), used experimental design (62%), and were underpinned by theory (75%). There was heterogeneity among studies regarding intervention design, content, delivery, measurement tools and outcomes assessed. Twenty-four studies (64%) included strategies aligned with all four food literacy domains. The most frequently used strategies included: Plan and manage – ‘meal planning and budgeting’ (n=21); Select – ‘food label reading’ (n=15); Prepare – ‘meal preparation, including hands-on activities and demonstrations’ (n=28); and Eat – ‘parent feeding practices’ (n=20) and ‘portion sizes’ (n=18).

**Conclusions:** This systematic review reveals substantial variation in how food literacy is incorporated within nutrition interventions targeting parents of young children. The inconsistent application of strategies across the four food literacy domains highlights gaps and opportunities for enhancing intervention design. Future research should consider the application of a food literacy framework to guide intervention strategies to more effectively support improvements in family dietary quality.

## Activity breaks for older adolescents living with disability. Findings from the Burn 2 Learn adapted randomised controlled trial.

**Dr. Angus Leahy**<sup>1,2</sup>, Dr Jordan Smith<sup>1,2</sup>, A/Prof Narelle Eather<sup>1,2</sup>, Prof Nora Shields<sup>3</sup>, Dr Michael Noetel<sup>4</sup>, Prof Chris Lonsdale<sup>5</sup>, Prof Charles Hillman<sup>6</sup>, Prof David Lubans<sup>1,2,7</sup>

<sup>1</sup>Centre for Active Living and Learning, College of Human and Social Futures, University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>3</sup>Olga Tennison Autism Research Centre, La Trobe University, Melbourne, Australia, <sup>4</sup>School of Psychology, University of Queensland, Brisbane, Australia, <sup>5</sup>Institute for Positive Psychology and Education, Faculty of Education and Arts, Australian Catholic University, North Sydney, Australia, <sup>6</sup>Department of Physical Therapy, Movement and Rehabilitation Sciences, Northeastern University, Boston, United States of America, <sup>7</sup>Faculty of Sport and Health Sciences, University of Jyväskylä, Jyväskylä, Finland

**O.2.25: Nurturing Healthy Beginnings: Nutrition and Activity in Childhood, Hunua 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** The aim of our study was to examine the acute effects of activity breaks on students' on-task behaviour and feeling state among older adolescents living with disability.

**Methods:** The Burn 2 Learn adapted (B2La) cluster randomised controlled trial was conducted among 255 older adolescents living with disability ( $15.7 \pm 1.0$  years), from 28 secondary schools in NSW, Australia. Schools were randomised to the B2La intervention (14 schools,  $n=130$  participants) or wait list control (14 schools,  $n=125$  participants). Teachers at intervention schools received training, support, and resources to deliver 2-3 activity breaks, per week during class time. Activity breaks were approximately 10-15 mins in duration and involved a combination of aerobic (e.g., shuttle runs), foundational resistance (e.g., body weight squat) exercises, and sports skills (e.g., basketball dribble). Assessments of on-task behaviour were conducted at baseline and post-test (3-months post-baseline). Feeling state (i.e., affect) was measured at the start and end of a lesson at post-test. Intervention effects were examined using linear mixed models. Four pre-specified moderators were explored (sex, weight status, socioeconomic status, disability type) using interaction terms (i.e., time-by-treatment-by-moderator).

**Results/findings:** Most participants had multiple disabilities, with intellectual disability (56.9%) and autism (52.5%) being most prevalent. The B2La intervention did not significantly improve students' on-task behaviour (adjusted difference = 3.6% of lesson time [95% CI, -4.6 to 12.0]) among the whole sample. Greater effects were observed for students living with moderate/severe intellectual disability (15.2% [95% CI, 1.2 to 29.1]), compared to students with no or mild intellectual disability (0.5% [95%CI, -9.5 to 10.4]), and for students from lower socioeconomic backgrounds (11.5% [95% CI, 0.0 to 23.1]), compared to those from higher socioeconomic backgrounds (-4.5 [95% CI, -17.6 to 8.5]). The B2La intervention significantly improved students' feeling state (0.5 units [95% CI, 0.1 to 1.0]).

**Conclusions:** Acute physical activity breaks did not significantly improve students' on-task behaviour in the full sample. However, sub-group analyses revealed significant improvements among youth with moderate/severe intellectual disability, and those from lower socioeconomic backgrounds. Together, these findings suggest that embedding physical activity into the school day can provide immediate benefits for students' learning outcomes.

## Comparing sets of dietary patterns with multivariate cosine similarity

**Dr. Beatrix Jones<sup>1</sup>**, Dr. Karen Mumme<sup>2</sup>, Ms Shiyu Fan<sup>1</sup>, Professor John Thompson<sup>1</sup>

<sup>1</sup>University of Auckland, Auckland, New Zealand, <sup>2</sup>Massey University, Albany, New Zealand

**O.2.25: Nurturing Healthy Beginnings: Nutrition and Activity in Childhood, Hunua 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** We consider a new methodology for quantifying the similarity between two different sets of empirical dietary patterns, assuming the same underlying variables were collected. We geometrically motivate the new methodology, “Multivariate Cosine Similarity” (MCS), and illustrate its use for both exploratory analyses and hypothesis testing.

**Methods:** MCS is an extension of cosine similarity (also called Tucker’s congruence coefficient). MCS ranges between 0 and 1, with 1 indicating perfect agreement between two dietary pattern spaces. We illustrate its use with two examples from the literature where food frequency questionnaires were used to produce dietary patterns using rotated principal component analysis. The first example, the ABC longitudinal study (n=541), compares dietary patterns for children at age 7, to patterns for the same children at age 11; the second example, the REACH study of older adults, compares the dietary patterns of men (n= 131) and women (n=234). An exploratory analysis is performed for the ABC data to choose an appropriate number of dietary patterns. MCS, computed for a range of choices for the number of patterns, allows us to understand which patterns correspond across the age groups. For the REACH data we use MCS as a test statistic for a permutation test for differences between the dietary patterns of men and women.

**Results/findings:** Differences between 7- and 11-year-olds in the ABC study largely involve swaps of the 3rd and 4th dietary pattern (ordered by variance explained). Thus, while 3 patterns adequately describe the 7-year-olds’ diet, omitting the fourth pattern would exaggerate differences between the two ages. The observed MCS comparing the dietary patterns for men and women in the REACH data is 0.62. Despite this modest value, a permutation test shows no significant difference between men and women (p=0.21). The range of MCS values in the permutation distribution indicates substantial sampling variability.

**Conclusions:** MCS is a useful tool to explore high dimensional food consumption data, and to formally test differences between dietary patterns. As with other measures of difference between populations, the sample size and sampling variability needs to be considered alongside the value of MCS.

# Physical activity, sedentary behaviours, and screen time among culturally and linguistically diverse youth in Australia: a scoping review

**Dr. Ana Maria Contardo-Ayala<sup>1</sup>**

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), Deakin University, Geelong, Australia,* <sup>2</sup>*Alliance for Research in Exercise, Nutrition and Activity (ARENA), University of South Australia, Adelaide, Australia,*

<sup>3</sup>*School of Education, Deakin University, Geelong, Australia*

**O.2.25: Nurturing Healthy Beginnings: Nutrition and Activity in Childhood, Hunua 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** This review synthesises qualitative and quantitative studies exploring the prevalence and factors influencing physical activity (PA), sedentary behaviour (SB), and screen time among culturally and linguistically diverse (CALD) youth.

**Methods:** Five databases were searched (March 2024) for relevant studies published since 2000 exploring the prevalence or correlates of PA and/or SB among CALD youth in Australia. Articles were screened using COVidence software. Study data were extracted and synthesised descriptively for quantitative findings and thematically for qualitative findings (framed by the socio-ecological model).

**Results:** The search yielded 2137 articles, 22 of which (8 quantitative and 14 qualitative studies) are included in this review. These studies involved 4,357 participants aged 3-17 from various CALD communities. Quantitative studies revealed high rates of inactivity (>92%) and excessive SB (>73%) among Middle Eastern and Asian children, with similar trends across most other cultural groups. Qualitative studies identified that barriers and facilitators varied between the CALD communities. Individual-level barriers included: language (All), academic pressures (Asian), lack of screen time alternates (Middle Eastern), and limited knowledge of excess screen-time (Middle Eastern). Interpersonal-level barriers encompass cultural gender stereotypes (Muslim women), lack of money (Middle Eastern, Africans), parental perceptions that PA limits academic success (Asian), cultural clothing expectations (Muslim girls), body weight concerns (Africans), safety concerns (Middle Eastern, Africans) and limited parental support (Middle Eastern, Africans, Chinese). Community-level barriers include limited facilities (All), home workload (Middle Eastern, Muslim), and prioritising academic achievement (Middle Eastern). Policy-level barriers include Australian policies prohibiting leaving children unattended outdoors (Sudanese). Facilitators included (individual-level) an enjoyment of sport/PA (Somalian, Chinese, Muslim, Middle Eastern) and knowledge of PA benefits (Middle Eastern). Interpersonal facilitators encompass social networks through sports (Muslim, Middle Eastern), a sense of belonging in sports (Muslim), parental support (Chinese, Muslim, Africans), and peer support (Chinese). Organisational-level facilitators include single-sex classes (Muslim girls), school sport/PA options (Muslim, Middle Eastern), and uniform adaptations (Muslim). Community-level facilitators include providing transport (Chinese).

**Conclusions:** Australian CALD youth exhibit low PA and high SB. Addressing specific cultural, social, and policy barriers while fostering community (schools) and familial support is crucial to promoting healthier lifestyles among each cultural group.

# Psychometric properties of a parent-report questionnaire to assess physical activity and sedentary behaviour correlates and behaviours across early childhood

**Dr. Jill Hnatiuk<sup>1</sup>**, Prof Kylie Hesketh<sup>1,2</sup>

<sup>1</sup>*School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia*, <sup>2</sup>*Institute for Physical Activity and Nutrition, Deakin University, Burwood, Australia*

**O.2.25: Nurturing Healthy Beginnings: Nutrition and Activity in Childhood, Hunua 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** To assess the reliability and convergent validity of purpose-designed parental and home environment correlates of children's physical activity (PA) and sedentary behaviour (SB) across early childhood.

**Methods:** Participant data were drawn from five timepoints (child aged 3mo; 9mo; 18mo; 3.5y; 5y) of the Melbourne InFANT Program cohort (n=304-525) plus test-retest samples of equivalent ages (n=35-66). At all timepoints, parents completed a purpose-designed questionnaire assessing parental and home environment correlates hypothesized to influence children's PA and SB (knowledge, views, self-efficacy, playtime activities, screen use, encouragement, facilitation, home environment), as well as parent-reported indicators of children's PA and SB (e.g., time outdoors, free to move about, watching TV, in pram, etc). The test-retest samples completed a duplicate questionnaire two weeks after the first. At 18mo, 3.5y and 5y old, Melbourne InFANT Program children wore ActiGraph GT1M accelerometers; cutpoints for sedentary (<100CPM), light (100-1679CPM) and moderate- to vigorous-intensity ( $\geq 1680$ CPM) PA were applied to the data. Minimum wear criteria were  $\geq 7.4$ hrs/day for  $\geq 4$  days. Cronbach's alpha and ICCs examined internal consistency and test-retest reliability of the questionnaire scales. Pearson's correlation coefficients examined convergent validity with accelerometer-derived movement behaviours.

**Results:** Across all timepoints, 87% of scales showed adequate internal consistency ( $\alpha > 0.60$ ). Test-retest reliability was substantial (ICC $\geq 0.81$ ), moderate (ICC=0.61-0.80), and fair (ICC=0.41-0.6) for 52.9%, 39.7% and 7.4% of scales, respectively. Time spent outdoors was positively associated with children's MVPA at 18mo (r=0.20), 3.5y (r=0.17) and 5y (r=0.27). Positive associations were also observed between time spent free to move about and children's MVPA at 18mo (r=0.14), and time spent being active with main parent (r=0.25) and other adults (r=0.24) and children's MVPA at 5yo. No other associations were observed between parent-reported indicators of children's PA and SB and their accelerometer-derived movement behaviours.

**Conclusions:** This purpose-designed parent questionnaire showed acceptable internal consistency and test-retest reliability and can be used to assess parental and home environment correlates of PA and SB across early childhood. Time spent outdoors was the most consistent parent-reported indicator of children's MVPA during the toddler and preschool years, demonstrating convergent validity.

## Parent-child interaction quality, sedentary behaviour, and cognitive development in preschool children

**Prof. Valerie Carson**<sup>1</sup>, Mrs. Madison Boyd<sup>1</sup>, Dr. Yao Zheng<sup>1</sup>, Prof. Christina Rinaldi<sup>1</sup>, Ramiah Moldenhauer<sup>1</sup>, Mrs. Morgan Potter<sup>1</sup>, Jasmine Rai<sup>1</sup>, Mr. Joshua Li<sup>1</sup>, Miss. Kyla Dorn<sup>1</sup>, Prof. Sandra Wiebe<sup>1</sup>

<sup>1</sup>University of Alberta, Edmonton, Canada

**O.2.25: Nurturing Healthy Beginnings: Nutrition and Activity in Childhood, Hunua 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Evidence is sparse on how the context (e.g., parent-child interactions) of sedentary behaviour relates to cognitive development. The purpose of this study was to examine differences in the quality of parent-child interactions between three sedentary behaviour tasks (i.e., television viewing, game app, storybook reading). The secondary purpose was to examine if parent-child interaction quality moderated screen time and cognitive development associations.

**Methods:** Baseline data from the screen TECHnology, parent-child interactions, and cognitive development in early childhood (TECH) project was utilized for this cross-sectional study. Participants were recruited from Western Canada (British Columbia, Alberta, Manitoba, and Saskatchewan) and included 356 dyads of preschool children (3, 3.5, or 4 years) and their parents. During a recorded virtual session, parents and children watched a brief television show via a shared link, played a game app that they downloaded on a smartphone, and read a storybook that was mailed to them. The order of tasks was counterbalanced all material were novel to the dyad. The Parent Child Interaction System (PARCHISY) coding scheme was used to score parent-child interaction quality. An average composite score was calculated for each task. During a second recorded virtual meeting, cognitive development (language, response inhibition, working memory, self-control) was assessed via four established short games. Show/movie/video viewing and electronic game playing were parental-reported using a 2-week online daily diary. Demographic covariates were measured via a parental questionnaire. Multi-level and regression models were conducted that adjusted for covariates.

**Results:** The average parent-child interaction quality scores for television viewing, game app, and storybook reading were  $3.5 \pm 0.8$ ,  $3.6 \pm 0.2$ , and  $3.9 \pm 0.4$ , respectively. Significantly higher parent-child interaction quality was observed for the storybook reading task, compared to television viewing and game app tasks. A significant difference in parent-child interaction quality was not observed between the television viewing and game app tasks. Parent-child interaction quality did not moderate the associations between show/movie/video viewing, electronic game playing, and cognitive development.

**Conclusions:** The non-screen based-task, storybook reading, had the highest quality of parent-child interactions. Given the evidence on the beneficial associations between high-quality parent-child interactions and cognitive development in the preschool years, storybook reading should be encouraged.

## Assessing U.S. mothers' awareness and perception of ultra-processed toddler foods

**Ms. Erin Hudson<sup>1</sup>**, Dr. Keryn Pasch<sup>2</sup>, Dr. Jaimie Davis<sup>1</sup>, Dr. Marissa Burgermaster<sup>1,3</sup>

<sup>1</sup>University of Texas at Austin, College of Natural Sciences, Department of Nutritional Sciences, Austin, USA, <sup>2</sup>University of Texas at Austin, College of Education, Department of Kinesiology and Health Education, Austin, United States, <sup>3</sup>Dell Medical School at The University of Texas at Austin, Department of Population Health, Austin, United States

**O.2.25: Nurturing Healthy Beginnings: Nutrition and Activity in Childhood, Hunua 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Nearly half of toddlers' daily calories in the United States come from ultra-processed foods (UPFs), which are linked to cardiometabolic diseases later in life, particularly in low-resource communities. Despite pervasive marketing of UPFs to toddlers, little is known about U.S. mothers' knowledge concerning ultra-processed toddler food or mothers' ability to identify them. This study aims to (1) adapt and validate a survey previously administered to adults in the UK to assess maternal awareness, perception, and ability to identify ultra-processed toddler foods; (2) administer that survey to a diverse sample of mothers of toddlers in the U.S.

**Methods:** For Aim 1, we will adapt a survey previously validated in UK adults to examine mothers' ultra-processed toddler food awareness, perception, and identification accuracy, along with psychosocial factors like time scarcity and nutrition literacy. We will recruit 20 mothers of toddlers (1–3 years old) from a multi-ethnic registry (>50% Latina) in Austin, Texas to participate in cognitive interviews using the think-aloud method. Transcripts will be analyzed to refine survey items for clarity and cultural relevance. Diet recalls will be collected and used to establish concurrent validity. For Aim 2, we will administer the survey to 50 ethnically and economically diverse mothers of toddlers recruited from grocery stores across Austin. We will collect dietary recalls and grocery receipts to evaluate UPF intake and purchases.

**Results/Findings:** Though results are not yet available, descriptive statistics will summarize participant demographics, and their awareness, perception, and ability to identify ultra-processed toddler foods. Regression models will assess predictors of UPF-related outcomes using demographic indicators and psychosocial factors. We will further evaluate self-reported awareness and perception of ultra-processed toddler foods against recent purchase receipts and UPF intake from dietary recalls.

**Conclusions:** This study will validate a novel survey for future use and provide foundational information about U.S. mothers' perceptions and awareness of ultra-processed toddler foods. These findings will support future planned research to examine the influence of nutrition/health claims on ultra-processed toddler food labels using eye-tracking technology. Ultimately, this work aims to support strategies that reduce toddler exposure to UPFs and address dietary health disparities in early childhood.

## Health inequalities associated with maternal adiposity: a secondary analysis of Study of How Adiposity in Pregnancy has an Effect on outcomeS (SHAPES) prospective cohort data

Fatimah Olukade<sup>2</sup>, Dr Giang Nguyen<sup>1</sup>, Raya Vinogradov<sup>3</sup>, Prof Dawn Teare<sup>1</sup>, Susan Lennie<sup>1</sup>, Dr John Allotey<sup>4</sup>, Prof Luke Vale<sup>1</sup>, **Prof. Nicola Heslehurst<sup>1</sup>**

<sup>1</sup>Newcastle University, Newcastle upon Tyne, United Kingdom, <sup>2</sup>Newcastle University Medicine Malaysia, Johor, Malaysia, <sup>3</sup>Newcastle upon Tyne NHS Hospitals Trust, Newcastle upon Tyne, United Kingdom,

<sup>4</sup>University of Birmingham, Birmingham, United Kingdom

**O.2.26: Security and Socio-economic inequalities, Waitakere 1, June 13, 2025, 1:30 PM - 3:15 PM**

### **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** Behaviour change interventions aiming to reduce maternal obesity-related risks have been widely researched globally. To date, interventions have focused on increasing motivation and support, and few consider the intersectionality of obesity, inequalities, and risk in their design. There are multiple inequalities associated with maternal obesity (defined using BMI $\geq$ 30kg/m<sup>2</sup>). However, alternative measures of body fat distribution (adiposity) are better indicators of risk than BMI, and little is known about their relationship with inequalities. This study aimed to identify associations between maternal adiposity measures and inequalities.

**Methods:** Secondary analysis of the SHAPES prospective cohort study in Newcastle, UK. 1450 pregnant participants underwent 1st trimester adiposity measurements. Chi<sup>2</sup> analyses explored patterns in inequality variable categories (age, parity, smoking, alcohol, ethnicity, deprivation) and adiposity risk categories for waist circumference (WC) (lower-risk<80cm, higher-risk $\geq$ 80cm), waist:hip (lower-risk $\leq$ 0.85, higher-risk>85) and waist:height (lower-risk<0.5, higher-risk $\geq$ 0.5).

**Results:** Patterns in the distribution of data showed that women living in areas of higher deprivation had higher risk categories of WC (p=0.002) and waist:height (p<0.001) than women in least deprived areas. Older women had higher risk waist:hip than younger women (p=0.02). Parous women had higher risk WC, waist:hip and waist:height than nulliparous (p<0.001). Black and Asian women had higher-risk WC than white women (p<0.001). Smokers had higher-risk waist:hip than non-smokers (p<0.001). Women who consumed >14 units of alcohol preconception had higher-risk waist:hip and waist:height than women consuming less/no alcohol (p=0.03). In comparison, only higher parity (p=0.002) and deprivation (p<0.001) were observed for higher-risk BMI categories.

**Conclusions:** This exploratory analysis has identified multiple inequalities associated with maternal adiposity beyond what we see for BMI in the same population of women. These may be contributing to worse health outcomes via a double burden mechanism if women with higher-risk adiposity are also experiencing more unfavourable social and personal circumstances; both of which increase pregnancy risks. Behavioural interventions to address maternal obesity-related risk should factor in inequalities, particularly deprivation and parity (suggesting caring responsibilities) given the consistent associations between these inequalities and adiposity regardless of measurement used. Focussing on addressing inequalities should increase the chance of behaviour change being achievable and improve pregnancy outcomes for all women.

## Testing Approaches to Food Insecurity Measurement among College Students

**Dr. Meg Bruening**<sup>1</sup>, Dr. Brenna Ellison<sup>2</sup>, Dr. Matthew Rabbitt<sup>3</sup>, Ms. Tran Huynh<sup>1</sup>, Mr. Evan Nguyen<sup>1</sup>, Ms. Folake Alliyu<sup>1</sup>, Ms. Caroline Stampein<sup>1</sup>

<sup>1</sup>Penn State University, University Park, USA, <sup>2</sup>Purdue University, West Lafayette, USA, <sup>3</sup>Economic Research Service, U.S. Department of Agriculture, Kansas City, USA

**O.2.26: Security and Socio-economic inequalities, Waitakere 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Food insecurity (FI) is a persistent issue among college students across the globe, with consistently higher rates of FI as compared to the general population. Previous research has found that self-administered surveys of FI among the general population also resulted in higher prevalence rates of FI. The current study compared assessment methodology among college students. Having better measurement approaches will allow interventions to better identify and intervene with students challenged by FI.

**Methods:** Diverse undergraduate students (N=231; 72% female; 37% non-white; 25% low-income) in a large US institution participated in a cross-over trial to compare responses from an online self-administered surveys to responses from zoom interviews administered by trained research assistants. Participants were randomized to complete an online survey or zoom interview first followed by the alternative no more than 3 days later of the 10-item Adult Household Food Security Survey Module, the gold standard for measuring FI among college students. Sensitivity and specificity across both measurement approaches were assessed. We examined differences in categorical (high, marginal, low, and very low food security) and dichotomous assessments of FI (FI vs. not).

**Results:** The self-administered online survey had higher reports of high and very low food security relative to the zoom approach (69.1% and 6.6% vs. 64.8% and 3.4%, respectively). Conversely, the zoom approach had higher rates of marginal and low food security relative to the self-administered survey (24.0% and 7.7% vs. 17.6% and 6.9%, respectively). When examining the 4-level categorical variable, the sensitivity for the zoom interview relative to the online survey was significantly improved (75.7% vs 57.1%,  $p < 0.05$ ); there were no difference in the specificity (94.0% vs 87.0%,  $p > 0.05$ ). Finally, when examining the sensitivity of the zoom relative to the self-administered assessment in the dichotomous variable of FI, sensitivity was significantly improved (84.6% vs 71.0%;  $p < 0.05$ ), with no differences in specificity (95.6% vs 98.0%;  $p > 0.05$ ).

**Conclusions:** There is a trade-off in the sensitivity and specificity in the measurement approaches. When trying to identify FI among college students, researchers may want to consider using a zoom interview approach, which has statistically significantly improved ability to identify students facing FI.

## The association of adverse social determinants of health with longitudinal fruit and vegetable intake and physical activity among low-income Hispanic adults in chronic care management

**Dr. Natalia Heredia<sup>1</sup>**, Zihan Yang<sup>1</sup>, Dr. MinJae Lee<sup>2</sup>, Sein Lee<sup>1</sup>, Lisa Mitchell-Bennett<sup>3</sup>, Juliana Lopez<sup>3</sup>, Maria Zolezzi<sup>3</sup>, LuBeth Perez<sup>3</sup>, Belinda Reininger<sup>3</sup>

<sup>1</sup>UTHealth Houston School Of Public Health, Houston, United States, <sup>2</sup>UT Southwestern Medical Center, Dallas, USA, <sup>3</sup>UTHealth Houston Brownsville location, Brownsville, USA

**O.2.26: Security and Socio-economic inequalities, Waitakere 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Introduction:** While chronic care management programs can help adults burdened with high rates of chronic disease and low levels of protective behaviors, such as fruit and vegetable (FV) intake and physical activity (PA), there is less understanding about how social determinants of health (SDOH) impact program success. We assessed how adverse SDOH factors were associated with behavioral outcomes in a chronic care management program.

**Methods:** Salud y Vida is a multi-level chronic care management intervention for individuals with uncontrolled type 2 diabetes implemented in a Hispanic, Texas-Mexico border community. Using factor analysis, we derived 4 SDOH and 1 behavioral health factor(s) from 39 variables in our clinical and social needs database. We conducted multivariable negative binomial and logistic regressions to assess associations of factor scores (high vs. low) with longitudinal FV intake and PA (# of servings/day, MET-minutes/week) and meeting FV & PA guidelines (yes/no), respectively, adjusting for confounders.

**Results:** Sample (N=5,261) was predominantly female (71%), Spanish-speaking (72%), with median age=53 years. Participants with high factor scores (i.e., higher needs) of Major Stress from Lack of Medical Provider & Resources, Insurance & Healthcare Barriers, or Mental Health Needs had lower odds of meeting FV guidelines at follow-ups than those with low needs. We found lower odds of meeting PA guidelines at 6-11 months for those with high scores of Identified Mental Health Needs (adjusted odds ratio (aOR)=0.74;  $p<0.001$ ), Insurance and Healthcare Barriers (aOR=0.76,  $p=0.0028$ ), and Urgent Financial or Social Hardship (aOR=0.79,  $p=0.006$ ) compared to those with low scores (fewer needs). Participants with more Transportation Barriers had less MVPA minutes over follow-up-months compared to those with fewer needs. Participants with low needs in Insurance & Healthcare Barriers, Urgent Financial/Social Hardship, or Transportation Barriers significantly increased FV intake at 6 months (adjusted rate ratio=1.1), while those with high needs did not.

**Conclusions:** High levels of adverse SDOH are associated with less improvement in FV intake and PA among low-income Hispanic adults in chronic care management. Future interventions should develop and test strategies to deliver more high-touch or in-depth case management to participants in chronic care management programs with the greatest needs.

## Characterizing Nutrition Security and Perceived Diet Quality Among Food-Insecure Guests at Pay-What-You-Can Community Cafes in the United States

**Dr. Alexandra MacMillan Uribe**, Dr. Lori Borchers, Dr. Xingguo Wang, Victoria Trevino, Heather Eicher-Miller, Dr. Rodolfo Nayga, Dr. Rebecca Seguin-Fowler, Dr. Gabrielli De Mello  
<sup>1</sup>Texas A&M AgriLife Research, Dallas, United States

**O.2.26: Security and Socio-economic inequalities, Waitakere 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Community cafes are novel, pay-what-you-can restaurants that provide high-quality meals regardless of ability to pay. Community cafes have strong potential to improve nutrition security and diet quality among food-insecure guests, but scientific evidence is scant. This study characterizes nutrition security and perceived changes to diet quality among food-insecure guests from community cafes in the United States (US).

**Methods:** Adults who had dined at a US-based community café (n=9 cafes) in the past month were invited to complete an online or paper-and-pencil cross-sectional survey. Food security was assessed using the US Department of Agriculture Adult Food Security Survey Module, categorizing respondents into marginal (MFS), low (LFS), and very low (VLFS) food security. Nutrition security was measured using the Center for Nutrition and Health Impact Nutrition Security Scale, ranging from 1-4, with lower score indicating lower nutrition security. A 7-point Likert scale, ranging from “a lot less healthy (1)” to “a lot healthier (7)”, was used to assess perceived changes in diet quality due to community café meals. Descriptive statistics and Kruskal-Wallis tests were used to analyze demographics and the association between diet-related variables and food security status, respectively.

**Results:** Of 170 respondents, 44% (n=74) experienced food insecurity; of those, 24% had MFS, 23% had LFS, and 53% had VLFS. Food-insecure respondents primarily identified as White (53%), Black (31%), and male (53%). Among food-insecure respondents, 59% were nutrition insecure (MFS:6%; LFS:41%; VLFS:85%). Lower food security was associated with lower nutrition security scores (MFS:2.8+0.6; LFS:2.4+1.0; VLFS:1.6+0.8;  $p<0.001$ ). Most food-insecure respondents (61%) indicated their diet was healthier or a lot healthier due to community café (MFS:39%; LFS:95%; VLFS:69%); lower food security was associated with stronger agreement that community café meals improved diet quality (MFS:5.2+0.9; LFS:5.6+1.2; VLFS:6.2+1.0;  $p<0.001$ ).

**Conclusions:** Nutrition insecurity is an issue among community café guests with food insecurity. Community cafe guests, especially guests with lower food security status, perceive community cafes as an important resource for improving diet quality. Further research is needed to evaluate the long-term impact of community cafes on diet quality and build evidence for their role in improving nutrition security.

## Impact of Socioeconomic Disparities on Food Security, Diet Quality and Growth in Malaysian Children

Prof. Bee Koon Poh<sup>1</sup>, Giin Shang Yeo<sup>1</sup>, Dr Pei Teng Lum<sup>1</sup>, Dr See Meng Lim<sup>1</sup>, Jyh Eiin Wong<sup>1</sup>, Assoc Prof Dr Nik Shanita Safii<sup>1</sup>, Dr Ilse Khouw<sup>2</sup>, **Dr. Sameeha Mohd Jamil**, Malaysia Study Group SEANUTS II<sup>1</sup>

<sup>1</sup>Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, <sup>2</sup>FrieslandCampina, Amersfoort, The Netherlands

**O.2.26: Security and Socio-economic inequalities, Waitakere 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Socioeconomic disparities affect access to diverse, nutritious foods, contributing to malnutrition and growth issues among children. This study examines how socioeconomic factors impact food security, diet quality and growth among Malaysian children.

**Methods:** Data from South East Asian Nutrition Surveys (SEANUTS II) Malaysia on 2,973 children aged 0.5-12.9 years were analysed. Socioeconomic characteristics, including age, sex, area of residence, ethnicity, parental education, maternal employment status, household income, food expenditure, and number of siblings, were ascertained using questionnaire. Food insecurity was evaluated using 10-item Radimer/Cornell Instrument. Dietary intake was assessed using single-day 24-hour recall, with diet quality determined by Mean Adequacy Ratio (MAR), derived from average Nutrient Adequacy Ratio (NAR) for 15 nutrients, with NAR based on Estimated Average Requirement. Growth indicators included body mass index-for-age z-scores (BAZ), height-for-age z-scores (HAZ), and weight-for-age z-scores (WAZ). Complex samples ANCOVA test was employed to determine associations between socioeconomic factors with food security, diet quality, and growth indicators.

**Results/findings:** More than half of the children (59.8%) were from low-income households. Although 47.8% had low food expenditure and 41.7% experienced food insecurity, average MAR score (0.84) is considered high. Prevalence of thinness, stunting, and underweight were 6.7%, 8.9%, and 10.4%, respectively. Food insecurity was more prevalent among rural children, within households characterised by lower parental education, unemployed mothers, lower income, lower food expenditure, and more siblings ( $p < 0.01$ ). Conversely, younger, urban children, boys, Chinese or other ethnicities, from households with higher maternal education and income, and fewer siblings, tended to have better diet quality ( $p < 0.05$ ). Lower HAZ and WAZ were more prevalent among children of younger age, Malays, non-working mothers, lower income, lower food expenditure, and more siblings ( $p < 0.05$ ). Rural children also presented lower HAZ ( $p < 0.01$ ). Younger age, girls, lower household income, and lower food expenditure were also associated with lower BAZ ( $p < 0.05$ ).

**Conclusions:** Food security, diet quality and growth among children in Malaysia are influenced by nutritional equity and socioeconomic determinants of health. Thus, it is important that such disparities be addressed via targeted policies and interventions to ensure equitable nutritional health and growth, particularly among disadvantaged Malaysian children.

## Use of food parcels among families experiencing homelessness: socio-ecological correlates and associations with children's dietary patterns

**Dr Alexandra Descarpentrie<sup>1</sup>**, Dr Stéphanie Vandentorren<sup>2,3,4</sup>, Dr Nicole Darmon<sup>5</sup>, Dr Caroline Méjean<sup>5</sup>, Dr Sandrine Lioret<sup>1</sup>

<sup>1</sup>Université Paris Cité and Université Sorbonne Paris Nord, Inserm, INRAE, CRESS, Paris, France,

<sup>2</sup>Université de Bordeaux, Inserm, UMR1219, PHARes team, Bordeaux, France, <sup>3</sup>Santé Publique France, French National Public Health Agency, Saint Maurice, France, <sup>4</sup>Institut Convergences Migration/CNRS, Aubervilliers, France, <sup>5</sup>MOISA, Université de Montpellier, CIRAD, CIHEAM-IAMM, INRAE, IRD, Institut Agro, Montpellier, France

**O.2.26: Security and Socio-economic inequalities, Waitakere 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** The global rise in food insecurity has led to greater use on emergency food aid. However, little is understood about the factors influencing this use among populations living in highly precarious conditions, and how such aid affects their dietary habits. This study sought to identify socio-ecological factors associated with food parcel use among families experiencing homelessness in France and to compare the dietary patterns of children between food parcel users and non-users.

**Methods:** The ENFAMS survey conducted in 2013 by the Observatoire du Samusocial de Paris, involved a random sample of 801 families sheltered in emergency centers for asylum-seekers, emergency housing centers, social rehabilitation centers, and social hotels in the Greater Paris area. Data on food parcel usage, family socio-ecological characteristics, and children's dietary intake (assessed using a 15-item food frequency questionnaire for children aged 6-12 years, n=235) were collected through face-to-face interviews conducted in 17 languages with parents, mostly migrants' mothers. Five dietary patterns were previously identified using principal component analysis: "Diversified," "Vegetables-and-Dairy-Products" (healthy), "Ready-to-Consume," "Starchy," and "Fast-Food" (unhealthy). Multivariable modified hierarchical Poisson and linear regression models were used to examine the relations of interest.

**Results:** Approximately 60% of parents reported using food parcels in the month prior to the interview. Factors most strongly associated with food parcel use included limited proficiency in French, recent arrival in France (less than 17 months), low household income, unemployment, non-regularized administrative status, and low levels of social support. A negative association was found between food parcel use and the "Vegetables-and-Dairy-Products" dietary pattern in children ( $\beta = -0.40$ , 95% CI [-0.80; -0.01]).

**Conclusion:** The findings highlight that use of emergency food aid among this vulnerable population was predominantly driven by deep-rooted socio-economic and socio-cultural challenges but was not associated with healthier dietary habits. While further research is needed on parcel content, it appears that there is a pressing need to improve the nutritional quality of food aid and to reform support programs, ensuring they provide sustainable and dignified options for the growing number of individuals experiencing food insecurity.

## Meal timing and risk of metabolic syndrome in the French NutriNet-Santé cohort

Ms. Elena Obeid<sup>1,2</sup>, Ms. Xuân Le Folcalvez<sup>1</sup>, Prof. Khaled Ezzedine<sup>2,3</sup>, Dr. Anna Palomar-Cros<sup>4</sup>, Prof. Sandrine Péneau<sup>1</sup>, Mrs. Alice Bellicha<sup>1</sup>, Dr. Mélanie Deschasaux-Tanguy<sup>1</sup>, Dr. Mathilde Touvier<sup>1</sup>, Dr. Valentina A. Andreeva<sup>1</sup>, **Prof. Bernard Srour<sup>1</sup>**

<sup>1</sup>Université Sorbonne Paris Nord and Université Paris Cité, INSERM, INRAE, CNAM, Center for Research in Epidemiology and Statistics (CRESS), Nutritional Epidemiology Research Team (EREN), Bobigny, France, <sup>2</sup>EpiDermE EA 7379, Université Paris Est Créteil, Créteil, France, <sup>3</sup>Hôpital Henri-Mondor APHP, Créteil, France, <sup>4</sup>ISGlobal, Barcelona, Spain

**O.2.27: Participatory research and cancer, Waitakere 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Cancer is driven by multiple mechanisms, including metabolic dysregulation. Metabolic syndrome (MetS), in particular, plays a role in the development and progression of certain cancers. Mistimed eating patterns can disrupt circadian rhythms and potentially affect metabolic health. However, the long-term relationship between meal timing and MetS remains unclear. This study aimed to evaluate the prospective associations between meal timing and the risk of developing MetS, which may, in turn, influence cancer risk.

**Methods:** We used measured biological and clinical data from 16 3535 adults (72% women, 51 years  $\pm$  13.72) in the NutriNet-Santé biobank (2011-2014), and examined the associations between meal timing, assessed with repeated 24-hour dietary records during the first two years of follow-up (starting 2009), and the risk of MetS, using modified Poisson regression models, adjusted for main confounders. We conducted additional analyses stratified by sex to explore potential differences across these subgroups.

**Results:** At the end of follow-up (mean 2.1 years (SD=1.2)), later timing of the first meal of the day was associated with a moderately higher risk of MetS (1,788 cases; RR per 1-hour delay = 1.05; 95% CI: 1.00-1.10). However, after adjusting for overall diet quality, this association was attenuated (RR: 1.04; 95% CI: 0.99-1.09). Overall, we found no evidence of an association between the occurrence of MetS and the time of the last meal (RR: 0.99; 95% CI: 0.95-1.05), the number of eating occasions (RR: 1.00; 95% CI: 0.98 - 1.03), or night-time fasting duration (RR: 1.03; 95% CI: 0.99 - 1.07). In women, time of first meal was significantly associated with the risk of MetS after adjusting for overall diet quality (RR = 1.06, 95% CI 1.00 – 1.13), so was nighttime fasting duration (RR = 1.07, 95% CI 1.02 – 1.13). In men, no significant associations were observed.

**Conclusions:** In this large prospective study, time of first meal was associated with the risk of MetS, specifically in women, independently of diet quality. Further investigations with a longer follow-up are needed to elucidate how meal timing-based interventions can influence metabolic health, and subsequently cancer risk.

## Optimal timing for promoting sustained adherence to lifestyle and body weight recommendations among postmenopausal breast cancer survivors: main results of the longitudinal mixed-methods OPTIMUM study.

**Dr. Meeke Hoedjes**<sup>1</sup>, Mrs Sandra van Cappellen-van Maldegem<sup>1</sup>, dr. Anja de Kruif<sup>2</sup>, Prof. dr. Lonneke van de Poll-Franse<sup>3</sup>, Prof. dr. Jaap Seidell<sup>4</sup>, dr. Floortje Mols<sup>1,4</sup>

<sup>1</sup>Tilburg University, Tilburg, Netherlands, <sup>2</sup>HAN University of Applied Sciences, Nijmegen, Netherlands,

<sup>3</sup>Netherlands Cancer Institute, Amsterdam, Netherlands, <sup>4</sup>VU University Amsterdam, Amsterdam,

Netherlands, <sup>5</sup>Netherlands Comprehensive Cancer Organisation (IKNL), Utrecht, Netherlands

**O.2.27: Participatory research and cancer, Waitakere 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Postmenopausal breast cancer (PMBC) survivors are encouraged to meet lifestyle and body weight recommendations to improve health outcomes. However, the majority does not adhere to these recommendations and there is a lack of insight on how to best promote adherence. The purpose of this presentation is to present the main results of the OPTIMUM study, which aimed to gain insight into the optimal timing for promoting sustained adherence to lifestyle and body weight recommendations in PMBC survivors.

**Methods:** The OPTIMUM study, a longitudinal mixed-methods study among ~700 PMBC survivors, was conducted in line with the first three steps of the Intervention Mapping protocol. Using a longitudinal survey, adherence to recommendations, readiness for change, and need for support were assessed at 4-6 months after diagnosis (retrospective before diagnosis assessment), 1 year after diagnosis (after treatment), and 1,5 year after diagnosis (during follow-up). Using descriptive statistics, insight into optimal timing based on these 3 main outcome variables was obtained. Additionally, logistic regression analyses were conducted to assess sociodemographic and psychological determinants of adherence, readiness for change and need for support. Longitudinal semi-structured interviews (n=48) and focus groups (n=4) were conducted to explore perceived optimal timing. Qualitative transcripts from audio-recorded interviews were analysed using thematic analyses. A systematic review of the literature was conducted to summarize evidence on intervention effects across time after cancer diagnosis.

**Results:** Mixed-method results on optimal timing will be presented. Together with insight into the optimal method for promotion of sustained adherence to lifestyle and body weight recommendations (presented in another abstract), findings on optimal timing offer the basis for a toolkit that can be used for personalized health promotion among PMBC survivors.

**Conclusions:** The obtained scientific evidence on when to promote sustained adherence in PMBC survivors can be incorporated into clinical oncology guidelines. Following the subsequent three steps of the Intervention Mapping protocol, the OPTIMUM toolkit will be further developed and evaluated before it can be used in clinical practice to promote sustained adherence to lifestyle and body weight recommendations, which is expected to lead to improved health outcomes.

## Exploring the Potential of the 24-Hour Movement Paradigm in Cancer: A Qualitative study with People Diagnosed with Breast, Prostate or Colorectal Cancer in the UK

**Miss Susan Smith<sup>1</sup>**, Dr Fiona Kennedy<sup>2</sup>, Dr Laura Brocklebank<sup>3</sup>, Professor Mark Hamer<sup>4</sup>, Dr Phillippa Lally<sup>5</sup>, Professor Abi Fisher<sup>1</sup>

<sup>1</sup>Department of Behavioural Science and Health, University College London, London, United Kingdom,

<sup>2</sup>Leeds Institute of Health Sciences, University of Leeds, Leeds, United Kingdom, <sup>3</sup>Big Data Institute, Li Ka Shing Centre for Health Information and Discovery, University of Oxford, Oxford, United Kingdom,

<sup>4</sup>Institute of Sport and Exercise Health, University College London, London, United Kingdom, <sup>5</sup>Dept of Psychological Sciences, University of Surrey, Surrey, United Kingdom

**O.2.27: Participatory research and cancer, Waitakere 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** There is strong evidence for the beneficial impact of physical activity (PA) after a cancer diagnosis. The majority of those living with cancer do not meet the recommended amounts of moderate-to-vigorous PA (MVPA). Many interventions are designed to increase MVPA in people diagnosed with cancer, but none have targeted all movement behaviours together. The 24-hour movement paradigm integrates PA, standing, sedentary behaviour, and sleep. Despite rapid increase in 24-hour movement research in the general population, the full 24-hour composition has rarely been explored in people diagnosed with cancer. Targeting the whole continuum of movement could offer more achievable and accessible goals after the side effects of cancer and treatment. This qualitative study aims to i) explore perspectives on 24-hour movement in people diagnosed with cancer and ii) to determine their understanding of current MVPA guidelines and receptiveness to 24-hour movement guidelines.

**Methods:** Participants are adults diagnosed with breast, prostate or colorectal cancer who have participated in the APPROACH randomised controlled trial (designed to promote brisk walking in insufficiently active people). 15-20 participants will be purposively recruited from the intervention group and 15-20 from the control group. One-to-one online semi-structured interviews will be conducted enquiring about participants' understanding of current PA guidelines in the UK and understanding of published Canadian 24-hour movement guidelines. Perceived suitability of both recommendation types to cancer populations will be explored as well as understanding of the terminologies used. Using Nvivo, verbatim transcripts will be analysed using reflexive thematic analysis.

**Results:** Participants are currently being recruited and interviews are planned to begin in December 2024. Preliminary themes will be presented on how participants perceive and engage with the concept of 24-hour movement. The potential challenges and benefits of implementing 24-hour movement guidelines in cancer care will be thematically described.

**Conclusions:** The findings of this study can shape targeted interventions focusing on 24-hour movement patterns in people diagnosed with cancer and facilitate a more tailored approach to changing movement behaviours. This research will help inform the potential development of guidelines specific to this population within the broader context of evolving 24-hour movement recommendations for the general population.

# APPROACH: A Study Protocol for a Randomised Controlled Trial of an App-based Intervention to Promote Brisk Walking in People Diagnosed with Breast, Prostate, and Colorectal Cancer

**Miss Susan Smith<sup>1</sup>**, Dr Fiona Kennedy<sup>2</sup>, Dr Rebecca Beeken<sup>2</sup>, Miss Caroline Buck<sup>1</sup>, Miss Hannah Truscott<sup>2</sup>, Dr Amy Creaser<sup>2</sup>, Miss Rosie Stevens<sup>2</sup>, Dr Philippa Lally<sup>3</sup>, Professor Abi Fisher<sup>1</sup>

<sup>1</sup>Department of Behavioural Science and Health, University College London, , United Kingdom, <sup>2</sup>Leeds Institute of Health Sciences, University of Leeds, , United Kingdom, <sup>3</sup>Dept. of Psychological Sciences, University of Surrey, , United Kingdom

**O.2.27: Participatory research and cancer, Waitakere 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Physical activity is associated with many benefits after a cancer diagnosis including improved survival and psychosocial outcomes and appropriate intervention should become part of cancer care. APPROACH is a theory-driven, app-based intervention with behavioural support to promote brisk walking in people diagnosed with cancer. The APPROACH pilot trial (N=90) demonstrated feasibility and acceptability of the intervention and study procedures. This protocol describes the large-scale definitive APPROACH randomised controlled trial (RCT) which aims to test the efficacy and cost-effectiveness of the intervention.

**Method:** APPROACH is a two-armed (intervention vs usual care) RCT. Participants are recruited from multiple hospital sites across Yorkshire, United Kingdom (UK). Participants must have a confirmed diagnosis of breast, prostate, or colorectal cancer in the past 2.5 years, be aged 16 or over, and must not be already achieving 150 minutes of moderate-to-vigorous physical activity per week. The APPROACH intervention involves a publicly available app designed to promote brisk walking (National Health Service 'Active 10') supplemented with an informational leaflet about habit formation, a walking planner card, and two behavioural support calls involving the delivery of key behavioural change techniques. The primary outcome is activPAL-assessed average minutes of brisk walking ( $\geq 100$  steps per minute) after three months on an intention-to-treat basis. Secondary outcomes include other activPAL outcomes, body mass index, and patient-reported outcomes. Self-reported demographic and medical characteristics are collected at baseline. Qualitative interviews and feedback in the questionnaires will inform a process evaluation of the intervention in line with the UK Medical Research Council guidance for complex interventions.

**Results:** This trial is currently still recruiting participants. 270 individuals (from a target 472; 57%) have been enrolled to date. Recruitment, participation (% received intervention), compliance to the outcome measurements, and baseline sample characteristics to date will be presented. Final results of the RCT are anticipated in 2026.

**Conclusions:** Findings will inform whether an app-based intervention with brief behavioural support can effectively increase MVPA in people diagnosed with cancer. If successful, this intervention has the potential for implementation at a large scale through brief contact within NHS standard cancer care.

## Trajectories of physical activity before and after a breast cancer diagnosis and subsequent mortality in women with type 2 diabetes

**Dr. Emerald Heiland<sup>1</sup>**, Dr. Stanley Teleka<sup>2</sup>, Professor Ingrid Glimelius<sup>3</sup>, Professor Karl Michaëlsson<sup>1</sup>, Professor Liisa Byberg<sup>1</sup>, Dr. Hannah Brooke<sup>1</sup>

<sup>1</sup>Medical Epidemiology, Department of Surgical Sciences, Uppsala University, Uppsala, Sweden,

<sup>2</sup>Department of Clinical Sciences, Lund University, Lund, Sweden, <sup>3</sup>Department of Immunology, Genetics and Pathology, Experimental Oncology, Uppsala University, Uppsala, Sweden

**O.2.27: Participatory research and cancer, Waitakere 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Type 2 diabetes (T2D) increases the risk of breast cancer – the leading cancer diagnosis worldwide. At the same time, physical activity (PA) is a beneficial approach to prevent and manage both conditions. Yet, the patterns of PA before and after breast cancer diagnosis in women with T2D and the rate of mortality have not been previously studied. Using high-resolution, repeated longitudinal data, we identified PA trajectories before and after a breast cancer diagnosis in women with T2D, explored trajectory correlates, the change in PA from before to after diagnosis, and the rate of subsequent mortality according to pre-cancer PA trajectories.

**Methods:** Women (n=3012; mean age at cancer diagnosis 64yrs) with T2D, who had a breast cancer diagnosis (from 2004-01-01) were included. Data were from the Swedish National Diabetes Register and National Cancer Register. Annual (2004-2020) self-reported PA (frequency of walking 30min or equivalent) was used, excluding the year immediately before and after the cancer diagnosis. Group-based trajectory modelling, multivariable logistic regression, and Cox proportional hazards models, were employed.

**Results:** Five trajectories emerged pre-cancer: very-low maintainers (active <1d/wk: 6.7%), low maintainers (1-2d/wk: 26.2%), average maintainers (3-5days/wk: 46.0%), high maintainers (7d/wk: 17.5%), increasers (3.7%). Three PA trajectories emerged post-diagnosis: low (19.4%), average (57.8%), high (22.7%). Different correlate profiles were identified according to the PA trajectories. Women who increased PA up to diagnosis were less likely to be single and had a 50% probability of being in the post-cancer high PA trajectory. Over an average of 5.9 (range:1-16) yrs, 688 deaths occurred. Being in the very-low maintainer or low maintainer PA trajectories before cancer diagnosis were associated with higher rates of all-cause mortality (Hazard ratio [HR] 1.68, 95% confidence interval [CI] 1.31-2.16; HR 1.35, 95%CI 1.13-1.62, respectively), compared to the average trajectory. Pre-cancer PA trajectories were not associated with subsequent breast cancer mortality.

**Conclusions:** PA trajectories both before and after a breast cancer diagnosis in women with T2D can help map the nuances in behaviours over time. Consequently, groups less likely to be active and at higher risk of early mortality can be identified for targeted interventions and to inform clinicians.

## Taking a HAT TRICK: Feasibility and acceptability of a culturally tailored health promotion and cricket program for South Asian men in Western Sydney, Australia

**Prof. Cristina Caperchione<sup>1</sup>**, Nechal Dhillon<sup>2</sup>, Suffan Hassan<sup>2</sup>, Patrick Farhart<sup>2</sup>, Madeleine English<sup>1</sup>, Hugh Sixsmith<sup>1</sup>, Dr Paul Sharp<sup>3</sup>, Professor Nico Schlenker<sup>1</sup>, Prashant Ahluwalia<sup>4</sup>  
<sup>1</sup>University of Technology Sydney, Sydney, Australia, <sup>2</sup>Cricket New South Wales, Sydney, Australia,  
<sup>3</sup>University of New South Wales, Sydney, Australia, <sup>4</sup>Schofields Cricket Club, Sydney, Australia

**O.2.27: Participatory research and cancer, Waitakere 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Diversity enriches Australian society but is accompanied by significant challenges relating to physical and mental health, social integration and feelings of belonging in culturally and linguistically diverse (CALD) communities. Sport can play an important role in addressing these challenges by promoting health and fostering inclusion. A scarcity of sport and physical activity programs adequately consider the needs and preferences of CALD groups. To fill this void, a collaborative co-designed approach with local community members was undertaken to tailor HAT TRICK, an existing health promotion and sport program aimed at improving physical, mental and social wellbeing, for South Asian men in Western Sydney, Australia.

**Methods:** Guided by Vargas's model of co-creation, the project included the co-design, delivery and testing of HAT TRICK, a 12-week group-based program centred around involvement in cricket. The program incorporated additional holistic health (e.g., nutrition, mental wellbeing) and social cohesion (e.g., community involvement, civic engagement) activities. Upon completion, participants (n=15) completed a program feedback form, and semi-structured interviews to assess the feasibility and acceptability of program content and delivery. Descriptive and thematic analysis was conducted.

**Research Findings:** Upon completion of HAT TRICK, participants reported increased self-awareness of physical activity behaviours (90%), healthy eating habits (73%) and mental health/fitness (64%). Moreover, 92% indicated that participating in HAT TRICK helped them establish new social connections. Interview data highlighted three main themes, including 1) Embedding diverse experiences and offerings, highlighting opportunities for upskilling in cricket related activities, guest speakers and role models; 2) Deeper and more meaningful 'dive' into cultural relevance, inclusive of refinements to cultural activities and resources, and 3) Aspects to fostering and building social connections, such as the influence of others in bridging relationships and providing new avenues for connection.

**Conclusions:** HAT TRICK demonstrated feasibility and acceptability as a culturally tailored program to support the physical, mental, and social health of South Asian men. Participants valued its cricket-based approach and holistic health focus, which fostered social connections and engagement. Findings offer insights for refining the program and extending its reach and transferability to other priority population groups.

## Physical activity and inflammation among young adults in the African-PREDICT study: comparison of three self-report and objective physical activity measures

**Dr. Rona Macniven<sup>1</sup>**, Dr Katrina Blazek<sup>1</sup>, Dr Lisa Ware<sup>2</sup>, Professor Carina Mels<sup>3</sup>, Dr Esme Jansen Van Vuren<sup>3</sup>, Professor Aletta E Schutte<sup>1</sup>

<sup>1</sup>UNSW Sydney, Kensington, Australia, <sup>2</sup>University of the Witwatersrand, Parktown, South Africa, <sup>3</sup>North-West University, Potchefstroom, South Africa, <sup>4</sup>The George Institute for Global Health, Sydney, Australia

**O.2.28: Emerging Insights in Young Adult Health and Well-being, Waitakere 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice: J. Young Adults**

**Purpose:** Physical activity during young adulthood is essential for preventing chronic diseases through different mechanisms including reduced inflammation. Most evidence linking physical activity or sedentary behaviour with inflammation is drawn from older populations in high income settings. Studies involving younger adults, especially outside of high income settings, are rare. We examined associations between three different physical activity measures and inflammatory markers among 1202 ethnically diverse South African young adults.

**Methods:** Global Physical Activity Questionnaire (GPAQ), Godin Leisure-Time Exercise Questionnaire (GLTEQ) and combined heart rate and accelerometry device (ActiHeart) data were analysed in this cross-sectional study. Participant blood samples were analysed for C-reactive protein (CRP), Interleukin-6 (IL-6) and Tumor necrosis factor (TNF- $\alpha$ ). Associations between each physical activity measure and inflammatory variable were calculated using ordinal logistic regression (CRP clinical risk categories) and linear regression (IL-6, TNF- $\alpha$ ), adjusted for age, sex, ethnicity, socioeconomic status and sedentary behaviour.

**Results:** Participants' mean age was 24.5 years ( $\pm$  3.1 years); 52% were female; 50% had black ethnicity; 52% were tertiary educated. Over three quarters (77%) met World Health Organisation (WHO) GPAQ guidelines, 68% were GLTEQ 'Active' and the mean Activity Energy Expenditure (AEE) was 413 kcal/kg/week. After adjusting for covariates, participants in the GLTEQ 'active' category had lower CRP and IL-6 levels compared to those in the inactive category. Those meeting the WHO GPAQ guidelines had lower CRP levels than those who did not. There was a positive association between meeting guidelines and IL-6 levels, and higher AEE was associated with higher CRP, IL-6 and TNF- $\alpha$  levels.

**Conclusions:** Associations between physical activity and inflammation among young adults varied depending on the measure used, possibly reflecting the different ability of the three measures to distinguish different types of physical activity. Leisure-time physical activity has should be considered as distinct to total physical activity in its association with inflammation. Different measurement tools capture different types of physical activity in this diverse, young adult population. Incorporating different physical activity measures for young adults can identify different associations with measures of inflammation

## Association of Phthalate and Plasticizer Exposure and Sleep Health Among United States Adolescents and Young Adults

**Ms. Deepali Ernest<sup>1</sup>**, Ms. Asha Collier<sup>2</sup>, Mr. Bipin Singh<sup>1</sup>, Ms. Aparajita Chandrasekhar<sup>1</sup>, Dr. Sarah Messiah<sup>3</sup>

<sup>1</sup>University of Texas Health Science Center School of Public Health, Houston, USA, <sup>2</sup>School of Human Ecology, UT Austin, Austin, USA, <sup>3</sup>Peter O'Donnell Jr. UT Southwestern School of Public Health, Dallas, USA

**O.2.28: Emerging Insights in Young Adult Health and Well-being, Waitakere 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Sleep is important for the healthy development of adolescents and young adults (AYAs). Plastics contain endocrine-disrupting chemicals that may be associated with sleep health. This study examines the individual and cumulative influence of plastic exposure on disordered sleep behaviors among AYAs in the United States.

**Methods:** Cross-sectional data from the 2015-2018 National Health and Nutrition Examination Survey was analyzed. Demographics and sleep behaviors for AYAs (ages 16-25 years) were self-reported and anthropometric data was collected during a physical examination. Plastic exposure was assessed using continuous urinary concentrations of 13 individual phthalates. Total phthalate exposure was assessed as the sum of the concentrations of 13 phthalates. Individual and total phthalate concentrations were log-transformed for analysis. Logistic regression models assessed the age- and gender-adjusted associations of log-transformed phthalate concentrations and total phthalate concentrations with (1) sleep duration, (2) having trouble sleeping, (3) snoring, (4) breath cessation, and (5) excessive daytime sleepiness.

**Results:** Participants (N=2,229; mean age 19.8 years, SE=0.06) had a mean total phthalate concentration of 229.5 ng/mL. About 50% were female; 21.9% Hispanic/Latino, 54.4% Non-Hispanic White, 13.3% Non-Hispanic Black, 5.3% Non-Hispanic Asian, and 5% other. Roughly 23.9% had overweight and 27.3% had obesity. Almost 1 in 5 (17.1%) reported <7 hours of sleep daily, 49.9% snored, 12.6% experienced snoring or breath cessation while asleep, 17% experienced trouble sleeping, and 67.7% experienced excessive sleepiness during the day. After adjustment, increased levels of mono-ethyl phthalate was associated with 22% higher odds of getting <7 hours of sleep per day [aOR=1.22; 95% CI: 1.08,1.37; p=0.002] and 15% higher odds of daytime sleepiness [aOR=1.15; 95% CI:1.01,1.32; p=0.04]; increased levels of cyclohexane 1,2-dicarboxylic acid monohydroxy isononyl ester was associated with 18% higher odds of snoring [aOR=1.18; 95% CI: 1.02,1.37; p=0.01], and mono-(3-carboxypropyl) phthalate was associated with 28% higher odds of excessive daytime sleepiness [aOR=1.28; 95% CI: 1.06,1.52; p=0.013]. Total phthalate concentrations were not significantly associated with any sleep characteristics.

**Conclusion:** Three of the 13 phthalates were significantly associated with disordered sleep characteristics among AYAs, emphasizing the need for further longitudinal research to examine causal relationships between plastic exposures and sleep health in this age group.

# The Long-term Effects of Pre-meal and Post-meal Exercise on 24-hour Continuous Glucose in Young Adults with Overweight and Obesity

**Dr. Xiaoyuan Zhang**<sup>1</sup>, Yilin Ho<sup>1</sup>, Bingqing Yang<sup>1</sup>, Dingfeng Wu<sup>1</sup>, Junwei Qian<sup>1</sup>

<sup>1</sup>Peking University, Beijing, China

**O.2.28: Emerging Insights in Young Adult Health and Well-being, Waitakere 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** J. Young Adults

**Objective:** While the optimal timing for exercise to control glucose levels remains unclear, especially regarding the long-term effects of exercise timing, this study aims to investigate the long-term effect of exercise timing in relation to meal times—specifically, pre-meal and post-meal exercise—on glucose homeostasis in young adults with overweight and obesity using continuous glucose monitoring (CGM).

**Methods:** A randomized controlled study was conducted on 34 overweight and obese young adults aged 18 to 35 who underwent a 10-week intervention with different exercise timings. The pre-meal exercise group performed at least 30 minutes of moderate-intensity (65% HRmax) aerobic exercise within 60 minutes before a meal, while the post-meal exercise group performed the same within 0-90 minutes after a meal, five times a week. The exercise intervention was conducted at a smart health station with at least two supervised exercise sessions per week and three self-exercise sessions, monitored by a heart rate belt. The primary outcome was 24-hour continuous glucose levels measured via CGM (SIBIONICS), with secondary outcomes being physical and mental health indicators. Participants maintained their usual dietary habits during the intervention and wore an actiGraph 3X accelerometer to monitor physical activity levels before and after the intervention. Paired t-tests were used for within-group comparisons, and covariance analysis was used for between-group comparisons.

**Results:** There were no significant differences in 24-hour mean glucose ( $98.23 \pm 3.16$  vs.  $97.77 \pm 4.22$  mg/dL), mean amplitude of glucose fluctuation (MAGE,  $31.87 \pm 4.37$  vs.  $33.12 \pm 6.82$ ), coefficient of variation of glucose (CV%,  $15.68 \pm 1.50\%$  vs.  $16.92 \pm 3.50\%$ ) and continuous overall glycemic effect (CONGA,  $15.37 \pm 2.34$  vs.  $16.11 \pm 3.21$  mg/dL) between or within the pre-meal and post-meal exercise groups (all  $p > 0.05$ ). However, the hypoglycemia index significantly decreased in the pre-meal exercise group ( $p = 0.039$ ). Regarding mental health indicators, only the pre-meal exercise group showed a significant improvement in mindfulness awareness. After the intervention, both groups increased their daily moderate-intensity physical activity time and reduced their sedentary time.

**Conclusion:** A 10-week pre- or post-meal exercise intervention did not significantly affect 24-hour continuous glucose levels. Compared to post-meal exercise, pre-meal exercise may reduce the risk of hypoglycemia in young adults with overweight and obesity.

## The impact of acute bike desk usage before encoding and during early consolidation on memory task performance in university students: A cross-over trial

**Dr. Declan Gaynor<sup>1</sup>**, Mr Ahmed El-Hagrasy<sup>1</sup>, Ms Rachel Marshall<sup>1</sup>, Ms Thuraiya Al-Rawahi<sup>1</sup>, Dr Nitya Kumar<sup>1</sup>, Dr Sally Doherty<sup>1</sup>

<sup>1</sup>Royal College of Surgeons in Ireland Medical University of Bahrain, Adliya, Bahrain

**O.2.28: Emerging Insights in Young Adult Health and Well-being, Waitakere 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Bike desks aim to mitigate sedentary behaviour while enhancing cognitive performance. Research indicates that acute aerobic exercise improves executive functions, memory, and attention, which is particularly beneficial in educational settings. We hypothesised that bike desk use before memory encoding and during consolidation would enhance memory task performance compared to a sedentary control condition.

**Methods:** 26 young adult university students (14 female) with a mean age of 21.5 years completed the cross-over experimental study. The order of experimental conditions was randomised and counterbalanced with a washout period of one week between experiments. A computerised Verbal Paired Associates Learning Task (VPAT) was used to assess memory task performance (immediate recall, delayed recall, total recall) and response latency after two periods of 20 minutes of sitting (control) or two periods of 20 minutes of moderate-intensity bike desk use (intervention).

**Results:** The results of our study showed no significant differences in VPAT scores between seated and bike desk conditions, except for a marginally non-significant difference in immediate recall ( $W = 227.5$ ,  $z = 1.752$ ,  $p = 0.08$ ). Response latency was lower during the bike desk condition but did not reach statistical significance. A multiple linear regression model ( $R^2: 0.773$ , Adjusted  $R^2: 0.651$ ,  $p < 0.001$ ) revealed that higher BMI, more frequent bicycle or stationary bike usage, and higher physical activity category were associated with improved VPAT performance with the bike desk, while higher vigorous MET minutes per week negatively impacted performance.

**Conclusions:** Our results indicate that acute moderate-intensity bike desk usage before encoding and during early consolidation does not impact memory task performance. However, our analysis of modulators identified possible associations between participant characteristics (BMI and self-reported physical activity) that have not been extensively reported in the literature. Future research is needed to learn more about participant characteristics that may act as modulators of the impact of bike desk usage on cognitive function, in addition to the potential impact of long-term bike desk usage on students' health and wellness, cognitive function and academic performance in educational settings.

## Clustering of health behaviours of secondary school students and their association with academic performance, absenteeism and mental health outcomes: a cross-sectional analysis

**Miss Katrina McDiarmid**<sup>1,2,3</sup>, Dr Rebecca Hodder<sup>1,2,3</sup>, Dr Kate Bartlem<sup>1,2,3</sup>, Dr Kate O'Brien<sup>1,2,3</sup>, Dr Tara Clinton-McHarg<sup>1,4</sup>, Professor Luke Wolfenden<sup>1,2,3</sup>

<sup>1</sup>University Of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Population Health, Wallsend, Australia, <sup>3</sup>National Centre of Implementation Science, Wallsend, Australia, <sup>4</sup>University of Melbourne, Parkville, Australia

**O.2.28: Emerging Insights in Young Adult Health and Well-being, Waitakere 3, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Health risk behaviours such as low fruit and vegetable intake, inadequate physical activity, tobacco smoking, and drug and alcohol consumption all contribute to chronic disease development. In adolescents, health risk behaviours can cluster together. Health risk behaviours are also associated with mental health and educative outcomes. However, there is limited evidence that identifies which clusters of health risk behaviours are associated with mental health and educative outcomes. The aim of this study is to identify health risk behaviour clusters in Australian adolescents and examine how these clusters are associated with demographic characteristics, mental health, academic performance, and absenteeism.

**Methods:** A cross-sectional study was conducted with secondary school students (grades 7-10). Students completed an online survey regarding their health behaviours (fruit and vegetable intake; physical activity; tobacco, alcohol and illicit drug use), mental health (Strengths and Difficulties Questionnaire), academic performance, and absenteeism. A latent class analysis was conducted to identify clusters of health behaviours. Regression analysis was used to examine associations between latent classes and academic, absenteeism and mental health outcomes.

**Results:** There were 5270 respondents aged between 14-16 years included in the analysis (52% response rate) of which 50% were female. Three distinct classes were identified: class 1 – lowest risk (n=63%, highest fruit, vegetable and activity levels and lowest substance use); class 2 – inadequate fruit and vegetable intake (n=26%, lowest fruit, vegetable and physical activity levels, but low substance use); class 3 – high substance use (n=12%, with middle levels of fruit, vegetable and physical activity, but high substance use). Both class 2 and 3 had lower odds of reporting good academic performances (22% and 46% respectively) compared to class 1. Class 3 also had 84% lower odds of reporting good school attendance (i.e. no absenteeism) during the school year and 63% lower odds of reporting good mental health (i.e. being in a lower mental health risk category), compared to class 1.

**Conclusion:** This study provides important evidence regarding the clusters of adolescent health risk behaviours, and their relationships with mental health and educative outcomes to inform future school-based programs targeting student health and wellbeing.

## Hot temperature reduces physical activity among middle-aged and older adults

**Mr. Yuquan Chen<sup>1</sup>**, Mr. Zhihu Xu<sup>1</sup>, Prof. Shanshan Li<sup>1</sup>, Prof. Yuming Guo<sup>1</sup>, Danijela Gasevic<sup>1</sup>

<sup>1</sup>*School of Public Health and Preventive Medicine, Faculty of Medicine, Nursing & Health Sciences, Monash University, Melbourne, Australia*

**O.2.29: Ageing, Physical Activity and Function, Limelight 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Evidence on the association between temperature and physical activity (PA) in Chinese middle-aged and older adults is limited, and this study aims to explore this relationship.

**Methods:** A total of 6,065 adults aged 45 and over (55.6% females, mean age 58.9±9.7 years), participants from the China Health and Retirement Longitudinal Study (CHARLS), were followed up from 2011 to 2020. Data on daily mean temperature (°C) and dew point temperature were obtained from the ERA5 Reanalysis database. PA was self-reported using the International Physical Activity Questionnaire and categorized as inactive, minimally active, and health-enhancing PA active (HEPA active) or presented as a continuous variable in METxmin/wk. The association between exposure to monthly average temperature (from one month prior to the time of questionnaire completion) and PA was examined using multilevel ordered logistic regression and multilevel linear regression, adjusting for demographic, socioeconomic, health-related variables, and relative humidity. Subgroup analyses by demographic and socioeconomic factors were also conducted.

**Results:** There were 1,083 (17.9%) participants classified as inactive, 1,379 (22.7%) minimally active and 3,603 (59.4%) as HEPA active participants. Weekly engagement in PA counted median 4,158.0 METxmin/wk (25th, 75th percentile; 1,732.5, 9,412.4). After adjustment for confounders, 1 °C increase in temperature was associated with 1.6% lower odds (OR: 0.984, 95% CI: 0.972–0.996) of being in an immediate higher category of PA (from inactive to minimally active or from minimally active to HEPA active); and 36.2 METxmin/wk lower engagement in PA (B = -36.2 95% CI: -71.5, -0.9). Subgroup analysis indicated that increase of temperature may more affect PA of adults younger than 70 years old, females, those with a high educational level, married, living in rural areas, doing agricultural work and those with lower income.

**Conclusions:** With population aging and global warming, it is vital to raise awareness about the effects of temperature on PA. Health policies should help mitigate the adverse impact of rising temperature, ensuring that PA levels are maintained, particularly for vulnerable groups.

## Making sense of a pedestrian audit: A multi-scale mix-methods analysis of walkability in Andorra la Vella

**Dr. Tiago Canelas<sup>1</sup>**, Dr. Catharina van der Boor<sup>2</sup>, Anna Sardà<sup>3</sup>, Dr. Adalberto Lopes<sup>4</sup>, Dr. Louise Foley<sup>1</sup>

<sup>1</sup>MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>Faculty of Public Health and Policy, Department for Health Services Research and Policy, London School of Hygiene and Tropical Medicine, London, United Kingdom, <sup>3</sup>Servei de la Gent Gran, Departament de Social, Comú d'Andorra la Vella, Andorra la Vella, Principality of Andorra, <sup>4</sup>Observatory for Urban Health, Federal University of Minas Gerais, Belo Horizonte, Brazil

**O.2.29: Ageing, Physical Activity and Function, Limelight 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice: A. Ageing**

**Introduction:** Walkability, defined as the pedestrian-friendliness of urban areas in terms of attractiveness, comfort, safety, and efficient access to diverse, desirable destinations, is linked to better health outcomes and is a critical element of an aging-friendly city and community (AFCC). While walkability is often assessed at a macro scale using frameworks like the 5Ds (density, diversity, design, destination accessibility, and distance to transit) or at a micro scale with street-level audits, few studies integrate these perspectives with multi-methods research. To evaluate the potential of Andorra la Vella as an aging-friendly city, we combined macro and micro scale approaches with qualitative methods to explore its walkability.

**Methods:** At the macro scale, we developed a walkability index (WAI) incorporating intersection density, land use mix, residential density, and slope. At the micro scale, we employed the Microscale Audit of Pedestrian Streetscapes (MAPS) Global tool, auditing 75% of the city's street network. The MAPS-Global scoring system was adapted based on input from over 100 older residents (aged 60+), gathered during roundtable discussions where they prioritized variables by relevance. To further enrich the analysis, we conducted 13 semi-structured interviews using the Capabilities Approach framework to explore the relationship between walkability, the built environment, and participants' quality of life.

**Results:** Preliminary findings show that the WAI reflects the city's geography, with lower walkability in steep residential areas accessed by a single road. These results aligned with the MAPS-Global findings. Despite Andorra la Vella's well-maintained streetscape, participants in the roundtable discussions identified key issues such as animal waste, sidewalk maintenance, and the social importance of amenities like benches and public squares. Macro and micro scale findings informed the creation of a decision-making web map to assist local authorities in prioritizing improvements to the built environment that enhance walkability.

**Conclusions:** This multi-scale mixed-methods analysis underscores the value of combining standardized tools with locally tailored approaches to walkability assessment. By integrating qualitative input and addressing specific contextual challenges, this study provides actionable insights for policymakers and highlights the importance of incorporating citizen perspectives into research.

## Exploring Older Adults' Perceptions of the Barriers and Facilitators to Resistance Training: A Qualitative Study Using the COM-B Model and Theoretical Domains Framework

**Mr. Brian Mulhare<sup>1</sup>**, Dr Ciara O'Hagan<sup>2</sup>, Prof Michael Harrison<sup>1</sup>, Dr Bróna Kehoe<sup>1</sup>

<sup>1</sup>South East Technological University, Centre for Health Behaviour Research, Waterford city, Ireland,

<sup>2</sup>South East Technological University, Department of Science and Health, Carlow town, Ireland

**O.2.29: Ageing, Physical Activity and Function, Limelight 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** The increase in life expectancy has not been matched by an equivalent period of good health, free from chronic diseases and disabilities. Resistance training (RT) benefits physical, physiological, and cognitive domains, enhancing independence and quality of life. Despite these benefits, participation in RT among older adults remains low, necessitating exploration of their perceptions of barriers and facilitators. This qualitative study aimed to explore older adults' perceptions of barriers, facilitators, and motivators to RT, guided by the COM-B model and Theoretical Domains Framework (TDF). The objective was to gain insights into the behavioural determinants influencing RT participation and maintenance.

**Methods:** Qualitative data were collected through six focus groups involving 27 older adults (68% female), recruited from Local Sports Partnerships, active retirement organisations, and community groups. Participants were randomly assigned to focus groups to ensure varied perspectives. Discussions were guided by the Behaviour Change Wheel framework, with a specific focus on the COM-B model to explore participants' capabilities, opportunities, and motivations for engaging in RT. Audio recordings of the focus groups were transcribed verbatim and subjected to directed qualitative content analysis, mapping findings to the 13 domains of the TDF.

**Results:** Key barriers identified included age-related physical deterioration, sociocultural norms, and misconceptions about RT. Facilitators comprised social support, structured guidance, and goal-setting strategies. Psychological and physical capabilities emerged as critical factors, with limited knowledge about RT reducing its perceived value. Social opportunity, particularly peer support and the influence of trusted professionals, strongly motivated participation. Conversely, participants expressed anxiety about injuries, found RT environments unwelcoming, and highlighted the need for inclusive and supportive spaces. Motivation was driven by resilience, goal achievement, and observable progress but was hindered by disinterest and insufficient promotion of RT's benefits.

**Conclusions:** This study provides a detailed understanding of the behavioural determinants influencing RT participation among older adults. The findings underscore the importance of addressing psychological, physical, and social factors to promote long-term engagement. By mapping barriers and facilitators onto the COM-B model, this research offers a foundation for designing effective, theory-driven interventions that support RT uptake and adherence in this population.

## Towards harmonising wrist and thigh accelerometer output using self-training machine learning models for classification of activity type and estimation of energy expenditure: the ProPASS consortium

Dr. Matthew Ahmadi<sup>1</sup>, **Dr. Nicholas Koemel<sup>1</sup>**, Dr. Raaj Kishore Biswas<sup>1</sup>, Prof. Emmanuel Stamatakis<sup>1</sup>

<sup>1</sup>University of Sydney, Sydney, Australia

**O.2.29: Ageing, Physical Activity and Function, Limelight 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** We examined new physical activity methodological techniques to develop wearables-based machine learning classifiers for activity type classification and energy expenditure estimation

**Methods:** Using a combination of labelled and unlabelled data collected across three settings (laboratory, semi free-living, and free living) we applied self-training semi-supervised learning techniques to retrain a wrist-based Random Forest model to harmonise activity type detection with a thigh-based model. We then applied the same techniques to develop a two-stage Multivariate Adaptive Regressive Spline (MARS) model to estimate energy expenditure. Criterion ground-truth measures for activity type was obtained via video direct observation. Energy expenditure criterion measures were obtained via portable indirect calorimetry. For activity type classification performance was assessed with F1-score. Energy expenditure estimation accuracy was assessed using mean absolute error. To determine harmonisation between the wrist and thigh, we used equivalence testing.

**Results:** Data was collected from 146 adults (age= 57.6 ± 13.2y; 58.9% female; 40 laboratory, 53 semi free living, and 53 free-living). For activity type detection, F1-score of the semi-supervised wrist Random Forest model was 91.8% (SD= 6.8%). Equivalence testing with the upper bounds set at a medium effect size (d= 0.4) showed both the wrist and thigh were equivalent to video direct observation for sitting, standing, walking, and running with a mean bias <5 minutes for each activity type. For stair walking, the wrist and thigh were not statistically different to the ground-truth with a mean bias of <1.5 minutes. For energy expenditure, mean absolute error for the wrist and thigh models were 4.3% and 6.1%, respectively. Equivalence testing showed the models were equivalent to ground-truth with a mean bias of <1.2 Kj/Kg of activity energy expenditure.

**Conclusions:** Our study demonstrates the effectiveness of self-training semi-supervised learning techniques in leveraging unlabelled free-living data alongside laboratory labelled data in harmonising wrist- and thigh-worn wearables for accurate physical activity type classification, and energy expenditure estimation. These findings suggest that harmonisation of physical activity measures between wrist and thigh wearables could be achieved through self-training on free-living data, and has the potential to enhance integration and scalable utilisation in interventions and population cohorts.

## Testing of a Vigorous Intermittent Lifestyle Physical Activity Intervention in adults transitioning to retirement

**Dr. Bingyan Pang**<sup>1</sup>, Associate Professor Joanna Moullin<sup>1</sup>, Dr Craig Thompson<sup>1</sup>, Professor Cecilie Thøgersen-Ntoumani<sup>2</sup>, Professor Emmanual Stamatakis<sup>3</sup>, Associate Professor Joanne McVeigh<sup>1,4</sup>

<sup>1</sup>Curtin University, Bentley, Australia, <sup>2</sup>University of Southern Denmark, Odense, Denmark, <sup>3</sup>University of Sydney, Sydney, Australia, <sup>4</sup>University of Witwatersrand, , South Africa

**O.2.29: Ageing, Physical Activity and Function, Limelight 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** To evaluate the feasibility and preliminary effects of a Vigorous Intermittent Lifestyle Physical Activity (VILPA) intervention to promote physical activity (PA) in adults transitioning to retirement. VILPA refers to lifestyle PA lasting <2min/bout, performed at vigorous intensity.

**Methods:** Adults (n=42) transitioning to retirement (mean age = 66 years) were randomly assigned to a 12-week intervention (Pi, n=21) or control group (Pc, n=21). Feasibility (recruitment sample size, drop-out and completion rates of intervention) and preliminary effects of the intervention were assessed. Semi-structured interviews with intervention participants were conducted to identify barriers and enablers in maintaining PA 6 months post-intervention. Pi received a VILPA checklist booklet, text reminders, ongoing support, and used a fitness tracker to monitor their PA. PA was measured by ActiGraph GT9X (7 continuous days on dominant hand) at three-time points (pre, midway and post) for Pi and two-time points (pre and post) for Pc. Raw GT9X files were processed using random forest machine learning algorithms. Participants' functional health and general health were assessed by a six-minute walking test and SF-36 survey. Pi were followed up at 1-month, 3-months, and 6-months post-intervention.

**Results:** 81% of participants (4 participants dropped out in each group) completed the initial 12-week study. The mean duration of VPA/day of Pi increased during the study (pre-trial = 2.23min, midway = 5.97min, post-trial = 5.83min), while negligible increases were observed in Pc (pre-trial = 1.87min, post-trial = 2.82min). At the end of the 12-week intervention, Pi engaged in more VILPA bouts, performed better in their six-minute walking tests and SF-36 survey findings than Pc. Pi reported continuing participation in PA at follow-ups with the enablers to continuing participation in PA reported as: 1) use of a fitness tracker, 2) increased awareness of PA intensities, 3) capability of self-monitoring of PA levels, 4) established PA habits, 5) health-benefits associated with increased PA. Barriers to PA were related to participants' health problems, environmental factors, and low mood.

**Conclusions:** The VILPA intervention was feasible and effective in establishing and re-introducing PA habits in adults transitioning to retirement. VILPA is likely to have positive impacts on health and well-being.

## Can physical activity be banked across mid-adulthood for better physical function? Findings from the HABITAT cohort

**Dr. Gregore Mielke<sup>1</sup>**, Dr Stephanie Duncombe<sup>1</sup>, Dr Yuta Nemoto<sup>1</sup>, Prof Wendy Brown<sup>2</sup>

<sup>1</sup>*School of Public Health, The University of Queensland, Brisbane, Australia*, <sup>2</sup>*School of Human Movement and Nutrition Sciences, Brisbane, Australia*

**O.2.29: Ageing, Physical Activity and Function, Limelight 1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** The aim of this study is to investigate the associations of the accumulation, and profiles of physical activity over six years with physical function in mid-aged Australian adults.

**Methods:** Data from the HABITAT cohort (N = 722) were analysed. Physical activity was self-reported in 2007 (mean age: 52.0 years, SD: 7.1), 2009, 2011, and 2013. Physical function measures (grip strength, chair stand, arm curl, step in place, sit and reach, back scratch, and timed up-and-go) were assessed in 2014–2015 (mean age: 60.3 years, SD: 7.1). Linear regression analyses were used to investigate the association between a cumulative physical activity score (2007–2013) and profiles of physical activity over the six years (e.g. low at age 52y - low at age 58y, low at age 52y - high at age 58y, etc) with a composite z-score of physical function.

**Results:** A positive dose-response relationship between cumulative physical activity and physical function was observed. Participants in the highest tertile of cumulative physical activity scores had significantly better physical function than those in the lowest tertile [ $\beta$ : 0.27 (95% CI: 0.17, 0.38)]. Overall, accumulated physical activity was associated with higher physical function z-scores, regardless of the age when the activity was accumulated. Participants in the profile with the highest physical activity at both age 52 and age 58 had significantly better physical function scores than those always in the lowest tertile [ $\beta$ : 0.34 (95% CI: 0.20, 0.48)]. Analyses of changes over time showed that participants who increased their physical activity levels had better physical function scores than those who remained in the lowest tertiles. Participants with high levels of physical activity at age 52y and low levels of physical activity at age 58y also had higher physical function scores than those always in the bottom tertile.

**Conclusion:** Accumulating physical activity, regardless of the timing, appears to enhance physical function in mid-aged adults before the transition to older age. Strategies to prevent declines in physical activity during this life stage should be a public health priority for maintaining health and functional capacity in an ageing population.

## Feasibility of fundamental movement skill-based physical activity intervention on preschool-age children's physical activity levels.

**Dr. Sofiya Alhassan**<sup>1</sup>, Miss. Pardis Parvizi<sup>1</sup>, Mr. Timothy Joseph<sup>1</sup>, Mr. Nehemiah Wilson<sup>1</sup>, Miss. Ruby Hornuvo<sup>1</sup>, Mr. Firas Aljizani<sup>1</sup>, Dr. Holly Laws

<sup>1</sup>University of Massachusetts Amherst, Amherst, USA

**O.2.30: Shaping the Early Years in Childcare Settings, Limelight 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Fundamental movement skills (FMS) are the building blocks of preschooler-age (3-5 years of age) children's physical activity (PA). However, it is unclear if preschool teachers who have limited training in FMS can be trained to teach preschoolers their FMS and the impact on preschoolers' PA levels. The purpose of this study was to examine the impact of the FMS-based 6-month intervention on preschoolers' PA levels.

**Methods:** Preschool centers from the Greater Springfield, MA area of the United States were recruited to participate in this 6-month study. Preschool centers were randomly assigned to either the treatment (n=2 centers; n=50 preschoolers) or control (n=2 centers; n=58 preschoolers) intervention. The intervention was implemented for 4 days/week for 6 months. The treatment intervention consisted of lesson plans focused on teaching preschoolers their locomotor and objective control skills. The study protocol used a train-the-trainer model to enable preschool teachers to implement the intervention. Physical activity was assessed using Actigraph accelerometers for 1 week (Monday-Friday) during the preschool day at baseline, 3-month, and 6-month. Pate et al. cut-points were used to classify the 15-second epoch counts to time spent in different PA intensity levels. Outcome variables of interest were analyzed using a series of mixed-effects models.

**Results:** Results provided evidence of a positive treatment impact on PA outcomes. Results also showed some evidence of increases in vigorous PA (minutes/hour) in children in the treatment versus control groups, but these effects only reached trend level significance ( $F [2, 138] = 2.35, p=0.099$ ). Children's steps per minute increased significantly in the treatment relative to the control groups ( $F [2, 125] = 13.94, p<0.001$ ). Steps per day showed a similar pattern, with children in the treatment group showing significantly higher increases in daily step count relative to children in the control condition ( $F [2, 135] = 7.10, p=0.001$ ). Daily step count was over 300 steps higher in children in the treatment condition versus the control condition by the end of the treatment, and this increase was maintained in the follow-up period.

**Conclusion:** Overall, this study's findings provide some evidence that FMS-based PA intervention can improve some aspects of PA.

# The impact of early childhood education and care-based interventions on child physical activity, anthropometrics, fundamental movement skills, cognitive functioning, and social-emotional wellbeing: A systematic review and meta-analysis

**Dr. Alice Grady**<sup>1,2,3,4</sup>, Dr Rebecca Lorch<sup>1</sup>, Mr Luke Giles<sup>2</sup>, Ms Hannah Lamont<sup>2</sup>, Dr Amy Anderson<sup>1</sup>, Ms Nicole Pearson<sup>1,2,4</sup>, Ms Maria Romiti<sup>2</sup>, Dr Melanie Lum<sup>3,5</sup>, Ms Ashleigh Stuart<sup>4</sup>, Ms Lucy Leigh<sup>4</sup>, A/Prof Sze Lin Yoong<sup>3,5</sup>

<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Population Health, Wallsend, Australia, <sup>3</sup>National Centre of Implementation Science, Newcastle, Australia, <sup>4</sup>Hunter Medical Research Institute, New Lambton, Australia, <sup>5</sup>Deakin University, Geelong, Australia

**O.2.30: Shaping the Early Years in Childcare Settings, Limelight 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** This review aimed to assess the effectiveness of ECEC-based interventions to improve child physical activity, and intervention impact on child weight-based anthropometrics, fundamental movement skills (FMS), cognitive functioning, and social-emotional wellbeing. Economic evaluations and adverse effects of the interventions were also assessed.

**Methods:** Finch et al's 2016 systematic review assessing the effectiveness of physical activity interventions in ECEC was updated. Electronic databases were searched from 10 September 2014 to 27 October 2022. Included studies were randomized controlled trials of ECEC-based interventions targeting physical activity among children aged 0–6 years, using objective measures of physical activity. Interventions were classified against international physical activity guideline recommendations for the ECEC sector. The methodological quality of studies was assessed using Cochrane's Risk of Bias tool v2. Standardized mean differences (SMD) were calculated for each outcome with meta-analysis undertaken; otherwise, findings were described narratively.

**Results:** Fifty-three studies were included. Six studies (11.3%) were judged 'low risk', 33 studies (62.3%) as 'some concerns', and 14 studies (26.4%) as 'high risk' of bias. ECEC-based interventions were found to significantly improve child physical activity (SMD 0.193, 95% confidence interval [CI] 0.09 to 0.3;  $p < 0.001$ ) and FMS (SMD 0.544, 95% CI 0.1 to 0.98;  $p = 0.015$ ), compared to control. A significant positive effect on child physical activity was found for interventions that included: providing opportunities for children to be physically active, offering educator training, educators promoting the benefits of physical activity, creating an environment that promotes physical activity, and parental involvement. Small positive, but non-significant, effects were found for weight-based anthropometrics, cognitive functioning, and social-emotional wellbeing. Few studies reported on adverse effects ( $n = 10$ ), and no studies reported formal economic analyses.

**Conclusions:** As ECEC-based interventions can significantly improve child physical activity and FMS, the delivery of these interventions into local, state, and national policies, and accreditation standards for the sector should be considered. Further evidence of their impact on cognitive functioning, social-emotional wellbeing, and the cost-effectiveness of such interventions is required to further inform policy and practice.

## Opportunities to enhance healthy eating and active play in the Australian early childhood education and care system

**Dr. Konsita Kuswara<sup>1,2</sup>**, A/Prof Rachel Laws<sup>1,2</sup>, Ms Elly Ganakas<sup>1</sup>, Professor Colin Bell<sup>2,3</sup>, Dr Penelope Love<sup>1,2</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia,* <sup>2</sup>*The Centre of Research Excellence in Translating Early Prevention of Obesity in Childhood (CRE EPOCH-Translate), University of Sydney, Sydney, Australia,* <sup>3</sup>*Institute for Health Transformation, Global Centre for Preventive Health and Nutrition, School of Medicine, Deakin University, Geelong, Australia*

**O.2.30: Shaping the Early Years in Childcare Settings, Limelight 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Early childhood education and care (ECEC) plays a critical role in promoting healthy eating (HE) and physical activity (PA) behaviours in young children. However, the implementation of evidence-based strategies to promote these behaviours is lacking and inconsistent. Systems thinking provides an approach to understand the root causes by examining how different elements of the system are interconnected. This study applied a systems thinking approach to identify leverage points for enabling more equitable and sustainable HE and PA promotion in Australian ECEC settings.

**Methods:** This qualitative study used a reflexive thematic analysis approach within a constructivist paradigm. Desktop mapping was conducted to identify key stakeholders, policies, and services related to the regulation and support of HE and PA promotion in ECEC across Australian jurisdictions. A purposive sample of key stakeholders was then invited to participate in semi-structured online interviews to explore their perspectives on the system and opportunities for improvement. Interviews were recorded, transcribed, and analysed inductively using NVivo 14.

**Results:** Desktop mapping showed that while HE and PA promotion in ECEC is regulated, the standard is vague, inconsistently assessed, and lacks implementation support. Disconnects between key system components, including regulation, health promotion, ECEC providers, and trainers, impeded effective adoption of evidence-based HE and PA promotion practices. Interviews with 16 participants (50% response rate) representing ECEC providers, regulators, and health promotion organisations identified three key themes: 1) 'mismatch in problem perception', 2) 'the carrot and the stick approach', and 3) 'building ECEC sector capacity'. These themes highlighted consensus on the need to strengthen sector capacity for health promotion, but differing views on the urgency and approach for change.

**Conclusions:** This study revealed significant gaps in the regulation, support, and implementation of HE and PA promotion in ECEC services. Key leverage points for improvement include developing national policies with clear, enforceable standards for HE and PA, alongside a coordinated support system involving quality assurance bodies, health promotion agencies, ECEC training providers, and local implementation partners. Support should focus on building the capacity of the ECEC workforce, including trainees, to integrate and advocate for health promotion practices in their roles.

## Young Children's Physical Activity and Sedentary Time Compositions During Childcare and Early Childhood Developmental Outcomes

**Dr. Sophie M. Phillips<sup>1</sup>**, Dr. Matthew Bourke<sup>1,2</sup>, Dr. Brianne Bruijns<sup>1,3</sup>, Dr. Leigh Vanderloo<sup>1,3</sup>, Mr. Aidan Loh<sup>1</sup>, Ms. Kendall Saravanamuttoo<sup>1</sup>, Dr. Trish Tucker<sup>1,4</sup>

<sup>1</sup>Western University, London,, Canada, <sup>2</sup>The University of Queensland, , Australia, <sup>3</sup>ParticipACTION, , Canada, <sup>4</sup>Children's Health Research Institute, London, Canada

**O.2.30: Shaping the Early Years in Childcare Settings, Limelight 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Physical activity and sedentary time are independently associated with health and developmental outcomes in young children. Many young children spend a significant amount of time in childcare settings, with these environments playing a key role in shaping health behaviours early in life. However, the integrated nature of physical activity and sedentary time on early life outcomes, particularly during childcare hours, is currently unclear. This study aimed to examine the association between young children's physical activity and sedentary time during childcare and various developmental outcomes (psychosocial, cognitive, and fundamental movement skills).

**Methods:** A total of 107 young children aged 2-4 years wore ActiGraph accelerometers during childcare hours to measure their sedentary time, light intensity physical activity (LPA), and moderate-to-vigorous intensity physical activity (MVPA). Early childhood developmental outcomes, including psychosocial health (internalising, externalising, prosocial behaviour), cognitive skills (memory, inhibitory control) and fundamental movement skills (locomotor control, object control, total fundamental movement) were assessed using validated tools. Compositional regression and isotemporal substitution models were used to examine how activity compositions in childcare were related to these developmental outcomes.

**Results:** Children accumulated 43 mins/hr of sedentary time, 9 mins/hr of LPA, and 8 mins/hr of MVPA whilst at childcare. Compositional regression analyses demonstrated that greater engagement in MVPA, relative to LPA and sedentary time, was associated with fewer internalising symptoms and better total fundamental movement skills and object control skills. While more time spent in LPA, relative to MVPA and sedentary time, was associated with more internalising symptoms and worse object control skills. Isotemporal substitution models suggested that increasing sedentary time or MVPA at the expense of LPA during childcare is associated with fewer internalising symptoms.

**Conclusion:** This study highlights the benefits of young children engaging in MVPA during childcare hours, at the expense of lower intensity activity (LPA and sedentary time), for improving fundamental movement skills and psychosocial development (e.g., internalising symptoms, such as emotional problems). These findings can inform childcare specific physical activity policy and guideline development.

## Exploring 24-Hour Movement Behaviors in Early Years (SUNRISE): A pilot study from Nepal

**Dr. Narayan Subedi**<sup>1,2,3</sup>, Dr Susan Paudel<sup>1,2</sup>, Dr Buna Bhandari<sup>3,4</sup>, Dr Dinesh Neupane<sup>1,5</sup>, Prof. Anthony Okely<sup>6</sup>

<sup>1</sup>Nepal Development Society, Kathmandu, Nepal, <sup>2</sup>Deakin University, Burwood, Australia, <sup>3</sup>Harvard T.H. Chan School of Public Health, Boston, United States, <sup>4</sup>Institute of Medicine, Tribhuvan University, Kathmandu, Nepal, <sup>5</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, United States, <sup>6</sup>University of Wollongong, Wollongong, Australia

**O.2.30: Shaping the Early Years in Childcare Settings, Limelight 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** The International Study of Movement Behaviors in Early Years (SUNRISE) was initiated in response to the WHO guidelines for promoting physical activity, sedentary behavior, and sleep in children under five. This pilot study in Nepal aimed to a) determine the proportion of children meeting these guidelines, and b) evaluate the feasibility and acceptability of the methods proposed for the main SUNRISE study.

**Methods:** Physical activity and sleep were measured using waist-worn ActiGraph accelerometers, while screen time and movement behaviors were assessed through parent questionnaires. Gross and fine motor skills were evaluated using the Ages and Stages Questionnaire (3rd edition), and executive functions were measured using the Early Years Toolbox, which includes interactive iPad games. Focus groups were conducted with parents and early childcare staff to assess the feasibility of implementing the study protocol. Data were collected in school settings from July to September 2023, with equal representation of children by sex/gender and residence (urban vs. rural).

**Results:** Data from 78 children and their parents were analyzed. Only 10% of children met all components of the WHO guidelines. Adherence rates for sleep (81%) and physical activity (79%) were relatively high compared to sedentary screen time (58%). Parents and childcare staff found the study methods, including the use of accelerometers, to be acceptable and feasible in Nepal's urban and rural contexts. Only two children were unable to use the accelerometer due to parental misconceptions about the device.

**Conclusions:** Adherence to all components of the WHO guidelines remains low in Nepal, with screen time being the most challenging area. Practical strategies are needed to promote healthier movement behaviors, particularly targeting screen time. The methods used in this study were feasible and acceptable, demonstrating the potential for conducting the SUNRISE main study in Nepal. **Keywords:** SUNRISE, 24-hour movement behavior, physical activity, screen time, Nepal

## 24h Movement Behaviors and Self-Regulation in Preschoolers: Cross-sectional associations using compositional and isotemporal analyses

**Dr. Clarice Martins<sup>1</sup>**, Dr Cain Clark<sup>2</sup>, Dr Jorge Mota<sup>1</sup>, Dr Natália Goulart<sup>3</sup>

<sup>1</sup>Faculty of Sports - University of Porto, Porto, Portugal, <sup>2</sup>Birmingham City University, Birmingham, UK,

<sup>3</sup>Federal University of Vale do São Francisco, Petrolina, Brazil

**O.2.30: Shaping the Early Years in Childcare Settings, Limelight 2, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** F. Early care and education

Early childhood is a critical period for brain development, particularly in self-regulation, which is essential for pre-academic success and socio-emotional competence. Recent studies have highlighted the role of 24-hour movement behaviours, including physical activity (PA), sedentary behaviour (SB), and sleep, in influencing self-regulation. Meeting recommended guidelines for these behaviours has been associated with positive cognitive and behavioural outcomes in preschoolers. However, the relationship between different combinations of these behaviours and various levels of self-regulation remains unclear. This study aims to analyze the association between the composition of 24-hour movement behaviours and cognitive and behavioural self-regulation in preschoolers and to investigate the effects of reallocating time between different movement behaviours. The sample comprised 223 four- and five-year-old preschoolers enrolled in public early childhood education centers in Petrolina, Brazil. Movement behaviours (PA and SB) were assessed using accelerometry for 8 consecutive days; sleep was parent reported in a face-to-face interview; while cognitive and behavioral self-regulation were measured using validated tools, including the Early Years Toolbox for cognitive self-regulation and the Head, Toes, Knees, Shoulders–Revised test for behavioural self-regulation. Compositional data analysis was employed to examine the relationship between movement behaviours and self-regulation outcomes using the R package.

**Results:** The findings highlighted that the 24-hour movement composition predicted 6% of the variance in visual-spatial working memory and cognitive flexibility, and 13% in behavioural self-regulation. Isotemporal substitution analysis showed that reallocating time from moderate-to-vigorous PA to SB or light PA resulted in significant improvements in behavioural self-regulation. However, no significant association was observed between movement behaviours and inhibitory control.

**Conclusion:** The results suggest that balanced daily movement behaviours are important for enhancing self-regulation in preschoolers, particularly the behavioural component. Future research should explore longitudinal impacts and mechanisms underlying these relationships to inform public health interventions aimed at optimizing self-regulation development in early childhood.

# Getting Active through Mindfulness: Randomised controlled trial of a digital mindfulness-based intervention promoting physical activity engagement and enjoyment

**Miss Masha Remskar<sup>1</sup>**, Dr Ben Ainsworth<sup>2</sup>, Dr Olivia Maynard<sup>3</sup>, Miss Olivia S. Malkowski<sup>1</sup>, Mr Adam Birch<sup>2</sup>, Miss Amber K. Burd<sup>1</sup>, Mr Teodor-Cristian Caretu<sup>1</sup>, Miss Lana El Assaad<sup>3</sup>, Miss Alexia Christodoulou-Tsiaoukkas<sup>2</sup>, Miss Aarya Menon<sup>3</sup>, Dr Max J. Western<sup>1</sup>

<sup>1</sup>University of Bath, Bath, United Kingdom, <sup>2</sup>University of Southampton, Southampton, United Kingdom,

<sup>3</sup>University of Bristol, Bristol, United Kingdom

**O.2.31: Digital Interventions and Strategies for Improving Health, Waihorotiu #1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Background:** Physical inactivity and mental ill-health are common in young adults, particularly those attending university. Physical activity (PA) interventions can improve health and wellbeing outcomes yet resulting changes to behaviour are rarely maintained. Mindfulness training that develops psychological skills and adaptive PA cognitions may facilitate PA behaviours. **Aim:** This preregistered trial aimed to explore the additive effects of a 30-day digital mindfulness-based intervention promoting PA engagement and enjoyment, compared to a simple PA intervention alone, in insufficiently active university students.

**Methods:** 109 participants were recruited across three sites in England, then randomised to receive an activity monitor and daily step count goal (8000 steps/day; PA-only control group), or a 30-day digital mindfulness intervention plus activity monitor/step goal (M+PA intervention group). Primary outcomes were self-reported PA and sedentary time; secondary outcomes were wellbeing, mental health, PA motivation, enjoyment and self-efficacy, and theoretical predictors of PA from the Theory of Planned Behaviour. Data were collected through surveys (pre- and post-intervention) and daily ecological momentary assessments.

**Results:** Self-reported PA doubled over time, and sedentary time reduced, with greater but not significant improvements in the M+PA group ( $M_{diff} = 305 \text{ MET-min/wk}$ ;  $-9.5 \text{ hrs/wk}$ ). Psychological health outcomes were mixed, with similar improvements in both groups for wellbeing and stress, but no change in depressive symptoms. The M+PA group reported stronger increases in behavioural intentions to be active over time vs. PA group. State mindfulness during PA increased in both groups, whereas exercise self-efficacy was unchanged.

**Conclusions:** Adding digital mindfulness training to a wearable-based PA intervention helped participants increase their intentions for PA, but did not produce differences in PA behaviour or sedentary time. Further research is needed to improve engagement with digital mindfulness interventions, and determine if mindfulness-induced changes in PA cognitions support sustained engagement in PA over a longer time period.

## How users' experience of consumer wearable activity trackers has changed from 2016 to 2023: a comparison of two cross-sectional surveys

**Dr. Rachel Curtis<sup>1</sup>**, Darcy Beckett<sup>1</sup>, Kimberley Szeto<sup>1</sup>, Professor Carol Maher<sup>1</sup>

<sup>1</sup>University of South Australia, Adelaide, Australia

**O.2.31: Digital Interventions and Strategies for Improving Health, Waihorotiu #1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Lifestyle behaviours such as physical inactivity and poor diet are leading yet modifiable causes of morbidity and mortality. Consumer wearable activity trackers have the potential to positively impact lifestyle behaviours. While wearables have become increasingly sophisticated in recent years, a positive user experience remains key to adoption and continued use. This study compared usage and user experience of wearables among adults between 2016 and 2023.

**Methods:** Seven hundred and twelve (n=237 in 2016 and n=475 in 2023) current and former wearable users completed a cross-sectional online survey examining social media sharing, perceived health behaviour change, complaints, and reasons for ceasing use. Results were compared between years using descriptive statistics and chi-square tests.

**Results:** The most common wearable brand changed from Fitbit in 2016 (66%) to Apple (44%) in 2023. In 2023, sharing wearable data on Instagram (44%), Facebook (36%) and Twitter (35%) was more common than in 2016 (1-4%). In both years, users were more likely to report change in physical activity than diet or sleep; however, perceived change in physical activity became less likely in 2023 (63%) than 2016 (77%), and perceived change in diet (51% vs 36%) and sleep (42% vs 22%) became more likely. Fewer users reported having an overall positive experience in 2023 (68%) than in 2016 (89%). Short battery life remained the most common complaint across 2016 (20%) and 2023 (21%). In 2023, complaints around accuracy and problems uploading data decreased, while complaints around comfort increased. The most common reason for ceasing use changed from "I learnt all I could" in 2016 (30%) to "it broke" in 2023 (33%).

**Conclusions:** The changes in user behaviour and experience between 2016 and 2023 have implications for health interventions using wearables and for wearable manufacturers. The rise in social media sharing, as well as perceived sleep and diet behaviour change, indicate greater integration of wearables into different areas of life; however, despite technological progress, continued improvements in wearable design are needed to maximise positive user experience.

## Hemoglobin A1C Changes in Human vs. Virtual Advisor-Delivered Physical Activity Interventions for Latino/a Adults

**Mr. Arjan Walia<sup>1</sup>**, Dr. Astrid N Zamora<sup>1</sup>, Ms. Maria I Campero<sup>1</sup>, Ms. Dulce M Garcia<sup>1</sup>, Dr. Abby C King<sup>1,2</sup>

<sup>1</sup>Stanford University School of Medicine Department of Epidemiology and Population Health, Stanford, USA, <sup>2</sup>Stanford Prevention Research Center, Stanford, USA

**O.2.31: Digital Interventions and Strategies for Improving Health, Waihorotiu #1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Background:** Though physical activity (PA) is associated with lower blood glucose and hemoglobin A1C levels, most US adults do not meet PA guidelines. Given the disproportionately high morbidity and mortality of diabetes mellitus in US Latino/a populations, effectively tailored behavioral interventions are needed to promote PA and reduce A1C levels within this underserved demographic.

**Purpose:** To compare the effectiveness of a telephone-delivered human- vs. computer-based PA intervention program in reducing hemoglobin A1C among Latino/a adults over a 12-month study period.

**Methods:** The On the Move (OTM) randomized controlled trial tested the effectiveness of linguistically and culturally targeted PA interventions for Latino/a adults in Northern California. Participants were randomly assigned to either an interactive SMS PA advisor (n=141) or a staff-delivered telephone PA advisor (n=139). Each intervention was delivered in English or Spanish depending on the participant's language preference. Clinical measures including A1C were collected by research staff at baseline and 12 months. Changes in A1C during the study period were examined across the two PA interventions (N=280) using linear mixed models, adjusted for demographics, BMI, and baseline A1C levels. In additional analyses, we used a clinically significant cut-point to operationalize A1C levels as a binary measure: non-diabetic (<5.7%) or pre-diabetic/diabetic (≥5.7%).

**Results:** Mean (SD) age of the participants was 51.3 (8.9) years, and 72.5% (n=203) were women. In the model with A1C operationalized as a continuous measure, the main effect for time revealed that A1C levels generally increased slightly over the 12-month study period ( $\beta=0.10$ ,  $p=0.02$ ). A significant interaction between time and study arm indicated a 0.14 percentage point A1C decrease in the staff-delivered arm at 12 months compared to the SMS-based arm ( $\beta=0.14$ ,  $p=0.02$ ). Results from the model using A1C categories showed no significant effects across time or interventions.

**Conclusion:** While the PA SMS-based arm had a slight increase in A1C, the telephone-based staff advisor arm had a significant reduction in A1C during the 12-month study period. Findings suggest that culturally targeted behavioral interventions aimed at promoting PA can offer broader health benefits, such as improvements in A1C, for Latino/a populations, particularly if delivered by human—rather than technology-driven—advisors.

## Optimizing Strategies to Reduce Sedentary Time Among Office Workers with Sit-Stand Workstations: The Transition Microrandomized Trial

**Dr. Stephanie Marita Carpenter<sup>1</sup>**, Dr. Sarah L. Mullane<sup>2</sup>, Dr. Meynard JL Toledo<sup>3</sup>, Dr. Ryan GN Seltzer<sup>1</sup>, Dr. Matthew P. Buman<sup>1</sup>

<sup>1</sup>Arizona State University, Phoenix, United States, <sup>2</sup>Johnson & Johnson, , , <sup>3</sup>University of Southern California, ,

**O.2.31: Digital Interventions and Strategies for Improving Health, Waihorotiu #1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Excess sedentary time is linked to risk for chronic disease and early mortality. Office workers are at high risk given job requirements that promote prolonged periods of sedentary time. Empirical evidence suggests that replacing sedentary time with standing or light-intensity activity (i.e., moving) reduces risk. Digitally delivered prompts that remind and encourage office workers to break up prolonged periods of sedentary time may be effective; however, how best to frame messages and whether they should prompt more standing or moving is unclear.

**Methods:** A 20-day digital health microrandomized trial tested message strategies to increase proximal stand and move time among office workers (N=15, 10 female) using sit-stand workstations. During work hours, participants were randomized at equal (0.5) probability 8 times/day (2400 randomizations across participants) to receive (a) an email-based prompt to either stand or move, or (b) no prompt. Prompts to stand or move were framed as standard reminders, or enhanced with goals (5- vs 30-min) or authoritative direction (e.g., management encouraged). Sedentary time was measured using an activPAL3c accelerometer that recorded time spent sitting, standing, and physical activity.

**Results:** Participants were 28% more likely to stand within 5 minutes of receiving any prompt versus no prompt (beta = 0.25, p = 0.03, 95% CI [0.04, 0.46]), and spent more time standing in the 30 minutes after a prompt was sent (M=+9.0,  $\pm$ 3.3 min/30-min) compared to when no prompt was sent (M=+7.6,  $\pm$ 2.7 min/30-min; beta = 1.69, p = 0.01, 95% CI [0.52, 2.85]). Participants, however, were 13% less likely to stand within 5 minutes of receiving an enhanced versus a standard prompt (beta = -0.14, p = 0.045, 95% CI [-0.27, -0.004]). The likelihood of moving within 5 minutes of receiving any prompt compared to no prompt was marginal (beta = 0.19, p = 0.09, 95% CI [-0.04, 0.42]).

**Conclusions:** Simple, digitally delivered reminders break up sedentary time with more standing time. Messages enhanced with goals and authoritative direction were less effective, and messages were ineffective at encouraging movement. Opportunities to incorporate message strategies into a comprehensive intervention to reduce sedentary time among office workers will be discussed.

# Safety of Videoconferencing for Physical Activity, Rehabilitation and Exercise: A Systematic Review and Meta-Analysis

**Dr. Riley Brown<sup>1,2</sup>**, Dr Joshua Simmich<sup>1,2</sup>, Dr Robert Cuthbert<sup>1,2</sup>, Dr Megan H Ross<sup>1,2</sup>, Dr Pablo Molina-Garcia<sup>3</sup>, Professor Trevor G Russell<sup>1,2</sup>

<sup>1</sup>RECOVER Injury Research Centre, The University of Queensland, Brisbane, Australia, <sup>2</sup>STARS Education and Research Alliance, Surgical Treatment and Rehabilitation Service, The University of Queensland and Metro North Health, Brisbane, Australia, <sup>3</sup>Instituto de Investigación Biosanitaria ibs.Granada, Granada, Spain

**O.2.31: Digital Interventions and Strategies for Improving Health, Waihorotiu #1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Videoconferencing physical rehabilitation and exercise interventions involve a health professional supervising participants in real-time through a video-linked appointment. The purpose of this review was to assess the safety of these interventions compared to in-person services for adults across varied populations.

**Methods:** Systematic searches of electronic databases (PubMed, Web of Science, Embase and Cinahl Complete) were conducted from inception until 20th June 2024. Randomised controlled trials (RCTs) conducting physical rehabilitation or exercise interventions via videoconferencing, comparing to an in-person control group and reporting adverse events were included. Adverse events were sub-grouped by severity into minor/moderate and major. Between-group meta-analyses were conducted for included trials on reported adverse events using an inverse variance, three-level model sub-grouped by severity and clustered by study. Heterogeneity was assessed using the Q-test and I<sup>2</sup> statistic. Risk of bias was assessed using the RoB2 tool, and certainty of evidence with GRADE.

**Results/findings:** A total of 19 RCTs were included. Adverse event criteria were defined in seven trials (37%), and recording methods were described in eight RCTs (42%). Meta-analyses identified that no statistically significant differences were observed between-groups for minor/moderate adverse events [Incidence Rate Ratio (IRR) = 0.97, 95% CI: 0.69 to 1.38, p = 1.0, I<sup>2</sup> = 0%]. There was considerable uncertainty in the summary estimate for major adverse events although no significant differences were observed (IRR = 1.73, 95% CI: 0.48 to 6.26, p = 0.98, I<sup>2</sup> = 0%). Overall, there was no evidence of significantly increased incidence of adverse events for videoconferencing compared to in-person comparators (IRR = 1.01, 95% CI: 0.72 to 1.41, p = 1.0, I<sup>2</sup> = 0%). Fifteen RCTs (79%) were rated as 'some concerns' or 'high' in overall risk of bias, and certainty in cumulative effect for adverse events was determined to be 'low'. Adverse event certainty was downgraded for serious risk of bias among RCTs, and indirectness of intervention methodology.

**Conclusions:** This study suggests that the safety of using videoconferencing for physical rehabilitation and exercise interventions is similar to in-person services. Future studies must improve transparency of adverse event defining and recording to improve certainty in effect.

## BeeHealthy – an mHealth app to support Ukrainian refugee children

Ms Olha Faryma<sup>1</sup>, **Joyce Haddad**<sup>1</sup>, Ms. Franziska Scheidegger-Balmer<sup>1</sup>, Prof. Karin Haas<sup>1</sup>, Prof. Klazine van der Horst<sup>1</sup>, Prof. Tamara Bucher<sup>1</sup>

<sup>1</sup>Bern University of Applied Sciences, Bern, Switzerland

**O.2.31: Digital Interventions and Strategies for Improving Health, Waihorotiu #1, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Ukrainian refugee children currently face immense challenges which are negatively impacting their social, mental and physical health. Current studies suggest refugee children are at higher risk of mental health issues and obesity. The aim of this study was to co-design and test the functionality of an mHealth app that can be used in educational settings, to support Ukrainian refugee children in promoting their health and well-being.

**Method:** We engaged three groups of Ukrainian refugee children (aged 11-15), each group consisting of 15 members, who were living in Switzerland or in Ukraine, in three in-person or online co-design workshops. Two focus groups were conducted online with 6 Ukrainian teachers for app testing and feedback. The app content development was also guided by the Behaviour Change Wheel framework. The beta version of the app was evaluated by 35 adolescents, using selected questionnaire items from the Mobile Application Rating Scale (MARS) (20 item questionnaire). Descriptive analyses were used.

**Results:** The mHealth app, BeeHealthy was developed as a result of the co-design workshops. The app features three main categories: nutrition, physical activity and mental health. It incorporates a reward system, tracks user progress in real-time and provides notifications to maintain engagement. Children contributed to naming the app, selecting avatars, choosing text, audio and visual elements and gamification ideas. Teachers provided recommendations on implementing the app in educational settings. The evaluation showed that 21 (of 35) of the children reported liking the app, with most (63%) enjoying the nutrition category the most. Twenty-eight children (80%) gave the app a 4-star rating or higher, and 22 (63%) reported they would recommend the app to their social network. The majority (74%) reported that the app was functional.

**Conclusion:** BeeHealthy addresses the urgent need for health education among Ukrainian refugee children. Using an interactive approach to learning, the app has potential for promoting the well-being, and practical health skills for Ukrainian refugee children through its use as a complementary tool at schools or independently. Future studies will evaluate BeeHealthy's effectiveness to improve self-efficacy and health behaviours.

## Exposure to digital food marketing and food consumption in adolescence: Results from a cross-sectional survey in Uruguay

**Dr. Gastón Ares<sup>1</sup>**, Dr. Lucía Antúnez<sup>1</sup>, BSc. Florencia Alcaire<sup>1</sup>, Dr. Virginia Natero<sup>1</sup>, BSc. Vanessa Gugliucci<sup>1</sup>, BSc. Leandro Machín<sup>1</sup>, BSc. Carolina de León<sup>2</sup>, Dr. Tobias Otterbring<sup>3</sup>

<sup>1</sup>Universidad de la República, Montevideo, Uruguay, <sup>2</sup>Agder University, Kristiansand, Norway,

<sup>3</sup>Intendencia de Montevideo, Montevideo, Uruguay

**O.2.32: Feeding Minds: Exploring the Impact of Food Availability, Marketing, and Industry Strategies, Herald Theatre, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Information on the nature, extent, and impact of digital food marketing is needed to strengthen public policies to protect adolescents. In this context, the present study aimed at exploring associations between exposure to digital food marketing and food consumption in Uruguay, a Latin American country. The following objectives were sought: i) to estimate Uruguayan adolescents' self-reported exposure to digital food marketing, and ii) analyze associations between exposure to digital food marketing and food consumption frequency.

**Methods:** The study relied on a cross-sectional observational design. A sample of 1542 adolescents attending 29 public and 10 private high schools was obtained using a stratified, two-stage cluster probability-based sampling approach. Participants completed a self-administered questionnaire with four main sections: i) exposure to digital food marketing, ii) food consumption frequency, iii) social media usage, and iv) socio-demographic characteristics. Data were analyzed using descriptive statistics and ordinal logistic regressions.

**Results:** The percentage of participants who reported seeing a food or beverage advertisement on digital media in the week prior to the survey was 87.6%, with 39.1% reporting daily exposure. Instagram, YouTube, and TikTok were the platforms where participants reported being most frequently exposed to food and beverage advertisements. More than 70% of participants recalled seeing advertisements of fast food, soft drinks, and savoury snacks. Exposure to advertisements of fast food or ultra-processed products and total social media use were significantly associated with higher reported consumption frequency of such categories. However, exposure to digital food marketing was not associated with consumption frequency of fruits, vegetables, meats, or fish, although total social media use was associated with lower consumption frequency of fruits and vegetables.

**Conclusions:** These findings stress the need to reduce adolescent exposure to digital marketing of unhealthy foods, possibly through mandatory policies including total bans of foods high in nutrients associated with non-communicable diseases in such marketing.

## Differences in self-reported exposure to unhealthy food marketing among youth in Canadian provinces with and without restrictions on marketing to children: Findings from the International Food Policy Study.

**Ms. Liza Boyar<sup>1</sup>**, Ms. Christine M. White<sup>1</sup>, Dr. Sharon Kirkpatrick<sup>1</sup>, Dr. Lana Vanderlee<sup>2</sup>, Dr. David Hammond<sup>1</sup>

<sup>1</sup>University of Waterloo, Waterloo, Canada, <sup>2</sup>Université Laval, Québec, Canada

**O.2.32: Feeding Minds: Exploring the Impact of Food Availability, Marketing, and Industry Strategies, Herald Theatre, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Children are particularly vulnerable to food marketing, which impacts nutrition behaviours by influencing product awareness, attitudes and purchasing intent. Since 1978, Québec has been the only Canadian province with mandatory restrictions on the marketing of commercial products to children under 13, including food marketing. However, there is relatively little evidence on the impact of these regulations on unhealthy food marketing exposure. The current study examined self-reported exposure to unhealthy food marketing among youth in Québec compared to those in other Canadian provinces.

**Methods:** Repeat cross-sectional surveys were conducted annually from 2019 to 2022 with 14,652 youth aged 10-17, including n=3,757 in Québec. Surveys assessed self-reported exposure to unhealthy food marketing, including locations of exposure, brands marketed, foods marketed, and marketing strategies encountered. Logistic and linear regression models examined differences between youth living in Québec versus other provinces for each exposure indicator, adjusting for age, sex-at-birth, ethnicity, perceived income adequacy, total screentime, and year.

**Results/findings:** Compared to youth in provinces with no mandatory restrictions on marketing to children, Québec youth reported seeing advertisements for unhealthy foods in fewer locations (1.57 vs 2.04 [range:0-13],  $\beta = -0.46$ ) and for fewer beverage (1.37 vs 1.52 [range:0-3],  $\beta = -0.18$ ) and restaurant (2.15 vs 2.34 [range:0-4],  $\beta = -0.15$ ;  $p < 0.001$  for all contrasts) brands. Québec youth reported seeing fewer advertisements for sugary drinks (2.85 vs 3.25,  $\beta = -0.40$ ), fast-food (3.41 vs 3.68,  $\beta = -0.30$ ), sugary cereals (2.66 vs 3.04,  $\beta = -0.38$ ), snacks (2.90 vs 3.19,  $\beta = -0.27$ ), and desserts/treats (2.87 vs 3.16,  $\beta = -0.28$ ;  $p < 0.001$  for all contrasts). Québec youth were less likely to see advertisements featuring cartoons/characters from movies/TV (17% vs 27%, AOR: 0.57) or created by food companies (27% vs 39%, AOR: 0.56), celebrities (20% vs 30%, AOR: 0.57), unhealthy food/drink company names/logos (17% vs 22%, AOR: 0.75), and 'Happy meal'/other fast-food restaurant toys (32% vs 47%, AOR: 0.53;  $p < 0.001$  for all contrasts).

**Conclusions:** Self-reported exposure to unhealthy food marketing was substantially lower among youth in a Canadian province with restrictions on marketing to children, compared to provinces without such restrictions. These findings help inform marketing restriction development in Canada and abroad.

# Misleading Marketing and Poor Nutrition: An Analysis of Commercial Foods for Infants and Toddlers in Australia

**Dr. Alexandra Chung**<sup>1</sup>, Ms Sophia Torkel<sup>1</sup>, Ms Judith Myers<sup>1</sup>, Professor Helen Skouteris<sup>1</sup>

<sup>1</sup>Monash University, Melbourne, Australia

**O.2.32: Feeding Minds: Exploring the Impact of Food Availability, Marketing, and Industry Strategies, Herald Theatre, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Globally, concern is growing around the poor nutritional content and misleading marketing claims used to promote commercial foods for infants and toddlers. In Australia commercial baby foods are consumed by one in three children young children at least once a week, and one in five young children eat these foods most days. This study investigates the nutritional quality and marketing practices of commercial foods for infants and toddlers in Australian supermarkets.

**Methods:** In accordance the World Health Organization's Nutrient and Promotion Profile Model (NPPM) rapid evaluation protocol, we evaluated a sample of commercial foods for infants and toddlers available in Australian supermarkets. Products were purposely sampled to include a range of brands across 7 product categories: dry cereals, dairy, fruit and vegetable purees, savoury meals, snacks, confectionary, and drinks (n=45). Product details including ingredients, nutrition information, and on-pack labelling and marketing were recorded in the NPPM data evaluation template and evaluated against the NPPM criteria for nutrient content, labelling, and marketing practices.

**Results:** 77% of the assessed products failed to meet all NPPM requirements for nutrient content. Notably, 43% of products exceeded recommended sugar limits, with processed sugars extracted from fruit identified as a common source of sugar. 60% of products failed to meet the NPPM criteria for product name clarity, potentially misleading consumers about the contents of the package. No products met all NPPM criteria for marketing with every product displaying at least one promotional claim not permitted under NPPM guidelines. Claims most commonly focused on health "natural", "organic", "no added sugar" and child development "for mini mouths", "toddlers in training".

**Conclusions:** The findings underscore the urgent need for stronger regulation of the composition, labelling, and promotion of commercial foods for infants and toddlers. Mandatory, government-led regulations are necessary to improve the nutritional quality and increase the accuracy of labelling and promotion of these products. Recent public consultations by the Australian Department of Health and Aged Care present an opportunity for significant policy reform to ensure commercially available foods support healthy growth and development in early childhood.

# Title: Marketing Practices and Nutritional Content of Toddler Milk Products Across the Americas: A Content Analysis

**Ms. Ana Paula Cardoso Richter<sup>1</sup>**, Dr. Allison Lazard<sup>1</sup>, Dr. Lindsey Smith Taillie<sup>1</sup>, Dr. Deshira Wallace<sup>1</sup>, Dr. Shelley Golden<sup>1</sup>, Dr. Marissa Hall<sup>1</sup>

<sup>1</sup>University of North Carolina at Chapel Hill, Chapel Hill, USA

**O.2.32: Feeding Minds: Exploring the Impact of Food Availability, Marketing, and Industry Strategies, Herald Theatre, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Toddler milks are dairy formulas that have become popular for young children, despite not being recommended. Studies have yet to systematically synthesize marketing on packaging or the nutritional profile of toddler milks. This study addressed two research questions: (1) What nutrition, health, and other marketing claims and persuasive imagery are used on the front of toddler milk products in Central, South, and North America? (2) What is the nutritional profile of toddler milk products in these regions?

**Methods:** We conducted a content analysis of 389 toddler milk products from 14 countries in the Americas to assess the frequency and types of claims and imagery. We also compared the nutritional profile of toddler milk products with cow's milk and flavored milk.

**Results:** Nearly all toddler milks (99%) featured at least one front-of-package claim. We identified categories of claims, with nutrition claims the most frequent (97%), followed by health claims (56%), and other marketing claims (i.e., claims about product quality and non-nutrition/health-related benefits) (39%). Nutrition claims highlighting components naturally found in breastmilk, such as Docosahexaenoic Acid (DHA) and Arachidonic Acid (ARA), appeared on 52% and 20% of products, respectively. Brain and cognitive health claims were the most frequent health claims (29%). The most common other marketing claims involved QR codes (17%), connecting consumers to online marketing platforms. Ninety-two percent of toddler milks included images; 21% depicting humans. Prominent imagery included shields (32%), symbolizing protection, and hearts (27%) representing care. Nutritionally, toddler milk contained an average total sugar of 5.90 g/100mL, higher than cow's milk (4.75 g/100mL) but lower than flavored milk (8.54 g/100mL). Added sugar averaged 1.64 g/100mL, significantly lower than flavored milk (4.63 g/100mL) but higher than cow's milk (0.00 g/100mL). Protein content in toddler milk (2.35 g/100mL) was lower than both cow's milk (3.19 g/100mL) and flavored milk (3.35 g/100mL).

**Conclusions:** Toddler milk products frequently use claims and images to promote perceived benefits. Compared to cow's milk, toddler milk contains more total and added sugar, and less protein. Our findings highlight the need for stricter regulations to ensure transparency and help parents make unbiased food choices for their children.

## The relationship between availability of healthy and unhealthy foods and drinks in English secondary schools and pupil lunchtime dietary intakes.

**Marie Murphy<sup>1</sup>**, Marie Harrington<sup>1</sup>, Dr Daniel Mensah<sup>1</sup>, Professor Ashley Adamson<sup>2</sup>, Dr Suzanne Spence<sup>2</sup>, Maisie Rowland<sup>2</sup>, Professor Peymane Adab<sup>1</sup>, Professor Miranda Pallan<sup>1</sup>  
<sup>1</sup>University of Birmingham, Birmingham, United Kingdom, <sup>2</sup>Newcastle University, Newcastle, United Kingdom

**O.2.32: Feeding Minds: Exploring the Impact of Food Availability, Marketing, and Industry Strategies, Herald Theatre, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice: H. Policies and environments**

**Purpose:** Current diets of UK adolescents fall short of recommendations, with low intakes of fruits and vegetables (FV) and fibre and high intakes of foods/drinks high in fat, salt or sugar (HFSS). Environmental cues within school canteens, such as increasing or limiting availability of healthy or unhealthy foods/drinks have the potential to influence dietary behaviours in this age group. We examined the relationship between availability of healthy and unhealthy foods/drinks and pupil lunchtime dietary outcomes.

**Methods:** Secondary cross-sectional analysis of 24-hour dietary recall data from pupils (11-15 years) attending 36 secondary schools in the Midlands (England) within the FUEL study (2019-2022). School lunch consumers were eligible for inclusion (n=1,712). Dietary outcomes were total energy intake (TEI), free sugars (FS), fat, fibre, FV, HFSS foods/drinks, confectionery and sugar-sweetened beverages (SSB). Availability was recorded by researchers over lunchtime and characterised by 1) total number of food items and drink items; 2) number of healthy (FV items) and unhealthy (cakes/biscuits, pastries, confectionery, desserts) food items as a percentage of total food items; and 3) number of healthy drinks as a percentage of total drinks. Analysis used repeated-measures multi-level modelling adjusting for pupil (age, gender, ethnicity, deprivation) and school (percentage of pupils eligible for free school meals)-level characteristics. Coefficients and 95% confidence intervals (CI) are presented.

**Results:** Mean total number of items offered was 44 (7-92) food and 13(1-27) drink items. Mean percentage of healthy/unhealthy foods offered was 23% (0-57%) and 23% (5-45%) respectively, whilst healthy drinks accounted for 70%(31-100%) of total drinks on average. Total number of foods available was positively associated with pupil TEI (1.340; 0.019, 2.661), fat (0.062; 0.005, 0.120), HFSS foods/drinks (0.006; 0.002, 0.009) and confectionery (0.010; 0.003, 0.016) intakes. All other relationships were not statistically significant.

**Conclusion:** Offering a smaller range of items may improve dietary behaviours for pupils consuming school lunches. Further research is needed to understand the influence of other environmental cues, such as positioning, marketing, presentation as well as pricing of healthy and unhealthy food/drink items. Foods/drinks brought from home may also be influential.

# Efficacy of Free Summer Programming on Elementary-Aged Children's Food and Beverage Consumption: A Randomized Clinical Trial

**Mrs. Meghan Savidge<sup>1</sup>**, Sarah Burkart<sup>1</sup>, Dr Christopher Pfladderer<sup>2</sup>, Elizabeth Adams<sup>1</sup>, Dr. R. Glenn Weaver<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Keith Brazendale<sup>3</sup>, Xuanxuan Zhu<sup>1</sup>, Dr. Brian Chen<sup>1</sup>, Dr Alexander McLain<sup>1</sup>, Dr. Michael Beets<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, United States, <sup>2</sup>University of Texas Health Houston, Austin, United States, <sup>3</sup>University of Central Florida, Orlando, United States

**O.2.33: School-Based Interventions for Nutrition and Physical Activity, Balcony Foyer, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** During summer vacation, children in low-income households often lose access to federally funded, healthful meals served in school. Summer day camps (SDC) may mitigate summer dietary changes by providing access to healthful meals and a structured environment; yet low-income families often cannot afford SDCs. This study examined the impact of receiving a voucher to attend SDC for free versus experiencing summer as usual (SAU) on food/beverage consumption during summer among children from families with low income.

**Methods:** Parent-child dyads (N=422; age: 8.2±1.5 yrs; 48% female; 51% Black) were recruited over 3 years (2021, 2022, 2023) from schools serving families with low-income. Children were randomized to receive 8-10 weeks of free SDC (intervention) or SAU (control). Parents completed a daily diary for 14 days during school (April/May) and during summer (July). Daily diaries captured if their child consumed healthful (i.e., fruit, vegetables, milk, 100% juice) and unhealthful (i.e., soda/pop, non-carbonated flavored beverages, fast food, salty snacks, desserts, frozen desserts) foods/beverages. Mixed-effects intent-to-treat (ITT) models examined the odds of consuming different foods/beverages during the summer, controlling for consumption during the school year, in the SDC group compared to SAU. Secondary as-treated analyses examined the impact of attending structured summer programming versus not attending on the odds of consuming different food/beverages during summer.

**Results:** A total of 4,038 daily diaries were completed for intervention (n=231) and control (n=204). ITT analyses showed the SDC group was less likely to consume frozen desserts (OR 0.67, 95%CI 0.49-0.91), compared to SAU, during summer. No other differences were observed. As-treated analyses showed children were more likely to consume fruit (1.68, 1.23-2.28), milk (2.00, 1.48-2.71), desserts (1.34, 1.07-1.68), and non-carbonated flavored beverages (1.58, 1.18-2.11) on days when they attended structured programming, compared to days when they did not attend.

**Conclusions:** Providing free SDC may not impact dietary intake. However, as-treated analyses showed when children in the intervention or control group attended structured programming, they had higher odds of consuming fruit and milk, but also consumed more less healthful foods/beverages. Research is needed to further understand influences on children's diet and how best to intervene in the summer

## MyPlate Food Ambassadors Changing Environments and Systems (FACES) in Texas, United States: Study Design and Baseline Nutrition Profiles

Ms. Kendra Marstall<sup>1</sup>, Dr. Gabrielli De Mello<sup>1</sup>, Ms. Mia Putnam<sup>1,2</sup>, Dr. Julie Gardner<sup>3</sup>, Mrs. Alice Kirk<sup>3</sup>, Dr. Alexandra MacMillan Uribe<sup>1</sup>, Ms. Melinda Nguyen<sup>4</sup>, Ms. Allyson Schaefer<sup>1</sup>, Mrs. Michelle Smith<sup>5</sup>, Ms. Megan Steele<sup>4</sup>, **Dr. Jacob Szeszulski<sup>1</sup>**

<sup>1</sup>Texas A&M AgriLife Research, Dallas, USA, <sup>2</sup>Texas A&M, College Station, USA, <sup>3</sup>Texas A&M AgriLife Extension, College Station, USA, <sup>4</sup>Texas Department of Agriculture, Austin, USA, <sup>5</sup>Action for Healthy Kids, Chicago, USA

**O.2.33: School-Based Interventions for Nutrition and Physical Activity, Balcony Foyer, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The MyPlate Food Ambassadors Changing Environments and Systems (FACES) study aims to compare the effect of two tracks to promoting MyPlate education – a visual guide to healthy eating created by the United States Department of Agriculture. This study describes program design, planned assessments, and students' nutrition profiles.

**Methods:** During enrollment, MyPlate Ambassadors self-select from two tracks: (1) mentorship and (2) environmental change. The 9-session mentorship track provides ambassadors the opportunity to work with an Extension agent (i.e., health educator) to teach MyPlate curriculum to elementary/middle school students. The 12-session environmental change track encourages ambassadors to create a MyPlate-relevant environmental change in their school. Technical support provided by the Texas Department of Agriculture (i.e., state agency that oversees school meal programs), Action for Healthy Kids (i.e., national non-profit that promotes health) and Texas A&M AgriLife Extension (i.e., statewide group of health educators) are available for projects related to improving districts' nutrition policy goals and for schools incorporating new multicultural recipes into their menu. To assess outcomes, ambassadors complete pre- and post-test food frequency questionnaires, set monthly MyPlate goals, complete event tracking sheets, and attend monthly check-ins. Nutrition profiles were created from food frequency survey data via principal components analysis (PCA).

**Results:** In fall 2024, student ambassadors (n=50, 15.8±1.1 years; 74.5% white; 52.0% Hispanic; 74.0% female) were recruited from 25 counties and 28 public high schools. More ambassadors selected mentorship (61.2%) than the environmental change track (38.8%); however, groups were not demographically different. The PCA revealed three patterns (i.e., nutrition profiles): (1) high factors loading for fruits, vegetables, lean proteins, brown grains, and dairy; (2) high loadings for lean protein and white and brown grains, low fruits and dairy; and (3) high fruit and white grain and low browns grain, which explained 35%, 19%, and 16% of the variation in students' food intakes, respectively.

**Conclusions:** We have identified three MyPlate nutrition profiles that can help ambassadors set personalized MyPlate goals. Our planned evaluation will determine the impact (e.g., reach) and effectiveness (e.g., improvement in diet quality) of our educational tracks, and differences in outcomes by profile type.

## Exploring the nutritional quality of home-packed Lunches and snacks and the prevalence of food Insecurity in Flemish primary schools

**Dr. Wendy Van Lippevelde<sup>1</sup>**, Miss Anne-Sophie Van Dijck<sup>1</sup>, Dr. Dieneke Van de Sompel<sup>1</sup>

<sup>1</sup>Ghent University, Ghent, Belgium

**O.2.33: School-Based Interventions for Nutrition and Physical Activity, Balcony Foyer, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** This study aims to examine the food and nutrient composition of home-packed lunchboxes and snacks among Flemish primary school children, and to explore how these vary according to socio-demographic characteristics and food insecurity status. Prior to this study, no data were available in Flanders regarding the types of foods children bring to school, the prevalence of empty lunchboxes—an issue frequently reported by schools—and the extent of food insecurity among primary school children.

**Methods:** A cross-sectional study was conducted in a stratified, representative sample of 25 Flemish primary schools between mid-April and mid-June 2023. The contents of lunchboxes and snacks were objectively measured using a custom-made tool incorporating automated food weighing and data input into a dedicated application. The measurement set up was also guided by a co-creation process with children and school stakeholders to ensure a child-friendly, inclusive and non-stigmatizing approach. Additionally, a questionnaire was administered to assess socio-demographics, such as food insecurity. The outcomes included foods and nutrients provided in lunchboxes and snacks, as well as the proportion aligned with the Flemish dietary guidelines.

**Results:** A total of 1,051 children participated in the questionnaire and the objective assessment of lunchbox and snack contents. The majority of lunchboxes contained predominantly unhealthy food products; only 12.3% of children brought lunchboxes with over 75% healthy foods, while 32.3% had lunchboxes filled entirely with unhealthy items. Vegetables were included by only 19.2% of children, and fruits by just 4.3%. Snacks tended to be healthier, primarily consisting of fruits. Although lunchbox and snack contents showed minor variations based on socio-economic status, no significant associations were observed with other socio-demographic factors. Only three empty lunchboxes were recorded, but 9% of children reported experiencing moderate to severe food insecurity in the past year.

**Conclusion:** The findings highlight a dual challenge: a high prevalence of nutritionally inadequate lunchboxes alongside alarming levels of food insecurity. This underscores the urgent need for a twofold approach in schools, addressing both food insecurity and the improvement of children's overall dietary quality.

## Scheduling of recess during elementary school and the effect on physical activity

**Dr. Erin Howie**<sup>1</sup>, Dr. Kari Weber<sup>2</sup>, Dr. Matthew Barenie<sup>2,3</sup>, Mr. Christopher Murphy<sup>1</sup>, Dr. Michael Thomsen<sup>2</sup>

<sup>1</sup>University of Arkansas, Fayetteville, United States, <sup>2</sup>University of Arkansas for Medical Sciences, Little Rock, United States, <sup>3</sup>University of South Alabama, Mobile, United States

**O.2.33: School-Based Interventions for Nutrition and Physical Activity, Balcony Foyer, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Background:** School recess, an opportunity for unstructured play typically outdoors and with social interaction, is a key pillar of a comprehensive school physical activity program. Little is known on how the timing of recess scheduling affects recess physical activity. Arkansas state law requires 40 minutes per day of unstructured recess time, but schools have discretion to schedule recesses as needed, resulting in variable recess schedules for each school and grade. **Purpose:** This study compares recess period physical activity between schools with varying recess schedules participating in a larger study investigating the impact of greener schoolyards.

**Methods:** Children were recruited from four elementary schools, with two recess periods each, in Little Rock, Arkansas, USA, across two academic years from February 2023 to May 2024. Of the four participating schools, 93% of students were eligible for free-or-reduced lunch, 86% of students were African American, 6% white, 6% Hispanic/Latino and 2% other race. Children wore Actigraph GT9x Link accelerometers on their waist and were included if they wore the device for a minimum of three recess periods. Recess times were manually extracted from 60 second epoch-level data based on school recess schedules. The percentage of time in moderate-to-vigorous physical activity (MVPA) was compared using mixed linear regressions adjusted for school grade and school.

**Results:** Children (n=161) had a higher percentage of time spent in MVPA ( $p<.001$ ) during their second scheduled recess (18.5% MVPA, 95%CI: 16.5, 20.5) compared to their first scheduled recess (15.5% MVPA, 95%CI: 13.6, 17.4). Similarly, children participated in lower percentages of MVPA during recesses starting before 11am (14.2% MVPA, 95%CI: 12.1, 16.3) compared to recesses at 11am or later (18.6% MVPA, 95%CI: 16.6, 20.5).

**Conclusions:** Despite some second recess periods immediately following lunch, children in these four schools participated in a higher percentage of MVPA during their second recess. Additional analyses will explore the effect of temperature and air quality on recess physical activity. Schools may consider maximizing the amount of time for recess in the later part of the day to optimize children's physical activity. However, additional research is needed on the implications of recess scheduling for academic effects.

# Reducing Food Waste Through School-Based Interventions: The Impact of Salad Bars and Marketing on Fruit and Vegetable Waste in Primary Schools

**Prof. Marc Adams<sup>1</sup>**, Dr. Mike Todd<sup>1</sup>, Dr. Mindy McEntee<sup>1</sup>, Dr. Meg Bruening<sup>2</sup>

<sup>1</sup>Arizona State University, USA, Phoenix, United States, <sup>2</sup>Penn State University, University Park, USA

**O.2.33: School-Based Interventions for Nutrition and Physical Activity, Balcony Foyer, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Background:** Food waste is a critical and emerging issue in nutrition research, particularly as it relates to dietary consumption. Food waste research is often tied to dietary consumption—having better data on waste will also improve our understanding of how to promote intake. This study evaluated the impact of two school-based interventions designed to increase fruit and vegetable (FV) consumption on FV waste among U.S. primary school students.

**Methods:** A cluster RCT was conducted in 13 primary schools, testing four conditions across an academic year: 1) introducing school-lunch salad bars alone (no FV marketing), 2) introducing FV marketing alone (no salad bar), 3) combining salad bars with FV marketing, and 4) a wait-list control group. FV waste was measured using digital scales to record tray weights pre- and post-lunch (grams). Aggregate FV waste was calculated (i.e., post-lunch FV weight - pre-lunch FV weight) / pre-lunch FV weight) at baseline (T1), 6 weeks after introducing the salad bar (T2), and 4 weeks later after introducing the marketing intervention (T3). Complete data were analyzed for 2,884 student trays. Generalized linear models were used to assess intervention effects on FV waste over time and between conditions, adjusting for student-level confounders. Results are presented as estimated means with 95% confidence intervals (CI).

**Results:** Among students (48.3 % female, grade 1-5, 25.6% non-Hispanic white, 79.4% free/reduced price lunch-eligible), the model-estimated mean percent of FV waste increased in the control condition (T1: 44.3%, T2: 65.3%, T3: 73.5%) over time. In contrast, FV waste declined in the salad bar (T1: 64.2%, T2: 53.4%, T3: 54.2%), marketing alone (T1: 64.5%, T2: 72.1%, T3: 60.6%), and salad bar+marketing (T1: 63.0%, T2: 55.7%, T3: 54.5%) conditions. Between T1 and T3, relative reductions in waste were significant for salad bars (-39.3%, 95% CI -46.8, -31.6), marketing alone (-33.2%, 95% CI -40.4, -26.0), and salad bar + marketing (-37.7%, 95% CI -44.9, -30.4).

**Discussion:** Interventions introducing salad bars and FV marketing in cafeterias, independently and combined, effectively reduced FV waste among primary students. Results highlight the dual benefits of such interventions in promoting healthy eating while impacting sustainability. Implications will be discussed.

## The health benefits and cost-effectiveness of healthy food and beverage policies in New Zealand schools

Mrs. Courtney Steele<sup>1</sup>, **Dr. Cristina Cleghorn**<sup>1</sup>, Prof Louise Signal<sup>1</sup>

<sup>1</sup>University Of Otago, Wellington, New Zealand

**O.2.33: School-Based Interventions for Nutrition and Physical Activity, Balcony Foyer, June 13, 2025, 1:30 PM - 3:15 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** New Zealand (NZ) has the second highest prevalence of childhood obesity among OECD countries and poor nutritional intake is an important contributor. Significant inequities also exist by ethnicity and socioeconomic status. Major gaps exist for healthy food policies in NZ schools. This study modelled the health impacts and cost-effectiveness of a policy which improved the healthiness of school food environments and implemented nutritional quality standards for food and beverages sold in schools. Impacts were modelled in the short-term and across the remainder of the lifetime.

**Methods:** A multistate life-table model was used to model a national mandatory healthy food policy for NZ youth aged 5-17 years. A reduction in sugar-sweetened beverage intake and, in scenario analyses, in body mass index was modelled onto diet- and obesity-related diseases. Health gains were predicted in quality-adjusted life-years (QALYs) and health-system costs over the remaining life course of the population alive in 2011. The modelled policy provided health promotion advisors for five years to assist schools in meeting policy guidelines. Policy costs were based on NZ's current Healthy Active Learning programme and scaled up for a mandatory policy.

**Results:** In the base case, the policy generated health gains of 610 QALYs (95% UI: 330 to 1,040) and saved NZ\$22.6 million (95% UI: NZ\$13.4 to 35.6 million) in healthcare-system costs. Age-standardised per capita health gains were 2.3 times greater for Māori (30 QALYs/100,000 people) than non-Māori (13 QALYs/10,000 people). Adolescents 15-17 years, who had the shortest exposure to the intervention, received lower health gains than younger age groups. In scenario analyses, the fewest health gains were generated when the policy was only targeted at schools selling food and beverages (290 QALYs (95% UI: 150 to 520)). The most health gains were generated when the policy was additionally assumed to impact BMI and the correlation between risk factors in adolescence and adulthood was included (29,910 QALYs (95% UI: 5,580 to 55,540)).

**Conclusions:** This study showed that a mandatory school-based healthy food policy is cost-saving and improves equity for Māori. This policy could be an effective component of a strategy to improve population nutrition and health.



# SHORT ORAL PRESENTATIONS

## Dietary behaviour and mental health outcomes of prostate cancer survivors

**Prof. Hattie Wright<sup>1,2</sup>**, Mr Corey Linton<sup>1</sup>, Prof. Suzanne Broadbent<sup>3</sup>, Dr Karina Rune<sup>4</sup>, Prof Cindy Davis<sup>5</sup>, Prof Anao Zhang<sup>6</sup>, Dr Jacob Keech<sup>7</sup>

<sup>1</sup>School of Health, Nutrition & Dietetics, University of the Sunshine Coast, Sippy Downs, Australia, <sup>2</sup>Sunshine Coast Health Institute, Birtinya, Australia, <sup>3</sup>School of Health, Exercise Science, University of the Sunshine Coast, Sippy Downs, Australia, <sup>4</sup>School of Health, Psychology, University of the Sunshine Coast, Sippy Downs, Australia, <sup>5</sup>School of Law & Society, Social work, University of the Sunshine Coast, Sippy Downs, Australia, <sup>6</sup>School of Social Work, University of Michigan, Ann Arbor, USA, <sup>7</sup>School of Applied Psychology, Griffith University, Mt Gravatt Campus, Australia

**SO.1.01: Cancer, Hunua 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** A high-quality diet improves mental health outcomes in non-cancer populations. Prostate cancer survivors are vulnerable for poorer mental health and may benefit from following a high-quality diet. This cross-sectional study examined eating behaviour, adherence to the Mediterranean diet (Med-diet), and mental health in prostate cancer survivors. Multiple regression analysis explored associations between eating behaviour as well as associations between Med-diet adherence and mental health.

**Methods:** An online survey was employed and Med-diet adherence was measured with the Mediterranean Adherence Screener (MEDAS), mental health was evaluated with the Depression Anxiety Stress Scale 21 (DASS-21), food choice with a selection of questions from the American Cancer Society's nutrition and activity quiz, and behavioural intention regarding following healthy and unhealthy eating principles over the next 4 weeks.

**Results:** Most survivors (n=70, 71.9±6.7 yrs) were ≥3-years post-diagnosis, retired (79%), had a prostatectomy (43%) or had completed hormone therapy (45%). Adherence to a Med-Diet was low with 70% having a MEDAS score of <5.0 (4.7±1.9). Unhealthy food choices were limited by most including salt intake (84%), high-energy baked goods (89%), fried foods (74%), and alcohol (83%). Few survivors met recommended intake for vegetables (3%), nuts and seeds (33%), legumes (37%), and fish (40%). Multiple regression analysis found no association between MEDAS and DASS-21 sub-scale scores. Lower intent to limit unhealthy eating behaviour was associated with higher DASS-21 depression ( $\beta=-0.569$ ,  $p<0.001$ ), anxiety ( $\beta=-0.648$ ,  $p<0.001$ ) and stress sub-scale scores ( $\beta=-0.442$ ,  $p=0.001$ ) in unadjusted and adjusted models (covariates: age, body mass index, physical activity, comorbidities).

**Discussion:** While the majority of survivors limited unhealthy food choices, they were not meeting a number of recommended food guidelines and had low adherence to the Med-diet. Significant associations between mental health and eating behaviour intent in these survivors highlights the need for dietetic support to enhance diet quality and its associated health benefits in those with poorer mental health. Further research is warranted to explore the direction of these associations and the role of diet in supporting mental health of prostate cancer survivors.

## Feasibility and acceptability of an intensive weight loss intervention to improve breast cancer survival: the WE SURE CAN pilot randomised controlled trial

**Dr. Louise Hall<sup>1</sup>**, Pei Loo Ow<sup>2</sup>, Michelle Collinson<sup>2</sup>, Dr Dimitrios A Koutoukidis<sup>3</sup>, Dr Annie S Anderson<sup>4</sup>, Christopher Taylor<sup>2</sup>, Dax Everitt<sup>2</sup>, Susanne Hartley<sup>5</sup>, Florence Day<sup>2</sup>, Amanda Farrin<sup>2</sup>, Dr Samuel G Smith<sup>1</sup>, Dr Rebecca Beeken<sup>1</sup>

<sup>1</sup>Leeds Institute of Health Sciences, University of Leeds, Leeds, United Kingdom, <sup>2</sup>Clinical Trials Research Unit, Leeds Institute of Clinical Trials Research, University of Leeds, Leeds, United Kingdom, <sup>3</sup>Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, United Kingdom, <sup>4</sup>School of Medicine, University of Dundee, Dundee, United Kingdom, <sup>5</sup>NHS England, Leeds, United Kingdom

**SO.1.01: Cancer, Hunua 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Women diagnosed with breast cancer who carry excess weight have increased risk of recurrence and mortality. Significant weight loss may improve outcomes. One strategy to achieve this is a low-energy total diet replacement (TDR) programme. This pilot trial aimed to assess the feasibility and acceptability of a TDR programme in women with breast cancer, to inform a future phase III trial.

**Methods:** A UK-based multi-centre, two-arm randomised controlled pilot trial with embedded process evaluation. Women who had completed treatment for stage 2-3a breast cancer, with a body mass index  $\geq 27\text{kg/m}^2$  were individually randomised (1:1) to TDR plus enhanced usual care (EUC) or EUC alone. The TDR programme comprised 12-weeks of TDR (810kcal/day), 12 weeks of stepped food reintroduction, then 6-months of weight maintenance, with remote behavioural support throughout. EUC comprised a leaflet and one-off telephone discussion providing habit-based weight loss advice. Follow-up was at 4-, 7-, 10- and 13-months. Key outcomes included weight, physical activity and quality of life. Pre-defined criteria (recruitment and adherence) were used to assess progression to a future phase III trial. Outcome data were explored using linear regression in non-powered analyses. Semi-structured interviews framed around the Theoretical Framework of Acceptability and Theoretical Domains Framework were analysed using thematic analysis.

**Results:** 110 women were approached, 80 (72.7%) were eligible, 58 (72.5%) consented, and 52 (65.0%) were randomised. Of the 26 randomised to TDR+EUC, 23 (88.5%) attended  $\geq 4$  consultations during the TDR phase, and 20 (76.9%) completed the intervention. 39 (75.0%) women provided questionnaire data at 4-months and 29 (55.8%) at 13-months. 31 (59.6%) had follow-up weight data at 13-months. Compared with EUC, the TDR+EUC arm had a lower weight at 13-months, adjusted mean difference of -7.54 kg (95% CI: -16.04, 0.97). Participant interviews (n=10) suggested high acceptability of the TDR, despite self-efficacy concerns.

**Conclusions:** The TDR programme was acceptable to women with breast cancer and showed potential for weight reduction at 13 months. Recruitment and adherence progression criteria were met, but feasibility of collecting objective weight data was not. Further refinement of the trial design is needed before a phase III trial. Trial Registration ISRCTN12000313.

## Promoting Physical Activity to Reduce Cardiovascular Risk in Cancer Survivors: Barriers, Facilitators, and Opportunities Guided by the COM-B Framework

**Dr. Roberto Benzo**<sup>1,2</sup>, Macy K. Tetrick<sup>2</sup>, Dr. Sara M. St. George<sup>3,4</sup>, Vanina Pavia<sup>4</sup>, Dr. Electra Paskett<sup>1,2</sup>, Dr. Peter Washington<sup>5</sup>, Dr. Ali Kargarandehkordi<sup>5</sup>, Rujul Singh<sup>2</sup>, Alex Osei<sup>6</sup>, Dr. Sanam Ghazi<sup>7</sup>, Olivia Preston<sup>7</sup>, Dr. Daniel Addison<sup>2,7,8</sup>

<sup>1</sup>Comprehensive Cancer Center, The Ohio State University, Columbus, USA, <sup>2</sup>Division of Cancer Prevention and Control, Department of Internal Medicine, College of Medicine, The Ohio State University, Columbus, USA, <sup>3</sup>Sylvester Comprehensive Cancer Center, University of Miami Miller School of Medicine, Miami, USA, <sup>4</sup>Department of Public Health Sciences, University of Miami Miller School of Medicine, Miami, USA, <sup>5</sup>Department of Information and Computer Sciences, University of Hawaii at Manoa, Honolulu, USA, <sup>6</sup>Department of Design, The Ohio State University, Columbus, USA, <sup>7</sup>Cardio-Oncology Program, Division of Cardiology, The Ohio State University Medical Center, Columbus, USA, <sup>8</sup>Division of Epidemiology, College of Public Health, Ohio State University, Columbus, USA

**SO.1.01: Cancer, Hunua 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Cardiovascular disease (CVD) is the leading non-malignant cause of death among cancer survivors, driven by the cardiotoxic effects of modern cancer therapies. Physical activity (PA) is a proven strategy to reduce CVD risk and holds potential for survivors undergoing cardiotoxic treatment. This study aimed to identify barriers and facilitators affecting survivors' engagement in PA and providers' ability to promote PA in this high-risk population.

**Methods:** This qualitative study used the Capability, Opportunity, Motivation, and Behavior (COM-B) framework. Participants included adult cancer survivors treated at a cardio-oncology clinic with cardiotoxic therapies (e.g., tyrosine kinase inhibitors) and healthcare providers involved in their care. Semi-structured interviews were conducted remotely to explore barriers and facilitators to engaging in or promoting PA, with responses categorized into COM-B domains. Data were analyzed using Rapid Qualitative Analysis (RQA). Ethical approval was obtained, and participants were compensated.

**Results:** Overall, 12 cancer patients (mean age 65.3 years; 50% female; 83% White) and 12 healthcare providers participated. Knowledge of PA benefits and prior experience facilitated engagement and promotion, while physical limitations (e.g., fatigue, decreased fitness) and safety concerns (e.g., fears of injury or symptom exacerbation) were major barriers. Opportunities for PA were enhanced by access to home exercise tools, public parks, digital content, and social support. However, limited resources, poor weather, and a lack of cancer-specific options reduced opportunities. Motivation was driven by perceived health benefits, positive emotions, and routines, but was undermined by negative emotions, physical discomfort, and ongoing safety concerns.

**Conclusions:** Guided by the COM-B model, these findings identify modifiable factors that can enhance survivors' PA engagement and support its promotion as a strategy to reduce cardiovascular risk. These factors can guide future interventions to increase PA among cancer survivors. Further research is needed to map these findings onto intervention functions to evaluate their impact on PA levels and health outcomes.

# Understanding Supportive Care Needs and Quality of Life Among Prostate Cancer Survivors in New Zealand

**Dr. Hui Xiao<sup>1</sup>**, Dr Erik Wibowo, Prof G David Baxter, Dr Lizhou Liu, Mr Tobias Hoeta

<sup>1</sup>University of Toronto, TORONTO, Canada

**SO.1.01: Cancer, Hunua 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Prostate cancer (PCa) survivors in New Zealand face significant long-term challenges impacting their quality of life (QoL). This study investigates disparities in supportive care needs (SCN) and QoL among PCa survivors, focusing on ethnic differences, treatment impacts, and survivor profiles to guide equitable care.

**Methods:** A cross-sectional survey was sent to 4,000 men with PCa, and we had a final sample of 1,075 respondents. Participants were stratified by diagnosis time (one to three years, and between three to five years) and ethnicity (Māori and non-Māori). Multivariate regression identified predictors of SCN and QoL disparities, hierarchical regression examined treatment interaction effects, and Latent Profile Analysis identified survivor profiles.

**Results:** Māori survivors had significantly lower QoL in physical health (mean difference = -12.4, 95% CI: -15.2 to -9.6,  $p < 0.001$ ) and higher SCN compared to non-Māori (mean difference = 8.7, 95% CI: 6.5 to 10.9,  $p < 0.001$ ). Care service utilization was significantly lower among Māori survivors (mean = 26.20 vs. 41.84,  $d = -0.79$ ,  $p < 0.001$ ). Poor mental health was linked to higher SCN across emotional ( $\beta = -5.55$ ,  $p = 0.01$ ) and information domains ( $\beta = -6.17$ ,  $p = 0.003$ ). Androgen Deprivation Therapy was associated with increased SCN, particularly in emotional needs ( $\beta = 15.96$ ,  $p = 0.002$ ) and hospital care needs ( $\beta = 9.13$ ,  $p = 0.021$ ). Radical prostatectomy improved care outcomes, especially for Māori men (interaction  $\beta = 6.36$ ,  $p = 0.002$ ). ADT also exacerbated SCN linked to poor mental health (interaction  $\beta = -4.27$ ,  $p = 0.003$ ). Latent Profile Analysis identified four profiles: • Resilient (33.8%): Predominantly non-Māori, older, higher education, high income. • Moderate Needs (46.9%): Mostly retired, moderate income. • QoL Struggles (10.7%): More Māori representation, younger, higher rates of diabetes and depression. • SCN Concerns (8.6%): Predominantly Māori, youngest, lower education, lowest care utilization.

**Conclusion:** Ethnic disparities exist in QoL and SCN among PCa survivors, with Māori men facing greater challenges. Culturally tailored supportive care services addressing mental health and SCN are essential to improve outcomes. Targeted interventions are needed to enhance well-being and reduce disparities in access to quality care.

## Active Together: An evidence-based intervention to support people with a cancer diagnosis to prepare for and recover well from treatment.

Prof. Robert Copeland<sup>1</sup>, **Dr Liam Humphreys**<sup>1</sup>, Dr Carol Keen<sup>2</sup>, Ms Gail Phillips<sup>1</sup>, Dr Kerry Rosenthal<sup>1</sup>, Dr Nik Kudiersky<sup>1</sup>, Mrs Gabriella Frith<sup>1</sup>, Dr Anna Myers<sup>1</sup>, Professor Gary Mills<sup>2</sup>, Professor Diana Greenfield<sup>2</sup>

<sup>1</sup>Advanced Wellbeing Research Centre, Sheffield Hallam University, Sheffield, United Kingdom, <sup>2</sup>Sheffield Teaching Hospitals Foundation Trust, Sheffield, United Kingdom

**SO.1.01: Cancer, Hunua 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** C. Cancer prevention and management

**Purpose:** Advancements in cancer treatment have improved survival rates, yet outcomes vary by procedure and patient fitness. This is unsurprising given the physiological and psychological strains of cancer and cancer treatments. Furthermore high-risk groups (e.g. frail and unfit) do not have sufficient physiological resilience, leading to post-treatment complications and inequalities in outcomes that follow a social gradient. Rehabilitation (including prehabilitation) is a multimodal approach aiming to help patients prepare for treatment, maximise its benefits and improve quality of life. Rehabilitation typically includes exercise, dietetics and psychological support with good evidence of its efficacy for a range of tumour groups. Despite this, few rehabilitation services are currently integrated into clinical pathways. Even fewer are commissioned or funded by the NHS. The Active Together service aimed to address this by testing the delivery of multi-modal rehabilitation (including prehabilitation) in a real-world setting.

**Methods:** Longitudinal mixed-methods evaluation combining outcome and process evaluations over two years (March 2022 to May 2024). The outcome evaluation employed a longitudinal design, comparing data from 847 Active Together participants with historical patient datasets and patients who declined participation, matched by procedure and tumour malignancy. The process evaluation gathered qualitative data through semi-structured interviews, questionnaires, and focus groups to explore service operation and contextual factors influencing outcomes.

**Results/Findings:** Strong referral (81% participation rate) and completion rates (93% for prehabilitation), with notable engagement from patients in deprived areas. Healthcare professionals reported 93% satisfaction regarding the service's integration into cancer care pathways. Patient feedback was overwhelmingly positive, with 97% noting improvements in health and wellbeing. Significant ( $p < 0.05$ ) enhancements in cardiorespiratory fitness, muscular endurance, and one-year survival were reported. The service demonstrated reduced healthcare resource use, with an estimated net saving of £366.36 per patient.

**Conclusions:** The Active Together service improves cancer treatment outcomes, fosters patient empowerment, and addresses health disparities. Its integration within existing care pathways has established trust among patients and healthcare professionals. The findings support continued implementation and expansion of the service, with potential long-term benefits for healthcare systems. This research underscores the importance of targeted, community-focused interventions in enhancing the quality of life and health outcomes for cancer patients.

## Harnessing Artificial Intelligence to Improve the Dietary Intakes of U.S. College Students

Ms. Christabel Domfe<sup>1</sup>, Dr. Aulo Gilli<sup>2</sup>, Boateng Bannerman<sup>3</sup>, Silas Bempong<sup>3</sup>, Pete McCloskey<sup>4</sup>, Charles Arnold<sup>1</sup>, Dr. David Hughes<sup>4</sup>, **Dr. Lauren Au**<sup>1</sup>

<sup>1</sup>University of California, Davis, Davis, USA, <sup>2</sup>International Food Policy Research Institute, Washington, USA, <sup>3</sup>University of Ghana, Accra, Ghana, <sup>4</sup>Pennsylvania State University, University Park, USA

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Technologies for precision nutrition research are in high demand due to the recognition that nutrition impacts the health of individuals differently. However, the effectiveness of precision nutrition research can be compromised by a lack of accurate and logistically intensive tools for assessing dietary intake. Artificial intelligence (AI) tools can improve dietary intake assessment for precision nutrition research. The purpose of this study was to conduct a pilot study of the PlantVillage Food Recognition and Nudging Insights (FRANI) mobile AI application by taking pictures and portion weights of commonly consumed foods and performing image annotation.

**Methods:** Data collection occurred in the University of California, Davis Dining Commons (DC) during the summer of 2024, following a 2-week menu cycle. It involved two waves of picture-taking: Wave 1 consisted of real-life pictures of foods, while Wave 2 consisted of pictures taken in two contexts – single foods in four standard portions and combination foods as they are typically eaten. Additionally, food portions were also weighed. Image annotation and subsequent semantic segmentation model training are currently underway to train FRANI to recognize foods in pictures. Additionally, seasonal foods not served during the summer will be captured in the fall and winter quarters to expand the food database further.

**Results:** Approximately 4,000 images representing 225 food classes, along with food portion data (in grams), were collected during the 2024 summer menu cycle. More than 30% of the images have been annotated. The annotation process is expected to conclude in December 2024, and model training will commence once approximately 50% of the images have been annotated.

**Conclusions:** Collaboration with the dining commons demonstrated the efficiency and feasibility of collecting AI data in a U.S. college setting. FRANI AI can serve as a tool for dietary assessment by being trained to recognize foods in captured images. The outcomes of this pilot will set the stage for a feasibility study that investigates the effectiveness of FRANI for future precision nutrition interventions.

# Systematic Development and Refinement of a User-Centred, Evidence-Based Digital Toolkit for Supporting Self-Care in Gestational Diabetes Mellitus: A Mixed-Methods Approach

**Ms. Maria Lua Coelho Nunes<sup>1</sup>**, Beatriz Félix<sup>1</sup>, Francisco Nunes<sup>1</sup>, Inês Santos<sup>2,3,4</sup>

<sup>1</sup>Fraunhofer Portugal AICOS, Lisbon, Portugal, <sup>2</sup>Laboratório de Nutrição, Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal, <sup>3</sup>Instituto de Saúde Ambiental, Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal, <sup>4</sup>CIDEFES, Universidade Lusófona and CIFI2D, Lisbon, Portugal

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Gestational diabetes mellitus (GDM) is a common pregnancy complication that demands women to adjust their self-care practices to avoid complications. Several digital behavioural interventions have been developed for GDM management. However, they often fail to address women's individual needs and characteristics and overlook the integration of self-care theory in the design. Thus, we adopted a mixed-methods approach to develop and refine a user-centred, evidence-based digital Toolkit for supporting self-care in GDM, providing behavioural and educational content, particularly about nutrition.

**Methods:** This study involved: 66 nutrition appointments' observation, interviews with dietitians (N=11) and patients (N=17), co-creation sessions with dietitians (N=2), and a survey healthcare professionals (N=17). Observation notes, interview transcripts, and co-creation sessions materials were generated and thematically analysed; while a descriptive statistical analysis was conducted on survey results. The first allowed the characterization of women's and dietitians' views on GDM management, informing the Toolkit development and refinement, together with scientific evidence. The latter enabled the validation of the Toolkit with healthcare professionals.

**Results/findings:** The thematic analysis resulted in 434 codes. From observations and interviews with women, we identified determinants of adherence to health behavior change, enclosed in five challenges: 1) Understanding the impact of health behavior change on the pregnant woman's body and fetus; 2) Measuring blood glucose values; 3) Identifying dietary features to control blood glucose levels; 4) Perceiving the multifactorial way to manage blood glucose levels; 5) Feeling supported by others in managing GDM. Additionally, we identified three topics of self-care in GDM, framed by theory: 1) Self-awareness; 2) Self-monitoring; 3) Self-management. From observations and interviews with dietitians, we divided clinical nutrition practices into three stages: 1) Assessment; 2) Implementation; 3) Monitor and review. Materials from co-creation sessions allowed to structure education topics and identify women's characteristics used to tailor nutritional interventions. Lastly, survey results enabled to select content with high-agreement among healthcare professionals for the final version of the Toolkit, resulting in thirty-eight artifacts divided into four modules, including behavioural tools to assist women in GDM management.

**Conclusions:** This mixed-methods approach robustly supported the development of a user-centred, evidence-based Toolkit for supporting self-care in GDM, aiming for its future testing.

## Evaluating the safety and usability of a sport fueling app targeting the dietary choices of high school athletes called PLAYTE: A pre-post study.

**Miss Alysha Deslippe<sup>1</sup>**, Dr. Shannon Zaitsoff<sup>3</sup>, Dr. Tamara Cohen<sup>1,2</sup>

<sup>1</sup>Land and Food Systems, University of British Columbia, Vancouver, Canada, <sup>2</sup>Healthy Starts, BC Children's Hospital Research Institute, Vancouver, Canada, <sup>3</sup>Psychology, Simon Fraser University, Burnaby, Canada

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Dietary habits impact high school athletes' (13-18 years) health and performance. In Canada, there are no school-delivered resources to help athletes understand what to eat. Publicly available resources are not specific to athletes elevated nutrient needs and often rely on calorie counting and weight tracking. This is problematic as athletes face pressures to achieve idealized bodies that are rooted in gender-specific ideals (e.g., girls as thin vs. boys as muscular), which can hinder mental health. To address this gap, we co-created PLAYTE, a sport fueling app that relies on plate-based eating, with teen athletes and coaches. Currently, we do not know if PLAYTE is usable and safe among all athletes. This information is critical to inform PLAYTE refinement.

**Methods:** To assess the usability and safety of PLAYTE, we will recruit 80 athletes (40 males; 40 females) from seven public schools in the Delta school district (British Columbia, Canada). Eligible teens must participate in at least one school sport that competes against other schools. Prior to using PLAYTE, athletes will provide details about their demographics (e.g., sex, gender, ethnicity, age, parent income) and sport history. Athletes will then undergo a 4-week intervention period using PLAYTE. Using a pre-post design, we will measure athletes' dietary habits (24-hour food records), disordered eating risk (Disorder Eating Screener for Athletes (DESA-6)) and perceptions of PLAYTE (Mobile Application Rating Scale (uMARS); open-ended prompts; optional focus group interviews).

**Analysis Plan:** Trends in dietary habits and disordered eating risk (DESA-6 scores) will be analyzed using descriptive statistics. App analytics (e.g., total time, use of different features) will be analyzed to assess how athletes used PLAYTE. Usability data will be analyzed descriptively (i.e., uMARS) and thematically (open ended prompts; focus group interviews) to add greater depth into athletes' views. Differences based on sex and gender will be explored for all measures.

**Conclusions:** There are no easily accessible sport nutrition resources in Canadian high schools. Understanding the usability and safety of a novel sport fueling app called PLAYTE moves one step closer to addressing this gap – having the potential to improve Canadian athletes' health and performance.

# Designing a Personalized Nutrition Web-Tool: Integrating Food Preference Profiling, Behaviour Change Strategies, and Machine Learning for Cardiovascular Disease Prevention

**Ms. Hana Navratilova<sup>1</sup>**, Prof Anthony Whetton<sup>1</sup>, Prof Nophar Geifman<sup>1</sup>

<sup>1</sup>University of Surrey, Guildford, United Kingdom

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** This study aims to establish the foundational background work for designing a web-tool based intervention for personalised nutrition recommendations. The tool will be based on individual food preference profiles, leveraging data from the UK Biobank. This research integrates behaviour change strategies, specifically using the Behaviour Change Wheel (BCW), with machine learning models for preference profiling and risk assessment.

**Methods:** Using food preference questionnaire (FPQ) data from over 180,000 UK Biobank participants, Latent Profile Analysis (LPA) to identify patterns and profiles were employed. Next, CVD probabilities for each profile group were predicted using regression and survival analysis. The first step in web-tool design involved selecting target behaviors using the COM-B model (Capability, Opportunity, Motivation – Behaviour), further analyzed with the Theoretical Domains Framework (TDF). Intervention options were identified, considering barriers to dietary changes related to fats found in the literature. Key web-tool features incorporating selected Behaviour Change Techniques (BCTs) were determined. Design guidelines addressing barriers to prolonged use of digital health platforms were included to ensure user-friendliness.

**Results:** Our AI approach identified three distinct food preference profiles. Out of 10 candidate target behaviors, two were selected: healthy fats and cooking methods. The intervention functions meeting APEASE criteria included education, persuasion, and enablement. Supporting policy categories were communication, guidelines, and service provision. Identified barriers to dietary change included negative attitudes toward increasing total fat intake, taste preferences, lack of knowledge about food types and proportions, limited cooking skills, resistance to changing eating habits, increased costs, and the need for supervision and encouragement. Four key features were determined: 1) food source and portion information, 2) recipes and shopping deals, 3) dietary feedback, and 4) community exchange platforms. Additionally, the web tool will include machine learning-based features: a food preference profiler and a CVD risk calculator.

**Conclusions:** Our study used unsupervised machine learning to categorize food preferences and identify new population strata. The web tool aims to empower users to make informed dietary choices, reduce CVD risk, and improve public health by making healthy eating more accessible and sustainable.

## Pain and sleep predict physical activity and function in systemic lupus erythematosus

**Ms. Chun-Chen Lin<sup>1</sup>**, Dr. Anna Kratz<sup>1</sup>, Dr. Daniel Whibley<sup>1</sup>, Dr. Dominique Kinnett-Hopkins<sup>1</sup>

<sup>1</sup>University of Michigan, Ann Arbor, USA

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Systemic Lupus Erythematosus (SLE) is a chronic autoimmune disease characterized by fatigue, pain, sleep disturbance, and depressed mood, affecting physical activity (PA) and physical function (PF). However, it remains unclear which symptoms have the greatest impact on PA and PF. To address this gap, we utilized ecological momentary assessments (EMA) to capture real-time data on somatic (fatigue, pain), mood (depression) symptoms, sleep (quality and duration), physical function, and PA. Our goal was to identify modifiable symptoms that predict same-day changes in PF and PA.

**Methods:** Participants with SLE attended a lab visit for demographic data, SLE characteristics, subjective PF (Neuro-QoL), and objective PF measures (NIH Toolbox Motor Battery, backward gait speed). A two-week home monitoring period followed, where participants wore an ActiGraph on their non-dominant wrist for daytime PA data. Participants reported sleep duration/quality each morning and completed EMA measures of fatigue, pain intensity, depressed mood, and upper/lower extremity functioning at 4 intervals (wake, midday, afternoon/evening, bedtime) via smartphone app. Multilevel random effects models were used to examine between- and within-person associations between symptoms/sleep and upper/lower extremity functioning and PA.

**Results:** Seventeen women diagnosed with SLE (mean age: 49.5±7.2 years; 7 Black/10 White; disease duration: 15.3±9.1 years; Systemic Lupus Activity Measure: 16.4±8.5; BMI: 31.5±7.1 kg/m<sup>2</sup>) were included. At the within-person level, days of higher than usual pain were associated with lower same-day upper extremity (hand) function ( $B=-0.32$ ,  $p=0.010$ ) and worse same-day lower extremity (mobility) function ( $B=-0.67$ ,  $p<0.0001$ ). Nights of longer sleep duration were associated with lower levels of next-day physical activity, including less total activity ( $B=-1.38$ ,  $p=0.0002$ ), less time spent engaged in moderate-to-vigorous activity ( $B=-0.5$ ,  $p=0.0003$ ), and less time spent engaged in light activity ( $B=-0.88$ ,  $p=0.0004$ ). At the between-person level; better sleep quality was associated with a higher level of total physical activity ( $B=4.3$ ,  $P=0.040$ ).

**Conclusion:** Of SLE symptoms assessed, daily fluctuations in pain and sleep significantly predicted daily PF and PA. These findings suggest that addressing pain and sleep may enhance PF and PA in individuals with SLE. Future research should explore specific domains of pain and sleep as predictors of daily physical function and PA.

# The effectiveness of parent targeted digital health interventions on child nutrition, physical activity and sedentary behaviour in the first 2000 days (birth to 5 years): a systematic review of randomised controlled trials.

**Dr. Jacklyn Jackson**<sup>1,2,3</sup>, Dr Alison Brown<sup>1,2,3,4</sup>, Ms Sienna Kavalec<sup>1,2,3</sup>, Ms Nayerra Hudson<sup>1,2,3</sup>, Associate Professor Rachel Sutherland<sup>1,2,3,4</sup>

<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Local Health District, New Lambton Heights, Australia, <sup>3</sup>Hunter Medical Research Institute, Newcastle, Australia, <sup>4</sup>National Centre of Implementation Science, Callaghan, Australia

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** The first 2000 days of a child's life represents a critical window for establishing preventative health behaviours including optimal physical activity and nutrition. Digital health interventions (DHIs) including eHealth and mHealth represent a highly scalable way of providing healthcare resources, information and service links to parents who are traditionally a difficult to reach population. Given the growing interest and demand for DHI to support child health during the first 2000 days, a synthesis of the current evidence is required to identify the effectiveness of DHIs on key preventative health behaviours.

**Methods:** Seven electronic databases were systematically searched up until April 2024. Randomised controlled trials of DHIs delivered to parents of healthy children aged 5 years and under were eligible for review. Studies were included if they reported at least one of the following outcomes: 1. Child dietary intake/nutrition; 2. Child physical activity; and 3. Child sedentary behaviour (including screentime).

**Results/findings:** Our search identified 6927 titles and abstracts. 214 full text studies were assessed for eligibility, and 30 articles relating to 26 individual randomised controlled trials were included in the review. Sixteen (62%) of the included trials were mHealth interventions (e.g. apps, text messages, voice messages and calls), and 12 (46%) were eHealth interventions (e.g. website, social media, online). Study duration ranged between 4 weeks to 2 years. Sixteen (53%) of the included articles reported a statistically significant improvement for at least one outcome of interest. Seven included DHIs reported significantly reduced screentime; 5 reported significantly reduced sugar sweetened beverage (including juice) intakes; 4 reported significantly increased fruit and/or vegetables intakes; and 3 reported significantly reduced discretionary food intakes. A meta-analysis is planned for outcomes related to fruits and vegetables; sugar sweetened beverages; screentime and minutes of moderate to vigorous physical activity.

**Conclusions:** Parent targeted DHIs may be an effective method of supporting the development of ideal child health behaviours during the first 2000 days that are highly scalable and relatively low cost. This systematic review and meta-analysis will provide high quality evidence regarding their effectiveness on key child health outcomes and identify study characteristics that may be particularly effective/ineffective.

## Effectiveness of mHealth interventions targeting physical activity, sedentary behaviour, sleep or nutrition on emotional, behaviour and eating disorders in adolescents

**Dr. Hannes Baumann<sup>1</sup>**, Dr. Ben Singh<sup>3</sup>, Amanda Staiano<sup>2</sup>, Dr. Claire Gough<sup>5</sup>, Mavra Ahmed<sup>6</sup>, Janis Fiedler<sup>7</sup>, Irina Timm<sup>7</sup>, Dr. Kathrin Wunsch<sup>7</sup>, Prof. Dr. Alyssa Button<sup>8</sup>, Zenong Yin<sup>9</sup>, Maria Vasiloglou<sup>10</sup>, Bridve Sivakumar<sup>11</sup>, Dr. Jasmine Petersen<sup>5</sup>, Joan Dallinga<sup>12</sup>, Mr. Christopher Huong<sup>9</sup>, Stephanie Schoeppe<sup>4</sup>, Chelsea Kracht<sup>13</sup>, Dr. Katie Spring<sup>2</sup>, Prof. Carol Maher<sup>3</sup>, Prof. Corneel Vandelanotte<sup>4</sup>

<sup>1</sup>German Sport University Cologne, Cologne, Germany, <sup>2</sup>Pennington Biomedical Research Center, Baton Rouge, USA, <sup>3</sup>University of South Australia, Adelaide, Australia, <sup>4</sup>Central Queensland University, Rockhampton, Australia, <sup>5</sup>Flinders University, Adelaide, Australia, <sup>6</sup>University of Toronto, Toronto, Canada, <sup>7</sup>Karlsruhe Institute of Technology, Karlsruhe, Germany, <sup>8</sup>Virginia Commonwealth University, Richmond, USA, <sup>9</sup>The University of Texas at San Antonio, San Antonio, USA, <sup>10</sup>Nestle Institute of Health Sciences, Lausanne, Switzerland, <sup>11</sup>Ontario Tech University, Oshawa, Canada, <sup>12</sup>The Hague University of Applied Sciences, Den Haag, Netherlands, <sup>13</sup>University of Kansas, Lawrence, USA

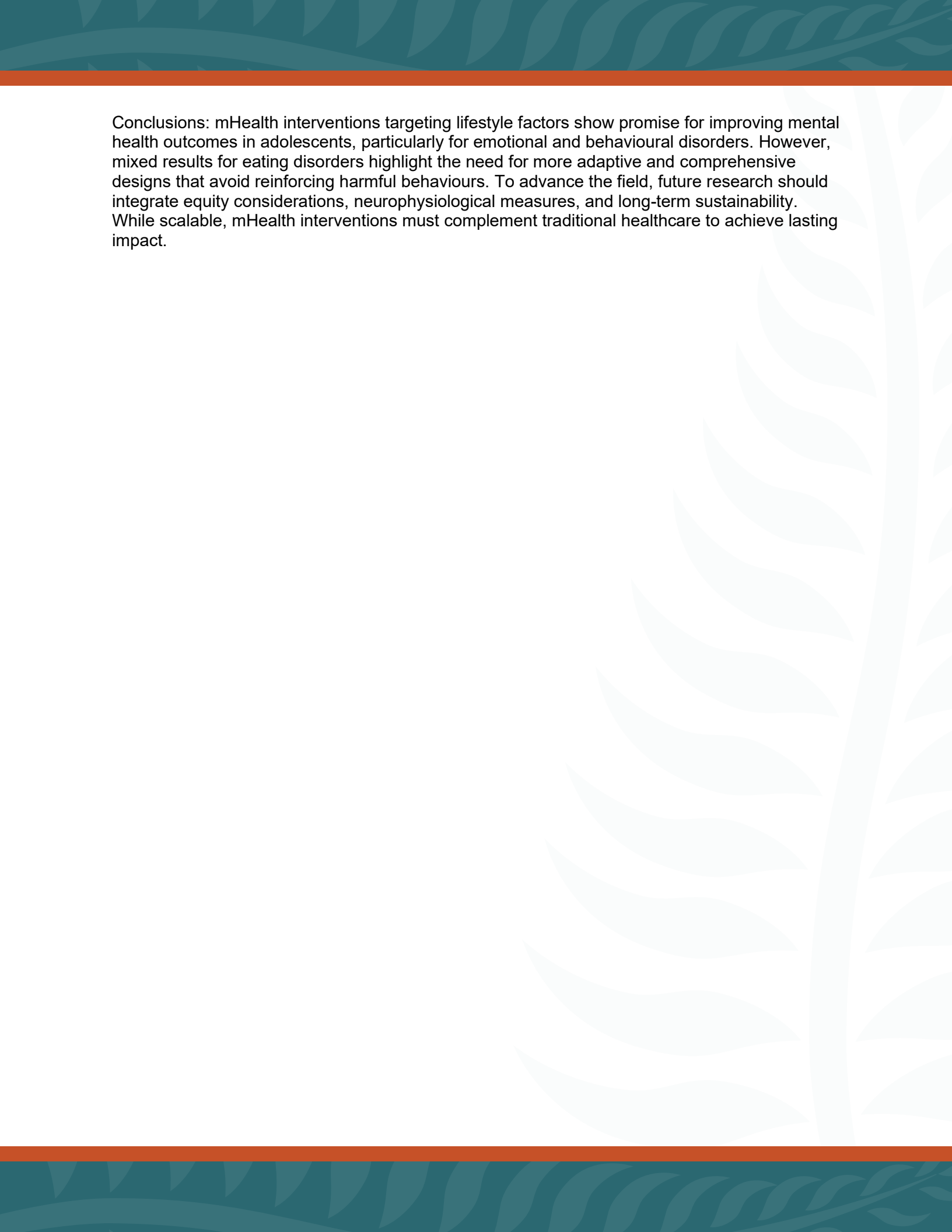
**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Mental disorders among adolescents are highly prevalent, affecting one in seven individuals and accounting for 15% of the global disease burden in this age group. This significant incidence—including emotional, behavioural, and eating disorders—emphasises adolescence as a critical period for mental health interventions. Addressing this requires innovative approaches. Mobile health (mHealth) interventions hold potential for improving physical activity, sedentary behaviour, sleep, and nutrition—which are pivotal factors influencing mental health outcomes. However, their effectiveness in achieving clinically meaningful mental health improvements for adolescents with emotional, behavioural, or eating disorders remains unclear. This review aims to synthesize evidence on the effectiveness of mHealth interventions targeting these behavioural factors.

**Methods:** A systematic review was conducted (PROSPERO ID: CRD42024591285) in accordance with PRISMA guidelines. Eight databases were searched for randomized controlled trials (RCTs) published up to October 2024. Eligible studies included adolescents aged 11–21 with clinically relevant emotional, behavioural, or eating disorders, where interventions targeted physical activity, sedentary behaviour, nutrition, or sleep. Risk of bias was assessed using the ROB2 tool. Data extraction and synthesis focused on intervention design, targeted behaviours, and mental health outcomes.

**Results:** Out of N=1,554 studies imported for screening, ten RCT's involving N=3,703 participants were analysed across emotional, behavioural, and eating disorders. For emotional disorders (5 studies, 2,338 participants), mHealth interventions featuring mindfulness and cognitive-behavioural therapy (CBT) significantly reduced symptoms of depression and anxiety, often prioritizing sleep as a key factor. Behavioural disorders (2 studies, 369 participants) saw improvements in ADHD symptoms, with interventions combining physical activity and cognitive tasks. Eating disorder interventions (3 studies, 996 participants) showed mixed results: CBT-based apps effectively reduced binge eating and psychopathology, but diet tracking apps offered limited mental health benefits.



Conclusions: mHealth interventions targeting lifestyle factors show promise for improving mental health outcomes in adolescents, particularly for emotional and behavioural disorders. However, mixed results for eating disorders highlight the need for more adaptive and comprehensive designs that avoid reinforcing harmful behaviours. To advance the field, future research should integrate equity considerations, neurophysiological measures, and long-term sustainability. While scalable, mHealth interventions must complement traditional healthcare to achieve lasting impact.

## Adherence to Workplace Movement Breaks and Its Impact on Physical Activity: Insights from the Physical Activity at Work Trial

**Dr. Katika Akksilp**<sup>1,2</sup>, Dr. Yot Teerawattananon<sup>1,2</sup>, Dr. Falk Müller-Riemenschneider<sup>2,3</sup>, Dr. Cynthia Chen<sup>2,3</sup>

<sup>1</sup>HITAP, Muang Nonthaburi, <sup>2</sup>Hitap, <sup>2</sup>Saw Swee Hock School of Public Health, National University of Singapore and National University Health System, Singapore, Singapore, <sup>3</sup>Yong Loo Lin School of Medicine, National University of Singapore and National University Health System, Singapore, Singapore

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: D. E- & mHealth**

The "Physical Activity at Work" (PAW) cluster-randomized trial aimed to promote workplace physical activity and reduce sedentary behavior through a multi-component intervention, with movement breaks as the central component. A process evaluation was conducted to explore adherence to the intervention and its relationship with physical activity outcomes. Intervention adherence was continuously monitored daily using Fitbit devices over a 24-week intervention period. Baseline characteristics of intervention participants (n=121) were collected using the National Statistic Office of Thailand and Euroqol EQ-5D-5L questionnaires and ActiGraph accelerometers. We compared the baseline data based on adherence levels, categorized as above or below the median adherence to movement breaks. Linear mixed-effects models, adjusting for office-level clustering as a random effect, were applied to assess differences in physical activity levels, sedentary time, and steps between intervention participants who had higher adherence and control participants at 24-week follow-up. Participants with higher adherence to the movement break intervention during the 24-week intervention period (n=60) had greater baseline sedentary time during waking hours (501 minutes/day vs. 466 minutes/day), more baseline steps during waking hours (6290 steps vs. 5570 steps) and office hours (3670 steps vs. 3290 steps), and higher health-related quality of life (EQ-5D value: 0.933 vs. 0.897) compared to participants with lower adherence (n=61). At the 24-week follow-up data collection, high-adherence participants in the intervention group spent 10.9 minutes/day (95% CI: 4.04–17.8 minutes/day) more in moderate-to-vigorous physical activity and had 1572.8 steps/day (95% CI: 575–2570 steps/day) higher compared to the control group during waking hours. During office hours, high-adherence intervention participants also spent higher time in moderate-to-vigorous physical activity and had higher steps. No significant differences were observed in sedentary or light physical activity. Fitbit-based monitoring effectively assessed adherence and the mechanisms of impact. Participants with higher adherence to the movement break intervention in the PAW trial were those with higher baseline sedentary time, steps, and health-related quality of life compared to those with lower adherence. The intervention was potentially effective among participants with higher adherence, demonstrating the value of workplace movement breaks in promoting physical activity and highlighting the importance of adherence in achieving positive outcomes.

## AI, Bots, and the Future of Remotely-Delivered Studies: Tackling Emerging Recruitment Challenges

**Ms. Hannah Lavoie<sup>1</sup>**, Ms. Jamie Zeldman<sup>1</sup>, Ms. Francesca L. Wilkins<sup>1</sup>, Dr. Megan A. McVay<sup>1</sup>, Dr. Amy R. Mobley<sup>1</sup>, Dr. Danielle E. Jake-Schoffman<sup>1</sup>

<sup>1</sup>University of Florida, Department of Health Education and Behavior, Gainesville, USA

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** D. E- & mHealth

**Purpose:** Participant recruitment for remotely-delivered health behavior studies has introduced novel challenges that impact the success of outreach strategies (e.g., bot interference, fraudulent screening completions). Common strategies for remote recruitment are explored, along with approaches and recommendations to optimize recruitment efforts.

**Methods:** Data from three Zoom-based qualitative studies focused on physical activity and nutrition are highlighted. For each study, eligibility and enrollment numbers are described before and after adjustments to recruitment strategies. Researchers' insights and reflections are discussed, along with suggestions for optimization of future recruitment efforts. This abstract summarizes common challenges encountered when recruiting participants for remotely delivered studies, providing unique insights into recruitment issues specifically for qualitative physical activity and nutrition studies.

**Results:** Across three interview studies (recruitment in 2023-2024), researchers aimed to recruit diverse participants, including female college students, caregivers of young children, and young adult Black women. However, each study faced significant recruitment challenges, particularly, managing fraudulent (i.e., deliberate false information) or bot responses (i.e., automated) and reaching their target audiences effectively. To address these issues, the research teams implemented a variety of strategies, including adjustments to recruitment methods and additional bot security. These included: 1) Survey and Screening Adjustments (e.g., measures for bot prevention, survey host change), 2) Adjusting Recruitment Methods (e.g., switching social media platforms as well as shifting to more community-based approaches), and 3) Security and Verification (e.g., procedures for identifying fraudulent or bot responses). For each study, data on screeners and eligible/enrolled participants are included: Study 1: 200 screeners, 12 enrolled; Study 2: 694 screeners, 50 enrolled; and Study 3: 952 screeners, 12 enrolled (800 bots confirmed). Data are presented from before and after adjustments were implemented. These recruitment adjustments were successful across the three studies in finding and enrolling more of the target sample and reducing fraudulent responses.

**Conclusions:** Effective strategies and procedures to limit bots and fraudulent responses are becoming necessary for remote recruitment. The adjustments implemented in the present studies highlight the need for diverse recruitment methods, adaptability in recruitment efforts, improved screening processes, and the use of robust security measures to effectively reach and recruit target audiences.

## Impact of financial incentives on completion of a 6-week culinary nutrition eHealth challenge within the No Money No Time website

Dr Rebecca Collins<sup>1,2</sup>, Dr Lee Ashton<sup>1,2</sup>, Dr Erin Clarke<sup>1,2</sup>, Associate Professor Marc Adam<sup>1,2</sup>, Associate Professor Melinda Hutchesson<sup>1,2</sup>, Professor Tracy Burrows<sup>1,2</sup>, **Prof. Clare Collins<sup>1,2</sup>**

<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>Food and Nutrition Program, Hunter Medical Research Institute, New Lambton Heights, Australia

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** The aim was to compare participant retention in a 6-week eHealth challenge, with and without use of financial incentives and to compare demographic characteristic, diet quality and engagement outcomes between them.

**Methods:** This single-arm, pre-post study recruited adults  $\geq 18$  years from Australia into a 6-week nutrition challenge delivered via weekly emails that directed participants to the No Money No Time (NMNT) website from 20th February to March 2024 after completing the embedded Healthy Eating Quiz (HEQ) and consenting to data use for research purposes. This project was approved by University of Newcastle Human Research Ethics Committee (H-2018-0512). At the start of each challenge week participants received an email with links to targeted NMNT content, relevant recipes, plus specific time and cost-efficient advice to help improve dietary patterns. Weeks 2–5 included a prize draw of 4 x \$25 eGift cards randomly drawn from participants actively engaging with challenge materials and a week 6 final draw of 4 x \$100 eGift cards from participants completing the HEQ and feedback survey post-challenge. Data was collected on diet quality (HEQ score), demographics (gender, age, vegetarian status, number of people/weekly household grocery expenditure, expenditure on food purchased away from the home, weight and height). NMNT website analytics were collected via Active Campaign software.

**Results:** The incentivised challenge recruited significantly more males (22 vs. 15%) and a younger demographic (mean age 45 vs 50y) compared to unincentivised ( $p < 0.01$ ). There was a significantly greater 6wk retention in the incentivised challenge compared to no incentivisation (21% vs. 16%, z-score = 2.14,  $p < 0.05$ ), with significant increases in diet quality (HEQ score) in adjusted models (+4.5 points,  $p < 0.05$ ), which was not significantly different to the unincentivised challenge  $p = 0.09$ .

**Conclusions:** The 6-week eHealth nutrition challenge using financial incentives improved diet quality and led to significantly greater retention compared to an unincentivised challenge, with overall retention still relatively low. Engagement with weekly emails exceeds global email marketing campaigns. Future iterations should incorporate strategies to increase participant engagement. An email campaign represents a low-cost approach to achieve short-term improvement in diet quality.

## Manipulating the order of food items in an online grocery store to nudge consumers into making healthier or more sustainable food choices.

**Dr. Nienke de Vlieger**<sup>1,2</sup>, Ms Jessica Piper<sup>1,2</sup>, Dr Eva Valenčič<sup>3</sup>, Professor Tamara Bucher<sup>1,2,4</sup>

<sup>1</sup>University of Newcastle, Callaghan, Australia, <sup>2</sup>Food and Nutrition Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>3</sup>Computer Systems, Jozef Stefan Institute, Ljubljana, Slovenia, <sup>4</sup>Department of Health Professions, Bern University of Applied Sciences, Bern, Switzerland

**SO.1.02: Innovative Digital Solutions for Nutrition, Physical Activity, and Behavior Change, Hunua 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: D. E- & mHealth**

**Purpose:** Previous literature has shown that re-ordering food products in online grocery stores has the potential to nudge consumers towards choosing higher fibre products. The aim of this study is to investigate if re-ordering the product choices in an online grocery store based on Health Star Ratings (HSR) or a fictitious Sustainability Rating (SR), can affect the consumer's food choice.

**Methods:** Over 500 Australian adults were randomly allocated to one of 4 groups: 1) HSR highest on top, 2) HSR random order, 3) SR highest on top, or 4) SR random order. In an online survey, participants started by answering questions on demographics, after which they were directed to the mocked up online grocery shop. The grocery shop contains over 300 mocked-up unbranded food and drink items, sorted over 7 categories. Participants were asked to complete a shopping task and return to the survey once done. Upon returning, participants answered further questions regarding their online shopping habits.

**Results:** Descriptive statistics such as means/medians with standard deviations and frequencies will be used to describe the sample of participants. Normality for outcome data will be tested using the Shapiro–Wilk test and Levene's test will be used to test the homogeneity of variances. Further, Wilcoxon rank-sum tests and Chi-square tests will check for matching of baseline characteristics between groups. Non-parametric data of HSR and Sustainability rating and total energy (kcal) per shopping cart will be analysed using Wilcoxon rank-sum tests. All tests will be done using R software with p-values <0.5 considered statistically significant.

**Conclusions:** The findings from this study will have valuable implications for consumers, public health officers, policy makers and User Interface designers. With an increasing number of consumers making more food choices in the digital eating environment, studies like the current one are important to further our understanding of the factors that can promote healthier or more sustainable choices for the everyday consumer.

## Differences in Elementary-Age Children's Food and Beverage Consumption between School and Summer: Three-year findings from the What's UP (Undermining Prevention) with Summer Observational Cohort Study

**Dr. Michael Beets<sup>1</sup>**, Dr Sarah Burkart<sup>1</sup>, Dr Christopher Pfladderer<sup>3</sup>, Dr Elizabeth Adams<sup>1</sup>, Dr R Glenn Weaver<sup>1</sup>, Dr Bridget Armstrong<sup>1</sup>, Dr Keith Brazendale<sup>3</sup>, Xuanxuan Zhu<sup>1</sup>, Dr Alexander McLain<sup>1</sup>, Dr Brie Turner-McGrievy<sup>1</sup>, Dr Russel Pate<sup>1</sup>, Dr Andrew Kaczynski<sup>1</sup>, Dr Amanda Fairchild<sup>4</sup>, Dr Brian Saelens<sup>5</sup>, Hannah Parker<sup>1</sup>, Dr Amy Yaroch<sup>6</sup>, Emily Eglitis<sup>7</sup>

<sup>1</sup>University of South Carolina, Columbia, United States, <sup>2</sup>UTHealth Houston, School of Public Health, Austin, United States, <sup>3</sup>Department of Health Sciences, University of Central Florida, Orlando, United States, <sup>4</sup>College of Arts and Sciences, University of South Carolina, Columbia, United States, <sup>5</sup>Seattle Children's Hospital, Seattle, United States, <sup>6</sup>Center for Nutrition & Health Impact, Omaha, United States, <sup>7</sup>University of Southern Australia, Adelaide, Australia

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Background:** Summer vacation is a time where youth gain excessive weight. A key driver of unhealthy weight gain is dietary quality. The absence of consistent structure, like school, is hypothesized to be one of the reasons for a lower quality diet during summer. This study examined differences in school and summer dietary quality in a diverse cohort of children across three years. We also examined the impact of attending structured programs on children's diets.

**Methods:** Parents of 1,298 children (age 5-14 years, 48% girls) completed a time use diary each day for 14-days during school (April/May) and again in summer (July) from 2021 to 2023, for a total of 6 timepoints. The daily diary collected information on the child's location and dietary intake for that day. Mixed-effects models examined the odds of consuming a food/beverage (e.g., fruit, vegetable, soda, salty snacks) on a given day during school vs. summer overall and by income. Models also examined the impact of attending structured programming before/after school (e.g., afterschool program) and during summer (e.g., summer day camp) on the likelihood of consumption.

**Results:** A total of 39,983 time use diaries were completed. Overall, children were less likely to consume fruit, vegetables, milk, 100% juice, and salty snacks (OR range 0.63 to 0.87), and they were more likely to consume sweetened beverages, soda, frozen desserts, and fast food (OR range 1.17 to 1.63) during the summer compared to school. On summer days with structured programming, children were more likely to consume fruits, vegetables, milk, salty snacks, sweetened beverages (OR range 1.13 to 1.45), and they were less likely to consume frozen desserts, fast food, and soda (OR range 0.63 to 0.90). During school, similar diet patterns were observed for structured programming before/after the school day. Few differences in dietary intake were observed across income.

**Conclusions:** Children were less likely to consume more healthful foods/beverages and more likely to consume less healthful foods/beverages during summer compared to school. Attending structured programming, during school or summer, is associated with improved diet – suggesting such settings have potential to modify dietary intake.

## Application of machine learning to determine predictors of child eating behaviors and parental feeding practices in the Environmental influences on Child Health Outcomes (ECHO) program

**Dr. Elena Jansen**<sup>1,2</sup>, Dr. Maxwell Mansolf<sup>3</sup>, MSPH Shuxian Hua<sup>1</sup>, Dr Phillip Sherlock<sup>4</sup>, MS James Lester<sup>3</sup>, Dr Courtney Blackwell<sup>3</sup>, Dr Susan Carnell<sup>1</sup>

<sup>1</sup>Department of Psychiatry and Behavioral Science, Johns Hopkins School of Medicine, Baltimore, United States of America, <sup>2</sup>Center for Eating and Feeding Disorders Research (CEDaR), Ballerup, Denmark,

<sup>3</sup>Department of Medical Social Sciences, Northwestern University, Feinberg School of Medicine, Chicago, United States of America, <sup>4</sup>Anita Zucker Center for Excellence in Early Childhood Studies, University of Florida, Gainesville, United States of America

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Child eating behaviors and parental feeding practices have both been shown to contribute to problematic mealtime interactions. Since the two concepts are intertwined and mutually influential, this study aimed to examine them separately and combined. Our goal was to use a data-driven machine learning approach to identify the most salient predictors of child eating behaviors and parental feeding practices in a large US sample which is not limited by diversity or geographic location.

**Methods:** We used data from the NIH ECHO cohort resulting in N=3556 2-6-year-old children (48% female, 52% White). Child eating was assessed with the Child Eating Behaviour Questionnaire (CEBQ) while parental feeding was measured with the Comprehensive Feeding Practices Questionnaire (CFPQ). We first used hierarchical cluster analysis to condense the numerous subscales of these measures into broader domains and then applied random forest regression to simultaneously identify cross-sectional predictors of these domains, including caregiver stress (Perceived Stress Scale), depression and social support (Patient-Reported Outcome Measurement Information System®), as well as demographics, SES and child BMI.

**Results/findings:** Analysis revealed six separate clusters (subscales of CEBQ and CFPQ clustered together respectively) and one combined cluster (subscales of CEBQ and CFPQ clustered together), representing a phenomenon comprised of children acting out their desires to eat and drink (i.e., Food responsiveness, Emotional Overeating, Desire to drink), and the caregivers exercising non-responsive feeding practices to control these behaviors (i.e., Restriction for weight control & for health, Pressure, Food as reward, Emotion regulation). Across these seven outcomes, caregiver and child age contributed the most predictive power in random forests, followed by caregiver mental health (perceived stress, depression) and child BMI, followed by support variables (emotional, informational, instrumental).

**Conclusions:** While child eating and parental feeding can both be seen as reflections of parents' perceptions, these concepts were largely independent, except for the combined cluster. Although the most salient predictors of the eating and feeding outcomes were caregiver and child age, adversities in the form of caregiver mental health and buffers in the form of social support also contributed, highlighting potential opportunities for intervention to improve children's eating behavior and parental feeding.

## The associations between infant feeding practices and cardiovascular risk profiles in early childhood

**Mr. Saeed Ghobadi<sup>1</sup>**, Prof. Kylie Hesketh<sup>1</sup>, Dr. Gavin Abbott<sup>1</sup>, Prof Berit Heitmann<sup>2</sup>, Prof Peter Vuillermine<sup>3</sup>, Prof David Burgner<sup>4</sup>, Dr Toby Mansell<sup>4</sup>, Dr Martin O'Hely<sup>3</sup>, Dr Miaobing Zheng<sup>1</sup>  
<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University, Melbourne, Australia, ,* <sup>2</sup>*The Department of Public Health, Section for General Practice, University of Copenhagen, Copenhagen, Denmark, ,* <sup>3</sup>*Institute for Mental and Physical Health and Clinical Translation, Deakin University, Geelong, Victoria, Australia, ,* <sup>4</sup>*Murdoch Children's Research Institute, Royal Children's Hospital Melbourne, 50 Flemington Rd, Parkville, VIC 3052, ,*

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Infant feeding practices have been associated with various individual cardiovascular risk markers, such as obesity in children, and infant rapid weight gain (RWG) is a potential mediator. However, it is unknown if infant feeding practices influence combined cardiovascular risks in children. This study examined the associations between infant feeding practices and combined cardiovascular risk profiles and the extent of mediation by RWG in early childhood.

**Methods:** We used data from the Australian Barwon Infant Study with follow-up at age 4 years (n=606) to examine various infant feeding practices: breastfeeding duration; exclusive breastfeeding at 3 months (defined as breastfeeding only without infant formula, other fluids, and solid foods); and predominantly breastfeeding at 6 months (defined as breastfeeding only without infant formula or other fluids). Infant RWG was defined as a change in weight for age z-score >0.67 from birth to one year. Latent profile analysis derived cardiovascular risk profiles from 7 cardiovascular risk markers measured at age 4 years. Multinomial logistic regression examined the association between infant feeding practices and cardiovascular risk profiles. Furthermore, the possible mediating effects of infant RWG on these associations were assessed.

**Results/findings:** Three cardiovascular profiles of 'high' (5.6% of children), 'medium' (48.7%), and 'low' risk (45.1%) were identified. Compared to children not predominantly breastfed at age 6 months, those who were predominantly breastfed had a lower risk of following the 'medium' than the 'low' cardiovascular risk profile (RRR: 0.5, 95% CI 0.3 to 0.8). There was no evidence of an association between predominantly breastfeeding at age 6 months and the risk of following the 'high' versus 'low' cardiovascular risk profile. No evidence of significant associations was found between breastfeeding duration or exclusive breastfeeding at age 3 months and the cardiovascular risk profiles. There was no evidence of a mediating effect of RWG on the association between infant feeding practices and cardiovascular risk profiles.

**Conclusions:** Predominantly breastfeeding at age 6 months was associated with a low risk of following the 'medium' cardiovascular risk profiles at age 4 years. The findings provide further evidence to support the beneficial role of predominant breastfeeding in early cardiovascular risk prevention.

## Appetite in Preschoolers: Producing Evidence for Tailoring Interventions Effectively (APPETItE): a project summary.

**Prof. Jackie Blissett**<sup>1</sup>, Dr Katie Edwards, Dr Abigail Pickard, Prof Clare Llewellyn, Prof Emma Haycraft, Dr Helen Croker, Dr Alice Kininmonth, Dr Moritz Herle, Prof Claire Farrow

<sup>1</sup>Aston University, Birmingham, UK, Birmingham, United Kingdom

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Children's appetite traits are the behavioural link between genetic risk and adiposity and are influenced by parental feeding practices. Parents of children who show high behavioural susceptibility to obesity need evidence-based guidance regarding feeding practice. Current advice on managing children's appetite is generic, ineffective and not tailored to children's appetite traits. Our aim was to create the evidence base for developing appetite-tailored interventions, and to co-create intervention guidelines from that evidence base.

**Methods:** A combination of longitudinal cohort analysis (n=2404 15-month to 5-year-old twins) survey methodology (n=995 parents of 3–5-year-old UK children) qualitative interviews (n=15), ecological momentary assessment (n=155) and a laboratory study (n=128). Workshops with parents were conducted to co-create guidelines for tailored digital intervention development.

**Results:** Avid eating behaviour is an identifiable profile for around 20% of 3–5-year-old children. It is distinguished by higher Food responsiveness, Emotional overeating, and Surgent temperament. These children have insatiable hunger and make constant requests for snacks and are more likely to experience food insecurity. Parents of children with avid eating profiles used more instrumental and emotional feeding practices. However, distraction, modelling, structure and boundaries were important in managing avid eating behaviour. Parents articulated their need for support to conduct the following steps: creating meal and snack structure; creating a protective home food environment (availability and portioning) and developing strategies for dealing with snack food requests in the moment (delay, distract, portion).

**Conclusion:** Tools are needed to support parents of children with avid eating to create healthy home food environments as well as to make feeding decisions 'in the moment' to deal with repeated requests for food. The proposed intervention will empower parents to create a protective home food environment to buffer children with avid eating behaviour from the obesogenic environment. Strategies to help parents reduce detrimental feeding practices including use of food for emotional regulation/reward are also needed, but changing this behaviour was perceived as very challenging for parents and will require additional support. Equipping parents with the skills to reduce stress/conflict without the use of food is likely to be a key determinant of intervention success.

# Macronutrient Distribution Across Pregnancy and the Influence of Exercise Type and Body Composition Changes

**Dr. Linda May<sup>1,2</sup>**, Dr. Ericka Biagioni<sup>1,2</sup>, Dr. Alex Claiborne<sup>1,2</sup>, Dr. Breanna Wisseman<sup>3</sup>, Dr. Tara Whiton<sup>4</sup>, Dr. Cody Strom<sup>5</sup>, Dr. Samantha McDonald<sup>6</sup>, Dr. Steven Mouro<sup>1,2</sup>, Dr. James DeVente<sup>1,2</sup>, Dr. George Kelley<sup>7</sup>, Dr. Lauren Sastre<sup>1,2</sup>, Dr. Oyinola T. Babatunde<sup>1,2</sup>

<sup>1</sup>East Carolina University, Greenville, United States, <sup>2</sup>Human Performance Lab, ECU, Greenville, United States, <sup>3</sup>University of Rhode Island, Kingston, United States, <sup>4</sup>St. Joseph's College of Maine, Standish, United States, <sup>5</sup>University of Southern Indiana, Evansville, United States, <sup>6</sup>Illinois State University, Normal, United States, <sup>7</sup>Boise State University, Boise, United States

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

Adequate maternal nutrition is critical to support the increased energy needs of pregnancy and, therefore, is reflected in the dietary recommendations for pregnant individuals. In addition, evidence from human studies demonstrates that maternal exercise during pregnancy imparts favorable pregnancy outcomes for both mother and offspring. However, exercise also increases maternal energy requirements, and the compounding effects of pregnancy and exercise on maternal energy availability are often not addressed.

**Purpose:** The primary objective of this analysis was to investigate how the dietary intake of pregnant women enrolled in a randomized controlled exercise trial compared to the recommended dietary levels. The secondary goal was to determine how differences in maternal nutrient intake during pregnancy relate to exercise type as well as changes in maternal body composition.

**Methods:** This study was a retrospective, secondary analysis of pooled data from a prospective, randomized controlled trial assessing the influence of supervised maternal exercise types on pregnancy outcomes (control=7; aerobic=8, resistance/strength=4, combination=9). At 16 (baseline), 24 (midpoint), and 36 weeks gestation, a dietary recall was assessed via self-report, and maternal weight and body composition were done via a calibrated scale and BodPod. Outcomes were compared between groups using ANOVA and correlations.

**Results:** All groups were similar regarding maternal descriptors (age, gravida, parity, race, GWG, BF%). Most pregnant women had less actual energy intake than their estimated energy requirements at 24 and 36 weeks gestation. There are group differences in carbohydrate and fat macronutrient intake, especially saturated and MUFAs. There was a positive correlation between carbohydrates and change in BF%, whereas there was a negative correlation between fat consumption and BF% across pregnancy.

**Conclusions:** The current analysis demonstrates inadequate energy intake among pregnant women at 24- and 36-week gestation. These findings show differences in dietary intake patterns between pregnant women performing different exercise modes. Our data suggests a potential role for macronutrient distribution in driving body composition changes during pregnancy; thus, highlighting a critical need for nutrition education in this population.

# Conceptualising appetite self-regulation in childhood: processes and mechanisms

**Dr. Georgie Russell<sup>1</sup>**, Emeritus Professor Alan Russell<sup>2</sup>

<sup>1</sup>Deakin University, Burwood (Melbourne), Australia, <sup>2</sup>College of Education, Psychology, and Social Work, Flinders University, Bedford Park, Australia

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Children's appetite self-regulation (ASR) contributes to energy intake and balance, diet quality, weight, and therefore long-term health outcomes. Individual components of ASR and associated processes and mechanisms have been conceptualised and measured, but there is no unifying conceptualisation. Explanations or interpretations of ASR phenomena (e.g., eating in the absence of hunger) need clear guiding models or theories. Following a narrative review, a proposed conception and a unifying conceptual model of mechanisms and processes of ASR in childhood were developed and then applied to the understanding of ASR in childhood.

**Method:** A search of key databases supplemented by snowballing was undertaken to identify definitions/conceptions and theoretical models of ASR, with a focus on children. An interpretive synthesis was used to organise themes from the extracted definitions and models, which informed the development of the conception and model.

**Results:** ASR competence (a trait-like ability) or enactment (state-like and situational) is conceived as a multidimensional latent construct involving dynamic recursive bottom-up/top-down processes in managing reactive responses to food cues and internal states that in turn are influenced by individual and contextual factors. At the centre of the ASR model is bottom-up reactivity to food, food cues and hunger, satiation and satiety signals together with top-down regulatory control. A major contribution is that the model incorporates five interacting and overlapping domains (biological, hedonics, cognitive, behavioural, and traits) that function in and influence both bottom-up reactivity and top-down regulation. The domains contribute to ASR outcomes of enactment and competence. External contextual and intrapersonal factors are considered to impact the domains and the bottom-up, top-down processes.

**Conclusions:** The conceptualisation and model unify research and theory about ASR in childhood. They assist in the interpretation, understanding and explanation of ASR competence and difficulties and provide directions for future research on child eating, weight and ASR. Practically, the model provides a framework for researchers and practitioners to interpret and support children in their self-directing food choices, energy intake and nutrition across the spectrum of dysregulated ASR from over-regulation (e.g., fussy eating) to under-regulation (e.g., over-eating).

## Exploring the influence of social norms on complementary feeding in high and upper-middle income countries: a systematic review

**Miss Amelia Scott<sup>1</sup>**, Dr Sarah Hunter<sup>1</sup>, Dr Rebecca Feo<sup>1</sup>, Rebecca Golley<sup>1</sup>, Ms Kate Dunn<sup>2</sup>, Brittany Johnson<sup>1</sup>

<sup>1</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Adelaide, Australia, <sup>2</sup>School of Exercise and Nutrition Sciences, Queensland University of Technology, Brisbane, Australia

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Complementary feeding occurs from approximately six to 24 months of age when children receive foods to complement breast milk or infant formula. This is a window of opportunity for optimal growth and development of eating behaviours and preferences. Social norms are one factor influencing caregivers' complementary feeding decisions, however we lack an understanding of what these norms are. This mixed-papers systematic review aimed to determine the social norms surrounding complementary feeding, their development and how they influence feeding behaviours in high and upper-middle income countries.

**Methods:** This review uses the Joanna Briggs Institute (JBI) methodology for mixed-methods systematic reviews. Systematic searches were performed in five databases: MEDLINE, CINAHL, PsychInfo, Scopus and EmCare in May 2023. Studies were eligible if they included caregivers of children aged 0-5 years and the phenomenon of social norms relating to complementary feeding. Records were screened in duplicate. Findings were synthesized using Bayesian methods and analysed thematically.

**Results/findings:** The search identified 6951 papers, of which 30 papers reporting on 29 studies were included. Seven types of social norms were identified, including the timing of introducing complementary foods, first foods to introduce, types of foods to provide and avoid, feeding method, food preparation, family meals, and infant weight. Social norms influenced intentions or predicted behaviours around introducing complementary foods at six months and came from various socio-ecological levels, including family, peers, health professionals, community, broader society, culture, religion, and education. Despite many norms being reinforced by close networks and cultural beliefs, some caregivers chose to deviate from a norm due to perceptions of it being outdated or inappropriate.

**Conclusions:** Social norms exist around and influence complementary feeding behaviours in high and upper-middle income countries. Social and cultural contexts should be considered by health professionals and public health interventions when supporting families to meet dietary guidelines, especially among migrant populations and those with strong family influences who may be exposed to norms which do not align with infant feeding recommendations. Further research with caregivers is recommended to better understand the roles and influence of social norms on their complementary feeding decisions.

## The impact of picture books on children's intake, liking and/or willingness to taste vegetables: a systematic review

**Dr. Alissa Burnett<sup>1</sup>**, Dr Emily Denniss<sup>2</sup>, Dr Alison Spence<sup>1</sup>, Dr Jookyeong Lee<sup>1</sup>, Dr Keri McCrickerd<sup>3</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia,* <sup>2</sup>*School of Exercise and Nutrition Sciences, Deakin University, Balaclava, Australia,*

<sup>3</sup>*Yong Loo Lin School of Medicine, National University of Singapore, , Singapore.*

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Many children worldwide do not meet the recommended intake of vegetables. While repeated exposure is an effective method to increase vegetable consumption among pre-schooler children, parents find it challenging and/or not feasible to expose children to a food the recommended 10 or more times. The aim of this review is to systematically review the literature regarding the impact of picture and storybooks on pre-school aged children's intake, liking and/or willingness to taste vegetables.

**Methods:** Following the PRISMA guidelines, a systematic search of four databases was conducted using terms for three concepts: picture/storybook exposure; AND willingness to taste, liking or consumption of vegetables; AND child. Inclusion criteria included intervention studies that examined the impact of at least one picture or storybook on pre-school aged (one to six years of age) children's intake, liking and/or willingness to taste vegetables. Studies not written in English and those targeting neurodiverse children or children with eating disorders were excluded. Two reviewers independently screened titles, abstracts, and full texts. Data from 20% of the included studies were extracted by two authors for consistency, while the remaining data were extracted by one author. Risk of bias was assessed using the Academy of Nutrition and Dietetics Quality Criteria Checklist.

**Results/findings:** The review included 16 studies with a mean sample size of 85, interventions lasting between 3 days and 12 weeks (average=3.5 weeks), and child age ranging from 18 months to 6 years. Of the twelve studies measuring child vegetable intake, ten found a significant effect of picture books. Seven of eight studies found that picture books increased children's liking of vegetables, and three of seven studies found that picture books increased children's willingness to taste vegetables. Various measurements were utilised for intake (n=11), liking (n=6), and willingness to taste (n=6).

**Conclusion:** The evidence suggests that picture books effectively enhance children's vegetable intake and liking, though findings on willingness to taste are less consistent. This inconsistency may arise from studies focusing on specific vegetables rather than overall intake. Future research should involve longer interventions, follow-up assessments, larger sample sizes, and comprehensive measurements of vegetable intake.

## What do school meals need to bring to the table? A Discrete Choice Experiment exploring parent values for a school-provided lunch offering in Australia

**Miss Alexandra Manson<sup>1</sup>**, Rebecca Golley<sup>1</sup>, Vicki Brown<sup>2</sup>, Dr. Brittany Johnson<sup>1</sup>

<sup>1</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Adelaide, Australia, <sup>2</sup>Deakin University, Faculty of Health/School of Health and Social Development/Institute for Health Transformation, Melbourne, Australia

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Australian lunchboxes are not adequately meeting the needs of our community, causing increased stress for parents. There is growing interest in adopting a school-provided meal model in Australia, however, little is known about parent values needed to design an acceptable and financially viable system. We aimed to understand parent values regarding the design of a school-provided lunch system for Australian primary schools and to explore differences across socio-demographic groups.

**Methods:** An online survey incorporating a Discrete Choice Experiment (DCE) was administered to parents of primary school-aged children across Australia. The DCE involved 12 choice tasks, where parents were required to choose between two hypothetical school-provided lunch model options. Each option included varying levels of the six attributes: cost, nutrition and quality, environmental sustainability, access, menu options, and the school approach to food. Attributes and levels were selected through a multi-stage research process, with four cost values to determine willingness to pay. A d-efficient design was constructed, with data analysed using multinomial logit models and the Krinsky and Robb method to calculate willingness to pay. Further questions on demographics and interest in school-provided meals were used to understand the population and findings.

**Results/Findings:** The final sample consisted of 383 participants, predominantly women (90%). A majority expressed interest in school-provided meals (93%). The DCE analysis identified significant influences on parent choice, with nutrition and quality most highly valued ( $\beta=0.71$ ), followed by menu options ( $\beta=0.47$ ), environmental sustainability ( $\beta=0.35$ ), and a whole-school approach to food ( $\beta=0.28$ ). A negative cost coefficient indicated a preference for lower-cost options. Parents were willing to pay (AUD) for enhancements, showing a willingness to pay \$6.47 for nutritious quality meals, \$4.32 for two menu options, and \$3.23 to incorporate environmental sustainability principles.

**Conclusions:** Australian parents showed strong support for the introduction of comprehensively designed and delivered school-provided lunches, aligned with their values. Parents strongly valued nutrition and quality, menu options, and environmental sustainability in a potential program, demonstrating a willingness to pay to ensure these elements are included. These findings can inform the design of a parent-accepted, financially viable co-payment model for transformative school-provided meal programs in Australia.

# Retrospective coercive food-related parental practices in childhood and their relationship to adult eating behaviors: A latent profile analysis with an exploration of sex differences

**Miss Camille Lavoie**<sup>1,2,3,5</sup>, Miss Emma Studer-Perez<sup>4</sup>, Dr Dara Musher-Eizenman<sup>4</sup>, Dr Geneviève Lavigne<sup>2,3</sup>, Dr Audrée-Anne Dumas<sup>1,3</sup>, Prof Marie-France Marin<sup>1,5</sup>, Prof Noémie Carboneau<sup>2,3</sup>

<sup>1</sup>Department of Psychology, Université du Québec à Montréal (UQAM), Montréal, Canada, <sup>2</sup>Department of Psychology, Université du Québec à Trois-Rivières (UQTR), Trois-Rivières, Canada, <sup>3</sup>Institute of Nutrition and Functional Foods (INAF), Université Laval, Québec, Canada, <sup>4</sup>Department of Psychology, Bowling Green State University (BGSU), Bowling Green, United States of America, <sup>5</sup>Research Center of the Institut universitaire en santé mentale de Montréal (CRIUSMM), Montréal, Canada

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Food-related parenting practices are considered coercive when they prioritize parental desires over children's needs, which can harm children's eating behaviors and diet quality. Few studies have considered the interdependence of multiple parenting practices experienced during childhood, while accounting for the role of sex. Doing so would provide a deeper understanding of the mechanisms underlying parental influences on eating behaviors, allowing the development of more efficient sex-specific interventions.

**Methods:** This study aimed to 1) investigate whether exposure to food-related parenting practices during childhood is associated with eating behaviors in adulthood and 2) explore potential sex differences. Participants were 441 French-Canadian adults (50.2% female; mean age = 42.7 years). Questionnaires administered included: the Comprehensive Feeding Practices Questionnaire, the Three-Factor Eating Questionnaire, the Intuitive Eating Scale-2 and the Food Liking Questionnaire. A latent profile analysis was conducted to identify subgroups of individuals based on patterns of coercive food-related practices used by their parents during childhood (i.e., retrospective reports).

**Results/findings:** Three profiles were identified: Profile 1 ("low control" n=194) reported lower levels of coercive practices than Profile 2 ("restriction for health"; n=200) who reported moderate levels of coercive practices but high levels of restriction for health, whereas Profile 3 ("high control" n=47) reported the highest levels of coercive practices. Profile 3 membership was associated with more dysfunctional eating behaviors (i.e., higher emotional eating, cognitive restraint, and disinhibition and lower intuitive eating). Profile composition did not differ by sex. However, women reported higher pressure to eat and emotional eating, whilst men reported higher liking of savory foods. Sex moderated the relationship between profile membership and food intake, indicating that men (but not women) in Profile 3 reported more frequent consumption of savory and sweet foods.

**Conclusions:** Overall, these results suggest that encouraging parents to adopt less controlling food-related practices may help their children develop healthier eating behaviors and a more positive relationship with food that extends into adulthood. Our findings also underscore the role of sex in shaping eating behaviors. This study has important implications for researchers and practitioners in nutrition, who could act as key players in equipping parents to implement better-adapted practices.

## “How do you do it all?”: Unpacking the work of the family meal in Canada and Australia

**Dr. Georgia Middleton<sup>1</sup>**, Assistant Professor Tamara Cohen<sup>2</sup>, Associate Professor Jennifer Black<sup>2</sup>, Professor Rebecca Golley<sup>1</sup>

<sup>1</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Bedford Park, Australia, <sup>2</sup>The University of British Columbia, Faculty of Land and Food Systems, Vancouver, Canada

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** In 2020, the Family Meal Framework was developed, capturing daily experiences of the cognitive, physical and emotional work of family meals in Australia. The purpose of this study was to test the applicability of the Framework in another population and to compare Australian experiences with another country. Canada was chosen as a socially comparable, yet culturally distinct country to Australia, that places emphasis on ‘eating with others’ as part of their national dietary guidance.

**Methods:** A restudy of the Family Meal Framework was undertaken with parents in Vancouver, Canada. Qualitative semi-structured interviews were conducted to explore family meal practices and experiences. Grounded theory methodology informed the generation of the Framework and the basis for theoretical sampling and data analysis for this study. Transcripts were coded inductively to sit within the five categories of the Framework: Cognitions, Actions, Outcomes, Beliefs and Feelings, and Person(s) Responsible.

**Results:** Twenty-one parents from 12 families participated in interviews; nine two-parent and three single-parent families. Families had 1-3 children aged between 10mths-15 years. The Family Meal Framework categories were generalisable to the Canadian experience. As in Australia, Canadian parents valued family meals, despite facing barriers to achieving them. A specific barrier for Canadian families were small living and cooking spaces that impacted how many people could be in the kitchen, and what could be prepared. Canadian families predominantly had one parent responsible for family meal work, usually the mother, compared to a more equal division of responsibility in Australia. Canadian parents placed more value in involving children in their processes as a learning opportunity than Australian parents but were also more likely to use online shopping orders and purchase takeout to streamline these processes.

**Conclusions:** The Family Meal Framework is generalisable to the Canadian experience and while Canadian experiences are similar to those of Australian families, there are distinct differences. Understanding global experiences of providing family meals is important in health promotion efforts to support healthy eating environments. Application of this Framework in other countries will strengthen understanding of family meal experiences globally, and how cultural and social norms and policies impact practices.

# Parent Preferences for Interventions to Increase Preschool-Age Children's Fruit and Vegetable Consumption: Results from a Needs Assessment Targeting Families at Risk of Experiencing Food Insecurity

**Dr. Layton Reesor-Oyer<sup>1</sup>**, Jhada Sims<sup>1</sup>, Gabrielle Lerner<sup>1</sup>, Amy Mobley<sup>1</sup>

<sup>1</sup>University of Florida, Gainesville, United States

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Fruit and vegetable (FV) consumption is important for the prevention of chronic disease. U.S. preschool age (2-5 years) children consume inadequate FV, with lower consumption among those living in households experiencing food insecurity (FI; the inability to obtain enough food for a healthy lifestyle). The purpose of this study was to understand parents' desires for an intervention aimed at increasing FV consumption among preschool-age children from families at risk of experiencing FI.

**Methods:** Data was collected as part of a needs assessment to inform future programming. Parents (n=28; 86% mothers) of preschoolers (X= 3.5 years; 46% non-Hispanic White, 29% Hispanic, 18% non-Hispanic Black, 7% other) were recruited from 3 childcare centers serving families with low-income in Florida, USA. Parents completed electronic surveys in March/April 2024 which included the USDA 18-item Household Food Security Survey (HFSS). Those who responded affirmatively to 3 or more items on the HFSS were classified as living in a household experiencing FI. Parents indicated their preferred intervention modality (multiple choice) and challenges with their child's eating habits (free response). Descriptive statistics are presented.

**Results:** The majority of the sample was classified as experiencing FI (54%) and desired to improve their child's diet (86%). The most popular intervention modalities were printed materials (46%), and videos (43%) that parents could review independently. Parents preferred virtual sessions (30%) over in person (11%) or telephone (11%) sessions. The least popular intervention modality was group sessions with an educator (7%). Parents indicated that eating more vegetables (14%) and a greater variety of foods (21%) were challenges with their child's eating habits where they would like support.

**Conclusions:** Results from this needs assessment indicate that parents may be receptive to an intervention aimed at improving their preschool-age child's eating habits, particularly if programming is focused on increasing vegetable consumption and variety of foods. These appear to be the most salient issues for parents. Utilizing intervention modalities that can be accessed independently and virtually may increase program uptake and compliance among families at risk of experiencing FI.

## Beyond ingredients, methods and dinners: feasibility of expanding the role of recipes in child feeding

**Dr. Alison Spence<sup>1</sup>**, Dr Melissa Burton<sup>1</sup>, Prof Karen Campbell<sup>1</sup>, Dr Kathleen Lacy<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), Deakin University, Geelong, Australia*

**SO.1.03: Nutrition, feeding behaviors, and related interventions impacting child health, Hunua 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Parents need supports to achieve healthy food provision for children. Despite the proliferation of recipes, minimal evidence exists regarding their use and role. Recipes typically target food provision and main meals, but have potential to influence other aspects of the home food environment impacting child food intakes, such as parental feeding practices and between-meal snacks, through their design and embedded messaging. This research aimed to explore parents' views of such tailored recipes.

**Methods:** Recipes for families with young children were designed in various formats, such as ideas for basic combinations of 2-3 foods/ingredients, "5 ways with" various fruits and vegetables, and a focus on snacks. Messaging to promote healthy home food environments was embedded within recipes as "Feeding Kids Tips", for example, promoting modelling and family meals. These were incorporated in an app intervention supporting parents managing toddler fussy eating. Australian parents of 1- to 3-year-old children were recruited via Facebook, given 2-6 weeks' access to the app, and invited to participate in semi-structured interviews about their recipe use, preferences and views on the app recipes and "Feeding Kids Tips". A Pragmatic Approach to thematic analysis was applied.

**Results:** Most of the 27 parents interviewed already used recipes regularly, but more commonly for main meals than snacks. Parents had variable interest in recipes for snacks, with some feeling they didn't need snack recipes, at least while their child was young, or that snacks were "whatever you can grab". Despite this, the basic combinations of 2-3 foods/ingredients and "5 ways with [vegetable/fruit]" were generally viewed positively by parents, which they suggested labelling as "quick/easy snack ideas". Most parents viewed the "Feeding Kids Tips" favourably, considering them "good reminders" and "a really good idea combining information in one spot". Though whether and how parents thought they would use the information was variable.

**Conclusions:** Recipes likely offer untapped opportunities within health promotion. In supporting parents with practical ideas of nutritious snacks, presenting "quick/easy snack ideas" may appeal to parents more than "recipes". Embedding messages about healthy home food environments within recipes for families shows feasibility, and future research should test efficacy.

## Strategies employed by mothers facing social disadvantage to cope with rising food prices: results from the qualitative component of the ECAIL trial

**Dr. Delphine Pogue**<sup>1</sup>, Dr. Priscille Sauvegrain<sup>1</sup>, Dr. Sandrine Lioret<sup>1</sup>

<sup>1</sup>Université Paris Cité et Université Sorbonne Paris Nord, Inserm, INRAE, Centre de Recherche en Épidémiologie et Statistique (CRESS), F-75004 Paris, France

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

### **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** ECAIL is a randomized controlled trial involving 609 families experiencing social vulnerabilities, such as food insecurity, with the overarching aim to improve health behaviours and reduce obesity risk among young children (NCT03003117). Pregnant women were recruited at two maternity wards in Northern France and are followed by dietitians until their child's second birthday. Participants from the intervention group receive nutritional support along with incentives to access affordable healthy foods, including fruit and vegetable baskets and discount vouchers. The qualitative study presented here explores the strategies these families employ to cope with rising food prices.

**Methods:** Semi-structured interviews were conducted with 47 mothers, who accepted to participate in the qualitative study (intervention group: N=29; control group: N=18). These interviews averaged 1 hour (range: 24 to 169 minutes), took place in the mothers' homes when their children were between 16 and 26 months old. The interview guide was structured around the COM-B model (Capability, Opportunity, Motivation). All interviews were transcribed and coded using NVivo software, and a thematic analysis was performed following a grounded theory approach. To ensure reliability, inter-coder verification was conducted.

**Results:** Due to rising food prices, some mothers stopped buying certain items, while others opted for cheaper alternatives, such as store-brand products. Mothers with storage space preferred buying in bulk during promotions. Most participants regularly visited multiple stores in a single day to take advantage of various promotions, explored anti-waste sections, used apps offering discounted food baskets, and shopped online. Some reduced shopping frequency and quantity to minimize waste. Preparing homemade meals and planning menus were common money-saving strategies. Although some mothers tried cheaper brands, many remained loyal to foods they valued, showing a preference for quality and taste over price. In the intervention group, fruit and vegetable baskets provided affordable access to fresh produce, encouraging participants to cook new foods, while discount vouchers further facilitated savings.

**Conclusions:** Rising food prices compel families to carefully plan their meals to save money, even as taste and quality remain important values. In the intervention group, incentives to access healthy foods serve as a promising lever for promoting healthier eating habits.

# Physical Activity in South Asian Migrant Families: Barriers, Facilitators, and Pathways Forward

**Dr. Susan Paudel**<sup>1</sup>, Prof Jenny Veitch<sup>1</sup>, Prof Kylie Hesketh<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University, Burwood, Australia*

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Migrant groups, including South Asians—the fastest-growing migrant group in Australia—are generally more susceptible to chronic conditions such as cardiovascular diseases but tend to have lower participation in health-promoting activities, including physical activity. This qualitative study aimed to explore the barriers and facilitators to physical activity among South Asian mothers and their children in Australia.

**Methods:** A total of 24 mothers (aged 30–45 years with children aged 2–12 years) and 10 children (aged 10–12 years) participated in one-on-one Zoom interviews. The interviews, conducted in English, lasted between 20–60 minutes and were guided by a semi-structured interview framework informed by the social-ecological model. Data were analysed using reflexive thematic analysis in NVivo 15.

**Results:** South Asian mothers were found to be less physically active, often prioritising family needs over their own health and well-being. Key barriers to mothers' physical activity included lack of motivation, time constraints, household and family responsibilities, absence of role models, cultural norms, limited exposure to physical activity in their country of origin, and weather. Facilitators included prioritising personal health, role modelling for children, family support, and access to gender- and child-friendly activity facilities. For children, barriers included children's lack of interest, parental time constraints, costs of activities, and a parental focus on academics over physical activity. Facilitators included parental encouragement, availability of play spaces and equipment at home, siblings and peers, and access to well-equipped local parks. Barriers and facilitators identified by mothers and children largely aligned, although some factors (e.g., access to outdoor space and equipment) influenced mothers' and children's physical activity differently.

**Conclusions:** South Asian mothers and children face a range of individual, interpersonal, and cultural barriers to physical activity. While some of these factors are shared with the broader population, others are distinct to their cultural background and migrant experiences. Implementing culturally tailored, group-based interventions with minimal time and cost demands could effectively address these barriers and support increased physical activity among South Asian migrant families.

## Diversity of participants in Australian physical activity research studies

Dr Stephen Gilbert<sup>1</sup>, Ms Luiza Pivotto<sup>1</sup>, Prof Ding Ding<sup>1</sup>, Prof Catherine Sherrington<sup>1</sup>, **Dr. Marina Pinheiro<sup>1</sup>**

<sup>1</sup>University of Sydney, Sydney, Australia

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Australia's population is highly diverse in culture, language, geography, yet health disparities persist among culturally, linguistically, and geographically diverse groups. Physical activity is a key determinant of health; however, its promotion often lacks inclusivity, potentially exacerbating health inequities. Physical activity participation is particularly low in diverse groups. This review aimed to evaluate (1) the extent to which physical activity intervention studies in Australia are designed to recruit diverse populations, and (2) the reported diversity of participants in these studies.

**Methods:** A systematic review of Australian physical activity intervention studies (2015–2022) was conducted following best practice recommendations. Eligible studies targeted adults (≥18 years) with interventions promoting physical activity. Data on recruitment methods and participant characteristics were extracted and analysed, focusing on cultural, linguistic, socioeconomic status (SES), gender, disability, and geographic diversity.

**Results:** Of 371 studies reviewed, only 26 (7%) employed recruitment strategies targeting culturally or linguistically diverse populations, and none targeted very remote regions. Recruitment predominantly occurred in major cities (51%), with limited representation from regional (3%) and remote (0.5%) areas. While 40% of studies reported some diversity data, the majority of participants were English-speaking, white, and urban-based. Only 3% of studies detailed methods to engage non-English speakers, while 42% excluded participants based on English language proficiency. Most studies targeted both men/males and women/females, yet women/females represented 69% of participants. None included a gender category beyond men/males and women/females. No studies specifically targeted SES in recruitment, and only 54% reported SES measures to describe the sample. People with disabilities were severely underrepresented, with only 11 studies (3%) targeting their recruitment and 82 studies (22%) explicitly excluding them.

**Conclusions:** Australian physical activity intervention studies rarely prioritise the recruitment of culturally, linguistically, or geographically diverse populations. Reporting on participant diversity is limited, hindering efforts to address inequities. The data reveal significant underrepresentation of people from diverse backgrounds, particularly those with disabilities. To ensure interventions are equitable and effective for all Australians, it is imperative to adopt inclusive recruitment strategies and provide detailed reporting on participant diversity.

## Socioeconomic inequalities in exposure to obesogenic neighbourhood characteristics at various life stages: Two OBCT systematic reviews

Ms. Jet van de Geest<sup>1</sup>, Ms. Valeria Cuenca Cuenca<sup>2</sup>, Dr. Kamille Almer Bernsdorf Torp<sup>3</sup>, Paul Meijer<sup>1</sup>, Dr. Luis Cereijo<sup>2</sup>, Ms. Juanita Mora<sup>2</sup>, Dr. Kirsten Bjørnsbo<sup>3</sup>, Dr. Julia Diez<sup>2</sup>, Ms. Linda J. Schoonmade<sup>4</sup>, Ms. Puck de Jong<sup>1</sup>, **Dr. Jeroen Lakerveld<sup>1</sup>**

<sup>1</sup>*Amsterdam University Medical Centre, Amsterdam, The Netherlands*, <sup>2</sup>*Universidad de Alcalá, Madrid, Spain*, <sup>3</sup>*Steno Diabetes Center Copenhagen, Copenhagen, Denmark*, <sup>4</sup>*Vrije Universiteit Amsterdam, Amsterdam, The Netherlands*

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

### **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** Inequalities in health behaviours and health outcomes may be partly driven by unequal exposure to food- and physical activity (PA) environments. Consequently, numerous studies have examined socioeconomic inequalities in exposures such as the neighbourhood availability of fast-food outlets, supermarkets, and sports facilities. To gain a better understanding, these results should be systematically summarised. This study aims to comprehensively review and, where possible, meta-analyse neighbourhood- and individual-level socioeconomic inequalities in exposure to obesogenic neighbourhood characteristics at various life stages.

**Methods:** We conducted systematic searches in the PubMed, Scopus, Web of Science, and Embase databases in February 2024. Eligible studies were quantitative, primary research that included objective measures of the food- and/or PA environment and at least one indicator of socioeconomic position (SEP), either at individual or area-level. Titles and abstracts were screened using the AI-based tool ASReview. Full-text screening was performed in duplicate, with disagreements resolved through discussion between reviewers. Data extraction followed a predefined form, and risk of bias was assessed using a shortened and adapted version of the AXIS tool. Results of studies with sufficient homogeneity were meta-analysed; others were synthesised qualitatively or through vote counting (relative disadvantaged exposure for lower SEP; advantage; or no difference).

**Results:** After deduplication, 21,063 studies were included in the reviews. After title/abstract screening, full-text screening was conducted on 283 studies on food environments and 546 studies on PA environments. Data were extracted from 171 studies on food environments and 242 on PA environments. Preliminary results show that 33.3% of the studies on food environments and 47.8% of the studies on PA environments indicated significantly disadvantageous exposure for lower SEP. Remaining studies showed either an advantage for lower SEP, null results, or mixed findings. Considerable variability in findings was observed based on SEP-indicators, environmental metrics used, country of study, and statistical methods applied.

**Conclusion:** These reviews provide insights into socioeconomic inequalities in food- and PA environments, underscoring the complexity of the relationship between SEP and exposure to obesogenic environments. They provide valuable entry points for public health and preventive efforts aimed at addressing the social determinants of health and reducing health inequalities.

## A systematic review of correlates of recreational sports participation among adults

**Mr. Aamir Memon**<sup>1</sup>, Mr. Ishtiaq Ahmed<sup>2</sup>, Mr. Sitong Chen<sup>1</sup>, Dr. Tena Matolic<sup>3</sup>, A/Prof. Danijel Jurakic<sup>3</sup>, Dr. Jerome Rachele<sup>1,4</sup>, Dr. Jozo Grgic<sup>5,6</sup>, Prof. Željko Pedišić<sup>1</sup>

<sup>1</sup>Institute for Health and Sport, Victoria University, , Australia, <sup>2</sup>Pain in Motion Research Group, Department of Physiotherapy, Human Physiology and Anatomy, Faculty of Physical Education & Physiotherapy, Vrije Universiteit Brussel, , Belgium, <sup>3</sup>Faculty of Kinesiology, University of Zagreb, , Croatia, <sup>4</sup>College of Sport, Health and Engineering, Victoria University, , Australia, <sup>5</sup>National University of Singapore, Healthy Longevity Translational Research Program, Yong Loo Lin School of Medicine, , Singapore, <sup>6</sup>National University Health System, Centre for Healthy Longevity, , Singapore

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

### **SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Sports participation can be affected by numerous factors that may differ between age groups. Previous systematic reviews on correlates and determinants of sports participation were focused on a limited number of factors, older adults, and specific sports disciplines. Therefore, the aim of this systematic review was to synthesise the available evidence on correlates and determinants of overall sports participation among adults.

**Methods:** Literature search was conducted in seven bibliographic databases, including Networked Digital Library of Theses and Dissertations, Open Access Theses and Dissertations, PsycINFO, PubMed/Medline, Scopus, SPORTDiscus, and Web of Science. We included observational studies published as peer-reviewed journal articles, dissertations, or theses, reporting correlates and/or determinants of recreational sports participation among population-representative samples of adults that included members of all three adult age groups (i.e. young, middle-aged, and older adults). Studies on children, a specific adult age group (e.g. only young adults), special populations and athletes, using an intervention or qualitative designs, and assessing modes of active travel (e.g. cycling) exclusively for transport purposes were excluded. The risk of bias was assessed using the Newcastle-Ottawa Scale. The associations from individual studies were synthesised and classified as: mostly positive (60% – 100% of studies reporting a positive association); mostly negative (60% – 100% of studies reporting a negative association); and mostly non-significant or inconsistent associations. A mostly positive or negative association was considered as consistent, if it was found in at least three studies.

**Results:** Twenty-three studies of low-to-medium methodological quality were included. We found consistent positive associations between sports participation and lower age, male sex, higher education level, higher socioeconomic status, lower number of household members, lower number of children in the household, non-migrant status, better self-reported health, and higher neighbourhood safety. Other factors were found to be associated with sports participation in less than three studies or the associations were mostly non-significant or inconsistent.

**Conclusions:** Sports participation among adults is associated with a range of sociodemographic, health, and environmental factors. These findings can be used to identify key target groups for future sports promotion policies and campaigns.

## Social and economic patterning in ultra-processed food intake in toddlerhood and middle childhood: longitudinal data from the UK Gemini cohort

**Miss Gabriella Heuchan**<sup>1</sup>, Dr Rana Conway<sup>1</sup>, Dr Harry Tattan-Birch<sup>1</sup>, Dr Lisa Heggie<sup>1</sup>, Prof Clare Llewellyn<sup>1</sup>

<sup>1</sup>University College London (UCL), London, United Kingdom

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** To investigate socioeconomic patterning of UK toddlers' (21-months) and children's (7-years) ultra-processed food (UPF) intake across several household and neighbourhood indicators.

**Methods:** Design: Secondary analysis of data from a prospective longitudinal cohort study using parent-report sociodemographic data and 3-day diet diaries. Participants/setting: Participants were children from the Gemini study of n=4,804 twins born in England and Wales in 2007. At 21-months and 7-years, n=2,591 and n=592 children had at least 2-days of dietary data, respectively. Main outcome measures: Percentage energy from UPF at 21-months and 7-years-of-age, classified using the NOVA system. Statistical analyses: Unadjusted linear regression models were run for household socioeconomic position (SEP) composite score, Index of multiple deprivation decile, income, occupation level, mother's age, education of mother and partner, child's ethnicity, sex, and age. Adjusted multivariable linear regression models were adjusted for ethnicity and all SEP indicators except SEP composite score (Adjusted 1), in addition to child sex and age (Adjusted 2). Missing data were addressed with multiple imputation and inverse probability weighting. Confidence intervals and P-values were adjusted to account for clustering within families.

**Results:** Children of lower SEP had higher UPF intake across several indicators. Mother's education was the strongest predictor, with postgraduate education associated with 8.64% (95% CI -12.08 to -5.20; P<0.001) and 10.12% (95% CI -15.68 to -4.56; P<0.001) less energy from UPF at 21-months and 7-years, respectively, compared to no educational qualifications in Adjusted model 2.

**Conclusion:** UK children from more disadvantaged backgrounds consumed a greater proportion of their energy from UPF. Mother's education seemed the most influential factor. Socioeconomic inequalities, particularly in maternal education, may drive disparities in diet quality and associated health outcomes. Addressing these gaps is essential to reduce childhood obesity and improve long-term health in socioeconomically disadvantaged populations.

## Considering Cultural Diversity when Scaling Up an Effective Healthy Lunchbox Program

**Ms. Aimee Mitchell**<sup>1,2,3,4</sup>, Dr Jannah Jones<sup>1,2,3,4</sup>, Ms Elise Porter<sup>2</sup>, Ms Katie Robertson<sup>2</sup>, Ms Hannah McCormick<sup>2</sup>, Nafiseh Ghafourina<sup>2</sup>, Ms Pip Budgen<sup>5</sup>, Mr Gavin Jones<sup>6</sup>, Ms Amanda Johnson<sup>8</sup>, Ms Lisa Moorhouse<sup>9</sup>, Ms Jessica Wrigley<sup>2</sup>, Ms Lauren Taylor<sup>7</sup>, Ms Helen Dirkis<sup>10</sup>, Ms Jennifer Plaskett<sup>11</sup>, Celia Zhuwei<sup>10</sup>, Associate Professor Rachel Sutherland<sup>1,2,3,4</sup>

<sup>1</sup>School of Medicine and Public Health, Faculty of Health and Medicine, University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>3</sup>Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>4</sup>National Centre of Implementation Science, University of Newcastle, Callaghan, Australia, <sup>5</sup>Health Promotion Service, Illawarra Shoalhaven Local Health District, Warrarong, Australia, <sup>6</sup>Health Promotion Service, Mid North Coast Local Health District, Coffs Harbour, Australia, <sup>7</sup>Health Promotion Service, South Western Sydney Local Health District, Liverpool, Australia, <sup>8</sup>Health Promotion Service, Murrumbidgee Local Health District, Albury, Australia, <sup>9</sup>Health Promotion Service, South Eastern Sydney Local Health District, Sutherland, Australia, <sup>10</sup>Population Health, Sydney Local Health District, Forest Lodge, Australia, <sup>11</sup>Health Promotion Service, Western Sydney Local Health District, Cumberland, Australia

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** SWAP IT is an effective and scalable school-based healthy lunchbox program that supports parents and carers to pack healthier lunchboxes. Australia is a multicultural society with 28% of the population born overseas. Therefore, prior to the broader scale-up of the program across NSW, Australia, it was essential to ensure the program and resources were culturally appropriate and inclusive for culturally and linguistically diverse (CALD) groups. This study aimed to conduct a cultural consultation to enhance program acceptability, appropriateness, and comprehension among CALD communities.

**Methods:** A working group was established to oversee all aspects of the consultation, with representatives from eight local health districts (LHDs) across NSW. The group identified 14 priority CALD populations and developed a consultation guide to gather feedback on the SWAP IT program (including the program concept, terminology and imagery used in the program resources). Ten focus groups, involving 70 participants (3-12 parents and/or community members per group) from various language and cultural backgrounds, were conducted using harmonised methods. Findings were collated and analysed using thematic analysis.

**Results:** Participating community members included mothers, grandmothers, students, and professionals, who arrived in Australia between 8 months and 31 years prior. Key themes identified included: improving the readability of parent resources and messaging, incorporating more culturally diverse foods and hot lunchbox examples, applying written labels to all food images, developing a glossary of foods contained in program resources, and identifying existing CALD-specific lunchbox resources. All SWAP IT program resources were revised to incorporate these recommendations. In addition, a food glossary was developed, and a multicultural lunchbox resource was collated (using existing resources).

**Conclusions:** The cultural consultation process resulted in significant updates to the SWAP IT program, to improve acceptability, appropriateness and relevance to CALD communities in NSW. The study highlights the importance of undertaking continuous cultural consultation when implementing and scaling-up health promotion programs, to ensure the needs of priority groups are met, and that universal programs do not exacerbate existing health inequities. Further

research is needed to evaluate the impact of these adaptations on program uptake and effectiveness in improving child nutrition in CALD population groups.

## Unpacking intersecting dimensions of social inequality: Effects on physical activity, diet, and sleep patterns in the German National Cohort (NAKO)

**Miss Carolin Marie Callies<sup>1</sup>**, Christine Emmer<sup>1</sup>, Prof. Dr. Jutta Mata<sup>1</sup>, Dr. Fabian Streit<sup>2</sup>

<sup>1</sup>University of Mannheim, Mannheim, Germany, <sup>2</sup>Central Institute of Mental Health, Mannheim, Germany

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** While the link between social inequality and health behaviors is well established, most research focuses on isolated dimensions of inequality, overlooking their intersecting effects. Leveraging the comprehensive data from the German National Cohort (NAKO)—Germany's largest population-based cohort study—this study pioneers the application of an intersectional framework. It aims to examine how intersecting dimensions of inequality shape health behaviors, hypothesizing that the accumulation of intersecting disadvantages predicts less protective health behaviors. Additionally, we explore specific combinations of inequalities that contribute the most to health behavior outcomes.

**Methods:** This analysis utilizes the NAKO Baseline Assessment (N = 205,415 participants, aged 19-74). Following PROGRESS-Plus framework, seven dimensions of inequality (place of birth, ethnicity/ migration, occupation, gender, education, socioeconomic status, and social capital) were assessed. Health behaviors were captured using validated measures: Physical activity, including frequency, duration, and subjective intensity over a typical week, and sedentary behavior during a typical day, were evaluated using the General Practice Physical Activity Questionnaire (GPAQ). Dietary habits, including food frequency in the past 12 months, were assessed via the Food Frequency Questionnaire version 2 (FFQ2). Sleep quality and related issues were evaluated using the German version of the Pittsburgh Sleep Quality Index (PSQI). A composite index will be used to quantify the cumulative burden of intersecting inequality for each participant. Additionally, subgroup analyses focus on dimensions exerting the most profound impact. By employing interaction models, the study identifies combinations of inequalities that amplify negative health outcomes, moving beyond traditional linear approaches. Unlike most previous studies, this research uses NAKO's extensive dataset to explore multiple and complex intersecting dimensions of inequality simultaneously across a large and diverse sample.

**Results:** Results are not ready by the submission date.

**Conclusions:** This study integrates intersectionality into health research, offering a deeper understanding of how complex social determinants interact with health outcomes. Methodologically, it demonstrates the value of intersectional analysis in large-scale epidemiology. Practically, the findings have implications for targeted interventions to reduce health disparities and promote equity.

## Area-level socioeconomic status and children's body weight: exploring the modifying role of the unhealthy food environment in Madrid, Spain

**Mr. Luis Carmona Rosado<sup>1</sup>**, Dr Julia Díez<sup>1</sup>, Dr Luis Cereijo<sup>1</sup>, Dr Luisa Borrell, Dr José Manuel Díaz-Olalla, Dr Manuel Franco

<sup>1</sup>Universidad de Alcalá, Alcalá De Henares, Spain

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Area-level socioeconomic status has been widely associated with inequalities in children's weight status. Previous studies have not explored the extent to which unhealthy food retailers could modify this association. Our aim is to evaluate whether the unhealthy food environment modifies the association between area-level SES and children's overweight and obesity.

**Methods:** We carried out a multilevel study in Madrid, Spain. Individual data came from a city-wide representative survey of 5961 children aged 3-12. We measured area-level SES using a composite index of 7 indicators on education, wealth, occupation and living conditions. We operationalized into terciles (T3, highest level SES). Our outcome variables were overweight and obesity, measured using anthropometric data on height and weight. As a potential effect modifier, we assessed the density of unhealthy food retailers around the household. We calculated 400m street network buffers using GIS and operationalized it into terciles (T3, most unhealthy). We estimated Prevalence Ratios (PR) and confidence intervals (CI95%) using Poisson regression models with robust errors - adjusted for age, sex, and population density. We stratified the models by the density of unhealthy food retailers after finding a statistically significant interaction ( $p < 0.05$ ).

**Results:** We found an inverse and statistically significant association between area-level SES and childhood overweight and obesity. In less unhealthy food environments, the prevalence of obesity was higher in children from low (PR:3.96; CI95%: 2.36,6.65) and medium-SES (PR:2.40; CI95%:1.42,4.07), vs those from high-SES. For overweight, we only found a statistically significant association for children from low-SES vs high-SES (PR =1.44; CI95%: 1.06-1.96). For those living in T2 (unhealthy food), prevalence of obesity and overweight was higher among those from low- [(PRobesity =3.26; CI95%: 1.96, 5.44); (PReoverweight =1.42; CI95%: 1.08,1.87)] middle-SES [(PRobesity =1.90; CI95%: 1.12, 3.24); (PReoverweight =1.27; CI95%: 0.96, 1.69)] compared to high-SES. In the unhealthiest food environments, we found no statistically significant association neither between obesity nor overweight.

**Conclusion:** The association between area-level SES and children's overweight/obesity is modified by the unhealthy food environment. Future research should evaluate the combined effect of social determinants, like SES, and environmental factors, like the density of unhealthy food retailers

## Food security status of low-income women with children living in New Zealand and Australia – varied assessment methods

**Dr. Rebecca Lindberg<sup>1</sup>**, Dr Claire Smith<sup>2</sup>, Dr Ioanna Katiforis<sup>2</sup>, Dr Amber Bastian<sup>1</sup>, Ms Julie Bonin<sup>1</sup>, Dr Paige van der Pligt<sup>1</sup>, Dr Fiona McKay<sup>1</sup>, Professor Sarah A McNaughton<sup>3</sup>

<sup>1</sup>Deakin University, GEELONG, Australia, <sup>2</sup>Otago University, Dunedin, New Zealand, <sup>3</sup>University of Queensland, St Lucia, Australia

**SO.1.04: Environment and health, Waitakere 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** To investigate the food security status of high-risk young families with new and existing measures.

**Methods:** Women in New Zealand and Australia with a household income of less than \$40,000 who had at least one child under 6 years of age and/or were pregnant were invited to complete the online, self-administered survey using Qualtrics market research panels. The household food security survey involved 10 sections with questions sourced from a variety of pre-existing validated instruments which captured items on health, income, demographics and household composition. New items were developed that include newer dimensions of food security: availability, utilisation and stability. Food security status was determined using Australian, New Zealand and US measures. These 3 provide insight on households financial access to food and are the most common monitoring tools. Prevalence estimates across the 3 measures and responses to items exploring the availability, utilisation and stability dimensions of food security were compared.

**Results:** A total of 669 (n=328 in New Zealand; n=341 in Australia) participants completed the survey between November-December 2022. The prevalence of food insecurity was assessed as 62% (using the Australian measure), 84% (using the US measure) and 92% (using the NZ measure). Data on local food availability, food skills/utilisation and trade-offs and stability over time, shed further light on dimensions that may compound household food insecurity.

**Conclusions:** Compared to population estimates, and irrespective of the measure used, these very low-income households have a high prevalence of food insecurity. Planning interventions and policy, which should include regular monitoring and reporting of household food security status, should consider all dimensions of food security for this vital life stage and vulnerable income group.

## **“It felt like it was my fault”: Experiences of ‘Lifestyle Stigma’ among Women with Gestational Diabetes in Australia**

**Dr. Elizabeth Holmes-Truscott<sup>1,2,3,4,8</sup>**, Dr. Eloise Litterbach<sup>1,2,3,7</sup>, Ms. Christina Arampatzis<sup>8</sup>, Dr. Cobi Calyx<sup>6</sup>, Ms. Jane-Elise Cherry<sup>8</sup>, Ms. Victoria Gilbert-Morresi<sup>8</sup>, Dr. Amelia Williams<sup>2</sup>, Prof. Matthew Fuller-Tyszkiewicz<sup>2</sup>, Prof. Helena Teede<sup>5</sup>, Prof. Jane Speight<sup>1,2,3</sup>

<sup>1</sup>The Australian Centre for Behavioural Research in diabetes, Diabetes Victoria, Carlton, Australia,

<sup>2</sup>School of Psychology, Deakin University, Geelong, Australia, <sup>3</sup>Institute for Health Transformation, Deakin University, Geelong, Australia, <sup>4</sup>Australian Centre for Accelerating Diabetes Innovations, Melbourne Medical School, University of Melbourne, Melbourne, Australia, <sup>5</sup>Monash Health, Monash University, Melbourne, Australia, <sup>6</sup>University of NSW, Sydney, Australia, <sup>7</sup>Institute for Physical Activity and Nutrition, Deakin University, Geelong, Australia, <sup>8</sup>Lived Experience Advisory Group (G-LEAG), Carlton, Australia

### **SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**Purpose:** One in six pregnancies in Australia is affected by gestational diabetes mellitus (GDM), placing women and children at greater risk of future type 2 diabetes. Extensive evidence suggests that people with diabetes experience stigma (negative social judgements, stereotypes, and prejudice) due to their condition and that stigma can negatively influence their health and wellbeing. Diabetes-related stigma may be driven by misconceptions, and “lifestyle” messaging. However, less is known about the experience of stigma for women with GDM. This study explored GDM-related stigma and, specifically, experiences of stigma in nutrition, physical activity, and weight-related messaging surrounding GDM.

**Methods:** A GDM-specific Lived Experience Advisory Group (G-LEAG n=5) informed all stages of the research process. Women with current or recent (within 3 years) GDM were invited to participate in online semi-structured interviews (up to 1.5 hours each) exploring women’s social experiences of GDM. Interviews included a late introduction of stigma concepts. Thematic analysis examined driver, experiences and impacts of GDM-related stigma. For this study, themes were subsequently identified from codes relating to nutrition, physical activity, and weight messaging.

**Results:** 20 women participated in interviews. All women reported being subjected to experienced and/or internalised (self) stigma due to their GDM, though when asked explicitly, six women did not identify stigmatising experiences as such. Identified themes include: 1) Health promotion messaging and framing, an unintended harm; 2) Pervasive stereotypes, facilitated by media, community (un)awareness and intersectional stigma, including emphasis on individual responsibility and blame; 3) Internalised stigma surrounding diagnosis and behavioural efforts, including feelings of failing oneself and one’s baby; and 4) The negative social, emotional and behavioural impacts of GDM-related stigma, including fear of insulin, non-disclosure, emotional distress, and negative impacts on social relationships.

**Conclusions:** This study provides novel insights into the experiences and impacts of stigma among women with GDM in Australia. Stigma surrounding “lifestyle” messaging is pervasive, internalised, and negatively impacts health and wellbeing outcomes for women with GDM. Findings highlight the need for more nuanced, compassionate, and non-judgmental approaches to health promotion and care in GDM to mitigate stigma and improve both health outcomes and emotional wellbeing for affected women.

# Using the Behaviour Change Wheel to Co-Design an Intervention to Interrupt Prolonged Bouts of Sedentary Behaviour in Older Employees Working from Home in Desk-Based Occupations

**Ms. Lily Mott**<sup>1</sup>, Dr Amelia Parchment<sup>1</sup>, Dr Annemarie Money<sup>1</sup>, Professor Sheena Johnson<sup>2</sup>, Professor Chris Todd<sup>1</sup>

<sup>1</sup>The University of Manchester, Manchester, United Kingdom, <sup>2</sup>Alliance Manchester Business School, The University of Manchester, Manchester, United Kingdom

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Those employed in desk-based occupations sit for large amounts of their working day, often in long uninterrupted bouts, exposing them to the health risks associated with sedentary behaviour (SB). The number of older workers ( $\geq 50$ ) is increasing and it is vital to promote healthy ageing in the workplace to ensure this population are not put at increased risk due to occupational sitting. With more employers offering home-working options, it is important to consider how workplace interventions can cater to this new environment to break up prolonged bouts of SB. Thus, this study aimed to use the behaviour change wheel, underpinned by a participatory approach, to co-design an intervention for older employees to interrupt their SB when working from home in a desk-based occupation.

**Methods:** Underpinned by the behaviour change wheel and a framework for utilising participatory methodologies, this study conducted a number of co-design workshops with employees from a local council in Greater Manchester who regularly work from home. This study follows on from an earlier piece of qualitative work which explored the influencing factors of SB in a sample of older employees to address the identified barriers. Workshops took place both online and in-person, with the data being deductively mapped to the individual steps of the behaviour change wheel, to support the development of an intervention.

**Results:** Once completed, this study will result in the development of an intervention suitable for older homeworkers to interrupt prolonged bouts of sitting. As per the behaviour change wheel, the final outcome will report the chosen intervention functions, mode of delivery, policy categories, behaviour change techniques, and how these components are expected to lead to a change in occupational sitting.

**Conclusions:** This study will offer a meaningful contribution to the literature by detailing the development of an intervention underpinned by a rigorous behaviour change framework. Reporting the mechanisms of action promotes transparency and will allow for replication in future work. This study is working in collaboration with desk-based older employees to ensure a suitable intervention is developed for the homeworking environment.

## How are adolescents participating in the transformation of healthy food environments? A scoping review of empirical research

**Ms. Allyson Todd**<sup>1,2</sup>, Ms Putu Novi Arfirsta Dharmayani<sup>3</sup>, Ms Sisi Jia<sup>1,2</sup>, Ms Rebecca Raeside<sup>1,2</sup>, Associate Professor Seema Mhrshahi<sup>3</sup>, Dr Katrina E. Champion<sup>4,5</sup>, Dr Penny Farrell<sup>6</sup>, Dr Alice A. Gibson<sup>6</sup>, Health Advisory Panel for Youth at the University of Sydney (HAPYUS)<sup>1</sup>, Dr Stephanie R. Partridge<sup>1,2</sup>

<sup>1</sup>Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, The University of Sydney, Camperdown, Australia, <sup>2</sup>Charles Perkins Centre, The University of Sydney, Camperdown, Australia, <sup>3</sup>Department of Health Sciences, Faculty of Medicine, Health, and Human Sciences, Macquarie University, Sydney, Australia, <sup>4</sup>School of Public Health, Faculty of Medicine and Health, The University of Sydney, Camperdown, Australia, <sup>5</sup>The Matilda Centre, Faculty of Medicine and Health, The University of Sydney, Camperdown, Australia, <sup>6</sup>The Leeder Centre for Health Policy and Economics, Faculty of Medicine and Health, The University of Sydney., Camperdown, Australia

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Adolescence (10-19-years) is a pivotal life stage, presenting both risks and opportunities for optimal nutrition with lasting intergenerational impacts. Adolescents have a right to be involved in decisions impacting them. The World Health Organization and UNICEF are advocating for adolescents to play a central role in transforming food environments— key to the Sustainable Development Goals (SDGs). It is unknown to what extent adolescents have participated in research to inform healthy food environments. We aimed to investigate the extent, impact and processes of adolescent participation in food environment research.

**Methods:** Scoping review of six databases (MEDLINE, Embase, Eric, Cinahl, Scopus, Web of Science) captured studies published before 6-May-2024 in any language. Included studies addressed how adolescents participated in improving food environments, mapped through the Healthy Food Environment Policy Index: i) food composition/nutritional quality, ii) food labelling, iii) food promotion, iv) food pricing, v) food retail, vi) food trade and investment. Extent (e.g. study characteristics, participation level) was analysed using descriptive statistics. Impact (individual/community-level) and process (barriers/enablers) were assessed through inductive content analysis. Youth advisors informed each stage, complying with Joanna Briggs Institute consultation guidelines.

**Results/findings:** 9648 articles were dual-screened. Eighty-nine articles (70 unique studies with 20,697 participants across 31 countries) were identified. Most studies were qualitative (60%) and conducted in high-income countries (81%). Food retail (56%) and provision (54%) were most reported, focusing on improving availability of healthy food in their local community and school. Most studies were adolescent-led (41%), however only 16% of studies included adolescents as co-researchers. Individual-level impact included improved professional skills, wellbeing, and motivated healthy behaviours. Community-level impact included presenting policy ideas to influential figures (e.g. politicians) and implemented policy (e.g. healthy school menus). Common barriers include adolescents not being taken seriously, limited resources and ethical considerations. Trusted adult facilitators enabled a supportive environment, and using engaging participatory methods helped reduce power imbalances.

Conclusions: There is substantial evidence of adolescents participating at various research levels to transform food environments. However, evidence was limited by inconsistent reporting and a lack of empirical evidence of impact. Ensuring diverse representation from lower-income countries is necessary to achieving the SDGs.

## A Good Practice Example: CUSP (City-University-School Partnership) Approach to Promote Safe Active Transport and Physical Activity Among School-Aged Children

**Dr. Michal Vorlíček<sup>1</sup>**, dr. Jaroslav Burian<sup>1</sup>, dr. Jan Dygrýn<sup>1</sup>, Lucie Hartmannová<sup>1</sup>, dr. Lukáš Rubín<sup>1</sup>, David Janda<sup>1</sup>, prof. Josef Mitáš<sup>1</sup>

<sup>1</sup>Palacký University Olomouc, Olomouc, Czech Republic

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** This study introduces an example of collaboration between a university, city council and schools to promote active transport, physical activity and safety among school-aged children. Using a mixed-methods approach, our project collected data to identify movement behaviors, active transport routes, and barriers, enabling targeted interventions at municipal and school levels.

**Methods:** A total of 1,061 pupils aged 6 to 15 ( $12.31 \pm 1.88$ ) from 15 schools in Olomouc district (Czechia) participated in the study. Participants charted their active transport routes and identified perceived barriers using an online mapping application. A subset of 206 children wore ActiGraph devices to monitor movement behaviors. Ten focus groups (n=110) further explored these topics. Additionally, the MAPS audit tool assessed the school environments.

**Results/Findings:** Active transport was reported by 59% of children, with the average journey to school lasting less than 15 minutes. Twenty-one percent reported feeling unsafe due to speeding vehicles (38%) or the absence of pedestrian crossings (19%). Of the 540 issues reported, 4% were deemed unsolvable by the city council, while 35% were resolved or expected to be resolved soon. ActiGraph data showed a daily average of 41 minutes of moderate-to-vigorous physical activity, with only 5% occurring before school. This equates to about 9% of the total time for this segment, indicating a need for further investigation and targeted interventions. Focus groups revealed safety concerns, such as dangerous intersections and heavy traffic, as major barriers to active transport. Pupils frequently mentioned encountering 'unknown individuals' or people exhibiting unsettling behavior as an unpleasant factor. The lack of sidewalks and bike paths also discouraged walking or biking to school. Social factors such as traveling with friends increased motivation for active forms of transport. Despite the relatively high rate of active transport, these barriers limited broader adoption.

**Conclusions:** This collaboration demonstrates how data on movement behaviors and environmental settings can inform municipal actions and provide feedback for schools. By integrating urban planning with educational strategies, the city council can address barriers and promote healthier lifestyles. This approach serves as a replicable framework for fostering active transport and physical activity through city-university-school partnerships.

# Co-Designing, Training, and Implementing Community-Based Physical Activity Interventions: A Participatory Approach to Health Promotion

**Mr. Rajan Shrestha<sup>1</sup>**

<sup>1</sup>Nepal Development Society, Kathmandu, Nepal, <sup>2</sup>Aarhus University, Aarhus C, Denmark

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** The aim of this study was to design, implement, and evaluate a community-based intervention to promote physical activity in Nepal. The intervention utilized Female Community Health Volunteers (FCHVs) as key facilitators. This participatory approach sought to address the increasing prevalence of non-communicable diseases (NCDs) by encouraging physical activity (PA) in underserved communities.

**Methods:** A participatory process was used to co-design the intervention. A baseline survey provided essential data, which was followed by focus group discussions with end users. Literature reviews and expert workshops, involving public health professionals, physiotherapists, and researchers, were conducted to shape the intervention. Additionally, end-user workshops engaged local community members and Female Community Health Volunteers (FCHVs) to further refine the materials and strategies. The intervention included training for FCHVs using structured materials such as manuals, flip charts, and reading materials for participants. The implementation strategy involved three organized visits by the FCHVs: (1) educating participants about the importance of physical activity (PA), the risks of non-communicable diseases (NCDs), and PA planning; (2) addressing barriers and facilitators while emphasizing the importance of social support; and (3) promoting active lifestyles and reducing sedentary behaviors.

**Results:** The intervention successfully engaged Female Community Health Volunteers (FCHVs), promoting active community involvement and discussion about physical activity. Preliminary findings show that awareness of the benefits of physical activity has increased, and participants have improved their physical activity levels. Barriers, such as sedentary behavior and a lack of social support, were tackled through practical tips and community-based solutions. Feedback from participants emphasized the effectiveness of the participatory co-design process and the relevance of the training materials.

**Conclusion:** This participatory intervention shows the potential of utilizing Female Community Health Volunteers (FCHVs) to encourage physical activity within community settings. By combining local knowledge with professional expertise, the intervention adopted a culturally tailored approach, contributing to sustainable health promotion efforts. The findings highlight the importance of co-designing health interventions with community stakeholders to enhance their acceptance and effectiveness. Future studies should investigate the possibility of scaling up such participatory models to other regions to tackle the broader challenges of non-communicable disease (NCD) prevention.

## Simultaneous Language Validation of a Participant-Driven Food and Physical Activity Behavior Checklist

**Ms. Mical Shilts<sup>1</sup>**, Ms. Daisy Beltran<sup>2</sup>, Ms. Jennifer Joseph<sup>3</sup>, Ms. Misty Reed<sup>3</sup>, Dr. Daniel Perales<sup>3</sup>, Dr. Karina Diaz Rios<sup>4</sup>

<sup>1</sup>California State University, Sacramento, Sacramento, USA, <sup>2</sup>University of California, Agriculture and Natural Resources, Davis, USA, <sup>3</sup>Catholic Charities of California, Sacramento, USA, <sup>4</sup>University of California, Merced, Merced, USA

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** To be accurate and meaningful, program evaluation must account for participant needs and align with content priorities and implementation context. The study's aim is to create a parsimonious participant-driven pictorial food behavior checklist (FBC) that is valid and reliable to evaluate a government-funded nutrition education program offered to English- and Spanish-speaking low-income adults.

**Methods:** Ten program and content experts evaluated 50 items for relevance to 23 evaluation priority behavior indicators via three separate online surveys organized by the reviewers domain of expertise i.e., diet quality, food resource management, and physical activity. To establish face validity, item clarity, semantic equivalence, and relevance were explored through cognitive interviews with target participants. English- and Spanish-speakers were simultaneously engaged to produce equivalent versions of the FBC in both languages.

**Results/findings:** Content validation resulted in a 27-item draft tool comprised of diet quality (n=13), food resource management (n=10), physical activity (n=3), and food security (n=1) items. Three rounds of cognitive interviews were conducted with English- (n=24) and Spanish- (n=26) speaking adults. Interviews were conducted in person (n=32) and via Zoom (n=18) with mostly women (86%). Three items were removed for redundancy and 1 item was added to better assess usual water intake. Upon respondent feedback, items were modified to improve text clarity (11 items), response options (22 items), and picture suitability (24 items). Physical activity, water consumption, and added salt behavior items proved the most challenging for interpretation consistency and image relevance to diverse participant needs.

**Conclusions:** Content and face validity were established for a 25-item pictorial FBC suitable for both English- and Spanish-speaking participants. Simultaneous recruitment and testing for both languages increased data collection logistic complexity and extended study timeline. Nonetheless, this approach resulted in a parsimonious tool expected to collect equally valid evaluation data from both groups. The resulting tool is currently being tested for temporal stability and internal consistency.

## Show Me! Digital Images Enhance Understanding of Teen Food Choices in Rural Texas Communities

Ms. Julie Miranda, Ms. Peehu Chhabra, Ms. Chishinga Callender, **Dr. Jayna Dave**, Dr. Debbe Thompson

<sup>1</sup>USDA/ARS CNRC, BAYLOR COLLEGE OF MEDICINE, houston, United States

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** To understand environmental influences on food choices of rural Texas teens.

**Methods:** Part of a larger mixed methods study with families from rural Texas communities (n=40 families), this research focuses on teen perceptions of influences on their diet. Initial interviews revealed the significant role of the environment on teen food choices. In this round of data collection, teens (n=32) used digital photography to capture factors influencing their food choices and discussed these images in a telephone interviews guided by the SHOWeD mnemonic. Thematic analysis was used to code transcripts verbatim using a structured coding approach, focusing on environmental influences. Two coders independently coded 3 transcripts; met to review codes, definitions, and coding application; discrepancies were then discussed and resolved. This continued until coding and codebook stabilization was achieved. A finalized codebook guided coding of the remaining transcripts. After completion, transcript excerpts for each code were reviewed to ensure “fit”. Codes were converted to categories/sub-categories; each was defined to guide this process and enhance rigor.

**Results/findings:** Families from 15 rural Texas communities were enrolled (n=40). Counties were diverse, ranging from shared borders with Mexico, Louisiana, and Oklahoma. Interviews averaged 52 minutes, with 5-7 photographs discussed per interview. Emerging findings confirm the significant influence of the environment on teens’ food choices. Mothers play a key role in shaping the home environment through food acquisition and preparation. School, friends, extended family, and sports are emerging as key social influences. Barriers like limited availability of affordable, healthy food options in the community and misconceptions regarding “healthy foods” were identified. The importance of coaches and sports programs are also emerging as important influences.

**Conclusions:** Rural teens’ food choices are influenced by a complex interplay of environmental factors, including maternal influence, social relationships, and environmental constraints. Digital photography offers a unique lens for gaining a deeper insight into these influences, offering a foundation for designing targeted obesity prevention strategies to promote healthier dietary behaviors among rural youth.

## YEBO-SPAN (Youth Engaged: Better Outcome- Social networks, Physical Activity and Nutrition): Results of “Our Voice” Citizen Science Advocacy Agenda to Address Barriers to Healthy Lifestyle Choices in Cape Town, South Africa.

**Prof. Estelle Vicki Lambert**<sup>1,2</sup>, Dr Zulfah Albertyn-Blanchard<sup>1,2</sup>, Dr Sasha West<sup>4</sup>, Mr Roger Woodruff<sup>1,2</sup>, Dr Feyisayo Wayas<sup>1,2</sup>, Dr Ismail Teladia<sup>5</sup>, Associate Professor Olufunke Alaba<sup>1,3,2</sup>  
<sup>1</sup>University of Cape Town, Cape Town, South Africa, <sup>2</sup>Research Centre for Health through Physical activity, Lifestyle and Sport (H-PALS), Faculty of Health Sciences, Cape Town, South Africa, <sup>3</sup>Health Economics Unit, School of Public Health and Family Medicine, Cape Town, South Africa, <sup>4</sup>Human Performance Laboratory, Cape Peninsula University of Technology, Cape Town, South Africa, <sup>5</sup>Directorate Curriculum GET, Western Cape Education Department, Cape Town, South Africa

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** YEBO-SPAN is a pilot project designed to engage self-identified adolescents as ‘citizen scientists’ to identify barriers to healthy eating, physical activity (PA) and mental well-being in their school and surrounding community; and to advocate and proffer solutions to stakeholders to address these barriers. This presentation aims to describe the process of engaging adolescents, using the “Our Voice” Citizen Science method for global health equity (Discover, Discuss, Activate, Change).

**Methods:** Learner volunteers (“citizen scientists”) (CS) from two secondary schools (N=12, AS, N=42, OLS) in low-middle income communities in Cape Town, South Africa, underwent brief training with the EpiCollect mobile app. Guided by facilitated discussions, CS groups planned Discovery walks to explore food and physical activity environments, as well as mental health concerns like safety and hygiene in their schools and communities. Accompanied by a research team member, each group captured at least 10 photos with audio narratives during the walks. These were reviewed in workshops, where students identified key themes, prioritized challenges, and developed advocacy strategies targeting relevant stakeholders.

**Results:** CS identified common themes reflecting similar challenges: lack of road safety for intersections near schools, unhealthy food options or expensive healthy food options in tuck shops, lack of intact sports facilities(e.g.netball nets, sports fields), dysfunctional and unhygienic toilets, bullying through social media and graffiti, limited sports and physical education, littering (limited rubbish bins), lack of shade and outdoor seating. Solutions created included: fundraising events to repaint toilet walls or purchase sports equipment, an anti-bullying campaign run by students, recruiting youth to assist with PA classes, developing a vegetable garden for school feeding and tuck shop, painting zebra crossing and monitoring pedestrian traffic for safety. Stakeholders included: principal, peers, tuck shop convenor, local safety and security officers, local policymakers.

**Conclusion:** High school youth from low-middle-income communities can identify and advocate for changes in built and social environments in their schools and surrounding communities, to address equity and environmental justice.

## Feeding Young Voices: Exploring Children's Perceptions of Meals in Summer Day Camps vs. Summer as Usual to Shape Better Programs and Reduce Food Insecurity

**Mrs. Meghan Savidge<sup>1</sup>**, Dr. R. Glenn Weaver<sup>1</sup>, Dr. Payal Shah<sup>1</sup>, Miss Olivia Finnegan<sup>1</sup>, Miss Hannah Parker<sup>1</sup>, Mr. James White III<sup>1</sup>, Ms. Catherine Jones<sup>1</sup>, Mr. Griffin A.T. Randolph<sup>1</sup>, Dr. Michael Beets<sup>1</sup>, Dr. Sarah Burkart<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Dr. Elizabeth Adams<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, United States

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Summer day camps (SDC) have potential to mitigate child food insecurity by providing access to nutrient-rich meals daily. While previous research has examined caregiver perceptions around summer meals, insights derived directly from children are lacking. Understanding children's unique experiences is important during ages when children have more food choice autonomy, particularly in settings where parents are not present. This study sought to understand children's perceptions around summer meals when attending free SDC (>50% days offered) versus summer as usual (SAU) and identify where children see valuable change to inform programs and policies to maximize consumption of these nutrient-rich meals.

**Methods:** A subsample of elementary-aged children (n=17; Kindergarten-4th grade) in the southeastern United States were recruited from an existing study which randomized children from families with low income to receive either 10 weeks of free SDC (intervention) or SAU (control). The SHOWeD method of participatory research was used to develop interview questions, facilitate discussions, and identify areas children saw valuable change around summer meals. During the last 3 weeks of summer, children from each group were interviewed individually, allowing for discussion and expression free from caregiver/peer influence or judgment. Interviews lasted ~60 minutes and followed a semi-structured format integrating arts-based methods, specifically drawings, that allowed children to express their experiences beyond oral communication, providing richer data and a deeper understanding. Interviews were audio-recorded, transcribed, and imported into QSR NVivo12. Thematic analysis was used to identify and compare perceptions of summer meals for children attending SDC and SAU, including types of food consumed, feelings around meals, environment and social context of meals, and desired changes.

**Results:** Seventeen interviews (9 SDC, 8 SAU) were completed. Emergent themes for children who received SDC included a desire for more choice, "fresh" food, and larger portion sizes, while SAU discussed consuming fast food and easy/quick meals (e.g., sandwiches or leftovers) more often than SDC. Both groups mentioned the importance of taste and texture when choosing foods.

**Conclusions:** Children in SDC and SAU identified areas of valuable change to summer meals (e.g., increasing choice, enhancing taste/texture) to increase summer meal consumption and reduce child food insecurity.

## MULT – New International Growth Charts to assess the Nutritional Status of Children and Adolescents

**Dr. Mariane De Oliveira**<sup>1</sup>, Dr. Camila Mazzeti<sup>2</sup>, Dr. Joana Araújo<sup>3</sup>, Dr. Milton Severo<sup>3</sup>, Dr. Wolney Conde<sup>4</sup>

<sup>1</sup>Boston College, Chestnut Hill, USA, <sup>2</sup>Federal University of Mato Grosso do Sul, Campo Grande, Brazil,

<sup>3</sup>Instituto de Saúde Pública da Universidade do Porto, Porto, Portugal, <sup>4</sup>School of Public Health – University of São Paulo, São Paulo, Brazil

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** The lack of growth references based on longitudinal data from diverse populations spanning all stages of childhood and adolescence presents a significant challenge in accurately assessing the nutritional status of children worldwide. This study aimed to address this gap by developing a new international growth reference (MULT), using data from multiethnic populations. Additionally, it sought to compare MULT with established international growth references, including those from the Centers for Disease Control and Prevention (CDC, 2000), the World Health Organization (WHO, 2006/2007), and the International Obesity Task Force (IOTF, 2012).

**Methods:** The MULT growth charts for height, Body Mass Index (BMI), and Allometric Body Mass Index (ABMI) were developed using longitudinal data from 17,505 individuals aged 0–23 years, born between the 1990s and 2000s, across England, Scotland, Wales, Northern Ireland, Ethiopia, India, Peru, Vietnam, Portugal, and Brazil. These growth charts were constructed using the LMS method and their model fit were evaluated using the worm plot method.

**Results:** The MULT height reference identified taller boys between 61–174 and 196–240 months and taller girls between 61–147 and 181–240 months compared to the WHO, and CDC references. Almost perfect concordance ( $CCC > 0.99$ ) was found between WHO and MULT height references for children aged 2 to 5 years, when the WHO sample predominantly included healthy, multiethnic children. For BMI, the MULT reference showed lower mean values for boys aged 102–240 months and girls aged 114–220 months compared to the other references. MULT S-values aligned with WHO and IOTF under 60 months, while L-values closer to 0 indicated greater symmetry. The ABMI reference revealed the largest deviations at ages 138–150 months for boys and 114–132 months for girls, aligning with pubertal stage.

**Conclusion:** This study represents the first effort to construct growth charts using longitudinal data from diverse multiethnic populations during childhood and adolescence. They align with existing standards for early childhood while capturing trends of increased height in later stages. Introducing the ABMI provides a novel approach to diagnosing underweight and obesity, making the MULT growth reference a valuable tool for global nutritional surveillance and targeted interventions.

## **“I can’t relate to it”: Exploring autistic and non-autistic adults’ perceptions of the Australian physical activity and sedentary behaviour guidelines.**

**Dr. Joanne McVeigh<sup>1</sup>**, Ms Tenneka Gorey<sup>1</sup>, Ms Georgia Watson<sup>1</sup>, Ms Taylor Lawler<sup>1</sup>, Ms Bridget Wells<sup>1</sup>, Dr Craig Thompson<sup>1</sup>

<sup>1</sup>*Curtin School of Allied Health, Curtin University, Perth, Australia*

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Despite sufficient physical activity being strongly associated with better health outcomes, half of the Australian population does not meet the Australian Physical Activity and Sedentary Behaviour Guidelines. This shortfall is more pronounced among autistic adults, who exhibit poorer health outcomes and lower physical activity levels than non-autistic adults. Despite these disparities, little is known about how autistic and non-autistic individuals perceive and interpret physical activity guidelines. This study explored two key questions: (1) how do autistic and non-autistic Australian adults understand the concepts of physical activity and sedentary behaviour? and (2) what are their perceptions of the physical activity guidelines, including their preferences for how these guidelines are presented?

**Methods:** We interviewed 15 autistic and 20 non-autistic adults to investigate how autistic and non-autistic adults perceive and comprehend the Australian physical activity guidelines. The data were analysed using interpretative phenomenological analysis.

**Results/findings:** Our study identified four themes that were largely similar between both groups: 1) Lack of awareness and engagement with the physical activity guidelines, 2) Misinterpretation of key terms and concepts, 3) Perceived lack of relevance and relatability of the physical activity guidelines, and 4) Lack of inclusivity.

**Conclusions:** The findings underscore the importance of crafting health communication and promotion materials that are more visible, clear, inclusive, and engaging for non-autistic and autistic individuals in Australia. This study highlights the potential for improving the number of people who correctly understand the physical activity guidelines by addressing dissemination methods, knowledge, and interpretation of the guidelines as some components of the multifaceted process required to achieve behaviour change.

# The Active Black Man: A Toolkit that Harnesses the Strengths of the Barbershop Setting for Physical Activity Promotion Among Millennial Black Men

**Idris Robinson**, Dr. Turea Hutson<sup>1</sup>, Dr. Shiriki Kumanyika<sup>1</sup>

<sup>1</sup>Drexel University, Dornsife School of Public Health , ,

**SO.1.05: Participatory research, Waitakere 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** Black men in the United States experience disproportionately high rates of chronic disease and premature mortality, largely due to undiagnosed or poorly managed chronic conditions, and inequities in accessing medical care. With 8 of the top 10 causes of death among Black men linked to chronic illnesses, there is a critical opportunity to improve healthy behaviors, such as adherence to physical activity guidelines, to reduce premature mortality. Physical activity is a widely recognized strategy for reducing the burden of chronic diseases. This study aimed to explore how the cultural and community elements of Black barbershops can be leveraged to support millennial Black men (ages 25–40) in meeting physical activity guidelines.

**Methods:** This qualitative study employed a three-phased approach. First, an integrative review of existing literature was conducted to identify evidence-based strategies that promoted physical activity among Black men in barbershop settings. Second, focus groups were conducted with Black men (ages 25–40) to document their needs and perspectives in their own words, emphasizing nuances often overlooked in published research. Finally, a community-engaged research approach engaged key stakeholders, including barbers and community leaders, to examine the social, environmental, and policy systems influencing physical activity behaviors in Black men.

**Results:** Findings highlight that Black barbershops, as trusted spaces, can serve as hubs for advancing healthy behaviors and encouraging physical activity. Participants emphasized the importance of relevant messaging and access to practical tools to encourage physical activity. Amplifying the voices of Black men allows public health initiatives to be more responsive to their lived experiences and to develop interventions that resonate with their realities. Stakeholders affirmed the potential of barbershop subsystems to foster community-centered, equity-driven strategies for improving health outcomes

**Conclusion:** The findings from this study provide foundational insights for the development of the Active Black Man Toolkit to help millennial Black men address chronic disease disparities by meeting physical activity guidelines.

## Attitudes of health care professionals towards discussing lifestyle in routine clinical practice

**Miss Marlinde Van Dijk**<sup>1,2,3</sup>, Dr. Judith G.M. Jelsma<sup>1,2,3</sup>, Anouk Driessen<sup>1,2</sup>, Jenny Marks-Vieveen<sup>1,2,4</sup>, Sanne Westerveld<sup>5</sup>, Dr. Inge Van den Akker-Scheek<sup>5</sup>, Alexander Boerboom<sup>5</sup>, Prof. dr. Martine de Bruijne<sup>1,3</sup>, Prof. dr. Rienk Dekker<sup>6</sup>, Dr. Anouk de Joode<sup>7</sup>, Dr. Arthur Kievit<sup>8</sup>, Prof. dr. Willem van Mechelen<sup>1,2</sup>, Dr. Femke van Nassau<sup>1,2</sup>, Dr. Erik Serné<sup>9</sup>, Dr. Hugo C. van der Veen, Dr. Joyce Vrijssen<sup>5</sup>

<sup>1</sup>Amsterdam UMC, location Vrije Universiteit Amsterdam, Department of Public and Occupational Health, Amsterdam, The Netherlands, <sup>2</sup>Amsterdam Public Health research institute, Health Behaviors & Chronic Diseases, Amsterdam, The Netherlands, <sup>3</sup>Amsterdam Public Health research Institute, Quality of Care, Amsterdam, The Netherlands, <sup>4</sup>Amsterdam UMC location Vrije Universiteit, Department of Anesthesiology, Amsterdam, The Netherlands, <sup>5</sup>University of Groningen, University Medical Center Groningen, Department of Orthopaedics, Groningen, The Netherlands, <sup>6</sup>University of Groningen, University Medical Center Groningen, Department of Rehabilitation Medicine, Groningen, The Netherlands, <sup>7</sup>University of Groningen, University Medical Center Groningen, Department of Nephrology, Groningen, The Netherlands, <sup>8</sup>Amsterdam UMC location University of Amsterdam, Department of Orthopedics, Amsterdam, The Netherlands, <sup>9</sup>Amsterdam UMC location Vrije Universiteit, Department of Internal Medicine, Amsterdam, The Netherlands

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Despite the proven advantages of a healthy lifestyle in hospital care, discussing lifestyle is currently not always routine clinical practice. The aim of this study was to gain insight in the attitudes of healthcare professionals in their current practice of discussing lifestyle in routine clinical practice. This is currently unknown and diving into the specific elements of attitudes provides insights in mechanisms and potential leads and opportunities for change.

**Methods:** In a grounded theory approach, semi-structured interviews were conducted with healthcare professionals (doctors, nurses, and allied health professionals (ACPs)) from different departments (cardiology, gastrointestinal medicine, gynecology, Hepato-Pancreato-Biliary (HPB) surgery, internal medicine, neurology, orthopedics) in two university medical centers. Participants were recruited via email and snowball sampling. Interviews were audio-recorded and analyzed using inductive thematic analysis with Atlas.ti. A framework by Van Aalderen et al. was utilized to explore attitudes, focusing on cognitive beliefs, affective states, and perceived control.

**Results:** The domain of cognitive beliefs had four distinguishing beliefs regarding perceived relevance (i.e. beliefs about relevance; beliefs about responsibility; beliefs about consequences; and beliefs about referral options), three sub-themes regarding perceived patient beliefs (i.e. patient motivation; patient capability; and patient opportunities) and perceived difficulty was one theme. For the domain affective states the two themes were enjoyment and anxiety. The domain of perceived control had two themes: self-efficacy and context dependency, which had three subthemes (i.e. time, financial reimbursement and institutional policy). Overall doctors seem more ambivalent in their attitudes than nurses and AHPs.

**Conclusion:** This study contributes to the field by elucidating the attitudes of healthcare professionals (HCPs) towards discussing lifestyle in routine clinical practice. The findings highlight the complexity of HCPs' cognitive beliefs, affective states, and perceived control, which

can inform the development of targeted interventions to promote lifestyle discussions. By addressing the ambivalence observed particularly among doctors, and enhancing self-efficacy and context dependency factors there is potential to improve the frequency and quality of lifestyle discussions in clinical settings.

## Sustainable chronic disease prevention at scale: evaluation of The Get Healthy Service, a telephone and online health coaching service.

**Dr. Zoe Szewczyk<sup>1,2</sup>**

<sup>1</sup>Sydney School of Public Health, Faculty of Medicine and Health, The University of Sydney, Camperdown, Australia, <sup>2</sup>Charles Perkins Centre, The University of Sydney, Camperdown, Australia

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The Get Healthy Service (GHS) is a free telephone and online health coaching service delivered in NSW since 2009 to support adults to make sustained health behavior improvements. Since its inception, the GHS has been delivered at scale, making it one of the few health promotion interventions globally to have achieved such a level of scalability and sustainability. The GHS was first evaluated over 10 years ago and was shown to be effective. Using recent data, we investigated who uses the GHS, participant characteristics conducive to program completion, the impact on health risk behaviors, and whether program impact has been sustained.

**Methods:** A pre-post process and impact evaluation of the GHS was conducted using data collected during program delivery (December 2017 - May 2023). Descriptive statistics were reported for the service. Inferential analysis was used to measure the conversion rate from participant enrolment to program completion and available case and imputed data was used to measure pre-post health risk behavior change.

**Results/Findings:** Of the 53,566 participants enrolled in the GHS, 34% completed the program. Multivariable analyses showed that men, people aged 50 years and over, and those who did not identify as Aboriginal were more likely to complete the program. Participants who completed the program showed increases in physical activity (30.5 mins/week; 95% CI 27.53-33.46), fruit intake (IRR 1.09; 95% CI 1.07, 1.11) and vegetable intake (IRR 1.29; 95% CI 1.27, 1.31), improvements in BMI (-0.31 kg/m<sup>2</sup>; 95% CI -0.37, -0.24), waist circumference (-2.06cm; 95% CI -2.42-1.70), sweet drink consumption (IRR 0.51; 95% CI 0.47-0.56), and takeaway food consumption (IRR 0.68; 95% CI 0.66-0.71). Compared to earlier evaluations, the impact of the GHS on health risk behaviors had decreased.

**Conclusion:** Almost 15 years after initial implementation, GHS participation continues to improve anthropometric and lifestyle risk factors in adults. This evaluation provides recent evidence that the scaled-up health coaching program is effective at improving health risk behaviors. While improvements remain positive, a reduction in the magnitude of impact was observed since earlier evaluations. Efforts to sustain the impact of the program, particularly amongst participants from most disadvantaged backgrounds, are needed.

## Growing Healthy Hearts: A randomized controlled trial of a digitally delivered gardening, cooking, and Dietary Approaches to Stop Hypertension (DASH) diet intervention for adults with cardiovascular disease risk factors

**Dr. Susan Veldheer<sup>1</sup>**, Dr. Ian Kim, Eric Schaeffer, Kayla Rutt, Dr. Shari Hrabovski, Dr. Sherry Pagoto, Dr. David Conroy, Dr. Kathryn Schmitz, Dr. Christopher Sciamanna

<sup>1</sup>Penn State College of Medicine, Hershey, USA

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Background:** Cardiovascular disease (CVD) is the leading cause of premature death and disability in the US. Food gardening is positively associated with two CVD risk factors, diet and physical activity (PA), but few studies that have tested its impact on these behaviors. This study assessed the feasibility and preliminary efficacy of the Growing Healthy Hearts (GHH), a digitally-delivered, integrated gardening, cooking, and the Dietary Approaches to Stop Hypertension (DASH) intervention for adults. **Design:** A 2-arm, parallel-group, prospective, pilot randomized controlled trial (RCT) **Intervention:** A 24-week program (April-September 2023) including 10 videoconference sessions and a private Facebook group with twice daily posts. Content targeted gardening skills, cooking skills, nutrition knowledge (Dietary Approaches to Stop Hypertension [DASH] diet), internal motivation (interest/enjoyment), and social support.

**Methods:** Participants were randomized to GHH or a no treatment control if they were aged 20+, had low fruit and vegetable (FV) intake (<5 servings/day), 2), low physical activity (PA) (<150 minutes/day), 3), and >1 CVD risk factor. Feasibility included acceptability of the intervention (post-program ratings), demand (ability to recruit and retain participants), and practicality (ability to complete 8/10 gardening tasks). Preliminary efficacy for changes in FV intake, cooking, internal motivation, and social support were analyzed with multivariate mixed effects models.

**Results:** Forty participants were randomized (20/group). They had a mean age of 48 (SD: 12), were primarily white (n=29, 73%) or African American (n=6, 15%), and female (n=34, 85%). All feasibility criteria were met. The majority (90%; n=37) completed the 24-week follow-up. Among intervention participants, 89% rated GHH as acceptable and they completed a mean of 9.5 gardening tasks (SD 0.48). Compared to the control group, the intervention group had significant increase in FV intake (+0.94 cups/day, p=0.04), and internal motivation (interest +1.0, p=0.005). There were no between group differences in other outcomes. However, compared to baseline, the intervention group significantly increased their mean steps/day (+1,445, p=<0.001) while the control group experienced a decrease.

**Conclusions:** The GHH intervention was feasible and demonstrated preliminary efficacy for behavioral mediators including FV intake and internal motivation. The next step is to further test the intervention in a fully-powered RCT.

# The Impact of Intersectional Identities of Youth with Psychiatric and Neurodevelopmental Conditions on Engagement and Experience in the GAMERFIT Physical Activity Intervention

Dr. Winston Kennedy<sup>1</sup>, **Dr. Sarah Benes**<sup>4</sup>, Tara Daly<sup>2</sup>, Dr. Michael Mobley<sup>2</sup>, Dr. Alyssa M. Button<sup>3</sup>, Dr. Amanda Staiano<sup>3</sup>, April Bowling<sup>2</sup>

<sup>1</sup>Northeastern University, Boston, United States, <sup>2</sup>Merrimack College, North Andover, United States, <sup>3</sup>Pennington Biomedical Research Center, Baton Rouge, United States, <sup>4</sup>Southern Connecticut State University, New Haven, United States

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** GamerFit is an intervention designed for youth with psychiatric and neurodevelopmental conditions that utilizes exergaming, app self-monitoring and telehealth coaching to promote physical activity and overall health. Identity and intersectionality can influence many aspects of health behaviors. Therefore, the purpose of this study was to examine GamerFit participants' perceptions of their experiences, engagement, and outcomes with a focus on participants' perceptions of their identity and how it related to their participation in the intervention.

**Methods:** Ten participants (avg age 14.9 years; 7 male-identified; 3 female-identified; 9 white, 1 other; 2 Hispanic/Latino or Spanish origin; 9 parent reported developmental diagnosis, 8 parent reported psychiatric diagnosis) were recruited from the GamerFit clinical trial for 30–60-minute semi-structured interviews (with a parent/guardian) conducted by the lead author. In alignment with intersectional qualitative research, the first and second authors who completed data analysis share their positionality: a) Black, Afro-Caribbean, male physical therapist; b) white, cis-gender, neurotypical female. Data analysis included: 1) independent initial coding to break the data down into discrete parts or codes, and 2) collaborative grounded theory approaches of axial and theoretical coding to determine themes. Trustworthiness was established through critical reflexivity, multiple analyst triangulation and member checks.

**Results:** Four main themes emerged from the data: Engagement (sub-themes: Challenge Connections, Personal Identity), Structure, Positive Outcomes and Improvements. Participants described how activity and task-related challenges, connections with coaches, family and friends during game play, and connections to personal identity supported “Engagement” and motivation. The “Structure” theme revealed that the accountability of coaching and the exergames positively impacted experiences. “Engagement” and “Structure” directly contributed to self-reported “Positive Outcomes” of improved physical and mental/emotional health, learning more about themselves and having fun being physically active. Participants suggested “Improvements” related to variation, flexibility, autonomy, and technical elements.

**Conclusion:** Overall, GamerFit was an engaging intervention leading to positive health outcomes for youth with psychiatric and neurodevelopmental conditions. Personal identity was revealed to be an important engagement factor. Future research should continue to emphasize enhancing participant experience and health outcomes through intentional connections to identity and a lens of intersectionality.

## Evaluation of a Virtual Culinary Medicine Intervention for Low-Income Adults with Type 2 diabetes and Elevated BMI in Texas

**Dr. Natalia Heredia**<sup>1</sup>, Grace Marcelo-Ramirez<sup>1</sup>, Diana Guevara<sup>1</sup>, Natalia Williams<sup>1</sup>, Alveena Imran<sup>2</sup>, Joanne Chow<sup>1</sup>, Dr. John W. McWhorter<sup>3</sup>, Dr. Logan Thornton<sup>1</sup>

<sup>1</sup>UTHealth Houston, Houston, United States, <sup>2</sup>University of Houston, Houston, USA, <sup>3</sup>Suvida Healthcare, Houston, USA

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** A healthy diet is critical for type 2 diabetes (T2D) control and weight management, but patients are often simply instructed to “eat healthier” without being given the knowledge and skills needed for success. Culinary Medicine (CM), an innovative educational approach blending the art of cooking with the science of medicine, has shown promise in improving health outcomes. We conduct a mixed-methods evaluation of a Virtual CM (VCM) program to promote cooking and healthy eating among patients with T2D and elevated BMI in low-income neighborhoods.

**Methods:** Patients with T2D and elevated BMI (>25) were recruited from primary care clinics in low-income neighborhoods. The VCM program, delivered by a dietitian, includes five weekly 90-minute sessions teaching basic cooking skills and techniques, walking participants through making a healthy meal following a recipe, and facilitating discussions on nutrition topics. We conducted an explanatory sequential mixed-methods pilot study using a pre-post survey design and post-program interviews to assess if participants improved dietary behaviors, nutrition knowledge, cooking skills, and behaviors.

**Results:** Of 221 interested participants, 158 completed screening, 124 were eligible, 88 consented and completed baseline assessments (58 intervention, 30 control), and 67 completed follow-up surveys (45 intervention, 22 control). Preliminary findings among the intervention group only with follow-up data indicated that patients' perception of their overall health improved (11% pre-test compared to 57% post-test reported excellent or very good health). Additionally, 33% of patients initially stated that they somewhat or strongly agreed that cooking healthy food was difficult, which was reduced to 14% at post-test. Before the program, 32% of patients perceived that their food choices helped them achieve optimal blood sugar levels, which increased to 55% post-program. Interviews indicate that the VCM program had a positive impact on participants' perceptions of healthy foods and cooking; participants indicated they now have a better understanding that cooking doesn't need to be overly time-consuming and that healthy foods can be delicious. Most participants were satisfied with the virtual format, removing transportation and driving time barriers.

**Conclusions:** The VCM effectively leverages technology to promote cooking skills and healthy eating among low-income patients with T2D and elevated BMI.

# Understanding Clinicians' Capabilities, Opportunities, and Motivations for Successfully Supporting Osteoarthritis Patients' Pre-Surgical Physical Activity Behaviour

**Dr. Jessica R Calverley<sup>1,2</sup>**, Dr. Kate N Thomas<sup>2</sup>, Dr. Elaine A Hargreaves<sup>1</sup>

<sup>1</sup>*School of Physical Education, Sport and Exercise Science, University of Otago, Dunedin, New Zealand,*

<sup>2</sup>*Department of Surgical Sciences, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand*

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

Patients with severe, end-stage osteoarthritis (OA) awaiting joint-replacement surgery are advised to remain physically active while waiting for their procedure. Clinicians play a vital role in providing information and support to patients during this period, influencing the extent of patients' pre-surgical physical activity engagement. Existing research has primarily explored clinicians' perspectives on physical activity in OA management; little is known about their experiences in motivating OA patients' physical activity behaviour pre-surgically. This study, guided by the Capability-Opportunity-Motivation Model of Behaviour (COM-B Model), investigated clinicians' views on their role in motivating behaviour change and their experiences of engaging in physical activity discussions with OA patients awaiting surgery. Using a qualitative, phenomenological approach, one-on-one semi-structured interviews were conducted with 19 clinicians drawn from anaesthetists, orthopaedic surgeons, nurses, physiotherapists, pre-admission administrators, and GPs involved in OA pre-surgical care in Dunedin, New Zealand. Interviews explored clinicians' views on motivating patients to be active and their experiences discussing physical activity with their patients. Interview transcripts underwent inductive thematic analysis, followed by a secondary analysis synthesising findings against the COM-B Model. All clinicians recognised the importance of physical activity for pre-surgical OA patients but experienced challenges in successfully engaging patients in such discussions. Clinician capabilities were limited by gaps in knowledge of appropriate activity to advise and available external support for patients, and skills in having motivational conversations. Opportunities for meaningful discussions were constrained by consultation times and insufficient healthcare resources. Clinicians' motivation to encourage pre-surgical physical activity was influenced by their perceived role—advising versus actively motivating patients—and by their perceptions of patient receptiveness to support, shaped by perceived patient misunderstandings about personal role, the benefits of physical activity, information overload, lengthy wait times, and OA-related pain. Clinicians recognise the importance of pre-surgical physical activity for OA patients but face challenges in engaging and motivating patients. This likely affects the success and/or extent of OA patients' pre-surgical physical activity behaviour. Findings highlight the need for enhancing clinician training and/or integrating dedicated behavioural support into routine pre-surgical care to address clinician challenges, improve motivational dynamics, and more-effectively support patients in achieving pre-surgical physical activity behaviour.

## The Impulsive System: A missing link in Physical Activity Promotion?

**Dr. Rachel Fuller**<sup>1</sup>, Dr Paul O'Halloran<sup>2</sup>, Professor Matthew Nicholson<sup>3</sup>, Dr Erica Randle<sup>2</sup>, Dr Alex Donaldson<sup>2</sup>, Dr Kiera Staley<sup>2</sup>

<sup>1</sup>Ehrenberg Bass Institute for Marketing Science, University of South Australia, Adelaide, Australia,

<sup>2</sup>Centre for Sport and Social Impact, La Trobe University, Melbourne, Australia, <sup>3</sup>Yayasan Monash University Indonesia, , Indonesia

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** It is well-established that physical activity behaviour is influenced by both rational and impulsive cognitive pathways. However, to date, physical activity messaging research has focused almost exclusively on the former, resulting in an incomplete picture of what messages to use to promote the behaviour. This could help explain recent declines in global physical activity levels, despite messaging efforts by Governments and Health Organisations around the world. This research: i) presents a theoretical case for including messages that appeal to impulsive cognitive systems in physical activity communication; and ii) introduces and tests a framework to identify and evaluate impulsive messages to include (and avoid) in physical activity communications in Australia.

**Methods:** This study involved two stages, both derived from methods based on cognitive psychology theories of information retrieval, and validated and commonly used in marketing to identify and prioritise impulsive drivers of behaviour. Stage one draws on existing literature and expert interviews to identify internal and external cues that individuals encounter when they enter leisure time (e.g., potential impulsive cues). Stage two draws on a representative online survey of 1499 Australian adults to evaluate the cues that more efficiently retrieve physical activity (vs. other leisure activities) from memory. Australia was used as a research context because it has similar levels of physical inactivity to the global average (30% vs. 28%; Guthold et al. 2018).

**Results:** The research revealed several messages to include in communications to increase the chances that physical activity will be impulsively cued when individuals enter leisure time (e.g., Improves mental health, Within budget, When the weather is nice). It also revealed messages to avoid, that are more likely to impulsively cue competing leisure activities (e.g., For Fun, At the weekend).

**Conclusions:** This research fills an important knowledge void about how to design messages that facilitate impulsive cognitive pathways to physical activity behaviour. Impulsive cognitive pathways are important as they can influence physical activity prior to, and independent of, deliberate choice (where current research focuses). This research will supplement existing physical activity messaging frameworks to more effectively promote the behaviour and reverse growing inactivity levels.

## Out-of-home consumer food purchase behaviour in the presence and absence of value pricing and price promotions: a randomised controlled trial

**Dr. Amy Finlay<sup>1</sup>**, Dr Andrew Jones<sup>2</sup>, Dr Martin O'Flaherty<sup>1</sup>, Dr Zoe Colombet<sup>1</sup>, Dr Nick Townsend<sup>3</sup>, Dr James Garbutt<sup>3</sup>, Dr Rebecca Evans<sup>1</sup>, Dr Zoi Toumpakari<sup>3</sup>, Prof. Eric Robinson<sup>1</sup>  
<sup>1</sup>University of Liverpool, Liverpool, United Kingdom, <sup>2</sup>Liverpool John Moores University, Liverpool, United Kingdom, <sup>3</sup>University of Bristol, Bristol, United Kingdom

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

Pricing strategies (e.g. temporary price reductions) are frequently used in the out-of-home (OOH) food sector to increase the incentive for consumers to make a purchase. Often these pricing strategies are applied to less healthy options, and so are implicated in poorer dietary quality. While restrictions to price promotions in grocery store settings have been considered for UK governmental policy, such restrictions have not yet been considered for the OOH food sector. In the present study we assessed the impact of removing a range of different price-based incentives on consumer purchase behaviour. A virtual delivery platform was created to present the menu of a popular UK pizza chain to participants. Participants were randomly allocated to one of 5 conditions: control (all price-based incentives present), product price reductions (25% off when you spend £10) removed, value pricing (product size increase for a disproportionately small price increase) removed, bulk-buy reductions (meal deals/bundles at discounted prices) removed, and all promotions removed. To assess the impact of condition on hypothetical food purchase (kcal and spend), two Analysis of Covariance (ANCOVA) models were used. Models controlled for socioeconomic position (subjective social status) and the number of adults in the household. Interactions with participant and household characteristics on kcal selected were explored. Kcal selected tended to be lower in the no promotion condition when compared to the other four conditions, however only the difference between no promotion and the 'value pricing removed' condition reached significance ( $p < .0125$ ). A significantly lower spend was observed in the control condition than all four experimental conditions. No significant interactions with participant characteristics were observed on kcal selected. Our findings suggest that the removal of a range of price-based incentives did not consistently lead to significantly reduced energy purchase in a hypothetical setting, but did lead to greater spend. Restrictions to price-based incentives are likely to have little impact on food choice if incentives are considered in isolation, removing all incentives simultaneously is likely to have the greatest impact. This study should now be replicated in a real-world setting.

## Prevalence and correlates of meeting 24-hour movement guidelines in early pregnancy

**Dr. Sylvia Badon<sup>1</sup>**, Alex Asera<sup>1</sup>, Dr Elizabeth Ryan<sup>1</sup>, Dr Bethany Hallenbeck<sup>1</sup>, Dr Erin Dooley<sup>2</sup>, Dr Kelley Gabriel<sup>2</sup>, Dr Lyndsay Avalos<sup>1</sup>, Dr Monique Hedderson<sup>1</sup>

<sup>1</sup>Kaiser Permanente Northern California Division of Research, Pleasanton, USA, <sup>2</sup>University of Alabama at Birmingham, Birmingham, USA

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** 24-hour movement guidelines incorporate sleep, sedentary behavior (SED), and physical activity. However, pregnancy-specific guidelines focus on physical activity only, despite evidence that sleep and SED also impact pregnancy outcomes. Understanding the prevalence and correlates of meeting Canadian 24-Hour Movement Guidelines for Adults in early pregnancy can identify additional behaviors and their potential determinants for interventions to improve pregnancy outcomes.

**Methods:** We used early pregnancy data (mean 13 weeks gestation) from a prospective cohort of pregnant individuals with pre-pregnancy BMI  $\geq 25\text{kg/m}^2$  (n=221). Participants completed questionnaires reporting pregnancy and mental health characteristics. 24-hour movement was measured using wrist-worn accelerometers for 7 days. Accelerometer data were categorized into in-bed time, SED, light intensity physical activity (LPA), and moderate/vigorous intensity physical activity (MVPA) using algorithms. We assessed prevalence and correlates of meeting daily 24-hour movement guidelines overall and for each component behavior (7-9 hours of sleep,  $\leq 8$  hours of SED,  $\geq 3$  hours of LPA,  $\geq 21$  minutes of MVPA).

**Results:** Only 1% of participants met overall 24-hour movement guidelines: 65% met guidelines for MVPA, 57% for LPA, 48% for sleep, and 5% for SED. Participants who met SED guidelines were more likely to be multiparous (vs nulliparous, 70% vs 64%), have moderate/severe nausea and vomiting symptoms (vs mild, 44% vs 36%), and have moderate/high perceived stress (vs low, 70% vs 53%). Participants who met sleep guidelines (based on in-bed time) were more likely to be nulliparous (38% vs 33%), have mild nausea/vomiting symptoms (68% vs 61%), and have low stress (50% vs 42%). Participants who met LPA guidelines were more likely to be multiparous (70% vs 58%) and have mild nausea/vomiting symptoms (68% vs 59%). Participants who met MVPA guidelines were more likely to be nulliparous (37% vs 32%), have mild nausea/vomiting symptoms (67% vs 59%), and have low stress (49% vs 41%).

**Conclusions:** Among individuals with overweight/obesity, very few met 24-hour movement guidelines in early pregnancy. Parity, mild nausea and vomiting symptoms, and low perceived stress were correlates of meeting guidelines across multiple behaviors. SED may be an important target for interventions in this population, given the low prevalence of meeting SED guidelines.

## Promotion of Physical Activity by Health Professionals (PROMOTE-PA): an effectiveness-implementation trial.

**Dr. Jennifer Baldwin**<sup>1,2</sup>, Ms Kate Purcell<sup>1,2</sup>, Ms Roslyn Savage<sup>1,2</sup>, A/Prof Leanne Hassett<sup>1,2</sup>, Prof Anne Tiedemann<sup>1,2</sup>, Dr Marina Pinheiro<sup>1,2</sup>, Ms Belinda Wang<sup>1,2</sup>, Ms Kerry West<sup>1,3</sup>, Professor Catherine Sherrington<sup>1,2</sup>

<sup>1</sup>University of Sydney, Sydney, Australia, <sup>2</sup>Sydney Local Health District, Sydney, Australia, <sup>3</sup>The Children's Hospital at Westmead, Sydney, Australia

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Promotion of physical activity by health professionals can increase physical activity participation among their patients, however physical activity promotion is not routinely delivered within usual care. Our primary aim is to evaluate the effectiveness of physical activity promotion by hospital-based health professionals on physical activity participation of their patients. The secondary aim is to observe the impact of implementation support provided to health professionals.

**Methods:** The Promotion of Physical Activity by Health Professionals (PROMOTE-PA) study is a hybrid type I effectiveness-implementation cluster randomised controlled trial. Clinicians delivering outpatient healthcare services in New South Wales, Australia will be included. The target patient population is children (5-17 years) and adults who are willing to receive support to be more physically active. The evidence-based intervention is brief physical activity promotion informed by the '5As' counselling model and embedded into routine clinical practice. A multi-faceted implementation strategy to support clinicians has been developed based on preliminary research with patient, clinician and community stakeholders. The implementation strategy includes access to an online education/resource hub and physical activity directory as well as a selection of the following (tailored to each team): referral pathways, motivational interviewing training and a telehealth coaching service for patients. Thirty outpatient clinical teams will be randomised to receive the implementation strategy immediately or after a 3-month delay (waitlist control). Each team will seek to recruit 20 patients (n= approx. 600) to complete self-reported moderate-vigorous physical activity (minutes per week, primary outcome), frequency of balance and strength exercise, mobility, and quality of life at baseline, 3-months, and 6-months post-randomisation. Data on the impact of the implementation strategies will also be collected.

**Results/findings:** Recruitment commenced in February 2024 and is ongoing. Seventeen clinical teams including 98 health professionals have been randomised and 86 patients have been recruited so far.

**Conclusions:** The PROMOTE-PA study aims to address the increasing burden of physical inactivity in a high-risk population using the existing health workforce. The implementation strategies being tested provide a potentially scalable solution to improve physical activity participation among older adults and children and adults with disabilities.

## Direct observation approaches for understanding patient movement behaviours in hospitals: a scoping review

Ms. Melody Cheuk Yin Leung<sup>1,2</sup>, Cathie Sherrington<sup>1,2</sup>, Ms Ana Helena Salles dos Reis<sup>1,2</sup>, Leanne Hassett<sup>1,2</sup>, Dr Lyn Olivetti<sup>3</sup>, Professor Peter Youssef<sup>1,2,4</sup>, Dr Stephen Gilbert<sup>1,2</sup>, Mrs Charlotte McLennan<sup>1,2</sup>, Dr Daniel Treacy<sup>5</sup>, Ms Rhuta Gole<sup>6</sup>, Mr Braydon Finnerty<sup>6</sup>, **Dr Marina B Pinheiro<sup>1,2</sup>**

<sup>1</sup>The University of Sydney, Camperdown, Australia, <sup>2</sup>Institute for Musculoskeletal Health, Camperdown, Australia, <sup>3</sup>Northern Sydney Local Health District, St Leonards, Australia, <sup>4</sup>Royal Prince Alfred Hospital, Camperdown, Australia, <sup>5</sup>Prince of Wales Hospital, Randwick, Australia, <sup>6</sup>St George Private Hospital, Kogarah, Australia

**SO.1.06: Innovative Strategies for Chronic Disease Management and Prevention, Waitakere 3, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Despite the clear benefits of physical activity for hospitalised patients, most remain inactive. Direct observation can measure inpatient ward-level activity, identifying barriers and enablers to inform effective delivery of interventions, though methods vary widely. This review aims to summarise direct observation approaches used in published studies to understand inpatient movement behaviour.

**Methods:** This ongoing scoping review follows the JBI framework and PRISMA-ScR checklist, and was registered with Open Science Framework. We searched 7 databases (MEDLINE, Embase, PsycINFO, CINAHL, Web of Science, Scopus, Cochrane Library) from inception to September 2024 without language restrictions. We included studies if they i) investigated inpatients of any gender, clinical condition or age, excluding infants; ii) were conducted in inpatient hospital settings, excluding emergency departments; iii) used direct observation to capture ward-level whole-body physical activity and/or sedentary behaviour, excluding upper limb activities. Two independent reviewers are screening the studies. Any disagreements not resolved by consensus will be discussed with a third reviewer. A data charting form will be developed before data extraction. Primary outcomes include key characteristics of direct observation approaches such as methodologies (e.g. observation technique, frequency/duration, observer details), analytical strategies, and study limitations. Secondary outcomes explore variations in these approaches across different techniques (e.g. behavioural mapping/time sampling), clinical settings (e.g. acute stroke/surgical wards), and patient populations (e.g. older adults/those with mobility limitations). Descriptive statistics (e.g. frequency, range, mean) will be used for numerical data, while qualitative data will be categorised to identify patterns.

**Results/findings:** A total of 9,327 records were identified in our search. Of these, 190 were screened for full-text review, with 61 included for data extraction, and approximately 200 full texts remaining for further screening.

**Conclusions:** The scoping review aims to inform future studies on effectively using ward-level direct observation techniques in hospital contexts. This will enhance evaluation of implementing hospital interventions/services, such as exercise/early mobilisation practice that require adaptation to overall inpatient activity levels, promoting patient and health service outcomes. To our knowledge, this is the first review to identify and compare different direct observation

approaches, providing a reference to future researchers interested in using this approach under various contexts.



## Exploring physical activity in Transition Care Programs: Insights from service users and care providers- A mixed methods study

**Dr. Claire Gough<sup>1</sup>**, Dr Nicky Baker<sup>1</sup>, Associate Professor Christopher Barr<sup>1</sup>, Professor Lucy K Lewis<sup>1</sup>, Ms Amanda Burdon<sup>2</sup>, Professor Stacey George<sup>1</sup>

<sup>1</sup>College of Nursing and Health Sciences Flinders University, Adelaide, Australia, <sup>2</sup>Southern Adelaide Local Health Network, Adelaide, Australia

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Hospital admissions often lead to decreased activity levels among older individuals, which can complicate their transition from hospital to home. Transition care programs specifically designed for older people aim to support safe discharge and hospital readmission. However, high readmission rates persist, with reduced physical activity contributing to the likelihood of readmission. Evidence on the activity levels of individuals receiving transition care, and the extent to which physical activity is integrated into these services remains limited. This study investigates the physical activity levels of service users during and after transition care programs, incorporating perspectives from both service users and care providers.

**Methods:** Accelerometry data were recorded at the start, end, and four weeks after transition care for eight service users, alongside measures of quality of life, loneliness, and mobility. Qualitative interviews captured service users' experiences of returning home and their activity levels returning home, while care providers discussed how physical activity is embedded into care and suggested improvements for future services.

**Results:** Eight participants with an average age of 78 (SD 6.8) years, mostly living alone and managing multiple chronic conditions, received transition care for an average of 75 days. Functional independence and quality of life improved for most participants, though activity levels remained below recommended guidelines. Service users remained largely sedentary, spending up to 87% of each day inactive. Interviews revealed that participants found the transition from hospital to home challenging and benefitted from transition care services.

**Conclusions:** These findings indicate that while transition care service users report positive experiences, there is a need to increase physical activity levels for older people transitioning from hospital to home. Low activity levels during and after discharge make the transition emotionally challenging and overwhelming. Personalised interventions to monitor changes and adapt plans are essential to help prevent early admission to residential aged care facilities. Further research is needed to determine whether the small sample of service users reflects the wider population and assess the feasibility of implementing care provider recommendations. While transition care may increase physical activity, co-designed strategies are vital to help older adults maintain ongoing benefits after discharge.

## Insights from municipal leaders and elected officials on opportunities and challenges for creating age-friendly communities.

**Dr. Shilpa Dogra<sup>1</sup>**

<sup>1</sup>*Ontario Tech University, Oshawa, Canada*

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** The purpose of this work is to understand the opportunities and challenges municipal leaders and elected officials face when intervening on environmental determinants of social isolation and mobility through evidence-informed policies and practices.

**Methods:** This is a qualitative case study in which interviews and a policy review will be conducted to understand the opportunities that exist for creating age-friendly environments across communities. Eligible participants are being contacted via email by the researcher. Upon indicating interest in participation, an infographic based on previous research conducted in local municipalities, and a short-survey are sent. An interview is then scheduled (conducted online). The survey (approximately 8 minutes) specifically prompts for knowledge levels and direct involvement with policy, infrastructure, and budget related decisions. A Likert Scale is also used to probe for specific age-friendly community indices (e.g. accessibility, green space, etc). The interview guide specifically probes for opportunities related to the built environment to influence social and movement behaviours of older adults. Data from the surveys will be analyzed using descriptive statistics, and interview data will be analyzed thematically. Policy documents and municipal documents identified in the interviews will also be reviewed as part of the analysis.

**Results:** Recruitment for this study is ongoing in our Region (population of ~750K). We are looking for a representative sample from the 8 municipalities in our Region, and for approximately 10 elected officials and 10 municipal leaders. Data collection is expected to be completed by March of 2025, with policy document review occurring in April 2025. A report will be presented to Regional Council in June 2025 (Seniors month in Ontario, Canada). We hope to identify several opportunities for the municipality to improve upon age-friendly metrics, especially as they relate to equity-deserving groups that live in our Region.

**Conclusions:** Age-friendly environments influence social and movement behaviours of older adults. There may be citizen science opportunities to further engage older adults, particularly those from equity-deserving groups, to support elected officials and municipal leaders with meeting their targets.

## Can an “ACTIVE-DAY” help older adults to move more, sit less and sleep better, from hospital to home? A multi-methods feasibility study of a behavioural coaching and practical support intervention.

**Dr. Claire Baldwin<sup>1</sup>**, Prof Peter Catchside<sup>1</sup>, Dr Dot Dumuid<sup>2</sup>, Dr Claire Hutchinson<sup>1</sup>, Dr Dori Rosenberg<sup>3</sup>, Dr Matthew Wallen<sup>1</sup>, Marina Habib<sup>1</sup>, Cath Evans<sup>1</sup>, Catherine Shepherd<sup>1</sup>, Prof Lucy Lewis<sup>1</sup>

<sup>1</sup>Flinders University, Bedford Park, Australia, <sup>2</sup>University of South Australia, Adelaide, Australia, <sup>3</sup>Kaiser Permanente Washington Health Research Institute, Seattle, USA

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Interventions to reduce sedentary behaviour in inpatient rehabilitation or from hospital to home, which consider the full 24-hour day are scarce. This study aimed to evaluate the feasibility, acceptability and potential effectiveness of the ACTIVE-DAY intervention on behavioural and clinical outcomes.

**Methods:** This multi-method, single-group study evaluated ACTIVE-DAY, a behavioural approach to supporting older adults ( $\geq 65$  years) undergoing inpatient rehabilitation to ‘move more, sit less and sleep better’ from hospital to home (ACTRN12622000751774). ACTIVE-DAY involved individualised education upon admission, and daily supervised exercise sessions. Two home visits and four phone consultations from weeks 1-12 post-discharge involved an activity tracker, workbook and coaching in strategies to reduce sedentary behaviour. Intervention fidelity data were collected descriptively, and key acceptability learnings were derived from content analysis of semi-structured interviews at 1-week and 12-weeks post-discharge. Outcomes assessed at admission, 1-week and 12-weeks post discharge included: postural parameters (uptime, sitting, lying from activPAL) over 7-days, physical function (SPPB), sleep quality (PSQI), quality of life (QoL-ACC) and mood (GDS-15). Changes over time were analysed with a multi-level compositional response model for postural data, and with non-parametric statistics for remaining outcomes.

**Results/findings:** All 18 participants (mean $\pm$ SD age: 82 $\pm$ 10 years, 61% female) completed the inpatient education session (100%) with 62% (81/131) of prescribed exercise sessions delivered. Ten people completed the home-based intervention phase. Interviews indicated that ACTIVE-DAY was acceptable both in hospital and at home, and that personalised coaching was the favoured facilitation strategy. From admission to 12-weeks post discharge, physical function (2.6 $\pm$ 2.0 vs 5.3 $\pm$ 3.5,  $p=0.042$ ) and sleep quality (10.3 $\pm$ 4.2 vs 7.3 $\pm$ 3.4,  $p=0.048$ ) improved, but mood (4.8 $\pm$ 2.8 vs 4.1 $\pm$ 3.3,  $p=0.898$ ) and quality of life (15.6 $\pm$ 4.7 vs 16.4 $\pm$ 6.6,  $p=0.378$ ) did not. While participants did not do more sit to stand transitions, compositional analyses showed that sitting time decreased, while lying and uptime (including stepping time/steps) increased (all  $p\leq 0.005$ ), with largest changes occurring between 1-week and 12-weeks post-discharge.

**Conclusions:** ACTIVE-DAY was feasible and acceptable for participants undergoing rehabilitation following acute hospitalisation. The composition of postural behaviours, physical function and sleep quality improved. These data support further use of refined ACTIVE-DAY strategies, to support patients through a challenging time.

## Barriers and facilitators to physical activity among community-dwelling older adults: a systematic literature review

**Mr. Yang Chen<sup>1</sup>**, Ms Shivangi Shah<sup>1</sup>, Dr Alice Owen<sup>1</sup>, Dr Christina Ekegren<sup>2</sup>, Prof Dragan Ilic<sup>1</sup>, Assoc Prof Danijela Gasevic<sup>1</sup>

<sup>1</sup>*School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia,*

<sup>2</sup>*Rehabilitation, Ageing, and Independent Living (RAIL) Research Centre, Monash University, Frankston, Australia*

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** A. Ageing

**Abstract Purpose:** Identifying and understanding the barriers and facilitators to engaging in physical activity (PA) among older adults is important to guide future health policies and programs to help increase PA participation in this population group. Several systematic reviews have synthesized the barriers and facilitators to PA engagement among older adults who are hospitalized, living with a life-limiting disease, living in a residential care facility or in populations specific to a local region/country. The barriers and facilitators to PA intensity is unclear among community-dwelling older adults without functional disability or not being on palliative care. This study aims to systematically review the evidence on barriers and facilitators to PA engagement among community-dwelling older adults.

**Methods:** A search strategy was performed on MEDLINE, Embase, APA PsycINFO, SPORTDiscus, CINAHL Plus, AgeLine and Scopus from their inception to April 14, 2024. Eligible studies were qualitative, quantitative or mixed-methods studies, published in English and investigating barriers and/or facilitators to PA among independently living adults aged ≥65 years. Content analysis was performed using a narrative synthesis adapted from the socio-ecological model of health behavior. Barriers and facilitators were categorized into intrapersonal, interpersonal, and environmental and political factors.

**Results:** Of 27,779 screened articles, 20 eligible studies were synthesized (11 qualitative, 1 mixed-methods, and 8 quantitative), with a total of 18,597 participants. The main barriers to PA included intrapersonal factors: fear of injury, pain, low motivation and lack of spare time; interpersonal factors: lack of social support and family obligations; environment factors: poor weather, poor built environment/high cost accessing PA facilities. The main facilitators to PA included intrapersonal: health and wellbeing, fitness devices, better self-perceived body image, sense of bodily control and enjoyment; interpersonal: social support and having a partner/group/pet to engage in PA together; environmental and political: age-friendly built environment and government subsidized PA programs.

**Conclusion:** Our study results may not be generalizable to populations other than community-dwelling older adults. There are multiple barriers and facilitators to PA engagement among community-dwelling older adults that should be considered by policy makers when decisions are being made about PA enhancements.

# Behavioral Patterns of Physical Activity and Sleep in Older Women: An Exploratory Factor Analysis Using Accelerometry Data

**Ms. Jiagi ZHANG<sup>1</sup>**, Prof. Angus Pak-Hung YU<sup>1</sup>, Prof. Eric Tsz-Chun POON<sup>1</sup>, Prof. Stephen Heung-Sang WONG<sup>1</sup>

<sup>1</sup>The Chinese University of Hong Kong, Hong Kong, 中国

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Being physically active and getting good sleep constitute fundamental pillars for health during the ageing process. Established guidelines for physical activity (PA) and sleep generally provide recommendation focusing on quantity. The reciprocal interaction among the quantity and characteristics of PA and sleep remains relatively unexplored. Therefore, this study aims to explore the underlying structure and relationships of lifestyle behavioral patterns.

**Methods:** This pilot study recruited 44 older women (mean age:  $64 \pm 4$  years) living in Hong Kong. They were instructed to wear an accelerometer (GT3X+, ActiGraph) for seven consecutive days. Accelerometry data were extracted and analyzed with the GGIR package version 3.1.4 in R. The extracted data included average acceleration (AvAcc), intensity gradient (IG), acceleration accumulated in continuous periods of the most active 15 minutes (MCont15), the ratio of acceleration accumulated in continuous periods of the most active 5 and 15 minutes to the acceleration of the most active 5 and 15 minutes throughout the day (MRatio5 and MRatio15), total sleep time (TST), sleep efficiency (SE), and sleep latency (SL). Exploratory factor analysis was performed with these variables to identify key factors that explain variations in lifestyle behavioral patterns among the participants.

**Results:** Using the Parallel Analysis retention method and Promax Rotation, a three-factor solution provided the clearest extraction. The factor "PA fragmentation" comprising MRatio15, MRatio5, and MCont15, accounted for 36.4% of the variance. Sleep, as the second factor, included SL, SE, and TST, accounting for 24.0% of the variance. The last factor, "PA volume", consists of AvAcc and IG, accounting for 12.1% of the variance. Jointly, these factors accounted for 72.5% of the variance in their daily behavioral patterns.

**Implications:** Our pilot study reveals PA fragmentation as an independent novel factor that accounts for the greatest variance, followed by sleep and PA volume in lifestyle behavioral patterns. This finding also provides insight into future lifestyle intervention studies, suggesting that PA fragmentation should be considered a modifiable factor in addition to the PA volume. Future studies utilizing confirmatory factor analysis with an adequate sample size are warranted to validate the structure and relationships between the three factors.

## The relationship between 24-hour movement behaviours and cognitive function in older adults: insights from compositional data analysis

Mr. Pieter-Jan Marent<sup>1,2</sup>, **Prof. Greet Cardon<sup>2</sup>**, Prof. Genevieve Albouy<sup>3</sup>, Jannique Van Uffelen<sup>1</sup>  
<sup>1</sup>Physical Activity, Sports and Health Research Group, KU Leuven, Leuven, Belgium, <sup>2</sup>Physical Activity and Health Research Group, Ghent University, Ghent, Belgium, <sup>3</sup>Department of Health and Kinesiology, University of Utah, Utah, United States

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** Since 1950, global life expectancy has steadily increased, leading to a larger group of people reaching older age. However, this demographic shift presents challenges, as ageing is accompanied by natural cognitive decline that can impair daily functioning and diminish quality of life. Fortunately, modifiable lifestyle factors, such as physical activity (PA), sedentary behaviour (SB) and sleep, are considered key factors in promoting healthy ageing. However, these behaviours are typically studied in isolation. Therefore, this research adopts a compositional approach to investigate the interplay of these 24-hour movement behaviours with cognitive function in older adults.

**Methods:** A total of 233 healthy adults aged 55 and older participated in this cross-sectional study (50.9% women; mean age  $68.3 \pm 7.7$  years). Participants wore an ActiGraph wGT3X-BT on their wrist for seven consecutive days to capture their time spent in light PA (LPA), moderate-to-vigorous PA (MVPA), SB and sleep. Cognitive function, including executive function (EF), processing speed, short-term and long-term memory (STM, LTM), was assessed using the Cambridge Neuropsychological Test Automated Battery. Compositional multiple linear regression was performed to assess the associations between cognition and time-use. Additionally, compositional isotemporal substitution examined the effects of reallocating time between the different movement behaviours on cognitive outcomes.

**Results:** Even after adjusting for age, sex, educational level and social isolation, time-use was significantly associated with short-term memory ( $p < 0.01$ ), long-term memory ( $p < 0.05$ ) and executive function ( $p < 0.001$ ). Hypothetical time reallocations of 30-min from LPA to MVPA predicted the largest improved z-scores, namely 0.19 [95% CI: 0.05-0.32] in STM and 0.22 [0.10-0.33] in EF. Similarly, reallocating 30-min from LPA to SB improved EF z-score with 0.14 [0.06-0.20]. For LTM, reallocating 30-min from sleep to MVPA predicted an increase in z-score of 0.18 [0.04-0.32]. No associations were observed for processing speed.

**Conclusions:** These findings emphasize the importance of studying the 24-hour movement behaviours collectively when investigating time-use and cognitive health. Dedicating more time to moderate-to-vigorous PA and SB seems to be beneficial for multiple cognitive domains. However, longitudinal studies are needed to further explore these relationships, with a focus on detailed assessments of sedentary behaviour types.

## Exploring the acceptability of engaging in physical activity amongst older adults with lower socioeconomic status beyond the COVID-19 pandemic: A qualitative study

**Ms. Danielle Harris<sup>1</sup>**, Dr Ashley Gluchowski<sup>2</sup>, Dr Alex Hall<sup>1</sup>, Dr Emma Elliott<sup>1,3</sup>, Dr Luke Munford<sup>1,3</sup>

<sup>1</sup>School of Health Sciences, University of Manchester, Manchester, United Kingdom, <sup>2</sup>School of Health & Society, University of Salford, Salford, United Kingdom, <sup>3</sup>NIHR Applied Research Collaboration-Greater Manchester (ARC-GM), Manchester, United Kingdom

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Older adults with lower socioeconomic status (SES) have lower physical activity levels compared to older adults with higher SES. Research during the COVID-19 pandemic demonstrated persistence or even a widening of these disparities in physical activity levels. This study aims to explore the views of older adults with lower SES around the acceptability of engaging in physical activity in the aftermath of the COVID-19 pandemic.

**Methods:** Semi-structured interviews were conducted with 16 community-dwelling older adults (aged 65 years and over) living in lower SES areas in Manchester, United Kingdom. Manchester is an area in North West England with high levels of socioeconomic deprivation compared to the rest of the country; 33.6% of older adults (aged 60 and over) live in income deprived households (compared to the national average of 18.1%). Areas in Manchester with the highest concentrations of income deprived older adults were selected to target recruitment. Participants were recruited via local community groups and age-related charities. Interviews were transcribed and analysed using reflexive thematic analysis.

**Results/findings:** Data analysis is ongoing and themes are yet to be fully developed but early insights indicate that physical activity is perceived as important; this was often linked to participants' reflections around an increased awareness of the importance of their health more generally as a consequence of the pandemic. Many participants described a motivation to increase their levels of physical activity. However, barriers to engaging in more physical activity included competing commitments and physical health limitations such as pain and mobility issues, whilst facilitators included enjoyment and encouragement from others such as family and friends as well as healthcare professionals.

**Conclusions:** These findings will help to develop a greater understanding of the attitudes towards engaging in physical activity amongst older adults with lower SES. Consequently, it will help inform future development of interventions that are appropriate to the needs of this group, to help with post-pandemic recovery of physical activity levels and prevent further widening of socioeconomic inequalities in physical activity levels.

## Harder to Walk? — Wearable Electromyography, Accelerometry and the Movement Economy of Walking and Standing in Type 2 Diabetes

**Dr. Arto Pesola**<sup>1</sup>, Mrs Suvi Lamberg<sup>1</sup>, Dr. Christian J Brakenridge<sup>2,6</sup>, Prof. Ying Gao<sup>3</sup>, Prof. David W Dunstan<sup>2,5</sup>, Prof. Taija Finni<sup>7</sup>, Prof. Genevieve N Healy<sup>4</sup>, Prof. Neville Owen<sup>2,6</sup>

<sup>1</sup>South-Eastern Finland University of Applied Sciences, Mikkeli, Finland, <sup>2</sup>Baker Heart & Diabetes Institute, Melbourne, Australia, <sup>3</sup>Zhejiang University, Hangzhou, China, <sup>4</sup>The University of Queensland, Brisbane, Australia, <sup>5</sup>Deakin University, Melbourne, Australia, <sup>6</sup>Swinburne University of Technology, Melbourne, Australia, <sup>7</sup>University of Jyväskylä, Jyväskylä, Finland

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Adults with type 2 diabetes often experience physical activity limitations. While accelerometers can measure daily activities like standing and walking, they cannot quantify the muscular effort required—a crucial consideration for those with reduced physical capacity. Movement economy, defined as the energy cost of submaximal tasks, is typically assessed in laboratories. However, muscular effort during free-living activities remains largely unexplored. Using novel wearable electromyography (EMG) shorts that enable precise quantification of muscular effort during daily activities, we examined movement economy from thigh and gluteal muscles during standing and walking, and their relationship with daily standing and walking time, in middle-aged and older adults with type 2 diabetes.

**Methods:** Participants (n=18, aged 61.3±8.1 years, BMI 31.7±4.9 kg/m<sup>2</sup>) wore EMG shorts (Myontec) and thigh-worn accelerometers (Fibion) for an average of 3.2 days in free-living conditions. Movement economy was calculated as average EMG (aEMG, %EMGMVC) from quadriceps, hamstrings, and gluteal muscles divided by accelerometer-estimated METs during standing and walking, with higher values indicating worse economy. Muscle group-specific economy was compared between standing and walking and correlations with overall daily standing and walking time were examined.

**Results:** Different muscle groups showed distinct movement economy patterns. Quadriceps muscle group had better movement economy during standing (3.0±1.1 %EMGMVC/METs; 4.8±1.9 %EMGMVC/1.6±0.1 METs) than walking (5.0±2.5 %EMGMVC/METs; 20.7±10.4 %EMGMVC/4.1±0.3 METs, p<.001). Conversely, gluteal muscles had worse economy during standing (4.6±2.5 %EMGMVC/METs; 7.3±4.0 %EMGMVC/1.6±0.1 METs) than walking (3.8±1.7 %EMGMVC/METs; 15.8±7.4 %EMGMVC/4.1±0.3 METs, p=0.03). Hamstring economy remained similar across both activities. Importantly, poorer quadriceps movement economy during both standing (R=-.42, p=.042) and walking (R=-.45, p=.026) was correlated with lower daily walking time. No significant correlations were found between daily standing time and movement economy for any muscle group.

**Conclusion:** Poorer quadriceps standing and walking economy is associated with lower daily walking duration, suggesting that quadriceps may be a key determinant of physical activity behavior in those with type 2 diabetes. Movement economy measures could enhance accelerometer-based activity assessments by accounting for variations in muscle capacity, potentially identifying novel approaches for improving physical activity in at-risk population groups, if our evidence can be supported by controlled intervention trials.

## Higher Baseline Balance Confidence Predicts Lower Perceived Challenge during a Fall-prevention Exercise Program in Aging Adults

**Ms. Brianna Leadbetter<sup>1,2</sup>**, Dr. Danielle R. Bouchard<sup>1,2</sup>

<sup>1</sup>University of New Brunswick, Fredericton, Canada, <sup>2</sup>Cardiometabolic Exercise & Lifestyle Laboratory, Fredericton, Canada

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Falls are the leading cause of injury-related death among older adults worldwide. Research shows that performing balance-challenging exercise is the most significant modifiable factor in reducing fall risk. However, factors influencing the ability to challenge balance during a fall-prevention exercise program remain unclear. This study explored whether baseline confidence in balance was associated with the level of balance intensity reported during a fall-prevention exercise program.

**Methods:** In a pre-post study design, 48 participants (median age: 65.5 years, IQR: 62.25-71.75; 85.4% female) completed a 12-week fall-prevention exercise program aiming to challenge balance. To be included, participants had to be Canadian residents over the age of 50 years old and medically cleared to exercise using the Get Active Questionnaire. Classes were delivered by a volunteer peer leader for two to three hours per week. At baseline, age (years) and sex (male/female/intersex) were self-reported and balance confidence was measured using the Activities-specific Balance Confidence questionnaire (0-10 scale, 0 being "No confidence" and 10 being "Completely confident"). The Balance Intensity Scale was used to assess how challenging the program's exercises were on a scale from 1 to 5, 1 being "No effort at all" and 5 being "Maximal effort." A Spearman's rank correlation and linear regression analysis were used to assess any associations between scores on the two tools.

**Results/Findings:** The median Activities-specific Balance Confidence score was 9.34 (IQR: 8.25-9.69) and the median Balance Intensity Scale score was 3.00 (IQR: 2.25-3.00). Spearman's rank correlation revealed a significant negative correlation between the Activities-specific Balance Confidence scores and the Balance Intensity Scale ( $r = -0.301$ ,  $p = .038$ ). Additionally, linear regression analysis indicated a significant negative association between the Activities-specific Balance Confidence scores and the Balance Intensity Scale ( $\beta = -0.162$ ,  $p = .037$ ) when adjusted for age and sex.

**Conclusions:** These findings suggest that individuals with higher baseline balance confidence perceive the exercises in the fall-prevention program as less challenging. This negative correlation suggests that exercise leaders need to offer more challenging exercise modifications for people with high balance confidence to ensure they challenge their balance as intended to reap the benefits of the fall-prevention program.

# Geospatial Autocorrelation of Moderate-to-Vigorous Physical Activity in Hong Kong's Older Population

**Miss Yu Ting Alison Ou<sup>1</sup>**, Prof Daniel. W. L. Lai<sup>1</sup>, Dr Yan Sun<sup>1</sup>

<sup>1</sup>Hong Kong Baptist University, Hong Kong, China

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** A. Ageing

**Purpose:** This study examines the spatial dependencies of moderate-to-vigorous physical activity (MVPA) among older adults in Hong Kong, with the aim of identifying the spatial determinants that influence health outcomes in this population.

**Methods:** A total of 410 older adults aged 60 to 80 years were recruited from three districts in Hong Kong: Hong Kong Island, Kowloon, and the New Territories. The spatial distribution of moderate-to-vigorous physical activity (MVPA) was assessed using geospatial analysis. Spatial autocorrelation was quantified using the Global Moran's I statistic to evaluate overall clustering patterns. Hotspot and coldspot analysis with varying levels of statistical confidence was conducted using the Getis-Ord Gi\* statistic, while detailed cluster and outlier identification was performed through Anselin Local Moran's I analysis. All geospatial analyses were conducted using geographic information systems (GIS) to ensure precise mapping and spatial pattern detection.

**Results:** The analysis revealed a global Moran's I value of 0.08, indicating significant positive spatial autocorrelation ( $p < 0.001$ ). The Getis-Ord Gi\* statistic identified significant hotspots predominantly in the New Territories, suggesting higher levels of MVPA in these less urbanised areas with 90% to 99% confidence. Conversely, significant cold spots, indicating lower levels of MVPA, were mainly located in the more densely urbanised regions of Kowloon and Hong Kong Island. Anselin Local Moran's I analysis further highlighted the presence of high-high clusters in the New Territories and low-low clusters in the urban districts.

**Conclusions:** The results highlight significant spatial patterns in physical activity among Hong Kong's older adults, suggesting that environmental and infrastructural factors play a crucial role in influencing these patterns. Identifying specific clusters where intervention is needed may help public health officials to allocate resources more effectively to increase physical activity levels among the older population.

## Impact of climate change on psychosocial health and physical activity among older adults in Austria – A mixed methods study

**Mr. Matteo Sattler<sup>1</sup>**, Ms. Elisabeth Füssl<sup>2</sup>, Ms. Karin Ausserer<sup>2</sup>, Ms. Bente Knoll<sup>3</sup>, Ms. Elke Kastner<sup>4</sup>, Ms. Elisabeth Brandstätter<sup>1</sup>, Ms. Marlene Jobst<sup>1</sup>, Ms. Carina Kern<sup>1</sup>, Mr. Tobias Perkounig<sup>1</sup>, Ms. Saghi Zafarani<sup>1</sup>

<sup>1</sup>Institute of Human Movement Science, Sport and Health, University of Graz, Graz, Austria, <sup>2</sup>FACTUM, Vienna, Austria, <sup>3</sup>Office for Sustainable Competence B-NK GmbH, Vienna, Austria, <sup>4</sup>Climate Alliance Austria, Vienna, Austria

**SO.1.07: Latest Findings in Ageing, Limelight 1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice: A. Ageing**

**Purpose:** Current climate crisis is a health crisis. In response to increases in severity and frequency of extreme weather events, like heat waves, populations and countries are urged to identify, evaluate and implement adaptation and mitigation strategies, which match other goals, such as promoting physical activity and health, or reducing inequalities. To do so, better evidence on climate-related needs and perspectives of the most vulnerable groups are needed. Therefore, the present study investigated the impact of climate change on older adults, with and without support needs, across multiple areas of daily life, including social interactions, physical activity, wellbeing and support needs.

**Methods:** A mixed-methods observational study ('Paradise') based on the socio-ecological model was carried out. Older adults from two municipalities in Austria were asked to fill in a standardized questionnaire covering several domains of health, physical activity, neighbourhood characteristics as well as associated changes due to climate change (i.e., changes in extreme weather events). The results were then used to guide the development of a semi structured interview guide to obtain further in-depth insights into their daily lives in changing environments.

**Results:** Overall, 143 older adults (36 % with support/care needs, mean age = 79.2 years) completed the standardized questionnaire and 30 participated in the interviews. Between 35% and 63% of participants reported decreases in physical activity and social interactions during extreme weather events while, on average, 44% reported having difficulties in finding shade (e.g., when visiting playgrounds with grandchildren or active travelling) and places to rest in public. Greater heat exposure was reported to increase physiological and psychological symptoms (e.g., cardiovascular symptoms, fatigue, perceived stress). Adaptation strategies often included staying at home, carefully planning outdoor trips, phone calls instead of personal meetings and physical activity at home. Overall, older adults with support needs - compared to without – experienced greater social isolation and lower quality of life.

**Conclusions:** Climate change negatively affects older adults in multiple areas, including physical activity, subjective wellbeing and family life. The observed maladaptation must be addressed in climate action to secure the achievement of other (health-related) targets (e.g., Sustainable Development Goals).

# Clustering of Lifestyle Habits and Association with Depressive Symptoms and Suicidal Behaviors in Adolescents: A Systematic Review and Meta-Analysis

**Mr. Yohannes Tekalegn Efa<sup>1</sup>**, Ms Shalima Lathief<sup>2</sup>, Professor David Roder<sup>1</sup>, Professor Zumin Shi<sup>2</sup>, Dr Ming Li<sup>1,3</sup>

<sup>1</sup>Cancer Epidemiology and Population Health Research Group, Allied Health and Human Performance, University of South Australia, , Australia, <sup>2</sup>Human Nutrition Department, College of Health Sciences, QU Health, Qatar University, Doha, Qatar , , Qatar, <sup>3</sup>Faculty of Medicine, University of Queensland, Queensland, Australia , , Australia

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Unhealthy lifestyle choices are closely linked to various health problems. Existing literature shows that modifiable lifestyle factors like physical activity, sedentary behaviours, dietary habits, and alcohol and tobacco use are associated with depressive symptoms and suicidal behaviours. However, comprehensive reviews examining how these behaviours cluster and collectively contribute to depressive symptoms and suicidal behaviours are limited. This study addresses this gap by synthesizing evidence on associations between clusters of modifiable unhealthy lifestyle behaviours and mental health outcomes in adolescents. We hypothesize that adolescents with multiple unhealthy behaviours will have higher odds of experiencing depressive symptoms and suicidal behaviours (Hypothesis 1) and that a dose-response relationship exists, where an increasing number of unhealthy behaviours correlates with increased mental health risks (Hypothesis 2).

**Methods:** A total of seven databases namely, Medline, Scopus, Embase, Emcare, Web of Science, PsycINFO, and CINAHL were searched using a comprehensive list of search terms. Observational studies investigating the link between combinations of lifestyle behaviours and depression symptoms, along with suicidal behaviours among teenagers were included. This review adhered to the PRISMA guidelines, and the protocol was registered in the International Prospective Register of Systematic Reviews (PROSPERO). Random effect and dose-response meta-analysis was conducted to determine the pooled effect size of the associations.

**Results:** A total of sixteen eligible studies with data from 433,207 adolescents were included in this review. A random effect meta-analysis revealed a significant positive association between the clusters of unhealthy lifestyle behaviours and depressive symptoms (AOR:2.26, 95% CI: 1.73, 2.95), and suicidal ideation (AOR: 3.30, 95% CI: 1.67, 6.51). A dose-response association was observed between the number of unhealthy lifestyle factors, and both depressive symptoms and suicidal ideation [(AOR: 1.42, 95% CI: 1.06, 1.91), (AOR: 1.34, 95% CI: 1.29, 1.38), respectively]. However, no significant association was found between unhealthy clusters and suicidal plans or attempts.

**Conclusion:** This review suggests that adolescents engaging in multiple unhealthy lifestyle behaviours have synergistically higher odds of experiencing depressive symptoms and suicidal ideation. These results highlight the importance of addressing multiple lifestyle factors simultaneously in intervention strategies to improve adolescent mental health.

# Leisure time activities and their relationship to the psychological wellbeing of university students in Qatar: Initial results from the Leisure-time Activities Study

**Dr. Merilyn Lock<sup>1</sup>**, Ms. Asifa Akbar<sup>1</sup>, Dr. Lina Majed<sup>1</sup>

<sup>1</sup>College of Health and Life Sciences, Hamad Bin Khalifa University, Ar-rayyan, Qatar

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Physical activity (PA) is crucial for psychological wellbeing, but the relative importance of PA to other types of leisure-time activities (LTA) is not clear. This study aimed to a) assess PA behaviour, psychological wellbeing, and engagement in different LTA, and b) explore their relationships in a sample of university students in Qatar.

**Methods:** We used an online survey to collect demographic information, measures of psychological distress [Kessler 10-item Psychological Distress Scale (K10)], positive wellbeing [World Health Organization Well-Being Index (WHO-5)], PA behaviour overall [International Physical Activity Questionnaire, short-form (IPAQ-SF)] and during leisure-time (IPAQ, long-form, part 4), and frequency of engagement in sports/PA, social, creative, and relaxing LTA (customised questionnaire). Gender and degree level groups were compared using Mann-Whitney U tests. The relationships between PA/LTA and K10/WHO-5 scores were assessed using multivariable linear regression models. A Pearson correlation was run using the K10 and WHO-5 scores.

**Results/findings:** Forty-four respondents (32 females) were included, with 70.45% enrolled in a postgraduate degree. There were no significant gender differences in K10 or WHO-5 scores. More males were meeting World Health Organization recommendations for PA (83.30%) compared to females (40.60%). Males reported significantly more vigorous PA compared to females (medians: 127.50 vs 0 min/week;  $p=0.011$ ). Undergraduates reported significantly lower K10 ( $p=0.010$ ) and higher WHO-5 ( $p=0.043$ ) scores, and more min/week in most domains of overall and leisure-time PA compared to postgraduates. Regression models for WHO-5 scores indicated significant positive associations with vigorous PA ( $p=0.043$ ), and frequency of engagement in creative ( $p=0.029$ ) and social ( $p=0.023$ ) LTA. No significant results were found for the model testing leisure-time PA domains against WHO-5 scores, or any of the models testing K10 scores. The K10 and WHO-5 scores showed a significant negative correlation ( $-0.398$ ;  $p=0.007$ ).

**Conclusions:** Frequency of engagement in vigorous PA, creative, and social LTA were positively related to wellbeing in this sample of university students in Qatar. Although the WHO-5 and K10 scores showed a significant correlation, only the positive wellbeing measure (WHO-5) was related to LTA. These findings are consistent with the Dual-Continua Model of Mental Health and is the first evidence of this in Qatar.

## Physical activity behaviour and depression scores in patients with and without cardiometabolic disease: A case-controlled study from the Qatar Biobank

**Dr. Merilyn Lock<sup>1</sup>**, Dr. Khoulood Mtibaa<sup>1</sup>, Dr. Ameera Almarkhi<sup>1</sup>, Dr. Lina Majed<sup>1</sup>

<sup>1</sup>College of Health and Life Sciences, Hamad Bin Khalifa University, Ar-rayyan, Qatar

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Individuals with cardiometabolic disease (CMD) may be at increased risk of mental health disorders. Physical activity (PA) is important for the management of both CMD and mental health. This study is the first to assess the relationships between PA and depression scores in cardiometabolic patients in Qatar.

**Methods:** A sample of 589 individuals with CMD (aged  $46.34 \pm 9.46$  years; 261 females) and 589 healthy gender-, age-, and body mass index-matched controls ( $46.14 \pm 9.42$  years) from the Qatar Biobank were analysed. Depression scores and PA were measured using the Patient Health Questionnaire (PHQ-9) and the International Physical Activity Questionnaire Short Form (IPAQ-SF), respectively. Associations between the PHQ-9 scores and CMD presence, gender, age, and PA were assessed using multivariate linear regression. A multivariate analysis of covariance (MANCOVA) was used to look at the effects and interaction of CMD and gender on mental health and physical activity outcomes, while adjusting for age. The number of individuals meeting World Health Organization (WHO) recommendations for PA were compared by gender using a Pearson Chi<sup>2</sup> test.

**Results/findings:** Linear regression for PHQ-9 scores found significant positive associations with female gender ( $B=1.25$ ,  $p<0.001$ ) and presence of CMD ( $B=1.58$ ,  $p<0.001$ ), and a significant negative association with age ( $B=-0.16$ ,  $p<0.001$ ). The MANCOVA confirmed significant main effects of age, gender, and CMD presence on PHQ-9 scores. Additionally, it revealed that women reported significantly less moderate ( $\Delta-30.85$  min/week, SE: 8.52,  $p<0.001$ ) and vigorous ( $\Delta-27.60$  min/week, SE: 6.86,  $p<0.001$ ) PA compared to men. No significant interactions between gender and presence of CDM were present for mental health or any PA outcomes when adjusting for age. Significantly fewer women (12.35%) were meeting WHO recommendations for PA compared to men (23.53%,  $p<0.001$ ).

**Conclusions:** Patients with CMD reported higher depression scores compared to healthy controls. Women reported higher depression scores, and lower levels of PA compared to men. Levels of moderate-vigorous PA were low in both genders but similar between CMD patients and matched controls and PA did not appear to influence depression scores. Findings indicate a need for targeted support for mental health in patients with CMD and PA across the whole population.

# Exploring real-time associations between worktime activity and sedentary behaviour, psychosocial work characteristics, and employee wellbeing

**Dr. Charlotte Brakenridge**<sup>1,2</sup>, Emily Lucha<sup>3</sup>, Dr. Elisabeth Winkler<sup>2</sup>, Professor Paula Brough<sup>1</sup>, Dr. Bronwyn Clark<sup>2</sup>

<sup>1</sup>Centre for Work, Organisation and Wellbeing, Griffith University, Brisbane, Australia, <sup>2</sup>School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Australia, <sup>3</sup>School of Psychology, The University of Queensland, Brisbane, Australia

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Desk-based office workers engage in excessive sedentary behaviour and limited physical activity during the workday. The aims of the current study were to explore how the psychosocial work environment, wellbeing and physical activity (MVPA, moving) and sedentary behaviour (total and prolonged) varied in desk-based workers during work time and how psychosocial work characteristics and wellbeing were associated with physical activity and sedentary behaviour.

**Methods:** Ecological momentary assessment was used with device-based activity measurement (Move 4, movisens GmbH) and self-report psychosocial (work demands, control, support and activity support) and wellbeing (affective wellbeing, job satisfaction, work engagement) measures (11-point scales) for five workdays. Multiple mixed non-linear and linear regression models were used to test associations.

**Results:** Thirty-two desk-based office workers (84% women, average age 35 years (SD=1.7)) participated. Job satisfaction, work engagement, work demands, work control, support, and activity outcomes varied within individuals. Each additional 10 minutes/hour of sedentary behaviour was associated with less job satisfaction (~1 point) and each additional 10 minutes/hour of moving was associated with more positive affect and job satisfaction (2-3 points). Conversely, increases within individuals in MVPA and/or moving were associated with small decreases in job satisfaction (-0.27) and work engagement (-0.74 to -0.89 points) with increases in sedentary or prolonged sedentary behaviour associated with small increases in work engagement (0.07 to 0.18 points). Supportive psychosocial characteristics were associated with less sedentary or prolonged sedentary time (-0.58 to -1.09 minutes per hour) and more moving (16% more relative per hour) within individuals, with effects also seen between individuals for work control and work activity support. Work demands were associated with more sedentary and prolonged sedentary time (0.59 to 1.07 minutes per hour) and less moving (9% relative per hour) within individuals.

**Conclusions:** This study demonstrates that psychosocial work characteristics, wellbeing and activity fluctuate throughout the day. Activities showed some associations with wellbeing outcomes. Supportive psychosocial work characteristics were associated with less sedentary behaviour and more moving during work hours. These findings add to the literature by showing the dynamic nature of these psychosocial constructs and their direct impacts on activity and sedentary behaviour.

# Effectiveness of digital lifestyle interventions for improving depression, anxiety, stress and wellbeing: a systematic review and meta-analysis

**Dr. Jacinta Brinsley<sup>1</sup>**

<sup>1</sup>University of South Australia, Adelaide, Australia, <sup>2</sup>Health & Biosecurity, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Adelaide, Australia, <sup>3</sup>School of Population Health, University of New South Wales, Sydney, Australia, <sup>4</sup>Innovation, IMPLementation and Clinical Translation (IIMPACT in Health), University of South Australia, Adelaide, Australia, <sup>5</sup>Ghent University, Department of Rehabilitation Sciences, Ghent, Belgium, <sup>6</sup>Research Foundation Flanders, Brussels, Belgium, <sup>7</sup>Department of Movement Sciences, KU Leuven, Leuven, Belgium, <sup>8</sup>Department of Movement and Sports Sciences, Ghent University Research Centre for Aging Young, Ghent University, Ghent, Belgium, <sup>9</sup>Division of Psychology and Mental Health, Manchester Academic Health Science Centre, The University of Manchester, Manchester, United Kingdom, <sup>10</sup>Manchester Academic Health Science Centre, Greater Manchester Mental Health NHS Foundation Trust, Manchester, United Kingdom

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Despite increasing evidence for digital interventions targeting lifestyle behaviors like diet, exercise, and sleep, their impact on mental health remains underexplored. Previous reviews have focused on specific behaviors or clinical groups, limiting our understanding of digital lifestyle interventions' broader efficacy. This systematic review and meta-analysis synthesizes evidence on the mental health effects of comprehensive digital lifestyle interventions, with attention to intervention design, delivery methods, and population characteristics.

**Methods:** This review was registered with PROSPERO (CRD42023428908) and followed PRISMA guidelines. Six databases were searched for randomised controlled trials that evaluated digital lifestyle interventions (physical activity, diet, sleep) and reporting outcomes on depression, anxiety, stress or wellbeing. Random-effects meta-analyses were conducted, calculating pooled effect sizes as standardized mean differences (SMD) with 95% confidence intervals (CIs). Risk of bias was assessed using the PEDro scale.

**Findings:** Sixty-one studies were included, with sample sizes ranging from 20 to 3,755 and mean participant age from 19 to 68 years. Most interventions were web-based (60%), targeted physical activity (40%) and had a mean PEDro rating of 6/10 (good quality). Meta-analyses revealed significant effects of digital lifestyle interventions for depression (SMD= -0.37 [95%CI= -0.46, -0.27], k=53), anxiety (SMD= -0.29 [95%CI= -0.36, -0.21], k=35) and stress (SMD= -0.17 [95%CI= -0.33, -0.01], k=11), but no effect for wellbeing (SMD= 0.14 [95%CI= -0.07, 0.37], k=6). Subgroup analyses revealed similar effectiveness in reducing depression and anxiety symptoms across different populations, intervention types, and delivery methods, with no specific features enhancing effectiveness except for recent publication year.

**Conclusions:** Digital lifestyle interventions demonstrate small-to-medium effects, offering a promising short-term self-management strategy for mental health by encouraging positive lifestyle changes. While the impact on overall wellbeing remains inconclusive, digital platforms are similarly effective in improving depression and anxiety outcomes. These interventions address both risk and protective factors for mental health and are particularly valuable when in-

person treatment options are limited. Future research should focus on integrating these interventions into existing healthcare services, with attention to digital health equity, literacy, and the effective implementation of these strategies.

## Is antioxidant vitamin intake associated with mental health in adolescents? A Swedish cross-sectional study

Martina Pensa<sup>1</sup>, Karin Kjellenberg<sup>1</sup>, Professor Örjan Ekblom<sup>1,2</sup>, Professor Gisela Nyberg<sup>1,2</sup>, **Dr. Björg Helgadóttir**<sup>1,2</sup>

<sup>1</sup>The Swedish School Of Sport And Health Science, Stockholm, Sweden, <sup>2</sup>Karolinska Institutet, Stockholm, Sweden

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Adolescence is a critical period marked by a rising prevalence of mental health challenges. Nutritional factors, especially antioxidants, have garnered attention for their potential role in mitigating oxidative stress and inflammation associated with mental health issues. However, the link between dietary antioxidants and mental health in adolescents remains poorly understood. This study focused on examining this relationship among Swedish adolescents while also exploring potential differences between genders.

**Methods:** Cross-sectional data were gathered among Swedish boys and girls aged 13-14 years (n = 1139). Participants answered questionnaires which included questions on background and mental health scales. The scales used measured anxiety (the short version of the Spence Children's Anxiety Scale), psychosomatic symptoms (the Psychosomatic Problems scale), and health-related quality of life (HRQoL measured via Kidscreen-10). Dietary intake was collected via a three-day recall system, which could be used to analyse the nutritional values in detail. Multiple linear regression analyses, adjusted for confounders, were used to investigate the associations between tertiles of dietary intake of vitamin C, E and  $\beta$ -carotene and mental health outcomes.

**Results:** Adolescents in the highest tertile of  $\beta$ -carotene intake reported fewer anxiety symptoms ( $\beta = -1.23$ , 95% CI = -2.34, -0.12), fewer psychosomatic symptoms ( $\beta = -0.91$ , 95% CI = -1.69, -0.13), and better HRQoL ( $\beta = 0.89$ , 95% CI = 0.11, 1.68), after adjusting for confounders. Similarly, higher vitamin C intake was associated with fewer psychosomatic problems ( $\beta = -1.00$ , 95% CI = -1.79, -0.21). Vitamin E intake showed no associations. No significant gender interaction was found in the association between antioxidant intake and mental health.

**Conclusion:** Our findings highlight the potential importance of dietary antioxidants, particularly  $\beta$ -carotene and vitamin C, in supporting adolescent mental health. Future research involving diverse populations and utilizing prospective study designs could provide deeper insights and guide effective public health interventions.

## Impact of a vigorous-intensity physical activity program (+moviMent) on fitness self-perception, cardiopulmonary resistance, lower limb strength, agility and quality of life: Controlled clinical trial.

**Miss Mariona Caro Crous<sup>1,2</sup>**, PhD Josep Manel Santos<sup>2,5,6,7,9</sup>, PhD Gemma Prat<sup>3,6,7,9</sup>, PhD Rosa Giralt-Palou<sup>3,4,7,9</sup>, PhD Antoni Corominas<sup>1,3,9</sup>, PhD Anna Puig-Ribera<sup>1,8,9</sup>

<sup>1</sup>University of Vic-Central University of Catalonia, Vic, Spain, <sup>2</sup>Osonament Foundation, Vic, Spain, <sup>3</sup>Mental Health Division. Althaia University Assistance Network of Manresa, Manresa, Spain, <sup>4</sup>University of Lleida, Lleida, Spain, <sup>5</sup>Department of Psychiatry, Vic University Hospital, Vic, Spain, <sup>6</sup>Faculty of Medicine, University of Vic-Central University of Catalonia, Vic, Spain, <sup>7</sup>Innovation in Mental Health and Social Welfare (ISaMBeS), University of Vic-Central University of Catalonia, Vic, Spain, <sup>8</sup>Research Group in Exercise and Physical Activity (GREAF), University of Vic-Central University of Catalonia, Vic, Spain, <sup>9</sup>Institute for Research and Innovation in Life and Health Sciences in Central Catalonia (IRIS-CC), Vic, Spain

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** This study wants to evaluate the efficacy of a vigorous-intensity physical activity (PA) program, which pretends to increase the number of vigorous-intensity PA bouts in their daily life, as a habit, improving fitness and quality of life, with people who have severe mental illness, including major depression, bipolar disorder and schizophrenia.

**Methods:** Multi-centric, controlled clinical trial. Data will be collected from recuperation services from Vic and Manresa (Barcelona). A sample size of 80 people will be allocated into a control group (CG) (n=30) or intervention group (IG) (n=50), with post-intervention follow-up at 7 months. The CG will receive usual healthcare from their recuperation service. Meanwhile, the IG will take part in a 7-month vigorous-intensity PA program, which pretends to increase the number of PA daily bouts, combining High-Intensity Interval Training (HIIT) and Vigorous-Intensity Lifestyle Physical Activity (VILPA) methods. Variables: (1) Fitness self-perception (IFIS); (2) Cardiopulmonary resistance (6MWT); (3) Lower limb strength (5-reps sit-to-stand test); (4) Agility (T-test); (5) Quality of life (WHOQoL-bref). Interaction between groups will be analysed throughout the intervention and follow-up. At the end, focus groups are held to find out what the experience of participating in the programme was like, and how it has affected each person's recovery process.

**Results:** Statistical analysis is currently underway. Other variables related to mental health symptomatology are being studied. So far, we have been able to observe the difference between pre intervention and follow-up at 4-months, in the following variables. The IG have been improved significantly their quality of live (WHOQoL-bref,  $p=0,017$ ), fitness self-perception (IFIS,  $p<0,001$ ), cardiopulmonary resistance (6MWT,  $p<0,001$ ), lower limb strength (5reps sit-to-stand,  $p=0,004$ ) and agility (T-test,  $p<0,001$ ) compared with CG (WHOQoL-bref  $p=0,388$ ; IFIS  $p=0,080$ ; 6MWT  $p=0,762$ ; 5reps sit-to-stand  $p=0,274$ ; T-test  $p=0,059$ ).

**Conclusions:** Vigorous intensity physical activity programmes could be an effective strategy for people with severe mental illness to achieve the extra-health benefits associated with higher intensity physical activity as part of their rehabilitation and recovery process to improve their fitness and quality of life.

## Uniting community physical activity organisations and NHS mental health trusts to support those with severe mental ill health to live physically active lives: Co-SPACES

**Dr. Gareth Jones<sup>1</sup>**, Mrs Eleanor Bowes, Dr. Trys Burke, Mr Matthew Faires, Dr. Katarzyna Machaczek, Dr Helen Quirk, Dr. Emily Peckham

<sup>1</sup>Sheffield Hallam University, Sheffield, United Kingdom

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Co-SPACES aimed to understand how community physical activity (PA) organisations and NHS trusts could connect to support those living with severe mental illness (SMI) to live physically active lives. Co-SPACES is an extension of 'SPACES', a PA intervention delivered within NHS mental health services to those with SMI. People with SMI experience a mortality gap of 10–20 years compared with those without SMI. The majority of deaths are attributable to physical health conditions and modifiable lifestyle behaviours including physical (in)activity. Community PA organisations offer potential sustainable opportunities for those with SMI, however experience barriers that prevent supporting those with SMI.

**Methods:** A national survey was distributed across UK community PA organisations and interviews were conducted with NHS physical activity coordinators (PACs) and community PA organisation to understand the barriers and facilitators of engaging those with SMI in community PA opportunities. Data analysis utilised framework analysis, which was informed by COM-B (Capability, Opportunity, Motivation, Behaviour). COM-B underpinned the development of the SPACES intervention. The Theoretical Domains Framework was employed to recognize potential intervention functions.

**Results/findings:** Sixty-five community PA organisations completed the survey. Sixteen PACs and seventeen community PA organisation (N=33) completed interviews. Early analysis revealed psychological capability (e.g., community organisation confidence), physical capability (e.g., sustainable funding) and social opportunity (e.g., an established link between community organisation and NHS trust) are key constructs to consider for intervention design. Further analysis is currently underway which will provide a comprehensive analysis of the data by February 2025.

**Conclusions:** Resources that empower NHS trust and community PA organisations to establish links are vital to create sustainable opportunities to support those with SMI to engage in long-term PA behaviour. Results emphasise the importance of a physical link between NHS trust workers and community organisations, likely to originate from within NHS trusts. Interventions should focus on unearthing how NHS trusts engage community PA organisations and how community PA organisations can improve their knowledge and confidence to adapt PA session delivery methods to those with SMI. Further exploration is required to understand financial mechanisms in this space to support community PA organisations provision of such opportunities.

# Measuring individual and organisational wellbeing in the healthcare industry: A review

**Dr. Stephanie Chappel<sup>1,2,3</sup>**, Dr Guncag Ozavci<sup>1,2,3</sup>, Ms Vicky Yuan<sup>1,2,3</sup>, Professor Tracey Bucknall<sup>1,2,3</sup>

<sup>1</sup>*School of Nursing and Midwifery, Deakin University, Burwood, Australia*, <sup>2</sup>*Centre for Quality and Patient Safety Research, Institute for Health Transformation, Deakin University, Australia, Burwood, Australia*,

<sup>3</sup>*Alfred Health, Melbourne, Australia*

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Wellbeing is a vital component of understanding an individuals' health behaviours. Whilst commonly investigated in relation to overall health, there is growing focus on the importance of understanding worker wellbeing, and the interplay between a worker's health and its impact on their work. Therefore, accurate measurement of wellbeing at work is needed. This is especially important within the healthcare industry, where problems have been raised around moral distress, violence, and staff turnover. The aim of this review was to determine the current evidence on the measurement of wellbeing at work within the healthcare industry, to aid future research in forming workplace strategies to mitigate any risks to workers wellbeing.

**Methods:** A search was conducted in December 2023 across EMBASE, MEDLINE Complete, APA PsycINFO, and Business Source Complete databases. Main search terms were formed around 'quality of life', 'psychological tests', and 'workplace' subjects. The search was limited to English publications from 2012, in adult populations, and focusing on healthcare professionals. A narrative synthesis of the included studies was conducted.

**Results:** A total of 4,493 records were identified through the search. After removing duplicates and completing screening, 778 articles were included. Of the included studies, 681 studies tested or used validated wellbeing tools, and 97 developed new tools. Across the validated studies, 23 tools were frequently used (present in >5 studies) focusing on five key areas: burnout; work engagement and job satisfaction; work-related quality of life; anxiety, distress and depression; and stress. Additionally, 15 tools were less-frequently used (present in >2 studies but <5) focusing on four key areas; job satisfaction and work environment; professional wellbeing; stress; and anxiety and depression.

**Conclusion:** Overall, there are a large number and variety of validated tools to investigate healthcare professionals' wellbeing at work across individual and organisational levels. Accessible, easy to use tools will allow organisations to monitor worker wellbeing over time and track the success of implemented strategies to improve workplace wellbeing. This review provides a comprehensive overview of workplace wellbeing tools that can be used to investigate health and wellbeing to develop our understanding and organisational strategies to improve worker health.

# A content analysis of commercial smartphone applications to support the mental health of young people

**Dr. Jasmine Petersen**<sup>1</sup>, Prof. Murray Drummond<sup>2</sup>, Prof. Ivanka Prichard<sup>1</sup>, Dr Mia Pellizzer<sup>2,3</sup>, A.Prof. Sam Elliott<sup>2</sup>, Ms Kate Rasheed<sup>2</sup>

<sup>1</sup>Caring Futures Institute, College of Nursing and Health Sciences, Flinders University, Adelaide, Australia,

<sup>2</sup>College of Education, Psychology and Social Work, Flinders University, Adelaide, Australia,

<sup>3</sup>Flinders University Institute for Health and Wellbeing, Flinders University, Adelaide, Australia

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Young people are known to be disproportionately affected by poor mental health outcomes. Smartphone applications (apps) present novel prospects for improving the mental health outcomes of this subpopulation. Commercially available mental health apps are ubiquitous, however, little is known about those accessible to young people. Therefore, this study aimed to systematically evaluate the quality and evidence-based content of commercial mental health apps for young people.

**Methods:** A systematic search of the Australian Apple iOS App Store and the Android Google Play store for mental health apps suitable to young people (10-24 years) was conducted in May 2023. The top 50 hits (free and paid) from each search term (e.g., 'mental health', 'mental illness') were screened for eligibility. Eligible apps were independently evaluated by two reviewers in relation to quality (Mobile Application Rating Scale, MARS) and evidence-based content using a standardised codebook. Data were summarised descriptively, and Pearson correlations were used to determine bi-variate relationships between variables of interest.

**Results:** This review included 161 apps (Apple App Store n=132, Google Play n=29). The overall quality of the apps was moderate (MMARS =3.3, SD=0.5, range 1-5), and less than 10% of included apps had an overall good quality rating ( $\geq 4$ ). On average, the apps included 7 (of a possible n=26) evidence-based treatment elements, with psychoeducation (80%), behavioural rehearsal (75%) and mindfulness (70%) the most commonly integrated elements. The MARS quality score was significantly correlated with the number of treatment elements ( $r=0.46$ ,  $p=0.01$ ) and average consumer ratings ( $r=0.27$ ,  $p=0.01$ ). Number of treatment elements was not associated with consumer ratings.

**Conclusions:** Many mental health apps are accessible to young people in Australia, however, there is considerable scope to improve their quality and provision of evidence-based content. This review has important implications for a range of stakeholders (e.g., consumers, clinicians, researchers), with the potential to guide the development, utilisation, and evaluation of commercial mental health apps.

## Exploring food and nutrition predictors of schoolteacher burnout: findings from the longitudinal teacher food and nutrition health and wellbeing study.

**Miss Tammie Jakstas**<sup>1,2</sup>, Dr Andrew Miller<sup>1,3</sup>, Professor Tamara Bucher<sup>2,4</sup>, Dr Vanessa Shrewsbury<sup>1,2</sup>, Laureate Professor Clare Collins<sup>1,2</sup>

<sup>1</sup>University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter Medical Research Institute, Food and Nutrition Research Program, Callaghan, Australia, <sup>3</sup>Priority Research Centre for Teachers and Teaching, Callaghan, Australia, <sup>4</sup>Bern University of Applied Sciences, Bern, Switzerland

**SO.1.08: Understanding Mental Health Wellbeing: From Organizational to Individual Behaviors, Limelight 2, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** M. Mental Health and Wellbeing

**Purpose:** Food and nutrition (FN) practices have implications for teacher health and wellbeing. Globally, poor teacher wellbeing is affecting teacher retention and supply demands. Based on a scoping review and Delphi study, the teacher food and nutrition wellbeing questionnaire (TFNQ) was validated for use in a teacher population, systematically measuring FN constructs alongside wellbeing outcomes. The longitudinal teacher FN health and wellbeing study, aimed to use the TFNQ to examine the links between FN constructs and burnout in teachers.

**Methods:** The TFNQ includes 30 food, nutrition, lifestyle and wellbeing constructs measured using nine sub-scales and 21 single-item measures. One-hundred and thirty-six Australian secondary teachers registered to participate, with data collected longitudinally across the four time points from September 2023 to June 2024. Using data from all four time points, Pearson correlation coefficient was used to assess relationships between all constructs and burnout individually. Constructs with an established significant correlation ( $p$  value  $<0.05$ ) with burnout were then added into a linear model to establish an adjusted analysis.

**Results/findings:** Registrant completions (rates) of the TNFQ at baseline, Time 1(T1), T2, T3 and T4 were 112 (82%), 91 (67%), 88 (65%), 85 (63%), respectively. At baseline the majority were female (87.5%) and aged 31-45 years (52%), with the mean score for burnout of 16.32 (standard deviation 5.16) (maximum possible score of 24), with a higher score indicating a greater degree of self-reported burnout. Linear correlation analysis demonstrated that 20 constructs within the TFNQ obtained a significant correlation with burnout (i.e.,  $p$  value  $<0.05$ ). Of these, six remained significant in multivariate adjusted analyses including stress (slope ( $s$ ) 1.10,  $p<0.001$ ), unhealthy eating social norms ( $s$ :-0.31,  $p<0.001$ ), positive personal subjective wellbeing ( $s$ :-0.52,  $<0.001$ ), food agency sub-scale of structure ( $s$ :-0.25,  $p0.004$ ), extra hours worked ( $s$ :0.38,  $p0.019$ ), and diet quality perceptions ( $s$ :0.59,  $p0.039$ ).

**Conclusions:** This study identified factors that have potential implications for preventing teacher burnout through future wellbeing interventions that aim to improve healthy eating practices. Future teacher wellbeing programs should consider including targeted advice and information to upskill teacher food agency in mediating teacher burnout.

# A Randomized Pilot Study Evaluating the Impact of a New Program and Implementation Strategy on Acceptability, Appropriateness, and Feasibility of the Healthy School Recognized Campus Initiative in Middle Schools in Texas, United States

**Dr. Jacob Szeszulski<sup>1</sup>**, Ms. Mia Putnam<sup>1,3</sup>, Dr. Julie Gardner<sup>2</sup>, Dr. Alexandra MacMillan Uribe<sup>1</sup>, Dr. Chad Rethorst<sup>1</sup>, Ms. Allyson Schaefer<sup>1</sup>, Dr. Rebecca Seguin-Fowler<sup>4</sup>, Mrs. Paula Butler<sup>2</sup>  
<sup>1</sup>Texas A&M AgriLife Research, Dallas, USA, <sup>2</sup>Texas A&M AgriLife Extension, Dallas, USA, <sup>3</sup>Texas A&M University, College Station, USA, <sup>4</sup>Texas A&M AgriLife Research, College Station, USA

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Healthy School Recognized Campus (HSRC) is an initiative that supports Cooperative Extension agents (i.e., health educators) to deliver bundled, research-based physical activity and healthy eating programs. To receive the HSRC designation, schools must complete a school-wide walking program, another student-focused program, and an adult-focused program. Due to HSRC's complexity and new programs being regularly added, we pilot tested one new program – Strong Teens for Healthy Schools (STHS) – and one implementation strategy – peer-to-peer mentoring – to evaluate changes in implementation outcomes.

**Methods:** A 2x2 cluster randomized factorial trial was conducted in eight middle schools (n=24 implementers). Schools were randomized to receive, or not receive, two different conditions: STHS and the peer-to-peer mentoring program; some schools received both/neither. STHS includes physical activity and nutrition education, and activities that help students create an environmental change (e.g., new school garden) via 24 curricular content hours. In the peer-to-peer mentoring program, implementers attend four 60-minute meetings to discuss successes, challenges, and available resources for HSRC (e.g., flyers, program materials). Changes in acceptability, appropriateness, and feasibility, measured via a validated 5-point scale, were analyzed using linear (continuous outcomes) and logistic (increase or decrease in outcomes) regression model frameworks.

**Results/findings:** Prior to HSRC, implementers (46.8±2.3 years; 84% female; 32% Extension agents) reported that HSRC was highly acceptable (4.6±0.1), appropriate (4.5±0.1), and feasible (4.5±0.1), and these scores change little (<0.1 points) following the study. In linear models, the mentoring program was related to a marginally significant reduction in HSRC acceptability ( $\beta = -0.19$ , 95%CI= -0.39, 0.00,  $p = .052$ ), but did not affect appropriateness or feasibility. In logistic regression models, participation in STHS reduced the odds that implementers would find HSRC more acceptable than they did prior to the study (OR=0.16, 95%CI=0.03, 0.85,  $p = .034$ ), but did not affect appropriateness or feasibility.

**Conclusions:** HSRC was highly acceptable, appropriate, and feasible for middle school implementers both before and after implementation. However, the addition of a new program or implementation strategy could negatively affect acceptability. Future studies, with a larger sample size, should evaluate these outcomes further, and implementation strategies designed to mitigate potential reductions in acceptability may be needed.

## Setting the stage: building a collaborative framework to evaluate a population-wide children's sport policy

**Ms. Catherine Simpson<sup>1</sup>**, Dr Rosa Virgara<sup>1</sup>, Dr Rachel Curtis<sup>1</sup>, Ms Michelle Crisp<sup>2</sup>, Ms Simone Licari<sup>2</sup>, Dr Bridget Foley<sup>3</sup>, Prof Carol Maher<sup>1</sup>

<sup>1</sup>Alliance for Research in Exercise, Nutrition and Activity, University of South Australia, Adelaide, Australia, <sup>2</sup>Office for Recreation, Sport and Racing, Government of South Australia, Adelaide, Australia, <sup>3</sup>Prevention Research Collaboration, Sydney School of Public Health, Faculty of Medicine and Health, Sydney, Australia

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Children's participation in sport yields profound health, wellbeing, and cognitive benefits, yet cost remains a significant barrier for many families. Every Australian state and territory has implemented financial incentives to improve accessibility; however, comprehensive evaluations are rare, leaving gaps in understanding these programs' real-world impact. This study set out to address this gap by developing evaluation recommendations tailored to the South Australian Sports Voucher program – a financial accessibility initiative with population-wide reach – using a Delphi study.

**Methods:** Over seven months (October 2022 to April 2023), a rigorous three-round Delphi study engaged a diverse, international panel of 67 stakeholders – including sports providers, voucher users, academics, government representatives, and NGOs – dedicated to supporting diverse and disadvantaged children. Round 1 assessed the importance of various evaluation components (e.g., reach, process, effectiveness); Round 2 identified specific approaches and tools; and Round 3 established methodological priorities and timelines. A consensus threshold of ≥70% was set a priori, with recommendations shaped around stakeholder preferences.

**Results:** Stakeholder engagement averaged a 76% response rate, highlighting the field's vested interest. Round 1 established consensus across all evaluation components, while Round 2 refined 14 key evaluation measures. Round 3 culminated in actionable, stakeholder-endorsed recommendations, yielding a practical, industry-aligned framework. This includes process evaluations for users and providers, analyses of non-participation factors, and a robust survey of program awareness among eligible families. Importantly, 72% of the panel endorsed directing program funds toward comprehensive evaluation.

**Conclusions:** This research effectively engaged stakeholders in the co-development of comprehensive evaluation recommendations for the SA Sports Voucher program. Results suggested a multi-pronged evaluation strategy is needed to fully understand the uptake, effectiveness, and impact of the Sports Voucher program. This has resulted in a pragmatic, meaningful and highly implementable output, with several evaluation recommendations having already been implemented and the potential to shape future program and policy decisions.

## Development and pilot testing of a participatory agent-based model of dynamic interactions at mealtimes in determining children's vegetable intakes.

**Dr. Megan Jarman<sup>1</sup>**, Dr Maria Chli<sup>1</sup>, Professor Jacqueline Blissett<sup>1</sup>

<sup>1</sup>Aston University, Birmingham, United Kingdom

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** N. Systems Science

**Purpose:** Researchers have called for methodologies which account for complex interactions between factors influencing children's dietary intakes as a system. One such method is Agent-Based Modelling (ABM) which seeks to simulate interactions between decision-making individuals (agents) with their social environment (other agents) and their physical environment, to understand dynamic processes which relate to an outcome. We developed a participatory ABM for parents to interact with understand mealtimes and subsequent child vegetable consumption as a complex system.

**Methods:** A systematic scoping review (n=241 articles) and stakeholder workshops contributed to the development of FeedQuest. FeedQuest is designed as a computer game with realistic graphics for parents to simulate mealtime experiences. Parents create a child avatar (which has similar 'food fussiness' and 'temperament' to their child in real life) and then play out a 'usual mealtime' by customising characteristics of the physical environment (location, screen present), and using various feeding practices (e.g. reward for vegetable consumption). The child-avatar agent responds by eating or refusing vegetables. If they refuse, the parent, in turn, can make amendments to the mealtime, and the child-avatar will subsequently respond and so on. The avatars response to the mealtime is programmed taking into account it's food fussiness and temperament, elucidating what works, for whom. Detailed pilot (beta) testing was completed with 11 parents of preschool children who interacted with FeedQuest to showcase the potential dynamic data collected.

**Results:** In FeedQuest most parents (n=9) fed their child-avatar at a table and n=7 modelled eating vegetables. In cases where the child-avatar then refused the vegetables (n=8) some parents (n=4) tried modelling again, whereas others turned to using pressure to eat (n=3) or offering a non-food reward (n=1). This subsequently resulted in n=5 child-avatars eating the vegetables. Most (n=10) parents agreed that FeedQuest represented a real mealtime and the child-avatar response was similar to their real child, validating our environment and behavioural modelling.

**Conclusion:** Participatory ABM can aid in our understanding of mealtime influences on children's vegetable intakes as a dynamic system. It may also serve as a training tool to help shape parenting practices around mealtimes.

## Prevalence of Physical Activity Initiatives in Australian Primary Schools: A Cross-Sectional Survey

Dr. Kate O'Brien<sup>1,2,3,4</sup>, Mrs Jessica Bell<sup>1,2,3,4</sup>, Prof Luke Wolfenden<sup>1,2,3,4</sup>, Associate Prof. Sze Lin Yoong<sup>2,3,5</sup>, Prof. Adrian Bauman<sup>3,6</sup>, Prof. Nicole Nathan<sup>1,2,3,4</sup>, Mr Christophe Lecathelinais<sup>1</sup>, Miss Lucy Leigh<sup>1,7</sup>, **Dr. Rebecca Hodder<sup>1,2,3,4</sup>**

<sup>1</sup>School of Medicine and Public Health, College of Health Medicine and Wellbeing, University of Newcastle, Newcastle, Australia, <sup>2</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>3</sup>National Centre of Implementation Science, University of Newcastle, Newcastle, Australia, <sup>4</sup>Hunter Medical Research Institute Population Health Program, Newcastle, Australia, <sup>5</sup>GLOBE, Deakin University, Australia, Geelong, Australia, <sup>6</sup>Sydney School of Public Health, University of Sydney, Sydney, Australia, <sup>7</sup>Hunter Medical Research Institute, Data Sciences Unit, Newcastle, Australia

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Schools are pivotal in shaping children's physical activity and sedentary behaviours and are globally recognised as essential settings for promoting physical activity. To achieve widespread health benefits, initiatives within schools must be guideline-informed and widely adopted. However, there is limited evidence on the implementation of these initiatives in Australian primary schools. This study aims to assess the implementation of recommended physical activity initiatives in Australian primary schools and examine their associations with school characteristics.

**Methods:** A cross-sectional survey was conducted with a nationally representative sample of Australian primary school principals between August 2022 and October 2023. Principals were asked about the implementation of 33 physical activity initiatives. Prevalence estimates were weighted to reflect the Australian school population, and logistic regression models were used to explore the associations with school characteristics.

**Results:** Of the 669 schools that participated in the survey, 360 principals responded to the questions assessing the implementation of physical activity initiatives in their schools. Implementation rates varied significantly, with the lowest being 4% for the initiative 'Some students provided physical activity trackers' and the highest being 98% for 'Physical activity units of work in PDHPE/HPE curriculum'. Other highly implemented classroom initiatives included 'Physical activity integrated into at least some Key Learning Areas other than PDHPE' (80%) and 'Fundamental movement skills units of work in PDHPE/HPE curriculums' (75%). Outside the classroom, initiatives such as 'School infrastructure that supports physical activity during breaks' (96%) and 'Sports equipment that supports physical activity during breaks' (86%) had high implementation rates. Initiatives targeting families and the broader community included 'Providing end-of-trip facilities to encourage active school travel' (75%) and 'Information on physical activity sent home to parents' (63%). Implementation of nine initiatives was associated with school characteristics (school size, location, or socioeconomic status).

**Conclusions:** This is the first national study to examine the implementation of individual physical activity initiatives in Australian primary schools, providing valuable insights for policymakers and practitioners. The findings can inform future policy and investment decisions and help identify schools that may require additional support to effectively implement specific initiatives.

## National scale-up of TransformUs Secondary, a whole of school physical activity and sedentary behaviour program: 16-months dissemination strategies and outcomes

**Mrs. Anna Fitriani<sup>1</sup>**, Associate Professor Harriet Koorts<sup>1</sup>, Dr Ana Maria Contardo-Ayala<sup>1</sup>, Deakin Distinguished Professor Jo Salmon<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition Deakin University, Melbourne, Australia*

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Most Australian adolescents engage in insufficient physical activity (PA) and prolonged sedentary behaviour (SB), negatively affecting their health. Schools are a popular setting to implement evidence-based interventions targeting PA and SB due to their potential high reach. However, current literature inadequately delineates the dissemination strategies used among school-based interventions to achieve nation-wide reach. This study aims to analyse and describe strategies used to disseminate TransformUs Secondary—a school-based PA and SB intervention targeting adolescents—and assess outcomes, including website reach, registration, and engagement over a 16-month follow-up period.

**Methods:** This study is a national implementation trial of TransformUs Secondary. The TransformUs website provides resources to aid with delivery of the program. Since its launches in QLD, SA, NT, WA and VIC (October 2023 to March 2024), the research team and partner organisations have disseminated the program over 16 months (e.g., state launches, social media). All dissemination activities were logged and coded by dissemination strategy type. Website registration data provided demographic information on program reach, and Google Analytics assessed website engagement. Data were summarised using means and percentages, with trends visualised through fortnightly line charts.

**Results:** Across 102 dissemination activities, dissemination strategies were applied 196 times, encompassing seven overarching strategies, such as develop stakeholder interrelationship (30%), distribution strategies (23%), and engage consumers (16%). Strategy use, registration rates, and website engagement fluctuated over time, with peaks around state launches. Following the VIC launch, the strategies became more varied, with some registrations and website engagement continuing. Across 16-month period, 202 school staff (0.1% of the national school staff) registered, comprising classroom teachers (33.5%), in government schools (72.4%), and were based in Victoria (44.8%).

**Conclusion:** In the first 16 months of TransformUs Secondary, dissemination efforts focused primarily on developing stakeholder interrelationships, with diverse strategies employed. This study provides a structured approach to understanding dissemination patterns in large-scale interventions. It underscores the need for a nuanced framework to improve coding and reporting of real-world dissemination efforts.

## Assessing the scalability of evidence-based healthy eating and physical activity interventions in early childhood education and care: A cross-sectional study of end-user perspectives

**Dr. Alice Grady**<sup>1,2,3,4</sup>, Dr Melanie Lum<sup>3,5</sup>, Dr Jacklyn Jackson<sup>1,3,4</sup>, Prof Luke Wolfenden<sup>1,2,3,4</sup>, Prof Andrew Milat<sup>6,7</sup>, Prof Adrian Bauman<sup>7</sup>, Dr Rebecca Hodder<sup>1,2,3,4</sup>, A/Prof Sze Lin Yoong<sup>3,5</sup>  
<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Population Health, Wallsend, Australia, <sup>3</sup>National Centre of Implementation Science, Newcastle, Australia, <sup>4</sup>Hunter Medical Research Institute, New Lambton, Australia, <sup>5</sup>Deakin University, Geelong, Australia, <sup>6</sup>Centre for Epidemiology and Evidence, , Australia, <sup>7</sup>University of Sydney, , Australia

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Objectives:** Few obesity-prevention programs are implemented at scale in early childhood education and care. Identification of 'scalable' interventions may improve the success of future efforts to implement programs at scale. We sought to describe, among Australian early childhood education and care services: i) perceptions regarding the scalability of evidence-based healthy eating and physical activity interventions; and ii) associations between perceived scalability of interventions and service characteristics.

**Methods:** A cross-sectional online or telephone survey was conducted with a randomly selected sample of services across Australia (August 2021-March 2022). The scalability of six evidence-based healthy eating (e.g. training educators to support child healthy eating), and six physical activity (e.g. providing sufficient opportunities for child physical activity) interventions were assessed using items based on the Intervention Scalability Assessment Tool. Items assessed 10 domains of scalability: the problem, the intervention, strategic and political context, effectiveness, costs, fidelity and adaptation, reach and acceptability, delivery setting and workforce, implementation infrastructure, and sustainability. Scores across scalability domains were summed (total score out of 50) with higher scores representing a higher perceived scalability. Linear regression analyses explored associations between intervention scalability scores and service characteristics.

**Results:** A total of 453 services completed the survey. The highest scoring healthy eating and physical activity interventions were 'Providing healthy eating education and activities for children' (M 43.05), and 'Providing sufficient opportunities for child physical activity' (M 41.43), respectively. The lowest scoring were 'Providing families with lunchbox guidelines' (M 38.99) and 'Engaging families in activities to increase child physical activity' (M 38.36). Services located in higher socioeconomic areas, compared to lower, scored the scalability of 'Having a physical activity policy' higher; larger services, compared to smaller, scored the scalability of 'Training educators to support child healthy eating' higher; and services located in rural areas, compared to urban, scored the scalability of 'Making healthy menu modifications' lower.

**Conclusions:** Perceptions regarding scalability of healthy eating and physical activity interventions in the childcare setting vary. Study findings identify where government investment and implementation efforts may be prioritised to facilitate scale up. Investigation into the barriers and implementation support required for lower scoring interventions is warranted.

## Evaluating the impact of local facilitation as a strategy to scale-up an effective school-based healthy lunchbox program

Miss Molly Parkinson<sup>1,2</sup>, **Dr. Anna Rayward**<sup>1,2,3,4</sup>, Dr. Jannah Jones<sup>1,2,3,4</sup>, Mrs. Demi Herdegen<sup>1,2,3,4</sup>, Dr Courtney Barnes<sup>1,2,3,4</sup>, Ms Katie Robertson<sup>1</sup>, Prof Luke Wolfenden<sup>1,2,3,4</sup>, Associate Prof. Rachel Sutherland<sup>1,2,3,4</sup>

<sup>1</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia,

<sup>2</sup>School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, <sup>3</sup>Population Health Research Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>4</sup>National Centre of Implementation Science, University of Newcastle, Callaghan, Australia

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Leading health organisations recommend the scale-up of effective school-based nutrition interventions to maximise population-level benefits, however limited evidence exists about the effectiveness of scale-up strategies. Local facilitation is an implementation strategy outlined in the Expert Recommendations for Implementing Change taxonomy, however little is known about how to best operationalise this strategy to maximise the adoption of interventions at scale and within educational settings. We aimed to examine the impact of the local facilitation strategy at increasing school adoption of an effective school-based healthy lunchbox program (SWAP IT), and to gain insight into the fidelity of its delivery.

**Methods:** This study utilised secondary data from a randomised controlled trial involving 337 primary schools located across 11 local health districts (LHDs) in NSW, Australia. The trial aimed to examine the effectiveness of a multi-component scale-up intervention to increase school adoption of SWAP IT. The local facilitation strategy was operationalised to include two tailored contacts undertaken with school principals, conducted by LHD health promotion staff via telephone or face-to-face meetings. The contacts aimed to create awareness of the program, address barriers to adoption and facilitate program adoption. Up to three attempts were employed to engage with the principal per contact. Adoption was assessed via electronic registration records. Descriptive statistics were used to express the proportion of schools eligible to receive the strategy, as well as reach, fidelity and program adoption.

**Results:** Of the 157 schools eligible to receive the local facilitation strategy, 72 (46%) principals were reached. Of these, 37 (51%) adopted the SWAP IT program. Of the 110 schools eligible to receive a second contact, 15 (14%) schools were reached and six (40%) adopted the program. Barriers to strategy fidelity may have limited the reach to principals. Identified barriers to fidelity and reach include reduced contact attempts due to health promotion staff workload and reluctance from school administrative staff to connect to the principal.

**Conclusions:** Local facilitation shows potential as an effective scale-up strategy to promote the adoption of school-based health promotion interventions. However, further research is needed about how to ensure fidelity of the strategy to maximise its impact.

## The Thriving Communities Lab: A Data-Driven Systems Approach to Enhancing Mental Well-Being Among Children and Adolescents in Denmark – An Early-Stage Overview

**Dr. Anneke Vang Hjort<sup>1</sup>**, Dr Josephine Funch Bilsteen<sup>1</sup>, Dr Henriette Bondo Andersen<sup>2</sup>, Dr Teresa Holmberg<sup>1</sup>

<sup>1</sup>Centre For Childhood Health, Copenhagen, Denmark, <sup>2</sup>Faaborg-Midtfyn Municipality, Faaborg-Midtfyn, Denmark

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** N. Systems Science

**Purpose:** The Thriving Communities Lab aims to improve the mental well-being of children and adolescents in Faaborg-Midtfyn Municipality, Denmark, through a systems science approach. The initiative focuses on building municipal capacity to address complex health challenges, ultimately creating a scalable framework for other municipalities. A defining feature of this project is its origin in municipal interest, underpinned by strong political and leadership support—an essential foundation for fostering sustainable systemic change and long-term capacity building.

**Methods:** The project integrates five foundational elements: a systems perspective, a data-driven approach, co-creation, effective communication, and robust partnerships. These elements guide the four project phases: (1) establishing strong partnerships, (2) understanding systems through data analysis and participatory workshops, (3) identifying context-specific interventions using data analysis and stakeholder input, and (4) implementing actions supported by continuous evaluation. Simulation modeling and Group Model Building workshops will identify leverage points for targeted interventions. The stakeholder workshops will refine these interventions to align with local priorities and needs.

**Results:** Currently in its early stages, the Thriving Communities Lab is focused on establishing strong partnerships and developing a shared program theory. Initial efforts involve assessing the feasibility of utilizing municipal data—exploring sources, legal considerations, and integration with national datasets—to identify risk factors and protective mechanisms influencing mental well-being. Qualitative and quantitative data analysis will apply the Health Complexity Framework to uncover patterns, mechanisms, and dynamics shaping the health and well-being of children and adolescents within the Faaborg-Midtfyn community.

**Conclusions:** At the conference, we will outline the innovative systems-based approach of the Thriving Communities Lab and invite delegates to provide input and feedback. This collaborative exchange will help refine our methods and strengthen the approach. By sharing our experiences and ongoing efforts, we hope to contribute to a broader understanding of how systems science can address complex public health challenges and inform future practices in promoting mental well-being among children and adolescents.

## Co designing scale-up models to enhance the implementation of an effective digital health intervention targeting nutrition, physical activity and child development in 0-5 year-olds

Ms. Nayerra Hudson<sup>1,2,3</sup>, Ms Jessica Pinfold<sup>1</sup>, Dr. Alison Brown<sup>1,2,3,4</sup>, Ms Fiona Murphy<sup>1</sup>, Ms Helen Higgins<sup>1</sup>, Ms Emily Daley<sup>1</sup>, Ms Deborah Noakes<sup>1</sup>, Ms Renay Macleod<sup>1</sup>, Ms Kim Pages<sup>1</sup>, **Dr. Jacklyn Jackson**<sup>1,2,3</sup>, Prof Luke Wolfenden<sup>1,2,3,4</sup>, Prof. Nicole Nathan<sup>1,2,3,4</sup>, Associate Prof. Rachel Sutherland<sup>1,2,3,4</sup>

<sup>1</sup>Hunter New England Health, Wallsend, Australia, <sup>2</sup>School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, <sup>3</sup>Hunter Medical Research Institute, Newcastle, Australia, <sup>4</sup>National Centre of Implementation Science, Newcastle, Australia

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Healthy Beginnings for HNEKids (HB4HNEKids) is an effective digital intervention delivered via text message, providing preventative health information and support to parents of 0-5 year-olds. However, there is little evidence to inform best-practice models for embedding digital health interventions into usual care, and how to implement these models at scale. The purpose of this research is to describe methods and outcomes of co-designing scale-up models with child and family health service staff to implement a digital health intervention as part of routine care.

**Methods:** Phase 1 of the co-design process explored determinants (barriers/enablers) to successfully implementing digital health interventions, through literature scoping and interviews conducted with child and family health staff. During phase 2, a scale-up task group, consisting of clinical leads and project staff, was established to review the identified determinants and co-design implementation strategies using the Behaviour Change Wheel and Expert Recommendations for Implementing Change framework. Through a series of 4 workshops and out of session reviews, the task group explored findings from phase 1 to identify strategies that would optimise the adoption and implementation of the intervention. Evaluation measures were embedded into the pre-implementation strategies to assess health services staff acceptability.

**Results/findings:** Phase 1 identified a range of determinants that influence implementation of digital health interventions, based on capability (staff knowledge/confidence/leadership/communication) opportunity (lack of time/capacity/burden/staff shortages) and motivation (perceived acceptability/value/attitudes/resistance to change). The task group identified a variety of pre-implementation strategies, including executive support, training, communication and taster messages. Two implementation models of scaling-up HB4HNEKids were co-designed: a 'clinician-initiated' model whereby supplementary clinician support strategies targeted additional determinants and a 'system-initiated' model, using health service data to automatically enrol families, removed some implementation barriers. Clinicians (N=74) that completed the pre-implementation training and survey, reported high program acceptability (93%) and appropriateness (95%). Clinicians (n=48) who engaged in taster messages, reported frequently reading the messages (71%) and believed the content/topics were suitable for families (98%).

Conclusion: Co-designing pre-implementation strategies prior to scale-up can positively impact program acceptability. However, testing a range of scale-up models may be necessary in addressing determinants for the successful implementation of digital health interventions.

## Transition to freshly-prepared school lunches and reusable serviceware in elementary schools: impacts on meal appeal, student participation, intake, food and packaging waste and school finances

**Dr. Lorrene Ritchie<sup>1</sup>**, Celeste Felix<sup>1</sup>, Dr Hannah Thompson<sup>1,2</sup>, KC Fiedler<sup>1</sup>, Stephanie Willits<sup>3</sup>, Reka Vasicsek<sup>1</sup>, Danielle Lee<sup>1</sup>, Dr. Wendi Gosliner<sup>1</sup>, Dr. Kristine Madsen<sup>2</sup>

<sup>1</sup>Nutrition Policy Institute, University of California Agriculture and Natural Resources, Oakland, USA,

<sup>2</sup>School of Public Health, University of California, Berkeley, Berkeley, United States, <sup>3</sup>Fremont Unified School District, Fremont, United States

**SO.1.09: Implementation and Scalability in Young People, Waihorotiu #1, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** School meals present an opportunity to improve student nutrition security and minimize food and packaging waste, benefiting both human and environmental health. This study aimed to assess the impacts of a 1-year intervention in 20 public elementary schools in one California school district transitioning from mostly prepackaged to 40% freshly-prepared entrées served with reusable serviceware. Students in the 4th-5th grades received one 30-minute lesson to promote school meal participation and waste reduction. Key outcomes included school lunch participation, meal appeal, food and packaging waste, and school foodservice finances.

**Methods:** A quasi-experimental pre-post difference-in-change design was used. Data on student lunch participation and foodservice costs were collected from administrative records. Aggregate post-consumer food and packaging waste were weighed at two lunch periods per school. Self-administered surveys of 4th-5th graders captured student perceptions of meals, waste and food insecurity. Interviews and focus groups assessed perspectives from foodservice staff, principals, and parents. Quantitative data were analyzed using regression models with a group-by-time interaction term and a fixed effect for school, adjusted for school- and student-level confounders. Qualitative data were coded and analyzed using the framework method.

**Results:** Student participation in school lunch remained unchanged post-intervention. Although some student perceptions of meals improved (e.g., liking fruits, healthfulness), others declined (e.g., taste, appearance). Total food waste increased by a mean ( $\pm$ SD) of 5.3 ( $\pm$ 4.4) pounds/day per 100 students, although fruit and vegetable waste remained stable. However, solid waste decreased by 6.8 ( $\pm$ 4.1) pounds/day per 100 students. Qualitative feedback demonstrated widespread support for scratch-prepared meals and reusable serviceware, but identified food waste as a negative implication, perhaps facilitated by challenges including requirements to serve full entrées, limited lunchtime, large portion sizes, and issues with food preparation and temperature. The financial viability of reusable serviceware also was a concern.

**Conclusions:** Transitioning to reusable serviceware can substantially reduce solid waste produced by schools, and students and school stakeholders widely support school meal waste reduction. Further efforts are needed to ensure food service transitions do not add to food waste. These findings can guide schools in improving student health, environmental sustainability, and school foodservice operations generally.

# Understanding Social Factors, Wearable Device Use, and mHealth Interventions in Promoting Physical Activity Among Older Adults

**Dr. Mengchi Li**, Dr. Junxin Li

<sup>1</sup>*Xi'an Jiaotong University Health Science Center, Xi'an, China*, <sup>2</sup>*Johns Hopkins University School of Nursing, Baltimore, USA*

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**Background:** Promoting physical activity (PA) and sleep among older adults is essential for improving cognitive health and well-being. While wearable activity trackers (WATs) and mHealth interventions offer promising solutions, disparities in their adoption persist, and the long-term effects on PA behaviors and health outcomes remain underexplored. This synthesis summarizes findings from our mHealth PA studies, including national surveys and intervention trials, to examine social factors influencing PA patterns, older adults' experiences with WATs, and the impact of mHealth interventions on PA over 24 weeks.

**Methods:** This synthesis integrates three studies: (1) a secondary analysis of the Health Information National Trends Survey (HINTS), (2) qualitative interviews, and (3) a 24-week mHealth intervention trial. Using HINTS data ( $n > 3,300$ ), we assessed WAT adoption and social disparities, with regression models exploring how WAT use mediates PA. Qualitative interviews were conducted with 23 older adults across three mHealth interventions, focusing on their experiences using WATs for self-monitoring and PA promotion. The intervention trial assessed changes in PA and sleep using actigraphy and questionnaires over 24 weeks.

**Results:** The cross-sectional analysis revealed that only 10.3%–10.9% of older adults were frequent WAT users, with adoption lower among individuals aged 75+ and those with lower incomes. Frequent WAT use was linked to higher moderate-to-vigorous PA and reduced sedentary behavior, mediating the effects of income and education on PA. However, WAT use did not mediate the relationship between socioeconomic status (SES) and sedentary time. Qualitative findings identified six key themes: device learning, hedonic motivation, habit formation, facilitating conditions, effort expectancy, and performance expectancy. Participants reported functional challenges with WATs and suggested enhancements to improve usability. The mHealth intervention led to improvements in PA and sleep, though PA gains declined after 16 weeks.

**Conclusion:** WATs and mHealth interventions show potential for promoting PA and sleep in older adults, but social disparities in WAT adoption remain a barrier. Expanding access to WATs, particularly for economically disadvantaged groups, may reduce these disparities and support sustained health benefits. Long-term strategies are needed to maintain healthy PA behaviors beyond intervention.

## Active Living, Climate Change, and Planetary Health: Implications for Climate-centered Physical Activity/Active Living (CPAAL)

**Dr. Semra Aytur<sup>1</sup>**, Dr. John Bucci, Glenn Rose, Dr. Anita Tucker

<sup>1</sup>University of New Hampshire, Durham, United States

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This project aims to: (1) examine how transdisciplinary researchers and practitioners conceptualize, communicate, and take action around intersectional issues at the nexus of active living, climate change, equity, and planetary health; (2) understand how peer-learning modalities may be utilized to support them.

**Methods:** Evaluative data from three different web-based surveys of transdisciplinary health and environmental professionals (majority USA; over 5 different countries represented) were triangulated and analyzed using appropriate statistical methods for quantitative data and rapid thematic analysis for qualitative analyzed. The surveys were distributed through peer networks such as PAPREN (the Physical Activity Research and Evaluation Network), Project ECHO (Extension for Community Healthcare Outcomes), NH Healthy Climate (a non-profit organization) and Indigenous collaboratives. Over 450 survey responses were analyzed.

**Results/Findings:** Approximately 50% of survey respondents had not had previous opportunities to engage in peer-led conversations about the intersection of active living, climate change, and planetary health, but the majority were very interested in doing so. PAPREN respondents developed an evolving blueprint/conceptual model, “Climate-centered Physical Activity/Active Living (CPAAL)” to frame ongoing dialogue. Evaluations of virtual peer learning sessions conducted via Project ECHO suggested that over 85% of participants improved their knowledge about relationships between climate change, equity, health behaviors (including physical activity/active living), and health outcomes. Over 85% of participants also improved their confidence to communicate with others, and over 70% initiated changes in their work/practice related to CPAAL. Participants also formed new partnerships and expanded their collaborative networks. Qualitatively identified themes included the need to develop foundational literacy for climate/planetary health work, co-create spaces for bi-directional peer learning, and develop ways to support systems thinking around planetary-health action pathways. Themes related to syndemic stress, eco-anxiety, and climate grief were also identified.

**Conclusions:** Peer-based opportunities to learn about CPAAL are warranted, as the transdisciplinary social movement continues to expand and evolve. Communities of practice and partnerships with professionals trained in trauma-informed methods may also be needed.

# Geographic patterning of food purchasing in Belgium

**Prof. Lukar Thornton<sup>1</sup>**

<sup>1</sup>*University of Antwerp, Antwerp, Belgium*

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Geographic location can significantly influence food purchasing due to variations in socioeconomic status, urbanisation, availability of fresh foods, and cultural differences across regions. Belgium's distinct regional divisions (Flanders, Wallonia, and Brussels) and its diverse population provide a rich context for exploring geographic disparities in food purchasing. Previous studies in Belgium have examined dietary patterns, but few have explored how geographic shape food purchasing behaviour. Despite the importance of understanding these patterns, limited research has examined how food purchasing varies across Belgium's regions. This study seeks to fill this gap by analysing geographic disparities in food purchasing.

**Methods:** This study draws upon two distinct datasets to explore geographic patterning of food purchasing behaviours. The first is the 2022 nationally-representative Household Budget Survey (HBS) (n=4,993 households). This dataset contains a detailed account of all food purchases made by households. The second dataset is from an FWO-funded study on meal delivery services in Belgium, with data of meal delivery service use obtained from 1,304 consumers across the Flanders region of Belgium. Preliminary analysis of the HBS data has explored the geographic patterning of expenditure allocated to fruit, vegetables, meat, restaurants, and fast food. Geographic patterning of meal delivery use was also explored using the FWO funded data.

**Results:** The most notable geographic patterning exists in meat and fruit expenditure, with the greatest proportion of the food budget allocated to meat in southern regions bordering France, where many arrondissements spend upwards of 19% of their total food expenditure on meat. The lowest expenditure was found in the northeastern regions bordering the Netherlands, where arrondissements also reported the higher proportion of total food expenditure on fruit. Patterns in restaurant and fast food expenditure were less clear, whereas no noticeable difference in use of meal delivery services was observed.

**Conclusions:** Geographic disparities in food purchasing behaviours across Belgium highlight significant regional variations, particularly in meat and fruit expenditure, underscoring the need for targeted public health interventions and policies. Future research will further explore geographic differences over time using additional HBS data from 2016, 2018, and 2020.

## Accuracy of menu calorie labelling in the England out-of-home food sector during 2024: Assessment of a national food policy

**Dr. Amy Finlay**<sup>1</sup>, Dr Andrew Jones<sup>2</sup>, Mrs Paula Thorp<sup>1</sup>, Dr I Gusti Ngurah Edi Putra<sup>1</sup>, Dr Megan Polden<sup>3</sup>, Prof Jean Adams<sup>4</sup>, Mrs Jane Brealey<sup>1</sup>, Prof Eric Robinson<sup>1</sup>

<sup>1</sup>University of Liverpool, Liverpool, United Kingdom, <sup>2</sup>Liverpool John Moores University, Liverpool, United Kingdom, <sup>3</sup>NIHR Applied Research Collaboration Northwest Coast, Liverpool, United Kingdom, <sup>4</sup>MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

Mandatory calorie labelling was introduced in out-of-home (OOH) food sector outlets during 2022 in England. Previous research in North America has found labelled energy content can be underestimated for packaged and quick-serve foods, but no study has evaluated the accuracy of out-of-home food sector menu calorie labelling in response to the mandatory policy introduced in England. N=295 menu items from a range of outlet types (e.g. cafes, pubs, restaurants) and menu categories (e.g., starters and sides, main, dessert) were sampled. Bomb calorimetry was used to quantify energy content and the reported energy content on menus was recorded. Consistency of measured energy was assessed by sampling the same items across outlets of the same business (N=50 menu items). Differences between reported and measured energy content were tested through Wilcoxon Signed Rank tests, and a linear model examined correlates of the difference. Mean measured kilocalories (kcal) were significantly lower than reported kcal (-16.70kcal ( $\pm 149.19$ ),  $V=16920$ ,  $p<.01$ ,  $r=0.182$ ). However, both over- and under-estimation of measured energy content was common and the averaged absolute percentage difference between reported and measured values was 21% ( $\pm 29\%$ ). Discrepancy between measured and reported energy content was more common in some outlet types (pubs) and reported energy content was substantially different ( $>20\%$ ) to measured energy content for 35% of sampled menu items. There were significant inaccuracies in reported energy content of calorie labelled menu items in English food outlets subject to mandatory calorie labelling and this appears to be caused by both over- and under-estimation of reported energy content.

## Local data collected by citizen scientists enabling advocacy to strengthen walkability in rural towns

Dr Kim Jose<sup>1</sup>, Dr Claire Morley<sup>1</sup>, Dr Georgia McGrath<sup>1</sup>, Professor Melanie Davern<sup>2</sup>, Professor Anna Timperio<sup>3</sup>, **Dr. Verity Cleland<sup>1</sup>**

<sup>1</sup>University of Tasmania, Hobart, Australia, <sup>2</sup>RMIT University, Melbourne, Australia, <sup>3</sup>Deakin University, Melbourne, Australia

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Strong evidence demonstrates that the physical environment can hinder or support walking. However, research has been urban-oriented, with little attention paid to rural and regional areas, who are at high risk for chronic disease and inactivity. Citizen science offers a novel approach to engage communities in research, empower community voices, and collect locally relevant data. We sought to understand how using a citizen science approach to produce local data supports advocacy efforts for walkability in regional towns.

**Methods:** Spatial analysis of walkability was conducted in 92 rural towns (population 200-6,000) across Tasmania, Australia. Towns were ranked by walkability score, and citizen scientists conducted walkability audits in one town from each decile. Researchers facilitated town workshops (n=10) to discuss key issues and identify priorities for action. All data were summarised in a town-specific report shared with participants who were encouraged to use them in local advocacy efforts. Eleven process evaluation interviews were conducted with 18 citizen scientists from 9 towns mostly after towns received their final report. Feedback on study processes was also collected during town workshops and emails sent to all citizen scientists (N = 108) asking about local changes following the project. Data were thematically analysed.

**Results:** Themes included credibility, locally identified priorities, and empowering advocacy. Citizen scientists felt well-supported by the project team and noted that University involvement alongside citizen scientists strengthened the credibility of findings. Involving residents in identifying local priorities was considered invaluable and useful for driving further community conversations and advocacy efforts 'you can have a meeting with people and say, 'Right, well this is what we need to concentrate on, this is why'. Some participants raised concerns about councils' willingness to implement suggested actions. However, in three of the 10 towns, local advocacy efforts incorporating data from these reports have resulted in commitments to implement suggested actions or been embedded in council policies.

**Conclusions:** This research demonstrates the strength of using citizen science to collect local data on walkability in regional towns and identify priorities for action. Citizen scientists have used/are using the local data to support successful advocacy efforts for change.

## Global urban indicators for active, climate resilient cities: Expanding the impacts of the Global Observatory of Healthy and Sustainable Cities

Dr. Melanie Lowe<sup>1</sup>, **Dr Eugen Resendiz<sup>2</sup>**, Dr Carl Higgs<sup>1</sup>, Dr Deborah Salvo<sup>3</sup>, Emerita Professor Billie Giles-Corti<sup>1,4</sup>, Dr Deepti Adlakha<sup>5</sup>, Dr Geoff Boeing<sup>6</sup>, Dr Vuokko Heikinheimo<sup>7</sup>, James Sallis<sup>8,9</sup>, Prof. Ester Cerin<sup>8</sup>, Prof. Anne Vernez Moudon<sup>10</sup>, Dr Shiqin Liu<sup>11</sup>, Dr Jonathan Arundel<sup>1</sup>, Prof. Jasper Schipperijn<sup>12</sup>, Mr Ryan Turner<sup>1</sup>, Dr Zahra Yousefi<sup>1</sup>, Prof. Erica Hinckson<sup>13</sup>

<sup>1</sup>Centre for Urban Research, RMIT University, Melbourne, Australia, <sup>2</sup>Tecnologico de Monterrey, Mexico City, Mexico, <sup>3</sup>University of Texas at Austin, Austin, USA, <sup>4</sup>The University of Western Australia, Crawley, Australia, <sup>5</sup>Delft University of Technology, Delft, Netherlands, <sup>6</sup>University of Southern California, Los Angeles, USA, <sup>7</sup>Finnish Environment Institute, Helsinki, Finland, <sup>8</sup>Australian Catholic University, Melbourne, Australia, <sup>9</sup>University of California San Diego, San Diego, USA, <sup>10</sup>University of Washington, Seattle, USA, <sup>11</sup>University of Minnesota, Minneapolis, USA, <sup>12</sup>University of Southern Denmark, Odense, Denmark, <sup>13</sup>Auckland University of Technology, Auckland, New Zealand

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Urban design and transportation systems that promote walking, cycling, and transit use are essential for both active living, and urban climate resilience. The Global Observatory of Healthy and Sustainable Cities provides comparable, evidence-based spatial and policy indicators of healthy and sustainable urban design and planning for cities internationally. To contribute to the global data commons, we aimed to develop, validate and share new indicators of urban climate resilience via the Global Observatory's 1000 Cities Challenge. We also sought to strengthen the impact pathway through which evidence-informed indicators of healthy and sustainable cities can inform urban planning internationally.

**Methods:** We conducted an action research project involving an international network of collaborators who participated in multiple rounds of feedback on the Global Observatory of Healthy and Sustainable Cities. We gathered qualitative data and input from these experts, via surveys, email, online tools, workshops and discussion groups. This was used to inform: 1) the selection, development and validation of new policy and spatial indicators of urban climate resilience; and 2) enhance the scalability and uptake of urban indicators of healthy and sustainable cities internationally.

**Results:** New spatial indicators (e.g. urban green space, heat vulnerability), and policy indicators (e.g. tree canopy and urban greening, urban biodiversity protection and promotion, disaster mitigation policies) were developed and validated using local collaborators' knowledge to demonstrate their relevance and accuracy for diverse cities internationally. Several steps were taken to address identified barriers and enablers of indicator uptake, including enhancing the 1000 Cities Challenge open access tools for calculating and reporting indicators; improving technical support and training for participants; and developing guidelines to support local advocacy towards active, healthy, and sustainable urban environments.

**Conclusions:** Making new indicators publicly available via the Global Observatory's 1000 Cities Challenge facilitates benchmarking and monitoring of many cities internationally. Harnessing the expertise of an international network enhanced the potential for global urban indicators to have local impact. Expanding the range of indicators and cities included in the Global Observatory,

and empowering local teams to use these indicators, enables evidence-informed planning of activity-supportive, climate resilient cities.



# Bike Lanes and Bylaws: Legal Mapping of Active Transport Laws in Auckland, Canberra, Cardiff, and Chicago

**Mr. Sean Selby<sup>1</sup>**

<sup>1</sup>*Te Whatu Ora, Auckland, New Zealand*

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Walking, cycling and micromobility are key to decreasing transport emissions and improving wellbeing. Reliance on single occupancy vehicles for daily transport has improved access to many services for many people but is also linked to increasing physical inactivity and is the largest source of greenhouse gas emissions in our urban centres. There is extensive research on what ways best promote active transport in the fields of urban design, transport safety and behaviour sciences. However, the link between law and the promotion of active transport behaviour has not been thoroughly investigated.

**Method:** Using methods based on public health law research, a legal mapping study has been undertaken that compares the law that promotes active travel between four cities in separate nations. Through the legal method of systematic content analysis, the respective city, state and national legislation of the four cities of Auckland, Canberra, Cardiff and Chicago were collected, and an analysis was undertaken with an adapted RAMPARTs framework and the PASTA conceptual framework of active travel behaviour to categorise the respective law.

**Results:** Results show a significant variation between cities and nations on how the legal strategies of Awareness, Funding, Incentive, Standards, Authorisation, Prohibition and Exemption are used to promote active transport. Each city and nation had a unique way of promoting active transport through the law. Yet, New Zealand was found to have significantly fewer comprehensive laws over all areas promoting cycling.

**Conclusions:** These findings have implications for understanding Auckland's current gaps in active transport legislation and how learnings from other nations' examples of legislation can be used to achieve current emission goals and improve wellbeing within Auckland and New Zealand.

# Physical Activity, Transport and City Design: Differences in Sustainable Transport Patterns in the City Centre, Inner Suburbs and Outer Suburbs

**Dr. Sandra Mandic<sup>1</sup>**, Dr. Tessa Madden<sup>1</sup>  
<sup>1</sup>Wellington City Council, Wellington, New Zealand

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Transport is essential for supporting the functioning of cities and plays a role in supporting active living, health and wellbeing of communities. Since transport behaviours are context-specific, differences in transport patterns are expected within cities based on proximity to destinations, public transport availability and topography. Such variability may be more pronounced in cities where most jobs, shopping and entertainment are located in the city centre. This research compared physical activity levels and transport patterns in adults living in the city centre, inner suburbs and outer suburbs in Wellington city (New Zealand).

**Methods:** Adults (n=5,428; aged 18-64 years) completed the online Pōneke/Wellington Transport Survey in 2023-2024. Respondents self-reported their physical activity, home location and use of various transport modes for their daily travel. Chi-square test was used to compare physical activity and transport patterns between residents living in the central city (n=984), inner suburbs (n=1671) and outer suburbs (n=2774).

**Results:** Overall, 42% of respondents met physical activity guidelines with a lower proportion of those meeting guidelines living in outer suburbs (40%) compared to the central city (46%) and inner suburbs (45%;  $p < 0.001$ ). In the central city, 52% of residents walked for transport regularly ( $\geq 5$  days/week) compared to 31% in inner suburbs and 18% in outer suburbs. Private vehicle travel showed a reverse pattern with 10% of regular users in the central city, 19% in inner suburbs and 38% in outer suburbs. Few residents regularly cycled for transport (central city: 4%; inner suburbs: 8%; outer suburbs: 5%;  $p < 0.001$ ) and a small proportion relied solely on public transport (central city: 10%; inner suburbs: 16%; outer suburbs: 11%;  $p < 0.001$ ). The proportion of residents who regularly walked or cycled for recreation  $\geq 5$  days/week showed only minor variations across the three city zones (range 19%-20% for walking and range 1.6%-1.8% for cycling).

**Conclusions:** Physical activity levels and sustainable transport use varied across city zones, with the highest levels observed in the central city and lowest rates in the outer suburbs. Understanding the local context is essential when planning strategies to encourage adults to use or switch to sustainable transport modes to increase their physical activity.

## Are Australian councils filling policy potholes for active transport?

**Ms. Melinda Covey-Hansen**<sup>1</sup>, Dr Anthony Kimpton<sup>2</sup>, Ms Paula Grant<sup>3</sup>, Professor Tracy Kolbe-Alexander<sup>1,4,5</sup>

<sup>1</sup>*School of Health and Medical Sciences, and Centre for Health Research, University of Southern Queensland, Ipswich, Australia,* <sup>2</sup>*School of Surveying and Built Environment, Centre for Health Research, and Centre for Heritage and Culture, University of Southern Queensland, Springfield Central, Australia,*

<sup>3</sup>*School of Surveying and Built Environment, University of Southern Queensland, Toowoomba, Australia,*

<sup>4</sup>*UCT Research Centre for Health through Physical Activity, Lifestyle and Sport (HPALS), Division of Research Unit for Exercise Science and Sports Medicine, University of Cape Town, , South Africa,*

<sup>5</sup>*Manna Institute, Centre for Health Research, University of Southern Queensland, , Australia*

**SO.1.10: Policies for Active and Healthy Communities, Herald Theatre, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study examines the alignment between council policy and evidence-based recommendations for creating environments supportive of active transport in Australian cities.

**Methods:** Australian councils (n=250) with cities or towns exceeding 10,000 residents received a validated survey investigating governance, demand management, public transport, walking and cycling infrastructure, traffic safety, transport investment, and other active transport-related policies. Participants reported the policy presence (yes/no) and relevant policy so 'presence' and 'quality' could be scored using a verified scoring system to identify presence (i.e., present: 1, partial: 0.5, or absent: 0), and quality based on specificity (e.g., >80% of residences <400m from bus stops) ranging from 0 (none) to 3 (specific and measurable), with multipliers added for policies classified as 'mixed/partially inconsistent' (-0.5) or 'inconsistent' (-1) with evidence-based recommendations. Summary scores quantified overall presence and quality.

**Results:** Fifty-seven responses from 52 councils across six Australian states identified over 250 policies. Most reported policies spanning key domains but lacking measurable standards or alignment with evidence-based recommendations. Notably, some council policies were taking promising strides towards greater adoption of evidence-based recommendations. Land-use and transport policies emphasised integrated planning and collaboration was evident despite departmental silos. Many required minimum parking standards but few parking maximums. Some policies reduced parking near transit-oriented development, adopted movement and place frameworks, or reallocated road space to public and active transport. Policies addressing public transport proximity aligned with evidence-based recommendations but mostly referred to greenfield and urban areas, restricting access in regional and outer suburban communities. Few addressed service frequency, '30-minute cities' access, or usage targets, though many advocated for improved public transport. Limited walking and cycling policies specified standards for connectivity, footpath, cycleway, bicycle parking, end-of-trip facilities and provision of lighting and trees. Some required increasing infrastructure provision near schools, shops, or transit stops. Policies permitting traffic calming measures often faced additional approval requirements. Active transport infrastructure expenditure was below recommended levels, and no councils set walking or cycling targets.

**Conclusions:** Councils are taking steps towards adopting evidence-based policies, but significant gaps persist. Greater adoption of policies with measurable standards aligned to evidence-based recommendations is essential to support active transport.

# Longitudinal Impact of School-based Physical Activity Intervention: The 5-year Health Oriented Pedagogical Project (HOPP)

**Prof. Per Morten Fredriksen<sup>1</sup>**

<sup>1</sup>Inland Norway University of Applied Sciences, Lillehammer, Norway, <sup>2</sup>Medical University of Graz, Graz, Austria, <sup>3</sup>Kristiania, Oslo, Norway

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**Introduction:** Many children engage in insufficient physical activity (PA), which is essential for enhancing cardiovascular health, improving mental well-being, and reducing the risk of chronic diseases. The aim of the study is to estimate both longitudinal and secular trends in PA and compare the results to baseline cross-sectional measures. The participants engaged in a primary school PA intervention from 2015 to 2021.

**Methods:** The study sample consisted of  $n=2123$  subjects (50% females) in 2015 aged 6 – 12 years ( $9.46 \pm 1.75$ ) from the Health Oriented Pedagogical Project (HOPP) in Norway. Moderate-to-vigorous physical activity (MVPA) and sedentary behaviour (SED) were objectively assessed using accelerometry based on seven-day averages. Data were analysed using linear and generalised linear mixed-effect models.

**Results:** The results of the baseline cross-sectional data showed a decline of 3.5 min·day<sup>-1</sup> in MVPA for children aged 6 –12 years. Longitudinally, across 5 years, MVPA declined on average by 2.2 min·day<sup>-1</sup> ( $p < 0.001$ ), and SED increased by 6.7 min·day<sup>-1</sup> ( $p < 0.001$ ). In the secular analysis, MVPA decreased by 4.8 min ( $p < 0.001$ ), and SED increased by 20.7 min per additional year of age.

**Conclusion:** Physical activity levels declined substantially with age, starting at age six. Compared to the decline found across age groups at baseline, the intervention of HOPP managed to reduce the decline in MVPA and reduce the increase in SED between 2015–2019.

## Exploring the impact of choice and variety on adolescents' motivation to participate in high intensity interval training during physical education.

**Dr Narelle Eather<sup>1,2</sup>**, Dr Angus Leahy<sup>1,2</sup>, Ms Emily McLachlan<sup>1,2</sup>, Dr Benjamin Sylvester<sup>4</sup>, Dr David Lubans<sup>1,2,3</sup>

<sup>1</sup>The University of Newcastle Australia, Callaghan, Australia, <sup>2</sup>Centre for Active Living and Learning, Callaghan, Australia, <sup>3</sup>Faculty of Sport and Health Sciences, University of Jyväskylä, Jyväskylä, Finland, <sup>4</sup>Personnel Research in Action, Department of National Defence, Government of Canada, Ottawa, Ontario, Canada

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Amongst adolescents, motivation is an important determinant of physical activity behaviour. The provision of variety and choice are proposed strategies for increasing motivation and engagement in physical activity. However, limited empirical evidence exists regarding the impact of variety and choice on adolescents' motivation in real world settings, such as physical education in schools, or during participation in specific types of physical activity, such as high-intensity interval training (HIIT). Therefore, the primary aim of this study was to investigate the impact of providing variety and choice on adolescents' autonomous motivation to participate in HIIT during physical education. Secondary outcomes were also evaluated, including enjoyment of HIIT, cardiorespiratory and muscular physical fitness, HIIT self-efficacy, affect, and future intentions to participate in HIIT.

**Methods:** We conducted a four-arm cluster RCT in one secondary school from NSW Australia. The 6-week HIIT intervention was delivered by the physical education teacher and involved embedding 2 x weekly HIIT sessions at the start of physical education classes, with session lasting approximately 10 minutes in duration (1 minute warm up and 8-minute workout containing eight exercise combinations) with a work to rest ratio 1:1 (30s:30s). Students from eight classes (N=206; 12.6 ± 0.5yrs) were randomized by class to the low-variety, high-variety, choice, or control conditions. A questionnaire was used to assess student's motivation, enjoyment of HIIT, HIIT self-efficacy, affect responses, and future intentions for participating in HIIT. Aerobic and muscular fitness were also evaluated.

**Results:** Favourable group-by-time effects resulted for the low-variety and high-variety groups for intrinsic motivation ( $d = 0.43, 0.47$ ) compared to the control group; high-variety and choice groups had higher enjoyment than the low-variety group; and the high-variety group showed greater positive affect than low-variety and choice groups ( $d = 0.68, 0.61$ ). Low-variety and choice groups had significant improvements for cardiorespiratory and lower-body muscular fitness (respectively).

**Conclusion:** Offering variety or choice in HIIT during physical education may enhance intrinsic motivation, enjoyment and/or positive affect in adolescents. This approach not only enriches their experience in physical education but also potentially boosts their physical fitness outcomes.

## The intended, delivered and received behaviour change techniques of a parent-focused behaviour change program to improve young children's health behaviours

**Dr. Brittany Johnson<sup>1</sup>**, Dr Georgia Middleton<sup>1</sup>, Dimity Dutch<sup>1</sup>, Prof Stewart Trost<sup>2</sup>, A/Prof Rebecca Byrne<sup>3</sup>, Prof Hayley Christian<sup>4,5</sup>, Dr Li Kheng Chai<sup>6</sup>, Anna Henry<sup>5</sup>, Kate Simon<sup>3</sup>, Dr Caroline Terranova<sup>3</sup>, Dr Denise Brookes<sup>3</sup>, Prof Rebecca Golley<sup>1</sup>

<sup>1</sup>Flinders University, Caring Futures Institute, Adelaide, Australia, <sup>2</sup>School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Australia, <sup>3</sup>Faculty of Health, School of Exercise and Nutrition Science, Queensland University of Technology, Brisbane, Australia, <sup>4</sup>The Kids Research Institute Australia, The University of Western Australia, Perth, Australia, <sup>5</sup>School of Population and Global Health, The University of Western Australia, Perth, Australia, <sup>6</sup>Health and Wellbeing Queensland, Queensland Government, Brisbane, Australia

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Many programs have been designed to equip parents with strategies to adopt practices to improve children's diet and movement behaviours. Describing the behaviour change techniques (BCTs) is one approach to understanding the behaviour change content of programs. However, the implementation (i.e. delivery and receipt) of BCTs in parent-focused behavioural programs is largely unknown. We aimed to identify, map and compare BCTs across stages of program planning and delivery and explore the mechanisms of potential behaviour change from the perspectives of peer facilitators and participating parents.

**Methods:** A coding design was used to identify, map and compare BCTs in the program content, delivery and receipt. Program materials and transcripts from qualitative evaluation with peer facilitators and participating parents were coded using the BCT Taxonomy v1. Identified BCTs were mapped to Social Cognitive Theory constructs via proposed mechanisms of action, using the Theory and Technique Tool. Comparisons were made using descriptive analyses.

**Results/Findings:** There were between 9 (intended) and 12 (delivered and received) unique BCTs identified in each stage of program delivery. Five BCTs were mapped across all stages of program planning and delivery: 1.2 Problem solving, 1.5 Review behaviour goal(s), 3.1 Social support (unspecified), 4.1 Instruction on how to perform the behaviour, and 11.2 Reduce negative emotions. All four Social Cognitive Theory constructs were mapped as mechanisms to BCTs identified from perspectives of peer facilitators and participating parents.

**Conclusions:** Our study provides a case study of how researchers can examine the practical application of BCTs within a parent-focused behavioural program. Demonstrated mechanisms of behaviour change from the perspective of facilitators and participants provides novel insight to program behaviour change processes.

## Educating children about alternative proteins using an interactive based application

**Miss Siti Amelia Juraimi<sup>1</sup>**, Mr Kum Seong Wan<sup>1</sup>, Dr Hui Si Oh<sup>1</sup>, Dr Pey Sze Teo<sup>2</sup>, Ms Kristabel Khoo<sup>3</sup>, Mr Petrus Bonang<sup>3</sup>, Mr Myat Min<sup>3</sup>, Dr Florence Sheen<sup>4</sup>, Dr Anna Fogel<sup>5</sup>, Dr Benjamin Smith<sup>6</sup>, Dr Mary Chong<sup>7</sup>, Dr Aimee Pink<sup>1,5</sup>

<sup>1</sup>*Institute of High Performance Computing (IHPC), Agency for Science, Technology and Research (A\*STAR), Singapore, Singapore,* <sup>2</sup>*Clinical Nutrition Research Centre (CNRC), Singapore Institute of Food and Biotechnology Innovation (SIFBI), Agency for Science, Technology and Research (A\*STAR), Singapore, Singapore,* <sup>3</sup>*Advanced Remanufacturing & Technology Centre (ARTC), Agency for Science, Technology and Research (A\*STAR), Singapore, Singapore,* <sup>4</sup>*School of Sport, Exercise and Health Sciences, National Centre for Sport and Exercise Medicine, Loughborough University, Loughborough, England,* <sup>5</sup>*Institute of Human Development and Potential (IHDP), Agency for Science, Technology and Research (A\*STAR), Singapore, Singapore,* <sup>6</sup>*Monell Chemical Senses Center, Philadelphia, USA,* <sup>7</sup>*Saw Swee Hock School of Public Health, National University of Singapore, Singapore, Singapore*

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Children are our future consumers and increasing consumption of alternative proteins (AP) via acceptance is crucial in this consumer segment. We developed an interactive application to educate children about AP and increase acceptance. This study aimed to assess the effectiveness of the interactive application against passive text-based materials in increasing children's perceived knowledge of AP and their willingness to try.

**Methods:** We adopted a 2 x 2 study design (between-subject "Interactive" application Vs. "Passive" materials; within-subject conditions "Pre" Vs. "Post"). Children aged 9-15 years-old living in Singapore with no to little perceived awareness of AP were randomly allocated to engage with either the interactive application or passive materials. The interactive application follows the narrative of the player's first day at work in a virtual 'factory' and presents various games and tasks to learn about AP and their manufacturing processes. The passive materials contain the same educational content without the interactive features. Children (target N=200) attend an in-person study session and complete a series of questions measuring their perceived knowledge of, acceptance and willingness to try AP before and after engaging with the education materials. Children also complete a hedonic taste test for four plant-based foods. Foods are weighed before and after the test. To assess impact of the education materials, children also complete a follow-up online survey one month later.

**Results/findings:** Preliminary results show that children (n=26) enjoy engaging with the interactive materials (M=4.34, SD=.51) more than the passive materials (M=3.80, SD=.71;  $t(24)=2.26$ ,  $p=.017$ ). Self-reported perceptions of knowledge of plant-based meat, cultivated meat and insect proteins increased following engagement with either education materials ( $p's \leq .001$ ; no significant difference was found between interactive and passive conditions,  $p's \geq .156$ ). Average liking of the plant-based foods did not significantly differ across conditions (interactive: M=7.06, SD=.50; passive: M=6.75, SD=.67;  $t(17)=1.11$ ,  $p=.282$ ), nor did average intake (interactive: M=15.25g, SD=7.81; passive: M=19.28g, SD=6.09, after controlling for baseline appetite). Data collection and analysis is on-going.

Conclusions: Initial findings suggest providing any type of education improved children's perceived knowledge of alternative proteins, although interactive materials were more enjoyable.



## Identifying BCTs of strategies for enhancing the implementation of school-based policies or practices targeting diet, physical activity or obesity – A secondary data analysis

**Mr. Daniel Chun Wei Lee**<sup>1,2,3,4</sup>, Dr. Sam McCrabb<sup>1,2,3,4</sup>, Dr. Kate O'Brien<sup>1,2,3,4</sup>, Ms. Katrina McDiarmid<sup>1,2,3,4</sup>, Associate Professor Serene Yoong<sup>2,5</sup>, Associate Professor Justin Presseau<sup>6,7</sup>, Mr. Christophe Lecathelinais<sup>1</sup>, Associate Professor Luke Wolfenden<sup>1,2,3,4</sup>, Dr. Rebecca Hodder<sup>1,2,3,4</sup>

<sup>1</sup>Hunter New England Population Health, Hunter New England Local Health District, Newcastle, Australia, <sup>2</sup>National Centre of Implementation Science, Callaghan, Australia, <sup>3</sup>School of Medicine and Public Health, University of Newcastle, Callaghan, Australia, <sup>4</sup>Hunter Medical Research Institute Population Health Program, Newcastle, Australia, <sup>5</sup>Global Centre for Preventive Health and Nutrition (GLOBE), Deakin University, Melbourne, Australia, <sup>6</sup>Methodological and Implementation Research Program, Ottawa Hospital Research Institute, Ottawa, Canada, <sup>7</sup>School of Epidemiology and Public Health, University of Ottawa, Ottawa, Canada

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Strategies to improve the implementation of school-based interventions (e.g. educational materials and educational meetings), as a whole are effective in increasing implementation of these interventions. However, these interventions are complex, multicomponent, and heterogenous, highlighting a need to assess the effectiveness of the smallest active component of individual intervention components. The purpose of this secondary analysis is to describe the behaviour change techniques (BCTs – active ingredients of an intervention), coded according to the Behaviour Change Technique Ontology (BCTO) used in school-based implementation interventions and to determine which BCTs are associated with effective strategies to improve the implementation of healthy eating, physical activity, obesity prevention, tobacco use and/or alcohol use in policies and/or programs in schools.

**Methods:** A secondary analysis of a Cochrane review was undertaken (latest search to June 2023). The original review included trials if: 1) they tested a strategy to improve the implementation of a policies and/or programs within schools; and 2) were randomised controlled trials (RCTs) with a parallel control group. BCTs of intervention components were coded according to the BCT codebook and the BCT taxonomy and mapped to the BCTO. A meta-regression will be conducted to determine the association between the use of BCTs adopted in trials and strategies to improve implementation.

**Results:** Thirty-nine trials were included (9 RCTs, 30 cluster-RCTs). The majority were conducted in Australia and the United States of America (USA, n=15 each) and tested strategies to implement healthy eating practices (n=12) and physical activity (n=17). Across all included trials, 58 unique BCTs were identified. All trials used multiple BCTs, the most common being Instruct how to perform behaviour BCT and Add objects to the directly experienced environment BCT. Data analyses are ongoing and results will be presented.

**Conclusion:** The review will identify which BCTs are most common and effective in strategies to improve implementation of school-based prevention interventions. The results will inform policymakers and practitioner in the development of future interventions and support the advancement of effective implementation in school settings.

## Identifying behaviour change techniques within an effective food literacy program.

**Dr. Andrea Begley<sup>1</sup>**, Dr Lucy Butcher, Miss Caylah Batt, Miss Sophie Royce, Mr Eamon Barron, Dr Roslyn Giglia

<sup>1</sup>*Curtin University - Perth, Perth, Australia*

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Achieving healthy dietary intake requires developing food literacy skills in planning, selection, and preparation. Implementing effective food literacy programs is critical. However, the next challenge is to identify how and why these programs change food literacy and dietary behaviours. Goal setting is key behaviour change technique used in programs to support participants in taking proactive steps and building self-efficacy. The objectives of this study were to a) identify behaviour change techniques (BCTs) in an effective food literacy program and b) ascertain whether food literacy and dietary behaviour changes were associated with the goal setting technique.

**Methods:** A mixed methods design was used. Consensus methods were employed to map BCTs across a four-week food literacy program curriculum. Pre- and post- program questionnaire data collected over a five-year period were used to determine statistically significant demographic characteristics, changes in food literacy behaviour factor scores, and changes in self-reported servings of fruits and vegetables among participants who set goals. Quantitative data were analysed using chi-square or ANCOVA.

**Results/findings:** The program employed multiple BCTs, with 22 BCTs mapped in total and nine including goal setting integrated weekly. The questionnaires were completed by 3023 participants. Participants who indicated that they had set goals exhibited statistically higher food literacy factor scores for planning, selection, preparation ( $p < 0.001$ ), and fruit serves ( $p = 0.004$ ). Goal setters were more likely to be female ( $p < 0.001$ ), older ( $p < 0.001$ ), have higher educational level ( $p < 0.001$ ), have higher socioeconomic status ( $p = 0.049$ ), reside with children ( $p = 0.014$ ), be born in Australia ( $p = 0.019$ ), or not identify as indigenous ( $p < 0.001$ ).

**Conclusions:** The BCT reported for this program was greater than the scant literature evidence of one to 13 BCTs. While goal setting correlated with improved food literacy and fruit consumption, other techniques such as instructions on how to perform the behaviour, behaviour demonstration, and behavioural practice, may be more critical for increasing vegetable intake. Identifying the BCTs associated with effective programs will enhance future interventions and enable targeted techniques for participants who are less inclined to utilise goal setting for behaviour change. Subsequent research can elucidate the contributions of BCTs to the effect size and efficacy of different programs.

## Height-adjustable sit-stand desks and their influence on physical activity among office employees in South Africa: a 12-month randomized controlled trial

**Prof. Philippe Gradidge<sup>1</sup>**, Dr Merling Phaswana<sup>1</sup>

<sup>1</sup>University of the Witwatersrand, Johannesburg, South Africa

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** In sub-Saharan Africa, office-based workers often lead sedentary lifestyles and physical inactivity, spending most of their working hours seated. This behavior increases their risk of cardiometabolic diseases. The purpose of this study was to assess the change of an intervention, both with and without the use of a height-adjustable sit-stand desk, on physical activity profile.

**Methods:** This study was a randomized controlled trial involving 41 South African office workers, with 26 participants in the height-adjustable sit-stand desk intervention group and 15 in the control group. The primary outcomes measured were changes in inactivity, light physical activity, and moderate-to-vigorous physical activity (MVPA) at 3 and 12 months, respectively, assessed using accelerometry. Trial registration: Pan African Clinical Trial Registry, PACTR201911656014962.

**Results:** The mean age of participants was 40.9±9.9 years, with 70.7% (n=33) being women. At the 3-month mark, the intervention group showed increases in inactivity (6.78 mins/day), light physical activity (9.24 mins/day), and MVPA (5.24 mins/day) compared to the control group, with effects ranging from trivial to small. By the 12-month mark, inactivity and MVPA continued to increase (inactivity: 4.81 mins/day; MVPA: 0.34 mins/day), while light physical activity decreased (-1.50 mins/day) in the intervention group compared to the control group, again with trivial to small effects.

**Conclusions:** The intervention involving height-adjustable sit-stand desks led to mixed results in physical activity profiles among South African office workers. While there were increases in inactivity and MVPA at both 3 and 12 months, light physical activity decreased over the same periods. These findings suggest that while the intervention may encourage more intense physical activity, it also inadvertently increases periods of inactivity. Further research is needed to optimize interventions to reduce sedentary behavior and promote balanced physical activity levels in office settings.

## What do work teams choose to sit less and move more and how does this relate to behaviour change?

**Prof. Genevieve Healy<sup>1</sup>**, Dr Ana Goode<sup>1</sup>, Lisa Ulyate<sup>1</sup>, Dr Samantha Mulcahy<sup>1</sup>, Dr Elisabeth Winkler<sup>1</sup>

<sup>1</sup>The University of Queensland, School of Human Movement and Nutrition Sciences, Brisbane, Australia

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** In line with the priority of increasing physical activity and reducing sedentary behaviour in workplaces, it is important to understand how workplaces can achieve this. BeUpstanding is an 8-week, champion-led program that supports teams of desk-based workers to sit less and move more. Teams collectively decide which strategies to achieve this they will promote as a team, ideally across the Hierarchy of Control. The BeUpstanding implementation trial revealed significant sit less and move more benefits for staff. This study describes team strategy selections, and how those relate to these benefits.

**Methods:** A list of 41 general strategies fitting within each level of the hierarchy of control (elimination, substitution, engineering, warning, administration) was developed, guided by the literature, and then used by two coders to classify the open-text strategies champions reported their teams had selected. The selection of each strategy (yes/no) were reported and tested against post-program and changes in staff-reported sitting and moving (% of the workday), using linear mixed models, correcting for cluster and confounders.

**Results:** Nearly all teams (n=89/93, 95.7%) selected administrative strategies, with common strategies including stretch breaks (35.1%), encouraging workers to leave their desks for lunch (34.0%) and prompting for standing breaks during meetings (34.0%). Many teams included substitution strategies (76.3%), with making tasks more active (37.5%), walking meetings (37.5%), and standing meetings (31.9%) commonly selected. Approximately half (44/93; 47.3%) selected an engineering strategy, usually height-adjustable workstations (37.2%); few (36.6%) selected a warning strategy, usually computer prompts (30.9%). Very few selected an elimination strategy (2.1%), always technology (e.g., voice recognition). There were no large or statistically significant associations of team strategy selection with any of the post-program behavioural outcomes (b = -0.01 to 0.04, all p>0.05; n=60 workplaces; 647 staff) or behavioural changes (b = -0.13 to 0.02, all p>0.05; n=60 workplaces; 332 staff).

**Conclusion:** The diverse choices indicate many (but different) sit less/move more strategies were perceived as feasible and acceptable by work teams. This diversity plus a lack of notable relationships with behaviours suggests research focus could extend beyond which choices work best to the importance of choosing collectively and accordingly building culture.

## Empowering learning: Teachers' perspective on school culture and student engagement to support physical activity in the learning environment

**Dr. Karen Mumme<sup>1</sup>**, Dr Jared Carpendale<sup>1</sup>, Prof Aj Ali<sup>1</sup>

<sup>1</sup>Massey University, Auckland, New Zealand

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The Healthy Active Learning initiative to improve learning and physical activity was introduced in New Zealand schools in 2020. Student engagement and school culture are relevant to the success of this initiative. School culture and student engagement from the teachers' perspective were measured at baseline and drivers behind these perspectives were explored.

**Methods:** A survey of 88 questions was completed by 514 teachers (183 schools, years 1-8) in 2020. Questions from student engagement (n=8) and school culture (n=24) sub sections were analysed by principal component analysis with varimax rotation. Multivariate linear regression was used to explore associations between teachers' scores on each component and gender (15% men), job description ('Senior' (32%), 'Teacher'), status of teaching career ('early' (38%), 'mid' (38%), 'late') and ethnicity ('European' (70%) and 'Māori (16%), Pacific Peoples (6%), Asian (7%) and other (1%)').

**Findings:** Four components (themes) were derived from principal component analysis. Theme one: 'inclusive physical activity and wellbeing', reflects the school's commitment to providing inclusive, diverse and well-supported physical activity opportunities catering for all students' needs. Theme two: 'student engagement and peer support' reflects the levels of student engagement, participation, and peer support in Health and Physical Education classes. Theme three: 'healthy eating and student wellbeing' reflects the school's commitment to promoting healthy eating and drinking habits, involving both policy enforcement and active student participation. Theme four: 'holistic student wellbeing and active engagement' reflects the school's comprehensive approach to student wellbeing, emphasising active engagement in physical activities, healthy living, and student-led initiatives. European teachers had higher scores on theme one ( $p<0.001$ ), theme two ( $p=0.03$ ) and lower scores on theme three ( $p=0.02$ ) and theme four ( $p<0.01$ ) compared to Māori, Pacific Peoples, Asian and other ethnicities. Teacher scores in theme one decreased as teachers gained more experience ( $p=0.04$ ). Gender and job description did not influence teachers' perspectives.

**Conclusions:** Four themes described teachers' perspectives on student engagement and school culture with regards to healthy active learning. Changes in theme scores will be measured in future evaluations. Future work includes exploring the association with changes in scores to student outcomes e.g. accelerometry data.

## Empowering Lifestyle Changes: Behaviour Change Principles in the Active Together Cancer Rehabilitation Service

**Dr. Liam Humphreys**<sup>1</sup>, Prof. Robert Copeland<sup>1</sup>, Dr Carol Keen<sup>2</sup>, Ms Gail Phillips<sup>1</sup>, Mrs Gabriella Frith<sup>1</sup>, Anna Myers<sup>1</sup>, Dr Kerry Rosenthal<sup>1</sup>, Mr Nik Kudiersky<sup>1</sup>, Professor Gary Mills<sup>2</sup>, Professor Diana Greenfield<sup>2</sup>

<sup>1</sup>Advanced Wellbeing Research Centre, Sheffield Hallam University, Sheffield, United Kingdom, <sup>2</sup>Sheffield Teaching Hospitals Foundation Trust, Sheffield, United Kingdom

**SO.1.11: Behavior Change in Health Promotion, Balcony Foyer, June 12, 2025, 2:15 PM - 3:30 PM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Evidence increasingly shows that rehabilitation, including prehabilitation, enhances cancer patients' psychological and physical well-being and improves outcomes. Integrating behaviour change theory into cancer prehabilitation and rehabilitation services is crucial for fostering sustainable lifestyle changes. Active Together is a multimodal rehabilitation service designed to help cancer patients prepare for and recover from treatment. This analysis explores the behaviour-change elements of the Active Together service, focusing on patient-reported outcomes and the processes influencing its delivery and effectiveness.

**Methods:** The Active Together service utilised a behaviour-change framework structured around the Behaviour Change Wheel. Techniques included education on exercise, dietetics, psychological well-being, feedback on health behaviours, demonstrations, and instructions on new behaviours. Goal setting and action planning were also incorporated. Self-efficacy for exercise was assessed using the Self-Efficacy for Exercise (SEE) questionnaire and patient interviews (n=24) provided insights into their confidence in maintaining exercise routines independently. Additionally, qualitative interviews with healthcare professionals (n=14) offered perspectives on the behavioural components. Together, these insights provide a comprehensive evaluation of the behaviour-change elements of the service.

**Results/Findings:** Patients reported moderate confidence in their ability to exercise at baseline, with a median increase of 7 points after rehabilitation ( $p < 0.044$ ). Post-treatment assessments decreased, showing no significant difference from baseline. Interviews highlighted concerns about maintaining exercise routines after structured support ended. While the service fostered a supportive environment for regular exercise, more can be done to empower patients to maintain healthy habits independently. The service emphasises autonomy and long-term self-management, but some patients lack the skills to sustain behaviours post-programme. Tapering support might help promote autonomy. Healthcare professionals emphasised the importance of tailored interventions and person-centred care. The implementation process was characterised by effective communication and collaboration, facilitating the integration of behaviour change strategies into clinical pathways.

**Conclusions:** The Active Together service successfully incorporates behaviour-change principles to support cancer patients adopting healthier lifestyles. While the service fosters behaviour change, sustaining these changes post-service remains challenging. Future efforts should focus on enhancing long-term self-management skills and reducing support to promote autonomy. This evaluation underscores the value of integrating behaviour-change theory into cancer rehabilitation services to improve patient outcomes.

## Investigating direct and indirect impacts of meal delivery services in Belgium: a qualitative study of food business owners

**Dr. Matthew Keeble<sup>1</sup>**, Professor Lukar Thornton<sup>1</sup>

<sup>1</sup>*University of Antwerp, Antwerp, Belgium*

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

Meal delivery services such as Uber Eats are available internationally, including across Belgium. Research to date has often investigated how these services facilitate access to food that is typically energy-dense and nutrient-poor. How their availability impacts food businesses has been overlooked but is important to understand given links to consumer food accessibility and purchasing practices. We investigated the perspectives of food business owners to understand their partnership with meal delivery services and direct and indirect implications of these services being available. From April-July 2024, we conducted 24 in-person, semi-structured interviews with food business owners in three Belgian cities (Aalst, Ghent, Antwerp). Across food businesses, there were 14 registered with meal delivery services, 7 not currently registered, and 3 fresh food specialists. We generated themes through reflexive thematic analysis. Owners of food businesses registered with meal delivery services viewed registration as a marketing strategy that provides exposure to consumers. They described how online orders complement those received in person, but that their number and size are unpredictable and cause considerable stress during busy periods. This group often reported that they pass costs from meal delivery service commission charges on to consumers by increasing their prices for online orders. Owners of food businesses not registered with meal delivery services prioritised face-to-face dining they believed was difficult to replicate and reported that their brick-and-mortar location was safe. Those previously registered ended their partnership after receiving limited support, because addressing customer complaints took time, and negative reviews about uncontrollable aspects of delivery harmed their reputation. Owners of fresh food businesses feared for their future as ready-to-eat meals and fresh food delivery have become increasingly popular. They started selling ready-to-eat meals alongside fresh produce to meet consumer demand and as a means of survival. The growing popularity of meal delivery in Belgium is forcing food business owners to increase their prices, forsake profit, and adapt existing practices and priorities to meet demand and survive. In turn, this threatens to increase consumer-level access to unhealthy food, amplify food insecurity, and widen dietary inequalities, while also impacting food business owner stress and future food retail success.

## Associations of GIS-based measured greenspace with adolescent moderate – vigorous physical activity: a systematic review

**Dr. Yijun Zhang**<sup>1</sup>, Mr Ziang Li<sup>1</sup>, Dr Hayley Fainu<sup>1</sup>, Dr Jinfeng Zhao<sup>1</sup>, Dr Sandra Mandic<sup>2</sup>, Professor Melody Smith<sup>1</sup>

<sup>1</sup>The University of Auckland, Auckland, New Zealand, <sup>2</sup>AGILE Research Ltd., Wellington, New Zealand

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Creating health-promoting environments is important for adolescent development. Greenspace has been linked to health and well-being outcomes, with physical activity considered being a key pathway for achieving benefits. Robust evidence is needed to better inform policymaking and environmental interventions. The aim of the current review is to systematically summarise and evaluate studies on the associations between GIS-based measured greenspace and moderate to vigorous physical activity (MVPA) among adolescents (aged 10 to 19 years)

**Methods:** The systematic review followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement guidelines. Five databases (SCOPUS, GEOBASE, Medline (Ovid interface), EMBASE (Ovid interface), and Web of Science) were searched using relevant keywords for articles published from 1980 onwards. All references from the databases were transferred to Covidence for subsequent reviewing, data extraction and quality assessment. Harvest plots were used to examine patterns in relationships between greenspace and adolescent MVPA.

**Results/findings:** Fourteen articles met the inclusion criteria and provided sufficient data to extract associations of greenspace with adolescent MVPA. All included research was undertaken in developed countries. Most eligible research (12 of 14) used cross-sectional study designs. Global positioning systems monitoring was used in three studies to capture participant locations. Out of the 14 articles, two focused solely on girls, while five stratified data by sex. Where differences by sex were examined, boys consistently accumulated higher levels of MVPA than girls. Eight of the 14 articles reported positive relationships between greenspace and adolescent MVPA, while five found non-significant relationships. Another one study reported inconsistent results.

**Conclusions:** While positive associations between greenspace and MVPA among adolescents were found in over half of the studies included in this review, the number of studies specifically targeting this age group is limited. More longitudinal designs are needed in the future to elucidate causal relationships. Additionally, exploring which features of greenspace encourage MVPA and examining the actual use of greenspace are needed. Addressing these gaps will provide more comprehensive evidence to inform policies and environmental strategies aimed at enhancing adolescent health and well-being.

## Children's Exposure to Food, Beverage and Restaurant Marketing on Digital Platforms in the United States

**Dr. Lisa Powell<sup>1</sup>**, Dr. Samantha Marinello<sup>1</sup>, Ms. Isabel McGoldrick<sup>1</sup>, Mr. Julien Leider<sup>1</sup>, Ms. Andrea Pipito<sup>1</sup>, Dr. Laura Vergeer<sup>2</sup>, Dr. Monique Potvin Kent<sup>2</sup>

<sup>1</sup>University of Illinois Chicago, Chicago, USA, <sup>2</sup>University of Ottawa, Ottawa, Canada

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** While children's exposure to food-related advertising on television has fallen substantially over the last decade in the U.S., children's use and engagement with digital media has increased. Recent evidence for Canada, Australia and Mexico shows exposure to a high volume of unhealthy food marketing on digital media. This study examines U.S. children's exposure to food, beverage and restaurant marketing across multiple digital media platforms.

**Methods:** A nationally representative (by age, gender, region, and household income/education) sample of 1000 children ages 8-17 is being recruited from November 2024 through February 2025. Participants will complete a 30-minute screen capture protocol via Zoom of their online digital activity via smartphone/tablet that includes internet browsing, using social media, and playing online games. Additionally, child surveys will collect information on digital media use and consumption patterns and parent surveys will ask about household characteristics, parental consumption patterns and parental monitoring/controls of child digital media use. Nutritional content coding will be undertaken based on WHO/PAHO nutrient profiles, the U.S. Interagency Working Group standards, and the Dietary Guidelines for Americans.

**Results:** Study results will provide evidence on the proportion of children exposed to food marketing on digital media, estimates of the number of marketing instances per child per 30-minutes of digital use and predicted average total annual food-related marketing exposure accounting for digital time use. Exposure will be assessed by age for children 8-12 and adolescents 13-17 and by race/ethnicity and household income to assess potential disparities in exposure. Results will also describe differences in food-related marketing exposure based on food categories and nutritional content, digital platforms (web browsing, social media [Instagram, Facebook, YouTube, TikTok, Snapchat, etc.] and gaming) and form of advertising (paid sponsor, banner advertisement and product placement).

**Conclusions:** This study will contribute to the limited evidence base quantifying children's exposure to food marketing in digital media both terms of the extent and nature of exposure. It will be the first screen capture study in the U.S. and the study with the largest sample (N=1000) worldwide allowing for stratified analyses that can help us begin to understand potential disparities in exposure.

## Transport-related physical activity policy review in an Australian jurisdiction using an adapted World Health Organization tool

**Dr. Melanie Sharman<sup>1</sup>**, Dr Matthew McLaughlin<sup>1</sup>, Peter McCue<sup>2</sup>, Associate Professor Verity Cleland<sup>1</sup>

<sup>1</sup>Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia, <sup>2</sup>University of New South Wales, Sydney, Australia

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Transport-related physical activity (TRPA) (commonly walking/wheeling) shows promise to improve population level physical activity (PA) for health gain. In Australia, enabling TRPA is largely determined by jurisdictional-level government policy. There are knowledge gaps regarding the policy coverage of TRPA in Australian jurisdictions.

**Methods:** In 2024 and Guided by the Comprehensive Analysis of Policy on Physical Activity framework, The World Health Organization's Health Enhancing Physical Activity Policy Audit Tool (HEPA PAT) Version 2 was selected and modified to reflect the study's jurisdictional-level and TRPA context across the PAT's 29 items. A five-person project team representing the public health, transport and environment/climate change sectors in Tasmania (an island state of Australia) completed the modified PAT. Policies were systematically extracted from all Tasmanian government sector websites and screened. The completed modified PAT guided content analysis and a SWOT analysis exposed strengths, weaknesses, opportunities and threats across policies.

**Results/findings:** The included policies (N=20), were from the education (n=1), environment/climate Change, (n=1), health (n=4), transport (n=8), urban design/planning (n=2), whole of government, (n=3) and tourism (n=1) sectors. Strengths exposed by the PAT: many agencies provide TRPA leadership (e.g. health organisations, government departments, advocacy groups); established jurisdictional-level collaborations and mechanisms for TRPA promotion (e.g. multisector/professional council and coalitions, Tasmanian Climate Change Act) and grants/incentives for TRPA-related initiatives (e.g. E-bike subsidy). Key weaknesses were: no jurisdictional mechanism to ensure evidence-based TRPA policy; absence of specific targets and robust measures of TRPA; policy documents not directly referencing TRPA (n=11). Key opportunities include targeted advocacy to address policy omission of TRPA and overlooked policy settings for TRPA (beyond primary schools, transport, environment/climate change and community) and population groups (only children/young people and those experiencing financial disadvantage specifically targeted). Key threats were fluctuating political commitment and operating environments, and the planning system deprioritising TRPA.

**Conclusions:** Despite several Tasmanian government policies specifically promoting TRPA there are gaps within and across policy and within mechanisms needed for TRPA gain. Filling these gaps may provide downstream influence required for population-level PA increases.

## Interventions implemented through sporting organisations for promoting healthy behaviour or health outcomes: a Cochrane systematic review

**Dr. Rebecca Hodder**<sup>1,2,3,4</sup>, Dr Kate O'Brien<sup>1,2,3,4</sup>, Muaamar Al-Gobari<sup>5</sup>, Aline Flatz<sup>6</sup>, Annegret Borchard<sup>7</sup>, Irma Klerings<sup>8</sup>, Dr Tara Clinton-McHarg<sup>10</sup>, Dr Melanie Kingsland<sup>1,2,4</sup>, Erik von Elm<sup>5,9</sup>  
<sup>1</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>2</sup>School of Medicine and Public Health, The University of Newcastle, Callaghan, Australia, <sup>3</sup>National Centre of Implementation Science, The University of Newcastle, Wallsend, Australia, <sup>4</sup>Cochrane Switzerland, Center for Primary Care and Public Health (Unisanté), University of Lausanne, Lausanne, Switzerland, <sup>5</sup>Population Health Research Group, Hunter Medical Research Institute, Wallsend, Australia, <sup>6</sup>Federal Office of Public Health, Liebefeld, Switzerland, <sup>7</sup>Epidemiology, Biostatistics and Prevention Institute, University of Zurich, Zurich, Switzerland, <sup>8</sup>Cochrane Austria, Department for Evidence-based Medicine and Evaluation, Danube University, Krems, Austria, <sup>9</sup>Cochrane Germany Foundation, Freiburg, Germany, <sup>10</sup>School of Population and Global Health, University of Melbourne, Parkville, Australia

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Chronic diseases are the leading cause of death globally, but their risk can be lowered through promotion of healthy behaviours including a healthy diet and physical activity. Sporting organisations are both popular in many countries and a setting where healthy behaviours can be promoted. This study aims to assess the effectiveness, unintended adverse consequences and cost-effectiveness of interventions implemented through sporting organisations to promote healthy behaviours (physical activity, sedentary behaviour, healthy diet).

**Methods:** A Cochrane systematic review of randomised controlled trials (RCTs) with a parallel control group testing a sporting organisation intervention to improve health behaviours or outcomes was conducted (search from inception to May 2024). There was no restriction by language or publication status. Meta-analyses or synthesis according to Synthesis Without Meta-analysis (SWiM) guidance was conducted.

**Results:** Twenty trials (8179 participants) were included. Sporting organisation interventions were found to probably increase physical activity by 7.4 minutes/day, may not reduce sedentary behaviour, and may increase fruit and vegetable consumption. It is not known whether sporting organisation interventions have an impact on sugary drinks. Findings for unintended adverse consequences were equivocal. All four trials that assessed cost outcomes reported the sporting organisation intervention to be cost-effective.

**Conclusion:** Findings indicate that sporting organisations could effectively tackle unhealthy behaviours in sporting organisation settings and potentially reach population groups that are otherwise hard to engage. However, the generalisability of positive results for some outcomes including physical activity and diet should be approached with caution, as these interventions have primarily been tested in specific population subgroups.

## Directing the risks: Czech youth's perceptions of neighborhood safety in active school travel

**Prof. Josef Mitáš<sup>1</sup>**, Dr. Michal Vorlíček<sup>1</sup>, Dr. Jan Dygrýn<sup>1</sup>, Dr. Jaroslav Burian<sup>1</sup>

<sup>1</sup>Palacký University Olomouc, Olomouc, Czech Republic

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study aims to identify the fundamental barriers and perceived risks associated with active modes of transportation (walking and cycling) to and from school among Czech school-aged children. By understanding these factors, we aim to inform evidence-based interventions, such as targeted traffic infrastructure improvements in school neighborhoods, to promote active commuting, enhance the overall safety of school routes, and promote healthier lifestyles.

**Methods:** A mixed-methods approach was employed to collect data on active transport routes, barriers, and physical activity behaviors among Czech school-aged children. A total of 1,061 pupils from 15 schools in the Olomouc district participated in the study. Participants utilized online tools to map their active transport routes and identify associated barriers. Additionally, questionnaires reporting perceptions of safety concerns related to school neighborhood and active modes of transport to and from school by participants and their parents were completed.

**Results/findings:** The majority of children reported walking as their primary mode of transportation to (55 %) and from school (58 %), primarily due to perceived safety (79 %). The main safety concerns identified were speeding traffic (38 %), a lack of pedestrian crossings (19 %), and obstructed visibility caused by parked cars (19%). Regarding the school environment, 83 % of adolescents positively evaluated its safety. However, the school neighborhood was often perceived as unpleasant and unsafe due to the presence of homeless individuals, alcohol users, and strangers, as well as traffic issues caused by cars parked on sidewalks and crosswalks obstructing visibility. Other barriers included missing crosswalks, speeding cars, and inadequate street lighting. Interestingly, parents recognized the positive impacts of active travel on their children's well-being, citing comfort (49 %), the importance of such behavior (81 %), health benefits (95 %), and environmental friendliness (96 %).

**Conclusions:** To promote safer and more enjoyable school commutes, it is essential to implement targeted interventions such as traffic calming measures, infrastructure improvements, and community-based initiatives. By addressing these factors, we can encourage children to choose active modes of transport, leading to improved health, environmental benefits, and a more sustainable future.

## Advancing Healthy Beverage Policies: Insights from Implementation Science and the New Orleans Experience

**Dr. Melissa Fuster<sup>1</sup>**, Danielle Gartner<sup>1</sup>, Maria M. Muñoz<sup>1</sup>, Lisa Hofmann<sup>2</sup>, Dr. Donald Rose<sup>1</sup>, Dr. Megan Knapp<sup>2</sup>

<sup>1</sup>Tulane University School of Public Health and Tropical Medicine, New Orleans, United States, <sup>2</sup>Xavier University of Louisiana, New Orleans, United States

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** This study applies implementation science methodologies to explore factors influencing the design and implementation of the Healthy Default Beverage (HDB) policy in New Orleans, Louisiana. HDB policies aim to reduce sugary beverage consumption among children by requiring restaurants to offer healthier beverages (e.g., water, low-/non-fat milk or milk alternatives, 100% juice) as default options with children's meals. New Orleans is the first city in the US Deep South to implement such policy, responding to high incidence of childhood obesity and associated health conditions. This research systematically examines barriers and facilitators to HDB policy implementation, providing insights for developing similar policies in New Orleans and beyond.

**Methods:** We conducted 13 interviews with stakeholders involved in the policy's advocacy, design, and implementation of the policy. Participants included professionals from public health, industry, and advocacy sectors. Interviews, averaging 33 minutes each, were conducted via teleconferencing and transcribed verbatim. Transcripts were analyzed using Atlas.ti, following a deductive, iterative coding process performed by two trained coders. We applied the Consolidated Framework for Implementation Research (CFIR), which systematically evaluates implementation barriers and facilitators across five domains: innovation Characteristics (e.g., source, evidence base, design, cost), Outer Setting (e.g., local attitudes, external pressures, critical incidents), Inner Setting (e.g., organizational characteristics and culture), Individual Characteristics (e.g., roles and traits of key actors), and the Implementation Process.

**Results/findings:** Key outer-setting factors, including the COVID-19 pandemic and shifts in local political leadership, significantly shaped the HDB policy's development and implementation. Inner-setting factors, such as the characteristics and capacity of the New Orleans Health Department and local restaurants, also played a critical role. Interactions among CFIR domains further highlighted the complex dynamics influencing implementation outcomes.

**Conclusions:** This study advances the application of implementation science to behavioral nutrition and policy interventions. By utilizing the CFIR framework, it systematically identifies barriers and facilitators in HDB policy design and implementation. These findings have implications for future HDB policies and broader initiatives aimed at enhancing the nutritional quality of restaurant offerings.

## Implementation of the world's first healthy checkout policy: Process, barriers, and facilitators

Dr. Alexandria Reimold<sup>1</sup>, Ethan Wolf<sup>1,2</sup>, Noelle Chin<sup>1,2</sup>, Dr. Anna Grummon<sup>3</sup>, Dr. Natalie Riva Smith<sup>4</sup>, **Dr. Jennifer Falbe<sup>1</sup>**

<sup>1</sup>University of California, Davis, Davis, USA, <sup>2</sup>University of California, Berkeley School of Public Health, Berkeley, USA, <sup>3</sup>Stanford University School of Medicine, Stanford, USA, <sup>4</sup>Harvard T.H. Chan School of Public Health, Boston, USA

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Berkeley, CA implemented the world's first Healthy Checkout Ordinance (HCO) in 2021, stipulating that sweetened beverages and foods high in sodium or added sugar cannot be placed in store checkout areas. Previous research found high store compliance one-year postimplementation. In this study, we aim to characterize the implementation process of this innovative policy and identify barriers and facilitators to the policy improving community health.

**Methods:** We observed meetings relevant to the HCO held by a City of Berkeley Commission and a Berkeley City Council subcommittee that generated the HCO. We also examined correspondences from both Berkeley city staff involved in policy interpretation and enforcement as well as representatives from a local youth-focused community-based organization involved in policy advocacy and implementation. Finally, we reviewed pertinent documents including the HCO, policy communication materials from the community-based organization, and Berkeley City Reports. We are in the process of conducting semi-structured in-depth interviews with City of Berkeley staff and owners and managers of retailers subject to the HCO.

**Results:** Preliminary findings indicate that the first step in implementation—policy communication with retailers—was conducted by youth representatives of a community-based organization. Representatives provided information packets and visited stores in person to offer technical assistance. Efforts from this organization were funded by City Council based on recommendations from a city commission. Perceived facilitators to policy implementation included city-funded outreach to stores and a city commission invested in the policy. A barrier to implementation was the delay of store inspections due to city staff capacity. Only 14% (3/22) of stores were significantly out of compliance after initial inspection for reported reasons such as confusion around the definition of the checkout area and a need for additional technical assistance on allowable foods and beverages. We expect interviews to reveal additional specific barriers to and facilitators of implementation and how retailers have responded to the HCO.

**Conclusions:** The world's first Healthy Checkout Ordinance has improved the healthfulness retail food environments, in part due to proactive outreach to stores. However, additional inspections and technical assistance may be needed.

## Promoting CHANGE: a multicomponent intervention in sports and recreation centre food outlets to improve public health nutrition

**Dr. Neha Lalchandani<sup>1</sup>**, Dr Helena Romaniuk<sup>2</sup>, Prof. Adrian Cameron<sup>1</sup>, Ms Bettina Backman<sup>1</sup>, Dr Megan Adam<sup>3</sup>, Dr Emma McMahon<sup>4,5</sup>, Dr Miranda Blake<sup>1</sup>

<sup>1</sup>Deakin University, Geelong, Australia, Institute for Health Transformation, Global Centre for Preventive Health and Nutrition, School of Health and Social Development, Faculty of Health, Melbourne, Australia,

<sup>2</sup>Deakin University, Geelong, Australia, Biostatistics Unit, Faculty of Health, Melbourne, Australia, <sup>3</sup>School of Exercise and Nutrition Sciences, Institute for Physical Activity and Nutrition, Deakin University, Burwood, Australia, <sup>4</sup>Department of Nutrition, Dietetics and Food, Monash University, Melbourne, Australia, <sup>5</sup>Wellbeing and Preventable Chronic Disease Division, Menzies School of Health Research, Charles Darwin University, Darwin, Australia

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Despite sports and recreation settings being associated with healthy lifestyles, these facilities often do not support healthy eating, highlighting the need for targeted interventions. Current barriers to healthy food retail initiative implementation, maintenance, and scale-up include the lack of: (1) skilled human resource time; (2) skill and knowledge-based capacity to drive change at the retail level; and (3) incentives for change. Promoting CHANGE is a co-designed capacity-building support model to help Australian local governments create and sustain healthier food environments in the sports and recreation facilities under their influence. This three-year hybrid cluster randomised trial will evaluate the implementation and effectiveness of Promoting CHANGE in improving the healthiness of food and drink offerings and customer purchases.

**Methods:** The trial commenced in August 2023 across seven local governments in Victoria (three Intervention, four Control) including over 30 participating facilities. The intervention comprises four components: (1) human resource support, (2) training, tools, technical assistance, and community-of-practice groups, (3) auditing and feedback on food retail environments guided by the Victorian Government's Healthy Choices guidelines, and (4) small grant incentives. Data collection involves six-monthly food environment audits, primarily photographic audits of stocked food and drinks and sales records. Products are classified as 'GREEN' (best choices), 'AMBER' (choose carefully), or 'RED' (limit) using FoodChecker and manually matched to sales codes. The primary outcomes are reductions in proportion of unhealthy ('RED') food and drink items displayed (implementation) and sold (effectiveness) in Intervention versus Control facilities.

**Results:** Details of the support model and trial design will be presented. While data collection is ongoing, preliminary findings from the first and second years for proportion of 'GREEN', 'AMBER', and 'RED' items displayed and sold, will be shared.

**Conclusions:** This innovative trial combines a multicomponent healthy food retail support package with real-world food environment audits to enhance public health nutrition in sports and recreation facilities. It is expected to provide valuable insights into the effectiveness of Promoting CHANGE and guidance on implementing and sustaining such community-based food

retail initiatives. The findings could apply to 6,000 retail outlets in over 500 Australian local governments and other global community-based food outlets.



## Children's movement during recess over five-years: Impact of a schoolyard redesign to mitigate heat

**Dr. Allison Poulos<sup>1</sup>**, Dr. Kylie Wilson<sup>1</sup>, Dr. Jennifer Vanos<sup>2</sup>

<sup>1</sup>Arizona State University, Phoenix, United States, <sup>2</sup>Arizona State University, Tempe, United States

**SO.3.12: Interventions and Environments for Public Health, Hunua 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Schoolyards are important settings for children's movement; however, extreme heat impacts physical activity (PA) during outdoor play. This study assessed changes in where children played and movement intensity during recess over five years after a public school district (U.S.A.) redesigned their schoolyard with nature-based elements to mitigate heat.

**Methods:** This observational study assessed changes in behavior after a nature-based redesign among younger (age 6-7; N=42-83) and older (age 10-11; N=66-99) children at one elementary school in an urban, desert region of the southwest U.S.A. from 2019-2024. The redesign included an added boulder area and 75 trees around fields and courts. Location, movement intensity (sedentary, light PA (LPA), moderate-to-vigorous (MVPA), and shade and nature interactions were assessed by direct observation using SOPLAY-SN during recess 4x/day over 3-4 days each spring and fall. Local weather station data was obtained to measure air temperature (21-38°C). Descriptive analyses were used to examine changes in PA and temperature over time, a one-way ANOVA compared differences in PA pre/post intervention, and linear regression models examined the impact of temperature on PA for both younger and older children. Data measuring shade and nature interactions have been collected and will be analyzed and incorporated before the conference if accepted.

**Results/Findings:** Immediately following the intervention, younger children shifted 20% of play from playgrounds to fields (intervention site), and MVPA spiked in both fields (55%) and playgrounds (53%). Post-intervention, behaviors stabilized with 75% of children playing in fields in LPA (36%). Temperature significantly predicted MVPA(-) and sedentary behavior(+) for younger children only. Compared to pre-intervention, levels of sedentary(-), LPA(+), MVPA(+) statistically differed. Among older children, play location and intensity did not change with the intervention or temperature. The most common play area across years was courts (61%) where most were engaged in LPA (41%). There were no statistically significant impacts of temperature or differences in behaviors following the intervention.

**Conclusions:** Alone, nature-based schoolyard redesigns to reduce heat may not be enough to influence behavior change among older children. Future work should consider environmental and behavioral interventions paired with heat mitigation strategies to impact children's movement and health.

## Predictors of Meeting a 12-Month Walking Goal in Insufficiently Active Midlife and Older US Adults: A Signal Detection Analysis

Dr. Astrid N. Zamora<sup>1</sup>, **Mr. Arjan Walia<sup>1</sup>**, Maria I. Campero<sup>1</sup>, Dulce M. Garcia<sup>1</sup>, Dr. Abby C King<sup>1,2</sup>

<sup>1</sup>Department of Epidemiology and Population Health; Stanford University School of Medicine, Palo Alto, United States, <sup>2</sup>Stanford Prevention Research Center, Department of Epidemiology and Population Health; Stanford University School of Medicine, Palo Alto, United States

**SO.3.13: Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** To identify predictor combinations for meeting a 12-month goal of  $\geq 150$  min/week of walking among midlife and older adults in Steps for Change (SFC) - a cluster-randomized physical activity (PA) trial.

**Methods:** The analytic sample included insufficiently active participants (i.e., those engaging in  $< 100$  min/week of moderate-intensity PA) ( $n=164$ , aged 40-64 and  $\geq 65$  years) who were cluster-randomized to receive either the person-level Active Living Every Day (ALED)+health education intervention or the ALED+neighborhood-level citizen science intervention. We applied signal detection analysis (SDA)—a hypothesis-generating, recursive partitioning method — to identify combinations that predict mutually exclusive subgroups that are more or less successful at achieving the walking goal. Baseline variables used in SDA included sociodemographic (e.g., age, gender), clinical (e.g., BMI, blood pressure, heart rate), behavioral (e.g., fruit and vegetable intake, sedentary time, sleep), and built environment (e.g., residential density, traffic hazards, parking availability) factors. The binary outcome was achieving the  $\geq 150$  min/week walking goal, assessed using the validated CHAMPS questionnaire.

**Results:** Participants had a mean age of 70.4 (SD=9.8) years; 73.2% were women, and 60.4% met the 12-month walking goal. SDA identified eight subgroups, with traffic hazards chosen as the most robust splitting variable, differentiating between those who met the PA goal versus those who did not. The most successful subgroup (86.7%; 39/45) reported a traffic hazards score  $< 2.7$  (indicating higher walkability), had a resting heart rate  $\geq 59$  bpm (considered healthy), and a residential density score  $< 245$  (indicating moderate walkability). Conversely, the least successful subgroup (17.4%; 4/23) had a traffic hazards score  $\geq 2.7$  (indicating lower walkability),  $< 465$  min/week of total PA, and a lack of parking score  $\geq 2$  (indicating lower walkability). Other predictors included sleep duration and BMI.

**Conclusions:** Combinations of variables drawn from different categories effectively distinguished individuals who met the PA goal from those who did not. Findings underscore the need to examine predictors in combination, particularly built environment factors, to systematically identify subgroups of midlife and older adults who are more or less likely to meet US national PA guidelines.

## **‘We need people who look active and strong in a variety of ways:’ Using the Physical Activity Messaging Framework to Co-Design Strength Training Messaging**

**Dr. Ashley Gluchowski<sup>1</sup>**

*<sup>1</sup>University of Salford, Salford, United Kingdom*

**SO.3.13: Health and Behavioral Interventions: Innovative Approaches to Promoting  
Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose.** Physical activity guidelines and their supplementary messaging play an essential role in raising awareness and changing behaviour at a population level. However, recent research suggests a low awareness of and adherence to the strength training component of these guidelines.

**Methods:** This study applied the Physical Activity Messaging Framework (PAMF) with an aim of co-designing new strength training messaging guidance. Twenty adults (n=18 females) aged 40-60 years residing in the Greater Manchester area of the United Kingdom participated in one, four-hour, in-person workshop at the University of Salford. Participants were in the contemplation, preparation, action, maintenance, or termination stage of the Transtheoretical Model. The focus group activities, resulting discussions, and the coding of data aligned with the PAMF to identify message content, format, and delivery that would resonate with the target audience.

**Findings:** Discussions revealed 11 key areas that could lead to more effective strength training messaging. Most notably, guidelines and messaging campaigns telling people to ‘build strength on at least 2 days a week’ were not sufficiently detailed to change behaviour. Participants proposed that future messaging campaigns include quick links to more detailed information on ‘how to’ participate in strength training, practically and effectively.

**Conclusions:** Relevant, clear, and consistent strength training messaging may directly influence awareness and increase healthy behaviours that align with national and international physical activity guidelines. We recommend that academics, decision makers, and communications and marketing teams consider these 11 co-designed guidelines in future strength training messaging campaigns.

## Enhanced Measurement of Sugar-Sweetened Beverage Marketing to Young Immigrant Children in Grocery Store Environments

**Dr. Hadis Dastgerdizad Elyaderani<sup>1</sup>**, Dr Rachael Dombrowski<sup>2</sup>, Dr Bree Bode<sup>3</sup>, Dr James Mallare<sup>4</sup>

<sup>1</sup>University of Miami, Coral Gables, USA, <sup>2</sup>California State University, San Marcos, USA, <sup>3</sup>Michigan Fitness Foundation, Lansing, USA, <sup>4</sup>Wayne State University, Detroit, USA

**SO.3.13: Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The marketing of Sugar-Sweetened Beverages (SSBs) in grocery stores constitutes an obesogenic factor that adversely influences children's dietary behaviors, particularly among racial and ethnic minority populations, including immigrants. This study seeks to develop and implement a methodology to accurately evaluate the availability, pricing, and promotional strategies of SSBs targeted at young children within independently owned grocery stores in Michigan's immigrant enclaves.

**Methods:** The original Nutrition Environment Measures Survey (NEMS) does not assess the availability, pricing, and promotion of SSBs targeted at children under five in grocery stores. In this study, the toddler and infant beverage and dairy categories in the NEMS were adapted to encompass a broader range of products, including unsweetened, organic, plant-based, and regular powdered, ready-to-feed, and soy formulas, toddler milk, plain and flavored milk, and kids' yogurt drinks. Additionally, questions were incorporated into the original NEMS to evaluate marketing strategies employed in promoting SSBs. A cross-sectional case-comparison approach was utilized to analyze NEMS-SSB scores (availability, price, and promotion) across 78 grocery stores. This included 30 stores located in Hispanic and Latino enclaves in Southwest Detroit and Arab and Chaldean enclaves in north-central Detroit, compared to 48 stores in less diverse areas of Metro Detroit.

**Findings:** A one-way Analysis of Variance revealed that grocers in the immigrant enclaves had lower NEMS scores (-2.38), meaning a significantly higher availability of SSBs with lower prices than grocery stores in the comparison group (-0.052). Unsweetened, plant-based, and organic beverages were unavailable in 97% of all stores across both groups. Signage featuring cartoon characters was the most frequent in-store SSB marketing tactic across both groups.

**Conclusions:** The pervasive marketing of SSBs within grocery stores located in immigrant enclaves may be a contributing factor to the elevated rates of early childhood obesity observed within these populations. Even if the parents uphold the best practice of healthy nutrition behaviors for their children, the unhealthy environment of grocery stores presents a significant challenge to fostering and maintaining healthy eating habits. The insights gained from this study can inform strategies to support the promotion of healthier eating behaviors in similar immigrant communities.

## Device-measured sleep, daily step count and cardiometabolic health: pooled joint associations from the ProPASS consortium

**Miss Wenxin Bian**<sup>1,2</sup>, Dr. Matthew N. Ahmadi<sup>1,2</sup>, Dr. Raaj K. Biswas<sup>1,2</sup>, Dr. Joanna M Blodgett<sup>3,4</sup>, Prof. Andrew J Atkin<sup>5</sup>, Dr. Hsiu-Wen Chan<sup>6</sup>, Prof. Borja del Pozo Cruz<sup>7,8,9</sup>, Dr. Kristin Suorsa<sup>10,11</sup>, Dr. Esmee A Bakker<sup>12,13</sup>, Dr. Richard M Pulsford<sup>14</sup>, Dr. Gregore I Mielke<sup>5</sup>, Dr. Peter J. Johansson<sup>15,16</sup>, Dr. Pasan Hettiarachchi<sup>15</sup>, Dr. Nicholas A. Koemel<sup>1,2</sup>, Prof. Dick H.J. Thijssen<sup>17</sup>, Dr. Sari Stenholm<sup>10,11</sup>, Prof. Gita D Mishra<sup>6</sup>, Prof. Armando Teixeira-Pinto<sup>18</sup>, Prof. Vegar Rangu<sup>19</sup>, Prof. Lauren B Sherar<sup>20,21</sup>, Prof. Ulf Ekelund<sup>22,23</sup>, Prof. Alun D. Hughes<sup>24,25,26</sup>, Prof. I-Min Lee<sup>27,28</sup>, Prof. Peter Cistulli<sup>29,30,31</sup>, ProPASS collaboration<sup>32</sup>, Prof. Andreas Holtermann<sup>33</sup>, Prof. Annemarie Koster<sup>34</sup>, Prof. Mark Hamer<sup>3,4</sup>, Prof. Emmanuel Stamatakis<sup>1,2</sup>

<sup>1</sup>Mackenzie Wearables Research Hub, Charles Perkins Centre, University of Sydney, Sydney, Australia,

<sup>2</sup>School of Health Sciences, Faculty of Medicine and Health, University of Sydney, Sydney, Australia,

<sup>3</sup>Institute of Sport Exercise and Health, Division of Surgery and Interventional Sciences, UCL, UK,

<sup>4</sup>University College London Hospitals NIHR Biomedical Research Centre, London, UK, <sup>5</sup>School of Health

Sciences, University of East Anglia, Norwich, UK, <sup>6</sup>School of Public Health, The University of

Queensland, Brisbane, Australia, <sup>7</sup>Department of Sports Science and Clinical Biomechanics, University

of Southern Denmark, Odense, Denmark, <sup>8</sup>Faculty of Sports Sciences, Universidad Europea de Madrid,

Madrid, Spain, <sup>9</sup>Faculty of Biomedical and Health Sciences, Universidad Europea de Madrid, Madrid,

Spain, <sup>10</sup>Department of Public Health, University of Turku and Turku University Hospital, Turku, Finland,

<sup>11</sup>Centre for Population Health Research, University of Turku and Turku University Hospital, Turku,

Finland, <sup>12</sup>Department of Primary and community care, Radboud university medical center, Nijmegen,

Netherlands, <sup>13</sup>Department of Physical Education and Sports, Faculty of Sport Sciences, Sport and

Health University Research Institute (iMUDS), University of Granada, Granada, Spain, <sup>14</sup>Faculty of Health

and Life Sciences, University of Exeter, UK, <sup>15</sup>Occupational and Environmental Medicine, Department of

Medical Sciences, Uppsala University, Uppsala, Sweden, <sup>16</sup>Occupational and Environmental Medicine,

Uppsala University Hospital, Uppsala, Sweden, <sup>17</sup>Department of Medical BioSciences, Exercise

Physiology research group, Radboud university medical center, Nijmegen, Netherlands, <sup>18</sup>School of

Public Health, Faculty of Medicine and Health, University of Sydney, , , <sup>19</sup>HUNT Research Centre,

Department of Public Health and Nursing, Faculty of Medicine and Health Sciences, Norwegian

University of Science and Technology (NTNU), Levanger, Norway, <sup>20</sup>School of Sport, Exercise and

Health Sciences, Loughborough University, UK, <sup>21</sup>NIHR Leicester Biomedical Research Centre,

University Hospitals of Leicester NHS Trust and the University of Leicester, Leicester, UK, <sup>22</sup>Department

of Sport Medicine, Norwegian School of Sport Sciences, Oslo, Norway, <sup>23</sup>Department of Chronic

Diseases, Norwegian Public Health Institute, Oslo, Norway, <sup>24</sup>MRC Unit for Lifelong Health and Ageing,

UCL Institute of Cardiovascular Science, UCL, UK, <sup>25</sup>UCL BHF Research Accelerator, University College

London, London, UK, <sup>26</sup>University College London Hospitals NIHR Biomedical Research Centre, London,

UK, <sup>27</sup>Division of Preventive Medicine, Brigham and Women's Hospital and Harvard Medical School,

Boston, USA, <sup>28</sup>Department of Epidemiology, Harvard TH Chan School of Public Health, Boston, USA,

<sup>29</sup>Northern Clinical School, Faculty of Medicine and Health, University of Sydney, Camperdown, Australia,

<sup>30</sup>Sleep Research Group, Charles Perkins Centre, University of Sydney, Camperdown, Australia,

<sup>31</sup>Department of Respiratory and Sleep Medicine, Royal North Shore Hospital, St Leonards, Australia,

<sup>32</sup>Names and affiliations of ProPASS collaborators are provided in acknowledgements section, , ,

<sup>33</sup>National Research Centre for the Working Environment, Copenhagen, Denmark, <sup>34</sup>Department of

Social Medicine, CAPHRI Care and Public Health Research Institute, Maastricht University, Maastricht, Netherlands

**SO.3.13 : Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice: B. Motivation and behavior change**

**Purpose:** Poor sleep and insufficient physical activity are lifestyle-related behaviors which impact cardiometabolic health. This study investigated the joint associations of device-measured sleep patterns (regularity; duration) and daily step count with cardiometabolic biomarkers in adults.

**Methods:** Harmonized individual participant data of 11,903 adults (mean±SD age:54.7±9.5 years; 54.9% female) from the pooled Prospective Physical Activity, Sitting and Sleep consortium (ProPASS), comprising six cohorts with thigh-worn accelerometry data were analyzed. Sleep duration (h/day), steps (per day) and the sleep regularity index (SRI), a metric that quantifies day-to-day sleep consistency, were derived from the accelerometry data. We used generalized linear models to cross-sectionally examine joint associations of sleep patterns, regularity (SRI tertiles <75.9, low; 75.9-84.5, medium; >84.5, high) and duration (<7h, short; 7-8h, adequate; >8h, long), and daily step count (step tertiles <8475, low; 8475-11553, medium; >11553, high steps/day) with individual cardiometabolic biomarkers, including BMI, waist circumference, total cholesterol, HDL cholesterol, triglycerides, and HbA1c, and a composite cardiometabolic health score. Models were adjusted for potential confounders.

**Results/findings:** Both less regular and insufficient sleep duration, along with lower step counts were adversely associated with the composite cardiometabolic health risk score. Compared to optimal sleep patterns (SRI>84.5 or 7-8h/day) and high step groups, low sleep regularity and short sleep duration were separately associated with the least favorable composite cardiometabolic health (z-score [95%CI] 0.34 [0.3,0.38] and 0.26 [0.22,0.31], respectively) among participants with low volume of steps. The combination of low sleep regularity and low daily steps were jointly associated with unfavorable BMI (2.92 [2.61,3.24] kg/m<sup>2</sup>), waist circumference (8.58 [7.78,9.38] cm), total cholesterol (0.15 [0.07,0.23] mmol/L), and lower HDL levels (0.17 [0.14,0.2] mmol/L), regardless of sleep duration. The combination of short/long sleep and low daily step count had unfavorable associations were only for cardiometabolic markers BMI and waist circumference.

**Conclusions:** Our findings suggest that the potential deleterious associations of irregular or inadequate sleep duration with cardiometabolic health outcomes may be exaggerated by lower daily physical activity. Investigation of prospective joint association of sleep patterns and physical activity with cardiometabolic health may be warranted.

## Time-use Navigation: an interactive interface providing personalised guidance on the journey towards the Goldilocks Day.

**Dr. Dot Dumuid<sup>1</sup>**, Dr Charlotte Lund Rasmussen<sup>2</sup>, Joanne McVeigh<sup>2</sup>, Straker Leon<sup>2</sup>, Ty Stanford<sup>1</sup>

<sup>1</sup>University of South Australia, Adelaide, Australia, <sup>2</sup>Curtin University, Perth, Australia

**SO.3.13: Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Achieving the "Goldilocks Day" with "just right" physical activity (PA), sedentary behaviour, and sleep for best health can be challenging for many people. However, we can all make small adjustments to improve our time-use composition in some way. We introduce a novel interactive interface that allows individuals to plan their own personal time-use reallocation journey towards the Goldilocks Day.

**Methods:** We used cross-sectional data from the 22-year-old follow-up of the Raine pregnancy cohort (n=447, 44% male). Time-use composition (moderate-to-vigorous PA (MVPA), light PA (LPA), sedentary behaviour, and sleep) was derived from hip-worn accelerometry. Self-reported overall health was measured using the Short Form 12 Health Survey. Overall health (dependent variables) was regressed against polynomial time-use composition log ratios (independent variables), including adjustment for sex, age, work hours, smoking status, and body mass index. We identified the "Goldilocks Day" as the time-use composition associated with the top 5% of model-derived overall health scores. We created an interactive user-facing web interface with Shiny in R, which allows users to visualize their current time-use composition on a "map", plotted relative to the Goldilocks Day. Users can plan incremental adjustments (up to 30 minutes) from their current position on the map, receiving feedback on whether the selected time-use adjustment moves them closer to the Goldilocks Day.

**Results:** Time-use composition was significantly associated with overall health ( $F(9, 430) = 2.69$ ;  $p = 0.005$ ). The Goldilocks Day was (min/d): MVPA = 63, LPA = 487, sedentary behaviour = 333, sleep = 556. Starting from the sample mean time-use composition, the most direct route to the Goldilocks Day required the following changes: +32 minutes of MVPA, +153 minutes of LPA, -278 minutes of sedentary behaviour, and +93 minutes of sleep. Such large changes in behaviour may be unfeasible for many. The interactive interface provides feedback on the "goodness" of user-selected smaller, alternate time reallocations, relative to the Goldilocks Day.

**Conclusions:** Our innovative time-use navigation interface assists individuals to plan their journey toward healthier time-use behaviours. It allows users to visualize, set goals, and track progress, offering a flexible tool for promoting behaviour change toward optimal health.

## Moderate-to-vigorous and light physical activity, one or the other?

**Dr. Mengyun Luo**<sup>1</sup>, Dr Philip Clare<sup>1,2</sup>, Binh Nguyen<sup>1</sup>, Katherine Owen<sup>1</sup>, Prof Ding Ding<sup>1</sup>  
<sup>1</sup>The University of Sydney, Sydney, Australia, <sup>2</sup>University of New South Wales, Sydney, Australia

**SO.3.13: Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** The current guidelines have primarily emphasised moderate- to vigorous-intensity physical activity (MVPA), while the evidence of light-intensity physical activity (LPA) is still limited. This study aims to examine the dynamic interplay between MVPA and LPA on all-cause mortality (ACM), Specifically 1) the dose-response relationships between LPA/MVPA and ACM and 2) the relationship between LPA and ACM at three levels of MVPA.

**Methods:** This prospective cohort study was based on 70,891 participants in the UK Biobank. MVPA and LPA were collected using accelerometers and linked to national registries until 30 November 2022. Flexible parametric survival models were deployed to estimate the associations between MVPA, LPA and all-cause mortality, and calculate the marginal (counterfactual) predicted probability of deaths after 10 years of follow-up (the maximum follow-up in the sample), adjusting for a wide range of confounders. To allow for non-linear associations with MVPA and LPA, we also fit a series of models using restricted cubic splines for MVPA, LPA, and their interaction.

**Results:** During a median follow-up period of 8.0 years, 2,172 participants died. We observed non-linear, dose-response associations for LPA and mortality. If all participants spent 5 mins/day on MVPA, the average marginal probability of death in 10 years decreases from 19.6% to 4.1%, corresponding to 0 to 420 minutes of LPA per day. If all participants performed MVPA at a moderate level of 26 mins/day, the average marginal probability of death decreases from 13.3% to 4.0%, corresponding to 0 to 300 minutes of LPA per day. If all participants performed MVPA at a high level of 67 mins/day, the average marginal probability of death remained lower than 7.0% regardless of LPA and decreased gradually to 3.3% when LPA was at 300 mins/day, and then remained stably low behind this level.

**Conclusions:** Even though MVPA is more effective in lowering the risk of all-cause mortality, LPA could add additional health benefits on top of MVPA when LPA was performed at a remarkably high level. Findings from this study can be used to inform future guideline development, especially for people who are less capable of doing physical activity at higher intensity.

## Climate on the Menu: Efficacy of Climate Labels for Restaurant Menus

**Dr. Alexandria Reimold<sup>1</sup>**, Dr. Julia Wolfson<sup>2</sup>, Dr. Aviva Musicus<sup>3</sup>, Ms. Nina Carr<sup>2</sup>, Ms. Raychel Santo<sup>4</sup>, Ms. Clara Cho<sup>4</sup>, Dr. Cindy Leung<sup>3</sup>, Christina Roberto<sup>5</sup>, Dr. Jennifer Falbe<sup>1</sup>

<sup>1</sup>University of California, Davis, Davis, USA, <sup>2</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, <sup>3</sup>Harvard T.H. Chan School of Public Health, Boston, USA, <sup>4</sup>World Resources Institute, Washington, USA, <sup>5</sup>University of Pennsylvania, Philadelphia, USA

**SO.3.13: Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** Food systems emissions account for one-third of global greenhouse gas emissions (GHGE), with many high-GHGE foods posing risks for both planetary and human health. Implementing climate labels on restaurant menus has the potential to substantially lower consumers' environmental impact while also improving meal nutrition, but little is known about the efficacy of different labels. This study focuses on the novel testing of estimated environmental cost labels, which translate GHGE associated with food production into dollar figures, alongside other climate label designs.

**Methods:** We are conducting an online experiment randomizing 10,000 participants to a control label or one of five climate labels: 1) Estimated Environmental Cost; 2) High Climate Impact; 3) High Climate Impact Warning; 4) Climate Grade; or 5) Climate Grade with range of possible grades. Each participant views and orders from a menu displaying their assigned label next to applicable items. The menu is based on a real-world restaurant, and items are labeled using accurate GHGE calculated a priori. Participants then respond to questions assessing label noticeability, policy support, and perceived effectiveness. The study will be completed January 2025. Primary outcomes include dichotomous selection of a high-climate-impact item and continuous GHGE of the selected item. Secondary outcomes include continuous Nutrient Profile Index score, total energy (kcal), total saturated fat (g), and total sodium (mg) of the selected item. Additional outcomes include a dichotomous indicator for correctly recalling the assigned label, support for climate labeling policy, and perceived label effectiveness, each assessed with 5-point scales. For dichotomous outcomes, we will use Poisson regression with robust error variance to estimate probability ratios. For continuous outcomes, we will use linear regression, regressing outcomes on indicators for experimental condition. We will compare experimental labels to the control, then each experimental label to each other using pairwise comparisons.

**Results/findings:** We will present first evidence on the efficacy of estimated environmental cost labels and the comparative efficacy of climate warning and climate grade label designs.

**Conclusions:** This study provides early insights into the optimal climate label design for advancing both planetary and human health. Results are expected to inform labeling strategies to mitigate GHGE.

## Exploring the Impact of E-Bike Trials on Reducing Vehicle Kilometers Traveled (VKT)

**Dr. Anna Barrero<sup>1</sup>**, James Green<sup>1</sup>, Louise Foley<sup>1</sup>, Yvonne Ryan-Fogarty<sup>1</sup>, Catherine Woods<sup>1</sup>, Colin Fitzpatrick<sup>1</sup>, Cathal Walsh

<sup>1</sup>Health Research Institute, University of Limerick, Limerick, Ireland

**SO.3.13: Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Purpose:** E-bikes provide a sustainable and equitable transportation option while promoting an active, health-focused mode of travel. To fully understand their impact on changing travel patterns, a systematic, long-term approach is essential, relying on objective measurements of travel behavior. The Inclusive Sustainable Cycling (ISCycle) behavior change intervention aims to assess the effects of e-bike loans on reducing car usage, increasing physical activity, promoting sustainable travel habits, and influencing the likelihood of future e-bike purchases.

**Methods:** A randomized controlled trial is being conducted among working adults who commute by car and are interested in adopting an e-bike. Participants are randomly assigned to one of four groups: three intervention groups (e-bike loans for 4, 8, or 12 weeks) and a waitlist control group. The impact of the intervention on travel behavior is evaluated using self-reported questionnaires, passive GPS logging via Google Maps, and on-bike GPS tracking. The primary aim of the study is to quantify modal shifts from baseline to post-intervention, with a particular focus on the substitution of Vehicle Kilometres Travelled (VKT) with cycling.

**Results:** The analysis will estimate the marginal effects of e-bike loan duration on VKT substitution by comparing outcomes across the different groups. It will evaluate the impact of the intervention on active travel duration and active-VKT, quantifying changes in modal choice from baseline to the loan period, including reductions in car use and increases in active travel. Additionally, the study will investigate how loan duration influences the automaticity of e-bike use and the likelihood of future e-bike purchases.

**Conclusions:** The study will conclude with an evaluation of how e-bike loans influence travel behaviour and sustainability. It will provide evidence on the potential of e-bike interventions to reduce car use, promote physical activity, and encourage long-term adoption of e-bikes. The findings will inform future interventions aimed at shifting travel behavior towards more sustainable, active transport options.

## What do we know about sedentary behaviour over the lifespan? A systematic review

Dr Juliana Zabatiero<sup>1</sup>, Dr Bingyan Pang<sup>1</sup>, Dr Erin Howie<sup>2</sup>, Dr Pieter Coenen<sup>3</sup>, Dr Irinja Lounassalo<sup>4</sup>, Prof Leon Straker<sup>1</sup>, **Dr. Joanne McVeigh<sup>1</sup>**

<sup>1</sup>Curtin School of Allied Health, Curtin University, Perth, Australia, <sup>2</sup>Department of Health, Human Performance, & Recreation, University of Arkansas, Fayetteville, United States of America, <sup>3</sup>Amsterdam UMC, Amsterdam, Netherlands, <sup>4</sup>Faculty of Sports and Health Sciences, University of Jyväskylä, Jyväskylä, Finland

**SO.3.13: Health and Behavioral Interventions: Innovative Approaches to Promoting Healthy Lifestyles, Hunua 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** B. Motivation and behavior change

**Introduction:** High levels of sedentary behaviour (SB) have been associated with an increased risk of developing several non-communicable diseases and of increased mortality. However, most evidence on this behaviour comes from cross-sectional studies, or those with short follow-ups. More recently, studies have investigated trajectories of SB over time at different life stages, however these data have not been synthesised. This systematic review aimed to summarise available evidence of longitudinal trajectories of SB over the lifespan, as well as identify associated factors in the general population.

**Methods:** This systematic review was conducted according to PRISMA recommendations and included studies that were longitudinal in design with two or more time points of measurement of SB; reported data from the general population; reported more than one trajectory class; and used finite mixture modelling to identify trajectories. Five databases, Medline, CINAHL, Scopus, Web of Science and Pubmed were searched from inception to April 2024.

**Results:** Twenty-nine studies were included. Preliminary analysis shows trajectories were created across five life stages: childhood (n=10), childhood to adolescence (n=5), adolescence to young adulthood (n=9), and adulthood to middle-age (n=5). Studies reported 108 trajectories overall, with 4 trajectories reported more commonly (range 2-6). Trajectories were categorised under stable or changing SB trajectories. While the stable and changing trajectories were similarly reported at the childhood and adulthood to middle-age stages, changing trajectories were more prevalent from childhood to adolescence, and stable trajectories were more prevalent from adolescence to young adulthood. Generally, high levels and increasing trajectories of SB were associated with poorer outcomes at all life stages.

**Conclusion:** The various SB trajectories identified in the included studies show that finite mixture modelling can provide new information on the complexity of SB compared to investigating only population mean SB levels. The investigation of individual-level SB trajectories is important not only to identify critical periods of change in behaviour that could have lifelong implications but also to identify predictors and outcomes related to trajectory membership that could inform more precise targeting of interventions to specific trajectory groups.

# Fathering, Family Meals, and Child Health and Wellbeing: A Life Course Perspective

**Dr. Jerica Berge<sup>1</sup>**

<sup>1</sup>*University of Colorado, Aurora, USA*

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Prior research has shown that family meals are protective for child health and well-being. While there are previous studies examining mother's role in family meals, little is known about the role of a father. This study aimed to examine father's perspectives about three main research questions: (1) what is the purpose(s) of having family meals?; (2) what is a father's role in family meals?; and (3) what are the barriers and facilitators of family meals?

**Methods:** The current qualitative study included fathers (n=13) from racially/ethnically diverse backgrounds (i.e., Asian, Black, Mixed, White) living in Minneapolis and St. Paul, Minnesota who participated in a qualitative in-home interview. A life course health development framework was used to understand the perspectives and role(s) of fathers in family meals, while overlaying a hybrid deductive/inductive qualitative approach to code and analyze the data.

**Results:** Ten themes were found related to our three research questions. Our study findings about the purpose of family meals suggested that family meals were passed on intergenerationally and should be prioritized; family meals created a culture of trust and interpersonal connection; family meals provided an environment for fathers to teach important life lessons/skills; and family meals provided routines/rituals for keeping on top of family life. Our findings related to father's roles at family meals showed that fathers had rules at family meals (e.g., screen time, food consumption) and engaged in both controlling and non-controlling food parenting practices during the meals. Our findings related to barriers and facilitators of family meals included lack of time and picky eating as barriers and facilitators included reducing other obligations, involving the family, and being creative.

**Conclusions:** Findings from this qualitative study show that father's identify family meals as key to their family life and see their role at family meals as not only one of making sure their children are fed, but also teaching them important life lessons. Future research should examine these qualitative findings in larger, more generalizable samples. Results also suggest that it may be important to consider father involvement when designing interventions around family meals to promote child health and well-being.

## Taking technology to the playground, motivational gold or an isolating hazard?

**Dr. Sarah Stearne**<sup>1,2</sup>, Dr Amber Beynon<sup>1,2</sup>, Dr Charlotte Lund Rasmussen<sup>1,2</sup>, Dr Juliana Zabatiero<sup>1,2</sup>, Prof Louise Paatsch<sup>2,3</sup>, Prof Daniel Johnson<sup>2,4</sup>, Dr Celine Chu<sup>2,3</sup>, Prof Leon Straker<sup>1,2</sup>, Dr Amity Campbell<sup>1,2</sup>

<sup>1</sup>School of Allied Health, Curtin University, Perth, Australia, <sup>2</sup>Australian Research Council Centre of Excellence for the Digital Child, Australia, <sup>3</sup>School of Education, Deakin University, Melbourne, Australia, <sup>4</sup>School of Computer Science, Queensland University of Technology, Brisbane, Australia

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Augmented Reality (AR) digital technology is becoming more prevalent in the lives of children. Playgrounds supplemented with AR have been proposed as a novel way to motivate children to participate in physically active play. High levels of enjoyment, longer engagement time and physically active play have all been reported as potential benefits. However, AR is typically viewed on a mobile phone and the use of this digital device at the playground may create physical and social risks. This study explored if young children using a mobile phone to engage with an AR playground, experienced disconnection with their peers, motion sickness and miscoordination.

**Methods:** In a laboratory simulated playground, 17 pairs of 5-8-year-old children searched for six plastic toy (non-AR) or AR (visualised using a mobile phone with a custom AR app) animals in both unstructured free play and structured obstacle course play styles. Following each condition children completed the Inclusion of Others in Self rating to assess peer connection, answered five questions related to symptoms of simulator sickness, and were recorded on video cameras to capture number of falls, trips, bumps and loss of balance.

**Results/findings:** Children's feelings of connection with their peer was not affected by the presence of a mobile phone. Children rated connection as high across all AR and unstructured free play conditions (AR free play:  $5.1 \pm 2.2$ , AR obstacle course:  $4.7 \pm 2.2$ , and toy free play:  $5.2 \pm 2.1$ , out of 7). Symptoms of simulator sickness were low and similar across all conditions, with 89.4% and 93.5% of children describing no symptoms in the AR and non-AR conditions respectively. The presence of a mobile phone did not increase miscoordination. Number of falls was lower in AR vs non-AR conditions (5 vs 11) as was the number of trips, bump and balance loss events (total AR = 31 vs total non-AR = 42).

**Conclusions:** AR enhanced laboratory playgrounds pose no greater risk to children than non-AR playgrounds in terms of peer connection, simulator sickness or miscoordination. They may therefore be suitable for implementation in the community to motivate children to participate in physically active play and enhance peer connections.

## Long-term impact of a father-daughter physical activity and wellbeing program: a mixed-methods study with 3-8 year follow up.

**Prof Philip Morgan**<sup>1,2</sup>, Miss Jaqueline Grounds<sup>1,2</sup>, Miss Rosslyn O'Connor<sup>3</sup>, Mr Daniel Lee<sup>1,2</sup>, Dr. Lee Ashton<sup>1,2</sup>

<sup>1</sup>Centre for Active Living and Learning, College of Human and Social Futures, School of Education, University of Newcastle., Callaghan, Australia, <sup>2</sup>Active Living and Learning Research Program, Hunter Medical Research Institute (HMRI), Lot 1 Kookaburra Circuit, , New Lambton Heights, Australia, <sup>3</sup>Population Health Research Program, Hunter Medical Research Institute, , New Lambton Heights, Australia

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Dads and Daughters Exercising and Empowered (DADEE) is a program that engages fathers/father-figures to improve their daughter's physical activity levels and social-emotional wellbeing. The holistic benefits of this program have been previously reported at post-program, 9-months and 12-months post-baseline. This study aims to investigate the long-term impact of the program on the fathers, daughters and broader family unit when followed-up between 3–8-years after program completion.

**Methods:** A mixed-methods design was employed, including online survey data and one-on-one semi-structured interviews with fathers that attended the program between 2015-2020. Questions for both the survey and interviews focused on fathers' perceptions of any long-term impact of the program on themselves, their daughter, and their family. The survey also explored daughters' current participation in sport and physical activity. Descriptive analyses were conducted for quantitative data, while the qualitative dataset was analysed independently using an inductive thematic analysis.

**Results:** A total of 197 fathers (50% of those invited) completed the online survey (fathers;  $47.5 \pm 4.9$  years, daughters:  $14.4 \pm 2.4$  years), while a random selection of 24 fathers completed interviews (fathers;  $46.9 \pm 4.9$  years, daughters:  $14.2 \pm 2.9$  years). For daughters, three key themes emerged as prominent sustained impacts: D1. More sports participation and active lifestyle, D2. Enhanced social-emotional wellbeing and D3. Awareness and ability to overcome gender inequities. For fathers, four key themes emerged including: F1. Gender equity advocates, F2. Prioritising the father role, F3. Empowering daughters to stay active and F4. More active lifestyle. Two key themes emerged for the father-daughter dyad, including FD1. Increased co-physical activity and FD2. Closer relationship in the teenage years, while two themes emerged for the wider family unit: Fam1. Gender equity advocates and Fam2. Establishing new family routines.

**Conclusions:** This novel physical activity and wellbeing program targeting fathers and daughters has led to sustained long-term effects (between 3-8 years since program completion) for fathers, daughters and the family unit. The evidence-based strategies implemented in the program can inform design and delivery of more effective family-based lifestyle programs, with potential to achieve long-term, holistic benefits.

## Examining differences in parent-reported screen time from school to summer in children: An observational cohort study

**Ms. Olivia FINNEGAN<sup>1</sup>**, Dr. R. Glenn Weaver<sup>1</sup>, Dr. Sarah Burkart<sup>1</sup>, Dr. Bridget Armstrong<sup>1</sup>, Dr. Elizabeth Adams<sup>1</sup>, Dr. Christopher Pfledderer<sup>2</sup>, Dr. Alexander McLain<sup>1</sup>, Dr. Xuanxuan Zhu<sup>1</sup>, Mr. Nicholas Niako<sup>1</sup>, Ms. Hannah Parker<sup>1</sup>, Dr. Anthony Holmes<sup>1</sup>, Mr. James White III<sup>1</sup>, Mrs. Meghan Savidge<sup>1</sup>, Mr. Griffin Randolph<sup>1</sup>, Dr. Michael Beets<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, United States, <sup>2</sup>UTHealth Houston, Austin, United States

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Initial evidence indicates that children's screen time (ST) increases during the summer, potentially because summer vacation lacks the structure of the school year. However, large-scale studies have not yet tested whether this increase is consistent across a larger sample and if reduced structure is related to screen time. The purpose of this study was to (1) examine differences in parent-reported ST from school to summer and (2) assess how structure relates to parent-reported ST during the summer in a diverse cohort of children.

**Methods:** Parents completed daily time use diaries for their children ( $n=1,032$ ;  $9.7 \pm 1.8$  years old; 33% Black; 50% girls) for 14 days at two timepoints: (1) during the school year (April/May) and (2) in the summer (July) for three years (2021-2023). Time use diaries collected parent-reported ST and the child's participation in structured programming (i.e., afterschool programming, summer day camp). Mixed-effects models assessed differences in total daily ST from the school year to the summer. Additionally, mixed-effects models evaluated the odds of meeting ST recommendations ( $< 120$  min/day) during the summer compared to the school year, and on days when attending structure compared to days not attending structure in the summer. Models were adjusted for age, poverty, and parent education.

**Results/findings:** Parents completed a total of 40,950 time use diaries, with an average of 12.2 ( $\pm 3.3$ ) at each timepoint. Compared to the school year, average total ST was 42 minutes higher (95% CI: 40.0, 44.2) during the summer. The odds of meeting ST recommendations were higher (OR: 2.7; 2.6, 2.9) in the school year than during the summer. During the summer, on days when children attended structured programming, the odds of meeting ST recommendations were higher (OR: 2.0; 1.77, 2.19) compared to days when they did not attend structured programming.

**Conclusions:** Children accumulated more ST during the summer compared to the school year. However, they were more likely to meet ST recommendations when attending structured programming in the summer. Structured programming during the summer may play a protective role in limiting child ST.

# Effects of Resistance Training on Academic Outcomes in School-Aged Youth: A Systematic Review and Meta-Analysis

**Dr. Katie Robinson<sup>1,2</sup>**, Dr Nick Riley<sup>1,2</sup>, Katherine Owen<sup>3</sup>, Dr Ryan Drew<sup>1,4</sup>, Dr Myrto Mavilidi<sup>5,6</sup>, Prof Charles Hillman<sup>7</sup>, Professor Avery Faigenbaum<sup>8</sup>, Prof David Lubans<sup>1,2,9</sup>

<sup>1</sup>University of Newcastle, CALLAGHAN, Australia, <sup>2</sup>Hunter Medical Research Institute, New Lambton, Australia, <sup>3</sup>The University of Sydney, Sydney, Australia, <sup>4</sup>University of Newcastle, Newcastle, Australia, <sup>5</sup>University of Wollongong, Wollongong, Australia, <sup>6</sup>Illawarra Health and Medical Research Institute (IHMRI), Keiraville, Australia, <sup>7</sup>Department of Psychology, Northeastern University, Boston, USA, <sup>8</sup>Department of Kinesiology and Health Sciences, The College of New Jersey, Ewing, USA, <sup>9</sup>Faculty of Sport and Health Sciences, University of Jyväskylä, Jyväskylä, Finland

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The primary purpose of our systematic review and meta-analysis was to investigate the effect of resistance training on academic outcomes (i.e., cognitive function, academic achievement, and on-task behaviours) in school-aged youth, and our secondary aim was to examine muscular fitness and its relationship with cognition and academic achievement in the same population.

**Methods:** We conducted a systematic search of six electronic databases (CINAHL Complete, PsycINFO, SCOPUS, Ovid MEDLINE, SPORTDiscus and EMBASE) with no date restrictions. Studies were eligible if they: (a) included school-aged youth (5–18 years), and (b) examined the effect of resistance training on academic outcomes (i.e., cognitive function, academic achievement, and/or on-task behaviour in the classroom). Risk of bias was assessed using the appropriate Cochrane Risk of Bias Tools, funnel plots and Egger's regression asymmetry tests. A structural equation modelling approach was used to conduct the meta-analysis.

**Results:** Fifty-three studies were included in our systematic review. Participation in resistance training (ten studies with 53 effect sizes) had a small positive effect on the overall cognitive, academic and on-task behaviours in school-aged youth (standardized mean difference (SMD) 0.19, 95% confidence interval (CI) 0.05–0.32). Resistance training was more effective (SMD 0.26, 95% CI 0.10–0.42) than concurrent training, i.e., the combination of resistance training and aerobic training (SMD 0.11, 95% CI – 0.05–0.28). An additional 43 studies (including 211 effect sizes) examined the association between muscular fitness and cognition or academic achievement, also yielding a positive relationship (SMD 0.13, 95% CI 0.10–0.16).

**Conclusion:** This review provides preliminary evidence that resistance training may improve cognitive function, academic performance, and on-task behaviours in school-aged youth.

## Test–Retest Reliability and Concurrent Validity of the 30 second Sit to Stand Test in Adolescents

**Dr. Katie Robinson<sup>1,2</sup>**, Professor David Lubans<sup>1,2</sup>, Dr Myrto Mavilidi<sup>3</sup>, Professor Francisco Ortego<sup>4</sup>, Dr Nick Riley<sup>1,2</sup>

<sup>1</sup>University of Newcastle, Kotara, Australia, <sup>2</sup>Hunter Medical Research Institute, Lambton, Australia,

<sup>3</sup>University of Wollongong, Wollongong, Australia, <sup>4</sup>University of Granada, Granada, Spain

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The purpose of our study was to assess the test–retest reliability and concurrent validity of the 30 sec Sit to Stand test in a sample of adolescents. To our knowledge, there are no existing field-based measures for assessing lower body muscular endurance. Therefore, the sit to stand test has potential for use by researchers, sports trainers, coaches, and educators as the test has few coordinative requirements and reflects movements commonly performed in body weight resistance training programs.

**Methods:** We recruited 30 male (58%) and 22 female (42%) participants (mean age = 15.77 years  $\pm$  0.46). Participants completed the 30-sec Sit to Stand and standing long jump tests on two occasions separated by 1 week. The 30-sec Sit to Stand test is a measure of lower body muscular endurance. The test requires participants to complete as many squats as possible in 30 sec, each time touching the bench of height 44 cm at the end of the squat. A paired t-test between the trials was conducted to test whether the error was significantly different from zero. Intraclass correlation (ICC) was used to provide an estimate of rank order repeatability. Bivariate correlations between the difference and the mean were used to identify proportional bias. Cohen's d effect size was also calculated. The values of the change scores for each subject were used to calculate the typical error. Lastly, the agreement between test–retest trials of the Sit to Stand and Standing Long Jump was assessed using Bland Altman plots. The validity of the Sit to Stand test was assessed using multiple regression modelling.

**Results:** The rank order repeatability of the Sit to Stand test for the entire group was good (ICC = 0.84, 95% CI's [0.71 to 0.91]), systematic error was low (1.7 repetitions  $\pm$  2.9), and the typical error between tests was 2.1 repetitions (95% CI's 1.73 to 2.55). Sit to Stand results were significantly associated with lower body power ( $r = 0.55$ ,  $p < .001$ ).

**Conclusion:** Our study demonstrated that the 30-sec Sit to Stand test has moderate-to-high test–retest reliability and acceptable concurrent validity in a population of adolescents.

# The Physical Activity Intensity Spectrum Associated with Physical Fitness in Children and Adolescents: A Multivariate Pattern Analysis

博士 **Guo Liang**<sup>1</sup>, Professor Lijuan Wang, Dr. Zhenwen Xie

<sup>1</sup>Shanghai university of sport, , China

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Accelerometers record detailed data on physical activity (PA) across the entire intensity spectrum. However, PA is often aggregated into a limited set of summary measures in the field of PA epidemiology, such as sedentary behavior (SED), light (LPA), moderate (MPA), and vigorous (VPA) PA. Analyzing the full physical activity intensity spectrum preserves essential information and addresses inconsistencies in research findings stemming from variability in intensity thresholds, allowing for a more precise assessment of the relationship between PA intensity and health. This study aimed to determine the cross-sectional association between the PA intensity spectrum and physical fitness in children and adolescents.

**Methods:** A total of 1,086 children and adolescents aged 6-18 years from China participated in this study. PA was measured using the ActiGraph GT3X+ accelerometer. We created 39 PA counts interval variables covering the whole intensity spectrum (from 0-99, 100-499, 500-999... to  $\geq 18500$  counts/min). Physical fitness was evaluated according to the National Standards for Students' Physical Health (2014 revision). To deal with the multicollinearity among 39 PA variables, we used multivariate pattern analysis to determine the association between PA variables and physical fitness.

**Result:** The PA intensity spectrum accounted for 38.13% of the explained variance in physical fitness in children and adolescents. The results indicated a significant negative association between SED (0-99 counts/min) and physical fitness. No significant associations were found in LPA and the lower-intensity count intervals of MPA (100-2999 counts/min) with physical fitness. Positive associations with physical fitness gradually strengthened with increased intensities from 3000 counts/min of MPA up to 9500-9999 counts/min (the optimal intensity counts intervals) of VPA and thereafter weakened. Boys and secondary school students required higher-intensity PA to significantly improve physical fitness compared to girls and primary school students.

**Conclusion:** The findings partially support the health benefits of MVPA for children and adolescents, with particular emphasis placed on the beneficial effects of VPA, especially activities within the 9500-9999 counts/min. Physical activity guidelines should also focus on and provide recommendations for VPA for children and adolescents.

## Gender differences in the composition of movement across the 24-hour day among high school students in Guadalajara, Mexico

**Ms. Alyssa Comfort<sup>1</sup>**, Dr. Ian Janssen<sup>1</sup>, Ms. Ruth García Camarena<sup>2</sup>, Mr. Adán Vázquez Gutiérrez<sup>2</sup>, Dr. Juan Ricardo López y Taylor<sup>2</sup>, Dr. Edna Jáuregui Ulloa<sup>2</sup>, Dr. Lucie Lévesque<sup>1</sup>  
<sup>1</sup>*School of Kinesiology and Health Studies, Queen's University, Kingston, Canada*, <sup>2</sup>*Instituto de Ciencias Aplicadas a la Actividad Física y al Deporte, Universidad de Guadalajara, Guadalajara, Mexico*

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** According to nationally representative self-report data, many Mexican adolescents do not meet moderate-to-vigorous physical activity (MVPA), sleep, or sedentary time (SED) guidelines, and girls are less likely to meet MVPA guidelines than boys. However, more data is needed to understand how girls are allocating their time in the place of MVPA, and if these patterns differ throughout the week. Thus, our objective was to explore gender differences in device-based composition of movement, i.e., light-intensity physical activity (LIPA), moderate-to-vigorous physical activity (MVPA), sedentary behaviour (SED), and sleep overall, and according to time of week (weekend/weekday).

**Methods:** LIPA, MVPA, SED, and sleep were measured over 7 consecutive days using Fitbit Flex 2 devices in a sample of adolescent girls and boys attending public high schools in Guadalajara, Mexico (n=108, 60% girls). A compositional data analysis approach by gender was used with MANOVA. Bootstrap means and 95% confidence intervals for the log-ratio difference between boys and girls were generated with analyses repeated separately for weekday and weekend data, and back-transformed to the linear scale to calculate the proportion of time spent in each behaviour for boys compared to girls.

**Results:** There was a significant gender difference in the 24-hour movement composition ( $p < .0001$ ). Boys spent more time in MVPA on weekdays and weekends, with differences of 123% (95% CI: 71% to 194%) and 95% (1% to 256%), respectively. There were small but statistically significant gender differences in SED on weekdays (8% [2% to 13%] higher in girls) and sleep on weekends (11% [2% to 20%] higher in girls). There were no gender differences for LIPA on weekdays or the weekend.

**Conclusions:** Adolescent boys and girls had significantly different composition of movement. Girls engaged in less MVPA than boys throughout the week, with more sedentary time on weekdays, and more sleep on weekends. Boys and girls may need targeted support with different behaviours to achieve a healthy balance of movement behaviours.

## A cross-sectional study exploring gender-specific patterns of playground use and physical activity levels in primary schools

Dr. Emma Pollock<sup>1,2,3,4</sup>, Dr. Alix Hall<sup>1,2,3,4</sup>, Ms Samantha Stacey<sup>1,2,3,4</sup>, Ms. Belinda Peden<sup>1,2,3,4</sup>, **Dr. Alyce Barnes**, Prof. Nicole Nathan<sup>1,2,3,4</sup>

<sup>1</sup>Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>2</sup>School of Medicine and Public Health, College of Health, Medicine and Wellbeing, University of Newcastle, Callaghan, Australia, <sup>3</sup>National Centre of Implementation Science, Wallsend, Australia, <sup>4</sup>Hunter Medical Research Institute, New Lambton Heights, Australia

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Despite efforts to increase physical activity in schools through interventions like active playgrounds, significant gender disparities persist, with girls consistently less active than boys. These disparities raise long-term health concerns, as physical inactivity during childhood is associated with poorer health outcomes in adulthood. The aim of this study was to investigate primary school students' use of playground infrastructure, their physical activity levels by sex, and the prevalence of inclusive, activity-enabling playground policies in schools.

**Methods:** A cross-sectional study of primary schools in New South Wales, Australia was conducted. Physical activity levels and playground use were objectively measured during school break times using the System for Observing Play and Leisure in Youth (SOPLAY). School principals provided data on school demographics and playground policies via a survey. Descriptive statistics were calculated using SAS (version 9.3).

**Results:** Data from eight schools (n=2308 students; 63% Catholic) revealed 63% of schools were in disadvantaged areas with 88% in urban locations. Girls predominantly used play equipment, while boys favoured open grass areas, leading to large gender differences in activity levels. On basketball courts, 43% of girls were sedentary versus 27% of boys, whereas in grass areas, 32% of boys engaged in vigorous activity compared to 13% of girls. Sedentary behaviour was more prevalent among girls, particularly on playground markings (48% of girls vs. 35% of boys). Boys displayed higher vigorous activity on play equipment and concrete/asphalt areas, while girls showed greater indoor activity (22% vigorous vs. 11% for boys). No schools adopted formal activity-enabling playground policies.

**Conclusions:** Play equipment was the most popular playground area for girls, while boys favoured grass areas. Overall, girls demonstrated higher sedentary behaviour and lower levels of vigorous physical activity compared to boys. Study findings will provide foundational information to inform the design of scalable and acceptable approaches to reduce girls' physical inactivity, which is critical for promoting long-term health.

## Feasibility and preliminary efficacy of the 'Muscle Movers' program: A teacher-delivered intervention to support children's muscle-strengthening physical activity participation

**Dr. Jordan Smith<sup>1</sup>**, Dr Sarah Kennedy<sup>2</sup>, Associate Professor Narelle Eather<sup>1</sup>, Associate Professor Nicholas Riley<sup>1</sup>, Professor David Lubans<sup>1</sup>

<sup>1</sup>The University of Newcastle, Callaghan, Australia, <sup>2</sup>Western Sydney University, Penrith, Australia

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** School-based interventions can increase children's physical activity (PA) and fitness, but few have focused on muscle-strengthening activity (MSA). Of those that have, most have been delivered by external physical education (PE) specialists or research staff. Utilising classroom teachers is a more cost-effective and scalable delivery model. But generalist teachers experience numerous barriers to delivering PA programs, and many view MSA as particularly complex. Our aim was to evaluate the feasibility and preliminary efficacy of 'Muscle Movers', a teacher-delivered MSA intervention for primary school children.

**Methods:** We conducted a single-group, pre-post trial, with two classes of Stage 2 children (Grade 3-4; 9-10 years; N=30) from one primary school in New South Wales, Australia. Two teachers delivered the 'Muscle Movers' program over 6-weeks (Nov-Dec 2022), which involved curriculum-aligned PE lessons (1 x 45 mins/week), classroom energiser breaks (2 x 5 mins/week) and active homework tasks (1 x 10 mins/week). Feasibility measures (acceptability, implementation, practicality, and adaptability) were collected from teachers post-intervention using survey and interview methods. Students' muscular fitness and perceived strength were assessed immediately before and after intervention delivery. Analyses involved descriptive statistics and paired t-tests, with Cohen's d as a measure of effect size.

**Results/findings:** Teachers ( $5.0 \pm 0.0$  out of 5) and students ( $4.1 \pm 0.9$ ) reported high levels of satisfaction, and teachers found the intervention to be practical and adaptable. Implementation fidelity was strong, with teachers facilitating all six PE lessons and more than twice the number of intended energiser breaks, but only 5 of 6 homework tasks. No meaningful changes in lower body strength or perceived strength were found, but a moderate improvement in children's upper-body muscular endurance was observed (mean [95%CI] =  $2.2$  [0.7 to 3.8] repetitions;  $d = 0.61$ ). Qualitative feedback from post-test interviews with teachers provided additional context to the quantitative results, identifying areas of strength and opportunities for further refinement.

**Conclusions:** Muscle Movers was highly feasible for generalist teachers with no prior MSA-related training and our preliminary data suggest the program may benefit children's upper body muscular endurance. Our positive preliminary findings justify further evaluation of this intervention using an appropriately powered randomised controlled trial.

## **“The kids are pumped!”: Teachers and students discuss the ‘Pau te Hau’ high-intensity interval training programme.**

**Dr Denise Atkins<sup>1</sup>**, Prof Nigel Harris<sup>1</sup>, Assoc Prof Isaac Warbrick<sup>1</sup>, Prof Rachael Taylor<sup>2</sup>, Professor Alex Parker<sup>3</sup>, Mrs Jacqui Pratt<sup>1</sup>, Dr Nikki Penetito-Hemara<sup>1</sup>, Professor David Lubans<sup>4</sup>  
*<sup>1</sup>Auckland University of Technology, Auckland, New Zealand, <sup>2</sup>University of Otago, Dunedin, New Zealand, <sup>3</sup>Victoria University, Melbourne, Australia, <sup>4</sup>The University of Newcastle, Newcastle, Australia*

**SO.3.14: Physical activity, exercise, and health behaviours in school-aged youth, Hunua 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** High-intensity interval training (HIIT) in schools is increasingly present in research and practice. This study aimed to understand teacher and student perceptions of a HIIT programme implemented during a cluster-randomised controlled trial conducted in Aotearoa New Zealand schools.

**Methods:** The Pau te Hau programme involved 10–15 minute HIIT sessions delivered 2–3 times weekly to 10-year-old students (N=401) over one school ‘term’ (nine weeks). Generalist teachers (N=17) used the Pau te Hau app to deliver the programme after receiving professional development. The app utilised videos including exercises linked to pūrākau (indigenous narratives), and real-time heart rate monitoring projected on a class screen with a targeted heart rate set at 90% of maximum. Post-intervention, semi-structured individual interviews with teachers, and 16 focus group interviews with students in groups of 5-6 were conducted, recorded, and thematically analysed.

**Findings:** Teachers and students agreed that learning was central to their experiences, noting the Pau te Hau programme was about ‘building capabilities and confidence’. Most teachers noted students’ engagement, particularly through using the heart rate monitors. They commented that their students were ‘pumped’, and students recognised that they too had increased knowledge and mostly enjoyed the sessions, emphasizing the fun and challenge involved. Engagement and focus in class after exercise were also factors noted, with both teachers and students reflecting on how Pau te Hau positively impacted these aspects. Boys in particular liked the physicality of the exercises and expressed that they felt ‘fitter’. The girls shared different responses to the programme, focusing mainly on the socio-cultural benefits of doing exercise together. Having fun and doing exercise with their friends was a common sub theme. A small number of students stated they were not enthusiastic about the programme owing to it being ‘hard’ or ‘sweaty’.

**Conclusion:** The Pau te Hau intervention highlights how a brief, intensive fitness programme can enhance learning and engagement for students, and support teachers with curriculum delivery and classroom behavioural dynamics. Its alignment with the NZ Curriculum supported an integrated approach that some teachers embraced, supporting holistic learning in school settings.

## Secular trends and sociodemographic disparities in physical activity among adults in eleven African countries: WHO STEPS 2003 - 2020

**Dr. Adewale Oyejemi<sup>1</sup>**, Raphael Araujo<sup>2,3</sup>, Umar Hassan<sup>1</sup>, Edward Ofori<sup>1</sup>, Chad Stetcher<sup>1</sup>, André Werneck<sup>4</sup>

<sup>1</sup>Arizona State University, Phoenix, USA, <sup>2</sup>Londrina State University, Londrina, Brazil, <sup>3</sup>The University of Queensland, Brisbane, Australia, <sup>4</sup>Universidade de São Paulo, São Paulo, Brazil

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

### **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** Mortality from physical inactivity-related non-communicable diseases (NCDs) is projected to surpass deaths from communicable diseases by 2030 in Africa. Monitoring physical activity (PA) is important for planning public health interventions addressing NCDs and planetary health, but there is a dearth of evidence on PA trends in Africa. This study explored the secular trends in overall and domains of PA (leisure, occupation, and transport), and examined the gender, age, and education disparities in PA trends across African countries.

**Methods:** We utilized data from the STEPwise approach to NCDs risk factor surveillance in eleven African countries (Algeria, Benin, Botswana, Cabo Verde, Eritrea, Eswatini, Malawi, Mali, Central Africa Republic, Sao Tome and Principe, Zambia) with at least two surveys conducted between 2003/2010 (first-wave) and 2010/2020 (second-waves). A total of 29,282 and 40,147 adults (18-69 years) in the first and second waves, respectively, completed PA interviews using the Global Physical Activity Questionnaire. Gender, age, and education status were self-reported. Weighted individual-country PA prevalence and 95% confidence interval (95%CI) were obtained. Random-effect meta-analysis was conducted to assess pooled estimates of PA trends across countries. Gender, age, and education disparities in PA trends were also investigated.

**Results:** There were increasing trends in meeting the WHO PA guidelines (Wave 1: 76.1%; 95%CI [69.9,82.2]; Wave 2: 81.9%; 95%CI [74.5,89.3]), as well as in all PA domains. Country-specific results showed significant upward trends in total PA in eight countries. Seven countries showed significant increasing trends in some leisure-time PA (2.0%-13.9% increase) and  $\geq 150$  min/week transport PA (4.0%-24.5% increase), while five countries recorded significant increasing trends in occupational PA (6.6%-56.9% increase). Gender, age, and education disparities in meeting the WHO PA guidelines remained relatively stable over time, but disparities in leisure, transport, and occupational PA increased in most countries.

**Conclusions:** The prevalence of overall PA among African adults has marginally increased over 17 years. There are still many adults, especially women and people with lower education, not doing well in domain-specific PA. Policy and environmental interventions are needed to improve PA and to reduce gender, age, and education disparities in leisure, transport, and occupational PA in African countries.

# Equity in implementation and scale-up of real-world physical activity, sedentary behaviour, and healthy eating interventions for infants and children: a systematic review

**Ms. Elly Ganakas<sup>1</sup>**, Dr. Jiani Ma<sup>1</sup>, Dr. Penelope Love<sup>1</sup>, Prof. Jo Salmon<sup>1</sup>, Thea Baker<sup>1</sup>, Dr. Harriet Koorts<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia*

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

## **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** Disparities in infant and child physical activity (PA) and healthy eating (HE) behaviours are prevalent worldwide, particularly among those experiencing higher levels of disadvantage. Implementation science has potential to address disparities when population-level interventions are implemented equitably. However, research is scarce on how equity is addressed within implementation of infant and child PA and HE interventions. This review aimed to understand: (1) how equity informed study design, implementation framework selection, and reporting of results; and (2) how facets of equitable implementation were included in the conduct of such research.

**Methods:** Six electronic databases were searched for articles published between 2014 to 2024. Eligible articles referred to equity or equivalent, reported on one or more implementation outcomes, and on PA or HE interventions targeting infants and children  $\leq 13$  years in real-world settings. A grey literature search was also conducted. Narrative synthesis was used to report findings, following PRISMA-equity guidelines. Data extraction used Proctor et al. (2011) implementation outcomes and PROGRESS-Plus indicators for Aim 1, and Loper et al. (2021) facets of equitable implementation for Aim 2.

**Results:** Seventeen articles and one grey-literature report have been included to-date, with searches to be repeated in January 2025 to capture any additional articles. Interim findings indicate that 16 articles detailed participant or setting-level characteristics using PROGRESS-Plus indicators; 12 stratified reporting of implementation outcomes by indicators; 6 discussed possible reasons for differences in outcomes between groups. Only two articles used an implementation framework. All articles included a facet of equitable implementation practice, but not all facets were equally represented.

**Conclusion:** Based on interim findings, implementation researchers are encouraged to: (1) increase reporting of implementation outcomes by PROGRESS-plus indicators and discuss implications of findings, (2) utilize equity-informed implementation theories, models and frameworks to guide study design and analysis, and (3) increase reporting around facets of equitable implementation practice. Such measures will help build the evidence base for equitable implementation practice to inform guidance on how to address disparities in PA and HE interventions for infants and children.

## Navigating the use of two independent and simultaneous advisory panels in the co-design of PLAYTE: A participatory approach to creating a sport fueling app for high school athletes.

**Miss Alysha Deslippe<sup>1,2</sup>**, Dr. Eimear Morrissey<sup>3</sup>, Dr. Molly Byrne<sup>3</sup>, Dr. Oonagh Meade<sup>3</sup>, Dr. Tamara Cohen<sup>1,2</sup>

<sup>1</sup>Land and Food Systems, University of British Columbia, Vancouver, Canada, <sup>2</sup>Healthy Starts, BC Children's Hospital Research Institute, Vancouver, Canada, <sup>3</sup>School of Psychology, University of Galway, Galway, Ireland

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** K. Participatory Research in Health Promotion

**Purpose:** To address the lack of sport-specific dietary resources in Canadian high schools, we used participatory research to co-create a new dietary intervention called PLAYTE with athletes and coaches. Due to power dynamics between these groups, the literature on co-design involving youth and adults is limited. To mitigate this and ensure the voices of athletes and coaches were heard, we formed two independent advisory panels. Since food choices significantly impact high school athletes' health and performance, co-creating PLAYTE with athletes and coaches increases the likelihood that an effective and sustainable intervention can be developed.

**Methods:** Guided by the Generative Co-Design Framework for Healthcare Innovation, we met bi-monthly with two advisory panels (n=8 athletes, n=7 coaches) at a local school over the past year. Panelists were recruited from a high school in Vancouver, Canada, and represented diverse sports, genders, ages, sexes and ethnicities. The panels met independently and guided decisions through a simultaneous consensus process that was facilitated by the same facilitator (Deslippe). All panelists were provided with refreshments at meetings and received an honorarium for their time.

**Results:** Meetings lasted 1.5 hours on average. Strategies for simultaneous and independent co-design included: 1. Alternating which panel met first; 2. Recapping what was determined in each panel at the start of a meeting; 3. Outlining which panel had the final say on a task in advance; and 4. Developing age-appropriate activities. By using these strategies, the panels designed features of PLAYTE based on established behaviour change techniques (i.e., shaping knowledge - sport nutrition videos; self-monitoring - tracking foods using plate-based eating; social support - recipe library and meal planning tool). Panelists also named the intervention, created a logo, decided on its delivery route (i.e., an app) and secondary outcome of interest (i.e., eating before a practice or a game).

**Conclusions:** Two independent advisory panels can be effectively used to co-create a dietary intervention targeting high school athletes. Future participatory research seeking to include youth and adults should explore using two panels to keep diverse end-users involved while minimizing power dynamics.

## Barriers and facilitators regarding health information in a lifestyle front office for hospital patients with limited health literacy: a qualitative study

Charlotte Schumacher<sup>1</sup>, Marlinde van Dijk<sup>2,3,4</sup>, Anouk Driessen<sup>2,3</sup>, Leonie te Loo<sup>2,3,7</sup>, Prof. dr. Rien Dekker<sup>5</sup>, Prof. dr. Johannes Zwerver<sup>6</sup>, Dr. Judith Jelsma<sup>2,3,4</sup>, Dr. Inge van den Akker-Scheek<sup>1</sup>, **Dr. Joyce Vrijsen<sup>1</sup>**

<sup>1</sup>University of Groningen, University Medical Center Groningen, Department of Orthopedics, Groningen, The Netherlands, <sup>2</sup>Amsterdam UMC, location Vrije Universiteit Amsterdam, Department of Public and Occupational Health, Amsterdam, The Netherlands, <sup>3</sup>Amsterdam Public Health research institute, Health Behaviors & Chronic, Amsterdam, The Netherlands, <sup>4</sup>Amsterdam Public Health research Institute, Quality of Care, Amsterdam, The Netherlands, <sup>5</sup>University of Groningen, University Medical Center Groningen, Department of Rehabilitation Medicine, Groningen, The Netherlands, <sup>6</sup>Gelderse Vallei Hospital, Sports Medicine, Sports Valley, Ede, The Netherlands, <sup>7</sup>Inholland University of Applied Sciences, Faculty of Health, Sports and Social Work, Haarlem, The Netherlands

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Approximately 35% of Dutch people have limited health literacy, and lifestyle-related diseases are more common in this group. Lifestyle front offices (LFOs) hold promise in guiding these individuals toward healthier lifestyles by referring to fitting community-based lifestyle initiatives (CBLI). However, the information currently provided may not be sufficiently accessible for this group. Therefore, this study aimed to identify barriers and facilitators to health information used in LFOs for hospital patients with limited health literacy. By adapting health information to better suit hospital patients with limited health literacy, LFOs can more effectively support this group in achieving a healthier lifestyle.

**Methods:** In this qualitative study, semi-structured interviews were conducted with patients with limited health literacy (Set of Brief Screening Questionnaire score < 4) from different departments (e.g., Orthopedics, Internal Medicine, Cardiology and Nephrology) of three Dutch hospitals. All patients went to an LFO, and interviews were held approximately 12 months after their first visit to an LFO. Interviews were audio recorded and transcribed. An inductive thematic analysis was conducted by three researchers independently to identify the barriers and facilitators regarding the health information received in an LFO.

**Results:** Eleven hospital patients with limited health literacy were interviewed (mean(SD) age=57.9(13.7)). Barriers and facilitators to health information used in an LFO were categorized into three themes: 1) healthcare-related factors (e.g., referral to LFO, communication in LFO, referral to CBLI, knowledge general practitioner), 2) patient-related factors (e.g., shame limited health literacy, financial aspect, help from others, use of online communication platform) and 3) information materials (e.g., form, lay-out, language use, content, timing, location).

**Conclusions:** This study shows that various adjustments are needed to improve the accessibility of the LFO for hospital patients with limited health literacy. To achieve this, communication and health information materials in hospital care should be adapted, taking into account the needs and preferences of the patient. It is essential to involve patients in the design process through co-creation, ensuring that the communication and health information materials meet their specific needs and preferences effectively.

## The need for systemic school actions to support Flemish food insecure children and families: perspectives of food insecure families and school stakeholders

**Miss Anne-Sophie Van Dijck**<sup>1</sup>, Ms Dienneke Van de Sompel<sup>1</sup>, Ms Coosje Dijkstra<sup>2</sup>, Ms Wendy Van Lippevelde<sup>1</sup>

<sup>1</sup>Ghent University, Ghent, Belgium, <sup>2</sup>University of Amsterdam, Amsterdam, The Netherlands

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

### **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** Food insecurity among children and families is a rising problem in Belgium. To tackle food insecurity, a systemic approach with actions at the different levels of the (school) system is imperative. This study investigates the extent to which a systemic approach is already being taken within the Flemish school system to support children and families with food insecurity. Specifically, it identifies the current actions and the system level they impact, their facilitating and hindering factors for use and implementation, as well as exploring needed actions according to relevant school stakeholders.

**Methods:** Semi-structured interviews and focus groups with children aged 6-12 years (n=6) and parents (n=12) with a lower socio-economic position (SEP); representatives of elementary schools (n=6); non-profit organizations and local actors driving new school-based initiatives (n=13). Interview transcripts were analyzed based on deductive coding using the four levels of the Action Scales Model: events, structures, goals and beliefs.

**Preliminary results:** The actions currently being organized at school are mainly at the event level of the system (e.g. provision of foods for hungry children) and mostly lacking at the higher levels. Parents with a low SEP mentioned the following aspects as key for a school food offer for their children: healthiness, variation, affordable and targeting all children (i.e. stigma-avoiding actions). They also highlighted that school food provision would reduce planning stress for home-brought meals and guarantee the consumption of at least one complete, nutrient rich meal per day for their child. Most stakeholders believed that schools should be supported to take their role in the provision of healthy foods for all as this is a basic human right.

**Conclusion:** The results provide an overview of the existing systemic school actions in Flanders. However, of greater importance is the insight that the majority of actions are mainly at the lowest level of the system. These actions are easy to implement, but consequently have a limited impact on system change. Greater efforts should be directed towards a package of actions that are focused on the structures, goals and beliefs of the school food system to impact supporting food insecure children and families.

## Evaluating the feasibility of a produce prescription plus education and self-monitoring support program among adults with elevated blood pressure from a low-income urban community in the United States.

**Dr. Alexandra MacMillan Uribe<sup>1</sup>**, Mohit Gupta, Erika Largacha, Lucy Xin, Victoria Trevino, Andrew McNeely, Jacob Szeszulski, Chad Rethorst, Rebecca Seguin-Fowler

<sup>1</sup>Texas A&M AgriLife Research, Dallas, United States

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

### **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** Uncontrolled blood pressure (BP) is a disparity in low-income urban communities in the United States (US), increasing cardiovascular disease risk. Produce prescription is a promising solution, but evidence for lowering BP is mixed, and programs often lack other effective lifestyle interventions, like BP education and monitoring support. This study evaluates the feasibility of Produce Prescription for Healthy Blood Pressure (PRx-BP), a produce prescription plus education and self-monitoring support program for hypertensive and low-income adults.

**Methods:** We conducted a 24-week randomized controlled pilot of PRx-BP for adults with high BP ( $>130/80$  mmHg) and low income ( $< \text{USD}\$46,500$  annual household income). Intervention group received 24 weekly produce bags, six BP nutrition and management sessions, and daily BP monitoring support via text. Feasibility outcomes included retention, fidelity (% of bags picked up by participants, % of participants who attended education sessions, average BP readings reported per week), effectiveness (changes in BP, food insecurity, and fruit and vegetable consumption in control versus intervention group), and satisfaction (qualitative exit interviews). Descriptive statistics and regression models were applied for quantitative analysis, and content analysis was used for qualitative data.

**Results:** We enrolled 104 participants (52 per group;  $57.4 \pm 12.0$  years old; 77% women; 83% Hispanic) and retained 58% ( $n=30$ ) in control and 69% ( $n=36$ ) in intervention group. In intervention group, on average, 70% of bags were picked up; 19% ( $n=7$ ) of participants attended education sessions, and participants reported 1 BP reading per week. In control versus intervention group, respectively, systolic/diastolic BP increased  $9.6/5.0 \pm 18.9/12.4$  versus  $9.8/4.4 \pm 18.7/12.3$  mmHg; food security decreased  $0.8 \pm 2.4$  versus  $1.0 \pm 2.2$ ; fruit intake increased  $1.5 \pm 3.4$  versus  $1.4 \pm 3.4$  servings; vegetable intake increased  $0.8 \pm 2.3$  versus  $0.2 \pm 3.2$  servings (no statistically significant differences). From exit interviews, participants appreciated BP monitoring support and that the PRx-BP produce they received helped offset food-related costs.

**Conclusions:** While most PRx-BP feasibility outcomes were encouraging, effectiveness and education session attendance (fidelity) were low. Participants may have replaced their typical produce purchases with produce received through PRx-BP, leading to null findings for BP and produce consumption outcomes. Providing more produce than participants typically purchase and incorporating strategies to increase education attendance may improve effectiveness.

## Exploring internally regulated eating styles in low-income adults: Results of a scoping review

**Mr. Thomas Sire**<sup>1,2</sup>, Prof. Noémie Carboneau<sup>1,2,3</sup>, Dr. Audrée-Anne Dumas<sup>2</sup>, Ms. Alex Désilets<sup>1,4,5</sup>, Prof. Laurence Godin<sup>1,5,6</sup>, Prof. Véronique Provencher<sup>1,4,5</sup>, Prof. Élise Carboneau<sup>1,4,5</sup>

<sup>1</sup>Institute of Nutrition and Functional Foods (INAF), Québec, Canada, <sup>2</sup>Department of Psychology, Université de Québec à Trois-Rivières, Trois-Rivières, Canada, <sup>3</sup>Canada Research Chair in the Psychosocial Determinants of Eating Behaviours, Trois-Rivières, Canada, <sup>4</sup>School of nutrition, Université Laval, Québec, Canada, <sup>5</sup>Centre Nutrition, Santé et Société (NUTRISS), INAF, Université Laval, Québec, Canada, <sup>6</sup>Department of sociology, Université Laval, Québec, Canada

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

### **SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Internally regulated eating styles (IRES) are defined as eating behaviors driven by internal bodily sensations of hunger and satiety, including intuitive and mindful eating. The IRES literature has expanded over the recent decades. However, a systematic and comprehensive overview of the existing qualitative and quantitative research on these eating styles in the context of economic precariousness is lacking. This scoping review aims to address this gap by exploring the current knowledge on IRES and their associations with dietary, psychological, and health outcomes in low-income adult populations.

**Methods:** An exhaustive literature search was conducted in five databases (i.e., Medline, APA PsycInfo, CINAHL, Sociological Abstract, Scopus and the Cochrane Library) following Arksey and O'Malley's methodological framework for scoping reviews: (1) identifying the research questions; (2) identifying relevant studies; (3) selecting eligible studies; (4) charting the data; (5) collating, summarizing, and reporting the results; and (6) consulting with knowledge users. The inclusion criteria were as follows: 1) articles from peer-reviewed sources and gray literature; 2) written in English or French; 3) articles addressing questions related to IRES; 4) including low-income participants aged 18 years or older.

**Results/findings:** A total of 48 articles were included, 35 using a quantitative design, 8 using a qualitative design, and 5 with a mixed design. Overall, low-income adults reported lower adherence to IRES compared to high-income adults. Factors promoting IRES in low-income adult populations included proactive meal planning, family support, and meal preparation routines. Conversely, financial constraints, family responsibilities, and concerns about weight or body image were identified as barriers to IRES adherence in these populations. Adherence to IRES was generally associated with better physical and mental health indicators as well as better diet quality. Based on intervention studies included in the review, promising strategies grounded in IRES to encourage healthy eating and a positive relationship with food among low-income adult populations include mindful eating interventions, community-based support programs, and personalized nutrition education.

**Conclusions:** This scoping review provides a comprehensive overview of IRES in the context of economic precariousness. These findings highlight the importance of designing interventions tailored to the unique challenges experienced by low-income adult populations.

## Cultural identity and its impact on physical activity and sedentary behaviors in Black and Hispanic adolescent girls

**Dr. Rebecca Kehm<sup>1</sup>**, Dr. Parisa Tehranifar<sup>1</sup>, Dr. Rachel Miller<sup>2</sup>, Dr. Frederica Perera<sup>3</sup>, Dr. Julie Herbstman<sup>3</sup>, Dr. Mary Beth Terry<sup>1</sup>

<sup>1</sup>Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, USA,

<sup>2</sup>Division of Clinical Immunology, Department of Medicine, Icahn School of Medicine at Mount Sinai, New York, United States, <sup>3</sup>Department of Environmental Health Sciences, Mailman School of Public Health, Columbia University, New York, United States

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

### **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** Physical activity declines sharply in adolescent girls, especially among girls of color. Few studies have examined how cultural identity contribute to these differences. We investigated whether having a sense of cultural belonging is associated with physical activity and sedentary behaviors in a cohort of Black and Hispanic girls, aged 11–20, in New York City.

**Methods:** We analyzed questionnaire data from 209 participants. Cultural belonging was measured using an 8-item Multigroup Ethnic Identity Measure, with statements like, “I have a strong sense of belonging to my own ethnic group.” Responses (0=strongly disagree to 4=strongly agree) were summed to create a belonging scale (Cronbach’s alpha=0.94; range 0–32). Girls reported participation in organized (e.g., sports teams) and unorganized (e.g., playing outside) physical activities over the past week, and sedentary activities (e.g., TV, video games, napping) over the past day. Outcomes were dichotomized as any/none, with sedentary activity also categorized as <60/≥60 minutes. We used Poisson regression with robust standard errors to estimate relative risks (RRs), adjusting physical activity models for age and maternal education, and sedentary models additionally for day of the week.

**Results:** The average belonging score was 24.4 (standard deviation (SD)=8.7), with no significant differences by race/ethnicity or maternal birthplace (54% foreign-born). Only 31% participated in organized physical activity, and 33% in unorganized activity, over the past week. Among sedentary behaviors, 81% watched TV and 65% took a nap (22% napped for over an hour). A 1-SD increase in cultural belonging was associated with a 31% higher likelihood of participating in organized physical activity (RR=1.31, 95% CI=1.01-1.70), especially for girls with a foreign-born mother (RR=1.54, 95% CI=1.08-2.20). Belonging was not associated with participation in unorganized physical activity. Cultural belonging was associated with lower likelihoods of watching TV (RR=0.93, 95% CI=0.88-0.98) and napping for over an hour (RR=0.71, 95% CI=0.58-0.87); no association with other sedentary behaviors.

**Conclusions:** These findings are consistent with previous research showing that young people with a sense of connectedness are more likely to engage in group activities. Fostering cultural belonging could be essential for increasing physical activity and promoting healthier lifestyles among Black and Hispanic adolescent girls.

## How alcohol consumption and perceived stress levels modify the association of fruit and vegetable intake with physical activity in an underserved Hispanic community

**DrPH Belinda Reininger<sup>1</sup>**, Ph.D. MinJae Lee<sup>2</sup>, MPH Sein Lee<sup>1</sup>, MPH Lisa Mitchell-Bennett<sup>1</sup>, Mrs. Maria Zolezzi<sup>1</sup>, Joseph Conroy<sup>1</sup>, Vanesa Saldana<sup>1</sup>, MPH Juliana Lopez<sup>1</sup>, Craig Field<sup>3</sup>, PhD Natalia Heredia<sup>1</sup>

<sup>1</sup>UTHealth Houston School of Public Health Brownsville TX, Brownsville, United States, <sup>2</sup>UT Southwestern Medical Center, Dallas, United States, <sup>3</sup>The University of Texas at El Paso, El Paso, United States

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

### **SIG - Primary Choice:** I. Socio-economic inequalities

**Purpose:** Given co-action of preventive behaviors is still not well understood, we examined baseline measures of health from a randomized controlled trial (RCT) enrolling Hispanic participants in a resource-poor community on the Texas-Mexico border. We evaluated the relationship between moderate-to-vigorous physical activity (MVPA), fruit and vegetable (FV) intake, alcohol use, and perceived stress to better understand potential co-action and capitalize on opportunities to enhance preventive health behaviors.

**Methods:** The RCT evaluates new alcohol use and stress intervention components added to the Tu Salud, Si Cuenta! physical activity and nutrition community-wide campaign. Of 475 participants enrolled in the two-arm trial, 461 Hispanic participants were included in this analysis. Baseline data included FV intake, alcohol use, perceived stress, and MVPA. Univariable and multivariable count negative binomial regressions evaluated the association of meeting FV guidelines (yes vs. no) with MVPA MET minutes/week, while testing potential effect modifications by alcohol use (excessive vs. moderate or less) or stress (high vs. low). We evaluated potential confounders (e.g., age, gender).

**Results/findings:** Participants were female (86%) with a mean age of 52.5 years ((SD)=16.21). Participants who met FV guidelines had significantly higher MET minutes compared to those who did not (median [Interquartile range] =900 [0, 1912.5] vs. 0 [0, 900]). Adjusting for age and gender, we found that meeting FV guidelines with MVPA MET minutes was modified by alcohol use and stress level. Among those who reported excessive alcohol use, meeting FV guidelines was strongly associated with higher MVPA MET minutes compared to those who reported moderate or lower alcohol use (adjusted rate ratio (aRR) = 4.63; p=0.03 vs. 2.57; p=0.047). Compared to participants with low stress, among those who had high stress, meeting FV guidelines was strongly associated with higher MVPA MET minutes (aRR = 5.01; p=0.008 vs. 1.88; p=0.23).

**Conclusion:** The results suggest that at baseline, participants with high alcohol use and stress who report meeting FV also obtain more minutes of MVPA. Future interventions could leverage the findings as brief motivational interviews with participants about co-action of behavior change and sustainment of positive behaviors.

## Prospective associations between daily steps and fat mass in men and women from the UK Biobank across demographic, lifestyle, and genetic risk factors

Dr. Miguel-Adriano Sanchez-lastra<sup>1</sup>, Dr. Jakob Tarp<sup>1</sup>, Nair Varela-Rouco<sup>2</sup>, Professor Ulf Ekelund<sup>1</sup>, **Dr. Jeroen Lakerveld**

<sup>1</sup>Norwegian School of Sport Sciences, Oslo, Norway, <sup>2</sup>University of Vigo, Vigo, Spain

**SO.3.15: Socio-economic inequalities, Waitakere 1, June 14, 2025, 10:00 AM - 11:15 AM**

### **SIG - Primary Choice: I. Socio-economic inequalities**

**Purpose:** To analyze the prospective associations between device-measured daily step counts and total fat mass, stratified by age, deprivation, diet quality, and genetic predisposition to obesity, in a cohort of adults from the UK.

**Methods:** We analyzed data from 4,960 women (mean age, SD: 60.6, 7.5) and 4,019 men (mean age, SD: 62.0, 7.8) from the UK Biobank, followed for a median (SD) of 4.6 (1.4) years. We included participants without major comorbidities, mobility limitations, or missing data on exposures, covariates, or outcomes. Daily step counts were measured with wrist accelerometers (during years 2013-2015) and total fat mass was assessed using DXA. Multivariate models were adjusted for demographic, lifestyle, and baseline body composition variables. The analysis was stratified by age, deprivation, diet quality, and body mass index (BMI) polygenic risk score (PRS) groups, and interactions across these were also tested.

**Results:** Each additional 1000 daily steps were associated with reductions in total fat mass kilograms across all subgroups for men and women. The most pronounced reductions by age strata were found in women aged 60–70 years ( $\beta = -0.71$ ; 95% CI: -0.81, -0.60) and men aged 60–70 years ( $\beta = -0.50$ ; 95% CI: -0.61, -0.38). By deprivation, the largest reductions were observed in medium-deprived women ( $\beta = -0.72$ ; 95% CI: -0.85, -0.59) and most deprived men ( $\beta = -0.46$ ; 95% CI: -0.60, -0.33). By diet quality, reductions were strongest in women with the highest quality ( $\beta = -0.70$ ; 95% CI: -0.80, -0.59) and men with the lowest quality ( $\beta = -0.44$ ; 95% CI: -0.60, -0.29). By BMI PRS strata, the greatest reductions were found in women with the highest genetic risk ( $\beta = -0.67$ ; 95% CI: -0.81, -0.53) and in men with medium genetic risk ( $\beta = -0.48$ ; 95% CI: -0.62, -0.35). Significant interactions were only found for BMI PRS strata in women.

**Conclusions:** Higher daily step counts were associated with reductions in total fat mass across age, deprivation, diet quality, and BMI PRS subgroups. These findings emphasize the potential of increasing daily steps as an accessible strategy for improving body composition, regardless of demographic, lifestyle, or genetic risk factors.

## **I'm so much more than just my body” a qualitative study examining eating behaviors, nutrition interests, and influences on Black/African American teenage girls' eating behaviors and body image to inform a culturally appropriate nutrition intervention**

**Dr. Nkechi Okpara**<sup>1</sup>, Halide Aydin<sup>2</sup>, Alexis Bell<sup>2</sup>, Dr. Gabrielle Turner-McGrievy.<sup>2</sup>, Dr. Mary Jones<sup>2</sup>, Dr. Bridget Armstrong<sup>2</sup>, Dr. Lucy Annang Ingram<sup>3</sup>

<sup>1</sup>Warren Alpert Medical School of Brown University, Providence, United States, <sup>2</sup>University of South Carolina , Columbia, United States, <sup>3</sup>University of Georgia , Athens, USA

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Background:** Early interventions specifically targeting body image and disordered eating behaviors (stress, emotional, restrictive) among Black/African American (AA) teenage girls are needed. To ensure effective interventions, it is imperative to develop appropriate and relevant nutrition educational material with direct input from this population.

**Purpose:** This study aims to (1) understand nutrition and eating issues faced by Black/AA teenage girls, (2) understand Black/AA teenage girls' perspectives on external influences on their body image and eating behaviors, and (3) gather information to direct the design of a culturally appropriate nutrition intervention for this demographic.

**Design:** This qualitative research involved semi-structured focus groups and utilized an inductive thematic analysis approach.

**Participants/setting:** Seven virtual focus groups were conducted with 27 Black/African American teenage girls (ages 14 to 18 years, M = 15.9 ± 1.2 years) from a national sample in the U.S. between August 2022 and November 2022.

**Analyses:** Transcripts were coded using the NVivo 12 software.

**Results/Findings:** Six themes were identified from the data. (1) “Varying Eating Patterns and Nutrition Concerns Among Black/African American Teenage Girls.” (2) “Black/African American Teenage Girls’ Interest in the Science of Nutrition and its Connection to Culture, Body Image, and Mental Health.” (3) “The Intersection of Race and Gender Informs How Participants Discuss Body Image.” (4) “The Complex Impact of Social Media, Peers, and Family Dynamics on Body Image Among Black/African American Teenage Girls,” (5) “The Influence of Social Judgment on Eating Behaviors Among Black/African American Teenage Girls and (6) “Effective Strategies for Engaging Black/African American Teenage Girls in Nutrition Programs.”

**Conclusion:** Participants noted intergenerational disparities in body preferences, as well as the influences of familial, peer, and cultural factors on eating behaviors and body image. Considering the intersectionality of race and sex, programs should address these multi-level factors, emphasizing the contrast between Eurocentric and ethnic beauty standards in both media and family norms.

## Empowering young adults to lead household sodium reduction: family-wide changes in dietary knowledge, attitudes, and behaviors following a novel online intervention in Singapore

**Dr. Shahmir H. Ali<sup>1</sup>**, Ms. Kimberly Mei Yi Low<sup>1</sup>, Ms. Cindy Mei Jun Chan<sup>1</sup>, Prof Mary Foong-Fong Chong<sup>1</sup>, Prof Ian Yi Han Ang<sup>1</sup>

<sup>1</sup>National University of Singapore, Singapore, Singapore

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** In combating the growing diet-related chronic disease burden faced in Asia, family members have enormous potential to expand the impact and feasibility of interventions. The Supporting Household Health through Family-led Promotion (SHAYP) intervention empowered Singaporean young adults (YAs), often easier or more practical to engage than older adults, to lead household sodium reduction efforts and improve knowledge, attitudes, and behaviors (KAB).

**Methods:** The 6-week intervention targeted sodium-related KAB in YAs and their family members (FMs). YAs, recruited online, invited 1–3 FMs to participate. Pre-intervention surveys assessed sodium-related knowledge, behaviors, and Theory of Planned Behavior constructs; all aggregated scores were scaled from 1 (lowest) to 10 (highest). Over two weeks, YAs completed a self-paced online (video- and WhatsApp-based) course on sodium reduction and family engagement strategies (developed through formative research and co-creation workshops with Singaporean YAs), culminating in personal and family action plans, which were implemented over the following month. Post-intervention surveys evaluated KAB and family dynamics, with linear mixed models used to assess changes, adjusted for socio-demographic and health variables.

**Results:** The study included 114 participants: 36 YAs (mean age 24.5 years, 55.56% female) and 78 FMs (55.1% parents, 31.9% siblings). Average pre-intervention sodium-related knowledge (YA: 4.95; FM: 4.82) and behaviors (YA: 4.80; FM: 5.23) were low, despite moderately positive attitudes (YA: 5.75; FM: 6.23). YAs spent a median of 3.34 hours to complete the course, focusing personal goals on eating out (72%), while family goals spanned eating out (46.15%), cooking (29%), and grocery shopping (25%). YAs reported greater perceived success for personal goals (6.56/10) than for family goals (4.90/10), adjusted post-intervention improvements were observed in sodium-related knowledge (YA: +1.13,  $p=0.002$ ; FM: +0.69,  $p=0.002$ ) and behaviors (YA: +1.57,  $p<0.001$ ; FM: +0.89,  $p<0.001$ ). Perceived behavioral control and subjective norms improved significantly ( $p<0.001$ ), while attitudes improved only among YAs (+1.04,  $p=0.006$ ).

**Conclusion:** The SHAYP intervention represents an innovative, family-led approach to dietary change, demonstrating feasibility and potential impact. By integrating sustainable behavior change into family dynamics, SHAYP offers a practical and scalable model for addressing NCD risk factors and informing broader public health interventions.

# Personalised Nutrition through Machine Learning: Predicting Dietary Diversity at Eating Occasions in Young Adults

**Ms. Nancy Tran**<sup>1</sup>, Dr Yuxin Zhang<sup>1</sup>, Dr Rebecca Leech<sup>1</sup>, Prof Sarah McNaughton<sup>2</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), Deakin University, Melbourne, Australia,* <sup>2</sup>*Health and Well-Being Centre for Research Innovation, School of Human Movement and Nutrition Sciences, University of Queensland, St Lucia, Australia*

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Dietary diversity, the consumption of a variety of foods, is a key component of diet quality. However, young adults often struggle to achieve adequate dietary diversity, potentially due to social and environmental factors shaping food choices. This study applied machine learning (ML) to predict dietary diversity at eating occasions (EOs) among young adults, aiming to inform personalised, context-driven dietary recommendations aligned with national guidelines.

**Methods:** This secondary analysis used data from the Measuring Eating in Everyday Life Study (MEALS), a cross-sectional study of 675 young adults (ages 18–30) who recorded dietary intake via the FoodNow app over 3–4 non-consecutive days. Dietary diversity at each EO was measured using the Shannon diversity index, which assesses variety and distribution across five nutritious food groups. K-means clustering was used to classify EOs as higher or lower in dietary diversity for ML analysis. Contextual predictors included person-level factors (e.g., demographics, physical activity, socio-environmental context) and EO-level factors (e.g., location, presence of others, food preparation). Three ML models (gradient boost decision tree (GBM), random forest (RF), and support vector machine (SVM)) were trained and evaluated using accuracy, sensitivity, specificity, positive predictive value, and area under the ROC curve. Cross-validation ensured robust performance, and predictor influence was assessed with Local Interpretable Model-agnostic Explanations.

**Results:** A total of 8,927 EOs were analysed, with a mean diversity score of 0.60 (95% CI: 0.59, 0.61). Among these, 2,500 EOs scored 0, indicating no diversity (score range: 0–1.57). Preliminary results showed that RF achieved highest performance, with an accuracy of 83.4% (95% CI: 82.6%, 84.2%) and balanced accuracy of 80.2%. RF's sensitivity (65.9%) and specificity (94.5%) confirm its robustness in identifying both higher and lower diverse EOs, while SVM and GBM showed lower accuracies and sensitivities (SVM: 64.7%, 18.5%; GBM: 62.9%, 13.4%).

**Conclusions:** Preliminary findings indicate the potential of ML to predict dietary diversity at EO, highlighting the influence of contextual factors on food choices among young adults. This approach provides a foundation for AI-driven, context-aware dietary interventions to support dietary variety, which is an essential component of diet quality.

## Pilot and feasibility study: Associations between nutritional intake, and inflammation in Australian adolescents collected via dried blood spots

**Miss Bridie Osman<sup>1</sup>**

<sup>1</sup>The University of Sydney, Waverley, Australia

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Inflammation is a precursor to chronic disease and literature in adults suggest poor nutritional intake correlates with inflammatory markers (i.e. hs-CRP). Due to a lack of research, less is known whether adolescents are experiencing the same biological implications, partly due to the complexities of collecting bio samples in young people. This study aimed to assess the feasibility and examine associations between total diet quality, percentage energy from core and non-core food groups, and hsCRP collected via dried blood spot (DBS), in a sample of Australian 15–16-year-olds.

**Methods:** This pilot study (N=20) recruited adolescents (mAge=14.4years) from the larger Health4Life RCT. Participants completed the Australian Eating Survey assessing diet quality and intakes from core (i.e., fruits, vegetables, wholegrains) and non-core (i.e., ultra-processed foods, sugar-sweetened beverages) food groups. Research staff conducted bioimpedance measurements and hsCRP collection via DBS. Linear regression models and correlations examined associations between dietary intake and hsCRP.

**Results/findings:** HsCRP collection via DBS in a school setting is feasible, cost-effective and nonburdensome, however consideration should be given to time required to obtain relevant approvals and minor difficulties retrieving DBS. Directionality of associations between dietary intake variables and hsCRP mostly aligned with adult literature. The strongest correlation was between higher consumption of non-core foods and higher hsCRP ( $r=0.44$ ).

**Conclusions:** This study contributes to the promising emerging research suggesting adolescents are likely not immune to the biological impacts of poor dietary intake. However, larger-scale research and more DBS resources are needed. Future research should consider incorporating cost effective/less intrusive ways to retrieve biomarkers (i.e. DBS) from adolescents in preventative health, and researchers/clinicians should disseminate feasibility learnings to help future trials succeed.

## Effectiveness of school-based obesity prevention interventions on psychosocial and educative outcomes of children aged 6-18 years: A secondary data analysis of a systematic review

**Miss Katrina Mcdiarmid<sup>1,2,3</sup>**, Dr Kate O'Brien<sup>1,2,3</sup>, Dr Tara Clinton-McHarg<sup>1,3,4</sup>, Dr Kate Bartlem<sup>1,2,3</sup>, Mrs Ashley Blowes<sup>1,2,3</sup>, Professor Luke Wolfenden<sup>1,2,3</sup>, Dr Rebecca Hodder<sup>1,2,3</sup>  
<sup>1</sup>University Of Newcastle, Callaghan, Australia, <sup>2</sup>Hunter New England Population Health, Wallsend, Australia, <sup>3</sup>National Centre of Implementation Science, Wallsend, Australia, <sup>4</sup>University of Melbourne, Parkville, Australia

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Overweight and obesity are a leading contributor to the development of various chronic diseases. While many school-based obesity prevention programs targeting diet and physical activity have demonstrated positive impacts on child weight, there is increasing evidence suggesting these programs may also have positive impacts on students psychosocial and educative outcomes. However, there is no current synthesis of the effectiveness of school-based obesity prevention programs on child and adolescent psychosocial and educative outcomes. The aim of this systematic review is to determine the effectiveness of school-based obesity prevention programs, that target a combination of diet and physical activity, on improving psychosocial and educative outcomes in children and adolescents aged 6-18 years.

**Methods:** A secondary data analysis of school-based obesity prevention trials included in an existing systematic review was undertaken. An updated search for additional papers associated with those originally included was conducted via internet search and author contact. Randomised controlled trials of school-based obesity prevention interventions targeting diet and/or physical activity, which also assessed one or more student psychosocial or educative outcomes of interest, were eligible for inclusion. Studies outside of the school setting, or those that aimed to treat obesity were excluded. Similar measures of each eligible outcome were synthesised in meta-analysis where possible, otherwise reported narratively.

**Results:** Of the 123 school-based studies included in the original review, 36 studies reported on at least one eligible psychosocial or educative outcome. Results from meta-analyses and narrative syntheses for wellbeing, quality of life, self-esteem, anxiety, depression, problem behaviours, self-worth, body satisfaction, academic attainment and attention and behaviour will be presented.

**Conclusion:** Identifying which school-based obesity prevention programs have broader co-benefits on child and adolescent psychosocial and educative outcomes will provide important evidence for the prioritisation of existing programs, and development of future school-based obesity prevention programs.

## Exploring Experiences of Collegiate Peer Health Coaches

**Dr. Sarah Benes<sup>1</sup>**, Dr. Jessica Peacock, Dr. Zi Yan

<sup>1</sup>*Southern Connecticut State University, New Haven, United States*

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** College students are at increased risk of experiencing physical and mental health challenges in the post-COVID pandemic era. While much work has focused on exploring clients' experiences in health coaching programs, little research has been done regarding experiences of health coaches themselves. This study explored peer health coaches' experiences in the college setting.

**Methods:** Participants were student coaches who took part in a randomized, 8-week peer health coaching intervention to improve college students' wellbeing at a midsize private college in New England, USA. Student coaches were health science major undergraduates trained as health coaches through two courses. Each health coach provided 50 coaching sessions to their assigned peers in the intervention. Post-intervention, two cohorts of coaches (n = 16, 100% female, avg age=21.3) completed one-on-one semi-structured interviews with the lead author that were audio recorded and transcribed. The interview guide included questions about their preparation, experience, and outcomes. Data analysis utilized a grounded theory approach. Themes emerged through the process of open, axial and selective coding. Members checks and peer review were implemented.

**Results/Findings:** Five themes emerged: Increased Confidence, Enjoyable & Rewarding Experience, Transferability, Deeper Self-Awareness (sub-themes: Mindfulness, Skills & Strengths and Personal Health & Well-Being), and Impact (sub-themes: Personal, Professional, & Client Outcomes). Participants described peer health coaching as an Enjoyable & Rewarding Experience that helped them gain Increased Confidence as a coach. They were prepared for the coaching experience and felt that applying coaching skills led to Increased Confidence. Participants noted the Transferability of health coaching skills into their personal and professional lives and how the coaching experience led to Deeper Self-Awareness in terms of their Mindfulness, understanding of their Strengths & Skills, and their Personal Health & Well-Being. Participants felt the coaching experience was impactful in Personal and Professional contexts as well as on Client Outcomes.

**Conclusions:** Participating in a peer health coaching program in college supports student coaches' health and well-being. Skills learned as a coach transfer across many professions and into their personal lives contributing to holistic health and well-being. Peer health coaching models may be sustainable and effective health-related interventions on college campuses.

## Sleep deficit in adolescent athletes: examining the factors contributing to insufficient sleep

**Dr. Pedro Figueiredo<sup>1,2</sup>**, Mr. Lúcio Cunha<sup>3</sup>, Dr. Michele Lastella<sup>4</sup>, Dr. João Brito<sup>5</sup>, Dr. Elisa A Marques<sup>6</sup>

<sup>1</sup>Physical Education Department, College of Education, United Arab Emirates University, Al Ain, United Arab Emirates, <sup>2</sup>Research Center in Sports Sciences, Health Sciences and Human Development, CIDESE, , Portugal, <sup>3</sup>Research Center in Sports Sciences, Health Sciences and Human Development, CIDESE, University of Maia, Maia, Portugal, <sup>4</sup>Appleton Institute for Behavioural Science, Central Queensland University, Adelaide, Australia, <sup>5</sup>Portugal Football School, Portuguese Football Federation, Oeiras, Portugal, <sup>6</sup>College of Sport Science, University of Kalba, Kalba, United Arab Emirates

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Adequate sleep is an essential health behavior associated with improved physical health, cognitive function, and emotional well-being, particularly in adolescent athletes facing the demands of continuous practice and competition. However, young athletes often obtain less sleep than recommended, and there is limited data on their specific sleep needs and habits. This study compared adolescent football players' self-assessed sleep needs and their habitual sleep duration and examined associations between specific sleep habits (e.g., sleep quality, sleep duration, sleepiness) and the risk of insufficient sleep.

**Methods:** The study included 299 adolescent football players aged 14-17 years (37 females). Insufficient sleep was calculated by subtracting each player's reported sleep duration from their self-assessed sleep needs. A difference of 1 hour or more indicated insufficient sleep. Sleep quantity and quality were measured using the Pittsburgh Sleep Quality Index, daytime sleepiness with the Epworth Sleepiness Score, and chronotype with the Morningness-Eveningness questionnaire. Differences between sleep need and habitual sleep duration were analyzed using a linear mixed model. Logistic regression analyses were used to estimate odds ratios (OR) and 95% confidence limits (CL) for insufficient sleep.

**Results:** Players reported an average subjective sleep need of  $8.5 \pm 0.9$  hours and an average sleep duration of  $7.8 \pm 0.9$  hours ( $p < 0.001$ ). The prevalence of insufficient sleep is 46% overall, rising to 70% among poor sleepers, 78% among those with excessive daytime sleepiness, and 75% for evening chronotype. Adolescents with an evening chronotype were more likely to have insufficient sleep (OR = 9.20, 95% CL 3.9-22.9). Not meeting sleep duration recommendations (OR = 5.59, 95% CL 3.4-9.5), excessive daytime sleepiness (OR = 5.18, 95% CL 2.5-11.9), and poor sleep quality (OR = 3.39, 95% CL 1.8-6.5) were also strongly associated with insufficient sleep.

**Conclusions:** A substantial proportion of adolescent football players failed to meet their individual sleep needs, with insufficient sleep being strongly associated with evening chronotype, short sleep duration, daytime sleepiness, and poor sleep quality. These findings highlight the importance of integrating sleep education and interventions into youth athletic development to promote better health and performance outcomes. Acknowledgements FCT project UIDB/04045/2020 (<https://doi.org/10.54499/UIDB/04045/2020>)

## Navigating Food Choices: Insights into Children's Behavior and Their Perspectives on Healthy Food in School Environment in Jakarta, Indonesia

**Ms. Nadhila Beladina<sup>1</sup>**, Dr. Avita Usfar<sup>1</sup>, Ms Ester Tambunan<sup>1</sup>, Ms. Azka Fitri<sup>1</sup>, Mr Iwan Ariawan<sup>1</sup>

<sup>1</sup>Reconstra Utama Integra Research, Jakarta Selatan, Indonesia

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Poor dietary pattern is known as modifiable factor contributed to the Non-Communicable Diseases (NCDs) in 2.1 billion of children and twenty-one percents of the global deaths. School plays an important role in shaping eating habits among children, as they spend around one third of their day in school. Studies show the lack of healthy food options in school acts as a factor navigating children's eating behavior, increasing the risk of health consequences. This pilot study explored children's eating behavior and their perspective regarding healthy food accessibility in school environment, giving insights toward better policy and practice.

**Methods:** Four focus group discussions were conducted among 19 students in 4 junior and senior high schools in Jakarta, Indonesia. Schools from different socioeconomic areas were purposively chosen to explore its variability. Data regarding eating behavior and perspective of healthy food accessibility in school environment were collected and analyzed by themes.

**Findings:** Schools typically restrict students from purchasing food outside during school hours, leaving school canteens as the only provider. However, students report a perceived lack of healthy food options within school. Students define healthy food as vegetable and protein-based meals, prepared in healthy ways, with minimum amounts of sugar and oil. While the true definition of healthy food focuses on delivering beneficial nutrients and minimizing harmful components, schools, particularly in better socioeconomic areas, offer limited but healthier options, including improved protein sources. However, students prioritize taste, appearance, and price when choosing food. As a result, students often overlook healthier options in favor of high-calorie, less nutritious foods (i.e. noodle and other flour-based snacks and meals). Additionally, the implemented healthy school-canteen program emphasizes canteen cleanliness rather than providing healthier food, further limiting the effectiveness of promoting healthy diets among students.

**Conclusions:** This study highlights the lack of accessibility to healthy food in school, which contributes to poor eating habits among students. It emphasizes the need for increased knowledge among school management and food vendors regarding healthy food, also better marketing policies and practices to improve its accessibility and foster long-term health among school-aged children.

## Intermittent food insecurity over time predicts poor executive function and avoidance coping behaviors among emerging adult college students

**Ms. Tran Huynh<sup>1</sup>**, Dr. Emma Rose<sup>1</sup>, Dr. Kathleen Keller<sup>1</sup>, Dr. Kristina Petersen<sup>1</sup>, Dr. Meg Bruening<sup>1</sup>

<sup>1</sup>Pennsylvania State University, State College, USA

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Introduction:** Food insecurity (FI) has been linked to poor executive function (EF) in older adults, but this relationship is underexplored in emerging-adult undergraduate students. College students experiencing FI may adopt avoidance coping behaviors; however, the association between FI, EF, and coping has yet to be studied among college students. This study examines the longitudinal association between FI, EF, and coping strategies in undergraduate students.

**Methods:** First-year undergraduate students (n=322, 68% female, 35% non-white) completed surveys in Fall 2023 and 2024 before arriving on campus (T0: June/July) and during their first semester (T1: October/November). At T0 and T1, FI over the past month was assessed using the Adult Food Security Survey Module. FI was categorized as never, intermittent, or persistent. At T1, students completed the BRIEF-A survey to assess EF. Scores were summed to calculate Global Executive Composite (GEC) T-scores. Higher GEC scores indicate worse EF. At T1, coping behaviors were assessed using the COPE survey. The behavioral disengagement, denial, restraint, and substance subscales were summed for avoidance coping scores, with higher scores indicating more avoidance behaviors. Mixed linear regression was used to examine the longitudinal relationship between FI over time (never, intermittent, and persistent FI) and EF and avoidance coping behaviors at T1, independently. Models were adjusted for sex, race/ethnicity, Pell Grant recipient status, highest parental education, and employment status.

**Results:** Over time, 75% of students never experienced FI (n=293), 17% experienced intermittent FI (n=67), and 8% experienced persistent FI (n=35). Mean scores of GEC were 68.01 (SD=17.77) and avoidance coping were 26.75 (SD=7.90). Intermittent FI was significantly associated with higher GEC ( $\beta=6.17$ , SE=2.70,  $p=0.02$ ) and avoidance coping scores ( $\beta=2.69$ , SE=1.16,  $p=0.02$ ) compared to never FI. Persistent FI had no significant associations with GEC and avoidance coping behaviors compared to never FI.

**Conclusion:** Intermittent FI may be associated with poorer EF and higher avoidance coping strategies in college students. Future research is needed to understand the mechanisms and develop interventions to protect students from FI's adverse outcomes, particularly by targeting EF improvement and coping strategies in this population.

## Cross-Cultural Effects of Beneficial Childhood Experiences on Health Outcomes in Early Adulthood

**Dr. Joshua Christensen<sup>1</sup>**, Dr. Kate McLellan, Dr. Kristina Moleni

<sup>1</sup>Brigham Young University-Hawaii, Laie, USA

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Beneficial childhood experiences (BCEs) have been associated with increased positive health over time. Little work has been done examining the cross-cultural role that BCEs may have on long-term health of individuals. The purpose of this cross-sectional study was to determine what differences BCEs had on the health of college students.

**Methods:** Surveys were acquired from 298 students attending a culturally diverse university in the Pacific region. The survey included measures regarding an individual's BCEs and various mental and physical health indicators including life satisfaction, stress, mood, physical activity levels, stress, and sleep. In our analyses, we compared the overall prevalence of BCEs on current mental and physical health symptoms among participants, then stratified these relationships to make comparisons between participant-reported race/ethnicity (white, Asian, or Native Hawaiian and Pacific Islander [NHPI]).

**Results/findings:** When comparing participants overall, we found significant relationship between greater levels of BCEs and increased life satisfaction ( $r = 0.27$ ,  $p < 0.001$ ), and positive mood ( $r = 0.22$ ,  $p = 0.002$ ) in adulthood. When stratified by race, we found no significant differences in BCE levels between the three groups. However, when further stratifying by gender, we did observe that by gender, white women and NHPI men reported the greatest levels of BCEs. When testing for the relationship between BCEs and health outcomes in adulthood by race, we found that white participants BCE scores significantly predicted greater life satisfaction ( $\beta = 0.08$ ,  $p = 0.001$ ) and improved mood ( $\beta = 0.04$ ,  $p = 0.04$ ) in adulthood. While BCE scores among Asian participants were found to have a significant impact on increased sleep duration ( $\beta = 0.41$ ,  $p = 0.02$ ), no significant relationships were found between BCEs and health outcomes for NHPI participants.

**Conclusions:** Findings indicate the prevalence of BCEs in an individual's life may vary between different races/ethnicities and gender. Among individuals from differing races/ethnicities, BCEs may have a different effect on one's mental/physical health later in life. While more research needs to be conducted in the area, understanding the nuanced role that BCEs may have cross-culturally may be beneficial in helping improve both child and adult health.

## Exploring value-led pathways to physical activity for youth experiencing inequities in Aotearoa New Zealand.

**Miss Ella Creagh<sup>1</sup>**, Dr Justin Richards<sup>2</sup>, Dr Victoria Chinn<sup>1</sup>

<sup>1</sup>*Te Wāhanga Tātai Hauora - Faculty of Health at Te Herenga Waka - Victoria University of Wellington, Wellington, New Zealand*, <sup>2</sup>*Te Hau Kori - Centre for Physical Activity and Wellbeing at Te Herenga Waka - Victoria University of Wellington, Wellington, New Zealand*

**SO.3.16: Youth physical activity and nutrition: outcomes and interventions, Waitakere 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** J. Young Adults

**Purpose:** Physical activity is often promoted to young people in ways that do not align with their values and priorities. In addition, young people experiencing inequities face more barriers to discover and do physical activity in the ways that work for them. This research takes a strengths-based approach by first exploring what young people experiencing inequities value and prioritise, and secondly looking at how physical activity could fit in and around these areas of importance. The overall aim of the research was to take a novel, creative, and youth-led approach to understanding and promoting physical activity within a community.

**Methods:** In 2024 a focus group was conducted with 13 young people and facilitators from a local youth organisation that supports youth through temporary housing, activities, and social support. The focus group involved responding to a series of prompts through a variety of mediums such as writing, drawing, and speaking. The data was then analysed using inductive and deductive thematic analysis with a phenomenological approach.

**Results/findings:** Young people strongly valued whanaungatanga (genuine relationships), spirituality and culture, routine, music, and healthy eating. These areas of importance intersected with physical activity to create three key themes. Inclusion and Diversity; Social Support and Motivation; and Opportunities for Growth (through Knowledge and Skills) were all valuable for physical activity within the youth organisation. These themes align with indigenous models of wellbeing such as Te Whare Tapa Whā and Te Pae Māhutonga, and the COM-B model for behaviour change.

**Conclusions:** The research explores an innovative way of understanding physical activity for youth experiencing inequities, in the specific context of their day-to-day lives within a community organisation. This research has contributed to the organisation supporting their young people to lead funding applications for physical activity grants. Through centering the voice of young people and what is valuable to them, we can understand the place and role of physical activity in their lives and how we, as researchers and physical activity providers, can adapt to better support them to be active in empowering ways.

## The Neighbourhood, School and Home Food Environments and Dietary Behaviours in Hong Kong Adolescents: the iHealth Study

**Dr. Maria Soloveva**<sup>1</sup>, Prof. Anthony Barnett<sup>1</sup>, Dr. Robin Mellecker<sup>2</sup>, Prof. Cindy Sit<sup>3</sup>, Prof. Poh-chin Lai<sup>2</sup>, Dr. Casper Zhang<sup>2</sup>, Prof. James Sallis<sup>4</sup>, Prof. Ester Cerin<sup>1</sup>

<sup>1</sup>Australian Catholic University, Melbourne, Australia, <sup>2</sup>The University of Hong Kong, Hong Kong, China,

<sup>3</sup>The Chinese University of Hong Kong, Hong Kong, China, <sup>4</sup>University of California, San Diego, USA

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Limited evidence suggests that neighbourhood, school and home food environments influence adolescents' dietary behaviours and, thus, the risk of obesity. Most studies were conducted in Western countries and considered only one or two food environment contexts. This study examined whether neighbourhood, school and home food environments were associated with dietary behaviours in Hong Kong adolescents; and whether off-campus lunch policy, bringing lunch from home and parental rules for eating behaviours moderated these associations.

**Methods:** We used cross-sectional data from the international Healthy environments and active living in teenagers – (Hong Kong) [iHealt(H)] study. Participants were adolescents aged 11 to 18 years (N = 1299; Mage = 14.7 years; 57% girls) and their parent/primary caregiver. We used surveys with validated scales to assess adolescents' dietary behaviours and perceived food environments as well as the Microscale Audit of Pedestrian Streetscapes and Geographic Information Systems data to objectively assess food environment around adolescents' residential and school neighbourhoods. Generalised Additive Mixed Models were used to estimate associations.

**Results:** Higher density of bakeries, coffee shops, cafes and convenience stores in the neighbourhood was associated with higher consumption of vegetables and lower consumption of sugar-sweetened drinks in adolescents. Adolescents who frequently brought lunch from home to school consumed fatty foods and sugar-sweetened drinks less frequently and were more likely to eat fruit and vegetables. Greater availability of unhealthy food outlets in the school was associated with higher consumption of sugar-sweetened drinks whereas increased number of restaurants within a 1km-radius buffer around the school was associated with higher consumption of fruit and vegetables. Adolescents were more likely to eat fruit and vegetables with greater availability of fruit and vegetables and healthy snacks at home whereas availability of unhealthy snacks and sugar-sweetened drinks was associated with higher consumption of fatty foods and snacks and sugar-sweetened drinks, respectively. Lastly, home-made lunches and restrictive parental rules for eating behaviours moderated the effects of food environments on adolescents' dietary behaviours.

**Conclusions:** All environmental contexts were associated with Hong Kong adolescents' dietary behaviours. However, the home and school environment appeared to be the most influential and should be targeted in interventions.

## Being Well-Fed in Universal School Lunches in Canada

**Ms. Kaylee Michnik<sup>1</sup>**, Dr. Rachel Engler-Stringer<sup>1</sup>

<sup>1</sup>University of Saskatchewan, Saskatoon, Canada

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

As Canada is implementing a new national school food program with a long-term goal of universal access, understanding student eating perspectives and food choices in universal programs is paramount to developing programs that promote student and family participation. The purpose of this participatory study is to understand how students in low-income and culturally diverse schools perceived and participated in a two-year, universal school lunch pilot as part of a larger case study of the Good Food for Learning program. Eleven focus groups with 65 students in grades 5 - 8, and participatory observation, were conducted at two urban elementary schools in Saskatoon, Canada. Analysis followed a reflexive thematic analysis approach (Braun & Clarke, 2019; 2020) using NVivo 12 Plus. Results highlighted student efforts and perspectives toward being well-fed in the universal lunch pilot. Students saw participation in the pilot as a matter of personal choice, and the decision to participate was encouraged by the flexibility and free design of the pilot, the variety and good taste of the food options served, and the perceived healthiness of the foods. In the future, mitigating barriers to participation requires considerations for student choice and agency, including feeding relationships with school staff, reflecting student diversity, diverse portion sizes, adequate meal lengths, cost of meals, and student-centered infrastructure. Universal school lunch programs that are health promoting, tasty, free, and offer flexibility and choice to students may be a socially desirable way to improve student nutrition and wellbeing.

## Exercise During Pregnancy Influences Maternal Sleep Quantity and Quality

**Dr. Linda May**<sup>1</sup>, Dr. Alex Claiborne<sup>1,2</sup>, Dr. Gabriela De Roia<sup>3</sup>, Dr. Kara Whitaker<sup>4</sup>, Dr. Richard Suminski<sup>5</sup>, Dr. Freda Patterson<sup>5</sup>, Dr. Breanna Wisseman<sup>6</sup>, Kara Kern<sup>1,2</sup>, Dylan Steen<sup>1,2</sup>, Dr. Samantha McDonald<sup>7</sup>, Dr. Cody Strom<sup>8</sup>, Dr. James DeVente<sup>1,2</sup>, Dr. Steven Mouro<sup>1,2</sup>, Dr. George Kelley<sup>9</sup>

<sup>1</sup>East Carolina University, Greenville, United States, <sup>2</sup>Human Performance Lab, ECU, Greenville, United States, <sup>3</sup>University of Flores, Buenos Aires, Argentina, <sup>4</sup>University of Iowa, Iowa City, United States, <sup>5</sup>University of Delaware, Neward, United States, <sup>6</sup>University of Rhode Island, Kingstown, United States, <sup>7</sup>Illinois State University, Normal, United States, <sup>8</sup>University of Southern Indiana, Evansville, United States, <sup>9</sup>Boise State University, Boise, United States

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Sleep disturbances are common in pregnancy and have negative implications for the health of the mother and offspring. We aimed to test the effect of prenatal exercise on sleep quantity and quality.

**Methods:** This study was a retrospective, secondary analysis of pooled data from two blinded, prospective, randomized controlled trials (control n = 15; exercise n = 71). Sleep quality and quantity were assessed via self-report at 16 (baseline) and 36 weeks gestation in women assigned to exercise (aerobic, resistance/strength, or combination) or an attention-control group. Sleep metrics were compared between exercise and control groups using independent samples t-tests. Tests for exercise type and sleep characteristics were completed using mixed models, while the influence of exercise dose on sleep was assessed via Pearson correlations and independent samples t-tests.

**Results:** Pregnant women exercised for an average of 21.8 weeks during pregnancy (range = 13-28 weeks). Exercising pregnant women slept 15 - 30 minutes longer per night than controls at 16 weeks (p = .049) but not 36 weeks gestation (Con: 7.27, Ex: 7.52 hr; p = .26). While the aerobic (~20% to 70%; p < .01) and resistance (~25% to 60%; p = 0.03) exercise groups showed an increased probability of reporting good sleep quality at 36 weeks, combination exercisers had no decrease in sleep quantity compared to decreases in the other groups (p = .19).

**Conclusions:** While exercise benefits sleep quantity during pregnancy, our results show an exercise type-dependent influence on sleep quantity and quality at 36 weeks gestation.

## Do school-based nutrition education programs that include environmental sustainability components, improve fruit and vegetable consumption in children aged 5-12-years? A systematic review.

Dr. Fay Karpouzis<sup>1</sup>, **Dr Rebecca Lindberg<sup>1</sup>**, Dr Kim Anastasiou<sup>2</sup>, Dr Adam Walsh<sup>3</sup>, Clinical Professor Smita Shah<sup>4,5</sup>, Emeritus Professor Kylie Ball<sup>1</sup>

<sup>1</sup>School of Exercise and Nutrition Sciences, Institute for Physical Activity and Nutrition, Deakin University, Burwood, Australia, <sup>2</sup>School of Social Sciences, University of Adelaide, Adelaide, Australia, <sup>3</sup>School of Behavioural and Health Sciences, Australian Catholic University, Melbourne, Australia, <sup>4</sup>Faculty of Medicine and Health, University of Sydney, Sydney, Australia, <sup>5</sup>Prevention Education and Research Unit (PERU), Western Sydney Local Health District, Westmead, Australia

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Despite efforts, children's fruit and vegetable (F&V) consumption remains below recommended levels. Integrating environmental sustainability themes into school-based nutrition education may enhance dietary behaviour. This novel systematic review aims to (i) describe the components of school-based nutrition education programs that include environmental sustainability elements for children aged 5-12 years; (ii) assess whether these programs improve F&V consumption; and (iii) identify which program components are associated with significant increases in F&V intakes.

**Methods:** A systematic search of electronic databases MEDLINE, CINAHL, ERIC, Global Health, PsycINFO, EMBASE, the Cochrane Library, and three clinical trial registries were searched for peer-reviewed articles in English, between 1987 and 2022. Studies were eligible if they evaluated school-based nutrition education programs that included environmental sustainability components, such as gardening, cooking, food tasting, farm visits, horticulture education, procuring local produce, and food system education. Two authors independently screened and reviewed articles and assessed quality using the Evidence Project risk of bias tool. Given the heterogeneity of study designs and outcome measures, a narrative synthesis was undertaken.

**Results:** A total of 3768 articles were identified, of which, 18 school-based programs met inclusion criteria. All programs were multi-component and included nutrition education, in addition to a variety of environmental sustainability theoretical and/or experiential components. Sixteen studies were low-to-moderate and two were high in quality. Eight studies reported significant increases in outcomes of interest. Programs with experiential components such as gardening, tasting garden-harvested produce and cooking activities, which were underpinned by theoretical frameworks, were more likely to report significant outcomes, compared to those without.

**Conclusions:** Changing children's dietary behaviours is challenging, but this review suggests that embedding environmental sustainability into nutrition education can enhance F&V consumption. These findings provide valuable insights for researchers, policymakers and educators to design effective school-based nutrition interventions. Programs that incorporate experiential components like gardening, food tasting, and cooking, along with a theoretical foundation, appear particularly effective in driving behaviour change.

# Effects of Experiential Food Education on Elementary Students' Food Literacy and Fruit and Vegetable Intake in Urban and Rural Schools

**Ms. Christine St Pierre<sup>1</sup>**, Ms. Catherine LeBlanc<sup>1</sup>, Ms. Lauren Rotholz<sup>1</sup>, Dr. Jennifer Sacheck<sup>1</sup>

<sup>1</sup>The George Washington University Milken Institute School of Public Health, Washington, USA

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Experiential food education programs are a popular strategy to support children in developing healthy eating habits from a young age. Evidence is lacking however, about the effectiveness of these programs across diverse populations, especially those at the greatest risk for low-quality diets. This evaluation examines the changes in food literacy and fruit and vegetable (FV) intake over the course of a school year among 4th and 5th grade students participating in a school-based experiential food education program in Washington, DC and Frankfort, KY.

**Methods:** Eight public elementary schools with varying lengths of program exposure were recruited from a combination of urban and rural settings. All 4th and 5th grade students at each school were invited to participate. In Fall 2024, students completed food literacy and FV intake surveys designed and tested for age-appropriateness and also provided anonymous demographic data (grade level and sex). The surveys will be repeated with participants in Spring 2025. Descriptive statistics, t-tests, and regression modeling will be used to examine changes in food literacy and FV intake and the association of these changes with length of program exposure, controlling for grade level, sex, and urbanicity.

**Findings:** The baseline analytic sample consists of 601 students (49.8% 4th grade, 44.1% female, 17.6% rural) from DC and KY. Based on school-level demographics, 69.3% of students were non-White, and an additional 6.9% were multiracial. In total, 88.0% of participants were enrolled at schools with a majority of students from economically disadvantaged backgrounds, and 29.6% of students were enrolled at schools adopting the food education program for the first time during the 2024-25 school year. At baseline, the average food literacy score was  $82.98 \pm 9.8$  out of a possible 100 points. Mean frequency of fruit and vegetables was  $4.4 \pm 3.3$  and  $2.8 \pm 2.7$  times per day, respectively.

**Conclusions:** The results from this evaluation will provide important insight into the effects of an experiential food education program on 4th and 5th grade students across a sample of elementary schools with high diversity between school communities. Findings can inform the development of implementation and scaling strategies that ensure future programming is contextually relevant and effective.

## Parental perceptions of neighbourhood environment and movement behaviours among schoolchildren: a compositional data analysis

**Ms. Ruirui Xing<sup>1</sup>**, Dr Jerome Rachele<sup>1,2</sup>, Prof Željko Pedišić<sup>1</sup>, Dr Venurs Loh<sup>1,2</sup>, Dorothea Dumuid<sup>3</sup>

<sup>1</sup>Institute for Health and Sport, Victoria University, Melbourne, Australia, <sup>2</sup>College of Sport, Health and Engineering, Victoria University, Melbourne, Australia, <sup>3</sup>Alliance for Research in Exercise, Nutrition and Activity (ARENA), Allied Health & Human Performance, Adelaide, Australia

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Several studies have investigated determinants and correlates of movement behaviours using the compositional data analysis approach. However, evidence on neighbourhood environment characteristics as correlates of movement behaviours in children and adolescents is limited. The aim of this study was to determine associations between parental perceptions of neighbourhood environment and movement behaviour in schoolchildren using compositional data analysis.

**Methods:** The study sample included 1,232 pairs of children aged 10–11 years and one of their parents recruited between 2014 and 2016 as part of the Child Health CheckPoint study, a nested module of the Longitudinal Study of Australian Children. Parents completed the Neighbourhood Facilities Scale, Neighbourhood Liveability Scale and Neighbourhood Social Capital Scale, asking about access to destinations and services, general safety, and social cohesion and capital. The amounts of time children spent in sleep, sedentary behaviour, light physical activity, and moderate-to-vigorous physical activity were assessed over eight consecutive days using wrist-worn GENEActiv accelerometers. We conducted multiple linear regression analyses with neighbourhood environment characteristics as independent variables and isometric log ratios calculated from the movement behaviour composition as dependent variables. The analyses were stratified by residence in a major city or regional/remote area and adjusted for child sex, age, pubertal status, body mass index, and socioeconomic status.

**Results:** Parental perceptions of access to destinations and services ( $p = 0.013$ ) and social cohesion and capital ( $p = 0.004$ ) were associated with movement behaviours only among schoolchildren from regional/remote areas. Specifically, greater parental perceptions of access to destinations and services was associated with longer sleep, less sedentary behaviour, less light physical activity, and more moderate-to-vigorous physical activity. Better parental perception of social cohesion and capital was associated with longer sleep and less sedentary behaviour, light physical activity, and moderate-to-vigorous physical activity. For general safety, we did not find a significant association with movement behaviours in either of the strata ( $p = 0.303$ ).

**Conclusions:** Our findings suggest that parental perceptions of access to destinations and services and social cohesion and capital could play an important role in promoting healthy movement behaviours among schoolchildren from regional/remote areas.

## Temporal and bidirectional associations between physical activity, sleep and emotional self-regulation in toddlers

**Mrs. Abhigale D'cruz<sup>1</sup>**, Dr. Katherine Downing<sup>1</sup>, Dr. Simone Verswijveren<sup>1</sup>, Prof. Kylie Hesketh<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University, Melbourne, Australia*

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Rapid development of physical activity (PA), sleep behaviours and emotional self-regulation (ESR) occur during toddlerhood (1-2 years). Despite cross-sectional evidence showing cross-sectional relationships, evidence for potential temporal and bi-directional associations in toddlers is scarce, limiting the causal interpretation between these constructs. This study aimed to examine temporal and bi-directional associations between toddlers' PA (total PA [TPA] and moderate- to vigorous-intensity PA [MVPA]), sleep (total quantity and sleep behaviours) and emotional self-regulation.

**Methods:** Baseline (T0) and six-months post baseline (T1) parent-reported data from 1075 toddlers (33±4.4 months) from the Let's Grow randomized controlled trial were used. Parents reported their toddler's TPA and MVPA, as well as their children's average nighttime sleep and daytime naps, which were summed to obtain total sleep quantity. Sleep behaviours (bedtime resistance, sleep-onset-delay, sleep duration, nighttime waking and bedtime routine) were assessed via the Child Sleep Habits Questionnaire and Brief Infant Sleep Questionnaire-revised. Emotional self-regulation was assessed via a 4-item parent report scale adapted from the Fast Track Project Child Behavior Questionnaire. Cross-lagged panel models were used, adjusting for age, sex, parental education and trial-group allocation.

**Results:** Findings suggest no temporal or bi-directional associations between PA, total sleep duration and emotional self-regulation. Higher nighttime sleep at T0 predicted better T1 emotional self-regulation ( $B = 0.06$ ;  $CI_{95} = 0.05, 0.11$ ;  $p = 0.02$ ), while higher naptime at T0 ( $B = -0.06$ ;  $CI_{95} = -0.11, -0.01$ ;  $p = 0.03$ ) predicted poorer emotional self-regulation after six months. More problems with bedtime resistance, nighttime waking and sleep duration at T0 predicted poorer ESR at T1 (all  $p < 0.01$ ), but bedtime routine and sleep-onset-delay at T0 did not predict ESR at T1. Lower emotional self-regulation at T0 predicted higher sleep-onset-delay at T1 ( $B = -0.06$ ;  $CI_{95} = -0.11, -0.01$ ;  $p = 0.02$ ). No bi-directional associations between total sleep or sleep behaviours and emotional self-regulation was observed.

**Conclusions:** Healthcare professionals may focus on educating parents and caregivers about the importance of nighttime sleep and sleep behaviours, highlighting their role in fostering toddlers' emotional self-regulation development. More research considering the complex systems involved in the association between physical activity, sleep and emotional self-regulation is warranted.

## Advancing Health Equity through Culturally Affirming Park Programs to Promote Physical Activity: Rationale and Baseline Data from the NatureUplift Pilot Randomized Trial

**Dr. Junia de Brito**<sup>1</sup>, Nicole Fernandez<sup>2</sup>, Hsin Yun Huang<sup>1</sup>, Gianfranco Morote Galvez<sup>1</sup>, Amanda Fong<sup>2</sup>, Velma Harris<sup>1</sup>, Kaitlyn Adams<sup>1</sup>, Ikraan Omar<sup>1</sup>, Dr. Daheia Barr-Anderson<sup>3</sup>, Dr. Eydie Kramer-Kostecka<sup>1</sup>

<sup>1</sup>University of Minnesota, Minneapolis, USA, <sup>2</sup>Three Rivers Park District, Plymouth, USA, <sup>3</sup>University of North Carolina at Charlotte, Charlotte, USA

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** The NatureUplift study was a community-engaged pilot randomized trial designed to evaluate the effects of a culturally responsive, nature-based curriculum—with and without a hiking component—on physical activity, mental health, and indicators of cardiovascular health among African American parent-child dyads. Intervention activities were led by culturally representative park leaders to address community-identified structural barriers to park use, thereby advancing environmental justice and health equity efforts.

**Methods:** Conducted in collaboration with the community engagement team of Three Rivers Park District in Plymouth, MN, during Summer 2024, we enrolled 13 dyads randomized into two groups: NatureUplift+Active (n=7) and NatureUplift (n=6). Both groups completed a 12-week NatureUplift curriculum with weekly 60-minute light-intensity activities (LPA) (e.g., outdoor yoga, forest bathing, fishing). The NatureUplift+Active group also participated in 60-minute weekly moderate-to-vigorous intensity hiking (MVPA). After 12 weeks, the NatureUplift group was offered a shortened 4-week NatureUplift+Active program. Outcomes were measured at baseline, 4, 12 (primary endpoint), and 16 weeks. Primary outcomes included objectively measured LPA and MVPA, systolic (SBP) and diastolic (DBP) blood pressure, and self-reported mental health outcomes (perceived stress, positive/negative affect, anxiety, and depression) using age-appropriate validated questionnaires. Descriptive statistics characterized baseline sociodemographic and outcomes data.

**Results:** At baseline, children (9.9±1.5 years; 30% girls) had, on average, a BMI z-score of 1.17±1.27 and SBP (23.1±25.8) and DBP (37.0±26.2) percentiles in the normal ranges. Children reported moderate stress, high positive affect, low negative affect, on-average population-level anxiety symptoms, and below-average depression symptoms. Parents (41.9±10.0 years; 77% female) had higher weight status (84%), were currently employed (85%), had partnered relationship status (69%), and had some college/associate degree (54%). SBP (113.2±15.4 mmHg) and DBP (73.8±14.7 mmHg) were within the clinically normal ranges. Most parents reported moderate levels of perceived stress, high positive affect and low negative affect, and anxiety and depression symptoms in the clinical diagnostic minimal/mild range. Neither parents nor children met the public health guidelines for MVPA.

**Conclusions:** This pilot trial will provide critical evidence to guide and scale equity-focused park programming aimed at reducing disparities in physical activity, mental health, and cardiovascular health outcomes in communities that face barriers to park use.

## Intergenerational impact of an antenatal lifestyle intervention on child anthropometry, neurodevelopment, dietary behavior and physical activity up to age 5 – secondary findings of the cluster-randomized GeliS trial

**Dr. Kristina Geyer<sup>1</sup>**, Ms. Roxana Raab<sup>1</sup>, Dr. Monika Spies<sup>1</sup>, Cand. Med. Johanna Knoke<sup>1</sup>, M. Sc. Sarah Lilge<sup>1</sup>, Dr. Stephanie Brandt-Heunemann<sup>2</sup>, Prof. Dr. Hans Hauner<sup>1</sup>

<sup>1</sup>Institute of Nutritional Medicine, Else Kröner-Fresenius-Centre for Nutritional Medicine, TUM School of Medicine and Health, Technical University of Munich, Munich, Germany, <sup>2</sup>Centre for Hormonal Disorders in Children and Adolescents, Division of Paediatric Endocrinology and Diabetes, Department of Paediatrics and Adolescent Medicine, University Medical Centre, Ulm, Germany

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** This study examines the long-term effects of an antenatal lifestyle intervention on child health outcomes up to age 5, focusing on children's anthropometrics, neurodevelopment, and dietary and physical activity behaviors. Its extended follow-up and comprehensive assessment of child health offers insights into the intergenerational benefits of maternal lifestyle modifications during pregnancy.

**Methods:** Children born to women in the cluster-randomized "healthy living in pregnancy" (GeliS) trial were followed up to age 5. Women in the intervention group (IG) received lifestyle counselling during routine antenatal visits, while the control group (CG) received usual care. Anthropometric data were obtained from routine health examinations at 46-48 and 60-64 months. Neurodevelopment at 5 years was assessed using the Ages-and-Stages Questionnaire (ASQ). Child lifestyle data at ages 3 and 5 were collected via validated questionnaires and are currently under investigation. Regression models with generalized estimated equations evaluated intervention effects on children's diet, physical activity and neurodevelopment. Mixed models for repeated measures and proportional odds ordinal logistic regression models assessed anthropometric outcomes.

**Results:** Of 2286 women enrolled, 1403 reported child anthropometric and neurodevelopment data. The intervention had no effect on child weight, height, head circumference, BMI, or percentiles and z-scores at ages 4 and 5. IG children had lower underweight rates (4 years: 7.8% vs. 10.9%; 5 years: 8.1% vs. 8.9%), but higher rates of overweight (4 years: 6.5% vs. 4.2%; 5 years: 5.1% vs. 3.4%) and obesity (4 years: 1.0% vs. 1.1%; 5 years: 2.7% vs. 1.6%). IG children were more likely to fall into a higher weight category at 4 ( $p=0.017$ ) and 5 years of age ( $p=0.075$ ). ASQ scores were similar across groups. Analysis of energy and macronutrient intake, dietary quality and physical activity data from 1,496 children is ongoing.

**Conclusion:** The antenatal GeliS lifestyle intervention showed no long-term impact on children's anthropometrics or neurodevelopment up to age 5. Whether the intervention influenced children's lifestyle behaviors, potentially mirroring maternal improvements, awaits analysis. These results highlight the complexity of intergenerational health promotion and the need for further research on effective antenatal strategies to improve long-term child health outcomes.

## Embedding children's health behaviour screening within routine primary health care as a strategy to support growth, health, and development in the early years.

**Miss Dimity Dutch<sup>1</sup>**, Dr Sarah Hunter<sup>1</sup>, Dr Lucinda Bell<sup>1</sup>, Professor Elizabeth Denney-Wilson<sup>2</sup>, Professor Rebecca Golley<sup>1</sup>

<sup>1</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, Adelaide, Australia, <sup>2</sup>The University of Sydney, Faculty of Medicine and Health, Susan Wakil School of Nursing and Midwifery, Sydney, Australia

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Primary Health Care (PHC) plays an important role in promoting health behaviours including nutrition, physical activity, sedentary behaviour and sleep in the early years. A screening tool to monitor health behaviours and support tailored conversations in PHC could better support children's growth, health and development, however its suitability in an Australian PHC context is unknown. Therefore, this research aimed to determine the feasibility and acceptability of embedding children's health behaviour screening within routine Australian PHC.

**Methods:** Aligned with the Knowledge to Action Framework, multi-stage research was conducted. A scoping review of Australian PHC guidelines and systematic review of existing child health behaviour screening tools generated knowledge regarding current practice in PHC. Nominal Group Technique workshops with diverse PHC practitioners identified and prioritised tool features and implementation strategies to support acceptability and uptake in practice. Finally, a multi-method pilot study investigated caregiver acceptability of child health behaviour screening in PHC.

**Results/Findings:** Australian PHC guidelines (n = 18) recognise the importance of monitoring and promoting child health behaviours, but lack practical tools and resources to support practitioners. Screening tools (n = 14) exist internationally and are acceptable and feasible in PHC, however none are fit-for-purpose for an Australian context. PHC practitioners (n = 29) including general practice, allied health and child and family health nurses identified and prioritised tool features and resources to support implementation. Caregivers of young children (n = 39) indicated acceptability and feasibility of child health behaviour screening and shared considerations for providing screening tool results, resources and supports.

**Conclusions:** The Knowledge to Action Framework enabled knowledge creation and tailored research products, demonstrating child health behaviour screening is acceptable, aligns with practice guidelines, and is an innovative approach to child health promotion and monitoring. Further research to identify how to implement this approach at scale, alongside updated policy and practice guidelines to support and sustain this in practice are required. Ultimately, this research provides evidence that embedding child health behaviour screening within routine Australian PHC can be a scalable, equitable, sustainable, and universal approach to support growth, health, and development in the early years.

## Correlates of Disordered Eating Behavior Among Youth with Obesity

**Dr. Alyssa Button**<sup>1</sup>, Dr. Amanda Staiano<sup>2</sup>, Dr. Robbie Beyl<sup>2</sup>, Dr. Robert Newton, Jr.<sup>2</sup>, Dr. Richard Stein<sup>3</sup>, Dr. Marian Tanofsky-Kraff<sup>4</sup>, Dr. Stephen Cook<sup>5</sup>, Dr. Denise Wilfley<sup>3</sup>

<sup>1</sup>Virginia Commonwealth University, Richmond, United States, <sup>2</sup>Pennington Biomedical Research Center, Baton Rouge, United States, <sup>3</sup>Washington University in St. Louis, St. Louis, United States, <sup>4</sup>Uniformed Services University, Bethesda, United States, <sup>5</sup>Ohio State University, Columbus, United States

**SO.3.17: Health interventions and strategies to improve child health behaviors and outcomes, Waitakere 3, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** G. Children and families

**Purpose:** Social drivers of health (SDoH) are increasingly recognized as related to disordered eating among adults and non-clinical adolescent samples. Moreover, children with obesity experience higher rates of binge eating, which is bidirectionally associated with psychosocial problems. This study evaluated the links among SDoH, psychosocial problems, and obesity severity with disordered eating attitudes and behaviors among obesity treatment-seeking youth.

**Methods:** This was a secondary analysis of baseline data from a randomized comparative effectiveness trial for pediatric obesity treatment in primary care. Disordered eating attitudes and behaviors were measured using an adapted Youth Eating Disorder Examination Questionnaire (importance of weight and/or shape, dissatisfaction with weight and/or shape, restraint over eating). SDoH were measured as race, ethnicity, insurance type, household income, mother's education, and food security based on parent report; obesity severity was assessed as body mass index in relation to the 95th percentile (BMI<sub>p95</sub>); and psychosocial problems were measured as Pediatric Quality of Life (PQoL), Sizing Them Up (weight-related quality of life, WRQoL), and Experiences with Teasing (impact and frequency of bullying). Chi square analyses, t-tests, and multiple regressions examined associations between the correlates of interest and importance of weight/shape, dissatisfaction with weight/shape, and restraint.

**Results:** This sample included 723 children ages 6-15y. Children with more severe obesity experienced greater importance/valuation ( $M=1.9\pm1.9$ ) and dissatisfaction ( $M=2.2\pm2.0$ ) compared to peers with less severe obesity ( $M=1.5\pm1.7$ ,  $p=0.02$ ;  $M=1.8\pm1.8$ ,  $p=0.005$ , respectively). Participants with household incomes <\$50,000/year reported greater weight/shape dissatisfaction ( $M=2.3\pm0.1$ ) compared to those with incomes \$50,000-\$90,000 ( $M=1.7\pm0.2$ ,  $p=0.002$ ). Multiple regression models relating SDoH to importance, dissatisfaction, and restraint were significant, all  $p\leq.001$ . WRQoL was inversely associated with importance ( $p=0.02$ ), dissatisfaction ( $p<.001$ ), and restraint ( $p=0.05$ ). Impact of bullying was inversely associated with restraint ( $p=0.01$ ).

**Conclusion:** Significant links among household income, weight related quality of life and teasing-related measures with disordered eating attitudes and behaviors highlight the importance of screening, connecting families with resources, and providing support for these factors within pediatric obesity treatment to promote positive eating-related attitudes and behaviors. Differences in disordered eating risk based on SDoH other than income may be difficult to disentangle given the already at-risk nature of children with obesity.

## Citywide free bus transit: How does it impact bus use, physical activity, and nutrition?

Dr. Jordan Carlson<sup>1</sup>, Ms. Chelsea Steel<sup>1</sup>, Ms. Mallory Moon<sup>1</sup>, Ms. Lauren Fitzpatrick<sup>1</sup>, Dr. Amanda Grimes<sup>2</sup>, Dr. Joseph Lightner<sup>2</sup>, Dr. Jenifer Allsworth<sup>2</sup>, Dr. Betty Drees<sup>2</sup>, Dr. Keith Feldman<sup>1</sup>, Dr. Emily Cramer<sup>1</sup>, **Dr. Jannette Berkley-Patton<sup>2</sup>**

<sup>1</sup>Children's Mercy Hospital, Kansas City, USA, <sup>2</sup>University of Missouri-Kansas City, Kansas City, USA

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**Purpose:** Making public transit free for all users may be a way to increase the use of public transit and support health in new and existing bus riders. This presentation integrates analyses of multiple data sources to investigate the impacts of a 5+ year citywide zero-fare free bus transit policy in Kansas City, Missouri USA, a city with 486K residents and 40K monthly riders.

**Methods:** Zero-fare's impact on bus ridership was investigated by comparing ridership between Kansas City and nine comparison cities without zero-fare. Within Kansas City, built and social neighborhood environment factors were investigated to identify characteristics of the neighborhoods that experienced the largest changes in ridership (e.g., socioeconomic deprivation, racial/ethnic composition, walkability, density, and streetscape features collected from community-led walk audits). Kansas City bus riders and non-bus riders (N=3000) completed self-report measures on bus use, physical activity, and nutrition, and a subsample (N=390) completed device-based measures of physical activity (accelerometry and GPS).

**Results/findings:** The start of zero-fare coincided with the start of the COVID-19 pandemic in early 2020. Ridership decreased dramatically early into the pandemic in all cities, though much less in Kansas City (by 27% in Kansas City and 53% in the comparison cities during the first year of the pandemic). Two, three, and four years after the start of zero-fare, ridership was consistently ~25% higher in Kansas City as compared to the peer cities, on average. Neighborhoods with higher socioeconomic deprivation ( $\beta=0.30$ ,  $p=.045$ ), greater street connectivity ( $\beta=0.32$ ,  $p=.033$ ), and a larger proportion of white non-Hispanic residents ( $\beta=0.04$ ,  $p=.012$ ) tended to experience more positive changes in ridership (i.e., smaller decreases or larger increases in ridership). The resident data on bus use, physical activity, and nutrition will be analyzed in late 2024 and included in this presentation.

**Conclusions:** Although the pandemic led to reduced ridership in all cities, ridership decreased much less and rebounded better over the 4-year period in the zero-fare city. The impact on ridership high-poverty areas is promising given the need to support transportation and health equity. Impacts on physical activity and nutrition will also be discussed.

## Perceptions of Physical Activity in Combating Metabolic Syndrome: Insights from a Multi-ethnic Urban Population

**Mrs Bushra Ali**, Dr. Anne Elliott, Dr. Rhonda Cohen, Prof Tim Evans

*<sup>1</sup>Middlesex university London, Hendon, United Kingdom*

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Background:** The study aimed to explore and evaluate stakeholders' perceptions of physical activity (PA) to reduce the occurrence of metabolic syndrome (MetS), the primary cause in the development of non-communicable diseases (NCDs) such as heart disease, stroke, and type 2 diabetes. Rising NCD rates are putting a major strain on the economy by raising healthcare expenses and lowering Quality of Life.

**Purpose:** Investigating approaches to enhance engagement and adherence to PA within Dubai's multiethnic framework. **Methods:** Data was collected through semi-structured interviews with 20 stakeholders concerned with MetS (10 men, 10 women; age range: 32-58 years). The sample included senior policy officials, gym owners, personal trainers, gym members, and inactive individuals.

**Results:** The findings of the research were thoroughly investigated by means of three separate analyses. The horizontal stakeholder analysis revealed two main themes: existing interventions to increase PA and Lack of MetS awareness, and vertical analysis revealed four 'barriers': cost, socio-cultural calendar prioritisation, life-work balance, and prolonged sedentary behaviour counteracting PA advantages. The content analysis through Hofstede's framework revealed the cultural influence on participants' participation in PA. Through the Saldana framework, the themes "the implications of living as an expatriate" and "the impact of dependence" emerged.

**Conclusions:** Analysis shows the lack of awareness surrounding MetS has resulted in it not being given the level of attention it deserves. The dynamic relationship between cultural and social norms has a significant impact on an individual's attitudes, beliefs, and actions towards PA. **Practical implications:** Finding ways to increase PA is essential to battling MetS and improving health outcomes. Developing strategies to reduce and interrupt sedentary behaviour is crucial. To effectively promote and encourage PA within the diverse community, it is imperative for specialists and academics to have a focused and sophisticated understanding of cultural dynamics. **Funding:** The author declares that this research was supported by personal funds.

# The Real Cost of Food Database: Using web harvesting and artificial intelligence to create a national database for monitoring online supermarket products and informing policy

**Dr. Helen Eyles<sup>1</sup>**

<sup>1</sup>The University of Auckland, Auckland, New Zealand, <sup>2</sup>Consumer New Zealand, Wellington, New Zealand, <sup>3</sup>Health Coalition Aotearoa, Auckland, New Zealand, <sup>4</sup>Ministry for Primary Industries, Wellington, New Zealand

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** New Zealanders spend ~70% of their household food budget at supermarkets. However, there are few regulations and policies, and no consistent or efficient monitoring of the foods and beverages NZ supermarkets sell. The main purpose of this study was to use web harvesting and artificial intelligence (AI) to create a national database of food and beverage products available for sale on major NZ supermarket websites. The specific objective was to determine the availability and equity of healthy, environmentally sustainable, budget-friendly foods in online supermarkets across regions of NZ.

**Methods:** A transdisciplinary team and approach was used to co-design The 'Real Cost of Food' (RCoF) database. Regional data are harvested weekly from PAK'nSAVE, New World, and Woolworths using a repeated cross-sectional design. AI (large-language models) assists in categorizing products into a three-tiered food and beverage taxonomy and identifying packaging types e.g. plastic, cardboard, metal, and glass. A composite healthiness score is calculated for each product based on the Australasian Health Star Rating nutrient profiling model and the Nova level of food processing. A composite environmental sustainability score is calculated for each product using data on greenhouse gas emissions, country of origin, and packaging type. Budget-friendly products are identified based on mean price. Policy-relevant findings are generated using a food basket approach.

**Results/findings:** Data were harvested from 385 online stores across NZ: 55 PAK'nSAVE, 145 New World, and 185 Woolworths. Total food and beverage product numbers ranged from 101 to 13,682 by store. AI models accurately identified packaging types for singular packaging but were less successful in identifying multiple packaging types present on one product. The percentage of products classified as healthy and environmentally sustainable will be presented overall and by store type, and region. The cost of a healthy, environmentally sustainable, and budget-friendly food basket overall and by region will also be presented.

**Conclusion:** Web harvesting and AI were essential tools for creating the RCoF database, a current, rich, and unique source of information about NZ supermarket food products. The transdisciplinary research team and methods increase the potential for findings to inform future food-related regulations and policies in NZ.

# Exploring Digital Nudges and Recommender Systems for Obesity Prevention and Physical Activity Promotion: A Scoping Review

**Dr. Sarah Forberger<sup>1</sup>**, Dr. Lucia A. Reisch<sup>2</sup>, Dr. Pieter Van Gorp<sup>3</sup>, Dr. Christoph Stahl<sup>4</sup>, Dr. Lara Christianson<sup>1</sup>, Jihan Halimi<sup>5</sup>, Dr. Karina Karolina De Santis<sup>1</sup>, Cassandra Omane<sup>1</sup>, Chungwan Lo<sup>1</sup>, Dr. Laurent Malisoux<sup>6</sup>, Dr. Tiziana De Magistris<sup>5</sup>, Dr. Torsten Bohn<sup>6</sup>

<sup>1</sup>Leibniz-Institute for Prevention Research and Epidemiology - BIPS, Bremen, Germany, <sup>2</sup>El-Erian Institute for Behavioural Economics and Policy, Cambridge Judge Business School, Cambridge, UK,

<sup>3</sup>Information Systems Group, Eindhoven University of Technology, Eindhoven, the Netherlands,

<sup>4</sup>Luxembourg Institute of Science and Technology – LIST, Luxembourg, Luxembourg, <sup>5</sup>Agro-Food Research and Technological Center of Aragon (CITA), Zaragoza, Spain, <sup>6</sup>Luxembourg Institute of Health, Luxembourg, Luxembourg

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Digital nudges and recommender systems have gained attention for promoting physical activity (PA) and preventing obesity. They assist with selecting recipes or recommending physical activities tailored to schedules and weather. These systems apply nudging mechanisms by reducing information overload, ranking relevant information, and simplifying decisions. This scoping review explores their use to prevent overweight and obesity and promote PA, aiming to (1) identify their applications and (2) map their characteristics (e.g., target populations, behaviours, system classification, personalisation, interconnection, and delivery).

**Methods:** A comprehensive search across seven databases was conducted until September 2023, following PRISMA-ScR guidelines, without language restrictions, following a published protocol. We included primary studies that tested systems in real-world samples, excluding those based on hypothetical datasets. After a two-stage screening process, 70 studies covering 92 evaluations were included. Reviewers extracted data using a standardised and pilot-tested form with a coding scheme including reported effects. The lead author coded and verified the data with a second team member.

**Results:** Most studies focused on dietary behaviours, with fewer addressing PA. Recommender systems dominated 56 studies (n=38 nutrition, n=11 PA, n=7 mixed), while 11 utilised nudges (n=8 nutrition, n=3 PA, n=1 mixed). Personalisation was common but often lacked data source details (38 studies). No studies demonstrated interconnection between participants. Most studies did not specify the intended target group (n=54); only 16 papers mentioned a target group, with older adults most frequently addressed (n=3). In contrast, evaluations predominantly involved individuals aged 18–40 (n=28) and mixed adult populations aged 18–65 (n=17), with limited representation of children, older adults, and other specific groups. Fifty-eight evaluations reported positive effects, while 27 reported mixed effects.

**Conclusion:** Digital nudges and recommender systems hold promise for obesity prevention and PA promotion. However, gaps remain in incorporating behavioural insights, fostering user interconnection, and improving real-world testing. Physical activity is underrepresented compared to dietary behaviours despite its significance for obesity prevention. Commercial products often already integrate advanced personalization, interconnection, and behavioral insights, highlighting the urgency for academic research to bridge the gap. Future studies should focus on these areas to maximise the impact of research-driven systems on diverse populations.

## An objective analysis of children's exposure to food and beverage marketing online: Kids Online Aotearoa.

**Miss Libby McNaughton**<sup>1</sup>, Dr Moira Smith<sup>1</sup>, Mr Ryan Gage<sup>1</sup>, Mr Marcus Gurtner<sup>1</sup>, Prof Louise Signal<sup>1</sup>

<sup>1</sup>*University of Otago, Wellington, New Zealand*

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

Childhood overweight and obesity global prevalence has increased by 40% in the last 40 years. Children's food and beverage marketing exposure is a powerful modifiable contributor to overweight and obesity, influencing children's dietary preferences and intake. In Aotearoa New Zealand, children are exposed to 27 unhealthy food and beverage advertisements per day in their physical environment, yet little is known about their online exposure. We aim to present initial findings of an objective assessment of the nature and extent of children's online exposure to food and beverage marketing. Kids Online Aotearoa is a cross-sectional study of 156 children aged 11-13 years from Aotearoa, New Zealand. Participants used Zoom to record their real-time online activity for four days. Videos will be manually coded for each encounter with food and beverage marketing, and the data analysed to determine exposure rates based on platform (e.g., Instagram, Snapchat, games), marketing type (paid, earned, owned), content contributor (user or food industry), engagement (likes, comments, shares), and healthfulness according to a modified version of the 2024 WHO Nutrient Profile Model. The online world provides multi-national food and beverage companies unprecedented opportunities to market their products to children. Food and beverage marketing is embedded into children's online experience in ways not possible in the physical world. Analysis of real-time screen recording of children's device use is considered the most accurate method of assessing children's online food marketing exposure in their everyday lives. This research is one of the first to do so with a sample of children from a range of ethnic and socioeconomic backgrounds. Study findings will provide objective evidence of children's online exposure to food and beverage marketing, that in turn could be used to inform local, national and international policy to protect children from harm from such exposures. Restricting online food and beverage marketing to children will likely positively impact their dietary preferences and behaviours.

## Development and evaluation of a Sustainable Eating Index applicable in the province of Québec: Results from the NutriQuébec project

**Miss Gabrielle Rochefort**<sup>1,2</sup>, Marianne Rochette<sup>1,2</sup>, Joy Hutchinson<sup>1,2</sup>, Catherine Laramée<sup>1</sup>, Iris Giguère<sup>1</sup>, Annie Lapointe<sup>1</sup>, Simone Lemieux<sup>1,2</sup>, Sophie Desroches<sup>1,2</sup>, Véronique Provencher<sup>1,2</sup>, Benoît Lamarche<sup>1,2</sup>

<sup>1</sup>Centre Nutrition, Santé et Société (NUTRISS), Institut sur la nutrition et les aliments fonctionnels (INAF), Université, Québec, Canada, <sup>2</sup>École de nutrition, Faculté des sciences de l'agriculture et de l'alimentation, Université Laval, Québec, Canada

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Sustainable dietary patterns encompass four domains, namely health and nutrition, environment, economic, and sociocultural. This study aimed to develop and evaluate a Sustainable Eating Index (SEI) that reflects the sustainability of dietary patterns among adults living in the province of Québec, Canada.

**Methods:** Analyses were conducted in a sample of 834 adults from the prospective web-based NutriQuébec cohort. Dietary intakes were assessed on one to three occasions within a 30-day period using a validated web-based 24-hour recall. The SEI was developed using four sub-scores, each corresponding to one dimension of diet sustainability: diet quality according to the HEFI-2019 score (nutrition), diet-related greenhouse gas emissions (environment), diet costs (economic) and the behavior of local food procurement (sociocultural). Each sub-score was attributed points on a 25-point scale based on population quantiles. The final SEI score therefore ranged from 4 to 100 points with a higher score reflecting a greater alignment to a sustainable dietary pattern. The internal consistency of the SEI was examined using a Cronbach's  $\alpha$  and associations between the SEI score and each sub-score were assessed using Pearson correlations. General linear models were used to evaluate differences in SEI score and sub-scores among sociodemographic subgroups.

**Results:** The mean SEI score in this population was 52.7 points (95%CI, 51.5 to 53.9). The SEI had a standardized Cronbach's  $\alpha$  of 0.70. The correlations between the total SEI score and each sub-score ranged from 0.43 (sociocultural sub-score) to 0.73 (environment sub-score). Females exhibited greater SEI scores than males (+4.7 points, 95%CI, 1.4 to 8.1) and individuals aged > 70 years tended to have greater SEI scores than individuals aged < 30 years (+4.4 points, 95%CI, -2.4 to 11.2). No difference in SEI scores was found across income or education subgroups, or between urban and rural residents.

**Conclusions:** Results support the use of the SEI to assess the sustainability of dietary patterns among adults in the province of Québec, Canada. They also provide insights about sociodemographic factors associated with sustainable eating, which may inform future policy research.

# From Systems Thinking to Systems Action: what does it take to build a resilient public health?

**Dr. Wilma Waterlander<sup>1</sup>**, Joreintje Mackenbach<sup>2</sup>

<sup>1</sup>Amsterdam UMC, University of Amsterdam, Amsterdam, Netherlands, <sup>2</sup>Amsterdam UMC, Vrije Universiteit, Amsterdam, Netherlands

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** N. Systems Science

**Purpose:** Despite decades of awareness, progress in creating healthier living environments and reducing the burden of chronic disease has been limited. Improving these environments is challenging, as they are part of a broader system influenced by social, economic, and political factors. Systems thinking offers a valuable approach to understanding this complexity and identifying leverage points for meaningful change. However, knowledge about systems thinking remains fragmented across disciplines, and there is a significant delay in translating scientific insights into practical action. This raises the question, what does a resilient public health from a systems perspective look like?

**Methods:** In 2022, we initiated a knowledge network on systems thinking and action to strategically unite expertise in public health, in the Netherlands. This network connects scientific disciplines with societal organizations, creating a platform to foster transitions toward healthier living environments. Drawing on data from three network meetings and 15 stakeholder interviews, we synthesized a joint narrative to guide future efforts.

**Results:** The knowledge network brought together stakeholders from diverse fields, including public health, law, business administration, nutrition and agricultural sciences, epidemiology, politics, psychology, and sociology. These exchanges informed the development of a Theory of Change, rooted in Transition Theory and system dynamics. Our vision for 2030 includes: (1) A resilient public health sector actively engaging with public discourse; (2) Strategic use of political opportunities to institutionalize health-for-all policies; (3) A seamless integration of research and policymaking processes.

**Conclusions:** Applying systems thinking in public health requires collaboration across academic and non-academic sectors. Findings from this knowledge network demonstrate how these principles can be operationalized in practice and highlight the critical steps needed to accelerate the transition to healthier living environments.

## Adults' perceptions of the 2022 food price crisis and its impact on food purchasing: a cross-sectional comparison among five high- and upper-middle-income countries

**Juliette Cauchon**<sup>1,2</sup>, Christine M. White<sup>3</sup>, Sharon I. Kirkpatrick<sup>3</sup>, Adrian Cameron<sup>4</sup>, Gary Sacks<sup>4</sup>, Rachel B. Acton<sup>3</sup>, David Hammond<sup>3</sup>, Lana Vanderlee<sup>1,2</sup>

<sup>1</sup>Centre de recherche Nutrition, santé et société (NUTRISS), Institut sur la nutrition et les aliments fonctionnels (INAF), Université Laval, Québec, Canada, <sup>2</sup>École de nutrition, Faculté des sciences de l'agriculture et de l'alimentation (FSAA), Université Laval, Québec, Canada, <sup>3</sup>School of Public Health Sciences, University of Waterloo, Waterloo, Canada, <sup>4</sup>School of Health & Social Development, Deakin University, Melbourne, Australia

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Rising food prices are a major global concern, with food inflation reaching record levels in 2022. This study examined consumer perceptions of the changes in food prices from 2021 to 2022 and their impact on food purchasing in five countries.

**Methods:** Adults (≥18 years) from Australia, Canada, Mexico, the United Kingdom and the United States (US) completed a cross-sectional online survey in 2022 as part of the International Food Policy Study (n=20,433). Respondents indicated if they perceived that food had become more expensive for them in the last 12 months. Those reporting higher food costs then indicated whether, because of food prices, they bought more, less, or made no change to the quantities purchased of three core foods (CF) categories (fruits/vegetables; meat; milk/cheese) and four non-core foods (NCF) categories (snacks; desserts; non-alcoholic beverages; pre-prepared meals). Logistic regression models adjusted for age, sex, ethnicity, education, perceived income adequacy, presence of children in the household and food security status were used to examine differences among countries.

**Results/findings:** Overall, 82.8% of respondents indicated that food had become more expensive over the last year. Respondents in Mexico were more likely to report higher food prices than those in the US (AOR=1.23, 99%CI=1.01-1.50). Among respondents who reported higher food prices in the last year, 55.2% reported buying less of at least one CF because of food prices, while 76.2% reported buying less of at least one NCF. Respondents in Canada were the most likely to have purchased less of at least one CF in the last year due to food prices, followed by Australia (p<0.009 for comparisons with all countries). Participants from Mexico were most likely to have purchased less of at least one NCF in the last year (p<0.001 for comparisons with all countries). Analyses regarding differences among socio-demographic groups and food security status will be presented.

**Conclusions:** Most adults perceived rising food prices across countries, which led to reduced CF purchases, potentially affecting food security and health. Even greater reductions in NCF purchases, could, however, have positive health implications. Policies supporting healthier food access during periods of high food costs remain essential.

## Economic evaluations conducted alongside studies embedded in Australian healthcare services and programs: a scoping review

**Ms. Belinda Wang<sup>1</sup>**, Prof Cathie Sherrington<sup>1</sup>, Mr Stanley Saputra<sup>1</sup>, Ms Luiza Pivotto<sup>1</sup>, Dr Zoe Szewczyk<sup>1</sup>, Ms Josielli Comachio<sup>1</sup>, Dr Nathalia Costa<sup>2</sup>, Assoc Prof Leanne Hassett<sup>3</sup>, Prof Kirsten Howard<sup>1</sup>, Prof Andrew Milat<sup>1</sup>, Dr Alison Pearce<sup>1</sup>, Dr Joanne Scarfe<sup>1</sup>, Assoc Prof Christopher Williams<sup>4</sup>, Dr Marina Pinheiro<sup>1</sup>

<sup>1</sup>*School of Public Health, University of Sydney, , Australia*, <sup>2</sup>*School of Health and Rehabilitation Sciences, University of Queensland, , Australia*, <sup>3</sup>*School of Health Sciences, University of Sydney, , Australia*,

<sup>4</sup>*Centre for Rural Health, University of Sydney, , Australia*

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Embedded research supports the evaluation of interventions in a more generalisable, real-world context to inform decision-making. Adoption of effective interventions must be considered within the context of finite resources. Economic evaluations in embedded research can inform sustainment, scale-up and budget implications. This scoping review seeks to identify and outline the characteristics of economic evaluations conducted alongside studies embedded in Australian healthcare services or programs. We will report separately the results of studies investigating physical activity interventions. The benefits of physical activity are widely recognised, with physical activity related interventions being shown to be effective across many age groups and health conditions. However, it is important to understand the costs and economic implications of these interventions when considering their wider implementation.

**Methods:** This is an ongoing scoping review. Nine databases were searched, using search terms related to economic evaluations, healthcare and Australia. Full, within-trial economic evaluations of studies that included a control group or period were included. Studies were eligible if recruitment and intervention delivery took place within the healthcare system. Title and abstract, and full text screening were conducted independently by two authors. A data charting tool will be used to record data relating to study characteristics, economic evaluation methods, outcomes and study quality (CHEC-list). Interventions will be classified according to the type of physical activity included.

**Results:** Overall, 7,475 unique records were identified with 145 included for data extraction. Of 151 comparisons, 44% (n=66) were cost-effectiveness analyses (CEA), 20% (n=30) were cost-utility analyses (CUA), 8% (n=12) were cost-benefit analyses (CBA), 7% (n=10) were cost-minimisation analyses, and 23% (n=34) included multiple economic evaluation types. The majority of studies (n=101, 67%) were conducted in adults and older adults.

**Discussion:** We found 145 full trial-based economic evaluations of studies embedded in healthcare in Australia. The majority of these economic evaluations were CEAs and CUAs. Reviewing the available evidence will allow us to better understand the characteristics of economic evaluations of physical activity interventions embedded in healthcare services and highlight gaps in the literature to inform future studies and clinical practice.

## Physical Activity Research Trends in Nigeria: A Secondary Analysis of the GoPA! Data.

**Mr. Oluwafemi Ayoola<sup>1</sup>**, Dr. Otavio Amaral de Andrade Leao<sup>1</sup>, Dr. Andrea Ramirez Varela<sup>2,3,4</sup>, Prof. Adewale Oyeyemi<sup>5</sup>, Prof. Pedro Hallal<sup>1</sup>

<sup>1</sup>University of Illinois Urbana - Champaign, Urbana, United States, <sup>2</sup>Department of Epidemiology, University of Texas Health Science Center, Houston, USA, <sup>3</sup>Center for Pediatric Population Health, Houston, USA, <sup>4</sup>Department of Pediatrics, McGovern Medical School at UTHealth, Houston, USA, <sup>5</sup>College of Health Solutions, Arizona State University, Phoenix, USA

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** To describe the evolution of physical activity (PA) research in Nigeria, examine research topics, and discuss future opportunities.

**Methods:** A secondary analysis of the Global Observatory for Physical Activity (GoPA!) data on PA research trends in Nigeria (1980 to 2020). Descriptive statistics were used to analyze study designs and research topics. Data was stratified by key research topics and decades to illustrate changes over time.

**Results:** Our findings revealed that 87% of the 85 studies examined were published after 2010. Studies on cardiovascular research topics comprised 12.9%, with a majority (81.8%) conducted from 2011 to 2020. Cancer-related PA studies were minimal (1.2%), with all studies occurring post-2011. Research on mental health and illness accounted for 4.7% of the total and took place during the 2011–2020 period. Notably, the built and natural environment topic represented 7.1% of studies, solely appearing in the last decade. PA and nutrition research contributed to 9.4% of the total, demonstrating a notable increase post-2010 (75% of these studies). Methodological studies constituted 10.6% of the total, spanning all periods but most prevalent in the most recent decade (66.7%). Additionally, studies on PA in relation to World Health Organization Millennium/Sustainable Developmental Goals policy documents and healthy lifestyle studies were limited, each accounting for 2.4%, only observed from 2011 onwards. The “Others” category (e.g., exercise training, therapeutic exercise) was the largest, comprising 48.2% of total studies., with most (90.2%) in the 2011 – 2020.

**Conclusion:** PA research output in Nigeria increased in the 2011–2020 period across nearly all areas, signifying more awareness and a growing focus on these fields in recent years. Overall, the findings show that PA research in Nigeria has become more diverse over the past decade, with an increasing focus on cardiovascular health, nutrition and interdisciplinary topics within the field. Despite the progress in PA research, certain gaps remain evident. Areas such as studies in sedentary time, populations living with disabilities, and objective measures of PA were notably underrepresented. Addressing these gaps is essential for a more inclusive understanding of PA trends and for developing well-rounded strategies to tackle various PA health-related outcomes.

# Effectiveness of local government actions targeting physical activity, sedentary behaviour and dietary behaviour: a scoping review

**Mrs. Jessie Van Kerckhove**<sup>1,2</sup>, Prof. Maïté Verloigne<sup>2</sup>, Dr. Elise Braekman<sup>1</sup>, Suzannah D'hooghe<sup>1</sup>, Dr. Leonor Guariguata<sup>3</sup>, Dr. Lize Hermans<sup>1</sup>, Dr. Stefanie Vandevijvere<sup>1</sup>  
<sup>1</sup>Sciensano, Brussels, Belgium, <sup>2</sup>Ghent University, Ghent, Belgium, <sup>3</sup>KU Leuven, Leuven, Belgium

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Background:** Over the past decades, there has been a growing interest from local government jurisdictions to address obesity, partly due to the slow and inadequate implementation of nationwide policies. Local governments are better positioned to have a direct impact on everyday lives and are capable to respond more quickly to the changing environment of their jurisdiction. However, their jurisdiction is typically narrower compared to national governments, and they often lack the expertise and capacity to effectively address obesity. This scoping review aims to identify policies implemented by local governments in high income countries to tackle obesity and evaluate their effectiveness in influencing diet and physical activity behaviours.

**Methodology:** We conducted a systematic search using Pubmed, Embase and Web of Science for articles published since January 2000. Studies were included if they (a) described local policies, programs or actions implemented at the level of the city, municipality, county or community in high income countries, (b) addressed physical activity, sedentary behaviour and/or dietary behaviour; (c) clearly highlighted the role of the local government for the policy/program/action; (d) evaluated effectiveness; (e) were aimed at prevention rather than treatment of obesity and (f) were published in English. Data were extracted using a pre-tested standardized form.

**Results:** A total of 88 papers were included. Local government actions mainly focused on physical activity and dietary behaviour. No policies were found that specifically targeted sedentary behaviour. Effective actions included taxation of sugar-sweetened beverages, menu-labelling at restaurants, regulations on food offered in public settings, restriction of new fast food outlets, park renovations, afterschool physical activity programs, land-use and transportation planning policies and whole-of-systems community interventions. These actions mainly impacted outcomes such as consumption of sugar-sweetened beverages, fruit and vegetable servings, BMI and BMI z-score, adult leisure time PA, the number of park users and time spent in MVPA.

**Conclusion:** This scoping review highlights a clear potential role of local governments to contribute to obesity prevention through targeted actions. HEALTH4EUKIDS is funded by the European Health and Digital Executive Office (Grant 101082462)

## Focus on Restaurant Engagement to Strengthen Health (FRESH) Trial: Findings from Formative Research and Baseline Assessments in Participating Restaurants

**Prof. Joel Gittelsohn<sup>1</sup>**, Dr Emma Lewis<sup>1,2</sup>, Ms. Anna Claire Tucker<sup>1</sup>, Veronica Velez-Burgess<sup>1</sup>, Lisa Poirier<sup>1</sup>, Epifania Ortiz<sup>1</sup>, MSPH Shuxian Hua<sup>1</sup>, Kenny Kusnadi<sup>1</sup>, Dr Joelle Robinson-Oghogho<sup>1</sup>, Albar Arvizu Contreras<sup>1</sup>, Stacey Williamson<sup>1</sup>, Prof Uriyoan Colon-Ramos<sup>3</sup>  
<sup>1</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, United States, <sup>2</sup>Texas A&M AgriLife, , United States, <sup>3</sup>George Washington University, , United States

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Americans spend nearly half their food dollars on foods prepared away from home. These foods are associated with poor diet quality and increased chronic disease risk especially in low-income urban minority communities. The FRESH trial aims to sustainably improve healthier menu offerings in independently-owned restaurants serving low-income African American communities in Baltimore and Latine communities in the Washington DC Metropolitan Area. Presently, we focus on preliminary findings from Baltimore.

**Methods:** Formative in-depth interviews were conducted with restaurant owners (n=14) on their perceptions of healthy food and customers' acceptance of healthier menus and cooking methods, coupled with concurrent observations of menu offerings. Qualitative data were coded and analyzed to inform the intervention. Descriptive statistics are reported for a preliminary sample of 7/48 restaurants to be recruited. Self-efficacy for incorporating healthier food and beverage offerings was assessed using a 10-question scale (range: 10–50,  $\alpha=0.77$ ).

**Results:** Baltimore restaurant owners viewed non-fried options, lean proteins, and plant-based meals as healthy. While open to using healthier cooking fats, they expressed mixed feelings about reducing salt, adopting non-frying methods, and adding vegetables and whole grain offerings, and were reluctant to reduce sugar. Our first 7 enrolled restaurants varied in cuisine types offered (i.e., Soul, African, American, Italian, etc.), underscoring the need for tailored approaches. All restaurants offered sugar-sweetened beverages. Aside from bottled water in 57% of restaurants, there were few or no low- or no-sugar beverages offered. Types of cooking methods ranged dramatically between restaurants, from primarily deep-frying, to flat-grilling, to baking, to broiling. Self-efficacy for preparing and offering healthier foods was high ( $x=39.0$ ). Owners were very interested in having their restaurants /dishes promoted via digital strategies to widen their customer base, but had limited time and resources to do so.

**Conclusions:** The FRESH trial will introduce 3+ healthy meals and 3+ low- or no-sugar beverages to each restaurant, mutually selected with the owner. To offset owner concerns with acceptability, short-term subsidies will be provided in the form of credit to their food suppliers. FRESH will support promotional strategies, including menu redesign, digital and print media.

# The Impact of Four-Day School Weeks on Food Insecurity in Rural U.S. School Districts and the Role of Off-Day Food Provision

**Dr. Emily Tomayko<sup>1</sup>**, Colleen Jones, Dr. John Schuna, Jr., Dr. Paul Thompson, Dr. Katherine Gunter

<sup>1</sup>Montana State University, Bozeman, USA

**SO.3.18: Innovative Tools and Global Trends in Policy and Environment, Limelight 1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** H. Policies and environments

**Purpose:** Food insecurity, particularly in rural areas, remains a significant issue in the United States, with children in food insecure households experiencing greater health risks. Federally subsidized school meal programs, such as the National School Lunch Program (NSLP), help alleviate food insecurity but have limited availability during school breaks, including summer. The widespread adoption of four-day school weeks (4DSW), especially in rural districts, may exacerbate food insecurity by further reducing access to school meal programs. This study examines the impact of 4DSW schedules on food insecurity and investigates whether off-day food provision services can mitigate these effects.

**Methods:** We used district-level food insecurity rates (2011-2018) from Feeding America's Map the Meal Gap, linked to school schedule type (4DSW vs. 5DSW), geographic location, and sociodemographic factors (e.g., poverty, Supplemental Nutrition Assistance Program participation). Additionally, we surveyed 4DSW districts during the 2022-2023 school year to assess the availability of food provision services on the non-school weekday. Statistical analyses, including forward stepwise regression, were conducted to examine the relationship between school schedule, food insecurity, and food provision services.

**Results:** There was no significant difference in food insecurity rates between 4DSW and 5DSW districts overall. However, secondary analyses revealed that in 4DSW districts offering food on the non-school day, food insecurity rates were 0.53 percentage points lower than in 5DSW districts (95% CI: -0.87, -0.19;  $p = 0.002$ ). Conversely, 4DSW districts without food provision had 0.21 percentage points higher food insecurity rates than 5DSW districts (95% CI: 0.02, 0.39;  $p = 0.033$ ). Additionally, 4DSW districts with food provision had food insecurity rates 0.81 percentage points lower than those without (95% CI: -1.21, -0.41;  $p < 0.001$ ).

**Conclusions:** While there was no overall difference in food insecurity between 4DSW and 5DSW districts, districts that offered food on the non-school day saw a small reduction in food insecurity. These results suggest that off-day food provision can mitigate potential impacts of reduced access to school-based meal programs, particularly in rural areas. Expanding such services could be an effective strategy to address food insecurity in districts operating on 4DSW schedules.

## From Policy to Plate: Stakeholder perspectives on the value of centre-based nutrition policy to optimise nutrition environments in Early Childhood Education settings

**Miss Anna Aristova<sup>1</sup>**, Dr Alison Spence<sup>2</sup>, Dr Chris Irwin<sup>3</sup>, Dr Penelope Love<sup>2</sup>

<sup>1</sup>*School of Exercise and Nutrition Sciences, Deakin University, , Australia*, <sup>2</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, Australia*,

<sup>3</sup>*School of Health Sciences and Social Work (SHS), Nutrition and Dietetics, Griffith University, , Australia*

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Centre-based nutrition policies (CBNPs) play a crucial role in shaping young children's dietary behaviours, translating broad government nutrition recommendations into practical, actionable guidelines for ECEC employees and families. However, the implementation of these policies in Australia is often limited due to resource constraints, varying staff training levels, and differing regional needs. This study explores these barriers to CNBP implementation in Australian ECEC settings, examining the perspectives of service-level (ECEC employees) and agency-level stakeholders (health/government organisations), to identify strategies to improve the feasibility and effectiveness of CBNPs.

**Methods:** A qualitative exploratory design was adopted to gain in-depth insights from stakeholders regarding their experiences with CBNPs. Participants were purposively sampled based on their completion of a related survey, and semi-structured interviews were conducted to capture their perspectives. Reflexive Thematic Analysis was applied to identify and analyse the key themes that emerged from the data.

**Results:** The analysis revealed three central themes: (1) stakeholders emphasised the need for realistic and feasible policy requirements over idealistic goals, (2) the importance of contextualising nutrition guidelines to the specific needs and circumstances of individual ECEC centres, and (3) the recognition that a multifaceted approach—including clear, adaptable guidelines and targeted support—is essential for fostering supportive nutrition environments.

**Conclusions:** To advance their effectiveness, CBNPs need to strike a balance between best-practice benchmarks and feasible policy guidelines, ensuring they address the unique challenges of diverse ECEC settings. This balance is critical for ensuring policies are both adaptable and impactful. ECEC settings also require practical tools and enhanced support in terms of resources, funding, and employee training to effectively implement CBNPs. Future research is needed to identify specific strategies to improve the development of appropriate CBNPs for the Australian ECEC sector and to enhance their implementation and compliance.

# The Effect of Active Learning on Academic Performance in a Primary School Setting - the Health Oriented Pedagogical Project (HOPP).

**Prof. Asgeir Mamen<sup>3</sup>**

<sup>1</sup>Inland Norway University of Applied Sciences, Lillehammer, Norway, <sup>2</sup>Medical University of Graz, Graz, Austria, <sup>3</sup>Kristiania, Oslo, Norway

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

The Effect of Active Learning on Academic Performance in a Primary School Setting - the Health Oriented Pedagogical Project (HOPP).

Introduction: Active Learning (AL) or Physical Activity Across the Curriculum (PAAC) are attempts to combine increased physical activity with learning activities in a school setting. If PA is separate from academic teaching, it might reduce the time allocated for educational activities, and there has been a fear of reduced learning outcomes in such situations.

Methods: The Health Oriented Pedagogical Project (HOPP) is a school-based PA intervention program conducted in seven elementary schools in Horten municipality in the Southeast part of Norway. The study includes pupils 6 – 11 years at baseline (n=1545). Two control schools were selected as a basis for comparison (n=752). Both control schools had no program for physical activity besides the compulsory teaching in physical education (PE). The HOPP study was initially a 7-year longitudinal large-scale controlled intervention that was initiated in 2015. The study focuses on public health, cardio-metabolic risk factors and academic performance. In this context, the relationship between the intervention and the pupils' academic performance will be highlighted. The Norwegian Directorate for Education and Training conducts annually compulsory tests that provide information on reading, numeracy, and English skills. The tests are carried out in the autumn, shortly after the pupils have started in 5th grade.

Results: HOPP has collected results from national tests for 5th grade pupils, starting in the fall of 2014 with pupils born in 2004 and ongoing until 2019 when the last 5th graders, born in 2008, completed their national tests. An analysis of national test scores in the English language from 2016 to 2019 reveals a significant improvement in the performance of pupils from intervention schools compared to control schools. Indicated by a consistent upward trend in English language acquisition. This trend not only signifies the effectiveness of the HOPP project but also underscores the potential of long-term active learning programs to enhance language skills—a domain often challenging to impact. A similar trajectory of national test scores was found in Calculus. The performance of the intervention schools exhibits a progressive improvement, markedly surpassing the performance of control schools. These findings suggest that incorporating physical activity in learning not only supports physical health but also bolsters mathematical reasoning and problem-solving skills, which are crucial components of academic success. The impact of HOPP extends to reading proficiency in Norwegian. The intervention schools displayed considerable gains in reading test scores, starkly contrasting the relatively stagnant trend observed in control schools. This improvement is particularly noteworthy, as reading is a foundational skill that influences all areas of learning. The HOPP project's approach may facilitate better concentration and information retention, enhancing reading comprehension.

Conclusion: Considering these findings, the following implications may be drawn 1) The integration of AL within the curriculum should be considered a viable approach to enhance

academic outcomes while promoting physical health. 2) Long-term interventions, as demonstrated by the HOPP project, are critical for realising the full benefits of AL. 3) Teacher involvement in the development and implementation of AL interventions is crucial for the practical and sustainable integration of such programs into the school curriculum.

## Crossing growth channels during adolescence is a risk factor for heightened weight gain during fatherhood

**Dr. Mariane De Oliveira<sup>1</sup>**, Other Natalie Grafft<sup>1</sup>, Prof. Jess Haines<sup>2</sup>, Dr. Sabrina Douglas<sup>2</sup>, Prof. Brent McBride<sup>3</sup>, Prof. Rebekah Coley<sup>4</sup>, Prof. Jorge Chavarro<sup>5</sup>, Prof. Sebastien Haneuse<sup>5</sup>, Prof. Wolney Conde<sup>6</sup>, Dr. Kirsten Davison<sup>1</sup>

<sup>1</sup>Boston College, School of Social Work, Chestnut Hill, USA, <sup>2</sup>University of Guelph Department of Family Relations & Applied Nutrition, Guelph, Canada, <sup>3</sup>University of Illinois, Urbana-Champaign, USA, <sup>4</sup>Boston College, Lynch School of Education and Human Development, Chestnut Hill, USA, <sup>5</sup>Harvard T.H. Chan School of Public Health, Boston, USA, <sup>6</sup>University of São Paulo, School of Public Health, São Paulo, Brazil

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

**Purpose:** Evidence suggests that factors present during the preconception period may influence men's risk of weight gain after becoming fathers. However, there remains a limited understanding of how BMI trajectories during adolescence shape long-term weight gain, especially in the context of fatherhood. This study examines the effect of crossing growth channels during adolescence (ages 14 to 22) (Bogin, 2023) on men's risk of weight gain during fatherhood compared to pre-fatherhood.

**Methods:** Repeated measures of BMI z-score (BMIz) for 742 males were compiled from the Growing Up Today Study (GUTS) (ages 10-22 years) and the Fathers and Families (F&F) study (ages 24+), with an average of 14.8 measures per participant. We analyzed growth channel changes during adolescence. An average increase in BMIz of  $\geq 0.67$ , calculated from consecutive time points of BMI, indicated that a participant had shifted to a higher growth channel, while values  $< 0.67$  BMIz indicated that they had remained in the same growth channel (independent variable). The primary outcome was change in men's BMIz during the 5-year period prior to, and up to 10 years following, entry into fatherhood. Using Linear Mixed Effects Regression, we examined differences in men's BMIz trajectories (level and slope) during fatherhood compared to pre-fatherhood for men who changed versus did not change their growth channel during adolescence.

**Results:** The intercept for men's change in BMIz at the point of fatherhood was significantly higher compared to pre-fatherhood. As hypothesized, this difference was significantly greater for men who crossed growth channels during adolescence versus those who remained in their channel. For those who remained in the same growth channel, the intercept increased from 1.04 (95% CI: 0.87-1.21) to 1.11 (95% CI: 0.94-1.28), indicating a higher baseline BMIz after fatherhood. The slope decreased slightly from 0.03 (95% CI: 0.02-0.03) to 0.02 (95% CI: 0.01-0.03), suggesting a minimal reduction in the rate of change over the fatherhood years. In contrast, for those who shifted growth channels, the intercept increased from 1.18 (95% CI: 0.75-1.60) to 1.24 (95% CI: 0.81-1.66), along with a slight slope decrease from 0.04 (95% CI: 0.03-0.05) to 0.03 (95% CI: 0.02-0.04). This indicates that both the intercept and slope for those who changed channels remain higher compared to those who stayed in the same channel.

**Conclusion:** Results suggest that adolescence may be a crucial time for interventions aimed at reducing weight gain risks associated with fatherhood.

## A participatory and co-design approach to developing a primary school program that educates Swiss children on nutrition and sustainability

**Dr. Joyce Haddad<sup>1</sup>**, Ms. Charlotte Bourcet<sup>1</sup>, Ms. Sarah Morier<sup>2</sup>, Dr. Maude Louvriot<sup>3</sup>, Ms. Franziska Scheidegger-Balmer<sup>1</sup>, Prof. Klazine van der Horst<sup>1</sup>

<sup>1</sup>Bern University of Applied Sciences, Bern, Switzerland, <sup>2</sup>Teacher Training University of Valais, Saint-Maurice, Switzerland, <sup>3</sup>Haute Ecole et Ecole Supérieure de Travail Social, Lausanne, Switzerland

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** In Switzerland, the primary school curriculum lacks evidence-based nutrition education. Innovative approaches to food education that integrate nutrition and environmental sustainability are needed. Success of such programs depends on using a structured model for intervention development and involving key stakeholders. The aim of this study was to develop an educational program (Umami project) aimed at promoting healthy and sustainable eating habits in Swiss primary schools, using a co-design and participatory approach with stakeholders.

**Methods:** The Umami project adopted an inter- and trans-disciplinary approach. Researchers from dietetics, consumer science, food science, and environmental sustainability participated in a one-day workshop to define key concepts of food systems that should be taught to children. These concepts were transformed into competences and learning objectives by nutrition education experts. A participatory approach was also employed, involving primary school teachers, dietitians, food and agriculture experts, and education specialists. Together, they designed educational lesson plans that met the established learning objectives and created an online platform for teachers and parents. Additionally, 22 school students aged 9–10 participated in three co-design workshops to evaluate: 1) important food-related themes, 2) lesson plans and program logos, and 3) their experience as co-researchers. Thematic analysis was employed.

**Results:** From the interdisciplinary workshop, 80 concepts were grouped into 8 themes: food origin, informed consumerism, food waste, food culture, dietary guidelines, intuitive eating, culinary practices, and planetary health. The participatory approach produced 32 educational lessons (2 in French and 2 in German per theme), each with 3 to 5 learning objectives and corresponding activities. Students highlighted culinary practices, dietary guidelines, animal products, eating behavior, and food origin as priority themes. They requested more sensory activities in the lesson plans and voted on their preferred logos. They reported feeling important, entitled and valued as co-researchers. Umami teaching material were adjusted to students' feedback.

**Conclusions:** This participatory co-design approach demonstrated the value of involving stakeholders in developing a school nutrition program. The program is currently being evaluated in eight Swiss schools to assess its feasibility and acceptance by teachers, parents and children. Expansion is planned, incorporating feedback from political and industrial stakeholders.

## **Rested & Ready to Learn: Examining Parent & Teacher Perspectives of a Proof-of-Concept Study Promoting Healthy Sleep Habits in Preschoolers**

**Mr. Griffin Randolph<sup>1</sup>**, Olivia Plenzler<sup>1</sup>, Maddy Mikes<sup>1</sup>, Carmen White<sup>1</sup>, Michael Beets<sup>1</sup>, Bridget Armstrong<sup>1</sup>, Elizabeth Adams<sup>1</sup>, R. Glenn Weaver<sup>1</sup>, Hannah Parker<sup>1</sup>, James White III<sup>1</sup>, Meghan Savidge<sup>1</sup>, Olivia Finnegan<sup>1</sup>, Nicholas Niako<sup>2</sup>, Sarah Burkart<sup>1</sup>

<sup>1</sup>Department of Exercise Science, University of South Carolina, Columbia, USA, <sup>2</sup>Department of Epidemiology and Biostatistics, University of South Carolina, Columbia, USA

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** Inadequate sleep is associated with lower cognitive performance, diminished learning capacity, and behavioral issues, especially among children of low-income families. One-third of children do not meet sleep guidelines. The present study examines the parent- and teacher-reported feasibility and acceptability of a single group proof-of-concept intervention promoting healthy sleep habits among preschool-aged children.

**Methods:** Participants included parents (n=12, age=31.9±5.8 years, 97.1% female/mother, 83.3% White) and teachers (n=3, 100% female) of children from low-income families enrolled in 4K (n=14, 5.0±0.3 years old) in the 4-week intervention. The intervention consisted of text messages sent to parents 3x per week, home activities, and teacher-led classroom activities 1x per week. Parents received tips, strategies, and weekly activities; teachers led sleep lessons. Parents and teachers completed an end-of-program survey to assess the intervention's acceptability and the appropriateness of the program's incentives.

**Results:** The program was well-received by parents; 91.7% (n=11) found it "completely acceptable" and 83.3% (n=10) made changes in their children's sleep habits. After the program, 83.3% (n=10) of parents "strongly agreed" they were prepared to help their children's sleep habits and routines. Parents found all the content and topics helpful, with the highest-rated topics being consistent bedtime and screen time before bed (91.7%, n=11) and how sleep affects learning (83.3%, n=10). All parents agreed that the text messages were easy to read and informative, and agreed the \$25 incentives for completing the survey and returning the sleep watch were appropriate. Parents (92%) found the \$5/daily diary suitable, while one did not suggesting \$15 would be more appropriate. All teachers found the program "completely acceptable" and rated the classroom component as useful, engaging, and age-appropriate. Teachers noted participating students seemed slightly more rested and attentive during the school day. They would recommend the program, with 66.7% (n=2) planning to reinstate it and 33% (n=1) "probably" planning to reinstate it.

**Conclusion:** Overall, the findings demonstrated that the program was well-received. Parents found the materials, topics, and incentives appropriate. Teachers deemed it feasible and beneficial for classroom engagement and school readiness. Promising feasibility and acceptability data support the progression to a pilot randomized controlled trial.

## Testing co-designed strategies to promote sustainable healthy food provision in Early Childhood Education and Care (ECEC) settings

**Dr. Audrey Elford<sup>1</sup>**, Dr Alison Spence<sup>1</sup>, Mrs Margaret Rozman<sup>2</sup>, Professor Kylie Hesketh<sup>1</sup>, Dr Penelope Love<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), Deakin University, Burwood, Australia*, <sup>2</sup>*National Nutrition Foundation, Melbourne, Australia*

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** ECEC settings provide food to vast numbers of children. There is evidence of poor diet quality and high food wastage in ECEC, with implications for both human and planetary health. A co-design process with the sector was undertaken to develop feasible strategies for sustainable healthy food provision and food waste reduction. It resulted in the development of i) a self-administered food served/wasted audit, and ii) a toolkit resource for a whole-of-centre approach (including children). This study aimed to assess feasibility, acceptability, and effectiveness of these co-designed strategies.

**Methods:** In this three-arm mixed-method intervention, ECEC centres were randomly assigned to receive either the i) audit, ii) toolkit, iii) or both. ECEC staff participated in pre-and post-intervention surveys derived from validated tools on Organisational Readiness for Implementing Change, Feasibility, Acceptability and Appropriateness of Intervention Measures, and food provision practices (GoNAPSACC tool). Likert scale results were used to create mean component scores. Weighed food waste audit data calculated percentages for total waste, serving waste (food prepared but not plated) and plate waste. Open-ended survey responses explored changes in awareness and practice amongst ECEC staff. ECEC educators collected children's drawings and "circle time" discussions for content analysis.

**Results/findings:** Post-intervention data collection concludes in December 2024. Completion rates across the three arms varied; i) audit n=11 (of 13) centres, ii) toolkit n=10 (of 14), both n=6 (of 15) centres. Preliminary survey findings suggest ECEC staff in all arms reported practice change such adjusting the amount of food prepared to reflect daily attendance rates to reduce food waste (cooks), and speaking to children about food waste whilst modelling enjoyment of sustainable healthy food (educators). Children's drawings/discussions suggested two preliminary themes: i) young children felt empowered and responsible for making positive changes to the environment through food choices and food waste reduction efforts, ii) children used the information they learnt in ECEC activities to influence parents in their homes.

**Conclusions:** When individually implemented, the audit and the toolkit appear to elicit positive practice change in ECEC centre staff and children. High attrition rates for centres implementing both strategies simultaneously suggests that this may be too burdensome.

## Daily school sport uniforms can benefit student physical activity and other wellbeing outcomes: a qualitative study

**Ms. Carly Gardner**<sup>1,2,3</sup>, Dr Cassandra Lane<sup>1,2,3</sup>, Dr Alix Hall<sup>1,2,3</sup>, Dr Emma Pollock<sup>1,2,3</sup>, Dr Nicole McCarthy<sup>1,2,3</sup>, Dr Nicole Nathan<sup>1,2,3</sup>

<sup>1</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia,

<sup>2</sup>School of Medicine and Public Health, Faculty of Health and Medicine, University of Newcastle, ,

Australia, <sup>3</sup>Hunter Medical Research Institute, New Lambton Heights, Australia

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** F. Early care and education

**Purpose:** In many countries, students wear traditional school uniforms that inadvertently hinder their school time physical activity (PA). In contrast, sport uniforms or kits (typically allowed once or twice a week) are designed to be PA conducive. Access to sport uniforms daily presents a simple, accessible strategy to encourage children's PA and reduce chronic disease risk factors. This study assessed the impacts of a daily sport uniform policy on health and wellbeing by examining the experiences and perspectives of primary school students and teachers in one region of Australia.

**Methods:** We used an exploratory qualitative study design with schools where a daily sport uniform policy had been implemented, in the Hunter New England region of NSW, Australia. Consenting schools facilitated recruitment of staff and student participants. Data were collected through semi-structured focus groups of students and interviews of teachers conducted during school hours. We used innovative methods to enhance student engagement, generating written, visual, and audio-recorded data. All datasets (students and teachers) were analysed in NVivo software via inductive thematic analysis, following Framework Analysis. Triangulation of findings from each dataset strengthened theme development and interpretation.

**Results:** Data were collected from students (n =13) and teachers (n=2) approximately 10 months after daily sport uniform policy implementation. Participants shared unanimous support for the policy, highlighting many positive impacts of daily sport uniforms, particularly enabling PA during and beyond school hours. Broader themes emerged around the contribution of daily sport uniforms to student wellbeing, such as supporting a positive mind set, feeling more relaxed and 'freer'. Applying an equity lens revealed the policy had particular importance for girls, who reported daily sport uniforms facilitated spontaneous PA while enhancing their comfort and confidence.

**Conclusion:** Having experienced traditional and daily sport uniform policies, participants in this study provided rich comparative insights, preferring the benefits of sport uniforms. In regions where uniforms are common, a daily sport uniform policy presents a simple, low-cost option with the potential to increase student PA and other wellbeing outcomes while also supporting gender equity and addressing a PA participation barrier experienced in some school-based programs.

# Physical Activity and Sleep, Knowledge and Perceptions of Child Movement Behaviors, and Childcare Practices Among Home Providers: A Mixed Methods Survey Study

**Dr. Christine St Laurent<sup>1</sup>**, Joseph Kang<sup>1</sup>, Caroline Tran<sup>1</sup>

<sup>1</sup>University Of Massachusetts Amherst, Amherst, USA

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** F. Early care and education

Early childhood is an important phase in developing 24-hour cycle behaviors (sleep, sedentary behavior, and physical activity) for physical, social-emotional, and cognitive health. While most research focuses on center-based childcare, 25% of U.S. children under 5 attend home-based family childcare, where providers often lack educational, financial, and resource support for health-related practices. Additionally, daytime sleep health is underrepresented in studies, especially in home-based settings.

**Purpose:** This cross-sectional study aimed to identify the activity and sleep behaviors of family childcare providers, their knowledge, perceptions, and childcare practices relating to children's 24-hour movement behaviors, and explore relations between these factors.

**Methods:** Adult home childcare providers of western Massachusetts (n = 84, 85.7% female; age = 43.5 ± 10.7 years, 78.3% White, 14.3% Hispanic) completed a semi-structured online survey. In addition to demographic and childcare practice information, participants answered questions about their personal sleep and physical activity behaviors, knowledge and perceptions of child sleep, and childcare practices and policies for screen time, physical activity, and napping.

**Results:** Average childcare scores were 14.1 (range 3 to 33), 19.9 (range 2 to 41), and 1.0 (range 0 to 4) for screen time, physical activity, and nap sleep, respectively, with lower scores indicating greater engagement in recommended practices. Several correlates of childcare practices were identified, including provider age, knowledge of child physical activity and sleep, and sleep. Qualitative data from open-text responses identified barriers and challenges to childcare practices and child 24-hour behavior promotion.

**Conclusions:** Findings from this preliminary analysis of an ongoing study identify some potential intervention targets in home childcare providers, such as increasing child sleep health and physical activity knowledge. Lower income may contribute to fewer resources for home childcare support, and the next steps in this formative work, such as focus groups and measurement of both caregivers and children, may provide context to needs and barriers.

## Exploring the dissemination of evidence-based healthy eating and physical activity practices among key stakeholders in the Early Childhood Education and Care (ECEC) setting in Australia, a qualitative study.

**Ms. Ana Renda<sup>1,2,3</sup>**, Dr Rebecca Hodder<sup>1,2,4</sup>, Dr Kathryn Reilly<sup>4</sup>, Associate Professor Serene Yoong<sup>5</sup>, Dr Alice Grady<sup>1,2,4</sup>

<sup>1</sup>University of Newcastle, Coogee, Australia, <sup>2</sup>National Centre of Implementation Science, Newcastle, Australia, <sup>3</sup>Sydney Local Health District, Forest Lodge, Australia, <sup>4</sup>Hunter New England Local Health District, Wallsend, Australia, <sup>5</sup>Deakin University, Burwood, Australia

**SO.3.19: Innovations and Insights in Early Childhood and Youth, Limelight 2, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** F. Early care and education

Introduction Implementation of some evidence-based healthy eating and physical activity prevention policies and practices in the Early Childhood Education and Care (ECEC) setting in Australia remains low. Poor dissemination might affect research use and implementation of these practices. Identifying factors affecting the dissemination of policies and practices is needed to improve their implementation in the ECEC setting. However, this remains underexplored. We aim to identify the perceived factors (barriers and/or facilitators) that influence dissemination of evidence-based healthy eating and physical activity policies and practices in ECECs, from the perspective of ECEC staff.

Methods: A qualitative study including a convenience sample of preschools and long day care services across Australia was conducted. In-depth one-to-one semi-structured interviews were conducted and recorded using MS Teams platform or telephone. An interview guide was developed based on key dissemination determinants described by Baumann et al (2020). Adapted descriptive thematic analysis was used which led to various themes describing factors affecting dissemination. This study was approved by the University of Newcastle Human Research Ethics Committee (Approval number: H-2023-0451).

Results: We conducted 21 interviews of services located in 5 different State/Territories in Australia. 48% of services were from regional/remote areas, 86% were long daycare, 48% were in New South Wales and 43% were private for-profit services. 76% were directors with 22 years of experience in the industry. Results show several barriers related to the channel of communication and the content of the information received. Emails are the most common channel used; however, they can be perceived as a barrier as participants get overwhelmed by the amount and complexity of information in them. Facilitators perceived were related to the channel such as face-to-face contact; the content such as simple, short and with images; and the source such as endorsement from regulatory agencies.

Conclusions: Dissemination of healthy eating and physical activity practices in ECEC would be facilitated when appropriate channels and adapted content is used. Disseminators should consider end-users preferences when planning for dissemination.

## Using a champion-led approach to implement a sit less, move more intervention for desk-based workers

**Genevieve Healy<sup>1</sup>**, Prof. Ana Goode<sup>1</sup>

<sup>1</sup>*The University of Queensland, School of Human Movement and Nutrition Sciences, Brisbane, Australia*

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**Purpose:** To reduce the consequences of prolonged sedentary time, it is important to target the settings in which this behaviour is common, such as the desk-based workplace. Using a champion-led approach, we developed and tested (via a national implementation trial) a workplace intervention to raise awareness and build a supportive culture to sit less and move more in desk-based work teams.

**Methods:** The BeUpstanding program and associated online champion toolkit provides a step-by-step guide for champions to take up, deliver and evaluate the 8-week program in their work team. Data are collected via online surveys and toolkit analytics. For the trial outcomes, linear mixed models, correcting for cluster, were used for effectiveness, with reach, adoption, implementation, and maintenance outcomes described.

**Results:** Use of the train-the-champion approach was acceptable and feasible across multiple industries and sectors with participation from across Australia. For the implementation trial, 118 (of 233 eligible) champions consented and started with 94% (n = 111 champions) completing the program. The program reached 2,761 staff, with 2,248 participating in the staff survey(s): 17% from a non-English speaking background. BeUpstanding effectively changed workplace sitting (-38.5 [95%CI -46.0 to -28.7] minutes/8-hour workday) and all outcomes targeted by BeUpstanding (behaviours and culture), with small-to-moderate statistically significant effects observed. All participating teams (n = 94) completed at least 5/7 core steps; most (67/70 96%) intended to continue or repeat the program.

**Conclusions:** Workplace initiatives employing a train-the-champion approach can be successfully implemented and scaled to address prolonged sedentary time and help reduce associated consequences of this behaviour.

## Monitoring systems for public health program and policy implementation in community settings: features and recommendations from a scoping review

Prof. Nicole Nathan<sup>3,4</sup>, Dr. Cassandra Lane<sup>3,4</sup>, Dr. Alison Zucca<sup>3,4</sup>, **Mr. Will Pascoe<sup>3,4</sup>**, Ms. Belinda Peden<sup>3,4</sup>, Ms Carly Garnder<sup>3,4</sup>, Dr. Adam Shoesmith<sup>3,4</sup>, Ms Angela Smith, Mr. Edd Riley-Gibson<sup>2,3</sup>, Prof Adrew Milat, Prof Luke Wolfenden<sup>3,4</sup>

<sup>1</sup>College of Health, Medicine and Wellbeing, University of Newcastle, Newcastle, Australia, <sup>2</sup>Hunter New England Population Health, Hunter New England Local Health District, Wallsend, Australia, <sup>3</sup>Population Health Program, Hunter Medical Research Institute, New Lambton Heights, Australia, <sup>4</sup>National Centre of Implementation Science, University of Newcastle, Callaghan, Australia, <sup>5</sup>Hunter New England Health Libraries, Hunter New England Local Health District, New Lambton, Australia, <sup>6</sup>School of Public Health, University of Sydney, Camperdown, Australia, <sup>7</sup>Sydney Health Partners, Sydney, Australia

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Monitoring systems play an important role in prioritising public health investments, facilitating evaluations of their impact and provide mechanisms for accountability. Despite substantial guidance on public health behavioural and disease surveillance systems there is a significant gap in understanding of essential features of systems to monitor the implementation of community-based public health programs. This scoping review aimed to 1) scope the literature describing implementation monitoring; and 2) synthesise this literature to identify key features and recommendations to improve the design and functioning of such systems.

**Methods:** A systematic search of five electronic databases and grey literature sources was conducted to identify documents describing systems, frameworks or guidance for monitoring the implementation of public health programs or policies in community settings. Studies focusing on clinical health-care, surveillance systems, or non-health topics were excluded. Two authors independently screened titles, abstracts, and full texts for eligibility. Data extraction was performed using a standardised form. Best Fit Framework Synthesis was employed to identify recurring features and recommendations, and included deductive coding based on pre-defined categories, followed by inductive thematic analysis to detail the identified features of monitoring systems and corresponding recommendations.

**Results:** Ninety-seven documents were systematically reviewed describing 75 distinct Cases of implementation monitoring systems, the majority of which were in high-income countries (64%) focusing on program monitoring (81%) as opposed to policy monitoring, primarily targeting nutritional outcomes (36%) and reproductive, HIV, and sexual health outcomes (28%). National-level agencies were responsible for managing 43% of monitoring systems. We identified 12 key features and 26 recommendations grouped into 4 components: plan, prepare, and revise; monitoring activities, system appraisal, partner engagement.

**Conclusion:** Features and recommendations reflect the main tasks in designing and implementing monitoring systems, and emphasise the need for clear objectives and planning, investment in infrastructure and capacity building, and ongoing partner engagement at all system levels. This manuscript offers a foundational framework to guide policymakers and practitioners in establishing these systems.

# Constructs from the Consolidated Framework for Implementation Research (CFIR) Related to the Implementation of Physical Activity and Healthy Eating Activities in a Faith-Based National Implementation Study in the United States

**Dr. Sara Wilcox<sup>1</sup>**, Dr. Ruth P. Saunders<sup>1</sup>, Dr. Andrew T. Kaczynski<sup>1</sup>, Jasmin Parker-Brown<sup>1</sup>, Dr. Ye Sil Kim<sup>1</sup>, Dr. A. Caroline Rudisill<sup>1</sup>

<sup>1</sup>University of South Carolina, Columbia, USA

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Faith-based organizations are promising partners for reducing health disparities, yet implementation research in this setting is limited. This study examined CFIR constructs related to 12-month implementation of physical activity (PA) and healthy eating (HE) activities in the Faith, Activity, and Nutrition (FAN) National Implementation Study.

**Methods:** FAN is an evidence-based, organizational change intervention that targets church-level opportunities, messages, pastor support, and policies for PA and HE. US churches (N=107; 75% predominantly African American) from 23 states were enrolled. Church committees, led by a FAN coordinator, were offered an 8-lesson online training to prepare them to implement FAN. FAN Coordinators completed online surveys at baseline (BL) and 12 months (12M). They rated their agreement (1='strongly disagree' to 4='strongly agree') with statements based on constructs from four domains of the CFIR (implementation characteristics, inner setting, implementer characteristics, implementation process) and frequency of implementation (1='not at all' or 'rarely or never' to 4='almost all of the time' or 'about weekly') for the four FAN targets. Composites for PA and HE implementation, representing averages of the FAN targets, were created. Regression models tested whether each CFIR construct was associated with 12M implementation after controlling for BL values. Analyses were limited to churches that met in-person at BL (n=69).

**Results:** Both PA and HE implementation increased significantly from BL to 12M ( $p<.001$ ). Constructs from all four domains of the CFIR were related ( $p<.05$ ) to 12M implementation: intervention characteristics (PA: adaptability, complexity; HE: cost), inner setting (both: tension for change, compatibility, relative priority, readiness, congregant needs; PA: organizational incentives; HE: presence of health ministry), implementer characteristics (both: self-efficacy; PA: perceived benefits; HE: fruit and vegetable intake), and implementation process (both: engaging leaders; PA: engaging champions).

**Conclusions:** Church-level implementation of an evidence-based intervention was related to constructs from all four domains of the CFIR, especially the inner setting. More constructs were associated with PA than HE implementation, perhaps because providing PA is more of an innovation than providing food in churches. Findings are consistent with our earlier studies that used in-person training and help to identify factors and potential resources associated with implementation outcomes.

## Food Retailers' Implementation of a Nutrition Incentive Electronic Benefit Transfer (EBT) Program in Communities with High Social Deprivation in California, USA

**Dr. Bailey Houghtaling<sup>1</sup>**, James Marriott<sup>1</sup>, Dr. Amy Yaroch<sup>1</sup>, Joseph Prickitt<sup>2</sup>, Blanca Melendrez<sup>2</sup>, Karemi Alvarez<sup>2</sup>, Nancy Knauer<sup>3</sup>, Andreina Torres<sup>3</sup>, Dr. Eric Calloway<sup>1</sup>, Dr. Carmen Byker Shanks

<sup>1</sup>Center for Nutrition & Health Impact, Omaha, USA, <sup>2</sup>Center for Community Health, University of California San Diego, La Jolla, USA, <sup>3</sup>Mother's Nutritional Center, Santa Fe Springs, USA

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** This study examined food retail management and staff experiences implementing a nutrition incentive program. Specifically, to reduce implementation burden and promote scalability, Electronic Benefit Transfer (EBT) card technology was used alongside the Supplemental Nutrition Assistance Program (largest federal food assistance program in the United States) to deliver nutrition incentives for fruits and vegetables.

**Methods:** This quantitative, cross-sectional implementation science study followed the Exploration, Preparation, Implementation, Sustainment (EPIS) framework. Retailers from a private grocery chain were eligible to participate, including higher-level leadership (e.g., owner), store-level management (e.g., district managers), and store staff (e.g., cashiers). Recruitment occurred using store meetings/memos; fresh juices were provided as study compensation. When available, existing survey measures were used, including the Implementation Leadership Scale (ILS), adapted for a new context, and an employee Net Promoter Score (eNPS). Descriptive statistics were computed for all survey items and inferential (two-sample t-test, significance level of  $\alpha=0.05$ ) statistics examined differences between store-level management and staff. Confirmatory factor analysis evaluated adapted ILS performance. Open-ended survey items were analyzed qualitatively.

**Results:** A total of 538 retailers completed a survey (89% participation rate) and predominantly identified as female (76%) and Hispanic (94%). Implementing stores were in California communities with high social deprivation. Leadership's support for nutrition incentive EBT program implementation (adapted ILS scores) was rated highly overall. Store-level managers rated themselves higher than staff ratings for management on items for supportive leadership ( $3.65\pm0.58$  versus  $3.48\pm0.55$ ) and removing implementation obstacles ( $3.52\pm0.65$  versus  $3.10\pm1.0$ ) ( $p<0.05$ ). Satisfaction for program implementation was also generally high, as indicated by an eNPS score of 89 (out of a possible 100). However, store-level managers responded more favorably than staff on items that assessed overall experience with implementation, program importance, and attitudes toward supporting similar programs in the future ( $p<0.05$ ). Qualitative data indicated opportunities to improve incentive balance tracking capabilities and customers' program awareness/understanding to facilitate implementation.

**Conclusions:** Implementation strategies that reduce food retail staff's burden and strengthen store-level management support for nutrition incentive EBT programs and similar public health initiatives could be key to sustaining and scaling these programs, helping to increase access to healthy foods like fruits and vegetables.

## Impact of the 'REFORM' food company intervention on company desire and ability to make changes to nutrition-related practices: a process evaluation

**Dr. Miranda Blake**<sup>1</sup>, Ms Jasmine Chan<sup>1</sup>, Prof Cliona Ni Murchu<sup>2</sup>, Ms Sally Schultz<sup>1</sup>, Ms Josephine Marshall<sup>1</sup>, Mrs Jacqueline Grey<sup>3</sup>, Ms Caitlin Haliburton<sup>2</sup>, A/Prof Jaithri Ananthapavan<sup>4</sup>, Prof Gary Sacks<sup>1</sup>

<sup>1</sup>Global Centre for Preventive Health and Nutrition (GLOBE), Institute for Health Transformation, Deakin University, Geelong, Australia, <sup>2</sup>Epidemiology and Biostatistics, School of Population Health, University of Auckland, Auckland, New Zealand, <sup>3</sup>National Institute for Health Innovation, University of Auckland, Auckland, New Zealand, <sup>4</sup>Deakin Health Economics, Institute for Health Transformation, Deakin University, Geelong, Australia

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** The 'REFORM' cluster randomised controlled trial provided some of the first evidence that directly engaging with food companies to improve their nutrition policies and practices via training, technical support and performance benchmarking had no significant impact on the healthiness of company food product portfolios. Our process evaluation aimed to determine the impact of REFORM on company desire and ability to improve nutrition practices, and the potential mechanism of any impact, over time.

**Methods:** Eligible companies included the largest packaged food and non-alcoholic beverage companies and fast-food chains in Australia and New Zealand. Semi-structured interviews were conducted at the end of the 12-month intervention period and again at 24-months with intervention company representatives from nutrition, marketing, and research and development roles. Interviews investigated perceptions of factors which supported or inhibited company action to improve nutrition policies and practices, and the process of implementing changes over time. Deductive analysis derived themes against the ADKAR (Awareness, Desire, Knowledge, Ability, Reinforcement) change model domains and the Consolidated Framework for Implementation Research.

**Results:** At 12-months, representatives from 15 Australian and 4 New Zealand companies were interviewed (9 and 2 companies at 24-months, respectively). Few reported substantive nutrition policy or practice changes in response to REFORM at 12- or 24-months. Company engagement with REFORM was influenced by internal governance structures and resourcing. Where REFORM contributed to changes in company attitudes, policies and/or practices, it was achieved by empowering internal nutrition advocates to engage senior company decision-makers. In these cases, REFORM increased knowledge of how company nutrition policies and product portfolio healthiness compared to competitors, and helped manage concerns regarding lack of consumer demand for healthier products. Ultimately, REFORM was unable to increase company desire and action for nutrition, over competing profit-focused priorities and external shocks to company operations (including COVID-19 supply chain disruptions).

**Conclusions:** While companies identified some benefits from the 'REFORM' intervention, there is limited evidence to show that it changed company nutrition-related policies and practices in ways that would benefit public health. It is likely that government regulation will be required to overcome current internal and external barriers to change for food companies.

## Mixed-methods process evaluation of the LOFIT study: the integration of a lifestyle front office in routine hospital care

**Marlinde van Dijk**<sup>1</sup>, Dr. Judith Jelsma<sup>1</sup>, Leonie te Loo<sup>1,3</sup>, Anouk Driessen<sup>1</sup>, Joyce Vrijssen<sup>2</sup>, Charlotte Schumacher<sup>2</sup>, Msc Eline Faber<sup>1</sup>, Dr. Inge Scheek<sup>2</sup>, Prof. dr. Willem van Mechelen<sup>1</sup>, Prof. dr. Martine de Bruijne<sup>1</sup>, Dr. Adrie Bouma<sup>2</sup>, Prof. dr. Rienk Dekker<sup>2</sup>, Femke Van Nassau<sup>1</sup>  
<sup>1</sup>Amsterdam UMC, Amsterdam, The Netherlands, <sup>2</sup>UMCG, Groningen, The Netherlands, <sup>3</sup>Inholland, Haarlem, The Netherlands

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** The aim of this process evaluation is to investigate the implementation processes of the LOFIT trial, preparing for the sustainable rollout of a lifestyle front office (LFO) in the hospital beyond the research setting. We aimed to identify the pathways through which the intervention influenced outcomes, and the facilitators and barriers to adoption, implementation, and continuation.

**Methods:** This mixed-method process evaluation follows the UK MRC guidelines for evaluating complex interventions. Data were collected from participants, lifestyle brokers, healthcare professionals, and community-based lifestyle initiatives through interviews, questionnaires, logs, observations and field notes. Data were analyzed across three domains: context (i.e. characteristics, barriers and facilitators), implementation (i.e. recruitment, dose delivery, fidelity, reach), and mechanisms of impact (i.e. views and experiences). Quantitative data were integrated with qualitative data.

**Results:** In the LFO we reached a large population that were lower or medium educated (19% or 54%), had a low income (41%), or low health literacy (8%). We found that the 162 patients in the intervention group on average needed two sessions (range 1-5) at the LFO before they were referred to a community-based lifestyle initiative (78%) or started independently (22%). The LFO was highly valued by patients and healthcare professionals. Additionally, it also received much attention and willingness to refer patients from non-participating departments. The findings provide the suggestion that we in the future need to focus more on awareness of the LFO in the hospital, improve efficiency of care delivery, optimize the collaboration with GPs, and develop tools for faster identification of suitable community-based lifestyle initiatives .

**Conclusion:** The process evaluation provided key insights into the effect of the LFO implementation strategies, as well as the barriers and facilitators to its adoption and continuation. The findings will not only inform the further development of the LFO but also offer guidance for broader implementation in routine care settings. Ultimately, the study aims to contribute to the sustainable integration of lifestyle interventions into healthcare practice and might play an important role in reducing health inequalities.

## Factors Associated with Delivery of Healthy Eating and Activity Content within a Home Visiting Program

**Dr. Rachel Tabak<sup>1</sup>**, Amanda Gilbert, Allison Kemner, Cindy Schwarz

<sup>1</sup>Washington University in St. Louis, St. Louis, United States

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Describe delivery of healthy eating and activity content within home visiting and explore factors related to delivery

**Methods:** This analysis describes characteristics of visits and participant demographics within a cluster-randomized clinical trial, and their associations with the proportion of visits including content from an intervention Healthy Eating and Active Living Taught at Home (HEALTH). HEALTH is embedded within a home visiting program delivered across the United States. Following each visit with a family enrolled in the study, home visitors completed a survey documenting characteristics of the visit (e.g., whether visits: included HEALTH content; were conducted in Spanish or English). Study participants reported sociodemographic characteristics at baseline (e.g., race/ethnicity, income). Proportion of visits including HEALTH content and visits conducted in Spanish were dichotomized at 80%. Associations between sociodemographic characteristics of the families receiving the visits and characteristics of the visit with the proportion of visits including HEALTH content were explored with chi squared tests. Analyses were conducted using Stata 17.

**Results/findings:** Among the 98 participants, 46% identified as Hispanic, 63% reported an income of <\$30,000/year, 30% received at most of their visits in Spanish, and 43% received HEALTH content at most of their visits. There were not statistically significant differences in receiving HEALTH content during at least 80% of visits based on ethnicity, or number of children in the home. Among those reporting low income, 57% received HEALTH content during most visits, but this was only 27% among those with higher income ( $p=0.008$ ). Among those receiving most of their visits in Spanish, 64% received HEALTH content in most of their visits, while only 59% who received most of their visits in English received HEALTH content in most of their visits ( $p=0.041$ ).

**Conclusions:** The frequency of delivering healthy eating and activity content within a national home visiting program varied among families; this was not associated with most of the demographic characteristics explored, though was significantly associated with income and the language in which visits were delivered. Future work should use mixed-methods to explore influences on decisions related to delivering HEALTH content during home visits.

## Vehicle detection from GSV imagery: Predicting travel behaviour for cycling and motorcycling using Computer Vision

**Ms. Kyriaki Kokka<sup>1</sup>**, Dr Ali Abbas<sup>1</sup>, Dr S M Labib<sup>2</sup>, Dr Rahul Goel<sup>3</sup>, Dr James Woodcock<sup>1</sup>  
<sup>1</sup>MRC Epidemiology Unit, University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>Utrecht University, Utrecht, Netherlands, <sup>3</sup>Indian Institute of Technology Delhi, Delhi, India

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Comparative data on cycling and motorcycling behaviours are scarce, particularly at a global scale. Street view imagery, such as Google Street View (GSV), combined with computer vision (CV), is a valuable resource for efficiently capturing travel behaviour data. This study demonstrates a novel approach using deep learning on street view images to estimate cycling and motorcycling levels across diverse cities worldwide.

**Methods:** We collated data from 185 global cities. The values for mode shares of cycling and motorcycling were estimated using travel surveys or censuses. We used GSV images to detect cycles and motorcycles in sampled locations, using 8000 images per city. A global prediction model was developed using beta regression with city-level mode shares as outcome, with log transformed explanatory variables of counts of GSV-detected images with cycles and motorcycles, while controlling for population density.

**Results/Findings:** We found strong correlations between GSV motorcycle counts and motorcycle mode share (0.78) and moderate correlations between GSV cycle counts and cycling mode share (0.62). Beta regression models predicted mode shares with  $R^2$  values of 0.635 for cycling and 0.612 for motorcycling, achieving median absolute errors (MDAE) of 1.5% and 1.4%, respectively. Scatterplots demonstrated consistent prediction accuracy, though cities like Paris and Cali were outliers. The model was then applied to rank cities globally without existing mode share data, predicting the highest motorcycle mode share in Hsinchu, Taiwan (64.5%) and the highest cycling mode share in Copenhagen, Denmark (44%). The lowest mode shares were predicted for motorcycling in Kiev, Ukraine (0.15%) and cycling in Hsinchu, Taiwan (1.2%). The YOLOv4 object detection CV model, fine-tuned using images from six cities, achieved a mean average precision of 89% for detecting cycles and motorcycles in GSV images.

**Conclusion:** GSV images offer valuable insights for predicting modes of cycling and motorcycling worldwide. GSV's capacity to discern travel modes and document street-level activity with the use of computer vision, makes it a complementary data source alongside the traditional methods.

## Dose-response of incidental physical activity against cardiovascular events and mortality

Prof. Emmanuel Stamatakis<sup>1,2</sup>, Dr. Raaj Kishore Biswas<sup>1,2</sup>, **Dr. Nicholas Koemel<sup>1,2</sup>**, Dr. Angelo Sabag<sup>1,2</sup>, Dr. Richard M Pulsford<sup>3</sup>, Dr. Andrew Atkin<sup>4</sup>, Dr. Afroditi Stathi<sup>5</sup>, Dr. Sonia Cheng<sup>2</sup>, Dr. Cecilie Thøgersen-Ntoumani<sup>6</sup>, Dr. Joanna Blodgett<sup>7,8</sup>, Prof. Adrian Bauman<sup>2</sup>, Prof Carlos Celis-Morales<sup>9</sup>, Professor Mark Hamer<sup>7,8</sup>, Prof Jason Gill<sup>9</sup>, Dr. Matthew Ahmadi<sup>1,2</sup>

<sup>1</sup>Mackenzie Wearables Research Hub, Charles Perkins Centre, The University of Sydney, Sydney, Australia, <sup>2</sup>School of Health Sciences, Faculty of Medicine and Health, The University of Sydney, Sydney, Australia, <sup>3</sup>Public Health and Sports Science, Faculty of Life and Environmental Science, University of Exeter, Exeter, United Kingdom, <sup>4</sup>School of Health Sciences, University of East Anglia, Norwich, United Kingdom, <sup>5</sup>School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham Edgbaston, Birmingham, United Kingdom, <sup>6</sup>Danish Centre for Motivation and Behaviour Science (DRIVEN), Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark, <sup>7</sup>Institute of Sport Exercise and Health, Division of Surgery and Interventional Science, University College London, London, United Kingdom, <sup>8</sup>NIHR University College London Hospitals Biomedical Research Centre, London, United Kingdom, <sup>9</sup>School of Cardiovascular and Metabolic Health, University of Glasgow, Glasgow, United Kingdom

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Few middle-aged and older adults engage in regular leisure-time exercise. Incidental physical activity (IPA) encompasses non-exercise activities done as part of daily living outside the leisure-time domain. No dose-response study is available to guide IPA-focused interventions and guidelines. This study examines the associations of device-assessed IPA intensities (vigorous, VIPA; moderate, MIPA; light, LIPA) with major adverse cardiovascular events and mortality; and to estimate the “health value equivalence” of LIPA and MIPA against 1 minute of VIPA.

**Methods:** This prospective cohort study included 24,139 (56.2% women) non-exercising participants from the UK Biobank. IPA energy expenditure (PAEE) and daily durations of VIPA, MIPA, LIPA were calculated using a validated machine learning-based intensity classifier. The main measures were major adverse cardiovascular events (MACE) comprising incident stroke, myocardial infarction, and heart failure, or CVD death; CVD mortality; all-cause mortality (ACM).

**Results:** Analyses included 22,107 (MACE), 22,178 (CVD mortality), and 24,139 (ACM) participants, corresponding to 908/223/1071 events over 7.9-years of follow-up. IPA volume exhibited an L-shaped association with a nadir at approximately 35-38 kJ/kg/d, corresponding to hazard ratios of 0.49 (95%CI: 0.39, 0.61) for MACE, 0.33 (0.22, 0.52) for CVD mortality and 0.31 (95%CI: 0.25, 0.38) for ACM. Any daily IPA amount of vigorous or moderate intensity was associated with lower risk, with a plateau of approximately 14 minutes of VIPA and 34-50 minutes of MIPA per day. The median VIPA (4.6 minutes/day) and MIPA durations (23.8 minutes/day) were associated with CVD mortality HR of 0.62 (0.46, 0.83) and 0.50 (0.31 to 0.80), respectively. LIPA showed a subtle inverse gradient which was statistically significant only for CVD mortality at levels >130-140 minutes per day. For ACM, 1 minute of VIPA was equivalent to 2.0 minutes of MIPA and 47.2 minutes of LIPA.

**Conclusions:** Any daily IPA amount of vigorous or moderate intensity is associated with lower CVD risk. One minute of vigorous or 3.0-3.5 minutes of moderate or 35-50 minutes of light

intensity IPA are associated with a similar degree of lower CVD risk. Our findings highlight the potential value of incidental physical activity, especially for people who struggle to do structured exercise.

## Utilizing a Physical Activity and Nutrition Data Tracker to Support Implementation of a Statewide Plan

**Dr. Julia Chosy<sup>1</sup>**, Saikaew Dudla<sup>1</sup>, Claire Prieto<sup>2</sup>, Jessica Lee<sup>2</sup>, Heidi Hansen-Smith<sup>2</sup>, Lance Ching<sup>2</sup>, Ms. Rebekah Rodericks<sup>1</sup>

<sup>1</sup>University of Hawaii at Manoa, Office of Public Health Studies, Honolulu, United States, <sup>2</sup>Hawaii State Department of Health, Chronic Disease Prevention and Health Promotion Division, Honolulu, United States

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** Recent data shows that 60% of adults and 29% of high school youth in Hawaii are either overweight or obese. Disparities in overweight/obesity are evident in most subpopulations, particularly Native Hawaiians and Other Pacific Islanders, and low-income households. The Hawaii Physical Activity and Nutrition (PAN) Plan 2030 is a guide to increasing physical activity and healthy eating in the state, with the long-term goal of improving health and reducing health disparities among all Hawaii residents. Implementation of the plan is a collective effort by diverse stakeholders to assure an inclusive, community-based participatory approach to successfully achieve objectives. To support implementation of the plan, a public data tracker was built with PAN measures from multiple data sources to provide a comprehensive picture of PAN in Hawaii.

**Methods:** The Hawaii Health Data Warehouse (HHDW) at the University of Hawaii collaborated with PAN experts from the Hawaii State Department of Health to create the PAN Plan 2030 Tracker, an innovative online dashboard displayed on HawaiiHealthMatters.org. Stakeholder input led to the selection of 50 PAN indicators for inclusion in the dashboard displayed for PAN stakeholders, decision-makers, and the public. Target values were calculated for each indicator for the year 2030. Measures are updated annually to monitor and evaluate implementation and progress.

**Results/findings:** The PAN Plan 2030 Tracker monitors progress toward important PAN goals. It provides tools for visualizing data by state and county as well as sociodemographic characteristics, allowing the exploration of PAN measures in at-risk populations. Symbols and colors depict different geographies, trends, findings over time, and achievement status of PAN Plan targets. Currently, none of the targets have been met, demonstrating the opportunity to strengthen collaboration and prioritize resources while working towards the 2030 targets.

**Conclusions:** Hawaii's PAN Plan 2030 Tracker highlights the importance of PAN measures with an easy-to-use platform to visualize PAN data. Trends and targets offer a method to quickly assess where progress has been made, and where further improvements are still needed. The data helps guide evidence-based decision-making including prioritizing resources, and developing action plans, policies, and practices to support the health and well-being of Hawaii residents.

## Implementation of three pilot food prescription programs for older adults: Enrollment, redemption and food usage data from the United States

**Dr. Lucia Leone<sup>1</sup>**, Dr. Anne Lally<sup>1</sup>, Dr. Jennifer Stohl<sup>1</sup>, Ms. Alicia Claudio<sup>1</sup>, Dr. Jill Tirabassi<sup>1</sup>

<sup>1</sup>University at Buffalo, Buffalo, USA

**SO.3.20: Implementation and Scalability, Waihorotiu #1, June 14, 2025, 10:00 AM - 11:15 AM**

**SIG - Primary Choice:** E. Implementation and scalability

**Purpose:** More than 5 million older adults in the United States are food insecure. Food prescriptions are an increasingly popular approach to addressing food insecurity, however older adults have unique barriers to food prescription utilization, including transportation limitations, that threaten program effectiveness. This research seeks to compare enrollment, redemption, and produce usage of two novel food prescription programs with a standard of care control.

**Methods:** Researchers worked with two hospital-based primary care clinics to identify patients aged 65 and older with trouble accessing fresh fruits and vegetables. Prior to recruitment, the research team randomized all potentially eligible patients to one of three 12-week food prescriptions: 1.) Produce Prescription: a home-delivered customizable fresh produce box; 2.) Meal kits: an equivalent amount of home-delivered produce plus complementary food items to make 3 meals plus recipes or 3.) Mobile Market: a voucher to use at one of multiple mobile produce market locations (standard of care control). Enrollment was calculated as the percentage of people offered each program that enrolled. Redemption is the percentage of deliveries or voucher redemptions confirmed via weekly phone or text surveys. Usage is the amount of produce received that they reported eating over the past week: all (100%), most (75%), about half (50%), some (25%) or none (0%). Preliminary average redemption and usage data from the first 6 weeks of the study are reported; complete findings will be available at the time of presentation.

**Results:** Enrollment rates were 76.7% for the produce prescription arm (n=23), 65.7% for meal kit arm (n=23), and 57.9% for the mobile market arm (n=22). Reported redemption differed by arm ( $p=0.001$ ) with 95.0% of produce prescriptions and 88.6% of meal kit deliveries confirmed compared with 48.7% of mobile market vouchers redeemed. Among those who redeemed their prescription, produce usage did not differ significantly.

**Conclusions:** While redemption rates were higher in both delivery arms, preliminary data indicate that the meal kit did not improve produce usage above the other arms suggesting that delivery had the most impact on food prescription utilization among older adults. Post-intervention qualitative interviews will further elucidate differences in program utilization and acceptability.

# SYMPOSIA PRESENTATIONS

## Impact, retention, fidelity and costs of a high-intensity interval training program to improve cardio-respiratory fitness in truck drivers. The Fit2Drive cluster-controlled trial

**Dr. Nicholas Gilson**<sup>1</sup>, Dr. Gregore Mielke<sup>1</sup>, Prof. Jeff Coombes<sup>1</sup>, Prof. Mitch Duncan<sup>2</sup>, Prof. Wendy Brown<sup>1</sup>

<sup>1</sup>The University of Queensland, <sup>2</sup>The University of Newcastle

**S1.01. Driving better health: from improved sleep to nutrition education to high intensity interval training in truck drivers – novel approaches to address health inequalities within this occupational group, Kiri Te Kanawa Theatre, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** High intensity interval training (HIIT) involves one or more short bouts of high-intensity exercise, interspersed with periods of low-intensity exercise or rest. HIIT is not new, but novel in terms of application to time poor, highly sedentary occupations at heightened risk of cardiometabolic disease. This cluster-controlled study assessed the impact, fidelity and costs of “Fit2Drive,” a depot-delivered HIIT program to improve the cardiorespiratory fitness (CRF) of truck drivers.

**Methods:** Nine transport companies from Brisbane, Australia were recruited to the study (2020-22). Companies were assigned to ‘Fit2Drive’ (4 clusters; 1x4 minutes supervised to self-managed HIIT, 3 times a week) or a control (5 clusters; usual behaviour). CRF (VO<sub>2</sub>peak) was measured at baseline and Week 12 using a cardiopulmonary exercise test to voluntary exhaustion. HIIT retention and fidelity were assessed using logbook data on session attendance (four three-weekly stages with supervision decreasing at each stage) and intensity (target RPE 16-18 on a scale of 6-20). Intervention outlays (clinical screening and HIIT delivery) were summed, with mean costs determined per driver.

**Results:** 120 drivers expressed interest in the study; 44 drivers returned informed consent and entered baseline (all men; mean [SD] age=50.5 [9.8] years; BMI=32.2 [6.7] kg/m<sup>2</sup>; recruitment rate of 34%). Respective retention rates for Fit2Drive and control clusters were 44% (12/27 drivers) and 65% (11/17 drivers). Driver clusters allocated to “Fit2Drive” significantly improved CRF compared to a control (mean difference of 3.6 mL·kg<sup>-1</sup>·min<sup>-1</sup>; P < 0.019; 95% confidence interval = 0.7–6.5 mL·kg<sup>-1</sup>·min<sup>-1</sup>). Program completers attended 70% (25/36) of HIIT sessions (mean [SD] RPE of 16.7 [1.5]); average session attendance declined as the program progressed from supervised to self-managed HIIT (Weeks 1-3 [fully supervised] 94% [34/36] of sessions attended vs Weeks 10-12 [fully self-managed] 19% [7/36] of sessions attended). Mean outlays for clinical screening (AUS\$250) and HIIT delivery (AUS\$460) by medical and fitness teams were costed at AUS\$710/driver.

**Conclusions:** For drivers who completed Fit2Drive, the findings highlight clinically significant improvements in CRF, good fidelity for achieving vigorous exercise intensity, and relatively low program outlays. Driver retention and the transition from supervised to self-managed HIIT are challenges for upscale of the program.

## Sleepful Drive: a digital sleep improvement programme to improve safety and metabolic health in commercial drivers

**Dr. Iuliana Hartescu**<sup>1</sup>, Prof. Stacy Clemes<sup>1,2</sup>, Dr. Aron Sherry<sup>1</sup>, Dr. Elizabeth Stamp<sup>1</sup>, Dr. Ian Taylor<sup>1</sup>, Prof. Kevin Morgan<sup>1</sup>

<sup>1</sup>Loughborough University, <sup>2</sup>NIHR Leicester Biomedical Research Centre

**S1.01. Driving better health: from improved sleep to nutrition education to high intensity interval training in truck drivers – novel approaches to address health inequalities within this occupational group, Kiri Te Kanawa Theatre, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Occupational demands including shift work, and sedentary, unhealthy lifestyles contribute to high levels of disordered, inadequate sleep among commercial drivers. Increasing driver sleep durations offers the dual benefits of improved road safety (through increased alertness) and improved metabolic health (through the physiological impact of sleep extension, mainly driven by improved nutrition and physical activity levels). Delivering sleep improvement strategies to a dispersed, mobile workforce is, however, a challenge. We report the feasibility and preliminary efficacy outcomes of a digital sleep improvement app for commercial drivers: Sleepful Drive. The app is based on cognitive-behavioural principles with content delivered in 10 'modules', and key messaging available as text or audio.

**Methods:** 47 commercial drivers (all male; mean( $\pm$ SD) age: 47.4 $\pm$ 11.5 years; BMI 29.3 $\pm$ 4.2kg/m<sup>2</sup>; working hours: 48.9h/week) completed online assessments at baseline and post-intervention (6 weeks). Assessment included demographic, occupational and medical information (baseline only), and ratings of sleep duration, sleep quality, insomnia symptoms, and daytime alertness (baseline and post-intervention). Following baseline assessment participants were asked to download and use Sleepful Drive on their smartphones for 4-6 weeks. Outcomes were accessed from the app and included daily sleep diary data, number of log-ins, module completion rates, number of screens viewed, and cumulative minutes using the app. Sleep outcome data were analysed using adjusted paired t-tests and multiple regression to test the contribution of sleep duration to daytime alertness.

**Results:** 77% of drivers continuously engaged with the app throughout the intervention period, for an average of 6.1 weeks. Baseline mean 'working week' sleep duration was 5h 55mins/24hrs (SD=66min); 45.8% reported symptoms of insomnia. Post-intervention mean sleep duration increased by 26mins/24hrs ( $p=0.005$ ), with 40% reporting a post-intervention increase of  $\geq 1$ h/24hrs. Reported sleep quality increased significantly ( $p=0.017$ ) with 53.3% reporting post-intervention improvements. After controlling for confounders, the regression model indicated that increases in post-intervention sleep duration were significantly associated with increases in daytime alertness ( $r^2=.53$ ,  $p<0.001$ ).

**Conclusions:** Sleepful Drive offers a feasible and effective program to increase sleep duration and quality, and positively influences alertness among commercial drivers. The app now provides a tool to explore the sustained impact of sleep extension on driver metabolic health.

## Implementation of the Structured Health Intervention For Truckers (SHIFT) short course within a mandatory truck driver training programme

**Prof. Stacy Clemes**<sup>1,2</sup>, Dr. Mohsen Sayyah<sup>1</sup>, Mrs. Vicki Johnson<sup>3</sup>, Dr. James King<sup>1,2</sup>

<sup>1</sup>Loughborough University, <sup>2</sup>NIHR Leicester Biomedical Research Centre, <sup>3</sup>University Hospitals of Leicester NHS Trust

**S1.01. Driving better health: from improved sleep to nutrition education to high intensity interval training in truck drivers – novel approaches to address health inequalities within this occupational group, Kiri Te Kanawa Theatre, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** UK truck drivers exhibit higher rates of obesity and cardiometabolic risk and have reduced life expectancies compared to other occupational groups. To target truck drivers' health inequalities, we created the 'Structured Health Intervention For Truckers' (SHIFT), a health promotion programme designed to promote physical activity and positive lifestyle changes. As no national-level health education resources exist for UK truck drivers, in partnership with drivers and industry stakeholders, we translated SHIFT into a scalable 1-hour short course (Short-SHIFT), to embed within industry-delivered mandatory driver training. UK truck drivers must undertake 35-hours of mandatory training over 5-years to maintain their licences. 'Short-SHIFT' is designed to raise drivers' awareness of healthy lifestyle behaviours. The purpose of this study was to provide an initial evaluation of the implementation of Short-SHIFT within a compulsory driver training module delivered by a UK logistics operator to their 7000-truck driver workforce.

**Methods:** Sixty-five truck driver trainers were trained to deliver Short-SHIFT, included within the Operator's mandatory training from October 2023. Upon completion of Short-SHIFT, truck drivers were invited to complete an online questionnaire, providing qualitative and quantitative feedback. Quantitative feedback received to date was summarised using descriptive statistics.

**Results:** To date, ~6500 truck drivers have experienced Short-SHIFT. Feedback questionnaire responses were received from 283 drivers (sample characteristics: 97% male; mean( $\pm$ SD) age: 47.4 $\pm$ 10.4 years; BMI 29.7 $\pm$ 5.9kg/m<sup>2</sup>, working duration: 16.4 $\pm$ 11.4 years). 83% reported finding Short-SHIFT interesting and informative; 78% agreed it raised their awareness of the benefits of physical activity, reducing/breaking up sitting, and a healthy diet. After experiencing Short-SHIFT, 77% reported that they intended to make healthier lifestyle changes, of which, the majority (63%) indicated that they planned to modify their dietary choices.

**Conclusions:** Findings suggest Short-SHIFT is scalable into truck drivers' mandatory training and appears to be effective in raising drivers' awareness of benefits of adopting healthy lifestyle behaviours. Course engagement appears to motivate drivers to want to make healthier lifestyle changes. The positive feedback received to date suggests Short-SHIFT has potential to be mandated nationally as a module component, increasing its reach to ~250,000 UK truck drivers, filling a void in drivers' health literacy.

## Optimal method for promoting sustained adherence to lifestyle and body weight recommendations among postmenopausal breast cancer survivors: main results of the longitudinal mixed-methods OPTIMUM study

**Dr. Meeke Hoedjes<sup>1</sup>**, Dr. Sandra van Cappellen-van Maldegem<sup>1</sup>, Prof. Anja de Kruif<sup>2</sup>, Dr. Lonneke van de Poll<sup>1,3</sup>, Dr. Floortje Mols<sup>1,4</sup>, Prof. Jacob Seidell<sup>5</sup>

<sup>1</sup>Tilburg University, <sup>2</sup>HAN University of Applied Sciences, <sup>3</sup>Netherlands Cancer Institute,

<sup>4</sup>Netherlands Comprehensive Cancer Organisation, <sup>5</sup>VU University Amsterdam

### S1.02. Innovative methods in designing and delivering activity and nutrition programmes to people with a cancer diagnosis, Hunua 1, June 12, 2025, 8:30 AM - 9:45 AM

**Purpose:** Postmenopausal breast cancer (PMBC) survivors are encouraged to meet lifestyle and body weight recommendations to improve health outcomes. However, the majority does not adhere to these recommendations and there is a lack of insight on how to best promote adherence. The purpose of this presentation is to present the main results of the OPTIMUM study, which aimed to gain insight into the optimal method for promoting sustained adherence to lifestyle and body weight recommendations in PMBC survivors.

**Methods:** The OPTIMUM study, a longitudinal mixed-methods study among ~700 PMBC survivors, was conducted in line with the first three steps of the Intervention Mapping protocol. Using a longitudinal survey, determinants of adherence to recommendations, readiness for change, and need for support were assessed at 4-6 months after diagnosis (retrospective before diagnosis assessment), 1 year after diagnosis (after treatment), and 1,5 year after diagnosis (during follow-up). Survivors were categorized into 'patient profiles' according to adherence, readiness for change, and need for support. Longitudinal semi-structured interviews (n=48) and focus groups (n=4) were conducted to assess perceived determinants. A review of the literature, the Behavior Change Wheel, and the Behavior Change Technique Taxonomy were used to match evidence-based methods to determinants. Additionally, methods and strategies were selected based on a Delphi study among 57 oncology health care professionals, 5 patient advocates, and 38 PMBC survivors. To assess acceptability of the selected methods 6 focus groups were conducted among 44 PMBC survivors.

**Results:** All retrieved changeable behavioural determinants will be presented, as well as the selected methods and strategies to influence these determinants. These offer the basis for a toolkit that can be used for health promotion among PMBC survivors, both personalized and tailored to different patient profiles.

**Conclusions:** The obtained scientific evidence on how to promote sustained adherence in PMBC survivors can be incorporated into clinical oncology guidelines. Following the subsequent three steps of the Intervention Mapping protocol, the OPTIMUM toolkit will be further developed and evaluated before it can be used in clinical practice to promote sustained adherence to lifestyle and body weight recommendations, which is expected to lead to improved health outcomes.

## Using digital technology to support wellbeing and independence among people living with incurable cancers

Dr. Jordan Curry<sup>1</sup>, Prof. Cristina Caperchione<sup>2</sup>, Ms. Sarah Greenley<sup>1</sup>, Dr. Lizzie Dennis<sup>1</sup>, **Dr. Cindy Forbes<sup>1</sup>**

<sup>1</sup>University of Hull, <sup>2</sup>University of Technology Sydney

### **S1.02. Innovative methods in designing and delivering activity and nutrition programmes to people with a cancer diagnosis, Hunua 1, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** People living with incurable cancer often experience substantial physical and psychological challenges that impact their quality of life (QoL) and physical function. The increased accessibility and cost-effectiveness of digital interventions may support wellbeing and independence for this group, yet there is far less research among this population or in the context of interventions targeting physical activity, nutrition, and sedentary behaviour. This review aimed to assess the feasibility, acceptability, and potential efficacy of digital interventions for physical activity, nutrition, and sedentary behaviour designed to improve or maintain wellbeing among people living with incurable cancer.

**Methods:** A comprehensive search was conducted in PsycINFO, MEDLINE, EMBASE, CINAHL, Web of Science Core Collection, and Cochrane Central Register of Controlled Trials (CENTRAL). Included studies evaluated digital interventions targeting physical activity, nutrition, or sedentary behaviour in adults with advanced or incurable cancer. Title and abstract, and full-text screening were conducted in Covidence with dual-screening for all records. Data extraction was done by two authors using a modified Cochrane EPOC form. Study quality was assessed with the Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields.

**Results:** A total of 4088 records were screened after deduplication with 24 studies ultimately included. Recruitment rates varied, ranging from 12.7% to 87%, with an average retention rate of 83.9%. The mean age of study participants ranged from 50 to 75 years, potentially limiting generalisability of findings to older populations who may have greater barriers to technology use. Most studies retained over 75% of participants throughout the interventions, indicating good feasibility. Several studies reported improvements in QoL, physical activity, and function, however, these improvements were not consistently statistically significant.

**Conclusion:** This systematic review demonstrates the potential of digital interventions to help improve the well-being and independence of individuals living with incurable cancer. High levels of acceptability and generally positive feasibility and efficacy outcomes indicate promise. However, the field remains in its early stages, and further research is needed to explore efficacy in larger, more diverse populations and address the specific barriers older adults face.

## Local scale-up of a school-based nutrition program: Findings from a collaborative network of randomised trials

**Dr. Jannah Jones<sup>1,2,3</sup>**, Dr. Courtney Barnes<sup>1,2,3</sup>, Other SWAP IT Advisory Group<sup>1,2,3</sup>

<sup>1</sup>University of Newcastle, <sup>2</sup>Hunter New England Population Health, <sup>3</sup>National Centre of Implementation Science

**S1.03. Advancing the evidence to scale-up health promotion programs: findings from a series of randomised trials to maximise the adoption of an evidence-based school nutrition program, Hunua 2, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** This study employed a novel collaborative network trial design to evaluate a series of scale-up strategies employed by three Local Health Districts in New South Wales (NSW) Australia, to increase the adoption of an effective school nutrition program (SWAP IT).

**Methods:** Three independent, two arm parallel group randomised controlled trials were conducted simultaneously to examine the potential effectiveness of implementation strategies on primary school adoption of SWAP IT. Schools were randomised to either a high intensity (various scale-up strategies including educational materials, local facilitation) or a minimal support group. Measures and data collection processes were harmonised across the three trials to provide individual school-level data for planned pooled analyses. The primary outcome was school adoption of SWAP IT, objectively measured via electronic registration records. Logistic regression analyses were used to assess school adoption of SWAP IT for each trial. Meta-analyses were also conducted to pool the effects of the three trials and allow the comparison of the potential relative effects of the different strategies.

**Results:** A total of 287 schools were included in the study: Trial 1 (n=164), Trial 2 (n=64) and Trial 3 (n=59). Relative to control, we found increased odds of adoption in Trial 1 that employed a combination of the educational materials and local facilitation strategies (OR 8.78; 95%CI 2.90, 26.56; p<0.001), but no significant differences in adoption in Trial 2 or 3 that employed solely the educational materials strategy. Pooled data suggests the combination of educational materials and local facilitation has a greater effect on adoption compared educational materials alone (OR 4.18; 95%CI 1.60, 10.04; n=3 studies; indirect effect).

**Conclusions:** Findings of this study indicate that local facilitation appears to be an important strategy to increase school adoption of the SWAP IT and should be considered for inclusion as a key strategy to maximise broader scale-up and population-level benefits of the program.

## State-wide scale-up of a school-based nutrition program: findings from a randomised controlled trial

**Prof. Rachel Sutherland**<sup>1,2,3</sup>, Other SWAP IT NSW Scale-up Advisory Group and Implementation Working Group<sup>1,2,3</sup>

<sup>1</sup>University of Newcastle, <sup>2</sup>Hunter New England Population Health, <sup>3</sup>National Centre of Implementation Science

### **S1.03. Advancing the evidence to scale-up health promotion programs: findings from a series of randomised trials to maximise the adoption of an evidence-based school nutrition program, Hunua 2, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** This study aimed to assess the effectiveness of a theoretically designed multi-component scale-up strategy to increase the adoption of an effective school nutrition program (SWAP IT) within primary (elementary) schools across the state of NSW Australia.

**Methods:** A cluster randomised controlled trial was conducted in 11 Local Health Districts across NSW Australia (n=337). Schools in each Local Health District were randomised to receive a theoretically designed multi-component scale-up intervention (n=169), or to a waitlist control (n=168). The multi-component scale-up intervention consisted of nine scale-up strategies (including local facilitation, audit and feedback, educational materials, sector support and endorsement) and aimed to increase Local Health District health promotion staff capacity to scale-up (n=3) or to overcome school-level barriers to the adoption of school nutrition programs (n=6). The primary outcome was school adoption of the SWAP IT program objectively assessed via electronic records at 6-month follow-up. Logistic regression assessed the scale-up effects on the primary outcome at 6-months, adjusting for baseline and stratification variables.

**Results:** Following the 6-month multi-component scale up intervention, significantly more schools allocated to the intervention group (67/169, 40%) had adopted the SWAP IT program, compared to schools allocated to the control group (0/168, 0%) (p<0.001).

**Conclusions:** A theoretically designed approach to scale-up, which purposively increased implementer capacity and addressed known school barriers, increased schools' adoption of an evidence-based school nutrition program. The study provides much-needed evidence for policy makers, practitioners and researchers and offers a model and process of equitably scaling up school-based health promotion programs. Whilst a significant proportion of schools adopted the program in a relatively short scale-up window, further investigation to optimise scale-up is warranted to deliver population-level health outcomes.

## National scale-up of a school-based nutrition program: adaptations to a theoretically designed, multi-component scale-up strategy.

**Dr. Anna Rayward**<sup>1,2</sup>, Other SWAP IT National Scale-up Advisory Group<sup>1,2</sup>

<sup>1</sup>University of Newcastle, <sup>2</sup>National Centre of Implementation Science

### S1.03. Advancing the evidence to scale-up health promotion programs: findings from a series of randomised trials to maximise the adoption of an evidence-based school nutrition program, Hunua 2, June 12, 2025, 8:30 AM - 9:45 AM

**Purpose:** This study examined adaptations to a theoretically designed, multi-component scale-up intervention to increase the adoption of an effective school nutrition program (SWAP IT) within primary (elementary) schools nationally, across Australia.

**Methods:** The national scale-up involved six Australian state jurisdictions. Four jurisdictions participated as active research sites and two provided support via scale-up advisory group participation. Four independent, two-arm parallel group randomised controlled trials were conducted separately across an 18-month period. Schools in each jurisdiction were randomised to receive a theoretically designed multi-component scale-up intervention (n=643), or to a waitlist control (n=322). Six scale-up strategies, at the implementer level (including local facilitation, local opinion leaders, audit and feedback, educational materials, sector support and endorsement, and program integration), were co-developed with stakeholders using an evidence-based approach to identify the determinants of school adoption and applying a consolidated theoretical framework. Scale-up strategies were delivered sequentially, but in varying order, by jurisdictional health promotion agencies. Adaptations to scale-up strategies were recorded using the FRAME-IS framework throughout the scale-up period.

**Results:** The greatest variation in scale-up strategy delivery across the four jurisdictions occurred in local facilitation. The main adaptation included a reduction in tailored contact call numbers, primarily due to varying levels of health agency staffing and school connectedness. Lower call numbers were associated with fewer successful contacts with school principals. Minor adaptations were made to educational materials and resources for local opinion leaders, including jurisdiction-specific information, and health agency branding alignment. One jurisdiction outsourced delivery of the local opinion leader strategy, targeting school parenting bodies, due to constraints from their education department. Another jurisdiction expanded the local opinion leader strategy, targeting two local opinion leader groups. Program integration was not possible for one jurisdiction where the school sample did not use the communication app available in the other jurisdictions. Only one jurisdiction delivered sector support from an education-related authority.

**Conclusions:** Scale-up strategies required adaptation to fit unique settings and contexts across the four national jurisdictions. Adaptations can be crucial to scale-up success however, monitoring adaptations is important to ensure adequate fidelity of the scale-up intervention to maximise its impact on increasing program adoption.

## The feasibility of passively tracking children's TV viewing, mobile device use, and sleep in naturalistic settings

**Dr. Teresia O'Connor<sup>1</sup>**, Ms. Tatyana Garza<sup>1</sup>, Mr. Uzair Alam<sup>1</sup>, Mr. Anil Kumar Vadathya<sup>2</sup>, Dr. Jennette Moreno<sup>1</sup>, Ms. Alicia Beltran<sup>1</sup>, Dr. Sheryl Hughes<sup>1</sup>, Dr. Deborah Thompson<sup>1</sup>, Dr. Salma Musaad<sup>1</sup>, Dr. Tom Baranowski<sup>1</sup>, Dr. Joseph Young<sup>2</sup>, Dr. Akane Sano<sup>2</sup>, Dr. Ashok Veeraraghavan<sup>2</sup>

<sup>1</sup>Baylor College of Medicine, <sup>2</sup>Rice University

### **S1.04. Children's screen media use and sleep: Innovations in assessment pave the way to novel insights, Hunua 3, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** One critical gap in studying the effect of children's technology and digital media (TDM) use on their sleep and health outcomes is a lack of robust measurement of children's TDM use. Our objective was to assess the feasibility of using novel, passive assessment methods to measure children's TDM use in their homes and to harmonize the TDM data with their sleep data.

**Methods:** Twenty children (5-12 years old) and one of their parents participated in a 3-day home study. Passive TDM assessment included the FLASH-TV system assessing TV viewing and the Chronicle App or Screen Time screenshots measuring use of Android and/or Apple devices. Sleep was assessed via a wrist-worn ActiGraph accelerometer and parent completed sleep diaries. Exit interviews were conducted with the parent to assess the lived experience with the study and perceptions on the study's assessment of their child's TDM.

**Results:** Of 20 participants, 40% had FLASH-TV installed on 2 TVs and 60% on 1 TV; 5% registered 2 mobile devices, 80% registered 1 mobile device, and 15% registered no devices in the study. Of those with mobile devices, 7 had Android devices, 5 an iPad, 4 an iPhone, and 1 both an iPhone and iPad. 100% completed the three-day study protocol. Out of 60 days total of TV assessment (n=20 participants), 86.7% of the days had valid TV data. Out of 51 total days of mobile device assessment (n=17 participants), 84.3% of the days had valid mobile data. 18 participants had at least 1 valid night of sleep data. Mean TDM use within 2 hours before sleep was 25.6 minutes (SD=25.1) for 17 participants with TDM and sleep data available. Most parents stated overall TDM estimates appeared accurate, while a few claimed under-reporting or over-reporting of TDM use. Most felt the TDM diaries were tedious and difficult. About half reported no concerns with the FLASH-TV system, while another half reported feelings of being observed.

**Conclusions:** Passive assessment of TDM and sleep among children is feasible. Data can be harmonized for a majority of participants, providing preliminary evidence of assessing TDM use among children in a naturalistic setting using objective measures.

## Sleeping with the enemy: do digital devices really stop our teens from sleeping?

**Prof. Rachael Taylor**

<sup>1</sup>*University of Otago*

**S1.04. Children's screen media use and sleep: Innovations in assessment pave the way to novel insights, Hunua 3, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose** The modern digital age means that screen use by youth is prevalent, necessary, and sometimes, contentious. Research advancing our understanding of implications for health and wellbeing have been stymied by the use of questionnaires to assess screen time, which seem likely inaccurate in today's world. Wearable cameras provide an opportunity to collect objective measures of screen use in children, but have been little used to date. This talk will describe the development of a novel coding protocol to quantify screen time in adolescents using video cameras which presumably offer advantages in that they also provide sound, motion and speed of device interaction, and how these measures relate to sleep in youth.

**Methods** An extensive series of pilot studies produced a final protocol that reliably ( $\kappa=0.92$ ) quantified time spent on eight device types and nine screen activities. Relationships with sleep were determined in 85 youth (11-14y, 38% indigenous Māori). Screen time was measured objectively from two hours before bed (wearable camera) until the child woke up (stationary camera) on four non-consecutive nights over one week. Screen time was related to actigraphy-measured sleep on a night-by-night basis using mixed-effects regression models, including participant as a random effect and adjusted for weekends.

**Results** 99% of youth used screens in the two hours before bed, 58% while in bed, and 33% even after trying to sleep. Screen time before bed had little effect on sleep that night. However, once in bed, screen time delayed sleep onset by 35 (95% CI: 20, 50) minutes compared to nights without screen use, and shortened total sleep time (TST) by 3 minutes (-6, -1) for every 10 minutes of screen time. Interactive screen use reduced TST more than passive screen use (9 compared with 4 minutes for every 10 minutes of use), and gaming and multitasking (using more than one device simultaneously) were particularly detrimental.

**Conclusions** Use of objective methodology in a repeated-measures study shows that screen time may impair sleep once in bed, especially if interactive or involving multitasking. Current sleep hygiene recommendations to restrict all screen time before bed seem neither achievable nor appropriate.

# From Sensors to Screens: A New Era of Sleep Assessment in Children

**Dr. Kim Meredith-Jones<sup>1</sup>**, Prof. Peter Whigham<sup>2</sup>, Prof. Rachael Taylor<sup>1</sup>

<sup>1</sup>Department of Medicine, University of Otago, <sup>2</sup>School of Computing, University of Otago

**S1.04. Children's screen media use and sleep: Innovations in assessment pave the way to novel insights, Hunua 3, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Accurately assessing sleep in children is crucial for understanding its role in health and development. However, traditional methods, such as polysomnography (PSG), are expensive, labour-intensive, and not feasible for large-scale studies, leading to a gap in validation studies for sleep scoring in children. This research focuses on the development of novel algorithms that use wearable sensor data—acceleration, temperature, and heart rate—to improve the accuracy of sleep assessment in children. By leveraging advanced modelling techniques, and raw acceleration data, we aim to offer an alternative to current sleep measurement in children. Key sleep behaviours such as time in bed, and shuteye time are difficult to measure accurately using accelerometry. These behaviours offer valuable insights into sleep quality and patterns, yet accelerometers alone often struggle to identify them, leading to inaccuracies in sleep onset detection and awakenings measures. Video data offers a promising solution, capturing in-bed behaviour and transitions into sleep, which accelerometers cannot measure. Video footage can enhance our understanding of these critical aspects of sleep, providing a more complete picture of children's sleep behaviours.

**Methods:** Data were collected from 137 children aged 8-16 years. Raw acceleration, temperature, and heart rate data were used to develop sleep algorithms, which were validated against PSG. To explore challenges in measuring time in bed, sleep onset, shuteye time, we analysed video from 82 adolescents, coding behaviours such as time in bed and shuteye time. These observations were compared to accelerometer-based sleep measures, highlighting discrepancies between the two methods and showcasing the additional insights video data can provide.

**Results:** The algorithms demonstrated promising accuracy, with sensitivity and specificity generally outperforming previous count-based methods. Random forest models, in particular, showed improved specificity for detecting awakenings and transitional sleep behaviours. However, accelerometry alone struggled to accurately identify time in bed and shuteye time, underscoring the value of integrating video data.

**Conclusions:** This presentation will showcase novel techniques that improve sleep assessment accuracy in children and adolescents. By combining wearable technology with video analysis, our approach offers more comprehensive insights into sleep behaviours, contributing to better monitoring and intervention strategies for sleep health.

## Tau tagata Niue experiences with kai, in relation to health

**Ms. Cloe Posimani<sup>1</sup>**, Dr. Jess Pasisi<sup>2</sup>, Dr. Christina Mckerchar<sup>1</sup>, Dr. Angela Curl<sup>1</sup>

<sup>1</sup>*Department of Population Health, University of Otago*, <sup>2</sup>*Te Tumu School of Māori, Pacific and Indigenous Studies, University of Otago*

### **S1.05. Exploring social inequalities in nutrition and health: international insights through quantitative, qualitative, and mixed methods, Waitakere 1, June 12, 2025, 8:30 AM - 9:45 AM**

**Background:** Niue experiences increasing rates of diet-related non-communicable diseases, reflecting wider trends in the Pacific region. Research that gives voice to tau tagata Niue in relation to these nutrition transitions, are limited. This study centres tau tagata Niue experiences with kai, in relation to health, while contextualising their stories through the use of the decolonising Niue methodology, Hiapo.

**Methods:** Hiapo methodology provides an approach to conduct research with tau tagata Niue, while emphasising the historical impacts on Niue and the unique relationships between tau tagata Niue and their environments. Participants consisted of family groupings and community members from various villages in Niue and six interviews were conducted. Talanoa methods provided a flexible story-telling process where the discussions were mostly led by participants. Participant experiences were organised into themes, an approach which aligned with the narrative aspect of Hiapo and an inductive storybook approach.

**Results:** The findings showed that kai remains central to tau tagata Niue relationships with their land, identity and communities. However, tau tagata Niue face challenges in eating healthy, as readily available foods are more likely to be unhealthy, while healthy foods are more expensive to purchase. Intergenerational shifts in culture were reported, as traditional food collection practices have become less central to tau tagata Niue way of life. Strengths around food security were due to the values of food sharing and community caring.

**Conclusion:** This study indicates that Niue kai systems are impacted by globalising, environmental and transnational factors, such as trade liberalisation and outward migration. These factors impact on health by limiting participants' capacities to exercise their agencies to maintain traditional food-collecting practices and eat fresh foods. The strengths of Niue communities include a collective passion for the transference of Indigenous food collection practices to the younger generations. Community movements to maintain and revitalise traditional kai gathering practices, alongside the promotion of healthy practices, should be appropriately facilitated and supported with sustainable funding. Effective policies to improve the nutritional quality of available kai, as well as support for tau tagata Niue to maintain their connections with their land, are imperative to restoring tau tagata Niue health.

## Impact of the COVID-19 pandemic and the cost-of-living crisis on eligibility and engagement for the ECAIL trial of socially disadvantaged families and on stakeholder mobilization: findings from an interdisciplinary approach

**Dr. Delphine Poquet<sup>1</sup>**, Ms. Camille Le-Gal<sup>1</sup>, Dr. Pascale Hincker<sup>2</sup>, Dr. Laurent Béghin<sup>2,3</sup>, Dr. Dominique Deplanque<sup>2</sup>, Dr. Damien Subtil<sup>4</sup>, Dr. Oriane Sion<sup>5</sup>, Mr. Benjamin Cavalli<sup>5</sup>, Dr. Blandine de Lauzon Guillaumin<sup>1</sup>, Dr. Marie-Aline Charles<sup>1</sup>, Dr. Delphine Ley<sup>3,6</sup>, Dr. Priscille Sauvegrain<sup>1,7</sup>, **Dr. Sandrine Lioret<sup>1</sup>**

<sup>1</sup>Université Paris Cité et Université Sorbonne Paris Nord, Inserm, INRAE, Centre de Recherche en Épidémiologie et StatistiqueS (CRESS), <sup>2</sup>Univ. Lille, Inserm, CHU Lille, CIC 1403 – Clinical Investigation Center, CHU Lille, <sup>3</sup>Univ. Lille, Inserm, CHU Lille, U1286 - INFINITE - Institute for Translational Research in Inflammation, <sup>4</sup>Women and Newborn Mother Unit, Centre Hospitalier Universitaire de Lille; EA 2694, METRICS, Evaluation of Health Technologies and Medical Practices; Université Lille, <sup>5</sup>Association Programme Malin, Research and Content Department, <sup>6</sup>CHU Lille, Division of Gastroenterology, Hepatology, and Nutrition, Department of Pediatrics, <sup>7</sup>Sorbonne Université, Department of Maieutics

### S1.05. Exploring social inequalities in nutrition and health: international insights through quantitative, qualitative, and mixed methods, Waitakere 1, June 12, 2025, 8:30 AM - 9:45 AM

**Background:** The ongoing ECAIL randomized controlled trial started in 2017 and targeted hard-to-reach families, aiming primarily to assess the effectiveness of a multicomponent childhood obesity prevention intervention (Clinicaltrials.gov NCT03003117). Health care providers (HCPs) at the principal maternity hospital in Lille (France) screened pregnant women with social disadvantages. Dietitians then recruited these women for follow-up by home visits until the child's second birthday. The COVID-19 pandemic forced the trial's suspension in March 2020; it resumed 6 months later. Here, using mixed methods, we sought to compare study eligibility and participation patterns before the pandemic and after its resumption and to explore the impact of both the pandemic and the cost-of-living crisis on the trial's implementation.

**Methods:** We analyzed 1,789 eligibility questionnaires distributed at Lille University Hospital. Inclusion criteria included ≥1 of the following social vulnerabilities: receiving social or medical benefits, being unemployed, experiencing financial hardship, residing in precarious housing, and social isolation. A psychosocial researcher interviewed the five dietitians and their coordinator — all responsible for implementing the study — as a group and transcribed the recorded text to identify key themes.

**Results:** Overall, 29.6% (n=941) of the women screened prepandemic were deemed eligible and 33.7% (n=848) later on. Social or medical benefits (78.3%), unemployment (58.9%), financial hardship (24.4%), social isolation (14.8%), and precarious housing (6.0%) were distributed similarly. Participation among eligible women was consistent before the pandemic and after the trial resumed: 24.7% (n=444) consented to participate. The group interview with dietitians revealed their own satisfaction and that of participants with visits resuming, especially addressing social isolation. Post-resumption, home visits were longer, and a pre-visit COVID-19 questionnaire helped reduce missed appointments. The quantitative and qualitative components converged, showing that HCPs demonstrated an even greater level of engagement, despite the pandemic-related burden on global hospital functioning.

Conclusions: The ECAIL trial reflects the social impact of both the pandemic and inflation by an increase in its eligibility but not its participation rate. It did not impair women's or stakeholders' engagement in this interventional research: home visits were perceived as appropriate for reaching socially disadvantaged families and fostering their adherence to the trial.

## Identifying social and environmental drivers of childhood obesity among Latino communities in Southern California

**Dr. Alexandra Descarpentrie<sup>1</sup>**, Dr. Joseph C. Cleveland<sup>2</sup>, Dr. Vishal Midya<sup>3</sup>, Dr. Juan Espinoza<sup>1</sup>, Dr. Jonatan Ottino-Gonzalez<sup>1</sup>, Dr. Shana Adise<sup>1</sup>, Dr. Tanya L. Alderete<sup>4</sup>, Prof. Michael Goran<sup>1</sup>

<sup>1</sup>*Department of Pediatrics, The Saban Research Institute, Children's Hospital Los Angeles, University of Southern California,* <sup>2</sup>*University of Colorado School of Medicine,* <sup>3</sup>*Department of Environmental Medicine and Public Health, Icahn School of Medicine at Mount Sinai,*

<sup>4</sup>*Department of Environmental Health and Engineering, Johns Hopkins Bloomberg School of Public Health*

### **S1.05. Exploring social inequalities in nutrition and health: international insights through quantitative, qualitative, and mixed methods, Waitakere 1, June 12, 2025, 8:30 AM - 9:45 AM**

**Background:** Numerous studies indicate social and economic disparities in childhood obesity based on composite indices of social determinants of health (SDoH). These indices are unable to identify the relative importance of individual factors that could potentially guide interventions and policy decisions for under-resourced communities. Our objectives were to (1) investigate the combined associations of individual and complementary factors from four SDoH indices on childhood obesity in Southern California by proposing a new SDoH index and assessing its effectiveness in capturing disparities in Latino communities, and (2) explore interactions among individual SDoH to identify subgroups of children at increased obesity risk.

**Methods:** We used publicly available data from 330 cities across 10 counties in Southern California of whom 40% were Latino. Estimates of childhood obesity prevalence were derived from the California Department of Education 2019 Physical Fitness Test data (684,419 children), and 52 individual SDoH were obtained from the Healthy Places Index, Social Vulnerability Index, CalEnviroScreen, and Child Opportunity Index. Weighted Quantile Sum (WQS) regression was used in combination with machine-learning to identify the significant SDoH contributors to childhood obesity.

**Results:** In the WQS model, we identified a new overall SDoH index (a linear and weighted combination of individual SDoH) that was associated with increased percentile of childhood obesity ( $\beta$  [95% CI]: 10.1 [8.1, 12.1]). Fourteen individual factors were identified as making a greater-than-chance contribution to the overall mixture effect. Among these, the top four factors were: School Poverty (contributed 15.5% to the overall association), Minority – all except White and non-Hispanic (7.8%), Asthma Emergency Room Visits (7.5%), and Public Assistance Rate (6.2%). We further demonstrated that Latinos lived in communities with less favorable SDoH, as indicated by this new index. Finally, we found that cities with higher School Poverty ( $\geq 20$ th percentile) and lower Low-Income Housing Burden levels ( $\leq 65$ th percentile) presented a higher percentile of childhood obesity (6.4 [3.4, 9.5]).

**Conclusion:** Our study identifies specific SDoH associated with greater levels of childhood obesity among Latino communities in Southern California. An integrative approach involving education, healthcare, community engagement and social services may be recommended.

## Feasibility and preliminary efficacy of a co-designed and co-created healthy lifestyle social media intervention program the 'Daily Health Coach' for young women: a pilot randomised controlled trial.

**Miss Jessica Malloy**<sup>1</sup>, Dr. Rajshri Roy<sup>1,2,3</sup>, Dr. Stephanie R Partridge<sup>2,3</sup>, Dr. Andrea Braakhuis<sup>1</sup>, Dr. Joya A Kemper<sup>4</sup>

<sup>1</sup>*Discipline of Nutrition & Dietetics, Faculty of Medical & Health Sciences, The University of Auckland,* <sup>2</sup>*Charles Perkins Centre, The University of Sydney,* <sup>3</sup>*Discipline of Nutrition and Dietetics, Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, The University of Sydney,* <sup>4</sup>*Department of Management, Marketing, and Entrepreneurship, University of Canterbury Business School, University of Canterbury*

### S1.06. Co-Designed Digital Interventions for Promoting Health across Diverse and Priority Populations, Waitakere 2, June 12, 2025, 8:30 AM - 9:45 AM

**Background:** Young women spend an average of 50 minutes daily on social media (SM). Therefore, SM platforms may be promising intervention tools to address pertinent aspects of women's health including body image and health literacy. We aimed to test the feasibility and preliminary efficacy of a co-designed and co-created Instagram health promotion intervention targeting eating, physical activity, and social well-being behaviours for young women aged 18-24 years.

**Methodology:** The DHC study is an assessor blinded, two-arm pilot randomised controlled trial. Young women (n=50) were recruited to participate in the 12-week intervention. SM metrics were collected to assess engagement with the intervention, with acceptability evaluated via post-program questionnaires. Other feasibility measures included retention, randomisation, recruitment, and data collection. Secondary outcomes including dietary quality, physical activity, social influence, disordered eating behaviours, body image and digital health literacy were assessed via validated surveys. Differences between groups at baseline were tested using independent t tests for continuous variables and chi-squared ( $\chi^2$ ) tests for categorical variables. All secondary health outcomes were included in linear mixed model analyses. For estimation of treatment effect, differences in mean scores from baseline to 3 months were tested for intention-to-treat (ITT) populations.

**Results:** The DHC scored 83.6% (4.18/5) for program satisfaction. A significant decrease in body image was observed over time ( $p=0.013$ ). There was a significant group-by-time interaction effect observed for digital health literacy ( $p=0.002$ ), indicating an increase in cohort ability to source and/or discern evidence-based nutrition information ( $p=0.006$ ). An increase in social influence was observed for the waitlist control group (WCG) when compared to the intervention group, whereby the WCG observed an increase in score, whilst the intervention group mean score declined ( $p=0.034$ ). No other significant changes were observed for measured fixed effects across cohorts.

**Conclusion:** The DHC is a feasible and acceptable form of nutrition information dissemination. Subsequent studies with larger cohorts are needed to determine program efficacy.

## A co-designed digital intervention for parents to improve the health of socio-economically disadvantaged adolescents in Australia

**Dr. Bridie Osman<sup>1</sup>**, Dr. Katrina Champion<sup>1,2</sup>, Dr. Lily Davidson<sup>1</sup>, Prof. David Lubans<sup>3</sup>, Prof. Nicola Newton<sup>1</sup>, Prof. Louise Baur<sup>4</sup>, Prof. Catherine Mihalopoulos<sup>5</sup>, Dr. Lauren Gardner<sup>1</sup>, Prof. Bonnie Spring<sup>6</sup>, Prof. Timothy Slade<sup>1</sup>, Prof. Cath Chapman<sup>1</sup>, Prof. Tracy Burrows<sup>7</sup>, Dr. Louise Thornton<sup>1</sup>, Dr. Stephanie Partridge<sup>1</sup>, Prof. Matthew Sunderland<sup>1</sup>, Prof. Belinda Parmenter<sup>9</sup>, Miss Emily Hunter<sup>1</sup>, Prof. Maree Teesson<sup>1</sup>

<sup>1</sup>The Matilda Centre for Research in Mental Health and Substance Use, The University of Sydney, <sup>2</sup>The School of Public Health, University of Sydney, <sup>3</sup>Centre for Active Living and Learning, University of Newcastle, <sup>4</sup>Sydney Medical School, University of Sydney, <sup>5</sup>School of Public Health and Preventive Medicine, Monash University, <sup>6</sup>Department of Preventive Medicine, Northwestern University, <sup>7</sup>School of Health Sciences, University of Newcastle, <sup>8</sup>Susan Wakil School of Nursing, University of Sydney, <sup>9</sup>School of Health Sciences, UNSW Sydney

### S1.06. Co-Designed Digital Interventions for Promoting Health across Diverse and Priority Populations, Waitakere 2, June 12, 2025, 8:30 AM - 9:45 AM

**Purpose:** Physical inactivity, poor diet, alcohol use, smoking, sedentary behaviours, and poor sleep are key chronic disease risk factors. These risk factors are higher among people of low socio-economic status (SES) and interventions among this priority population are urgently needed. Parent-based interventions can improve youth outcomes and digital interventions offer many benefits. This study aims to co-design a new parent-based intervention to improve the health of low SES youth.

**Methods:** This study is guided by the Multiphase Optimisation Strategy (MOST), a novel approach for building effective interventions by testing multiple intervention components simultaneously. Two co-design workshops were conducted with low SES parents (N=12) in Australia. Parents advised on the content, frequency and format of five intervention components. Following initial development, parents provided feedback on the acceptability and feasibility of components via an online survey. Changes will be made, and development of the final components will be conducted by our digital partner.

**Results:** Based on the latest evidence and with input from >150 parents, five components designed to reduce lifestyle risk factors among low SES youth were selected: Online modules: to enhance parents' self-efficacy, improve health literacy, and provide advice on how to promote healthy behaviours within financial constraints. Web-based tailored feedback about parents' adherence to health guidelines and parenting practices and automated motivational advice. Stress management: An additional online module will teach parents coping strategies to decrease household stress, practice stress alleviation and challenge negative beliefs. Text messages: co-designed to provide supportive accountability and encourage intervention engagement. Health counselling: offered by a trained health coach providing tailored advice, check-in on progress, and encourage intervention engagement. A further >473 parents recently provided feedback on the acceptability and feasibility of the digital intervention components, and results will be available soon.

**Conclusions:** Through meaningful co-design with parents, this study will result in a set of equity-based parent-based components to reduce chronic disease risk factors among low SES youth, ready for rigorous evaluation.

# Acceptability, utility, and engagement with the Health4Me digital health intervention for adolescents: Process evaluation results from a Randomised Controlled Trial

**Ms. Rebecca Raeside<sup>1,2</sup>**, Ms. Allyson Todd<sup>1,2</sup>, Dr. Stephanie Partridge<sup>1,2</sup>, Other Health4Me Team<sup>1,2</sup>

<sup>1</sup>Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, The University of Sydney, <sup>2</sup>Charles Perkins Centre, The University of Sydney

## S1.06. Co-Designed Digital Interventions for Promoting Health across Diverse and Priority Populations, Waitakere 2, June 12, 2025, 8:30 AM - 9:45 AM

**Purpose:** Adolescents are increasingly calling for high-quality digital services to support their health and wellbeing. The Health4Me study is testing the effectiveness of a 6-month interactive text messaging intervention, supplemented by optional health counselling, aimed at improving adolescents' physical activity and dietary behaviours compared to usual care. The full sample size (n=390) has been recruited and randomised (1:1) to either the intervention or control group. This mixed-methods process evaluation aims to assess the acceptability, utility, and engagement with the Health4Me intervention.

**Methods:** A mixed-methods process evaluation was conducted using quantitative and qualitative data from text message delivery analytics, an intervention feedback survey, and focus groups. Focus group participants were eligible if they were in the intervention group and had completed the 6-month follow-up. A semi-structured discussion guide was used to facilitate the discussions. Focus groups were conducted until thematic saturation was reached, recorded, transcribed verbatim, and independently coded by two researchers, followed by thematic analysis using the Framework approach. Quantitative and qualitative data will be integrated through a merging approach.

**Results:** Final participant follow-up will be completed by October 2024. Text delivery analytics and feedback survey data are forthcoming; preliminary focus group data is presented. Five focus groups were conducted with 37 participants (mean age 16.7 years, SD 1.3; 78% female; 14% male; 8% non-binary/gender diverse). Thematic analysis indicated that receiving information via text messages was acceptable and useful. Participants found the messages increased access to health information, were suitably delivered, and could be referred to later. They desired further personalisation of content (age-appropriateness, context-specific) and delivery (timing, quantity) to enhance engagement. Despite enrolling, participants expressed a lack of trust in the intervention, feeling skeptical about clicking on links, replying to messages, and engaging with the health counselor. Suggested improvements included adding a mobile app or social media pages to build trust and allowing personalisation during sign-up.

**Conclusions:** Participants found the Health4Me intervention acceptable and useful. Optimising the intervention for personalisation and building trust in its features is needed. These findings support the use of digital preventive health interventions for adolescents and suggest strategies to enhance engagement in the future.

## Longer participation in a nutrition assistance program predicts higher diet quality but not better weight outcomes in low-income children ages 2 to 5 years old in the U.S.

**Dr. Lorrene Ritchie<sup>1</sup>**

<sup>1</sup>University of California, Division of Agriculture and Natural Resources

**S1.07. Exploring inequities, diet quality, and obesity in early childhood using two national, longitudinal studies in New Zealand and the United States, Waitakere 3, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** The U.S. Special Supplemental Nutrition Program for Women, Infants and Children (WIC) program provides nutrition education, healthy foods and support services to low-income infants and children up to age 5 years in the U.S. Data from the WIC Infant-Toddler Feeding Practices Study (ITFPS)-2, a national longitudinal study was used to: 1) describe trends in diet quality and weight status in children ages 2-5; 2) assess if duration on WIC is associated with child diet quality and weight status; and 3) identify the top foods contributing to diet quality.

**Methods:** Dietary intakes were assessed by 24-hour recalls collected annually for children ages 2-5 years (n=980 unweighted, n=403,725 weighted). Diet quality was assessed using the Healthy Eating Index (HEI)-2020 indicates alignment with the 2020-2025 U.S. Dietary Guidelines for Americans. Child height and weight were measured annually by WIC or health care providers and converted to BMI-for-age percentiles. Multivariate regression was used to examine HEI-2020 scores and BMI-for-age percentiles by WIC duration. The top 5 food contributors to HEI-2020 components were averaged across ages 2-5 and compared across WIC duration groups.

**Results:** Study children's mean HEI-2020 ranged from 53-55 from ages 2-5, comparable to national averages for children with low-income. Children with high WIC duration had significantly higher total HEI-2020 scores compared to children with low WIC duration from ages 2-5 years (mean±SD: 58.1±0.7 vs. 55.6±1.1, p=0.03). The percentage contributions of many WIC-eligible foods to HEI-2020 components were higher with longer WIC duration. Although the majority (60% at age 5) of study children were in the normal/healthy weight category, about a third (35% at age 5) were either overweight (16%) or obese (19%). No associations were observed between duration on WIC and BMI-for-age percentile at age 5 or change in BMI-for-age percentile between 2 and 5 years.

**Conclusions:** Longer participation in WIC and consumption of WIC-eligible foods may improve dietary intakes, but ample room remains to improve the diet quality and weight status of young children in the U.S.

## Aotearoa New Zealand: diet quality in early life is not setting young children up to thrive

**Dr. Teresa Gontijo de Castro<sup>1</sup>**

<sup>1</sup>*University of Auckland*

**S1.07. Exploring inequities, diet quality, and obesity in early childhood using two national, longitudinal studies in New Zealand and the United States, Waitakere 3, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** The first 5 years of life represent a unique opportunity to prevent malnutrition throughout life. Aotearoa New Zealand (ANZ) lacks national information on whole diet quality in early life and its determinants. Data from Growing up in New Zealand cohort (n=6,435) was used to provide nationally generalisable findings on: i) diet quality at 9-, 24- and 54-months and their maternal determinants; ii) associations between infant feeding quality and excess adiposity at 54-months and, ii) diet quality trajectories in early life.

**Methods:** Dietary indexes were developed to measure the adherence to national nutrition guidelines. Higher scores in the indexes meant higher adherence to guidelines. The infant feeding index (IFI-9-months) and the child feeding indexes (CFI-24- and 54-months) maximum scores, were, respectively, 12 and 11 points. BMI-for-age (WHO Standards) defined overweight/obesity and waist-to-height-ratio > 90th-percentile central adiposity. Poisson regressions with robust variance (risk ratios, 95% confidence intervals) were used to examine associations. Children indexes' scores were used to grade them as high (H), medium (M) and low (L) adherence. Then Sankey graphs examined diet quality trajectories across 9-, 24- and 54-months

**Results:** The indexes mean (SD) scores were: IFI-8.2 points (2.1), CFI-24-months: 6.1 (1.2) and CFI-54-months: 6.2 (1.3). There were inequities in whole diet quality across all time-points, with maternal age, education level, ethnicity and smoking habits constituting the stronger predictors. Compared with children in the highest IFI tertile, girls in the lowest and middle tertiles were more likely to be overweight/obese (1.46, 1.03-2.06 and 1.56, 1.09-2.23, respectively) and boys in the lowest tertile more likely to have central adiposity (1.53, 1.02-2.30) at 54-months. The most common dietary trajectory was: HMM for European (25.6%) and Asian (15%) and MMM for Māori (14%) and Pacific (15.4%). Only 2.7% of the cohort tracked stable on the HHH trajectory. Children's proportions tracking stable on the LLL trajectory were three times higher among Māori, Pacific and Asian (6.7%, 6.5% and 6.0%, respectively), in relation to European (2.2%).

**Conclusions:** There were relevant diet quality inequities in ANZ, with many children not being set on trajectory that promotes a better start to life and prevents chronic diseases.

## The Infant Diet Quality Index predicts dietary and adiposity outcomes in U.S. children

**Dr. Lauren Au<sup>1</sup>**

<sup>1</sup>*University of California, Davis*

**S1.07. Exploring inequities, diet quality, and obesity in early childhood using two national, longitudinal studies in New Zealand and the United States, Waitakere 3, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Limited techniques are available to assess diet quality in infancy in the U.S., and none have been shown to be predictive of dietary and adiposity outcomes in low-income children. Data from the U.S. Women, Infants, and Children (WIC) Infant and Toddler Feeding Practices Study-2 (n=2,936) was used to: (1) construct a novel Infant Diet Quality Index (IDQI) from birth to 12 months; (2) assess if the IDQI was predictive of diet quality and weight status in early childhood; and (3) investigate differences by race/ethnicity and language (English/Spanish).

**Methods:** This study analysed data from 24-hour dietary recalls and survey responses during infancy in relation to Healthy Eating Index-2015 (HEI-2015) scores and body mass index Z-scores (BMIz) calculated at 2-4 years. Regression analysis was used to estimate associations between the total IDQI score (range 0-1) and HEI-2015 and BMIz at 2-4 years, adjusted for covariates. Statistical interaction between IDQI and each racial/ethnic group was estimated in multivariable models. Mediation of race/ethnicity through the IDQI using causal mediation methods was also assessed.

**Results:** The IDQI has predictive validity for diet quality and weight status in low-income U.S. children. The total IDQI score was positively associated with HEI-2015 at 2 years ( $\beta=16.7$ ;  $P<0.001$ ), 3 years ( $\beta=14.5$ ;  $P<0.001$ ), and 4 years ( $\beta=15.4$ ;  $P<0.001$ ); and negatively associated with BMIz at 2 years ( $\beta=-1.24$ ;  $P=0.002$ ) and 4 years ( $\beta=-0.92$ ;  $P=0.003$ ). Racial/ethnic differences in IDQI were observed between (mean(SD)): Hispanic Spanish (0.41(0.10)), Hispanic English (0.37(0.10)), White (0.36(0.10)), and Black (0.35(0.09)), range 0-1,  $P<0.001$ . Interaction between race/ethnicity and IDQI was observed for all outcomes except for BMIz at 3 years. Through mediation, IDQI explained 13-21% of the difference in HEI-2015 scores between 2-5 years, respectively, between Hispanic Spanish and White participants. IDQI explained 21% of the difference in HEI-2015 scores at 4 years between Hispanic Spanish and Black participants.

**Conclusions:** The IDQI has predictive validity for diet quality and weight status in low-income U.S. children. Higher IDQI scores observed in Hispanic Spanish-speaking participants explains some of the racial/ethnic differences observed in later diet quality, suggesting that improving infant diet quality may help alleviate disparities in early childhood.

## Co-designing a digitally delivered 24-hour time use intervention for dementia risk reduction

Dr. Henry Blake<sup>1</sup>, Dr. Aaron Davis<sup>1,2</sup>, Dr. Maddison L. Mellow<sup>1</sup>, **Dr. Ashleigh E. Smith<sup>1</sup>**

<sup>1</sup>*Alliance for Research in Exercise, Nutrition and Activity (ARENA) Research Centre, Allied Health and Human Performance, University of South Australia,* <sup>2</sup>*Australian Research Centre for Interactive and Virtual Environments (IVE), Creative, University of South Australia*

### **S1.08. New frontiers in 24-hr time-use interventions for brain health: compositional data analysis, optimization and co-design, Limelight 1, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Co-design approaches actively involve stakeholders to better understand community needs and tailor interventions to intended end users. Using co-design principles based on the Health CASCADE framework, we aim to describe the collaborative process undertaken to develop a 24-hour time-use intervention, called Small Steps, which addressed gradual and incremental health behavior change. A secondary aim is to reflect on the challenges and benefits of co-design in this project, offering insights into the 'why' and 'how' to co-design 24-hour time-use interventions with priority populations.

**Methods:** To prioritize older adult views 8 adults aged >65 years and 4 allied health professionals with >2 years' experience working with the target population were recruited and participated in 6 co-design workshops (June 2023 – January 2024). Workshops and activities were structured using the British Design Council's Double Diamond Design Process to stimulate design thinking. Where possible, participant-led documentation was used to reduce the bias associated with academic scribing and empower participants to provide input and facilitate ownership for the project. Workshop activities and discussions were also captured through printouts, audio and iPad screen recordings and analyzed through thematic and content analysis.

**Results:** Co-designers informed all elements of the intervention including the website, the content, and the level of researcher input during the intervention. Iterative improvements were made based on the unique perspectives and needs of the community experts. End-users valued both support and autonomy for the action planning element of the intervention. Older adults expressed their desire for a list of behavior change options, while maintaining the freedom to adapt these options to their individual needs and preferred a step-by-step approach, allowing for gradual behavior changes across the intervention to avoid feelings of becoming overwhelmed.

**Conclusions:** The co-design approach captured participants' unique perspectives, leading to iterative improvements focused on meeting the specific needs of its intended users. Key factors contributing to the co-design included flexibility in the design process, fostering a supportive environment, and empowering participants through activities that guided and stimulated their thinking. These elements helped shape the development of Small Steps and reinforced the value of co-design in personalized intervention design.

## Personalising 24-hour time-use interventions for brain health: development of an interactive behaviour change tool to identify customised 'ideal days' for cognitive function using UK Biobank data

**Dr. Maddison L. Mellow<sup>1</sup>**, Dr. Tyman E. Stanford<sup>1</sup>, Dr. Ashleigh E. Smith<sup>1</sup>, Dr. Dorothea Dumuid<sup>1</sup>

<sup>1</sup>*Alliance for Research in Exercise, Nutrition and Activity (ARENA) Research Centre, Allied Health and Human Performance, University of South Australia*

**S1.08. New frontiers in 24-hr time-use interventions for brain health: compositional data analysis, optimization and co-design, Limelight 1, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Physical activity, sleep, and sedentary behavior are mutually exclusive and exhaustive components of the 24-hr day. Identifying the optimal composition of these behaviors may be a promising dementia prevention strategy. However, the 'ideal 24-hr day' for brain health likely varies between individuals depending on their current time-use, health status, and sociodemographic characteristics. It is possible to compute optimal 24-hr compositions for individuals based on such characteristics, however the big translational challenge is how to effectively communicate behavior change recommendations which are underpinned by complex statistical techniques. The current abstract describes the creation of an interactive web app "My Ideal Day" which was used to inform a 24-hr time-use intervention for brain health, Small Steps.

**Methods:** Cross-sectional analysis included 51,000 UK Biobank participants with 24-hr accelerometry, sociodemographic and dementia risk factors, and cognitive testing data (across 5 cognitive domains). Compositional 24-hr accelerometry data were expressed as isometric log-ratios. Eight strata were created using age (<65 or ≥65 years), sex (male, female) and BMI (<30 or ≥30), and within each of these strata, the optimal day for each cognitive outcome was identified based on more granular individual characteristics. A user-friendly interactive web app was created using the Shiny package in R, allowing users to input their health and sociodemographic characteristics, view their personalized estimated 'ideal' 24-hr day, and view small changes that could be taken to move towards the ideal day.

**Results:** Across the total sample and within each stratum, significant associations between 24-hr time-use composition and each of the cognitive outcomes were identified. Feasible 24hr time-use compositions varied across and within strata. The Shiny app, co-designed with community-dwelling older adults, provides real-time comparison of the participant's 'current day' (self-identified) and their 'ideal day' (identified by the individualized optimization analysis "under the hood").

**Conclusions:** This exploratory study demonstrates that (a) 24-hr time-use interventions for brain health can be personalised to the individual's sociodemographic and health characteristics, and (b) 'small steps' towards the ideal day can be communicated using an interactive user interface. Such an analysis relies on large and representative datasets and is achievable using open-source software such as R Shiny.

## Associations between physical activity, sleep, and brain health in older adults

**Dr. Kelsey R. Sewell<sup>1,2</sup>**, Dr. Belinda M. Brown<sup>2,3,4</sup>

<sup>1</sup>AdventHealth Research Institute, <sup>2</sup>Centre for Healthy Ageing, Health Futures Institute, Murdoch University, <sup>3</sup>Centre for Precision Health, Edith Cowan University, <sup>4</sup>Alzheimer's Research Australia, Sarich Neuroscience Research Institute

**S1.08. New frontiers in 24-hr time-use interventions for brain health: compositional data analysis, optimization and co-design, Limelight 1, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Physical activity and sleep are both related to brain health, and these lifestyle factors also share a bi-directional relationship. However, in the context of cognitive function, sleep and physical activity are seldom considered together in cross-sectional studies, and the influence of each lifestyle factor in the context of interventions (e.g., exercise) remains unclear. The purpose of this research is to investigate whether sleep and physical activity may interact to influence brain health in older adults.

**Methods:** This abstract will present data from two studies. The first is a cross-sectional study in healthy older adults ( $n=349$ ;  $75.3 \pm 5.7$  years) with self-reported measures of sleep (Pittsburgh Sleep Quality Index, PSQI) and physical activity (International Physical Activity Questionnaire). We investigated the moderating influence of physical activity on associations between sleep and cognition. Secondly, we will present data from a randomized controlled trial which was a 6-month, supervised exercise intervention in 89 cognitively unimpaired older adults ( $68.76 \pm 5.32$  years). We investigated the influence of baseline sleep, measured by PSQI, on exercise-induced cognitive improvement across the course of the intervention.

**Results:** Cross-sectionally, we found an interaction between sleep efficiency and physical activity ( $\beta = -.09$ ,  $SE = 0.04$ ,  $p = .028$ ), such that those with the lowest physical activity levels ( $-1SD$  below the mean) showed the strongest association between greater sleep efficiency and better episodic memory. In those with high physical activity levels, there was no association between sleep efficiency and episodic memory. From our exercise intervention study, we found that those with poorer sleep efficiency at baseline showed the greatest exercise-induced improvements in episodic memory from pre- to post-intervention.

**Conclusions:** Our results suggest that physical activity and sleep interact to influence cognitive function, and the efficacy of exercise interventions to improve cognition may be influenced by sleep. Taken together, our data suggest that physical activity may compensate for some negative influences of poor sleep on cognitive function. These results highlight the importance of considering the 24-hr activity cycle (e.g., both time in activity and time in sleep) when designing lifestyle-based interventions for brain health.

# A cluster randomised controlled trial of a multicomponent school-based systems intervention to prevent childhood obesity within Victorian primary schools: study protocol for the TransformUs Wellbeing trial

**Dr. Claudia Strugnell<sup>1</sup>**, Other Natalie Lander<sup>2</sup>, Prof. Jo Salmon<sup>2</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University, Geelong, Australia. Global Centre for Preventative Health and Nutrition (GLOBE), Institute for Health Transformation,*

<sup>2</sup>*Institute for Physical Activity and Nutrition, Deakin University*

**S1.09. Enhancing Physical Activity, Wellbeing, and Learning for Children of All Ages and Abilities, Limelight 2, June 12, 2025, 8:30 AM - 9:45 AM**

**Background** Childhood overweight and obesity are pressing public health issues, affecting one in four children, with higher prevalence in regional areas. Previous interventions targeting single behaviors have shown limited effectiveness, whereas approaches utilizing systems science have demonstrated reductions in obesity rates and sustained improvements in health-related quality of life (HRQoL). This paper presents the adaptation process and protocol for the TransformUs Wellbeing cluster randomized controlled trial in Victorian primary schools.

**Methods** TransformUs Wellbeing incorporates community-based systems dynamics (CBSD) methods into the school environment, hypothesizing that this stable, child-focused setting will produce sustained intervention effects. The initiative combines successful strategies addressing multiple behavioral drivers of obesity, including physical activity, sedentary time, diet quality, sleep sufficiency, and both physical and psychosocial HRQoL. The intervention is grounded in theoretical frameworks such as theory of change, social cognitive theory, behavioral choice theory, and ecological systems theory. Primarily delivered by classroom teachers, it includes both school and home-based strategies.

**Discussion** TransformUs Wellbeing aims to develop, test, and disseminate a multicomponent school-based systems intervention for preventing childhood obesity. By integrating the intervention within the school infrastructure, it is expected to be less vulnerable to external disruptions like health service priorities, budget cuts, and staff turnover. The whole-of-school approach, combined with proven resources, seeks to enhance both implementation and efficacy. The trial's outcomes will contribute to the evidence base for systems science methodologies in childhood obesity prevention and inform future public health strategies.

**Conclusion** This research has the potential to reshape approaches to childhood obesity prevention, providing sustainable, effective solutions tailored to school environments and ultimately improving the health and wellbeing of children in Victoria and beyond.

## School-delivered strategies to increase physical activity and reduce sedentary behaviour in students with disability: Protocol of the TransformUs All Abilities Type II hybrid implementation-effectiveness trial

**Dr. Emiliano Mazzoli<sup>1,2</sup>**, Dr. Ana Maria Contardo-Ayala<sup>2</sup>, Other Natalie Lander<sup>2</sup>, Other Harriet Koorts<sup>2</sup>, Prof. Anna Timperio<sup>2</sup>, Prof. David Lubans<sup>2</sup>, Other Nicola D Ridgers<sup>3,2</sup>, Dr. Kate Anderson<sup>4</sup>, Prof. John Cairney<sup>5</sup>, Prof. Lisa Barnett<sup>1</sup>, Prof. Jo Salmon<sup>2</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Health and Social Development, Faculty of Health, Deakin University,* <sup>2</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Faculty of Health, Deakin University,* <sup>3</sup>*Alliance for Research in Exercise, Nutrition and Activity (ARENA), Allied Health and Human Performance, University of South Australia,* <sup>4</sup>*School of Computing Technologies, STEM College, RMIT University.,* <sup>5</sup>*school of Human Movement and Nutrition Sciences, University of Queensland*

### **S1.09. Enhancing Physical Activity, Wellbeing, and Learning for Children of All Ages and Abilities, Limelight 2, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** TransformUs is a school-based program designed to enhance physically active teaching and learning, aligned with the Australian curriculum. Originally developed for mainstream primary schools, it effectively increases physical activity and decreases sedentary behavior. The program has now been adapted for students with disabilities in both primary and secondary schools, termed TransformUs All Abilities. This presentation will outline the adaptation process as well as the hybrid implementation-effectiveness trial to evaluate TransformUs All Abilities.

**Methods:** We will conduct a hybrid Type II trial to assess TransformUs All Abilities across all government and independent special and mainstream schools in Victoria, Australia, as well as select schools in Queensland and South Australia. This includes 208 special schools, 1,175 primary schools, 553 secondary schools, and 237 combined schools. The effectiveness trial will focus on a subgroup of government or independent special schools for students with mild to moderate intellectual disabilities in Victoria, involving up to 3 intervention and 3 waitlist control schools from 61 eligible institutions. Assessments will utilize the RE-AIM framework, focusing on Reach, Effectiveness, Adoption, Implementation, and Maintenance. Primary outcomes include students' physical activity and sedentary behavior, while secondary outcomes encompass physical literacy and cognitive functions. Teachers will provide feedback on the program's implementation, and a subsample of students will share qualitative insights regarding engagement, enjoyment, and suggestions. Data will be analyzed descriptively and with linear mixed models to evaluate changes over time, accounting for school/classroom clustering and confounding effects.

**Results:** Findings will be disseminated through academic publications, conference presentations, and summary reports to schools, parents, and partner organizations. The goal is to inform future policies and practices for school-based interventions aimed at children with disabilities.

## TransformUs Secondary Schools program: A Type II hybrid implementation-effectiveness trial to increase adolescents' physical activity and reduce sedentary time in secondary schools

**Dr. Ana Maria Contardo-Ayala<sup>1</sup>**, Other Natalie Lander<sup>1</sup>, Dr. Emiliano Mazzoli<sup>2</sup>, Prof. Anna Timperio<sup>1</sup>, Other Harriet Koorts<sup>1</sup>, Other Nicola D. Ridgers<sup>3</sup>, Dr. Gavin Abbott<sup>1</sup>, Prof. David Lubans<sup>4,5,6</sup>, Prof. Jo Salmon<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Faculty of Health, Deakin University,* <sup>2</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Health and Social Development, Faculty of Health, Deakin University,* <sup>3</sup>*Alliance for Research in Exercise, Nutrition and Activity (ARENA), Allied Health and Human Performance, University of South Australia,* <sup>4</sup>*Centre for Active Living and Learning, College of Human and Social Futures, University of Newcastle,* <sup>5</sup>*Hunter Medical Research Institute, New Lambton Heights, New South Wales,* <sup>6</sup>*Faculty of Sport and Health Sciences, University of Jyväskylä*

### **S1.09. Enhancing Physical Activity, Wellbeing, and Learning for Children of All Ages and Abilities, Limelight 2, June 12, 2025, 8:30 AM - 9:45 AM**

**Introduction** Despite the benefits of physical activity and the risks associated with prolonged sedentary behavior, only one in ten adolescents globally meet physical activity guidelines, with three-quarters of the school day spent sitting. TransformUs, an effective and cost-efficient whole-of-school program promoting physical activity among primary school children, has now been adapted for secondary schools (TransformUs Secondary). This presentation outlines the adaptation process as well as the protocol for TransformUs Secondary, focusing on implementation, scale-up across Australia, and the real-world effectiveness of the intervention on adolescents' physical activity, sedentary time, sleep, wellbeing, and engagement in school.

**Methods** We will conduct a Type II hybrid implementation-effectiveness trial using a mixed-methods design. The implementation trial will disseminate TransformUs Secondary through key organizations, including state Departments of Education, making it available to all Australian secondary schools (n=1,453). Implementation outcomes will be assessed using the RE-AIM framework (reach, adoption, implementation, and maintenance). Data collection will occur at the school and teacher levels through the TransformUs website (website analytics), descriptive quantitative surveys, text messages to teachers, and qualitative interviews with teachers, students, and representatives from key organizations. For the effectiveness assessment, we will implement a pragmatic 1:1 waitlist control design in 10 Victorian secondary schools, targeting a sample of 600 Year 7-10 students (ages 12-16). Primary outcomes will include adolescents' physical activity and sedentary time, measured with accelerometers. Secondary outcomes will assess health (sleep and wellbeing), engagement (on-task behavior via classroom observations and school attendance), and sitting time (using posture monitors).

**Conclusion** This study aims to provide valuable insights into the effectiveness of the TransformUs Secondary program, informing future interventions to enhance physical activity and reduce sedentary behavior among adolescents, ultimately contributing to improved health and educational outcomes.

## Kanien'kehà:ka concepts for implementing health promotion activities “In A Good Way”.

**Dr. Brittany Jock<sup>1</sup>**

<sup>1</sup>*McGill University*

**S1.10. Indigenous Health Promotion, Concepts of Health, & Cultural Safety., Waihorotiu #1, June 12, 2025, 8:30 AM - 9:45 AM**

Process evaluations assess the quality of program implementation and can assist in understanding the outcomes of activities using concepts such as reach, fidelity, and dose delivered/received, but this information is less informative for assessing the implementation of community-engaged health promotion activities. There is an absence of alternative methodologies to assess the effective implementation of such activities in Indigenous communities. This study aims to describe the cultural concepts and indicators for the successful implementation of health promotion activities in a Kanien'kehà:ka context. We conducted 20 conversations with knowledge carriers, health program staff, and Indigenous scholars from one Kanien'kehà:ka community of Turtle Island (North America). All participants provided informed, verbal consent and received a tobacco tie following Kanien'kehà:ka protocols when requesting experts share their knowledge. We used a thematic analysis approach to code the transcripts using participant-identified in vivo themes which were developed into a codebook that was used to code all transcripts. Member checking was conducted with a subset of participants to ensure that findings represented the knowledges of individual participants and the wider community. Participants described concepts that were useful for understanding the successful implementation of health promotion activities that are grounded in Kanien'kehà:ka knowledge systems: peace, empowerment, and having a good mind. We present a framework for how these concepts are implemented for evaluation and ways to assess progress. Our study provides a novel and alternative approach to evaluating health promotion success that can be useful for Indigenous and/or community-engaged health promotion activities. This provides a foundation for an Indigenous-grounded process evaluation methodology, which could steer program evaluations away from biomedical notions of program success (based on limited adaptation, number of treated, dosage, and patient compliance) and towards constructs that best apply to community-based Indigenous health promotion.

## Family Medicine Indigenous Program centers efforts on Cultural Safety.

**Prof. Alex M McComber<sup>1</sup>**

<sup>1</sup>*McGill University*

**S1.10. Indigenous Health Promotion, Concepts of Health, & Cultural Safety., Waihorotiu #1, June 12, 2025, 8:30 AM - 9:45 AM**

The McGill University Department of Family Medicine Indigenous Program was created in 2020 by two Indigenous professors. This session will share stories and experiences of the Program creation, the knowledge exchange Indigenous Space; and the main focus of cultural safety education. This has taken form as two graduate level courses; consultation and developing cultural safety content in courses at other departments and schools; and April 2023, was one of four Quebec based Indigenous groups\* who organized and hosted a three-day Roundtable on Cultural Safety in an Indigenous Health Research in Tiohtia:ke (Montreal), Quebec, Canada bringing together forty-five mostly Indigenous and allied persons from various community and academic backgrounds, including students and elders. They shared traditional and community perspectives on cultural safety & culturally safe practices & created recommendations to various Quebec stakeholder groups, recommendations on cultural safety training, and recommendations to integrate Joyce's Principle into health research to ensure culturally safe practices are guaranteed for participants and communities. \* The Office of Joyce's Principle; the Indigenous Program of the Department of Family Medicine, McGill University; Tahatikonhsontóntie' Quebec Network Environment for Indigenous Health Research; and the SPOR Quebec Support Unit Indigenous Health Research Project (34).

## Conceptualisation and development of health indicators by and for Quechua indigenous rural communities: results of a collective concept mapping.

**Prof. Dave Bergeron<sup>1</sup>**

<sup>1</sup>*University of Quebec*

**S1.10. Indigenous Health Promotion, Concepts of Health, & Cultural Safety., Waihorotiu #1, June 12, 2025, 8:30 AM - 9:45 AM**

In most low-, middle- and high-income countries, colonisation has contributed to the marginalisation of indigenous communities' knowledge systems and conceptualisations of health. Even today, in several countries, including Peru, the perspectives of indigenous populations are rarely taken into account by health authorities when planning health services and interventions, resulting in a health system that is particularly ill-suited to the needs of indigenous communities. Using a three-phase collective concept mapping process, this research project aims to explore the conceptualisation of health in two rural Quechua indigenous communities in Peru and to identify relevant community indicators to measure the effectiveness of health promotion interventions in these indigenous communities. Collective concept mapping is a participatory, mixed-method approach that integrates qualitative group processes and multivariate statistical analysis to structure and visually represent collective thinking. At the end of the collective concept mapping process, participants from each community identified between five and six conceptual clusters that made explicit each community's conceptualisation of health. For each community, two of the conceptual clusters identified were related to the responsible use of traditional medicinal plants and the consumption of traditional, healthy, locally produced foods. The results of this collective conceptualisation then enabled participants to exchange ideas and identify potential projects to promote the use of medicinal plants and the consumption of locally produced traditional foods. Some key indicators were also identified that the participants considered most important for evaluating the outcomes of these future projects.

## Quantifying the whānau (family) effect: Positive cross-generational associations between physical activity and physical literacy levels of adults and young people living in the same household

**Dr. Lucy Corbett<sup>3</sup>**, Prof. Adrian Bauman<sup>1,3</sup>, Dr. Justin Richards<sup>1,2</sup>

<sup>1</sup>*Te Hau Kori, Victoria University of Wellington – Te Herenga Waka*, <sup>2</sup>*Sport New Zealand - Ihi Aotearoa*, <sup>3</sup>*Prevention Research Collaboration, University of Sydney*

**S1.11. Active New Zealand: Leveraging government physical activity surveillance data to influence research, policy and practice in Aotearoa New Zealand and internationally, Herald Theatre, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** The purpose of this study was to examine how physical activity is influenced by the behaviour and physical literacy of close family members. It is thought that the health behaviours of adults may be particularly influential on young people living in the same household, but there is limited empirical evidence that substantiates this across different population groups. We aimed to quantify the inter-generational association between physical activity and physical literacy levels.

**Methods:** We matched Active NZ data for adults and young people living in the same household (n=8,837 pairs). We used logistic regressions to examine whether a parent meeting physical activity recommendations (i.e. 150minutes/week) was associated with their child's physical activity levels adjusted for age, sex, education and ethnicity. We repeated this analysis for incremental increases in adult weekly physical activity duration and also stratified according to school-level (i.e. primary, intermediate, secondary). The association between adult physical literacy and young person's physical activity for people living in the same household was also examined.

**Results:** The duration of physical activity participation for young people was positively associated with whether an adult in their household met the recommendations (OR=1.44, 95%CI:1.31-1.58). An adult doing any physical activity was also positively associated with child physical activity (OR=1.30, 95%CI:1.17-1.44). This association strengthened as the weekly duration of parent physical activity increased to 60-minutes (OR=1.35, 95%CI:1.22-1.50), 120-minutes (OR=1.36, 95%CI:1.23-1.50), 180-minutes (OR=1.46, 95%CI:1.33-1.60), and 240-minutes (OR=1.57, 95%CI:1.43-1.72), before weakening slightly for 300-minutes (OR=1.53, 95%CI:1.40-1.67). These associations with parent physical activity levels were stronger for younger children. Parent physical literacy was also positively associated with the physical literacy and physical activity levels of young people living in the same household.

**Conclusion** Parents who are physically literate and active are more likely to have physically active children. The likelihood a young person will be physically active increases as their parent's physical activity participation increases up to four hours, at which point it reaches a plateau. The influence of parental physical activity appears to reduce as their children get older. Whānau (family) focussed interventions to promote physical activity and physical literacy are likely to be an important population strategy.

## Single-item physical activity survey: Optimal sensitivity and specificity for efficient population-level surveillance of meeting physical activity recommendations across the lifespan

**Prof. Adrian Bauman<sup>1,3</sup>**, Dr. Justin Richards<sup>1,2</sup>

<sup>1</sup>Te Hau Kori, Victoria University of Wellington – Te Herenga Waka, <sup>2</sup>Sport New Zealand - Ihi Aotearoa, <sup>3</sup>Prevention Research Collaboration, University of Sydney

**S1.11. Active New Zealand: Leveraging government physical activity surveillance data to influence research, policy and practice in Aotearoa New Zealand and internationally, Herald Theatre, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** The purpose of this study was to examine the use of a single-item physical activity (SIPA) questions for adults and adolescent in an existing national surveillance tool. We aimed to identify the optimum number of days/week reported using the SIPA that best classified meeting the current aerobic physical activity recommendations (i.e. moderate-vigorous physical activity for 150mins/week for adults and 420mins/week for adolescents).

**Methods:** We used population-representative Active NZ data for adults and adolescents from 2019-2020. The survey included multiple measures of physical activity participation collected concurrently. Adults were asked the SIPA question for “number of days/week active for at least 30 minutes” and the IPAQ-Long survey. Adolescents were asked the SIPA question for “number of days/week active for at least 60 minutes” and the IPAQ-Adolescent survey. We used area under the curve (AUC) estimates from receiver operator characteristic (ROC) analyses and Youden index to identify where the SIPA measures most correctly classified respondents as meeting physical activity recommendations according to the IPAQ-Long / IPAQ-Adolescent measures.

**Results:** Using the relevant IPAQ-Long and IPAQ-Adolescent measures, 85.2% of adults and 82.7% of adolescents met the physical activity recommendations. For adults, the SIPA AUC values were good for the IPAQ-leisure time domain (AUC=0.75) and the IPAQ-total (AUC=0.71). The Youden index values were 0.41 for the IPAQ-leisure time domain and 0.33 for the IPAQ-total, indicating better fit with the IPAQ-leisure time measure. The Youden index identified the best fit for the adult SIPA was 3+ days/week for maximizing sensitivity and specificity to meet IPAQ-Long defined PA guidelines. For adolescents, the SIPA showed good classification with the IPAQ-Adolescent measure (AUC= 0.73) and a Youden index of 0.37. The Youden index identified the best fit for adolescent SIPA was 4+ days/week for maximizing sensitivity and specificity to meet IPAQ-Adolescent defined PA guidelines.

**Conclusions:** Our analyses redefines surveillance-relevant concurrent validity for the SIPA question. Identifying 3+ days/week for adults and 4+ days/week for adolescents on the SIPA questions best classifies meeting physical activity recommendations. These results improve the utility of SIPA questions for the surveillance of meeting physical activity recommendations across the lifespan.

## Policy prioritisation of different physical activity types: Assessing the relative contribution of different activities to overall leisure-time physical activity participation

**Dr. Erika Ikeda<sup>1</sup>**, Dr. Justin Richards<sup>1,2</sup>, Prof. Adrian Bauman<sup>1,3</sup>

<sup>1</sup>*Te Hau Kori, Victoria University of Wellington – Te Herenga Waka*, <sup>2</sup>*Sport New Zealand - Ihi Aotearoa*, <sup>3</sup>*Prevention Research Collaboration, University of Sydney*

**S1.11. Active New Zealand: Leveraging government physical activity surveillance data to influence research, policy and practice in Aotearoa New Zealand and internationally, Herald Theatre, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** The purpose of this study was to examine the relative contribution of different types of physical activity to total leisure-time participation. Investment and policy prioritisation of different sports and physical activity organisations is thought to align with national participation levels, but there is limited empirical evidence that substantiates this assertion. We aimed to quantify relative participation levels of specific physical activity types to inform future prioritization.

**Methods:** We used population-representative weighted data from the Young People Active NZ survey. The online survey includes measures of overall physical activity in the past week and questions about participation in 77 different activity types (e.g. walking dog, football, kapa haka, gym). We subsequently categorised these activity types into 21 groups (e.g. walking, traditional sports, Indigenous activities, exercise). The prevalence and mean duration of these types and groups of activities were calculated and matched with the 2018 Census data to calculate total person time of each activity at the population level. These data were then used to estimate the proportion of total physical activity participation that was contributed by each type and group of activity.

**Results:** For specific activity types, the largest contribution to total physical activity participation was from running (29.01%), playing (15.55%), playground (8.94%), swimming (8.22%), games (8.03%), walking for fitness (5.82%) and cycling (5.61%). For the grouped activity categories, the largest relative contribution came from playing (i.e. play, playground, games; 30.67%), traditional sports (e.g. rugby, netball, cricket; 21.12%), running (i.e. run, jog, cross-country; 18.70%), artistic sports/performance (e.g. trampoline, gymnastics, dance; 7.69%) and swimming (e.g. swim, surf lifesaving, water polo; 5.93%). All other activity types and groups contributed less than 5% of total physical activity participation across the population.

**Conclusions:** Recreational running and play contribute the most to total physical activity. Although the contribution of each traditional sport is small, collectively they account for a third of total physical activity participation in young people in Aotearoa New Zealand. This has implications for future funding in the physical activity sector if participation level is a key determinant of investment.

## The impact of 30km/h speed limits on physical activity– A natural experiment in two Dutch cities

Dr. C.L. van Erpecum<sup>1</sup>, Ms. F. Heuvelman<sup>2</sup>, Dr. F.J.M. Mölenberg<sup>3</sup>, Dr. A. Bornioli<sup>4</sup>, Dr. J.S. Benton<sup>5</sup>, Prof. P. Garcia Gomez<sup>1</sup>, Prof. J.W.J. Beulens<sup>2</sup>, **Dr. N.R. den Braver<sup>2</sup>**

<sup>1</sup>Erasmus School of Economics, Applied Economics, Erasmus University, <sup>2</sup>Department of Epidemiology and Data Science, Amsterdam University Medical Centre, Amsterdam Public Health Research Institute, <sup>3</sup>Department of Public Health, Erasmus Medical Centre, <sup>4</sup>Environmental Psychology Research Group, University of Surrey, <sup>5</sup>Department of Geography, School of Education, Environment and Development, The University of Manchester

### **S1.12. How can we change environments to promote physical activity? Mixed-method natural experiments for robust practice-based evidence, Balcony Foyer, June 12, 2025, 8:30 AM - 9:45 AM**

Background: Transport policy, such as lowered speed limits, is an opportunity to promote physical activity (PA) and reduce car dependency. However, policy evaluations have insufficiently investigated such outcomes. In this mixed-methods natural experiment study, we evaluated the impact of 50km/h to 30km/h speed limit reductions on PA outcomes in two Dutch cities (Rotterdam and Amsterdam).

Methods: In Amsterdam, a city-wide reduction to 30km/h was implemented on December 8th 2023. In Rotterdam, seven streets changed incrementally from September 2023 to June 2024. We conducted baseline measurements in intervention streets with matched control streets (remaining 50km/h) in November 2023 (Amsterdam) and June 2023 (Rotterdam). Follow-up measurements are currently ongoing (September-November 2024). Outcome measures included (1) household surveys assessing self-reported moderate-to-vigorous PA (MVPA), active travel (bike) and passive travel (car or public transport) using the International Physical Activity Questionnaire (IPAQ), (2) accelerometer-based MVPA (subsample), and (3) observed MVPA (predominantly cycling) in six streets through systematic observations using the Method for Observing pHysical Activity and Wellbeing (MOHAWk). In this abstract, we report on baseline values of PA outcomes. In the conference, we will present follow-up and evaluation results.

Results: In the surveys, we recruited 416 individuals in Amsterdam (mean age 54.7(±18.2) years, 55% female) and 595 in Rotterdam (48.2(±17.9) years, 56% female). In Amsterdam, 46% of participants met the PA-guidelines (150min/week), 55% cycled above the national average (15min/day), 62% used passive transport above average (39min/day) according to self-report. These numbers were 45%, 46% and 60% in Rotterdam, respectively. In the accelerometer study, a subsample of 88 individuals participated. Of these, 95% met national PA-guidelines. In the observations, at baseline 57% (intervention streets) and 52% (control streets) of participants were engaging in MVPA.

Conclusions: Nationally, about 50% of individuals meet the PA guidelines. Our survey sample is thus quite representative in this aspect, also with regard to national averages of active and passive travel. However, a highly active subsample participated in the accelerometer study, indicating selectivity in this subsample. This robust mixed-methods natural experiment evaluation will provide rare evidence for policymakers regarding the health impacts of 30km/h speed limits.

# Flooding the Pathways: A Natural Experiment on the Longitudinal Impact of Extreme Weather Events on Active Transportation in the United States

**Dr. Marilyn E. Wende**<sup>1</sup>, Dr. Jessica Stroope<sup>2</sup>, Prof. Semra A. Aytur<sup>3</sup>, Ms. Karin Valentine Goins<sup>4</sup>, Prof. M. Renée Umstattd Meyer<sup>5</sup>

<sup>1</sup>University of Florida, <sup>2</sup>Louisiana State University AgCenter, <sup>3</sup>Department of Health Management and Policy, University of New Hampshire, <sup>4</sup>University of Massachusetts Chan Medical School, <sup>5</sup>Baylor University, Robbins College of Health and Human Sciences

**S1.12. How can we change environments to promote physical activity? Mixed-method natural experiments for robust practice-based evidence, Balcony Foyer, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** This study assesses the longitudinal relationship between extreme precipitation and active transportation across the United States amid rising extreme weather events and flooding.

**Methods:** Conducted at the county level (n=3142) from 2005 to 2018, this longitudinal study used data from the National Environmental Public Health Tracking Network. Five-year estimates of rates of active transportation to work for those over 16 years old were derived from ACS data (2005-2009 to 2018-2022), encompassing both walking and bicycling. The annual population-weighted average of extreme precipitation days ( $\geq 2$  inches) was obtained from the North American Land Data Assimilation System (2005-2023). Mixed-effects models using REML analyzed predictors of walking and biking percentages, incorporating random effects for county-level clustering. The models accounted for fixed effects including days of precipitation (exposure), year, region (South, Northeast, West, Midwest), poverty percentage, water cover percentage, metropolitan/non-metropolitan status, and percentage of people with a park within 1 mile, along with interaction terms to assess temporal changes.

**Results:** From 2005 to 2018, the mean percentage of walking to work decreased from 3.37% to 2.68%. Biking-to-work percentages declined from 0.35% in 2005 to 0.27% in 2018. The mean number of days with precipitation slightly fluctuated, starting at 1.15 days in 2005 and ending at 1.61 days in 2018, while the maximum number of days with precipitation increased from 10 to 13 during the study period. Each additional day of precipitation was associated with a 14.35% decrease in walking rates (95%CI: -18.6%, -10.1%). Over time, the negative impact of additional precipitation days on walking decreased by approximately 0.0072% per year (95%CI: 0.005%, 0.009%). For biking, each additional day of precipitation decreased rates by about 2.47% (95%CI: -3.55%, -1.38%), with a slight but statistically significant increase of 0.0012% per year in the effect of precipitation over time (95%CI: 0.0007%, 0.0017%).

**Conclusions:** While more rainy days generally reduce walking and biking rates to work, over time, this adverse impact lessens slightly, suggesting a potential adaptation or change in behavior in response to increasing precipitation. Additional research is needed to understand why active transportation is resilient amid an increasing number of extreme precipitation days.

## Impacts of a co-designed sustainable park on physical activity and other wellbeing behaviours in a UK deprived urban area: a mixed-methods natural experimental study

**Dr. Jack S. Benton**<sup>1</sup>, Prof. David P. French<sup>2</sup>, Dr. Junyan Ye<sup>1</sup>, Miss Ellie Barker<sup>1</sup>, Dr. Vanessa G. Macintyre<sup>2</sup>, Dr. Jack Wilkinson<sup>3</sup>, Prof. James Rothwell<sup>1</sup>, Dr. Matthew Dennis<sup>1</sup>, Dr. Jamie Anderson<sup>1, 4</sup>

<sup>1</sup>Department of Geography, School of Education, Environment and Development, The University of Manchester, <sup>2</sup>Manchester Centre for Health Psychology, Division of Psychology & Mental Health, School of Health Sciences, The University of Manchester, <sup>3</sup>Centre for Biostatistics, Division of Population Health, Health Services Research & Primary Care, School of Health Sciences, The University of Manchester, <sup>4</sup>Manchester Urban Institute, School of Environment, Education and Development, The University of Manchester

### **S1.12. How can we change environments to promote physical activity? Mixed-method natural experiments for robust practice-based evidence, Balcony Foyer, June 12, 2025, 8:30 AM - 9:45 AM**

**Purpose:** There is a dearth of robust natural experimental studies examining the impact of urban green space interventions on physical activity (PA). This study aimed to (1) assess the effects of a new co-designed, sustainable “sponge park” in a deprived, high flood-risk area of Manchester (UK) on park use, PA, and other wellbeing behaviours, and (2) develop a theory of change to explain the mechanisms underpinning these intervention effects.

**Methods:** Two comparison sites were matched to two intervention sites using eight environmental correlates of PA. All sites were in the UK's 10% most deprived areas. The primary outcome (observed walking) and secondary outcomes (vigorous PA, socialising, taking notice) were assessed using the MOHAWK behaviour observation tool. Observations were conducted at baseline (2018) before the intervention was implemented in 2020, and follow-ups at 3-months (2020) and 15-months (2021) post-intervention. Negative binomial regression models were used to estimate the effects of the intervention compared to the comparison group, controlling for key covariates. Intercept surveys were also used to assess self-reported outdoor space usage at baseline and 12-months post-intervention in the intervention and comparison sites. Qualitative walk-along interviews with stakeholders and local residents are planned for early 2024 to develop a theory of change based on realist methodology.

**Results:** Compared to the comparison sites, the total number of people observed walking at the intervention park increased at 3-months (incidence rate ratio (IRR) 2.18, 95% CI 1.07–4.43) and 15-months post-intervention (IRR 3.44, 95% CI 2.11–5.62). Similar increases were observed in vigorous PA, socialising, and taking notice at the intervention sites compared to the comparison sites. Self-reported increases in outdoor space usage from baseline to follow-up were twice as large in the intervention sites compared to the comparison sites. Qualitative findings and the theory of change will be presented, which explain the underlying mechanisms of these effects.

**Conclusions:** Creating sustainable parks is a promising intervention to promote walking and other wellbeing behaviours, especially in deprived areas. More robust mixed-methods natural experimental studies like this are needed to inform policy and decision-makers on how urban green space interventions can promote PA in different contexts.

## Global Observatory for Physical Activity (GoPA!): Launching the 2025 Country Cards and Almanac


Dr. Andrea Ramirez Varela<sup>1,2,3</sup>, **Prof. Pedro Hallal<sup>4</sup>**, Ms. Juliana Mejía-Grueso<sup>5</sup>, Mr. Eduardo Ribes Kohn<sup>6</sup>, Prof. Adrian Bauman<sup>7</sup>, Dr. I-Min Lee<sup>8,9</sup>, Dr Deborah Salvo<sup>10</sup>, Dr. Adewale Oyeyemi<sup>11</sup>, Prof. Shigeru Inoue<sup>12</sup>, Dr. Inacio Crochemore-silva<sup>6,13</sup>, Prof. João Martins<sup>14</sup>, Michael Pratt<sup>15,16</sup>

<sup>1</sup>Department of Epidemiology, School of Public Health, The University of Texas Health Science Center at Houston (UTHealth), <sup>2</sup>Center for Health Equity, The University of Texas Health Science Center at Houston (UTHealth), <sup>3</sup>Department of Pediatrics, McGovern Medical School, The University of Texas Health Science Center at Houston (UTHealth), <sup>4</sup>Department of Health and Kinesiology, University of Illinois Urbana-Champaign, <sup>5</sup>Global Observatory for Physical Activity - GoPA!, <sup>6</sup>Postgraduate Program in Physical Education, Federal University of Pelotas, <sup>7</sup>Charles Perkins Centre, Sydney School of Public Health, The University of Sydney, <sup>8</sup>Division of Preventive Medicine, Brigham and Women's Hospital, Harvard Medical School, <sup>9</sup>Department of Epidemiology, Harvard T.H. Chan School of Public Health, Harvard University, <sup>10</sup>Department of Kinesiology and Health Education, The University of Texas at Austin, <sup>11</sup>College of Health Solutions, Arizona State University, <sup>12</sup>Department of Preventive Medicine and Public Health, Tokyo Medical University, <sup>13</sup>Postgraduate Program in Epidemiology, Federal University of Pelotas, Pelotas, <sup>14</sup>Centro de Estudos em Educação, Faculdade de Motricidade Humana e UIDEF, Instituto de Educação, Universidade de Lisboa, <sup>15</sup>Herbert Wertheim School of Public Health and Human Longevity Science, University of California San Diego, <sup>16</sup>Institute of Public Health, University of California San Diego

**S1.13. Leveraging global physical activity and physical education data to shape the future: the launch of the GoPA! and GoPE! 2025 Country Cards, Kiri Te Kanawa Theatre, June 12, 2025, 4:45 PM - 6:00 PM**


Purpose: To present the key findings and global insights from the Global Observatory for Physical Activity (GoPA!) Third set of Country Cards and Third Almanac.

Methods: Data on demographics, surveillance, policy, and research indicators were collected for 218 countries to create country-specific physical activity (PA) profiles. Using a standardized methodology, the GoPA! Working Group organized the indicators and launched a new online workflow system for review and approval that will be completed by December 2024. Potential contacts were identified in each country through databases and expert recommendations, invited to verify the Country Cards for accuracy, and encouraged to translate the cards into their native language. Indicators included country, capital, population, urban population, life expectancy, Gini Index, Human Development Index, non-communicable diseases (NCDs) mortality, overall PA prevalence estimates, policies, guidelines, surveillance, research, and country capacity for PA promotion. New measures, such as premature NCD mortality risk, Human Capital Index, Democracy Index, and PA estimates by domain (active leisure, transport), were introduced. New representations were added, including equiplots for gender inequalities in adult PA prevalence and research. The capacity pyramid for PA promotion was updated to reflect policy availability and implementation, as well as surveillance data and periodicity. This information was summarized into one-page Country Cards and compiled into the GoPA! Third Edition Almanac. Also, they contacts were encouraged to translate their Country Cards into their countries' native language.



Results: Preliminary results show that for 140 countries (64.2%), contacts confirmed the accuracy of information. Contacts were mostly from academia (66.0%), government (20.4%), non-profit organizations (6.3%), national agencies (3.5%), or other (3.8%). The coverage (countries with a representative) by regions was AFRO (51.1%), EMRO (68.2%), EURO (74.2%), PAHO (50.0%), SEARO (72.7%), and WPRO (78.1%). PA surveillance, policy, and research data were available for 62.8%, 61.5%, and 57.8% of countries, respectively. Gender equiplots highlighted significant inequalities in adult PA prevalence estimates and research outputs (first and senior authors), especially in low- and middle-income countries. The updated PA promotion capacity pyramid showed that while 62 countries reported standalone PA policies, only 23 demonstrated high implementation levels.

Conclusions: The Third edition of the GoPA! Country Cards offer a more comprehensive picture of the global PA landscape and emphasize the importance of effective PA surveillance, policy, and research. The Almanac is anticipated to serve as a powerful advocacy tool for Country Contacts, researchers, and policymakers, ultimately strengthening global efforts to promote PA and improve public health outcomes.



## Physical Activity and Physical Education Monitoring: A Reflection

Prof. Pedro Hallal<sup>1</sup>, Dr. Andrea Ramirez Varela<sup>2,3,4</sup>, Ms. Juliana Mejía-Grueso<sup>5</sup>, Mr. Rafael Cristão<sup>6</sup>, Prof. João Martins<sup>6</sup>, **Prof. Adrian Bauman<sup>7</sup>**, Michael Pratt<sup>8,9</sup>

<sup>1</sup>Department of Health and Kinesiology, University of Illinois Urbana-Champaign, <sup>2</sup>Department of Epidemiology, School of Public Health, The University of Texas Health Science Center at Houston (UTHealth), <sup>3</sup>Center for Health Equity, The University of Texas Health Science Center at Houston (UTHealth), <sup>4</sup>Department of Pediatrics, McGovern Medical School, The University of Texas Health Science Center at Houston (UTHealth), <sup>5</sup>Global Observatory for Physical Activity – GoPA!, <sup>6</sup>Centro de Estudos em Educação, Faculdade de Motricidade Humana e UIDEF, Instituto de Educação, Universidade de Lisboa, <sup>7</sup>Charles Perkins Centre, Sydney School of Public Health, The University of Sydney, <sup>8</sup>Herbert Wertheim School of Public Health and Human Longevity Science, University of California San Diego, <sup>9</sup>Institute of Public Health, University of California San Diego

**S1.13. Leveraging global physical activity and physical education data to shape the future: the launch of the GoPA! and GoPE! 2025 Country Cards, Kiri Te Kanawa Theatre, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** To reflect on global progress in monitoring physical activity (PA) and physical education (PE).

**Methods:** A non-systematic desk review was conducted to identify key international surveillance systems related to PA, PE, school-based PA, and fitness. This informative review aimed to highlight the current landscape of PA and PE monitoring.

**Results:** In recent decades, the monitoring of PA and PE has gained priority in public health due to the growing burden of non-communicable diseases (NCDs). The review underscores a significant expansion of collaborative networks from the mid-1900s through 2023, aimed at improving PA and PE surveillance globally. Numerous tools and questionnaires were identified for assessing PA levels and school-based PA across diverse settings. Global systems like the Global Observatory for Physical Activity (GoPA!) and the Global Observatory for Physical Education (GoPE!) have emerged, alongside regional and national systems, for tracking PA and PE progress. The GoPA! and GoPE! Observatories have produced key advocacy tools for the field. Initiatives and programs such as the Active Healthy Kids Global Alliance report cards have further contributed by evaluating PA behaviors and activity levels among children and adolescents worldwide. These efforts illustrate the impact of epidemiological research and surveillance to informing policymakers and foster dissemination of data and progress over the years to increase PA across the lifespan.

**Conclusions:** Monitoring PA and PE is crucial for informing public health policies aimed at reducing physical inactivity and NCDs. Various approaches exist for tracking PA and PE across populations, with GoPA! and GoPE! standing out for their progress over the years and their role in advancing global data-driven action. Continued efforts to refine and expand these monitoring systems are essential for driving evidence-based policy and intervention strategies.

## Global Observatory for Physical Education (GoPE!): Launching the 2025 Country Cards and Almanac

Prof. João Martins<sup>1</sup>, Mr. Rafael Cristão<sup>1</sup>, Dr. Andrea Ramirez Varela<sup>2,3,4</sup>, Prof. Dean Dudley<sup>5</sup>, **Prof. Rafael Miranda Tassitano<sup>6</sup>**, Prof. João Costa<sup>7</sup>, Ms. Andressa Crystine da Silva Sobrinho<sup>8</sup>, Ms. Juliana Mejía-Grueso<sup>9</sup>, Michael Pratt<sup>10,11</sup>, Prof. Pedro Hallal<sup>6</sup>, Prof. Marcos Onofre<sup>1</sup>


<sup>1</sup>*Centro de Estudos em Educação, Faculdade de Motricidade Humana e UIDEF, Instituto de Educação, Universidade de Lisboa*, <sup>2</sup>*Department of Epidemiology, School of Public Health, The University of Texas Health Science Center at Houston (UTHealth)*, <sup>3</sup>*Center for Health Equity, The University of Texas Health Science Center at Houston (UTHealth)*, <sup>4</sup>*Department of Pediatrics, McGovern Medical School, The University of Texas Health Science Center at Houston (UTHealth)*, <sup>5</sup>*Macquarie School of Education, Macquarie University*, <sup>6</sup>*Department of Health and Kinesiology, University of Illinois Urbana-Champaign*, <sup>7</sup>*Sports Studies and Physical Education Programme, School of Education, University College Cork*, <sup>8</sup>*Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo*, <sup>9</sup>*Global Observatory for Physical Activity – GoPA!*, <sup>10</sup>*Herbert Wertheim School of Public Health and Human Longevity Science, University of California San Diego*, <sup>11</sup>*Institute of Public Health, University of California San Diego, San Diego*

### **S1.13. Leveraging global physical activity and physical education data to shape the future: the launch of the GoPA! and GoPE! 2025 Country Cards, Kiri Te Kanawa Theatre, June 12, 2025, 4:45 PM - 6:00 PM**


**Purpose:** To present the global landscape of physical education (PE) and school-based physical activity (PA) from the Global Observatory for Physical Education (GoPE!) First set of Country Cards and First Almanac.

**Methods:** Data were collected for 218 countries on country demographics, PA participation, PE policy, PE surveillance, and PE and school-based PA interventions research. The most recent available data from World Health Organization (WHO), World Bank, UNESCO, governmental websites, monitoring systems, google, and scientific databases informed the indicators. Moreover, a systematic umbrella review was conducted. The data that informed the indicators were collected following a standardized research protocol by the GoPE! Research Group and validated by the Country Contacts from the GoPE! worldwide network of experts. This information was summarized into one-page cards—Country Cards—and compiled into the GoPE! First Edition Almanac.

**Results:** The GoPE! Country Cards summarized data across standardized indicators. Preliminary results show that country representatives confirmed and approved data for 26 countries (11.9%). Currently, the GoPE! Country Contacts network comprises 190 members, representing 156 countries (71.6%) from the six WHO regions: AFRO (20.5%), EMRO (8.3%), EURO (34.0%), PAHO (14.1%), SEARO (6.4%) and WPRO (12.4%). Within the 25 countries with the indicators' revision approved, 84.6% present PE curriculum for all school years of primary education and 80.8% for secondary education. In 80.8% of countries, there is a national policy requiring mandatory PE for all school years of primary education and in 77% of the countries for secondary education. A policy requiring minimum and mandatory PE time exists in 57.7% of those 25 countries for all school years of primary education and in 53.4% for secondary education. Only one country (3.8%) has a policy that requires minimum and mandatory PE time for some of the school years of secondary education. One of the countries



(3.8%) has a curriculum and policies requiring mandatory PE endorsed at a subnational level. Two of the countries have policies endorsed at a subnational level requiring minimum and mandatory PE time (7.7%). Only 26.9% of the countries have surveillance systems aimed at evaluating PE policies' implementation. Conclusions: The GoPE! Country Cards will provide stakeholders with a powerful tool to assess and enhance PE and school-based PA participation, monitoring, policy, and research in their countries. The GoPE! First Almanac is a tool for the global network of dedicated PE and school-based health-enhancing PA researchers, policymakers, and advocates.



# Applying reinforcement learning, natural language processing and large language models to support a physical activity digital assistant

**Prof. Corneel Vandelanotte**<sup>1</sup>, Dr. Danya Hodgetts<sup>1</sup>, Prof. Carol Maher<sup>2</sup>, Dr. Tasadduq Imam<sup>1</sup>, Dr. Mamunur Rashid<sup>1</sup>, Dr. Quyen To<sup>1</sup>, Prof. Stewart Trost<sup>3</sup>

<sup>1</sup>Central Queensland University, <sup>2</sup>University of South Australia, <sup>3</sup>The University of Queensland

## **S1.14. Active Algorithms: Developing the physical activity interventions of the future with machine learning and artificial intelligence, Hunua 1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** An artificial intelligence and machine learning revolution is taking place that affects all aspects of society. To develop more effective population-based interventions, machine learning can also be applied in health behaviour change interventions. Yet, to date few physical activity interventions have done so. While some have applied off the shelf Natural Language Processing (NLP) in physical activity chatbots, almost none have applied other machine learning techniques that are well suited to producing behaviour change, such as Reinforcement Learning (RL) which continuously learns and adapts. The purpose of this presentation is to describe a physical activity intervention supported by a range of machine learning techniques and address challenges associated with its development.

**Methods:** The new intervention was developed over 15 months in collaboration with a large software firm. The process involved a literature review, focus groups, co-creation workshops, weekly meetings with the development team and extensive beta-testing.

**Results:** A physical activity digital assistant (i.e., MoveMentor) was developed as a stand-alone app for Apple and Google app-stores, and applies RL (i.e., contextual multi-arm bandit), NLP (i.e., Dialogue Flow) and a Large Language Model (LLM, i.e., Gemini). The intervention is based on the B-COM model, applies Nudge Theory and is delivered as a just-in-time adaptive intervention that includes self-monitoring (via synced activity tracker), adaptive goal setting, frequent nudging, chat functionality, action planning and educational conversations. Yet, despite a large development budget it was not possible to implement several desired features (e.g., GPS and GIS) and integrations (e.g., Garmin). The simultaneous integration of NLP and LLM caused functionality problems. Training of RL algorithms was minimal, and their effectiveness is unknown. Additionally, the cost of running the application is prohibitively expensive and the collaboration with the software firm was very tense at times due to budgetary constraints.

**Conclusions:** Compared to traditional scalable interventions, the promise of interventions that apply machine learning and artificial intelligence is large due to unprecedented levels of personalisation and customisation they can offer. However, the development of such interventions remains very challenging, not only because of their high cost, but also due to a range of technical issues and limitations.

## Leveraging large language models to deliver a scalable personalised lifestyle coach: a co-design study

**Prof. Carol Maher**<sup>1</sup>, Dr. Aaron Davis<sup>1</sup>, Ms. Tara Cain<sup>1</sup>, Prof. Karen Murphy<sup>1</sup>, Prof. Katina Donise<sup>1</sup>, Dr. Rachel Curtis<sup>1</sup>, Dr. Dot Dumuid<sup>1</sup>, Prof. Rachel Milte<sup>2</sup>, Dr. Ben Singh<sup>1</sup>, Dr. Ashleigh Smith<sup>1</sup>, Dr. Francois Fraysse<sup>1</sup>, Dr. Jacinta Brinsley<sup>1</sup>  
<sup>1</sup>University of South Australia, <sup>2</sup>Flinders University

### S1.14. Active Algorithms: Developing the physical activity interventions of the future with machine learning and artificial intelligence, Hunua 1, June 12, 2025, 4:45 PM - 6:00 PM

**Purpose:** Chronic diseases strain healthcare systems worldwide. In Australia, state health departments offer personalised telephone coaching for chronic disease management, but these interventions are resource-intensive, limiting scalability. This study aims to develop an AI-powered virtual health coaching app using Large Language Models (LLMs) to provide personalised, scalable, and cost-effective lifestyle interventions for improving physical activity and diet. We aim to explore how LLMs can mimic human coaching benefits while reducing per-user costs.

**Methods:** We are employing an iterative co-design approach to develop an AI-powered virtual health coaching app. The study design, guided by the British Design Council's Double Diamond framework, comprises four rounds of co-design workshops, with a total of 8 workshops (4 in-person and 4 online) planned. Rounds 1 and 2 focused on exploring user preferences for engaging with a virtual health coach, identifying valuable features, and addressing ethical considerations and AI-related concerns. Round 3 workshops will gather feedback on an early software prototype, and Round 4 will allow participants to test and provide input on a near-complete version of the software.

**Results:** Four workshops have been completed, involving 23 participants aged 18 to 80 years. Findings reveal interest in AI health coaching, alongside privacy concerns and apprehension about AI handling sensitive information (e.g., mental health issues). Hands-on tech demonstrations highlight that participants expect highly personalised advice but express disappointment with errors, emphasising the importance of managing these expectations during onboarding. These insights inform our agile software development process, ensuring alignment with user needs. All workshops and software development are expected to be completed by March 2025.

**Conclusions:** This study underscores the importance of user-centred design in developing AI-powered health interventions. Given the substantial time and financial investment required for software development, our co-design approach ensures that the final product aligns closely with user needs and preferences, potentially increasing its effectiveness and adoption. Following the completion of software development, we will conduct a 2-year non-inferiority randomised controlled trial to compare the effectiveness and cost-effectiveness of our AI-powered app with the existing telephone-based coaching model.

## Using Machine Learning Models to Predict Receptive States for Physical Activity Behavioral Support

**Dr. Jacqueline Mair<sup>1</sup>**, Mr. Samarth Negi<sup>1</sup>, Dr. Oscar Castro<sup>1</sup>, Mr. Ahmad Jabir<sup>1</sup>, Mr. Akshaye Shenoi<sup>1</sup>, Prof. Florian Wangenheim<sup>2</sup>, Prof. Tobias Kowatsch<sup>3</sup>

<sup>1</sup>Singapore-ETH Centre, <sup>2</sup>ETH Zurich, <sup>3</sup>University of Zurich

### **S1.14. Active Algorithms: Developing the physical activity interventions of the future with machine learning and artificial intelligence, Hunua 1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Push notifications are a key component of mHealth interventions, enhancing user engagement, promoting adherence, and delivering behavioral support. Personalizing notification delivery—when users are most in need and receptive (ready to act)—requires real-time contextual data and complex decision rules. However, collecting and processing such data is challenging and notifications often fail to arrive ‘just-in-time’. Machine learning (ML) models leveraging passive smartphone sensing data could predict when users are most receptive, offering an alternative to complex rules and improving notification timing. This presentation explores the challenges and opportunities of developing ML models that predict ‘receptive states’ in mHealth physical activity interventions.

**Methods:** We developed a smartphone sensing module that uses feature representations such as location, acceleration, Wi-Fi, Bluetooth, screen usage, and temporal data to infer user receptivity. Preliminary studies were conducted using the LvL UP mHealth intervention to analyse user behaviour patterns in everyday life. We tested high-performing tree-based models and compared them with other ML architectures to determine which were most effective for predicting user receptivity using different sensor representations. Different data aggregation schemes—like hourly phone usage distributions and frequently visited locations—were evaluated to understand how data granularity affects model performance. Data availability, user engagement, and battery drain were considered to balance predictive accuracy with computational feasibility for real-world applications.

**Results:** Optimizing notifications in mHealth physical activity interventions and evaluating their long-term impact presents several challenges. ML models must perform robustly within real-world constraints like data sparsity or user disengagement. Algorithms need to be adaptive (learning over time) which introduces computational and operational challenges. Evaluating the effectiveness of notifications in rigorous trials requires control conditions where notifications are intentionally sub-optimal or withheld, potentially affecting intervention efficacy. Confounding variables such as time and spill-over effects further complicate assessment.

**Conclusions:** The challenges and opportunities highlighted in this presentation will inform future research using ML models to optimise engagement and effectiveness of behavioral prompts. Such considerations are crucial for overcoming the challenges associated with deploying interventions across large populations, where the cost and complexity of real-time monitoring and model inference can be prohibitive.

## Leveraging Spatial Data to Capture Neighborhood Trauma's Influence on Obesity Risk

**Dr. Krista Schroeder**<sup>1</sup>, Dr. Levent Dumenci<sup>1</sup>, Ms. Sophia Day<sup>2</sup>, Dr. Kevin Konty<sup>2</sup>, Dr. Jennie Noll<sup>3</sup>, Dr. Kevin Henry<sup>4</sup>, Dr. Shakira Suglia<sup>5</sup>, Ms. Kira Argenio<sup>2</sup>, Dr. David Sarwer<sup>1</sup>

<sup>1</sup>Temple University College of Public Health, <sup>2</sup>New York City Department of Health and Mental Hygiene, <sup>3</sup>University of Rochester, <sup>4</sup>Temple University College of Liberal Arts, <sup>5</sup>Emory University Rollins School of Public Health

### **S1.15. Applying innovative equity-focused methodologies for improving implementation of behavioural nutrition and physical activity programs., Hunua 2, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Adverse Childhood Experiences (ACEs) increase the risk for elevated body mass index (BMI) and obesity. Globally, most individuals experience  $\geq 1$  ACE, though prevalence is higher in populations who experience obesity inequities. The role of neighbourhood environment in ACEs-BMI associations has not been widely studied, limiting ability to develop and implement multi-level policies and interventions to reduce obesity among populations affected by ACEs. A neighbourhood ACEs index (NAI) can be used to understand ACEs, neighbourhood, and BMI associations in equity-focused implementation research. A NAI is a spatial index that captures neighbourhood factors associated with ACEs exposure; it leverages advanced statistical methods that account for collinearity among neighbourhood risk factors arising from socially and economically-driven neighbourhood disinvestment (e.g., co-occurrence of poverty, low greenspace, crime, etc.). The purpose of this study was to 1) examine associations between an NAI and BMI among New York City (NYC) youth and 2) examine the NAI's geographic distribution across NYC.

**Methods:** This secondary analysis linked data for kindergarten-12th grade students (ages 5-18) attending NYC public general education schools from 2006-2017 (N=1,753,867) with 25 spatial datasets capturing neighbourhood characteristics for NYC census tracts. Multivariable hierarchical linear regression tested associations between the NAI and BMI for the total sample, as well as stratified analyses by age (young/<8 years; school age/8-12 years; adolescent/>12 years) and sex subgroups. Mapping and local Moran's I identified clusters of high and low NAI neighbourhoods.

**Results/findings:** Higher NAI was associated with higher BMI in every sex and age group. The largest associations existed for girls (medium NAI versus low NAI:  $\beta=0.112 \pm SE 0.008$ ; high NAI versus low NAI:  $\beta=0.195 \pm SE 0.008$ ;  $p<0.001$ ) and adolescents (medium NAI versus low NAI:  $\beta=0.189 \pm SE 0.014$ ; high NAI versus low NAI:  $\beta=0.364 \pm SE 0.015$ ;  $p<0.001$ ). Statistically significant clusters of neighbourhoods with higher and lower NAI exposure existed across NYC.

**Conclusions:** Our study combined with prior evidence suggests future implementation science research focused on interrupting ACEs-obesity associations should consider the role of neighbourhood environment, especially in communities that experience high levels of childhood trauma. An NAI can be used by future researchers seeking to include contextual metrics in their equity-focused implementation science research.

# Rapid Ethnographic Assessments to Understand Factors Influencing Equitable Implementation of Healthy Eating and Physical Activity Programs in Rural Australian Schools

**Dr. Cassandra Lane**<sup>1,2,3</sup>, Dr. Adam Shoesmith<sup>1,2,3</sup>, Dr. Daniel Groombridge<sup>2</sup>, Dr. Nicole McCarthy<sup>2</sup>, Prof. Nicole Nathan<sup>1,2,3</sup>, Dr. Emma Pollock<sup>2</sup>, Dr Rachel Sutherland<sup>1,2,3</sup>, Prof. Luke Wolfenden<sup>1,2,3</sup>

<sup>1</sup>*School of Medicine and Public Health, Faculty of Health and Medicine, University of Newcastle,*

<sup>2</sup>*Hunter New England Population Health, Hunter New England Local Health District,* <sup>3</sup>*National Centre of Implementation Science*

## **S1.15. Applying innovative equity-focused methodologies for improving implementation of behavioural nutrition and physical activity programs., Hunua 2, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** School-based healthy eating and physical activity interventions are often designed for universal application, making them less effective in systemically marginalized settings with unique needs— such as rural and remote Australian communities. Qualitative research is required to tailor universal programs to better suit the needs of such settings; however, traditional qualitative methods can be slow and resource intensive when rapid, actionable evidence is required to improve implementation where it is most needed. To address these challenges, we integrated ongoing Rapid Ethnographic Assessment (REA) to evaluate the implementation of healthy eating and physical activity interventions in primary schools across rural and remote New South Wales, Australia.

**Methods:** REA is a qualitative method designed for time-efficient and practical use. During school visits, Local Health District Project Officers serve as 'ethnographers,' leveraging their local knowledge and established relationships to gather contextual insights. Data are collected through a combination of observations, informal and semi-structured interviews, and document reviews. Following each site visit, data are analysed using NVivo software, employing team-based Framework Analysis, a collaborative form of thematic analysis involving data collectors and other stakeholders. Data are coded into an evolving codebook, iteratively refined as new information is added, enabling both school-level findings and a synthesis of insights across schools as the dataset grows.

**Results:** We employed REA in one Local Health District which serves 253 rural and remote primary schools. Data collection occurred over 1–3-day school visits (2-3 per month), and initial findings were produced within five days of collection. This rapid process allowed for timely adjustments to healthy eating and physical activity programs for improved implementation in rural and remote schools. Additionally, we have partnered with three more Local Health Districts to expand REA across the state, as part of evaluating its feasibility for routine health service operations. Findings will be available at the conference.

**Conclusions:** REA can rapidly produce contextually relevant findings to inform adaptations of health programs that are responsive to the unique challenges faced by rural and remote schools, contributing to improved implementation and reducing health inequities.

## Integrating health equity and implementation science frameworks to conduct needs assessments of Universal School Meals (USM) within a large US urban school district

**Dr. Gabriella McLoughlin**<sup>1</sup>, Ms. Molly Kerstetter<sup>1</sup>, Ms. Yerusalem Yohannes<sup>1</sup>, Dr. Omar Martinez<sup>2</sup>, Dr. Resa Jones<sup>1,3</sup>, Prof. Ross Brownson<sup>4,5</sup>, Prof. Jennifer Fisher<sup>1</sup>

<sup>1</sup>Temple University College of Public Health, <sup>2</sup>College of Medicine, University of Central Florida,

<sup>3</sup>Fox Chase Cancer Center, Temple University Health, <sup>4</sup>Siteman Cancer Center, Washington University School of Medicine, <sup>5</sup>Brown School of Social Work, Washington University in St. Louis

### S1.15. Applying innovative equity-focused methodologies for improving implementation of behavioural nutrition and physical activity programs., Hunua 2, June 12, 2025, 4:45 PM - 6:00 PM

**Purpose:** A major gap in dissemination and implementation science is how to understand whether implementation is equitable among socially and economically marginalized populations (i.e., racial/ethnic minority, low-income). This is especially the case for policies such as the Universal School Meal (USM) provision that addresses hunger in low-income schools. The purpose of this study was to understand key equity-related determinants of USM implementation and student uptake through a mixed methods needs assessment. This was grounded in the Consolidated Framework for Implementation Research (CFIR) and the Health Equity Measurement Framework (HEMF).

**Methods:** The study took place with 8 schools in the School District of Philadelphia during 2023-2024; participants participated in semi-structured interviews and completed surveys grounded in the CFIR and HEMF. We conducted observations of breakfast and lunch at each school and gathered field notes. Interviews were transcribed, uploaded into MAXQDA coding software, and coded deductively according to both frameworks through consensus coding. Survey data were cleaned and analysed descriptively; field note data were analysed in MAXQDA to triangulate interview codes.

**Results:** The 193 participants included teachers (29%), parents (26%), students (middle 14%; high school 10%), administrators (13.5%), and food service personnel (11%). Participants identified as Black/African American (43%), White (26%), Hispanic/Latino (20%), Asian (5%), Middle Eastern (1.8%), and other (3.8%). In line with the HEMF, 73% felt that USM helps low-income students access healthy food, and 70% felt USM adequately addresses hunger. Key equity-related implementation determinants from interview and observation data related to the outer setting of the CFIR and sociopolitical constructs of the HEMF such as local conditions (i.e., safety, healthy food access), local attitudes (i.e., cultural sensitivity of menus), and the inner setting such as culture (i.e., stigma) and human equality-centeredness (i.e., consideration of all students' needs).

**Conclusions:** Our study highlighted equity-related implementation determinants for USM; alignment of health equity and implementation science frameworks facilitated a more critical analysis of data that advances prior understanding of USM and will facilitate development of novel implementation strategies. Researchers can adapt our methods to evaluate implementation of interventions and policies through a health equity lens to improve their overall public health impact.

## Children's screen use guidelines are best positioned within 24-hour movement guidelines.

**Prof. Anthony Okely<sup>1</sup>**

<sup>1</sup>*University of Wollongong*

**S1.16. Moving screen use guidelines: Should children's screen use guidelines be separated from 24-hour movement guidelines?, Hunua 3, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** This presentation will argue that children's screen use guidelines are best positioned within 24-hour movement guidelines. **Methods:** Critical narrative review of the evidence and expert commentary.

**Results:** 24-hour movement guidelines take a wholistic view of how children spend their time across a day, with respect to their physical activity, sedentary behaviour and sleep. Because recreational sedentary screen time is: i) a common sedentary behaviour that is associated with health and development, and ii) an issue that many caregivers want guidance on and that many governments want to provide guidance for, it should be included within 24-hour movement behaviour guidelines. Screen use should not be seen in isolation as it interacts with other 24-hour movement behaviours. The context in which screen time occurs (whether it replaces more active play or social interaction, for example) is crucial. 24-hour movement guidelines provide a framework to weigh screen time within the broader context of how children spend their day. Further, the inclusion of screen use guidelines in 24-hour movement guidelines is consistent across many countries (e.g., Canada, Australia, and South Africa) and with the World Health Organisation (WHO) (for children < 5 years). This inclusion anchors screen use guidelines within the broader 24-hour paradigm. It aligns with international agenda, and results in many countries, particularly LMICs, who adopt WHO guidelines having national screen use guidelines. Including screen time as part of 24-hour movement guidelines offers end-users a single, cohesive set of recommendations. Separating screen time guidance risks overwhelming parents with multiple, fragmented guidelines, which could create confusion or inconsistency in parents' approaches to managing their children's overall health. As technology evolves and screens become more integrated into everyday life (e.g., virtual learning, digital health tools), a more nuanced, integrated approach to screen use is necessary. Screen time is not inherently negative; it depends on content, context, and duration. Keeping screen use within the broader 24-hour movement guidelines allows for flexibility and adaptation to new technologies without the need for constant revisions to separate guidelines.

**Conclusion:** To best support children's health globally, children's screen use guidelines should be positioned within 24-hour movement guidelines.

## Children's screen use guidelines should be separated from 24-hour movement guidelines

**Prof. Leon Straker<sup>1</sup>**

<sup>1</sup>*Curtin University*

**S1.16. Moving screen use guidelines: Should children's screen use guidelines be separated from 24-hour movement guidelines?, Hunua 3, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** This presentation will argue that separate guidelines for how children can gain the benefits from using screens whilst minimising the potential harms would better enable the adults in children's lives to support them to thrive in modern society.

**Methods:** Based on critical reviews of the evidence and analysis of data from professionals working with children, parents, and children, key reasons to change current guidelines were identified.

**Results:** Reasons for separate screen use guidelines clustered around two main themes: the evolving understanding of the limitations of current 'screen time' evidence and the lack of utility of the 'screen time' guidelines. Limitations in the 'screen time' evidence include: its lack of consideration of other aspects of screen use associated with health including context, content and purpose; little consideration of the potential positive impacts of screen use; inadequate attention to the weakness of epidemiological associations; minimal regard for the varying vulnerabilities and needs of children; and muddling of the effects of 'screen time' with sedentary behaviour. Lack of utility of 'screen time' 24hr movement guidelines include: positioning 'screen time' as toxic and thus to be minimised, rather than providing practical suggestions for caregivers in how to enable children to use screens in ways that support health and development whilst minimising risk; distracting the community from the important health messages around moderate/vigorous physical activity and sleep; and confusing conflicted messages from health versus education and human rights organisations. Parents and professionals working with children valued a different approach to screen use, analogous to how the community deals with balancing the risks and benefits of beach use. Whilst the significant risks to children's health present at the beach are acknowledged, rather than just limiting 'beach time' we provide community infrastructure (life-guards, shark nets etc) and education for families (swimming lessons, sun-wise campaigns etc). In this way we help children gain the benefits of being at the beach and develop into competent adult beach users.

**Conclusion:** Providing separate screen use guidelines for children would better reflect the evidence and better support the community to facilitate children to be healthy.

## Exploring drivers and approaches to address food insecurity across the six dimensions

**Dr. Eric Calloway<sup>1</sup>**, Eliza Short<sup>1</sup>, Dr. Chris Long<sup>1</sup>, Bailey Houghtaling<sup>1</sup>, Dr. Betsy Anderson Steeves<sup>1</sup>, Dr. Victoria Zigmont<sup>1</sup>, Dr. Amy Yaroach<sup>1</sup>

<sup>1</sup>*Center for Nutrition and Health Impact*

### **S1.17. Innovative food systems approaches to promote the six dimensions of food security: initiatives from Australia and the USA., Waitakere 1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Describe qualitative findings from three different projects that worked across the six dimensions of food security. **Methods:** Three distinct qualitative studies using semi-structured key informant interviews and inductive thematic analysis approaches.

**Results:** First, within a project focused on New Jersey (USA) we worked with the Office of the Food Security Advocate to investigate Agency and Sustainability within the state. Through interviews (n=55) with residents experiencing food insecurity and representatives of organizations that worked within the food system, we found 16 themes describing drivers of household-level agency (e.g., agriculture, food access, and food skills) and 13 themes describing drivers of food system sustainability (e.g., land use, food waste, and demographic trends). This is among the first qualitative studies of drivers of agency and sustainability (two newer and less understood dimensions of food security). Second, in a national evaluation of a nongovernmental philanthropic initiative comprised of 21 food bank and healthcare “Food is Medicine” partnerships, we conducted a longitudinal qualitative study to understand participant perceptions of these programs. Through interviews (n=90) conducted at various time points throughout participants’ engagement with the programs we identified 15 themes related to participants’ perceptions and recommendations for screening, referrals, and improving impact (e.g., comfortability with food security screening, barriers to referral engagement, and perceptions of dietary impacts). Lastly, in a sub-study of a federal initiative to support produce prescription programs (PPP), we studied implementation strategies and intervention components across 75 funded PPP to understand which features of these programs most contributed to redemption rates and participant engagement. We elucidated 17 practical interviewee-driven recommendations for improving patient redemption and engagement with PPP (e.g., importance of participant navigation, approaches to ensure program fit, and social contextual factors).

**Conclusions:** These studies touched on each of the six dimensions of food security, which is recognized globally as a framework within which to understand food security. While this work was conducted in the USA, the findings are likely to be broadly applicable to other countries with similar levels of development. The insights gained from these three studies can inform approaches for improving, scaling, and adopting similar approaches across settings.

## Food Action Groups: A networked governance approach to food security in regional Australia.

**Dr. Stephanie Godrich<sup>1</sup>**, Ms. Isabelle Chiera<sup>1</sup>, Dr. Melissa Stoneham<sup>2</sup>, Ms. Jess Doe<sup>1</sup>, Ms. Sarah Goodwin<sup>1</sup>, Prof. Amanda Devine<sup>1</sup>

<sup>1</sup>Edith Cowan University, <sup>2</sup>Public Health Advocacy Institute, Curtin University

### **S1.17. Innovative food systems approaches to promote the six dimensions of food security: initiatives from Australia and the USA., Waitakere 1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Food security is a complex issue with many determinants. It requires multiple sectors collaborating on a portfolio of programs, which could be achieved through a collaborative, networked governance approach like Food Action Groups. This could support broader involvement in policy and practice among community and stakeholders, increasing agency and empowerment. The purpose of this study across regional Western Australia was to: 1) determine food security initiatives needed to fill identified service provision gaps; 2) ascertain interest in Food Action Groups as a mechanism to coordinate a portfolio of food security initiatives.

**Methods:** Study elements were conducted across eight Western Australian regions, spanning 2.5 million square kilometres. Semi-structured interviews were conducted with 103 food security initiative leaders. Initiatives were categorised by initiative type and the food security dimension they were addressing. New initiatives required to fill existing service provision gaps were determined through public workshops. The need for Food Action Groups were determined via 19 focus groups with 92 community members and food system stakeholders. Community members were over 18 years old; stakeholders were working in agriculture, food transport, retail, waste, government, education, food relief, or a community organisation. Interviews and focus groups were analysed thematically using NVivo, following the Braun and Clarke (2006) approach. Workshop content was analysed by content analysis.

**Results:** A total of 148 food security initiatives were explored via interviews. Nutrition education and/or cooking initiatives were the most common initiative type (n=58, 39%). 'Food access' was the most prominent food security dimension supported by initiatives (n=89). Initiatives needed to fill service provision gaps included surplus produce drop off points; community transport to access food; nutrition education, cooking, and growing programs; and opportunities to access regionally grown produce (e.g. food hubs, food redistribution market). Community and stakeholders in every Western Australian region asserted the need for Food Action Groups and advised on the desired governance model, stakeholders, and priority programs as solutions to local food issues.

**Conclusions:** This research has identified gaps in the current food security initiative landscape, and created a roadmap towards a collaborative, place-based suite of solutions implemented through Food Action Groups.

## Food systems stories and statistics: co-creating evaluation approaches with seven community food hubs in Victoria, Australia

**Dr. Kate Wingrove<sup>1</sup>**, Kristy Bolton<sup>1,2</sup>, Dr. Erica Reeve<sup>2</sup>, Dr. Penelope Love<sup>1</sup>, Prof. Colin Bell<sup>3</sup>, Prof. Gary Sacks<sup>2</sup>, Prof. Steven Allender<sup>2</sup>, Ms. Julie Wood<sup>1</sup>, Ms. Patricia Ribeiro de Melo<sup>1</sup>, Dr. Christina Zorbas<sup>2</sup>, Rebecca Lindberg<sup>1</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University,* <sup>2</sup>*Global Centre for Preventive Health and Nutrition (GLOBE), Institute for Health Transformation (IHT), School of Health and Social Development, Deakin University,*

<sup>3</sup>*Global Centre for Preventive Health and Nutrition (GLOBE), Institute for Health Transformation (IHT), School of Medicine, Deakin University*

### **S1.17. Innovative food systems approaches to promote the six dimensions of food security: initiatives from Australia and the USA., Waitakere 1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Community food hubs can strengthen local food systems and improve access to healthy, affordable, culturally appropriate food. This project evaluated seven community food hubs in Victoria, commissioned by the Victorian Health Promotion Foundation (VicHealth). These food hubs form part of VicHealth's \$4 million Future Healthy investment (2022-2025). This presentation will describe the outcome and impact evaluation approaches co-created with each of the seven food hubs.

**Methods:** First, a scoping review was conducted to analyse the methods used to evaluate food hubs in high income countries and synthesise evidence of outcomes (short-term and medium-term changes) and impacts (long-term changes) under five categories: economic development and viability; ecological sustainability; access to and demand for healthy local food; personal and community wellbeing; agency and re-localisation of power. These categories were adapted from an existing framework, adding the 'agency' dimension of food security. Second, an analysis of internal and publicly available documents was conducted to draft a logic model and evaluation approach tailored to each food hub. Finally, semi-structured interviews with food hub coordinators gathered feedback to finalise logic models, outcome measures and data collection tools.

**Results:** The scoping review included 16 studies/reports, evaluating 24 food hubs. Most food hubs were evaluated using qualitative methods alone (n=11, 46%) or in combination with quantitative methods (n=8, 33%). Only two food hubs (8%) were explicitly evaluated using a logic model. Across the five categories a total 140 outcomes were evaluated, and 82% (n=115) were desirable outcomes (e.g. increased fruit and vegetable consumption, increased community connection). The document analysis highlighted similarities between food hubs regarding intended long-term impacts (e.g. stronger local food systems, lower rates of food insecurity in the local community). However, differences in activities and intended outcomes were also identified, emphasizing the need for tailored evaluation approaches. Interviews identified priorities for evaluation, context appropriate outcome measures and data collection tools. Globally, community food hubs are being implemented to strengthen local food systems and promote food security.

**Conclusion:** This research helps to advance the evidence on what these initiatives can achieve and how they can be evaluated using co-creation.

## TravelTrack: a citizen science tool to explore enablers and barriers to inform interventions that promote more equitable and healthier environments.

**Mr. Ben Goedons**<sup>1</sup>, Mr. Bart De Wit<sup>2</sup>, Mrs. Jana Verdoodt<sup>2</sup>, Prof. Jean-Michel Oppert<sup>3,4</sup>, Mrs. Alice Bellicha<sup>3</sup>, Dr. Hélène Charreire<sup>5,6</sup>, Prof. Susan C Hu<sup>7,8</sup>, Dr. Nuan-Ching Huang<sup>10</sup>, Dr. Mara Kirschner<sup>9</sup>, Prof. Mary Nicolaou<sup>9</sup>, Prof. Greet Cardon<sup>1</sup>, Dr. Stefanie Vandevijvere<sup>11</sup>

<sup>1</sup>Department of Movement and Sports Sciences, Ghent University, <sup>2</sup>Department of Geography, Ghent University, <sup>3</sup>Center of Research in Epidemiology and Statistics (CRESS), Nutritional Epidemiology Research Team (EREN), Université Sorbonne Paris Nord and Université Paris Cité, INSERM, INRAE, CNAM., <sup>4</sup>Department of Nutrition, Pitié-Salpêtrière Hospital, Assistance Publique-Hôpitaux de Paris (AP-HP), Sorbonne University, CRNH-Ile de France, <sup>5</sup>MoISA, Univ Montpellier, CIRAD, CIHEAM-IAMM, INRAE, Institut Agro, IRD, <sup>6</sup>Univ Paris Est Créteil, LabUrba, <sup>7</sup>City Research Center, Research and Services Headquarters, National Cheng Kung University, <sup>8</sup>Department of Public Health, College of Medicine, National Cheng Kung University, Taiwan, <sup>9</sup>Department of Public & Occupational Health, Amsterdam UMC, Amsterdam Public Health Research Institute, University of Amsterdam, <sup>10</sup>Department of Public Health, College of Health Care and Management, Chung Shan Medical University, <sup>11</sup>Sciensano

**S1.18. Creating a healthy society using citizen science, Waitakere 2, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Citizen science is a valuable approach for engaging the public in research and generating data to inform health and environmental policies. At Ghent University, we developed TravelTrack, a citizen science tool designed to assess active travel environments. For the ERA4Health project "YAHEE" (Young Adults in Health-enhancing Equitable Environments), we expanded TravelTrack to also assess food environments. This study aims to identify the enablers and barriers to interventions that transform food and physical activity environments around schools and universities among young adults from low socio-economic neighbourhoods in Belgium, the Netherlands, France, and Taiwan. Additionally, we aim to further develop TravelTrack by assessing its user experience and utility, and exploring its potential to inform structural and policy interventions that promote more equitable and healthier environments.

**Methods:** A convenience sample of 1000 young adults (aged 18-25) from low socio-economic neighbourhoods in vocational schools and universities across the four countries (n=250 per country) will be recruited between October and December 2024. Participants will use TravelTrack to map their travel routes, active travel behaviours, food environments, and purchasing habits along these routes and in the surrounding areas. In early 2025, semi-structured focus group discussions with a subset of 80 participants across the four countries will assess TravelTrack's ease of use, its impact on active travel behaviour and food literacy, and the usefulness of the TravelTrack-generated reports for identifying enablers and barriers to interventions, and its potential for informing structural and policy changes. Qualitative data will be analysed using thematic analysis, with an inductive approach to identify emerging patterns, ensuring reliability through data triangulation.

**Results:** Findings from TravelTrack on active transport and food environments, along with early insights from focus groups, will be presented. These results will provide insights into young adults' experiences with walkability, bikeability, and food access around their schools and universities, identifying potential leverage points for structural and policy interventions.

Conclusions: The presentation will showcase TravelTrack as an innovative citizen science tool for understanding physical activity and food environments in low socio-economic neighbourhoods, demonstrating how it can inform policies and interventions that foster healthier, more equitable environments for young adults. (The YAHEE project is funded by ERA4Health)

## Evolving citizen and community science applied to building healthier community environments: The case of Te Hotonga Hapori-Connecting Communities Research Programme

**Prof. Erica Hinckson<sup>1</sup>**, Prof. Abby King<sup>2</sup>, Mrs. Julia McPhee<sup>1</sup>, Mrs. Megan Sommerville-Ryan<sup>1</sup>, Prof. Scott Duncan<sup>1</sup>

<sup>1</sup>Auckland University of Technology, Faculty of Health and Environmental Sciences, Human Potential Centre, School of Sport and Recreation, <sup>2</sup>Stanford University School of Medicine, Department of Epidemiology and Population Health, and Stanford Prevention Research Center

**S1.18. Creating a healthy society using citizen science, Waitakere 2, June 12, 2025, 4:45 PM - 6:00 PM**

**Background:** In 2017, the Our Voice Citizen Science Global Research Network published the first set of common measures and protocols to guide citizen science research at the local community setting. Ongoing application of the Our Voice Citizen Science for Health Equity method has provided many insights, lessons learnt, and subsequent evolution of the Method. In this presentation, we will discuss the practical application and adaptation of Our Voice constructs and measures within a five-year research programme centred on urban redevelopment in Auckland, New Zealand

**Methods:** Te Hotonga Hapori – Connecting Communities is an ongoing research programme that aims to enhance the impact of major urban development on community wellbeing. One of the sub-projects within the wider programme aims to understand the impact of urban redevelopment on community wellbeing and lived experiences in accessing their neighbourhood environments. In order to develop a tailored framework for community engagement, the overarching categories of constructs and measures that were proposed to consider when designing citizen science research studies were revisited. Additional measures and processes are proposed to take into account content and local community knowledge. The process of developing a culturally-relevant framework to guide the research is showcased through Te Hotonga Hapori Community Engagement Framework.

**Results:** The development of Te Hotonga Hapori Engagement Framework highlighted the importance of engaging meaningfully with communities through culturally-relevant research design. In applying this framework researchers are guided prior to data collection to focus on building active relationships with the local communities, partners and stakeholders; understanding the historical and cultural realities of the communities; seeking to understand community's aspirations for their area, and building and enabling trust with community and other stakeholders. As a consequence The "Our Voice" Citizen Science Method for Health Equity evolved into the Community Science Aotearoa process of Engage, Discover, Discuss, Advocate, Change, and Re-engage.

**Conclusions:** While some standardisation of citizen and community science methodologies is important, it is equally important for researchers to invest time in understanding the unique context of the communities they engage with. A deep appreciation of the local cultural, social, and environmental factors enhances the relevance and impact of the research.

## Embedding citizen science into policy and practice to create healthy societies

**Dr. Yvonne LAIRD<sup>1,2</sup>**, Ms. Pippy Walker<sup>1,2</sup>, Dr. Leah Marks<sup>1,2</sup>, Prof. Ben Smith<sup>1,2</sup>, Dr. Samantha Rowbotham<sup>3</sup>

<sup>1</sup>The University of Sydney, <sup>2</sup>Charles Perkins Centre, <sup>3</sup>Curtin University

**S1.18. Creating a healthy society using citizen science, Waitakere 2, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Meaningful public engagement in research and decision making is a key priority for health promotion. Citizen science approaches, which actively involve the public in research, are gaining attention amongst public health agencies, but there is limited evidence to guide the use of these approaches in policy and practice settings. The Citizen Science in Prevention project aimed to build capacity for and evaluate the feasibility and impacts of stakeholder-led citizen science approaches to create healthy public and online spaces.

**Methods:** Developed in partnership with four health promotion agencies and underpinned by knowledge mobilisation principles, this project included: (1) supporting the development and implementation of four stakeholder-led citizen science projects; (2) capacity building activities and development of resources (including case studies and fact sheets, community of practice sessions, and workshops); and (3) a developmental mixed methods evaluation of stakeholder-led projects and capacity building activities utilising a combination of interviews, surveys and project records and online metadata.

**Results:** Working closely with stakeholders in the co-design and implementation of citizen science projects and providing citizen science resources and support laid the foundations for these approaches to become embedded within the work of a number of organisations. Insights from stakeholder-led projects have identified feasibility considerations for policy and practice stakeholders including navigating collaborative relationships, team capacity and resources, recruitment and engagement of citizen scientists and ethical considerations. Our capacity building resources have been utilised by a wide network of policy and practice stakeholders to support the use of citizen science approaches in their work.

**Conclusions:** Citizen science approaches offer considerable potential as a means of strengthening partnerships between communities, researchers, practitioners, and policymakers to develop and address shared research agendas that reflect communities' needs, and ultimately, to create healthy societies. Through this work we have demonstrated the need for, and value of resources and capacity building activities aimed at supporting and embedding citizen science approaches within policy and practice settings to enable wider use of these approaches in practice.

## Conceptual framework and evidence reviews for updating the 2015 Position Statement on Active Outdoor Play

**Dr. Maeghan James**<sup>1</sup>, Dr. Louise de Lannoy<sup>2</sup>, Prof. Scott Duncan<sup>3</sup>, Prof. Eun-Young Lee<sup>4</sup>, Prof. Mark Tremblay<sup>5</sup>

<sup>1</sup>University of Ottawa, <sup>2</sup>Outdoor Play Canada, <sup>3</sup>Auckland University of Technology, <sup>4</sup>Queen's University, <sup>5</sup>CHEO Research Institute

### **S1.19. Reflecting on a decade: The impact and future of the Position Statement on Active Outdoor Play, Waitakere 3, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** In 2025, it will be ten years since the release of the 2015 Position Statement on Active Outdoor Play. Recognizing this anniversary, Outdoor Play Canada, and an 11-person international Leadership Group, are updating the Position Statement (AOP10). This study aims to describe the development of the conceptual framework and corresponding literature reviews to inform the AOP10 project.

**Methods:** Using multiple methods (e.g., environmental scans, text mining, chat GPT, linked network analysis), the international Leadership Group and Steering Committee established nine core elements for the AOP10 framework. Literature reviews were then conducted for each core element to explore the relationship between that element and active outdoor play. Inclusion criteria varied by review but generally required studies to be peer-reviewed, involve human participants of any age and from any country, and examine the relationship between active outdoor play and one of the framework elements. A range of languages were included based on language capabilities of the authorship groups.

**Results:** The final conceptual framework includes nine overlapping elements: Education & Learning; Movement Behaviours; Health & Wellbeing; One Health; Nature & Environment; Human Rights & Policy; Community, Connections & Partnerships; Social Capital; and Emerging Areas. A total of 13 reviews (10 systematic reviews, 1 umbrella review, 1 scoping review, 1 narrative review) and 6 region-specific commentaries on active outdoor play are currently underway to comprehensively synthesize evidence on active outdoor play and each framework element. To date, 7 reviews have completed Level 2 screening and a total of 371 papers have met the review-specific inclusion criteria. Commentaries are being written for outdoor play in Africa, Asia, Europe, North America, Oceania and South America.

**Conclusion:** The findings from this study demonstrate the breadth of the active outdoor play sector and the abundance of research being conducted in the field. The conceptual framework and findings from the reviews will provide the foundational information to inform the AOP10 Position Statement. The AOP10 Position Statement will help to guide various sectors (e.g., community, healthcare, education) in recognizing the importance of active outdoor play and further advance the promotion of active outdoor play around the world.

## 2015 Position Statement on Active Outdoor Play: Development, impact and legacy

**Prof. Mark Tremblay<sup>1</sup>**, Dr. Louise de Lannoy<sup>2</sup>

<sup>1</sup>CHEO Research Institute, <sup>2</sup>Outdoor Play Canada

### **S1.19. Reflecting on a decade: The impact and future of the Position Statement on Active Outdoor Play, Waitakere 3, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** A cross-sectoral group of outdoor play partners, stakeholders and researchers collaborated to develop an evidence-informed Position Statement on Active Outdoor Play (PS) focused on children aged 3–12yrs. The PS was created in response to practitioner, academic, legal, insurance and public debate, dialogue and disagreement on the relative benefits and harms of active outdoor play. The PS was released in 2015 and its impact and legacy have been monitored.

**Methods:** The PS was informed by two systematic reviews, a critical appraisal of the literature and existing position statements, engagement of research experts (n = 9) and cross-sectoral individuals/organizations (n = 17), and an extensive stakeholder consultation process (n = 1908). The PS was launched using the 2015 ParticipACTION Report Card Report Card on Physical Activity for Children and Youth as a vehicle for dissemination and promotion. A variety of methods have been employed to assess the impact of the PS since being released.

**Results:** More than 95% of stakeholders consulted agreed with the PS; 14/17 participating individuals/organizations endorsed it; and >1000 individuals/organizations are identified supporters. The PS states “Access to active play in nature and outdoors—with its risks— is essential for healthy child development. We recommend increasing children’s opportunities for self-directed play outdoors in all settings—at home, at school, in childcare, the community and nature.” The full PS provides additional context, evidence, and a series of recommendations to increase active outdoor play opportunities to promote healthy child development. The PS served as a galvanizing force to the sector in Canada. Its impact includes motivating an ~\$11M investment in Canadian projects focused on increasing children’s active outdoor play; informing a provincial Supreme Court decision against a lawsuit demonizing outdoor play; a 10-fold increase in outdoor play research publications in Canada; and inspiring the creation of Outdoor Play Canada and the Play, Learn, and Teach Outdoors Network (PLaTO-Net).

**Conclusions:** Inspired by the significant impact on research, policy and practice in Canada, the development of a 10-year update to the PS (2025) is underway with a more inclusive and comprehensive conceptual framework and global target audience.

## Environmental scan of global outdoor play initiatives and organizations

**Dr. Louise de Lannoy**<sup>1</sup>, Mr. Joshua Cheruvathur<sup>2</sup>, Ms. Olivia Lopes<sup>3</sup>, Dr. Maeghan James<sup>3</sup>, Prof. Scott Duncan<sup>4</sup>, Prof. Eun-Young Lee<sup>5</sup>, Prof. Mark Tremblay<sup>2</sup>

<sup>1</sup>Outdoor Play Canada, <sup>2</sup>CHEO Research Institute, <sup>3</sup>University of Ottawa, <sup>4</sup>Auckland University of Technology, <sup>5</sup>Queen's University

### **S1.19. Reflecting on a decade: The impact and future of the Position Statement on Active Outdoor Play, Waitakere 3, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** The 10-year anniversary of the Position Statement on Active Outdoor Play project serves to describe the impact of the original 2015 Position Statement, make it global in reach and relevance and identify learnings from the past 10 years. As a preliminary, and ongoing step to this update, an environmental scan of the history and development of outdoor play was (and continues to be) conducted to understand how it evolved into the sector it is today.

**Methods:** The environmental scan consisted of three parts: i) scan of resources on the Outdoor Play Canada website; ii) grey literature and data search of Google; and iii) key informant consultations with members of the Play, Learn and Teach Outdoors Network (PlaTO-Net), a 700-person network with representation across 61 countries. All included items were available in either English or French. Information extracted from each item included item name, date (where relevant), location, website link, type, theme, and description.

**Results:** A total of 192 items (190 items available in English, 2 in French) met the criteria of being either an international or national outdoor play initiative or organization. Items were identified from every inhabited continent. There were 106 items focused on outdoor play at the international level, and 86 items focused on outdoor play at the (Canadian) national level. We classified items based on their type and theme. The most common type of resource identified were 'organizations' (n=75) and the most common theme was 'children's play' (n=102), where there were far fewer items related to outdoor play across all ages (n=16). The least common resource type was 'movements' (n=3; e.g., historical movements such as the 'The Playground Movement' launched during the industrial revolution in the United States) and the least common theme was 'play structures'.

**Conclusions:** This environmental scan highlights the plethora of resources to support children's outdoor play, while also demonstrating the lack of focus on outdoor play for individuals beyond childhood. The large focus on Canadian outdoor play initiatives was likely due to bias on behalf of those collecting this information, though nonetheless highlights the galvanization of this movement in Canada.

## Telephysiotherapy can improve mobility in aged care: effectiveness and implementation results from the TOP UP trial

**Dr. Rik Dawson<sup>1,2</sup>, Dr. Marina Pinheiro<sup>1,2</sup>**, Prof. Vasikaran Naganathan<sup>1,2</sup>, Dr. Morag Taylor<sup>3,4</sup>, Prof. Kim Delbaere<sup>3,4</sup>, Dr. Juliana Oliveira<sup>1,2</sup>, Dr. Abby Haynes<sup>1,2</sup>, Prof. Leanne Hassett<sup>1,2</sup>, Prof. Cathie Sherrington<sup>1,2</sup>

<sup>1</sup>University of Sydney, <sup>2</sup>Sydney Local Health District, <sup>3</sup>Neuroscience Research Australia,

<sup>4</sup>University of New South Wales

### **S1.20: Innovative and scalable solutions to increase physical activity participation among older adults, Limelight 1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** To investigate the effectiveness and implementation of a supported telephysiotherapy program to improve mobility in older people.

**Methods:** This study was an effectiveness-implementation hybrid (Type 1) randomised controlled trial. Adults aged 65 years and older receiving aged care services, either in the community or in residential care, to receive either the Telehealth Physiotherapy for Older People (TOP UP) program or usual care. TOP UP is a co-designed program delivering 10 online physiotherapy sessions over six months, supported by trained support workers and exercise videos. The primary outcome was mobility improvement assessed by the Short Physical Performance Battery (SPPB, range 0-12) at baseline and six months. Secondary outcomes included fall rates (falls/person), fall risk (individuals with 1+ fall), sit-to-stand performance, balance, gait speed, pain (Visual Analogue Scale (VAS), range 0-10), goal attainment, physical activity, and quality of life (EQ-5D-5L VAS, range 0-100).

**Results:** We enrolled 242 participants (mean [SD] age 82.5 [8.0] years). At six months, SPPB scores in the intervention group increased by 2.1 points (95% Confidence Interval (CI) 1.4-2.7) compared to controls, adjusted for baseline. Favourable results were also seen in secondary outcomes: a 38% lower fall risk (Risk Ratio 0.62, 95%CI 0.42-0.92), improved quality of life (mean difference [MD] 6.23, CI 1.77-10.70), and reduced pain (MD -1.08, CI -1.82 to -0.34). Implementation showed 75% provider participation. Implementation outcomes were promising, with an 18% conversion from screening to enrolment, a 77% completion rate, and 94% program endorsement. Minimal adverse events were reported, including one non-injurious fall during exercise. Qualitative analysis (n=36) identified key implementation factors, such as expanded home exercise opportunities, age-appropriate resources, and motivation through local support and physiotherapist-led health coaching.

**Conclusions:** TOP UP effectively and safely enhanced mobility, reduced falls and pain, and improved quality of life, highlighting telephysiotherapy's potential benefits in aged care with potential to deliver interventions at scale.

## Peer-led exercise programs for older adults are both effective and scalable solutions to increase physical activity participation.

**Prof. Leigh Hale<sup>1</sup>**, Prof. Debra Waters<sup>1</sup>, Mrs. Dando Margaret<sup>2</sup>

<sup>1</sup>University of Otago, <sup>2</sup>Age Concern

### S1.20: Innovative and scalable solutions to increase physical activity participation among older adults, Limelight 1, June 12, 2025, 4:45 PM - 6:00 PM

**Purpose:** To report effectiveness and scalability of a community-based peer-led strength and balance exercise programme for older adults, Steady As You Go© (SAYGO).

**Methods:** Four studies contribute to this report. Three studies recruited older adults ( $\geq 65$  years) with increased fall risk (quasi-experimental evaluation with 12-month follow-up ( $n=118$ ); prospective cohort study ( $n=207$ ); focus group descriptive study ( $n=63$ )) and required participation in SAYGO. A 2x2 factorial, randomised controlled trial recruited pre-frail (FRAIL scores=1-2,  $\geq 75$  years) older adults, with two groups randomised to SAYGO or SAYGO plus Senior Chef ( $n=236$ ).

**Results:** Study 1 demonstrated SAYGO participation significantly improved and maintained outcomes of strength and balance ( $p<0.02$ ) and continued participation compared with a seated (stretch, aerobic exercise) group. Poisson regression showed a 27% decrease in falls for the peer-led group (incidence rate ratio [IRR], 0.73; 95%CI, 0.48–0.1;  $p=0.07$ ). In Study 2 the mean length (SD) of SAYGO participation was 4.3 (2.5) years (range, 1–10y). Average class attendance was 69%. Crude fall rate was 0.75 per person-year. Fall incidences at 12 and 24 months were highly correlated ( $r=0.897$ ,  $p<0.001$ ). Longer SAYGO participation (3y) resulted in lower 12-month fall incidence (incidence rate ratio, 0.90; 95%CI, 0.82–0.99;  $p=0.03$ ) compared with a shorter duration of participation (1–2y). Study 3 found that positive social connectedness by peer leaders who modelled a caring culture contributed to sustainability. In study 4, run across four sites in both islands of New Zealand (NZ), the mean adherence rates at SAYGO and/or Senior Chef ranged between 63% and 72%.

**Conclusion:** SAYGO is effective in improving outcomes for strength, balance, and fall prevention. This peer support model facilitates social connections and ongoing relationships which encourages continuous attendance and support to keep exercising. Scalability is evident. In 2011, 35 classes ( $n=350$ ) existed in one NZ city. Currently over 245 SAYGO groups ( $n=\pm 4500$ ) participate weekly in classes across NZ, all led by peer leaders, with some classes running continuously for  $>20$  years. Long-term engagement is imperative to derive and maintain the benefits of exercise for older adults, including for those who are pre-frail.

## Effectiveness and implementation of telehealth physiotherapy-led advisory service among older adults and people with disability: the PROPOSE trial.

**Ms. Kate Purcell**<sup>1,2</sup>, Dr. Jennifer Baldwin<sup>1,2</sup>, Ms. Jo Dawson<sup>1,2</sup>, Ms. Roslyn Savage<sup>1,2</sup>, Prof. Leanne Hassett<sup>1,3</sup>, Prof. Anne Tiedemann<sup>1,2</sup>, Prof. Cathie Sherrington<sup>1,2</sup>

<sup>1</sup>University of Sydney, <sup>2</sup>Sydney Local Health District, <sup>3</sup>Sydney Health Partners

### **S1.20: Innovative and scalable solutions to increase physical activity participation among older adults, Limelight 1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** To investigate the effectiveness of a telephysiotherapy coaching service on physical activity participation of older adults and people with disabilities in the community.

**Methods:** The Professional Referral to Physical Activity, Sport and Exercise (PROPOSE) study was a hybrid type I effectiveness-implementation cluster randomised controlled trial. Adults with physical disability and adults aged 50+ years were randomised to receive telehealth physiotherapy coaching or an information booklet. The coaching service was collaboratively developed with health professionals and patients and included an assessment; identification of suitable PA opportunities; development of a tailored PA plan and goals; and 2-6 sessions of health coaching using motivational interviewing. Outcomes included steps per day (primary outcome, measured using an ActiGraph) and self-reported incidental and planned exercise (hours/week, Incidental and Planned Exercise Questionnaire). We also collected implementation outcomes of dose, acceptability and satisfaction.

**Results:** Thirty-six patients were recruited over 21 months, with recruitment affected by COVID-19. Participants in the intervention group had a higher daily step count compared with the control group at 3 months (between group difference 2402.7 [95% CI 146.6 to 4658.9] steps), greater self-reported walking activity (mean difference between groups 2.5 [0.1 to 4.9] hours,  $p < 0.05$ ), and greater physical functioning (mean difference between groups 1.8 [0.4 to 3.2] points,  $p < 0.011$ , PROMIS scale 4-20 points). There were no between group differences for incidental walking, planned or total self-reported activity, anxiety depression. All 18 participants received an initial assessment and a tailored plan (mean duration 65.3 [14.9] minutes), plus at least one session of health coaching (mean number of sessions 3.9 [1.3] sessions, mean duration 43.1 [15.3] minutes). A total of 3090 minutes of health coaching was delivered. Walking programs ( $n = 10$  [56%] participants) and home exercise programs ( $n = 7$  [39%] participants) were the most common activity types. Most participants ( $n = 15$ , 83%) were satisfied and would recommend the program to others. Participants valued the knowledge and skills of the physiotherapist, and reported a range of emotional, physical and social benefits.

**Conclusions:** Telehealth physiotherapy coaching is a potentially effective and scalable solution to increase physical activity participation among older adults and adults with disability.

# From Research to Reality: Lessons Learned from the Translation of a Successful Obesity Prevention Initiative

**Dr. Falon Smith<sup>1</sup>**, Mrs. Michelle Herr<sup>1</sup>, Dr. Erik Willis<sup>1</sup>

<sup>1</sup>*University of North Carolina at Chapel Hill*

**S1.21. Creating and evaluating Health Promoting Early Childhood Education and Care settings, Limelight 2, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** The Nutrition and Physical Activity Self-Assessment for Child Care (NAPSACC) is an evidence-based public health initiative designed to improve health environments in early childhood education care (ECEC) settings. This presentation explores the evolution of NAPSACC emphasizing the balance between implementation fidelity and flexibility, along with the challenges of assessing scaled effectiveness across diverse ECEC ecosystems.

**Methods:** NAPSACC initially employed a consultant-driven implementation approach to guide ECEC professionals through a structured improvement process grounded in behaviour change theory. While this strategy effectively improved the health environments of ECEC programs, its resource-intensive nature limited scalability. To address this, NAPSACC was translated to an online platform, Go NAPSACC, aiming to expand reach and reduce reliance on direct consultant support. Through a cross-sectional analysis of Go NAPSACC's uptake across 22 states, we illustrate the context-specific variations in program implementation.

**Results:** The online platform effectively retained the core theory-based components of NAPSACC - self-assessment, action planning, education, and reassessment - while enabling rapid scaling, with a tenfold increase in the number of ECEC programs reached over ten years. However, the fragmented nature of U.S. ECEC ecosystems, with diverse governance and funding structures, required flexibility in Go NAPSACC's implementation. Across 22 states, core components were integrated into ECE systems in different ways - utilizing quality rating and improvement systems (6%), recognition programs (23%), pre-service/professional development requirements (39%), and consultant networks (29%). Additionally, there were significant variations in dissemination: 23% of states prioritized regional efforts with a focus on implementation fidelity, while 77% concentrated on achieving broad reach through statewide dissemination.

**Conclusions:** NAPSACC successfully translated its core components into an online platform, reaching over 11,000 ECEC programs. However, assessing its effectiveness at scale presents challenges, as its impact varies based on the context of implementation. In diverse ECEC ecosystems, balancing fidelity to core components with the flexibility needed for local implementation is essential but nuanced. Traditional evaluation methods may not fully capture the intervention's true impact, underscoring the need for ongoing evaluation and adjustments to ensure meaningful, scalable outcomes.

## Developing the Tiny Bites program: A digital health intervention to improve infant nutrition through childcare and parent partnerships

**Dr. Gloria KW Leung<sup>1</sup>**, Ms. Nicole Pearson<sup>2</sup>, Dr. Melanie Lum<sup>1</sup>, Dr. Clare Dix<sup>3,4</sup>, Ms. Ceara Swyripa<sup>4</sup>, Dr Rachel Sutherland<sup>2,5</sup>, Ms. Hannah Lamont<sup>2</sup>, Dr. Najma Moumin<sup>1</sup>, Ms. Karen Gillham<sup>2</sup>, Dr. Tessa Delaney<sup>6</sup>, Prof. Nilmini Wickramasinghe<sup>7</sup>, Dr. Sze Lin Yoong<sup>1</sup>

<sup>1</sup>*Institute for Health Transformation, Deakin University*, <sup>2</sup>*Hunter New England Population Health*, <sup>3</sup>*School of Health, University of the Sunshine Coast*, <sup>4</sup>*School of Human Movement and Nutrition Sciences, The University of Queensland*, <sup>5</sup>*School of Medicine and Public Health, The University of Newcastle*, <sup>6</sup>*Centre for Population Health, NSW Ministry of Health*, <sup>7</sup>*School of Computing, Engineering and Mathematical Sciences, La Trobe University*

### S1.21. Creating and evaluating Health Promoting Early Childhood Education and Care settings, Limelight 2, June 12, 2025, 4:45 PM - 6:00 PM

**Purpose:** Tiny Bites is an 18-month digital health intervention that aims to promote healthy growth trajectories in children aged 0 to 3 years. It targets parents and early childhood education and care services (ECECs) to implement recommendations outlined by the Australian Infant Feeding Guidelines and to adopt responsive feeding practices. The aim of this presentation is to showcase the intervention development process.

**Methods:** Barriers and enablers for parents and ECECs to implement targeted behaviours were identified through literature reviews and focus groups (n= 7) and categorised using the COM-B model (Capability (Cap), Motivation (Mot) and Opportunity (Opp) factors interact to generate Behaviour). Guided by the Behaviour Change Wheel, we identified intervention functions and associated Behaviour Change Techniques (BCTs) to target these barriers.

**Results:** Key barriers for parents included receiving conflicting information and advice (reflective-Mot); limited knowledge, skills (Psychological-Cap) and self-efficacy (reflective-Mot) around feeding; and uncertainty about how ECECs can support feeding (reflective-Mot). These barriers were addressed through three components incorporating multiple BCTs: i) text messages providing prompts to encourage behaviour; ii) digital resources to increase knowledge, provide instructions on how to perform behaviours and persuasion to promote self-belief; and iii) e-newsletters with conversation ideas to enhance collaboration between parents and ECEC educators. To reduce confusion from conflicting nutrition information, we consolidated the most relevant nutrition information into digital resources, embedded in a visually engaging webpage. Key barriers for ECECs included limited knowledge and skills around feeding (psychological-Cap), lack of effective and timely communication with families (psychological-Cap, social-Opp) and misalignment in feeding practices and beliefs with parents (social-Opp). The ECEC intervention consists of three components: i) online webinars to improve knowledge and skills in feeding and effective communication with parents; ii) support in action planning and feedback from a local health promotion officer; and iii) templates of information snippets to send home, aligning understanding of key nutrition messages.

**Conclusions:** This presentation describes a systematic process used to develop Tiny Bites, an intervention which enhances the partnership between parents and ECEC educators to improve child nutrition outcomes.

## Process evaluation of the NAPSACC UK randomised controlled trial: an environmental nutrition and physical activity intervention in early childhood education and care settings in the UK

Dr. Rebecca Langford<sup>1,2</sup>, Ms. Jemima Cooper<sup>1</sup>, Dr. Stephanie Chambers<sup>3</sup>, Dr. Kimberly Hannam<sup>1</sup>, Mr. Tom Reid<sup>1</sup>, Dr. Madeleine Cochrane<sup>1</sup>, Prof. Russell Jago<sup>1</sup>, Prof. Sharon Simpson<sup>4</sup>, Prof. Miranda Pallan<sup>5</sup>, **Prof. Ruth Kipping<sup>1</sup>**

<sup>1</sup>Bristol Medical School, University of Bristol, <sup>2</sup>NIHR Applied Research Collaboration West (NIHR ARC West), <sup>3</sup>School of Social and Political Sciences, University of Glasgow, <sup>4</sup>MRC/CSO Social & Public Health Sciences Unit, University of Glasgow, <sup>5</sup>Institute of Applied Health Research, University of Birmingham

### S1.21. Creating and evaluating Health Promoting Early Childhood Education and Care settings, Limelight 2, June 12, 2025, 4:45 PM - 6:00 PM

**Purpose:** In HMIC many children develop obesity during preschool years. Most also attend early childhood education care (ECEC). ECECs provide opportunities to improve health through improved nutritional quality and physical activity for young children. There is evidence from the US that the NAPSACC intervention improves nutrition and physical activity in ECECs. We adapted NAPSACC for the United Kingdom (UK) and investigated its fidelity, acceptability and sustainability within a trial.

**Methods:** An embedded process evaluation within a cluster randomised controlled trial with 52 ECECs in the UK (25 intervention and 27 control). The NAPSACC UK intervention comprised two six-month cycles of nutrition and activity self-assessment, staff workshops and goal setting, supported by public health practitioners. Mixed-methods data included: observations and questionnaires of training and workshops; questionnaires on practice in control ECHCs; interviews with eleven practitioners who delivered the intervention, eleven ECEC managers, five commissioners, and two researcher focus groups. Document analysis was undertaken of self-assessment and goal-setting forms. Analysis used deductive and inductive codes, a coding framework and triangulation.

**Results:** Three-quarters (76%) of intervention ECECs fully implemented the NAPSACC intervention across one cycle. Forty percent implemented a second cycle, mainly due to delays in initial workshops. ECEC managers valued the opportunity to reflect on practice and the on-going practitioner support. ECEC staff rated the workshops highly. 83% of nutrition and 70% of physical activity goals set by the ECECs were achieved (fully or partially) and self-assessment scores increased, with greater gains for ECECs implementing two cycles. ECEC managers planned to maintain the changes they had made but were mixed on continuing self-assessment and goal-setting processes.

**Conclusions:** Despite significant sector-wide staffing challenges and financial pressures, we saw high engagement from ECECs in self-assessment and setting goals to improve child nutrition and activity. Depending on the primary and secondary outcomes from the trial (see separate abstract), any further dissemination of NAPSACC UK would benefit from tailoring activities and sustained support for practitioners and ECECs.

## Partnering for Purpose: Advancing Public Health Through Government, Industry, and Research Collaboration

Dr. Samantha Mulcahy<sup>1</sup>, Prof. John Cairney<sup>1</sup>, Dr. Robyn Littlewood<sup>3</sup>, Dr. Sandra Pavey<sup>3</sup>, Dr. George Thomas<sup>1</sup>, **Sjaan Gomersall**<sup>1,2</sup>

<sup>1</sup>Health and Wellbeing Centre for Research Innovation, School of Human Movement and Nutrition Sciences, The University of Queensland, <sup>2</sup>School of Health and Rehabilitation Sciences, The University of Queensland, <sup>3</sup>Health and Wellbeing Queensland, Queensland Government

### **S1.22. Bridging the gap between research and practice through government and academic partnerships: Opportunities, challenges and lessons learned from Australia and New Zealand, Waihorotiu #1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Building meaningful partnerships between academia, government and industry are needed to achieve a shift towards sustained population level impact on health and wellbeing outcomes. Underpinning this, person-centred approaches are also imperative to ensure health promotion initiatives and programs are developed and implemented with, and for, communities. The Health and Wellbeing Centre for Research Innovation (HWCRI) is a unique research partnership between The University of Queensland (UQ) and Health and Wellbeing Queensland (HWQld), the state's leading prevention agency. The partnership aims to bridge academic research with policy and practice to create evidence-based programs and initiatives that improve the wellbeing of Queensland communities.

**Methods:** The partnership was conceived out of a mutual desire to leverage UQ's academic expertise in health research and HWQld's mandate to improve the health and wellbeing of all Queenslanders. HWCRI was developed as a hub for innovation, bringing together interdisciplinary expertise in physical activity, nutrition, mental health, and public health – key focus areas for HWQld – to address critical health issues. A co-design approach was utilised, with both organisations working together to ensure the alignment of research with public health priorities to reduce health inequities and improve population health.

**Results:** The co-design process resulted in a shared governance model underpinned by an overarching research agreement that enables responsive collaborations and rapid initiation of new projects. The partnership has resulted in substantial outcomes, including successfully obtaining over \$7million in grant funding, to date. HWCRI has led more than 25 research projects, many of which directly inform HWQld's policies and programs. Key partnership projects include evaluating state-wide health promotion initiatives, developing evidence-informed prevention strategies, and contributing to the design and evaluation of community health initiatives. These projects have influenced both state-level health policy and community-based program development.

**Conclusion:** HWCRI has provided the necessary academic rigor to evaluate and inform government-led health initiatives. This partnership exemplifies how academic institutions and government bodies can work together to co-develop scalable solutions. Key takeaways include the importance of co-design, interdisciplinary collaboration, and aligning research timelines and policy needs to create scalable, impactful health interventions.

# Logan Healthy Living: A Case Study of the development of a Multi-Sector partnership to deliver a Community Allied Health Service for people living with Type 2 Diabetes

**Prof. Sjaan Gomersall<sup>1,2</sup>**, Mr. Denis Giguere<sup>4</sup>, Ms. Joanna Munro<sup>3</sup>, Prof. Genevieve Healy<sup>1</sup>  
<sup>1</sup>Health and Wellbeing Centre for Research Innovation, School of Human Movement and Nutrition Sciences, The University of Queensland, <sup>2</sup>School of Health and Rehabilitation Sciences, The University of Queensland, <sup>3</sup>Health and Wellbeing Queensland, Queensland Government, <sup>4</sup>UQ Health Care Ltd, Logan Healthy Living

## **S1.22. Bridging the gap between research and practice through government and academic partnerships: Opportunities, challenges and lessons learned from Australia and New Zealand, Waihorotiu #1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Type 2 diabetes is the fastest growing chronic condition in Australia with higher prevalence in disadvantaged groups. Logan Healthy Living (LHL) is a proof-of-concept, interprofessional allied health clinic focused on supporting people with and at risk of type 2 diabetes in Logan, a region in South-East Queensland, Australia with high levels of health inequity. LHL was created by UQ Healthcare and is a collaborative venture supported by the Queensland Government through Health and Wellbeing Queensland and a broader multi-sectoral alliance including primary health care, tertiary hospital and health services, government, community, not-for-profit and university sectors. This presentation will 1) describe the establishment of LHL and the process of building multi-sectoral partnerships, service development, and governance, 2) development of the evaluation framework and 3) key learnings and impacts.

**Methods:** LHL delivers 8-week lifestyle management programs which consist of weekly group sessions with one hour of education and one hour of tailored exercise. The RE-AIM framework guided evaluation of the program and informed key questions regarding: Reach (number and characteristics of clients); Effectiveness (diabetes-related distress, health behaviours [physical activity and diet], quality-of-life, self-management self-efficacy, loneliness, community involvement, anthropometric measures, HbA1c, physical function and healthcare utilisation); Adoption (referral pathways); Implementation (fidelity, appropriateness, acceptability, costs); and, Maintenance (long term effectiveness). Data will be drawn from a purposefully embedded, co-designed minimum dataset (collected via surveys; in-person measures; client management software).

**Results:** The multi-sectoral partnership has had unique impacts on the operation and iterative development of the service. These will be discussed, including purposeful and ongoing consumer and stakeholder engagement, innovation and partnerships in data collection methods, and real-time feedback and iterative feedback, which has enabled improvements in service delivery and the generation of new research questions.

**Conclusions:** While multi-sectoral responses are needed for complex community health challenges, processes for achieving this are rarely documented and the description of the development of LHL has the potential to inform future partnerships.

## Te Hau Kori: Does cross-sectoral partnership and co-design address the gap between physical activity research, policy and practice?

Justin Richards<sup>1</sup>, **Dr. Lara Andrews<sup>1</sup>**

<sup>1</sup>Te Hau Kori, Victoria University Wellington - Te Herenga Waka

**S1.22. Bridging the gap between research and practice through government and academic partnerships: Opportunities, challenges and lessons learned from Australia and New Zealand, Waihorotiu #1, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Despite remarkable progress in physical activity (PA) research in the past five decades, much of the evidence generated has not translated into substantive improvements in participation levels or population wellbeing. Similarly, existing tertiary education programmes continue to proliferate, but do not appear to be training graduates to meet existing PA promotion workforce needs. This is particularly the case for groups experiencing widespread inequities, such as Māori (i.e. Indigenous people of Aotearoa New Zealand (NZ)). We hypothesise that this gap in knowledge translation is underpinned by persistent organisational disconnects among key stakeholders within academia, policy and practice. Our aim was to assess the impact of an entity intentionally created to directly address these disconnections among researchers, policy-makers and practitioners.

**Methods:** We established Te Hau Kori, a Centre with three priorities: a) Facilitate the translation of PA promotion research into policy; b) Improve PA promotion workforce training/practice; c) Privilege Indigenous knowledge alongside conventional science. Te Hau Kori was “co-designed” to be a “partnership” between a Crown agency (Sport NZ–Ihi Aotearoa) and the tertiary sector (Victoria University Wellington–Te Herenga Waka). It was also established as a “Te Tiriti-based” Centre, with equal representation of Tangata Whenua (Māori) and Tangata Tiriti (Non-Māori) across its operational and governance structure. We used an engagement model from Te Arawhiti (Office for Māori Crown Relations) as a framework to directly observed how interactions among these key PA stakeholders were impacted by establishing Te Hau Kori.

**Results:** Interactions among the PA stakeholders remained largely characterised as “collaboration” (researchers), “consultation” (policy-makers) and “informing” (practitioners). Although these terms are often used interchangeably, they represent distinct types of engagement that do not align with the “partnership” approach underpinning the establishment of Te Hau Kori. Despite this, there were several occasions where “co-designed” activities improved outcomes. This included developing the first “Play Promotion” teaching programme in NZ and improving cross-government PA surveillance.

**Conclusions:** Genuine cross-sectoral and cross-cultural “partnership” has the potential to close existing gaps among researchers, policy-makers and practitioners. However, active maintenance of “co-design” principles with key PA stakeholders is critical to success

# Adolescents' self-efficacy for and attitudes towards dietary behaviours: How are they shaped by their neighbourhood, home and school environments?

**Dr. Casper J.P. Zhang<sup>1</sup>**, Prof. Ester Cerin<sup>1, 2</sup>

<sup>1</sup>*School of Public Health, The University of Hong Kong*, <sup>2</sup>*Mary MacKillop Institute for Health Research, Australian Catholic University*

**S1.23. Advances in research on sleep, physical activity and dietary behaviours in Hong Kong youth, Herald Theatre, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose** To examine how the neighbourhood, home and school environments affect self-efficacy for and attitudes towards dietary behaviours as well as the frequency of consumption in adolescents.

**Methods** 1,224 dyads of adolescents (age: 12-18y) and one of their parents were included. Dietary behaviours of fruits and vegetables (F&V), deep-fried/fatty food (FF), and any sugar-sweetened beverages (SSBs) were operationalised as asking adolescents' frequency of consuming specific foods. Adolescents' self-efficacy for and attitudes (perceived advantages and disadvantages) towards eating corresponding foods were measured using validated scales. Perceived neighbourhood and home environments were reported by their parents. School food environments were adolescent-reported. Mixed-effects generalised linear models accounting for clustering at the neighbourhood and school levels were used in data analyses.

**Results** As expected, adolescents' self-efficacy and attitudes were positively/negatively associated with corresponding dietary behaviours ( $ps < 0.001$ ). A range of environmental variables at the neighbourhood (e.g., friendliness of shops), home (e.g., availability of SSBs) and school (e.g., presence of food outlets) levels were identified as predictors of self-efficacy for and attitudes towards eating specific diets and the frequency of consumption ( $ps < 0.05$ ). Specifically, friendliness of shops for F&V and low-fat products, respectively, in the neighbourhood was associated with higher levels of self-efficacy and/or perceived advantages for F&V, and with higher levels of self-efficacy for eating low-fat foods and less frequent consumption of FF. Availability of F&V at home was positively associated with both self-efficacy and advantages for F&V whilst availability of SSBs at home was negatively associated with self-efficacy for not drinking SSBs and positively associated with advantages for SSBs. Availability of F&V and SSBs was also respectively associated with frequent consumption of F&V and SSBs. Notably, more SSBs available at home were also associated with more frequent consumption of FF, which was partially mediated by lower levels of perceived disadvantages for eating FF. Presences of salad bars and vending machines (for foods or drinks) at the school were associated with self-efficacy and the frequency of consumption of some behaviours amongst F&V, SSBs and FF ( $ps < 0.05$ ).

**Conclusions** Adolescents' dietary behaviours shaped by self-efficacy and attitudes can be further impacted by their neighbourhood, home and school environments.

## Within-person temporal associations between raw acceleration derived physical activity metrics and sleep in preschoolers

**Dr. Wendy Huang<sup>1</sup>**, Dr. Jie Feng<sup>2</sup>

<sup>1</sup>Academy of Wellness and Human Development, Hong Kong Baptist University, <sup>2</sup>Department of Sports Science and Physical Education, The Chinese University of Hong Kong

**S1.23. Advances in research on sleep, physical activity and dietary behaviours in Hong Kong youth, Herald Theatre, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** Average acceleration (indicative of volume) and intensity gradient (IG, indicative of intensity distribution) have been proposed as population independent physical activity metrics derived from raw accelerometer data. This study aimed to investigate the within-person temporal relationships of average acceleration and IG with sleep in preschool-aged children.

**Methods:** Baseline data from 105 children aged 3-6 years participated in an intervention study were analyzed. Children wore an ActiGraph accelerometer on the non-dominant wrist for seven consecutive days. Open-source R package GGIR was used to generate daily average acceleration and IG during waking hours, sleep parameters, as well as acrophase (timing of peak activity). Acrophase was then categorized into three groups: phase advanced (less than 1 SD of the mean), phase delayed ( $> 1$  SD of the mean), and normal phase (mean  $\pm 1$  SD). Linear mixed models were performed to test temporal associations of average acceleration and IG with previous and subsequent nights' sleep duration and sleep efficiency, with adjustment of age, sex, parental education, BMI z-score, type of day, and valid wake hours. Interactions between the predictors and acrophase were also tested.

**Results:** Neither sleep duration nor sleep efficiency was associated with average acceleration and IG the following day. However, IG was negatively associated with subsequent night-time sleep duration ( $\beta = -0.116$ , 95% confidence interval [CI]: -0.214, -0.017) and sleep efficiency ( $\beta = -0.204$ , 95% CI: -0.316, -0.093), while higher average accelerations were associated with a longer sleep duration ( $\beta = 0.105$ , 95% CI: -0.002, 0.212) and better sleep efficiency ( $\beta = 0.114$ , 95% CI: 0.002, 0.226) the subsequent night. Interactions were found between average acceleration and acrophase in predicting sleep duration in children with delayed phase ( $\beta = -0.311$ , 95% CI: -0.316, -0.093) and advanced phase ( $\beta = 0.286$ , 95% CI: 0.007, 0.565), compared to those with normal phase.

**Conclusions:** The relationships between physical activity volume and subsequent night-time sleep vary across different acrophase categories in young children, particularly highlighting a negative association for children with delayed phase compared to those with normal phase. The unexpected negative relationships between intensity profile and sleep warrant further investigation.

## Demographic determinants of physical activity among children with special educational needs in Hong Kong

**Dr. Jie Feng**<sup>1</sup>, Prof. Cindy Hui-ping Sit<sup>1</sup>, Prof. Stephen Heung-sang Wong<sup>1</sup>, Dr. Wendy Yajun Huang<sup>2,3</sup>, Prof. Martin Chi-sang Wong<sup>4</sup>, Prof. Raymond Kim-wai Sum<sup>1</sup>, Ms. Catherine Carty<sup>5</sup>, Ms. Judy Ka-wai Kong<sup>6</sup>, Mr. Jinghao Sui<sup>1</sup>

<sup>1</sup>Department of Sports Science and Physical Education, The Chinese University of Hong Kong,

<sup>2</sup>Academy of Wellness and Human Development, Hong Kong Baptist University, <sup>3</sup>Dr Stephen Hui Research Centre for Physical Recreation and Wellness, Hong Kong Baptist University, <sup>4</sup>The Jockey Club School of Public Health and Primary Care, The Chinese University of Hong Kong,

<sup>5</sup>UNESCO Chair, Munster Technological University, <sup>6</sup>InspiringHK Sports Foundation limited

### S1.23. Advances in research on sleep, physical activity and dietary behaviours in Hong Kong youth, Herald Theatre, June 12, 2025, 4:45 PM - 6:00 PM

**Purpose:** Children with special educational needs (SEN) often encounter barriers to engaging in physical activity (PA), with these challenges frequently shaped by family dynamics and socioeconomic status. Understanding these demographic determinants is crucial for developing effective strategies to promote PA in this population; however, evidence is limited in Southeast Asia, particularly Hong Kong. This cross-sectional study examined PA levels among children with SEN in Hong Kong and their related determinants.

**Methods:** A total of 134 school-aged children (mean age:  $8.9 \pm 1.4$  years; 83.6% boys) from eight mainstream primary schools participated in this study from January to June 2024. Children's PA was assessed using the ActiGraph GT9X device, and body fat percentage was determined with a Tanita bioelectrical impedance analyser. Demographic information (e.g., age, gender, number of siblings, parents' ages, parents' education levels, family income, and living arrangements) was reported by parents through a written questionnaire. Generalised linear models with gamma distribution and log link were performed to examine the relationship between demographics and PA, adjusting for school clusters and SEN types.

**Results:** On average, children engaged in  $338.1 \pm 94.2$  minutes of PA daily, including  $38.3 \pm 23.8$  minutes of moderate-to-vigorous-intensity PA (MVPA). Girls participated in lower levels of MVPA ( $B = -0.41$ , 95% confidence interval [CI]:  $-0.75, -0.07$ ). Children living with only their mothers exhibited lower levels of MVPA compared to those living with both parents ( $B = -1.54$ , 95% CI:  $-2.26, -0.83$ ). Additionally, children from high-income families reported lower MVPA levels compared to those from low-income families ( $B = -0.38$ , 95% CI:  $-0.75, -0.01$ ). Furthermore, a negative association was found between the mothers' age and both the children's light-intensity PA ( $B = -0.02$ , 95% CI:  $-0.03, -0.00$ ) and MVPA ( $B = -0.04$ , 95% CI:  $-0.08, -0.00$ ). No significant associations were found between other demographic determinants and PA.

**Conclusions:** The levels of MVPA among children with SEN were significantly associated with their gender, living arrangements, family income, and the age of their mothers. These findings underscore the necessity that interventions should consider family dynamics, particularly the mothers' role, to effectively promote PA in children with SEN.

## Monitoring availability and promotion of food products in online grocery retailers globally

Dr. Clara Gomez Donoso<sup>1</sup>, Dr. Tailane Scapin<sup>1</sup>, **Prof. Adrian Cameron<sup>1</sup>**

<sup>1</sup>*Deakin University*

### **S1.24. How is the Online food environment shaping our health? Challenges and opportunities for public health, Balcony Foyer, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** As a result of the increasing popularity of online food retail services, a new standardised, low-resource tool to monitor and benchmark marketing practices of online grocery retailers has been developed within the International Network for Food and Obesity/NCDs Research, Monitoring and Action Support (INFORMAS). This presentation will aim to 1) describe the healthiness of product availability and promotion across online grocery retailers in a wide range of countries and 2) discuss the challenges, benefits and importance of monitoring online grocery retailers globally.

**Methods:** A selection of one to four online grocery retailers (aiming to cover at least 25% of the market share) were assessed in each of 17 countries: Canada, Mexico, Brazil, Peru, Colombia, England, Spain, Denmark, Belgium, Netherlands, South Africa, India, Thailand, Indonesia, Philippines, Australia, New Zealand. Data collected included the type and nutritional profile of food and drinks and the prevalence of marketing strategies. This data was collected from the home page, promotional pages (e.g., specials), and a selection of food category pages (i.e., fruit and vegetables, soft drinks, sweet biscuits, confectionery, chips) of each grocery shopping website. The proportion of healthy and unhealthy food available and promoted across the assessed pages will be reported for each country. The extent to which food labels and nutritional information details are present in online grocery retailers will also be reported.

**Results:** A total of 35 websites of supermarkets and hypermarkets were assessed across 17 countries. The number of products available in home pages varied largely between and within countries. Overall, there were twice as many unhealthy products compared to healthy products. Food products in promotional pages were predominantly unhealthy, with some promotional pages specifically dedicated to products from ultra-processed food manufacturers. For food category pages, there were generally more promoted products in the unhealthy categories (soft drinks, sweet biscuits, confectionery, chips) compared to fruits and vegetables. Most common marketing strategies across all countries were temporary discounts. Availability of nutritional information varied largely across countries, ranging from around 40 to 90%.

**Conclusion:** These findings can serve as a baseline for comparison between and within countries over time and can help identify public health benchmarks based on best practice examples.

## Meal Kits and Public Health Nutrition: Opportunities and Challenges in the Australian Market

**Mrs. Kylie Fraser**, Dr. Alison Spence, Dr. Penelope Love, Prof. Karen Campbell  
<sup>1</sup>Deakin University

### S1.24. How is the Online food environment shaping our health? Challenges and opportunities for public health, Balcony Foyer, June 12, 2025, 4:45 PM - 6:00 PM

**Purpose:** Commercial meal kits (e.g., HelloFresh™, Marley Spoon™) have rapidly gained popularity, with a global market value exceeding US\$12 billion. Meal kits meet the demand for healthy, convenient meal options by delivering fresh, pre-portioned ingredients and recipes, streamlining meal planning, shopping and cooking. Despite their popularity, little is known about the impact on public health nutrition and cooking habits. To address this, a series of studies focused on the Australian market were conducted to identify opportunities for enhancing the health benefits of meal kits. The studies aimed to: 1) analyse the Australian meal kit market and conduct a vegetable-specific content analysis of recipes, 2) assess their potential to promote food literacy behaviour change, and 3) explore family usage patterns.

**Methods:** A one-week subscription was purchased for all nine Australian meal kit services to access content and recipes. The vegetable content of 179 available recipes was analysed using FoodWorks nutritional software. Websites were systematically reviewed to document key characteristics and features. Behaviour change frameworks, including the Behaviour Change Technique Taxonomy (BCTTv1), were used to identify the behaviour change content of meal kit services. Semi-structured interviews were conducted with 25 parents of children (2-5 years) who use meal kits, and transcripts were analysed using thematic analysis and a food literacy framework.

**Results:** The Australian meal kit market has grown rapidly. Analysed recipes provided a median of 2.5 vegetable servings per person, with three different vegetables from two varieties (e.g., dark green, starchy). Vegetable servings varied widely (0.75 to 7.5), indicating some meals were not nutritionally balanced. We identified 35 behaviour change techniques (BCTs) across services (range: 19-29 BCTs), primarily targeting changes in motivation and capability. The presence of BCTs suggests that meal kits may potentially facilitate food literacy development. Thematic analysis showed that families use meal kits to simplify feeding young children, easing the mental load and broadening culinary experiences. However, gaps remain in meal kits' potential to influence healthy meal choices and eating habits.

**Conclusions:** This research offers insights into the Australian meal kit market, highlighting opportunities and challenges in using meal kits to improve public health nutrition and cooking practices.

## Trends in online food delivery (OFD) service use and drivers of online food choices- A mixed methods study

**Dr. Adyya Gupta<sup>1</sup>**, Dr. Catherine Huggins<sup>1</sup>, Prof. Kathryn Backholer<sup>1</sup>, Prof. Anna Peeters<sup>1</sup>

<sup>1</sup>*Institute for Health Transformation, Global Centre for Preventive Health and Nutrition, Deakin University*

### **S1.24. How is the Online food environment shaping our health? Challenges and opportunities for public health, Balcony Foyer, June 12, 2025, 4:45 PM - 6:00 PM**

**Purpose:** The OFD sector has experienced unprecedented growth since the pandemic began. In Australia with a market size of \$1.3bn in 2023, over three billion consumers used OFD services in 2024. Very little is known on the public health impact of OFD service use and what actions are needed to ensure that OFD services offer healthy foods. The aims of this study were to 1) to quantify the trends in OFD service use in 5 upper middle- and high-income countries from 2018-2021 and 2) describe consumer exposure to, and engagement with, digital marketing techniques used by OFD services in real-time and how this influences food purchasing decisions.

**Methods:** Using a mixed methodology, we quantified the trends in the use of OFD service in 5 countries namely, Australia, Canada, Mexico, the UK, and the USA, using weighted repeated annual cross-sectional data for adults over 18 years (n=83,337) from the International Food Policy Study. Next, using a novel screen capture method, we recorded OFD service users' (n=30) exposure and engagement with the food marketing techniques on the OFD platforms, followed by in-depth semi-structured interviews to understand how OFD services influence users' food purchasing decisions, in real-time.

**Results:** We found a steady increase in the use of OFD services. The overall proportion of the population purchasing meals using OFD services increased from 19 to 25% for all countries. The average number of meals purchased using OFD service nearly doubled for all countries between 2018-2021. During this period, a decline in the average number of meals purchased was observed for other purchase formats. From the content analysis of the screen recordings of the online food purchases on OFD services, we observed that users are mostly exposed to discretionary food items (e.g. pizza, chips) with a range of digital marketing techniques such as price discounts, promotion on food items and personalised strategies (e.g., "only for you"). Guided by the socio-ecological model, drivers to food choices on OFD services ranged from individual (motivation to seek comfort food, time- and cost-saving), social (family influence) to environment level factors (limited availability and accessibility to healthy food outlets and healthy food options; price promotions, low delivery fee and appealing food images).

**Conclusion:** OFD services are rapidly expanding and overwhelming prominence of digital marketing techniques to promote less healthy food options influence consumers food choices. Our research calls for policy actions to support healthier food choices on OFD services.

## The effects of a remote diet and exercise intervention and behavioral change constructs on health behaviors in the Prostate 8-II randomized controlled trial

**Dr. Stacey Kenfield<sup>1</sup>**, Dr. June Chan<sup>1</sup>, Ms. Lufan Wang<sup>1</sup>, Ms. Ada Sanchez<sup>1</sup>, Ms. Greta Macaire<sup>1</sup>, Ms. Shelagh Roberts<sup>1</sup>, Dr. Rebecca Graff<sup>1</sup>, Dr. Li Zhang<sup>1</sup>, Dr. Kerri Winters-Stone<sup>2</sup>, Dr. Matthew Cooperberg<sup>1</sup>, Dr. Peter Carroll<sup>1</sup>, Dr. Erin Van Blarigan<sup>1</sup>

<sup>1</sup>University of CA San Francisco, <sup>2</sup>Oregon Health Sciences University

**S2.25: Effects of health behavior interventions among people with cancer - development, adherence, early results, and future design considerations for remote and supervised randomized controlled trials, Kiri Te Kanawa Theatre, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** We evaluated whether diet or exercise habits changed in a randomized controlled trial (RCT) of a remote health behavior intervention vs. control, in men with localized prostate cancer. Secondly, we assessed cross-sectional associations between baseline behavioral change theoretical constructs and health behaviors.

**Methods:** Prostate 8-II is a RCT testing a remote diet and exercise intervention among 202 men, diagnosed with prostate cancer, opting for surgery as primary treatment, and who were not meeting all exercise and diet recommendations. Enrollment is closed and follow up is ongoing. The intervention included an interactive website with educational materials, goal setting, tracking, and rewards, text messaging, and health coaching; the control arm received print education only. We examined the effects of the diet intervention on the P8 diet score (higher score=healthier), and the exercise intervention on meeting moderate to vigorous physical activity (MVPA) guidelines and the P8-II resistance exercise guideline (2+ days/week, 8 exercises/session) with mixed effects models (changes assessed via survey between 0 and 12 months). We also examined cross-sectional associations between baseline behavior constructs (social support, self-efficacy, perceived barriers, and use of change strategies) and baseline diet and exercise behaviors using multivariable linear and logistic regression.

**Results:** 188 participants had data for analyses. Among those with two-timepoint survey data, men randomized to the intervention (N~79) compared to control (N~83) increased their P8 diet score ( $p<0.001$ ). A greater proportion of those randomized to exercise (N~91) vs. control (N~97) made improvements in meeting the resistance exercise recommendation ( $p=0.004$ ); the exercise intervention did not result in improvements in MVPA between arms. At baseline, reporting more barriers was associated with lower step count (assessed via Actigraph GT3X+ accelerometers) and being less likely to meet MVPA guidelines, while use of change strategies was positively associated with meeting MVPA guidelines. Higher self-efficacy for healthy eating was positively associated with the P8 diet score.

**Conclusions:** The P8-II intervention increased the adoption of a prostate cancer-specific healthy diet and resistance exercise (vs. control). Future study will examine if changes in behavior were modified by baseline behavioral constructs and evaluate the effect of the intervention on prostate-specific antigen levels.

## Optimization of a nutrition and physical activity intervention for cancer survivors (Tools To Be Fit): Design of a full factorial experiment

**Dr. Erin Van Blarigan**<sup>1</sup>, Dr. Stacey Kenfield<sup>1</sup>, Dr. Jeffrey Meyerhardt<sup>2</sup>, Dr. June Chan<sup>1</sup>, Dr. Chloe Atreya<sup>1</sup>, Dr. Sorbarikor Piawah<sup>1</sup>, Ms. Evelyn Montenegro<sup>1</sup>, Mx. Paige Steiding<sup>1</sup>, Dr. Mi-Ok Kim<sup>1</sup>, Ms. Wenora Johnson<sup>3</sup>, Ms. Florence Kurttila<sup>3</sup>, Ms. Wendy Lewis<sup>3</sup>, Mr. Curtis Pesmen<sup>3</sup>, Ms. Yasmeem Watson<sup>3</sup>, Dr. Siobhan Phillips<sup>4</sup>

<sup>1</sup>University of California San Francisco, <sup>2</sup>Dana-Farber Cancer Institute, <sup>3</sup>Fight Colorectal Cancer Patient Advocate, <sup>4</sup>Northwestern University Feinberg School of Medicine

**S2.25: Effects of health behavior interventions among people with cancer - development, adherence, early results, and future design considerations for remote and supervised randomized controlled trials, Kiri Te Kanawa Theatre, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Nutrition and physical activity are associated with quality of life and cancer mortality, but adherence to health behavior guidelines among cancer survivors remains low. Identifying which tools and resources best support the adoption of sustained healthy behaviors is warranted to improve length and quality of life for cancer survivors.

**Methods:** We are using the Multiphase Optimization Strategy (MOST) framework to optimize a home-based behavioral intervention for cancer survivors. In a 48-week (wk.) full-factorial experiment, we are testing 4 intervention components: 15 health coaching calls (on/off), 4 support person coaching calls (on/off), 4 text messages per wk. (on/off), and digital health toolkit (activity tracker and diet tracking app vs. paper logbook). Our primary outcome is change in the American Cancer Society (ACS) guideline score based on physical activity, diet, and BMI (range: 0-6). Participants are recruited throughout the United States (target N=400). Eligibility criteria include a diagnosis of bladder, breast, colon, endometrial, kidney, ovarian, prostate or rectal cancer; ≥18 years of age; English or Spanish fluency; own a smartphone; completed therapy, and ACS score ≤4. Participants receive a booklet and are randomized to 1 of 16 combinations of the intervention components. Outcomes assessed at 24- and 48-wks include change in ACS score and its components; adherence; and biomarkers of insulin metabolism, inflammation, and the gut microbiome.

**Results:** Between October 2021-September 2024, 1,108 cancer survivors have completed the screening survey. Of these, 370 (33%) were potentially eligible. Reasons for ineligibility include ACS score >4 (40%), no support person (26%), recent use of both an activity tracker and diet app (20%), and no history of cancer or ineligible cancer type (19%). Among potentially eligible participants, 278 (75%) have consented and 124 have been randomized to date. Recruitment is on-going.

**Conclusions:** This study will inform the design of a definitive RCT to determine the effect of an optimized home-based behavioral intervention on biological and clinical cancer outcomes. ClinicalTrials.gov Identifier: NCT05056077

## Intense exercise for survival among men with metastatic prostate cancer: 12-month feasibility results from the INTERVAL-GAP4 trial

Dr. Stacey Kenfield<sup>1</sup>, Dr. Nicolas Hart<sup>2</sup>, Ms. Jennette Sison<sup>1</sup>, Dr. June Chan<sup>1</sup>, Dr. Erin Van Blarigan<sup>1</sup>, Ms. Leah Ung<sup>1</sup>, Dr. Li Zhang<sup>1</sup>, Dr. Rosemary Greenwood<sup>3</sup>, Dr. Kerry Courneya<sup>4</sup>, Dr. Fred Saad<sup>5</sup>, **Dr. Robert Newton<sup>6</sup>**

<sup>1</sup>University of California, San Francisco, <sup>2</sup>University of Technology Sydney, <sup>3</sup>University of York, <sup>4</sup>University of Alberta, <sup>5</sup>Université de Montréal, <sup>6</sup>Edith Cowan University

**S2.25: Effects of health behavior interventions among people with cancer - development, adherence, early results, and future design considerations for remote and supervised randomized controlled trials, Kiri Te Kanawa Theatre, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Intense Exercise for Survival among Men with Metastatic Prostate Cancer (INTERVAL-GAP4) randomized controlled trial (RCT) is evaluating the effects of high-intensity aerobic and resistance exercise vs. control on overall survival in men with metastatic prostate cancer. We describe the demographic characteristics, completion rates, and exercise adherence over the initial 12 months.

**Methods:** INTERVAL-GAP4 was designed as a multi-center phase III global RCT. Participants were randomly allocated (1:1) to: high-intensity supervised resistance + aerobic exercise for 1 year tapering to self-management in year 2; or self-directed, unsupervised exercise with information resources (control). Patients were stratified by site and disease/treatment status (metastatic hormone-sensitive prostate cancer [mHSPC] or metastatic castration-resistant prostate cancer [mCRPC] and if the latter, treatment modality). The study closed to enrollment in February 2023.

**Results:** 232 patients consented across 18 sites between April 2016-November 2022 and 145 patients were randomized (75 intervention and 70 control). Main reasons for exclusion were not meeting clinical criteria (N=31), comorbid conditions (N=17), failed cardiopulmonary exercise test (N=13), other medical reason (N=12), and time commitment (N=6). Median age at randomization was 70 years (IQR: 64, 74), median BMI was 28.7 kg/m<sup>2</sup> (IQR: 25.6, 31.5), 86% identified as white, and time since diagnosis was 3.7 years (IQR: 1.5, 7.9). 39 participants (27%) had mHSPC and 106 (73%) had mCRPC. Completion rates were - of 142 alive at 6 months, 82% completed surveys, 74% exercise testing, and 73% biological samples; of 134 alive at 12 months, 78% completed surveys, 67% testing, and 69% biological samples. The survival outcome is available for 97% of participants at 12 months. 68 intervention participants were alive at 12 months and median exercise adherence was 84% (IQR: 67%, 94%). Adherence was not different by mCRPC vs. HSPC status (p=0.76). 7 participants died within year 1; those randomized to the intervention arm stopped exercise a median 73 days [IQR: 38, 97] before death.

**Conclusions:** Exercise training was feasible in men with metastatic prostate cancer with no difference observed in exercise session adherence by disease status. Survey completion was high; in-person protocol completion rates were affected by the COVID-19 pandemic.

## Selecting a Core Measures Set for PABs' Determinants in 9-12 old Children: a DE-PASS study

**Dr. Antonio Palmeira**<sup>1,2</sup>, Dr. Judith Jelsma<sup>3,4</sup>, Dr. Eduarda Sousa-Sa<sup>1,7</sup>, Dr. Sara Pereira<sup>1,2</sup>, Dr. António Videira-Silva<sup>1,2</sup>, Dr. Giancarlo Condello<sup>5</sup>, Prof. Ciaran MacDonncha<sup>6</sup>, Prof. José Carlos Ribeiro<sup>7</sup>, Prof. Mekdes Gebremariam<sup>9</sup>

<sup>1</sup>CIDEFES, Universidade Lusófona, <sup>2</sup>CIFI2D, Faculty of Sport, University of Porto, <sup>3</sup>Amsterdam UMC location Vrije Universiteit Amsterdam, Department of Public and Occupational Health,

<sup>4</sup>Amsterdam Public Health Research Institute, Health Behaviors & Chronic Diseases,

<sup>5</sup>Department of Medicine and Surgery, University of Parma, <sup>6</sup>Department of Physical Education and Sport Sciences and Health Research Institute, University of Limerick, <sup>7</sup>Research Center in Physical Activity Health and Leisure (CIAFEL); Faculty of Sport - University of Porto,

<sup>8</sup>Laboratory for Integrative and Translational Research in Population Health (ITR), <sup>9</sup>Department of Community Medicine and Global Health, Institute of Health and Society, University of Oslo

### **S2.26: Towards better identification and understanding of determinants of Physical Activity Behaviours across settings and ages, Hunua 1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** In sizeable multidisciplinary research teams, finding the balance between using the most appropriate and needed measures for data collection and minimising participant burden is often a significant challenge. This report addresses the procedures developed and implemented in the DE-PASS study, which involved a large multidisciplinary team, to select a set of measures for behavioural, individual, psychological, environmental, and socio-cultural determinants of physical activity behaviours in 9-12 years old.

**Methods:** An internal small group (n=8) worked iteratively with an external large group of experts and stakeholders (n=30-50) in three steps: 1) External input – Identification through expert opinion; 2) Internal input – Identification and selection via a systematized approach; 3) External validation of the selected measures.

**Results:** As a result of these steps, 113 measures were first identified, then scored, sorted, and selected using evidence-building practices such as systematic literature reviews, peer-review, and consensus discussions. The final list encompassed 18 selected measures, which were agreed upon and included in child and caregiver questionnaires. Pragmatism, implementation concerns, and the experts' experience were key in the final selection decisions.

**Conclusion:** The procedures encompassed in this report resulted in 18 measures, included in children and caregiver versions of the instruments package, and this report resulted in a proof-of-concept research harmonisation deliverable within DE-PASS. This study reports on several measure selection procedures that are not usually disseminated. As such, we hope it may be considered an example to others involved in the challenge of selecting measures in their research. (this submission was funded by the DE-PASS, EU COST CA19101)

## DE-PASS Best Evidence Statement (BEST) on modifiable determinants of physical activity in youth

Dr. Anna Marcuzzi<sup>2</sup>, Dr. Mohammed Khudair<sup>3</sup>, Dr. Kwok Ng<sup>4,5</sup>, Dr. Gavin Tempest<sup>1</sup>, Mr. Ratko Peric<sup>6</sup>, Mr. Frantisek Bartos<sup>7</sup>, Mr. Maximilian Maier<sup>8</sup>, Dr. Mirko Brandes<sup>9</sup>, Dr. Angela Carlin<sup>10</sup>, Dr. Simone Ciaccioni<sup>11</sup>, Dr. Cristina Cortis<sup>12</sup>, Dr. Chiara Corvino<sup>13</sup>, Dr. Andrea Di Credico<sup>14</sup>, Dr. Patrik Drid<sup>15</sup>, Dr. Francesca Galle<sup>16</sup>, Dr. Pascal Izzicupo<sup>14</sup>, Dr. Henriette Jahre<sup>17</sup>, Dr. Athanasios Kolovelonis<sup>18</sup>, Prof. Evangelia Kouidi<sup>19</sup>, Prof. Paul Mork<sup>2</sup>, Dr. Federico Palumbo<sup>11</sup>, Dr. Penny Rumbold<sup>1</sup>, Mr. Petru Sandu<sup>20</sup>, Dr. Mette Stavnsbo<sup>21</sup>, Dr. Ioannis Sympas<sup>18</sup>, Dr. Sofia Vilela<sup>22</sup>, Prof. Catherine Woods<sup>5</sup>, Dr. Kathrin Wunsch<sup>23</sup>, Prof. Laura Capranica<sup>11</sup>, Prof. Ciaran MacDonncha<sup>5</sup>, **Dr. Fiona Chun Man Ling<sup>1</sup>**

<sup>1</sup>Department of Sport, Exercise and Rehabilitation, University, <sup>2</sup>Department of Public Health and Nursing, Norwegian University of Science and Technology, <sup>3</sup>School of Psychology, Cardiff University, <sup>4</sup>School of Educational Sciences and Psychology, University of Eastern Finland, <sup>5</sup>Department of Physical Education and Sport Sciences, <sup>6</sup>Exercise Physiology Laboratory, OrthoSport Banja Luka, <sup>7</sup>Department of Psychology, University of Amsterdam, <sup>8</sup>Department of Psychology, University College of London, <sup>9</sup>Department of Prevention and Evaluation, Leibniz Institute for Prevention Research and Epidemiology, <sup>10</sup>Centre for Exercise Medicine, Physical Activity and Health, Sport and Exercise Sciences Research Institute, University of Ulster, <sup>11</sup>Department of Movement, Human and Health Sciences, University of Rome "Foro Italico", <sup>12</sup>Department of Human Sciences, Society and Health, University of Cassino and Lazio Meridionale, <sup>13</sup>Department of Psychology, Università Cattolica del Sacro Cuore, <sup>14</sup>Department of Medicine and Aging Sciences, University "G. d'Annunzio" of Chieti-Pescara, <sup>15</sup>Faculty of Sport and Physical Education, University of Novi Sad, <sup>16</sup>Department of Medical, Movement and Wellbeing Sciences, University of Naples Parthenope, <sup>17</sup>Department of Physiotherapy, Oslo Metropolitan University, <sup>18</sup>Department of Physical Education and Sport Science, University of Thessaly, <sup>19</sup>Laboratory of Sports Medicine, Department of Physical Education and Sports Science, Aristotle University of Thessaloniki, <sup>20</sup>National Institute of Public Health in Romania, <sup>21</sup>Department of Sport Science and Physical Education, Faculty of Health and Sport Sciences, University of Agder, <sup>22</sup>Laboratory for Integrative and Translational Research in Population Health (ITR); EPIUnit - Institute of Public Health, Institute of Public Health, <sup>23</sup>Institute of Sports and Sports Science, Karlsruhe Institute of Technology

### **S2.26: Towards better identification and understanding of determinants of Physical Activity Behaviours across settings and ages, Hunua 1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Physical inactivity is deemed a global epidemic, but interventions that target children and adolescents have largely failed to get the population more active. Interventions generally target modifiable determinants associated with physical activity (PA) and sedentary behaviours (SB) as a means to enact behavior change, however, evidence of the associations between modifiable determinants and PA/SB is fragmented, and the effect of interventions on changing the determinants is lacking. There is also limited evidence on which determinants work for who and under what settings. Therefore, the aim of this study is to identify key modifiable determinants and their associations with PA/SB in youth (5-19yrs) in settings, through four systematic reviews and the results are summarized (i.e. children device-based measurement, children self-report measurement, adolescent device-based measurement, adolescent self-report measurement).

**Methods:** We conducted systematic reviews of randomized controlled trials (RCTs) and controlled trials (CTs) that target device-based and self-reported PA/SB in children and

adolescents. Studies were searched from Medline, PsycINFO, Web of Science, Sport Discus and CENTRAL. Robust Bayesian meta-analyses were conducted where possible.

Results: Of the 102,560 studies identified, 15-38 studies were included, depending on the individual systematic reviews. Results showed that modifiable determinants were mainly individual and interpersonal determinants. Settings include school, family/home, community and a combination of them. There was mostly negligible to small evidence of the presence of intervention effects on modifiable determinants and PA/SB in all settings. Several determinants analysed descriptively showed moderate-large effects, but corresponding changes in PA/SB were absent.

Conclusions: Associations between modifiable determinants and PA/SB remained uncertain in all settings, partly due to interventions have not been effective in modifying targeted determinants. Attention is warranted for several determinants that have been successfully modified but without corresponding PA/SB change. Our results question if RCTs/CTs serve the intervention purpose. There is growing emphasis on involving stakeholders and target populations in intervention design. Although every intervention might look different, such approach may better advance our understanding of which determinants work for who, how, and in what settings. Importantly, PA/SB interventions for children and adolescents should consider targeting policy/organizational determinants, in addition to individual/interpersonal determinants, following the whole-systems approach. (on behalf of DE-PASS consortium)

## Modifiable determinants of physical activity behaviors in older adults: A DE-PASS systematic review and meta-analysis.

Dr. Sofie Compernelle<sup>1</sup>, Mr. Simone Ciacconi<sup>2</sup>, **Prof. Greet Cardon<sup>1</sup>**, Mrs. Maren Lurfald Lurfald<sup>3</sup>, Mr. Federico Palumbo<sup>2</sup>, Mrs. Floriana Fadda<sup>4</sup>, Mrs. Ginevra Toma<sup>4</sup>, Prof. Cristina Cortis<sup>5</sup>, Prof. Paul Jarle Mork<sup>3</sup>, Prof. Laura Capranica<sup>2</sup>, Prof. Ciaran MacDonncha<sup>6</sup>, Prof. Linda Ernsten<sup>3</sup>

<sup>1</sup>Department of Movement and Sports Sciences, Ghent University, <sup>2</sup>Department of Movement, Human and Health Sciences, Division of Human Movement and Sport Sciences, University of Rome Foro Italico, <sup>3</sup>Department of Public Health and Nursing, Norwegian University of Science and Technology, <sup>4</sup>Department of Public Health, Pharmacy and Medicine, University of Rome La Sapienza, <sup>5</sup>Department of Human Sciences, Society and Health, University of Cassino and Lazio Meridionale, <sup>6</sup>Department of Physical Education and Sport Sciences, Health Research Institute, University of Limerick

### S2.26: Towards better identification and understanding of determinants of Physical Activity Behaviours across settings and ages, Hunua 1, June 13, 2025, 8:00 AM - 9:15 AM

Purpose: To summarize evidence on modifiable determinants of older adults' physical activity and sedentary behavior in community and healthcare settings.

Methods: A search of (randomized) controlled trials was performed in PubMed, EBSCOhost, and Web of Science. Studies addressing modifiable determinants of physical activity (PA) and sedentary behavior (SB) in community-based and healthcare settings were included. Risk of bias assessment was performed with Cochrane's tools. Modifiable determinants were categorized into clusters based on a transdisciplinary consensus framework for sedentary behavior across the life course. Random effects models were performed to conduct the meta-analysis of studies reporting device-based PA (steps per day and minutes of moderate-to-vigorous physical activity [MVPA] per day) and SB (minutes per day). The standardized between-group mean difference (SMD) and 95% confidence interval (CI) were used as effect sizes.

Results: From 31,727 individual records, 52 eligible randomized controlled trials were published between 2012–2022. Self-reported and device-based PA/SB were identified for 9,112 individuals across community and healthcare settings. Quality of life and functional fitness were the most frequently reported determinants. Postintervention differences of interventions focusing on physical health and wellbeing determinants revealed an increase in steps (SMD= 0.46; 95%CI= 0.15–0.77) and minutes of MVPA (SMD= 0.41; 95%CI= 0.19–0.64) compared to controls, whereas interventions targeting psychological or behavioral determinants showed no differences in steps (SMD= 0.10; 95%CI= - 0.12–0.32) and MVPA (SMD= 0.26; 95%CI= - 0.24–0.75). Interventions on physical health and wellbeing determinants showed significant heterogeneity. Setting-based moderation analysis (community vs healthcare) did not reveal significant results. Still, subgroup analyses showed a significant effect for intervention studies conducted in community settings (SMD= 0.42; 95%CI= 0.07 to 0.77), whereas a non-significant effect was found in studies from health-care settings (SMD= 0.26; 95%CI= - 0.10 to 0.62). No significant reductions in SB were observed.

Conclusion: Despite significant heterogeneity, our meta-analysis demonstrates that interventions focusing on physical health and wellbeing can increase physical activity in older adults. However, further research is essential to fully understand the determinants of physical

activity and sedentary behavior across different settings, particularly those related to psychological, behavioral, social, and environmental factors. (on behalf of COST Action CA19101 DE-PASS)



# The Youth Activity Profile as a Monitoring Tool for the Hungarian Active School Program

**Dr. Mónika Kaj<sup>1</sup>**, Dr. Tamás Csányi<sup>1,2</sup>, Dr. Alexandra Cselkó<sup>1</sup>, Dr. Katalin Kälbli<sup>1,3</sup>

<sup>1</sup>Hungarian School Sport Federation, <sup>2</sup>Hungarian University of Sports Science, <sup>3</sup>ELTE, Bárczi Gusztáv Faculty of Special Needs Education

**S2.28: International applications of the Youth Activity Profile (YAP) tool to enhance the assessment and promotion of physical activity in youth, Hunua 3, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** This presentation will highlight how the Hungarian School Sport Federation integrated and used the Youth Activity Profile (YAP) tool to evaluate the effects of its new, complex physical activity (PA)-based health promotion intervention in Hungary, called the Active School Program. The Active School Program was launched in 2023 with 304 schools and now involves 422 schools. The program aims to create a more physically active environment in schools to help youth meet the World Health Organization (WHO) recommendation of at least 60 minutes of PA per day. The program consists of five main intervention areas: (1) school sport, (2) physical education, (3) a health-promoting environment, (4) partnerships and communication, and (5) student engagement. The program is supported by an IT system that allows schools to access various professional resources, monitor their progress, and document their achievements.

**Methods:** To assess the program's effectiveness, students in all participating Active Schools (fifth grade and above) completed a 46-item online questionnaire to evaluate (1) their PA levels, (2) perceptions of school sports programs and activities, and (3) overall well-being at school. This questionnaire includes all the YAP questions, which assess moderate to vigorous PA at different time segments of the day. The evaluation focused on the percent of youth that meet the WHO recommendation of 60 minutes of daily PA. However, results are also provided to schools in a digital feedback report generated by the Active School IT system, identifying further intervention opportunities and areas for improvement.

**Results:** The survey was first conducted in Spring 2024, involving 16,540 students (boys: 8,074, 48.81%) from grades 5 to 12 across 156 Active Schools (average age:  $13.43 \pm 2.18$  years). Overall, 49.3% of the students met the WHO PA recommendation, which is significantly higher than the international and national averages of around 20% (WHO, 2020).

**Conclusion:** The YAP tool is a straightforward and effective method for tracking students' PA levels in school level, which is a key area for measuring the effectiveness of the Active School Program. Regularly repeating these assessments provides valuable insights into the effectiveness of national PA intervention programs.

## Use of the Youth Activity Profile in evaluation of physical activity among Czech and Polish adolescents

**Prof. Josef Mitáš<sup>1</sup>**, Dr. Karel Frömel<sup>1,2</sup>, Dr. Lukáš Jakubec<sup>1</sup>, Dr. Dorota Groffik<sup>2</sup>, Dr. Greg Welk<sup>3</sup>  
<sup>1</sup>Palacký University, <sup>2</sup>The Jerzy Kukuczka Academy of Physical Education, <sup>3</sup>Iowa State University

**S2.28: International applications of the Youth Activity Profile (YAP) tool to enhance the assessment and promotion of physical activity in youth, Hunua 3, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** The Youth Activity Profile (YAP) provides many advantages for school-based physical activity (PA) assessment but a key feature is the ability to provide rapid feedback to students, teachers, school administrators and parents. The purpose of this presentation is to summarize applications of the YAP in the Czech Republic and recent research outcomes designed to evaluate and refine PA surveillance strategies.

**Methods:** The research was conducted between 2018 and 2023 in 25 high schools in the Czech Republic and 21 high schools in Poland. The Czech and Polish versions of the YAP were translated according to EORTC and estimates of PA from the YAP were compared with matched data from ActiGraph GT9X LINK and wGT3X accelerometers. The study also examined agreement between YAP estimates and values from the International Physical Activity Questionnaire (IPAQ). The presentation provides an overview of standardization and comparison to previously used methods and introduces simple and more practical recommendations.

**Results:** The national YAP calibration process addressed some 'translational' issues with additional culturally dependent comments needed to standardize the tool. The correlations between PA estimates ranged from 0.23-0.50 on weekdays and 0.23-0.58 on weekend days. The IPAQ and YAP both detect PA differences between gender groups, but provide different insights. The IPAQ aligns well with global PA recommendations, while the YAP provides more specific insights into school-based PA which are better suited to the needs of students and school administrators. Experience with these recommendations in schools has shown increased student interest in meeting PA guidelines, as well as improved collaboration between teachers and students in achieving comprehensive school PA and education programs.

**Conclusion:** Aligning PA recommendations derived from questionnaires with those targeting specific segments of the school day could improve adolescents' understanding of PA guidelines and enhance their physical and health literacy. Future work will explore the impact of using the proposed PA recommendations on youth PA behavior. The calibrated algorithm for estimating moderate to vigorous PA has not yet been fully standardized for the Czech and Polish adolescents and is on the list of next steps as well as online tool to update the latest formulas.

## Multi-Country Evaluation of the Youth Activity Profile (YAP) Web-based Platform for International Applications

**Dr. Greg Welk<sup>1</sup>**, Dr. Johannes Jaunig<sup>2</sup>, Dr. Roseane de Fatima Guimaraes Czelusniak<sup>3</sup>, Dr. Michael Pereira da Silva<sup>4</sup>

<sup>1</sup>Iowa State University, <sup>2</sup>University of Graz, <sup>3</sup>Université du Québec à Trois-Rivières,

<sup>4</sup>Universidade Federal do Rio Grande

**S2.28: International applications of the Youth Activity Profile (YAP) tool to enhance the assessment and promotion of physical activity in youth, Hunua 3, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Research has supported the reliability, validity and utility of the Youth Activity Profile (YAP) assessment tool for a variety of school-based research applications. The purpose of this presentation is to summarize outcomes and insights from applications in the U.S. and to highlight progress from international pilot studies being conducted to facilitate cross-cultural comparisons and international youth physical activity (PA) surveillance.

**Methods:** The development of a robust content management tool and associated training resources has facilitated use of the YAP for both research and practice applications in the U.S. New features in the online platform has facilitated international applications by streamlining the translation process and pilot projects are underway in multiple countries. The presentation will provide an overview of the online YAP tool used in the U.S. and preliminary pilot results from international collaborators evaluating the translation capabilities and utility in Austria (German), Canada (French) and Brazil (Portuguese).

**Results:** National and international comparisons of PA profiles require careful consideration of the social and environment context where data are collected as well as how PA is viewed and interpreted by the target population. The online platform and empirical nature of the YAP calibration process address some 'translational' issues; however the series of formative, descriptive and cross-validation studies has provided new insights about needs to standardize evaluations for cross-cultural comparisons. The three different pilot studies each explored different issues but collectively they provide insights needed to facilitate broader international adoption of the YAP. The first pilot study in Austria followed rigorous language translation steps and cognitive testing to evaluate the utility of the translated tool for assessing PA in German-speaking youth. The second pilot study evaluated the validity of the French Canadian translation of the tool (relative to estimates from wrist worn monitors). The third pilot combined elements of the first two pilot studies to examine both the validity and utility for school-based assessment using a Portuguese translation for Brazilian youth.

**Conclusion:** The development of a robust content management system for the YAP has facilitated utilization in school-based settings and new translation capabilities offer potential for standardized data collection and applications in other countries.

## Mentorship, collaboration and support to facilitate the participation of low-middle-income countries in Global Matrix initiatives: Experiences from Indonesia

**Dr. Agus Mahendra<sup>1</sup>**, Dr. Dian Budiana<sup>1</sup>, Mr. Didin Budiman<sup>1</sup>, Dr. Lukmannul Haqim Lubay<sup>1</sup>, Ms. Mesa Rahmi Stephani<sup>1</sup>, Ms. Wulandari Putri<sup>1</sup>, Other Anira -<sup>1</sup>, Mr. Gano Sumarno<sup>1</sup>, Mr. Ricky Wibowo

<sup>1</sup>*Universitas Pendidikan Indonesia*

**S2.29: It just takes a spark to light a fire: Building capacity and understanding of child physical activity in low- and middle-income countries through Global Matrix initiative, Waitakere 1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** To discuss the significance of gaining valuable experience in developing the first Physical Activity Report Card for Indonesia and participating in the Global Matrix 4.0 organized by the Active Healthy Kids Global Alliance (AHKGA). We highlight the significant guidance, collaboration and resource support that facilitated the development of the 2022 Indonesia Report Card.

**Methods:** Indonesia received dedicated funding from the AHKGA to support the development and release of its first Report Card and participate in the Global Matrix 4.0. With guidance from AHKGA, a national team of experts obtained data from mostly grey literature and national annual reports on the participation of children and adolescents in physical activity. The data were synthesized using the AHKGA Global Matrix benchmarks and assessment rubric.

**Results:** Funding and mentorship support from the AHKGA facilitated Indonesia's 2022 Report Card, which provided the most comprehensive data synthesis on child and adolescent physical activity in Indonesia to date. The grades for individual movement behaviours (Physical Activity, Organized Sports, Active Play, and Physical Fitness) were all "F". Active Transportation received "D-", and Sedentary Behaviour received "B". Two sources of influence also received an "F" (Family and Peers, School). In contrast, the other two sources of influence (Community and Environment, Government) were assigned "D+" and "B-" respectively. Involvement in the Global Matrix hopefully can become a resource for advocating for government and private sector support and interventions responsible for physical activity improvement. Future participation in this important advocacy initiative is anticipated to help develop and advance physical activity surveillance and government investment and support in this field.

**Conclusions:** Following in the footsteps of other participating countries, AHKGAs ongoing guidance, resource support, and targeted capacity-building efforts can facilitate sustainable and reliable physical activity monitoring among children and adolescents in resource-constrained LMICs. The support received allowed Indonesia to participate in a harmonized international initiative to develop a comprehensive Report Card, thus contributing to global efforts to create strong and comparable physical activity oversight to collectively power the movement to get kids moving.

## Mentorship, collaboration and support to facilitate the participation of low-middle-income countries in Global Matrix initiatives: Experiences from Nepal

**Dr. Narayan Subedi**<sup>1,2</sup>, Ms. Ashmita Karki<sup>3</sup>, Mr. Sudip Nepal<sup>4</sup>, Dr. Susan Paudel<sup>1,2</sup>

<sup>1</sup>Nepal Development Society, <sup>2</sup>School of Exercise and Nutrition Sciences, Institute for Physical Activity and Nutrition, Deakin University, <sup>3</sup>School of Health, Medical and Applied Sciences, Central Queensland University, <sup>4</sup>Universitas Gadjah Mada

**S2.29: It just takes a spark to light a fire: Building capacity and understanding of child physical activity in low- and middle-income countries through Global Matrix initiative, Waitakere 1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** To discuss experiences from Nepal of dedicated mentorship, collaboration, and continuous facilitation for participation in the Active Healthy Kids Global Alliance (AHKGA)'s Global Matrix initiatives for physical activity (PA) surveillance among children and adolescents. We highlight how Nepal initiated the first AHKGA registration and continued participating in developing and presenting results from Report Cards included Global Matrixes 3.0 and 4.0.

**Methods:** A team of Nepali researchers engaged/interested in PA was formed. The team identified, synthesized, and summarized the best available evidence, and policy documents related to PA of children and adolescents in Nepal. We followed the AHKGA's Global Matrix harmonized process using the common indicators, benchmarks and grading rubrics to assign Report Card grades. The Nepal team reached consensus on the final grading which was reviewed by the AHKGA mentor.

**Results:** In coordination with AHKGA, we developed, launched and disseminated Nepal's Report Cards through international platforms. We received monthly e-blasts that informed and guided us throughout the Report Card development process. For our first Report Card, regular meetings (4 meetings) with the Asian region mentor helped resolve confusion on identifying appropriate data sources and assigning grades to the indicators. This experience allowed us to independently lead and develop our second Report Card. Altogether, 9 researchers/students were trained for PA surveillance in Nepal through the Global Matrix initiative. We also co-authored four scientific papers. We found an increase in PA data sources. There was no major difference in indicator grades (Physical Activity, Organized Sport, Active Play, Active Transportation, Sedentary Behavior, Family and Peers, School, Community and Environment, Government) between the report cards. Participation in the Global Matrix initiative helped to extend our international connections with global PA experts and build the capacity of Nepali researchers for PA surveillance. The Report Card has become the tool for advocacy on PA in Nepal.

**Conclusions:** Our experience suggests that initial and ongoing mentorship and support from AHKGA were crucial for developing our capacity for PA surveillance in Nepal, leading to two successful iterations of Report Cards and linking Nepal to this global network.

## Mentorship, collaboration and support to facilitate the participation of low-middle-income countries in Global Matrix initiatives: Experiences from Zimbabwe

**Taru Manyanga**<sup>1</sup>, Dr. Daga Makaza<sup>2</sup>, Ms. Khanyile Dlamini<sup>2</sup>, Ms. Anesu Madondo<sup>3</sup>, Dr. Carol Mahachi<sup>4</sup>, Dr. Paul Makoni<sup>5</sup>, Dr. Nyaradzai Munambah<sup>6</sup>, Mr. Tholumusa Mlalazi<sup>7</sup>, Dr. Tonderayi Matsungu<sup>8</sup>

<sup>1</sup>*Division of Medical Sciences, University of Northern British Columbia,* <sup>2</sup>*Department of Sport Science and Coaching, National University of Science and Technology,* <sup>3</sup>*Department of Physiotherapy, National Star College,* <sup>4</sup>*Physiology Unit, Biomedical Sciences Department, Faculty of Medicine and Health Sciences, University of Zimbabwe,* <sup>5</sup>*Research and Internationalization Office, National University of Science and Technology,* <sup>6</sup>*Department of Occupational Therapy and Physiotherapy, School of Allied Health Sciences, University of Namibia,* <sup>7</sup>*Curriculum Development and Technical Services, Ministry of Primary and Secondary Education,* <sup>8</sup>*Department of Nutrition, Dietetics and Food Sciences, University of Zimbabwe*

**S2.29: It just takes a spark to light a fire: Building capacity and understanding of child physical activity in low- and middle-income countries through Global Matrix initiative, Waitakere 1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** To discuss the importance and impact of having dedicated mentorship, collaboration, and resource support for participation in the Active Healthy Kids Global Alliance (AHKGA)'s Global Matrix (GM) initiatives for the surveillance of physical activity among children and adolescents in low-middle-income countries (LMICs). This presentation highlights Zimbabwe's first-time registration and its ensuing success in developing and presenting results from three successive Report Cards (GM 2.0 to 4.0).

**Methods:** Using AHKGA's GM benchmarks and grading rubric, a team of Zimbabwean experts followed the prescribed harmonized approach to assign Report Card grades on internationally agreed-upon indicators of physical activity for children and adolescents. After synthesizing the best available evidence, unweighted averages of all studies providing data for each indicator were used to inform grade assignment. Following a meeting on the data appraisal and the grade assignment process, the Zimbabwe team assigned grades for each of the indicators. Discrepancies in grades were discussed, and final grades were assigned after consensus and audit by AHKGA.

**Results:** With guidance from the AHKGA, plans were executed to develop, launch, and promote the first Zimbabwe Report Card in 2016. Since first participation, Zimbabwe's grades for individual behaviours (Physical Activity, Organized Sport, Active Play, Active Transportation, Sedentary Behaviours) have typically been higher than for sources of influence (Family and Peers, School, Community and Environment, Government). Report Card grades spanning the three Global Matrices show that the Overall Physical Activity grade (C+) did not change, whereas the grades for Community and Environment (F, D, C-) steadily improved. Grades for Active Transportation, Sedentary Behaviours, and Organized Sport remained unchanged for GM 2.0 and 3.0, but declined for GM 4.0. Zimbabwe's participation in the GM initiative advanced PA surveillance, knowledge mobilization, academic outputs, and advocacy capacity while significantly advancing global networking connections.

**Conclusions:** AHKGA's initial, and ongoing mentorship, resource support, and targeted capacity building efforts can facilitate sustainable and reliable physical activity surveillance among

children and adolescents in resource-limited LMICs. Such support enabled Zimbabwe to participate in a harmonized international initiative to develop comprehensive Report Cards, thus, contributing to the global effort of creating robust and comparable PA surveillance.

## Toowoomba Healthy Towns: An intergenerational citizen science initiative

**Prof. Tracy Kolbe-alexander**<sup>1,2</sup>, Dr. Paul Gardiner<sup>3,1</sup>, Mrs. Anne Banchoff<sup>4</sup>, Mr. Adam Schmidt<sup>1</sup>, Ms. Melinda Covey-Hansen<sup>1</sup>, Prof. Abby King<sup>4</sup>

<sup>1</sup>*School of Health and Wellbeing and Centre for Health Research, University of Southern Queensland*, <sup>2</sup>*Division of Exercise Science and Sports Medicine, Department of Human Biology, Faculty of Health Sciences, University of Cape Town*, <sup>3</sup>*School of Public Health, The University of Queensland*, <sup>4</sup>*Stanford Prevention Research Center, Stanford University School of Medicine*

### **S2.30: Culturally Relevant Citizen Science for Enhancing Community Wellbeing and Built Environment Advocacy, Waitakere 2, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** The prevalence of physical inactivity and poor health outcomes is higher in Australia's regional and rural areas compared to their urban counterparts. The main aim of this study was to use the Our Voice citizen science research method to investigate factors that help or hinder physical activity (PA) choices across the life course.

**Methods:** The study was conducted in Oakey and Toowoomba, regional towns in Australia. An intergenerational approach was used to gain the unique perspectives of the built environment influencing PA. Three groups of citizen scientists (CS) were recruited: children 10-12 years (n=11), adults (n=12), and older adults >65 years (n=10). CS completed a 'discovery walk' in their neighbourhood taking photos of things that help or hinder PA. They rated each photo and provided a narrative explaining their reason for taking the photo. Once all CS completed the walk, they met for a group discussion to analyse the photo's arranging them into themes and highlighting priority actions. CS then advocated for the actions to the local council.

**Results:** Across the 3 groups, 567 photographs were collected, 279 supported and 249 hindered PA choices with the remaining photographs rated both positive and negative. One of our main findings was the similarity of some of the themes that emerged across the three age groups: crossings, pavement and walkways, and safety. This demonstrates the importance of these particular determinants from a life course perspective. The main priorities the children wanted addressed were safer crossings, pavements /walkways, safety, destinations, and access to cold water for drinking at water fountains. Similar to the children, adults and older adults suggested that crossings be marked with different coloured paint to the street to make them more visible. The availability of "smart seating" and anti-social behaviour were themes that emerged for the older adult CS only. Four CS delivered a presentation to a local council committee their recommendations have informed the council's Walking Network Plan.

**Conclusion:** This initiative highlights the role that CS can play in advocating for change. Improving aspects of the built environment.

## Enhancing neighbourhood liveability using culturally-relevant participatory research: Community Science Aotearoa

**Prof. Erica Hinckson**<sup>1</sup>, Dr. Vivienne Ivory<sup>2</sup>, Mrs. Julia McPhee<sup>1</sup>, Mrs. Megan Sommerville-Ryan<sup>1</sup>, Mr. Damian Powley<sup>3</sup>, Mrs. Ivy Llanera<sup>3</sup>, Prof. Albert Refiti<sup>4</sup>, Prof. Abby King<sup>5</sup>, Prof. Tania Ka'ai<sup>6</sup>, Prof. Scott Duncan<sup>1</sup>

<sup>1</sup>Auckland University of Technology, Faculty of Health and Environmental Sciences, Human Potential Centre, School of Sport and Recreation, <sup>2</sup>WSP Research & Innovation, <sup>3</sup>Isthmus, <sup>4</sup>Auckland University of Technology, Faculty of Design and Creative Technologies, Vā Moana Research Cluster, Art and Design, <sup>5</sup>Stanford University School of Medicine, Department of Epidemiology & Population Health, and Stanford Prevention Research Center, <sup>6</sup>Auckland University of Technology, Te Ipukarea Research Institute

### S2.30: Culturally Relevant Citizen Science for Enhancing Community Wellbeing and Built Environment Advocacy, Waitakere 2, June 13, 2025, 8:00 AM - 9:15 AM

**Background:** To implement for the first time a culturally-relevant engagement process for enhancing wellbeing in residents during urban redevelopment in Auckland, New Zealand.

**Methods:** Te Hotonga Hapori Community Engagement Framework (THHCEF) and Community Science Aotearoa Process (CSAP) were applied in four distinct areas of Auckland that were undergoing urban redevelopment. The CSAP was adopted from "Our Voice" Citizen Science for Health Equity method and incorporate the six steps of Engage, Discover, Discuss, Advocate, Change and Re-engage. Photos with narratives and wellbeing scores were captured using the THH app. Thematic analyses were conducted utilising a variety of evidence collected during workshops and sessions with residents and stakeholders.

**Results:** THHCEF was applied during the 3 years prior to data collection. Three Community Advocacy groups (n=4-6 residents/study area) completed the entire CSAP. Residents captured 267 photos and 267 audio-narratives describing their lived experiences during urban redevelopment. Being cared for, Safety, Connectivity, and Green Spaces were identified as future community aspirations. Residents spoke of neglect especially when amenities were broken and not fixed. Improvements in safety were highlighted referring to unsafe street parking and hazardous areas, where it reduced opportunities for accessing local environments. Neighbourhood connections were seen as critical and strengthened through shared spaces, events, and places that brought people together, though more facilities for community gatherings were needed. Residents highly valued the greenery, appreciating the trees and plants that enhanced their environment. Ease of actively getting around independently was also a concern, with issues related to public transport and convenience. Therefore, Safety and Surveillance, Illegal Dumping and Better Communication were prioritised as challenges that were important and feasible to advocate for change to local stakeholders. Implementation of THHCEF and CSAP were successfully applied in three of the four areas. Wellbeing scores reflected the stage of the area's redevelopment stage.

**Conclusions:** Initial outcomes indicate that embedding a culturally-responsive framework and process has led to greater community trust, commitment to participation, and activation of residents. Additional reflections will be shared on the lessons learned and the potential application of the THHCEF and CSAP for broader application in other diverse urban communities.

## Engaging Community Voices to Drive Cross-Cultural Collaboration and Action: Age-Friendly Coastside, Half Moon Bay, California

**Ms. Sofia A. Portillo<sup>1,2</sup>**, Dr. Sandra J. Winter<sup>3</sup>, Mrs. Maria I. Campero<sup>1</sup>, Mr. Zakaria Doueiri<sup>1</sup>,  
**Dr. Abby C. King<sup>1,2</sup>**

<sup>1</sup>*Department of Epidemiology and Population Health, Stanford University School of Medicine,*

<sup>2</sup>*Stanford Prevention Research Center, Department of Medicine, Stanford University School of Medicine,* <sup>3</sup>*Senior Coastsiders*

**S2.30: Culturally Relevant Citizen Science for Enhancing Community Wellbeing and Built Environment Advocacy, Waitakere 2, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** As communities confront the challenges and opportunities of an aging population, it is essential to support older residents in maintaining active, healthy lifestyles. This collaboration between the Our Voice Citizen Science for Health Equity Research Initiative and the Senior Coastsiders nonprofit aimed to identify activities that enhance the age-friendliness of Half Moon Bay (HMB), a California coastside community, and inform an application to the American Association of Retired Persons (AARP) Network of Age-Friendly States and Communities. The project brought together seniors who were primarily monolingual in Chinese, Spanish, or English.

**Methods:** Seventeen focus groups were conducted (N=89, ages 55-93) with diverse residents, half of whom were low-income, and included Latinx (N=12), Chinese (N=35), unhoused individuals (N=3), and community leaders (N=11). Participants also collected data using the multi-lingual Discovery Tool app, focusing on strengths and unmet age-related needs in their community. Participants then categorized their data into different thematic areas based on AARP's eight domains of livability, generated solutions, identified local allies, and prioritized action steps.

**Results:** Participants captured 83 photos and 86 audio-text comments describing their lived experiences at and around the Senior Coastsiders' community center. A community dinner and discussion event engaged 24 community members who reviewed the trilingual data reports and collaboratively developed actionable recommendations. The recommendations were presented to stakeholders, including the city mayor, and included in a successful application for membership of the AARP Network. The specific outcomes achieved by the Age Friendly Half Moon Bay Coastside coalition included: 1) formation of an oversight group; 2) enhanced local communications about senior-focused activities; 3) establishment of a healthcare access advocacy committee; and 4) facilitation of an affordable housing workshop.

**Conclusion:** Through targeted translation efforts and trilingual materials, participants were able to effectively engage in cross-cultural collaboration and action for a healthier community.

# Culturally Safe Conversations: Yarning Circles with Australian Aboriginal Early Years Workforce on Sustaining our Aboriginal infants and families through healthy eating and active play in the first 1000 days

**Ms. Fiona Mitchell<sup>1,2</sup>**, Dr. Jennifer Browne<sup>3</sup>, Dr. Penelope Love<sup>1</sup>, Prof. Rachel Laws<sup>1</sup>

<sup>1</sup>Deakin University, Institute for Physical Activity and Nutrition, <sup>2</sup>Deakin University, Deakin Rural Health, <sup>3</sup>Deakin University, Institute for Health Transformation

## **S2.31: Approaches to supporting Indigenous families with nutrition and movement behaviour in first 2000 days of life, Waitakere 3, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** To explore the views, experiences and preferences of the Australian Aboriginal early years workforce regarding the provision of information and support within existing service delivery to Aboriginal families in the first 1000 day.

**Methods:** Yarning circles were conducted during 2024. Data was collected through 2 yarning circles with a total of 21 participants. One yarning circle, (n=14), with the Koori Maternity Service (KMS) workforce was conducted in person and had a note taker in attendance. The second yarning circle (n=7) was with the Aboriginal maternal child health (AMCH) workforce and was online and recorded with participants consent. The recording was then transcribed. Reflective thematic analysis was used to identify the emerging themes.

**Results:** Participants at both yarning circles were a mix of Aboriginal health workers, Aboriginal maternal child health workers, midwives and nurses. The workforce highlighted the need for more trained Aboriginal early years workforce in early years nutrition, thereby enabling service delivery to be culturally safe. The provision of role models in the family, community and workforce was also raised to support Aboriginal mothers with breastfeeding, nutrition and active play. Considerations for the challenges of the current cost of living was also discussed in relation to nutrition and healthy eating.

**Conclusions:** This research will inform the co-design of targeted information and support on healthy eating and active play for Aboriginal families with infants aged 0-2 years, contributing to improved health outcomes for Australian Aboriginal and Torres Strait Islander infants and their families.

## Moemoeā– Strengthening Whānau Well-being through Māori-led Sleep Intervention Focused on Ritual

**Ms. Takiwai Russell-Camp**<sup>1</sup>, Prof. Rose Richards<sup>2</sup>, Dr. Jill Haszard<sup>3</sup>, Dr. Lou Fangupo<sup>1</sup>, Prof. Barbara Galland<sup>4</sup>, Prof. Rachael Taylor<sup>1</sup>, Prof. Justine Camp

<sup>1</sup>University of Otago, Department of Medicine, <sup>2</sup>University of Otago, Pacific Development,

<sup>3</sup>University of Otago, Biostatistics Centre, <sup>4</sup>University of Otago, Department of Women's and Children's Health

### **S2.31: Approaches to supporting Indigenous families with nutrition and movement behaviour in first 2000 days of life, Waitakere 3, June 13, 2025, 8:00 AM - 9:15 AM**

**Introduction:** Family rituals foster connection and naturally lead to routines that enhance sleep and overall well-being. This presentation discusses a Māori-led sleep intervention that leveraged Māori ritual to support whānau well-being and strengthen family connections through improved sleep among pēpi (infants) aged 2 to 12 months. We differentiate between the concepts of ritual and routine, illustrating why focusing on ritual can act as a decolonising tool within sleep science. By integrating Māori cultural practices, this intervention aligns more authentically with the realities of whānau, transcending mainstream adaptations into te reo Māori.

**Purpose:** This study sought to create culturally relevant measures of connectedness and wellbeing, moving beyond conventional Western metrics of 'healthy sleep.' The development of new measures enabled a more accurate and respectful representation of Māori values and practices within a sleep intervention framework. **Methods:** Our methods incorporated Kaupapa Māori methodology with core principles such as tino rangatiratanga, taonga tuku iho, and the extended whānau principle. The Whānau Tuatahi framework informed qualitative phases of the research, which included unstructured interviews with tikanga and te reo experts to explore Māori rituals relevant to whānau connection, whakatau wairua, and transitional practices. Subsequently, semi-structured interviews with whānau participants provided insights into sleep rituals, familial support, and engagement with well-child services.

**Findings:** Preliminary findings suggest that, while measurable sleep health impacts were limited, the intervention's co-design approach resonated with whānau, fostering appreciation for culturally congruent resources.

**Conclusion:** Whānau responses highlight the potential for ritual to serve as a culturally relevant framework that enhances connection and supports well-being, affirming the need for adaptable, Indigenous-led interventions that resonate with Māori lived experiences.

## The development and impact of culturally centred support and programs for Cree fathers and mothers

Dr. Patrick Lightning<sup>1</sup>, Dr. Reuel Purificati-Fuñe<sup>1</sup>, Dr. Luwana Listener<sup>1</sup>, Dr. Denise Young<sup>1</sup>, Dr. Marissa Saddleback<sup>1</sup>, Dr. Rhonda Bell<sup>1</sup>, Dr. Richard Olster<sup>1,2</sup>

<sup>1</sup>University of Alberta, <sup>2</sup>University of Alberta, Indigenous Wellness Core

### **S2.31: Approaches to supporting Indigenous families with nutrition and movement behaviour in first 2000 days of life, Waitakere 3, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Through a long-standing community-university partnership, we explored the development of a culturally centered, group-led support strategy for Cree fathers and men, and its impacts on wellbeing. In addition, we explored the views of Elders attended a neighbouring healthcare clinic to help provide better culturally appropriate perinatal care for Cree women and raise the cultural safety of the clinic. The overarching goal of the project is restoring and supporting healthy family systems and miyo pimatisiwin (living a good life).

**Methods:** A community-based participatory research approach was adapted to honour Cree ways of knowing and used iteratively co-determine the activities undertaken, data collection methods and approaches to analysis. Group-led support activities for fathers/men occurred from August 2021 to January 2023. Opportunities included recreational (e.g. floor hockey, basketball, pizza nights), learning (e.g. firearms training), cultural (e.g. horse therapy, family camp, ceremony such as sweats), and community support (e.g. delivering Christmas hampers) opportunities. Two Wisdom Circles provided qualitative data, along with meeting minutes, reflexive journals, photos, implementation notes, and community reports. Three Moms' Support and Healing Circles (MSHC) for mothers/women were held from May – July 2024. Community researchers and Elders lead activities focusing on culture, language, ceremony, food, time for discussions, laughing, and supporting one another. Attendees completed post-session surveys and invited to participate in a qualitative interview. Survey responses were counted, and interviews data analyzed narratively, relationally, and non-linearly.

**Results:** Development of the fathers' group relied on strategies to overcome institutionally situated inequities, such as getting together in healthy ways and supporting one another through relational connections, learning from and identifying with one another, and breaking cycles of intergenerational trauma through cultural connections, sharing, and expressing love. MSCH participants reported positive, supportive experiences, indicating that attending the “event was worth it” and meaningful.

**Conclusions:** Experiential and pressure-free activities contributed to men's sense of belonging, created positivity, enhanced collective ownership, and supported fathers and men through life difficulties. Challenging and overcoming Western academic approaches, focusing more on community ways of knowing, relationality, and community leadership, was crucial to the success and sustainability of the group. The MSHC is a new initiative to supporting moms in Maskwacîs that is community-led and driven. The collection of longitudinal data of future MSHC accompanied by Wisdom Circles (to collect qualitative information) will inform allow attendees to tell their own stories about how participation has impacted them, their families and community, and provide a basis for sustainable programming.

# Physical activity training for mental health and psychosocial support (MHPSS) professionals working in humanitarian settings

**Prof. Simon Rosenbaum<sup>1</sup>**

<sup>1</sup>UNSW Sydney

**S2.32: Empowering mental health providers to promote physical activity in practice: Innovative training approaches in real-world settings, Limelight 1, June 13, 2025, 8:00 AM - 9:15 AM**

**Objective:** Mental health and psychosocial support (MHPSS) practitioners play a key role in promoting and protecting the mental health of forcibly displaced communities. Physical activity (PA) is an evidence-based, cross-cutting strategy to protect and promote mental and physical health and increase resilience. However, while PA is recommended, implementation remains largely ad hoc. Strengthening collaboration between PA and MHPSS workforces may help bridge this implementation gap.

**Methods:** Together with members of the Olympic Refugee Foundation (ORF) Think Tank, we iteratively developed training (online and in person) for MHPSS practitioners working in a variety of contexts affected by forced displacement, including Poland, Moldova, Romania and Bangladesh. Learning outcomes included understanding the difference between PA, sport, and exercise, exploring the evidence linking PA and mental health, assessing PA level, and identifying resources for PA promotion. The primary aim was to determine the acceptability, appropriateness, and feasibility of the trainings using the Acceptability of Intervention Measure (AIM), the Intervention Appropriateness Measure (IAM) and the Feasibility of Intervention Measure (FIM). Each measure has four items and uses a five-point Likert scale ranging from Completely Disagree (1) to Completely Agree (5), with total possible scores for each scale ranging from 4 (poor) to 20 (high). Data reported are from in-person workshops conducted in Cox's Bazar, Bangladesh.

**Results:** Seventeen participants (psychologists, social workers and gender-based violence practitioners) attended the training and joined an online WhatsApp group in July 2023. The mean acceptability score was 17.71 (SD = 1.49). In total, 14/14 participants (100%) scored the acceptability 16 or higher out of 20. Mean appropriateness score was 16.43 (SD = 1.50). In total, 12/14 participants (85.6%) scored appropriateness 16 or higher out of 20. Mean feasibility score was 15.93 (SD = 2.06). In total, 8/14 (57.1%) participants scored 16 or higher out of 20.

**Conclusion:** Training MHPSS practitioners in PA promotion is acceptable, appropriate and feasible. Further, MHPSS staff may be at risk of physical inactivity which may have ramifications for their own health and wellbeing, in addition to their PA promotion practices. Interventions to increase the PA capability of MHPSS staff are warranted.

# Identifying Priority Topics for Interdisciplinary Education on Lifestyle Interventions in Mental healthcare: A Modified Delphi Study

**Dr. Oscar Lederman**<sup>1,2</sup>, Dr. Sam Manger<sup>3,4</sup>, Dr. Linda Barron<sup>5</sup>, Dr. Felice Jacka<sup>3,6,7,8</sup>, Dr. Tetyana Rocks<sup>9</sup>

<sup>1</sup>University of Technology Sydney, <sup>2</sup>University of New South Wales, <sup>3</sup>James Cook University, <sup>4</sup>Australasian Society of Lifestyle Medicine, <sup>5</sup>Sunshine Coast Hospital Health Service, <sup>6</sup>School of Medicine and Barwon Health, Deakin University, <sup>7</sup>Murdoch Children's Research Institute, <sup>8</sup>Black Dog Institute, <sup>9</sup>Western Sydney University

**S2.32: Empowering mental health providers to promote physical activity in practice: Innovative training approaches in real-world settings, Limelight 1, June 13, 2025, 8:00 AM - 9:15 AM**

**Objective:** The purpose of this study was to ascertain priority educational topics on integrated lifestyle interventions in mental healthcare, to inform the creation of education and training resources for mental health service providers.

**Methods:** A modified Delphi method was employed with three rounds. In Stage one, mental health experts identified three key priorities for each of the eight questioned elements relating to the application and implementation of lifestyle medicine. In stage two, the expert panel were asked to rank the most frequently listed aspects for each topic in the order of importance. Consensus on key educational topics was finalised in a 3rd stage through an online meeting with the broader research team.

**Results:** Eighteen experts from diverse professional and lived-experience backgrounds completed both rounds. Consensus was reached regarding key educational topics, covering a range of items, including assessments; interventions; medication optimisation; behaviour change; lifestyle intervention maintenance and adherence; lifestyle-based programs; clinician and consumer perceived barriers; and key research priorities.

**Conclusion:** To the best of our knowledge, this study represents the first study employing expert consensus on the key educational topics surrounding the implementation of lifestyle medicine for improving mental and physical health outcomes of people living with mental health illnesses. These outcomes can inform continuous professional development resources and tertiary education curriculum, to improve knowledge among mental health service providers surrounding lifestyle interventions in mental healthcare.

## Integrating nature-based physical activity into mental healthcare: Development of a toolkit and training intervention for university counseling centers

**Dr. Emily Mailey<sup>1</sup>**, Dr. Gina Besenyi<sup>1</sup>

<sup>1</sup>Kansas State University

**S2.32: Empowering mental health providers to promote physical activity in practice: Innovative training approaches in real-world settings, Limelight 1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Rates of mental health disorders and service utilization have increased substantially among college students over the past several decades, and university counseling centers (UCCs) have struggled to keep pace with the increased demand. Feasible and effective treatment approaches with high potential for dissemination are an urgent priority. This project aimed to develop and implement a novel nature-based physical activity intervention at a UCC.

**Methods:** The intervention, Moving Naturally Through Challenges, is a nature-based physical activity therapy group for college students with anxiety and depression. In partnership with UCC therapists, we used feedback from pilot studies to develop a toolkit of resources to support implementation of the intervention. A key component of the toolkit is the group facilitator handbook, grounded in cognitive behavioral therapy and modeled after other group therapy guides, with added emphasis on the unique benefits of physical activity and nature exposure. The pilot group will run from February-April 2025; assessments will capture feasibility and acceptability of the intervention from therapists' and students' perspectives, as well as changes in anxiety and depression among participating students.

**Results:** The completed toolkit consists of: 1) a 2-hour training intervention for UCC staff, 2) a group facilitator handbook with a detailed outline of eight 90-minute group therapy sessions, 3) activity plans for a range of moderate intensity outdoor activities, 4) recruitment flyers and handouts about the mental health benefits of physical activity and nature exposure, 5) behavior change worksheets to build self-regulatory skills among students, and 6) interactive maps of parks and outdoor physical activity resources. Each weekly therapy session will incorporate cognitive behavioral skills for managing anxiety and depression, 30 minutes of nature-based physical activity (e.g., walking, hiking, yoga, outdoor games), and interactive discussions and activities. All UCC therapists (n=8) have completed the training intervention and recruitment for the group is under way.

**Conclusions:** This study highlights an innovative intervention with promise for translation across university contexts. Additional feasibility and effectiveness data will be available by June 2025 and incorporated in the presentation.

# Maintaining Early Childhood Education Settings as Screen-Free Zones: Exploring the Impact of Screen Use on Early Childhood Mental Health

**Dr. Sophie Phillips<sup>1</sup>**

<sup>1</sup>*Western University*

## **S2.33: Are Screens Enhancing or Hindering Positive Movement and Nutrition Behaviours in Early Childcare Environments?, Limelight 2, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Early childhood is a formative period of development where key health behaviours and habits are established. Increasing evidence links screen use to mental health indicators throughout childhood, which has garnered increasing attention from researchers, educators, parents, and healthcare professionals. This presentation will explore screen use and other sedentary behaviours on a range of early life mental health indicators.

**Methods:** A systematic review was conducted to examine associations between screen use and other sedentary behaviours on a range of early life mental health indicators. This review distinguished between screen use/engagement and other sedentary behaviour to explore their distinct effects on mental health indicators of young children.

**Results:** Findings indicate that the use of screens during early childhood is associated with poorer mental health indicators. While some contexts or reasons for screen use may be less harmful, this research does not support screen use in early childhood education settings. This work also highlights that sedentary time and other sedentary activities may have varying associations with early childhood mental health indicators, emphasising the importance of evaluating these behaviours independently in the context of early childhood education.

**Conclusions:** Limiting screen use in early childhood may be an advantageous method to prevent adverse mental health outcomes. Keeping early childhood education settings as screen-free zones may help reduce the risk of harm of screen use on young children's health. These settings offer an ideal health promoting space for young children, including prioritisation of other sedentary behaviour activities associated with positive health outcomes, play, physical activity, and socialization with peers and educators. This presentation will emphasise the importance of maintaining early childhood education environments as screen-free spaces, to support the health and wellbeing of young children from the earliest years.

## Strategies to increase adoption of Stand & Move at Work, a US-based, nationally-implemented sedentary behavior workplace intervention

**Dr. Matthew Buman**<sup>1</sup>, Ms. Sarah Rydell<sup>2</sup>, Ms. Arlene Fernandez<sup>1</sup>, Dr. Paul Estabrooks<sup>3</sup>, Dr. Alexis Koskan<sup>1</sup>, Dr. Matthew Martin<sup>1</sup>, Prof. Genevieve Healy<sup>4</sup>, Dr. Mark Pereira<sup>2</sup>

<sup>1</sup>Arizona State University, <sup>2</sup>University of Minnesota, <sup>3</sup>University of Utah, <sup>4</sup>University of Queensland

### **S2.34: Operationalizing and applying multilevel dissemination strategies to increase reach and adoption over time, Waihorotiu #1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Little is known about optimal strategies for enhancing dissemination and adoption of health promotion programs in the workplace. Evidence-based programs may even fail if program uptake is low. We present results of our dissemination efforts from a nationally-implemented sedentary behavior reduction program.

**Methods:** Stand & Move at Work (SMW) is a multicomponent intervention designed to reduce sitting and increase light-intensity physical activity at work. As part of an ongoing implementation trial seeking to engage small and moderate size workplaces across the United States, we tested dissemination strategies to increase the rate of intervention adoption. We defined adoption at the organizational level, including (a) receiving all worksite-level approvals to implement the program; (b) completing all program training; and (c) launching the SMW program. Dissemination materials were developed based on Roger's Diffusion of Innovation attributes (relative advantage, compatibility, complexity, trialability, and observability). We tested two adoption approaches: (a) standard landing page with program key characteristics; or (b) a request for proposals (RFP) where organizations prepare a brief application demonstrating need and readiness for the program. We disseminated materials through the following channels: social media (e.g., LinkedIn), professional wellness organizations (e.g., National Wellness Institute), direct referral, and organic web searches.

**Results:** A total of 184 worksites responded to dissemination strategies between September 2021 and June 2024. At the time dissemination strategies ended, 25 organizations had adopted the program, 31 were deemed ineligible (e.g., worksite too large or too small), 123 refused adoption, and 5 were in the process of adoption but not yet completed all steps. The average time from initial interest to program adoption or refusal was  $67 \pm 122$  days. Among adopting organizations ( $n=25$ ), time to adoption was  $89 \pm 69$  days. Organizations exposed to the RFP adoption process had significantly longer time to adoption/refusal ( $225 \pm 274$  days;  $N=22$ ) vs organizations engaged through a standard landing page ( $46 \pm 63$  days,  $N=162$ ). Time to adoption/refusal was fastest among organic web searches ( $30 \pm 32$  days), followed by professional wellness organizations ( $55 \pm 106$  days), direct referral ( $76 \pm 88$  days), and social media ( $205 \pm 334$  days).

**Conclusion:** Strategies to enhance program adoption at the organizational level are often overlooked, yet substantial time, political, and financial resources are often expended within organizations before wellness programs can be implemented. We demonstrate here that both adoption strategies (standard landing page vs RFA) and dissemination channels play important roles in determining the rate and speed of program adoption.

## Factors Influencing Adoption of a Worksite Physical Activity and Sedentary Behavior Intervention: A Qualitative Analysis from Stand and Move at Work II

Dr. Paul Estabrooks<sup>1</sup>, Ms. Kayla Norton<sup>1</sup>, Ms. Sarah Rydell<sup>2</sup>, Ms. Arlene Fernandez<sup>3</sup>, Dr. Mark Pereira<sup>2</sup>, **Dr. Matthew Buman<sup>3</sup>**

<sup>1</sup>University of Utah, <sup>2</sup>University of Minnesota, <sup>3</sup>Arizona State University

**S2.34: Operationalizing and applying multilevel dissemination strategies to increase reach and adoption over time, Waihorotiu #1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** We will present a conceptual framework informed by the Integrated Promoting Action on Research in Health Services (i-PARIHS) framework to identify multilevel mechanisms of reach and adoption change. We will also provide a data driven example focused on adoption.

**Methods:** We used study field notes recorded during the process of recruiting worksites for the Stand and Move at Work II implementation study. Field notes were available for 94 eligible worksites that enrolled (n=21) and worksites that expressed initial interest and either explicitly declined to participate (n=41), or did not respond to follow-up contacts (n=32). Field notes included a summary of worksite recruitment interactions and, when possible, reasons for declining participation (n=38/41). Initial coding was completed by generative AI (Notebook LM) and confirmed by 2 investigators (PE, KN) using the i-PARIHS qualitative coding guide.

**Results:** Generative artificial intelligence and investigator coding corresponded at 96% agreement. Enrolled worksite codes reflected positive (1) recipient factors related to time, resources, and motivation (e.g., 5 people on the wellness—all likely to be champions), (2) contextual factors related to leadership support (e.g., assessed and received management support), culture, and climate, (3) and a high degree of fit between the intervention and workplace. Worksites that either did not respond to follow from the research staff or explicitly indicated they were not interested in moving forward were characterized by (1) recipient factors related to time, resources, and motivation (e.g., too many competing demands), (2) context related to a lack of leadership support (e.g., indicated a need to check with leaders, then did not respond) and culture focused on health (e.g., employee surveys demonstrated a lack of interest), and (3) poor fit (e.g., concerns about the length of the program). Of note, no codes were identified related to the i-PARIHS construct of facilitation which may suggest that internal facilitation structures may not be important in adoption decision making.

**Conclusions:** This conceptual approach can provide contextual and mechanistic factors that influence worksite reach and adoption as well as targets for strategies to improve dissemination and scale up.

## Integrating the power of design and theory for enhancing uptake and implementation of a workplace health promotion program

**Prof. Ana Goode<sup>1</sup>**, Prof. Genevieve Healy<sup>1</sup>

<sup>1</sup>*University of Queensland*

**S2.34: Operationalizing and applying multilevel dissemination strategies to increase reach and adoption over time, Waihorotiu #1, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Infusing intervention design and associated messaging with user-centred principals and behaviour change theory can be a powerful way to enhance health promotion efforts. A user-centred design approach, underpinned by established behaviour change theories guided the development and promotion of BeUpstanding: a workplace intervention that aims to help raise awareness of the benefits of sitting less and moving more and build a supportive culture for change. Multiple users are targeted through the program: senior management; workplace champions; and staff. Champions are supported to deliver the program via a free online toolkit, which includes a step-by-step guide and associated multi-media resources. The aim of this study is to describe how behaviour change theory and user-centred design informed the messaging used in BeUpstanding to enhance adoption, reach and implementation of the program.

**Methods:** Workplace health and safety policy and practice partners across Australia have supported BeUpstanding since its inception in 2015. Partner-led referral pathways have targeted desk-based work teams from across Australia. User-centred design methods (e.g., discovery interviews, persona and scenario mapping, facilitated workshops, surveys and prototyping), and established behaviour change models (e.g. COM-B, Theoretical Domains Framework) were employed to develop and deploy the program, including program messaging and targeted recruitment campaigns. A core team including content experts, and an implementation scientist, interaction designer, software developer and business developer worked closely with policy and practice partners and end users (i.e., workplace champions, management and staff).

**Results:** Our approach encouraged interdisciplinary collaboration and helped guide messaging and required adaptations to enhance adoption, reach and implementation by placing diverse users (including regulators, researchers and workplaces) at the centre of design efforts. Over 1400 organisations with over 1900 champions (and over 150,000 staff potentially involved) have taken part in the program to date, providing at least sign-up data. The program has reached diverse end users with organisations from all 19 industries and from all state and territories across Australia taking part.

**Conclusion:** BeUpstanding showcases the value of utilising user-centred design together with behaviour change theories to provide a rigorous but flexible approach to achieve implementation in real-world settings for diverse users.

## Addressing science and policy gaps on biological, sociocultural and environmental obesity risks: The OBCT project

**Dr. Jeroen Lakerveld on behalf of the OBCT consortium<sup>1</sup>**

<sup>1</sup>*Amsterdam UMC, Department of Epidemiology and Data Science*

**S2.35: Advancing Multidisciplinary and Cross-Border Collaboration in Obesity Prevention in Europe: Insights from the OBEClust Network and Three of its Projects (OBCT, Better4U, HealthyW8), Herald Theatre, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** To share the outline and first results of the OBCT project, which aims to provide a comprehensive understanding of obesity risk factors across the life course, with a particular focus on communities of lower socioeconomic position (SEP). The project seeks to highlight how biological, sociocultural, and environmental factors interact dynamically to influence obesity risk, and to translate this knowledge into practical tools and strategies for action.

**Methods:** OBCT employs a multi-disciplinary approach, integrating data from epidemiological studies, socio-cultural analyses, and environmental mapping. The project quantifies the relative contributions of biological, behavioural, and environmental factors to obesity risk at different life stages. Using advanced statistical modeling, it assesses how SEP modulates these risk factors. OBCT also develops tools such as a holistic obesity risk screener for public and clinical use, and a digital interactive atlas mapping the obesogenicity of environments at high resolution. The project will further evaluate the impact of obesity-related policies on health inequalities and develop country-specific trend estimates for obesity prevalence.

**Results:** In its first project phase, OBCT has contributed to mapping worldwide abdominal adiposity trends over time. It furthermore mapped an initial set of environmental obesogenic exposures at high resolution across Europe, including walkability and food retail exposure. These latter outputs feed into a digital atlas that will offer a visual representation of obesogenic environments, aiding targeted interventions.

**Conclusions:** The OBCT project generates critical evidence on the interplay of biological, sociocultural, and environmental factors driving obesity, particularly in disadvantaged populations.

## Leveraging Recommender Systems for Physical Activity Promotion: A Literature Overview and Real-World Application using GameBus as part of the HealthyW8 project

**Dr. Sarah Forberger<sup>1,8</sup>**, Ms. Suzan Evers<sup>7</sup>, Prof. Lucia A. Reisch<sup>2</sup>, Dr. Pieter Van Gorp<sup>3</sup>, Dr. Christoph Stahl<sup>4</sup>, Dr. Lara Christianson<sup>1</sup>, Ms. Jihan Halimi<sup>5</sup>, Dr. Karina Karolina De Santis<sup>1</sup>, Mr. Chungwan Lo<sup>1</sup>, Ms. Cassandra Omane<sup>1</sup>, Dr. Laurent Malisoux<sup>6</sup>, Dr. Tiziana De Magistris<sup>5</sup>, Prof. Astrid Kemperman<sup>7</sup>, Dr. Torsten Bohn<sup>6</sup>

<sup>1</sup>Leibniz Institute for Prevention Research and Epidemiology – BIPS, <sup>2</sup>El-Erian Institute for Behavioural Economics and Policy, Cambridge Judge Business School, <sup>3</sup>Industrial Engineering and Innovation Sciences, Eindhoven University of Technology, <sup>4</sup>Luxembourg Institute of Science and Technology – LIST, <sup>5</sup>Agro-Food Research and Technological Center of Aragon (CITA), <sup>6</sup>Luxembourg Institute of Health, <sup>7</sup>Built Environment, Eindhoven University of Technology, <sup>8</sup>Department of Health Sciences, University of York

### S2.35: Advancing Multidisciplinary and Cross-Border Collaboration in Obesity Prevention in Europe: Insights from the OBEClust Network and Three of its Projects (OBCT, Better4U, HealthyW8), Herald Theatre, June 13, 2025, 8:00 AM - 9:15 AM

**Purpose:** This study aims to advance obesity prevention by combining a systematic mapping of recommender systems with real-world data from a pilot trial to explore their efficacy in promoting an active lifestyle. The objectives are to 1) systematically identify and map recommender systems by target population, behaviour, and system type and (2) to test identified features in a real-world setting using personalised interventions with location-based nudges via the gamified health platform GameBus.

**Methods:** Following the PRISMA-ScR guidelines and a published protocol, a systematic bibliographic search was conducted across seven databases with a two-stage screening process. The review's findings underpin the selection of system features used in the pilot trial (digital nudges). The pilot trial, one of 22 HealthyW8 trials, will include approximately 50 university students (aged 18-25 years, BMI 25-30 kg/m<sup>2</sup>) over eight weeks, starting in January 2025 in the Netherlands. Participants will receive personalised PA goals via GameBus and self-report emotional state (valence, arousal, stress) using the wearable Experience Sampling Method (wESM). Embedded wearable sensors will passively track PA data (i.e., step count) and heart rate variability, synchronising with GameBus to provide personalised feedback. Data analysis will use repeated measures and mixed modelling in SPSS to assess system's efficacy and behaviour changes over time in compliance (usage logs, goal completion) and PA levels (increased PA), adjusting for individual effects.

**Results:** Of the 70 studies included in the scoping review, 56 employed recommender systems, mainly focusing on nutrition (n=38), PA (n=11), or a combination of both (n=7). Digital nudges were rarely used with recommender systems. The pilot trial will report real-world data on the efficacy of GameBus-assisted location-based nudge intervention in promoting PA.

**Conclusion:** Recommender systems hold significant promise for promoting a healthy lifestyle and preventing obesity, mainly through personalised, data-driven interventions. However, gaps remain in integrating behavioural insights and validation in real-world settings. The findings from this review, combined with real-world data from all HealthyW8 trials, will support the development of a validated Digital Twin-based recommender system. This system could provide a scalable solution for long-term obesity prevention and health promotion in at-risk populations.

## Consumers' Perceptions of Ultra-Processed and Minimally Processed Foods: Do They Align with the Evidence?

**Ms. Anna Claire Tucker<sup>1</sup>**, Dr. Julia Wolfson<sup>1</sup>

<sup>1</sup>*Johns Hopkins Bloomberg School of Public Health*

**S2.36: International efforts to improve dietary quality by reducing ultra-processed food intake: policies, challenges, and tradeoffs, Balcony Foyer, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** Consumers are being increasingly exposed to information about food processing, including evidence linking ultra-processed foods (UPFs) to poor health outcomes and recommendations to consume more minimally processed foods (MPFs). However, little is known about consumers' beliefs about food processing, and how consumers' perceptions of food processing are related to perceived healthfulness.

**Methods:** We fielded a national online survey using CloudResearch, with adults in the United States aged >18 years (N=4,455). Participants were randomly presented 10 out of 40 possible foods and rated the perceived processing level and healthfulness from 0 (not at all processed/not at all healthy) to 10 (very processed/very healthy). We used descriptive statistics and chi-square tests to examine participant beliefs about UPFs and mean perceived processing and healthfulness scores stratified by participant demographic characteristics (age, gender, income, and education), and food classification systems (Nova category and Food Compass score). Next steps will include multilevel modeling to examine associations between perceived processing and perceived healthfulness, including potential moderation by Nova category, Food Compass score, and participant demographic characteristics.

**Results:** Most US adults believe UPFs are "food products submitted to a series of industrial processing" (54.4%), 52.0% believe UPFs are "food products that contain artificial ingredients," and 73.8% think that UPFs are not healthy. However, 32.7% believe UPFs are genetically modified products, and 23.6% stated they do not know what UPFs are. Compared to UPFs, participants scored MPFs as healthier (7.3 [SD 1.6] vs 5.8 [SD 2.0]  $p<0.001$ ) and less processed (4.2 [SD 2.2] vs 6.1 [SD 2.1]  $p<0.001$ ), with consistent findings across demographic groups by age, gender, income, and education.

**Conclusions:** While the majority of US adults believe UPFs are unhealthy, nearly one-third think UPFs are genetically modified products and almost one-quarter say they do not know what UPFs are. Findings underscore widespread confusion about the definition of UPFs, despite consumers believing UPFs are, on average, less healthy than MPFs. Improved evidence-based communication is needed to reduce confusion about UPFs among consumers. Future investigations will explore how perceptions of UPFs and MPFs are associated with food agency, cooking behavior, and dietary quality.

# Impacts of ultra-processed foods on diet quality and health: scientific evidence and strategies for raising awareness in Australia

**Dr. Priscila Machado<sup>1</sup>**

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University*

**S2.36: International efforts to improve dietary quality by reducing ultra-processed food intake: policies, challenges, and tradeoffs, Balcony Foyer, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** This presentation will explore the body of scientific evidence on the impacts of ultra-processed foods (UPFs) on diet quality and health, and explore communication strategies to raise awareness about UPFs in Australia.

**Methods:** Literature search of umbrella reviews and systematic reviews to summarise the evidence of the impacts of UPFs on diet quality and health. Original research on the development of communication strategies to raise awareness about UPFs derived from a nationally representative survey of Australian adults, consumers and stakeholder engagement.

**Results:** The nutrition literature and authoritative reports increasingly recognise the concept of UPFs as a descriptor of unhealthy diets. These foods have novel physical structures and chemical compositions that have been identified as providing plausible biological mechanisms to explain associations between UPFs and adverse health outcomes. This includes the poor nutrient profile, presence of additives and contaminants that are endocrine disruptors, and changes in texture and mouthfeel that affect satiety. At the same time, they displace important whole foods from diets. Increased exposure to UPFs has been associated with >30 health outcomes, particularly type-2 diabetes, mental disorder outcomes, cardiovascular disease related mortality and all-cause mortality. People are consuming more UPFs each year, often without realising the potential adverse impacts of these foods. Ultra-processed foods include not only 'junk foods' (e.g., soft drinks, fast food) but also many items that consumers may not realise are ultra-processed (e.g., mass-produced sliced breads, ready-to-heat meals, and flavoured yoghurts). There is increasing recognition that strategies must focus on reducing UPF consumption to abate their myriad harmful impacts. Communication strategies to raise awareness about UPFs in Australia are grounded in holism, socioecological model, behaviour change, social marketing, and co-design principles and theories. Recommendations for communication to increase awareness about UPFs in Australia will be presented.

**Conclusions:** This presentation will provide up to date evidence on the health impacts of UPFs, and new knowledge on ways to tailor UPF communication that will inform further development and implementation of policies (e.g., dietary guidelines), the media, advocacy groups, and professional practice. This has potential to increase nutrition literacy and public support for policy actions targeting UPFs.

## Intra-household dynamics, food access and fresh and ultra-processed food consumption: A mixed-methods study among low- to middle-income children in Chile

**Dr. Isabel Pemjean<sup>1</sup>**, Dr. Camila Corvalán<sup>1</sup>, Dr. Sergi Fábregues<sup>2</sup>

<sup>1</sup>University of Chile, <sup>2</sup>Universitat Oberta de Catalunya

**S2.36: International efforts to improve dietary quality by reducing ultra-processed food intake: policies, challenges, and tradeoffs, Balcony Foyer, June 13, 2025, 8:00 AM - 9:15 AM**

**Purpose:** This study investigated the relationship between intra-household dynamics, food access, and the consumption of fresh and ultra-processed foods among children from low- to middle-income households in Chile during the COVID-19 lockdown. Notably, children from lower SES communities experience poorer dietary quality compared to their higher SES peers, yet also display intragroup differences despite residing in similar external food environments. Elucidating the interplay between external food access and intra-household dynamics is critical to addressing health disparities.

**Methods:** We employed an explanatory sequential mixed methods design. First, a survey of 999 households assessed the association between food access profiles (latent class analysis) and children's diet quality (compliance with national dietary guidelines and intake of ultra-processed foods) and identified whether intra-household dynamics (gender, time allocation, meal frequency patterns and cooking skills) influenced this association. Then, a photo-elicitation-based qualitative study in a subsample of 14 households explored how the identified intra-household dynamics influence the relationship between food access and children's dietary quality through thematic analysis. Finally, we integrated quantitative and qualitative results using a side-by-side joint display.

**Results:** The mixed-methods results expanded on the quantitative finding that diversity in food access profiles explain only a few differences on fresh food consumption and cannot explain differences in ultra-processed food (UPF) consumption with three key inferences: 1) Gender inequality in household food tasks affects children's fresh and UPF consumption. 2) Time scarcity and gender inequities are interconnected factors increasing reliance on UPFs, influencing food access by reducing food supply and purchasing options and limiting food education and skill development. 3) Gender and time inequalities hinder households' ability to navigate other intra-household dynamics (e.g., coping strategies), compromising children's dietary quality.

**Conclusions:** Gender and time inequalities interact with external food environments, influencing food store convenience and food choices and ultimately affecting children's food consumption. Gender and time should be both considered social determinants of health. Short-term measures should increase access to nutritious food for time-constrained food gatekeepers, while long-term policies should promote cultural shifts towards equitable food responsibilities.

## The NOURISH Trial: Feasibility and Acceptability of Medically Tailored Food Bag Distribution in Hematopoietic Stem Cell Therapy Clinics

**Dr. Anna E. Arthur<sup>1</sup>**, Ms. Madison Kurth<sup>1</sup>, Mr. Danon Hare<sup>2</sup>, Mr. Jury Paulson<sup>2</sup>, Ms. Hannah Brown<sup>1</sup>, Ms. Kaitlin Culifo<sup>1</sup>, Ms. Cristina Hernandez<sup>1</sup>, Ms. Breighlyn Kowalczyk<sup>1</sup>, Ms. Jennifer McCabe<sup>1</sup>, Ms. Gail Sanders<sup>1</sup>, Dr. Kris Mahadeo<sup>3</sup>, Dr. Jonathan Peled<sup>4</sup>, Dr. Andrew Rezvani<sup>5</sup>, Dr. Francisco J. Diaz<sup>1</sup>, Dr. Shelby D. Reed<sup>3</sup>, Dr. Tami John<sup>5</sup>, Dr. Moneeza Walji<sup>4</sup>, Dr. Urvi A. Shah<sup>4</sup>, Dr. Lawrence A. David<sup>3</sup>, Dr. Jill Peltzer<sup>1</sup>, Dr. Christopher Wilson<sup>1</sup>, Dr. Susan Kreissman<sup>3</sup>, Dr. Ami J. Shah<sup>5</sup>, Dr. Anthony Sung<sup>1</sup>

<sup>1</sup>University of Kansas Medical Center, <sup>2</sup>Harvesters-Community Food Network, <sup>3</sup>Duke University, <sup>4</sup>Memorial Sloan Kettering Cancer Center, <sup>5</sup>Stanford University

### **S2.37: Medically Tailored Meals: Exploring Food Provider and Hospital Partnerships as a Novel Approach to Supporting Behavioral Nutrition for Cancer Patients, Kiri Te Kanawa Theatre, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** This study investigates the feasibility and acceptability of developing and distributing medically and culturally tailored food bags in partnership with food banks for patients with food insecurity undergoing transplant or cellular therapy (TCT). This is the first step towards evaluating the cost effectiveness and impact of this intervention on malnutrition in a multi-site RCT of 210 participants.

**Methods:** This multi-site study involves collaborations between NCI-designated cancer centers and food banks in four geographical regions of the U.S. (Midwest, Northeast, South, and West). Stakeholders, including dietitians, patients, caregivers, clinicians, and food bank staff, actively participated in selecting food items for the bags to cater to individual needs and preferences (allergies, dietary restrictions, cultural/regional preferences) while adhering to nutritional guidelines for patients receiving TCTs. The study team collaborated with food bank staff to confirm the availability and accessibility of chosen food items. Recipes featuring food bag contents and video cooking demonstrations were developed to further support nutrition during TCT. The Acceptability of Intervention Measure (AIM) and the Intervention Appropriateness Measure (IAM) surveys are used to assess patient satisfaction and feedback.

**Results:** The collaborative process resulted in food bags tailored to local dietary preferences and needs while maintaining consistent nutritional value across all study sites. Strategies for sensitive and discreet in-clinic distribution were identified to minimize stigma and ensure patient comfort. Resources including recipes and video demonstrations optimize use of food items to support nutrition. Results of the AIM and IAM survey responses and feedback provided by study participants will be reported.

**Conclusions:** This study demonstrates the feasibility of developing and implementing medically tailored food bags in partnership with food banks. By incorporating patient feedback, developing supporting resources like recipes and cooking demonstrations, and addressing potential barriers like stigma, this intervention has the potential to improve nutritional support and reduce malnutrition among patients with food insecurity receiving TCTs. These findings lay the groundwork for the next phase of this project—testing whether the intervention reduces malnutrition while being cost-effective, supporting the potential for widespread adoption as standard of care for patients with food insecurity receiving TCTs.

# The CRHF Study: Feasibility of Medically Tailored Meals for Head and Neck Cancer Patients Undergoing Radiotherapy: A Multidisciplinary Approach in the Occupied Palestinian Territories

**Dr. Hania M. Taha**<sup>1,2,4</sup>, Dr. Hannah D. Hoslcher<sup>1</sup>, Dr. Fadi Atrash<sup>2</sup>, Ms. Bisan Khair<sup>2</sup>, Mr. Ramzi Ja'bary<sup>2</sup>, Dr. Anna Arthur<sup>3</sup>

<sup>1</sup>University of Illinois Urbana-Champaign, <sup>2</sup>Augusta Victoria Hospital, <sup>3</sup>University of Kansas Medical Center, <sup>4</sup>University of Virginia

## **S2.37: Medically Tailored Meals: Exploring Food Provider and Hospital Partnerships as a Novel Approach to Supporting Behavioral Nutrition for Cancer Patients, Kiri Te Kanawa Theatre, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Medically Tailored Meals (MTMs) address the specific nutritional needs of cancer patients and managing treatment-related side effects. This study evaluated the feasibility of a carbohydrate-restricted, high-fat (CRHF) diet versus a Standard Diet (SD) in newly diagnosed head and neck cancer (HNC) patients undergoing radiotherapy, focusing on tailoring the CRHF diet to patient needs while maintaining satisfaction and adherence.

**Methods:** Thirteen Palestinian HNC patients from the West Bank and Gaza receiving radiotherapy at Augusta Victoria Hospital in East Jerusalem between January 2020 – July 2021, were provided three meals daily for 2-weeks before and 7-9 weeks during radiotherapy, with adequate calories to maintain weight. The CRHF diet included 45% fats, 25% proteins, and 30% carbohydrates to manage blood glucose without inducing ketosis, while the SD comprised 50% carbohydrates, 30% fats, and 20% proteins. Meals were culturally appropriate, sourced from the hospital kitchen with additional fresh foods. Oral nutrition supplements were provided when necessary. Nutrition Data System for Research software was used for meal planning. Food intake tracked using daily surveys. Meals were delivered to patients' homes or picked up at the hospital, with meal delivery barriers tracked and managed. Continuous feedback enabled meal adjustments based on taste changes and texture needs.

**Results:** Over 90% of participants rated the meals as “very good.” Patients with higher adherence experienced significantly less weight loss during radiotherapy ( $P=0.02$ ). Both diets were well tolerated with no adverse effects, achieving a 69% retention rate despite challenges by the COVID-19 pandemic, cultural preferences, treatment side-effects including taste changes, poor appetite, and difficulty swallowing, and checkpoint delays during meal delivery, which increased costs.

**Conclusion:** Implementing MTMs for HNC patients undergoing radiotherapy, while maintaining macronutrient composition, is feasible and beneficial by maintaining muscle mass. Personalized meals tailored to individual needs and preferences improved adherence and helped overcome treatment-related nutrition impact symptoms. Meal delivery in high-conflict areas further ensured adherence despite logistical and political barriers. These findings highlight the importance of a multidisciplinary approach to MTMs, suggesting that integrating these interventions into oncology care, particularly in challenging settings, can enhance patient outcomes through the “Food is Medicine” approach.

## The ENHANCE Study: Feasibility and Acceptability of Medically Tailored Meals with Local Businesses for Cancer Care

**Dr. Sylvia L. Crowder<sup>1</sup>**, Dr. Nathan Parker<sup>1</sup>, Dr. James Caudell<sup>1</sup>, Dr. Kedar Kirtane<sup>1</sup>, Dr. Jhanelle Gray<sup>1</sup>, Dr. Lary Robinson<sup>1</sup>, Dr. Heather S.L. Jim<sup>1</sup>

<sup>1</sup>Moffitt Cancer Center

**S2.37: Medically Tailored Meals: Exploring Food Provider and Hospital Partnerships as a Novel Approach to Supporting Behavioral Nutrition for Cancer Patients, Kiri Te Kanawa Theatre, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** “Food is medicine” (FIM) interventions were widely recognized in the 2023 U.S. White House Conference on Hunger, Nutrition, and Health. Medically tailored meals (MTM) are a vital component of FIM which aims to integrate food and nutrition into healthcare. MTM can address malnutrition concerns, support immune function, and alleviate side effects associated with cancer treatment. Despite the known benefits of MTM, they remain highly uncommon in cancer care settings. This study investigates the feasibility and acceptability of partnering with a local restaurant to provide MTM for cancer patients with prominent nutrition impact symptoms concerns (e.g., dysphagia, mucositis).

**Methods:** Lung cancer patients receiving chemoradiotherapy were randomized to a MTM Mediterranean diet intervention. During chemoradiotherapy, participants are provided with 15 Mediterranean diet meals each week for 7 weeks (105 meals total). In collaboration with our restaurant partner, all meals are individualized per participant based on macronutrient goals from a registered dietitian and accommodate common nutrition impact symptom concerns experienced during treatment (ex. dysphagia, taste alterations, difficulty chewing). While on study, participants were taught portion size and are asked to record percentages of each meal consumed in a provided food journal, in addition to any outside meals, snacks, or nutritional supplements. Participants were also provided with weekly dietary coaching to discuss nutrition impact symptom concerns, diet compliance, and set SMART goals (approximately 30 min). Following completion of chemoradiotherapy (5 weeks), participants were provided with weekly dietary coaching without the provision of meals to assess diet adherence.

**Results:** Preliminary findings show high acceptability and patient satisfaction. Participants reported the relevance and applicability of the ENHANCE intervention content (e.g., dietary coaching) was high and intervention length and timing (e.g., 30-minute coaching sessions once weekly for 12 weeks) was ideal. As meals were prepared to accommodate nutrition impact symptom concerns, participants rated high meal consumption adherence as documented via 24-hour food logs.

**Conclusion:** This study demonstrates the feasibility and acceptability of a MTM intervention in partnership with a local restaurant. This is the crucial next step to increase availability of MTM and actively engage cancer survivors in such interventions.

## Factors Impacting Access and Utilization of Basic Needs Services among Undocumented and Immigration-Impacted Undergraduate Students at California Public Universities

Ms. Christine Nguyen<sup>1</sup>, Mr. José Gutierrez<sup>2</sup>, Ms. Giovanna Itzel<sup>3</sup>, Dr. Denise D. Payán<sup>1</sup>, Dr. Laura E. Enriquez<sup>4</sup>, **Dr. Matthew J. Landry<sup>5</sup>**

<sup>1</sup>Department of Health Society and Behavior, Joe C. Wen School of Population and Public Health, University of California Irvine, <sup>2</sup>Department of Sociology, School of Social Sciences, University of California Irvine, <sup>3</sup>Department of Political Science, School of Social Sciences, University of California Irvine, <sup>4</sup>Department of Chicano/Latino Studies, School of Social Sciences, University of California Irvine, <sup>5</sup>Department of Population Health and Disease Prevention, Joe C. Wen School of Population and Public Health, University of California Irvine

**S2.38: International Perspectives on Policy, Systems, and Environmental Approaches to Address Food Insecurity among Higher Education Students, Hunua 1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Undocumented and immigration-impacted college students in the United States (U.S.) face unique challenges that heighten their risk of experiencing food insecurity and other unmet basic needs. U.S. higher education institutions are increasingly establishing Basic Needs Centers (BNCs)—comprehensive, on-site ecosystems offering support services for students experiencing food, housing, and financial insecurities. This study examines factors influencing the utilization of campus BNCs among undocumented and immigration-impacted students across the University of California's nine undergraduate campuses.

**Methods:** Using data from the UC Collaborative to Promote Immigrant and Student Equity (UC PromISE) survey, we analyzed three student populations: (1) undocumented immigrant students, (2) mixed-status family students (U.S. citizens with undocumented parents), and (3) legal-status family students (U.S. citizens whose parents have lawful immigration status). Using the Health Equity Framework, a justice-based model that conceptualizes person-environment interactions and health outcomes, we examined campus BNC utilization and associations with four spheres of influence: relationships and networks, systems of power, individual factors, and physiological pathways.

**Results:** The analytic sample comprised 1,875 Hispanic/Latino/a/x students (mean age 20.6 ± 2.4 years; 77.1% female; 93.1% first-generation college). Nearly two-thirds (59.1%) of participants reported experiencing food insecurity and 33% had used their campus BNC in the last month. Living off campus without family members was consistently associated with higher BNC utilization across all groups. Food insecurity predicted increased BNC use among undocumented and legal-status family, but not mixed-status family students. Family economic hardship and utilization of general support resources were significant predictors of BNC use among undocumented and mixed-status students. Among mixed-status family students, social exclusion and self and family legal vulnerability were associated with greater BNC use. Neither family immigration-related academic distraction nor discrimination appeared to significantly influence BNC utilization in any group.

**Conclusions:** Living arrangements, food insecurity, family economic circumstances, and legal vulnerability emerge as critical spheres of influence, with varying impact across undocumented, mixed-status, and legal-status family students. Higher education institutions should consider tailoring outreach and services for students with varying living and economic conditions when developing and implementing basic needs services to ensure equitable access and support.

# Nurturing Opportunity and Understanding Resources to Improve Student Hunger: Perspectives from an Urban Campus in the United States

**Dr. Gabby Headrick<sup>1</sup>**, Ms. Lily Amorosino<sup>1</sup>, Ms. Mackenzie Konyar<sup>1</sup>, Mr. Sean Watley<sup>1</sup>, Dr. Andrew Sonn<sup>2</sup>, Jennifer Sacheck<sup>1</sup>

<sup>1</sup>*Department of Exercise and Nutrition Sciences, Milken Institute School of Public Health, George Washington University*, <sup>2</sup>*Division for Student Affairs, George Washington University*

**S2.38: International Perspectives on Policy, Systems, and Environmental Approaches to Address Food Insecurity among Higher Education Students, Hunua 1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** In the United States (US), college students attending higher education institutions face unique social and economic challenges that increase their risk for food insecurity. In urban campuses, these challenges are additionally complex due to increased costs of living and limited access to healthy food sources. In response to these challenges, students use a variety of food resource management skills to prevent, or cope with, the experience of food insecurity. This study examines student characteristics associated with food insecurity and describes students' food resource management strategies among a population of urban college students attending a higher education institution in the US.

**Methods:** We conducted a longitudinal survey in the Fall 2024 semester in addition to in-depth interviews (n=40) to assess food security status, health status, and food resource management strategies among undergraduate and graduate students attending an urban university in the US. We assessed food security status using the USDA Six-Item Short Form Food Security Module, self-reported physical health using the CDC Healthy Days Core Module, depression using the Patient Health Questionnaire-2 (PHQ-2), and anxiety using the Generalized Anxiety Disorder 2-Item Questionnaire (GAD-2). We conducted in-depth interviews using a semi-structured interview guide focused on food acquisition habits, resources used to get food, and the impact of food access on self-perceived wellbeing.

**Results:** Among our convenience sample of n=380 college students (mean age 22 ± 5.5 years; 67% undergraduate; 72% female; 60% receiving financial aid), n=148 (39%) reported experiencing food insecurity. Students experiencing food insecurity more commonly reported fair or poor physical health (33% vs 15%, p<0.0001), depression (27% vs 16%, p<0.01) and anxiety (47% vs 28%, p<0.0001) compared to students experiencing food security. Many students experiencing food insecurity did not access available food resources as they were unaware of the available support, or reported feeling shame or guilt when accessing the resources.

**Conclusions:** Among surveyed urban college students, 39% experienced food insecurity, correlating with poorer physical health, higher rates of depression, and anxiety. Many lacked awareness of food resources or felt stigma in accessing them. Institutions should promote resource awareness, reduce stigma, and implement comprehensive food support to improve college student health and success.

## Practitioner-driven tailoring and modifications of the Healthy Eating, Active Living Taught at Home (HEALTH) intervention

**Prof. Callie Walsh-Bailey<sup>1</sup>**

<sup>1</sup>*Department of Medical Social Sciences, Northwestern University Feinberg School of Medicine*

**S2.39: Bidirectional implementation lessons between the science and practice of physical activity and healthy eating interventions delivered in home settings, Hunua 2, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose** Healthy Eating, Active Living Taught at Home (HEALTH) integrates healthy eating and activity content from the Diabetes Prevention Program (evidence-based healthy weight intervention) into the Parents As Teachers (PAT) home visiting model. As part of a cluster-randomized trial testing HEALTH's implementation, we conducted a descriptive qualitative study to understand how parent educators tailored and modified HEALTH and how they delivered it. We then mapped tailoring and modification activities to newly developed fidelity and quality dimensions, which balance fidelity to the program model and fidelity to community, which is an underexplored concept in the program adaptation literature.

**Methods** We conducted semi-structured interviews with PAT staff, called parent educators, whose sites were randomized to deliver HEALTH to enrolled families. We used purposive sampling to achieve diverse representation of parent educator and site-level characteristics. We added equity-focused operationalizations to the Framework for Reporting Adaptations and Modifications to Evidence-Based Interventions (FRAME) and used this to develop the interview guide and codebook. We conducted directed content analysis and report adaptations using the equity-expanded FRAME.

**Results** All participants (N=14) identified as female and had an average of 10.5 years of experience as PAT parent educators. Participants reported a total of 19 unique types of adaptations. The most common adaptations to HEALTH were content modifications (e.g., reordering modules, condensing/shortening curriculum delivery). Participants also reported context modifications, most frequently changing delivery locations or modality (e.g., walking or virtual visits). The most common reasons for adaptation were to accommodate family preferences and social determinants of health such as food security, housing and neighborhood safety. Most adaptations were rated as likely to promote equity and were fidelity consistent across program and community dimensions.

**Conclusions** Our study raises potential equity considerations for research and practice partners to consider when scaling up HEALTH's integration into the PAT curriculum. Findings can inform others seeking to balance program fidelity with the need to adapt and tailor for diverse populations and settings. The equity-extended FRAME can be used to assess other program adaptations and to determine optimal approaches for promoting equitable reach and engagement in community-based health promotion interventions.

## Strategies to support implementation of an evidence-based healthy eating and physical activity intervention in community-based home visiting

**Prof. Rachel Tabak<sup>1</sup>**

<sup>1</sup>*Brown School, Washington University in St. Louis*

**S2.39: Bidirectional implementation lessons between the science and practice of physical activity and healthy eating interventions delivered in home settings, Hunua 2, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Non-clinical, community settings that focus on families are crucial for reaching mothers of young children, particularly in the presence of barriers related to social determinants of health (SDOH)—conditions of daily life and the systemic and policy forces that generate them. The purpose of this abstract is to describe implementation strategies to support implementation of HEALTH (healthy eating and activity intervention) in its routine practice within a community organization.

**Methods:** Our team has partnered with Parents as Teachers (PAT) to develop, embed, and evaluate HEALTH. PAT is an award-winning national organization that serves families from pregnancy until the youngest child in the home enters kindergarten to build strong communities, thriving families and children who are healthy, safe, and ready for school. HEALTH demonstrated effectiveness to prevent weight gain. Through semi-structured interviews with parent educators (providers), PAT site leaders, and families that have participated in two randomized controlled trials testing HEALTH when disseminated and implemented within PAT practice. These strategies focused both on implementing HEALTH and on supporting families' basic needs (e.g., housing, food security).

**Results:** Implementation strategies were identified across categories of the Expert Recommendations for Implementing Change (ERIC) strategy clusters were identified and specified. For example, from the strategy cluster “Develop resource sharing agreements”, a strategy to enhance community partner relationship between PAT site and organizations with which they partner for social needs linkage was identified and specified (i.e., actor, action, temporality, and dose) according to Proctor et al (2013) recommendations for specifying implementation strategies. Further, from the category cluster “Audit and Feedback”, the strategy Collect and summarize resource referral data and give it to site leaders and parent educators to monitor, evaluate, and modify provider behaviors was identified and specified.

**Conclusions:** Partnership with providers delivering a healthy eating and activity intervention within practice allowed for identification of strategies to support widespread implementation. Tools from implementation science can support specification of strategies to implement intervention in community programs that reach families.

## Research-practice partnered group model building to support planning for equitable dissemination of a healthy weight intervention in a community setting

**Prof. Alexandra Morshed<sup>1</sup>**, Prof. Rachel Tabak<sup>2</sup>, Ms. Allison Kemner<sup>3</sup>

<sup>1</sup>Rollins School of Public Health, Emory University, <sup>2</sup>Brown School, Washington University in St. Louis, <sup>3</sup>Parents as Teachers National Center

**S2.39: Bidirectional implementation lessons between the science and practice of physical activity and healthy eating interventions delivered in home settings, Hunua 2, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** We used a systems thinking based, partnered approach to plan for the national dissemination of the evidence-based Healthy Eating and Active Living Taught at Home (HEALTH) intervention, embedded within the Parents as Teachers (PAT) program. We adapted the Coverage Framework, a framework from the health equity literature, to support the development of a stock-and-flow model of HEALTH implementation within PAT in preparation for developing strategies for equitable dissemination. In this presentation, we describe the participatory approach that led to the development of this conceptual model with the goal of identifying practice-informed leverage points to support HEALTH access, acceptability, reach, and participation.

**Methods:** We used the group model-building methodology to conduct workshops with stakeholders at multiple levels of a home-visiting program with sites across the country, which embeds a healthy weight intervention in its services. As inputs we used trends over time graphs of participation and engagement, prevalence of and relationship between family social needs and participation, and a research conceptual model of program coverage. The group model-building sessions were supported by analyses of program administrative datasets and literature synthesis.

**Results:** Modeling outputs included consensus on key indicators to use in simulation, areas of uncertainty in how they are measured, practice-informed conceptual model, and feedback-based explanations for disparities in engagement. Key insights identified from the modeling process included: 1) that there is insufficient understanding of how social needs cluster within home-visiting sites and 2) improved understanding of feedback loops between participation and family social needs.

**Conclusions:** With the goal of developing more effective implementation strategies, we drew on scientific, practice, and lived experience knowledge to plan for dissemination of HEALTH. To prevent potential gaps in reach, implementation, retention, and, as a result, impact during dissemination, we leverage implementation science that attends to dynamic, multifactorial, often interorganizational, contexts where interventions are applied.

## Food Insecurity in Early life – Caregivers' Experiences of Economic and Commercial Shocks in Canada and the U.S.A

Dr. Lesley Frank<sup>1</sup>, Dr. Jane Francis<sup>1</sup>, Dr. Elisabeth Rondinelli<sup>1</sup>, Ms. Aylssa Gerhardt<sup>1</sup>, Ms. Ruby Harrington<sup>1</sup>

<sup>1</sup>Acadia University

**S2.40: Food security in pregnancy and early life, Hunua 3, June 13, 2025, 3:15 PM - 4:30 PM**

**Introduction:** Household food insecurity [HFI], meaning lack of access to food because of financial constraint, is measured and monitored in Canada and the U.S.A. using the Household Food Security Survey Module [HFSSM] and the U.S. Household Food Security Survey Module respectively. Both modules may underestimate the prevalence of childhood food insecurity because the child-focused questions do not capture how financial constraint (or other structural determinants) might alter food access for children under two years of age. There are few processes or tools in place to monitor food insecurity in this early life course phase leaving little on which to base social policy and infrastructure that may redress this problem.

**Methods:** This talk will share research results from a study conducted in Canada and the U.S.A. in 2024 on caregiver's experiences of economic and commercial shocks to infant feeding and the outcomes. Survey data that captured infant feeding variables, income-based household food insecurity, and infant food insecurity indicators (due for not enough money in the household and infant formula supply shortages) will be shared as well as caregiver stories about infant food insecurities collected through a digital ethnography platform (to be conducted in early 2025).

**Results:** While the survey is still in the field, preliminary data identifies several dimensions and indicators of food insecurities in early life linked to feeding practices (breastfeeding, formula feeding, solids food) that are psychological and social in nature, and impact the quality and quantity of foods feed to infants. These indicators are a result of economic and commercial drivers of food insecurity in early life that reveal unique feeding tactics as coping mechanisms. We anticipate complimentary ethnographic data to share as participants are being recruited from the survey, and through administrators of Finding Formula Facebook groups.

**Discussion:** The survey data will be used as step toward validating a measurement tool for infant food insecurities in high-income contexts. Employing such a tool can monitor food insecurities impacts on infant feeding and nutrition inequities. Survey data and qualitative stories of caregivers can broaden our understanding of household food insecurity in families with young children and inform potential emergency feeding pathways and long-term solutions to infant food insecurity in North America, and beyond.

## Food (in)security, nutrition, and pregnancy: addressing implications for maternal and infant health and well-being

**Prof. Nicola Hestlehurst<sup>1</sup>**, Dr. Gina Nguyen<sup>1</sup>, Dr. Zoe Bell<sup>1</sup>, Dr. Steph Scott<sup>1</sup>, Prof. Amelia Lake<sup>5</sup>, Ms. Julia Zinga<sup>3</sup>, Dr. Ella Dyer<sup>1</sup>, Dr. Zainab Akhter<sup>1</sup>, Dr. Kiya Hurley<sup>4</sup>, Prof. Fiona Mckay, Dr. Paige van der Pligt<sup>3</sup>, Ms. Letitia Sermin-Reed<sup>1</sup>, Miss Gemma Andreae<sup>1</sup>

<sup>1</sup>Newcastle University, <sup>2</sup>Kings College London, <sup>3</sup>Deakin University, <sup>4</sup>Birmingham University,

<sup>5</sup>Teeside University

**S2.40: Food security in pregnancy and early life, Hunua 3, June 13, 2025, 3:15 PM - 4:30 PM**

Food insecurity in pregnancy is an emerging priority area in high-income countries with rapidly increasing prevalence. Pregnancy is a life course stage where nutrition is vital for maternal health, fetal development and new-born health. Nutritional deficiencies during this life course stage have life-long consequences for both the pregnant woman/person and their child. Given the recent emergence of the importance of food insecurity during pregnancy it is essential to establish the short- and longer-term health implications to plan prevention and support strategies.

**Methods:** This talk will provide an overview of a conceptual model on the nutrition and wider health implications of food insecurity during pregnancy. The model was informed by a series of systematic reviews on food insecurity during pregnancy, synthesising the results of studies conducted in HICs since the 2008 global financial crisis. These include quantitative systematic reviews on the associations between food insecurity and maternal nutrition, weight, maternal and infant pregnancy outcomes, and breast feeding. It also includes qualitative synthesis of women's experiences of food insecurity in pregnancy and the impact it has on their mental and physical health and well-being. The preliminary evidence-based conceptual model will be further developed and refined by a group of international experts attending a meeting in October 2024.

**Results:** Evidence identified for the systematic review was primarily from the USA and Canada, with limited quantitative evidence from the UK (n=1 quantitative) and Australia (n=1 qualitative). The conceptual model identifies relationships between food insecurity and obesity (increase), gestational diabetes (increase), mental health (decrease), dental health (decrease), and breastfeeding (decrease). Stress (increase) and poor diet quality (decrease) were key mechanism driving these relationships (e.g. as a driver of obesity and mental health).

**Discussion:** This conceptual model provides the basis to inform policy and practice interventions to support women/pregnant people experiencing food insecurity as well as preventative action. The evidence-base clearly demonstrates that a combination of prevention and support action to address food insecurity, and the resulting stressors, will have life course health benefits for both pregnant women/people and their children.

## Informing effective community-based interventions targeting food insecurity during pregnancy: a qualitative exploration of pregnant women's views and perspectives.

**Dr. Paige van der Pligt<sup>1</sup>, Dr. Zoe Bell<sup>2</sup>**

<sup>1</sup>Deakin University, <sup>2</sup>King's College London

**S2.40: Food security in pregnancy and early life, Hunua 3, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** The primary purpose of this presentation is to report the perspectives of pregnant women regarding preferences for community-based interventions aimed at alleviating food insecurity in the UK and in Australia. The contribution of this research is critical to guide effective, targeted solutions aimed at reducing food insecurity in the pre-conception and pregnancy life stages.

**Methods:** One on one qualitative interviews with women and a series of one engagement and two co-design workshops have been undertaken so far. Interviews assessed women's experiences of food insecurity and their support needs along the maternity journey. Workshops were conducted within community-based settings using participatory methods to identify key recommendations and co-design an infographic to translate research findings.

**Results:** First – stage results have shown that women regard food insecurity as a significant issue in the antenatal period and support is lacking to alleviate the issue. Women have reported the opportunity for enhanced coordination of care between health and social care systems to improve awareness of and access to services mitigating food insecurity. They have identified a gap in support from foodbanks and food co-operatives during pregnancy compared to the postnatal period. Themes resulting from the interviews include i) Societal systems failure and its nutritional impact, ii) System 'soothers' to mitigating food insecurity, iii) Creating coordinated care. Results from the workshops showed that i) support to mitigate food insecurity needs to start early in the antenatal period ii) Interpersonal connections are a key factor for women regarding information about local support services.

**Conclusions:** Community support for women during pregnancy to alleviate food insecurity is lacking. This has implications for the nutrition-related health of women and children during pregnancy. Gaining a thorough understanding of pregnant women's preferences for delivery of community-based interventions during pregnancy which aim to target food insecurity is a critical step in next-stage research. Further work to be undertaken in this area will enhance design and delivery of food insecurity interventions during this critical life-stage.

## Enhancing diversity of research populations through multi-pronged recruitment approaches: Lessons learned from prediabetes research across Canada.

**Prof. Mary Jung**

<sup>1</sup>*University of British Columbia*

### **S2.41: Righting Recruitment: Opportunities and Approaches to Create more Representative Research, Waitakere 1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** In Canada, rates of prediabetes and type two diabetes are disproportionately higher in equity-owned populations, including those of African, Arab, Asian, Hispanic, Indigenous, or South Asian descent, and those living with food insecurity or lower income. Diabetes prevention research often fail to recruit individuals who are most at risk. This results in nongeneralizable research findings that do not address equity-owned groups, ultimately leading to greater disparities in diabetes prevention care. The purpose of this presentation is to share successful and unsuccessful recruitment strategies tested when conducting research on a diabetes prevention intervention in urban and rural communities across 8 provinces in Canada.

**Methods:** To increase representation of equity-owned populations who are at heightened risk of developing type two diabetes in Canada, a distinct recruitment plan was devised for each research site. During active recruitment phases of research, recruitment tactics, outreach, and success were tracked, which subsequently informed reiterations of recruitment strategies deployed across all sites.

**Results:** Local engagement within communities, development of relationships with partnered organizations centred on trust and non-tokenistic approaches, and professional social media recruitment packages tailored and delivered in areas of interest to targeted populations, were found to be successful strategies. Establishment of healthcare professional referral pathways proved challenging.

**Conclusions:** Dedicating substantial time and resources to develop a flexible recruitment plan enabled recruitment of a diverse study population more representative of Canada's population of individuals living at risk of type 2 diabetes. To advance the science of behavioral nutrition and physical activity, research must ensure to meaningfully include equity-owned groups within study samples, ultimately reducing existing under-representation of these populations in the literature.

## Working with Indigenous Peoples for Research in Physical Activity

**Dr. Scott Lear**

<sup>1</sup>*Simon Fraser University*

**S2.41: Righting Recruitment: Opportunities and Approaches to Create more Representative Research, Waitakere 1, June 13, 2025, 3:15 PM - 4:30 PM**

Indigenous people suffer from substantial health inequities due to colonization and separation from their cultural foundations. The lifespan of colonized Indigenous people is shorter than the non-Indigenous population. Health-focused research in Indigenous populations is key to improving disease prevention strategies and physical activity (PA) interventions can have a role in these strategies. However, Indigenous populations have experienced 'helicopter' research in which scientists collect data and publish their work without any benefit to the community. As a result, Indigenous communities have developed guiding research processes and practices to ensure research is respectful and of value to their communities. This presentation will use the development of a culturally competent mobile application to increase PA in young Indigenous women in British Columbia, Canada, as a case study in engagement with Indigenous people for PA research. Despite having a history of high PA levels from activities such as hunting, fishing and daily domestic activities, colonization has dramatically decreased PA levels in Indigenous people to below that of the non-Indigenous people. Young Indigenous women (18-29 years) may particularly benefit from PA interventions as this is a time of significant life transitions (from school to employment, moving away from home, pregnancy). Crucial to the success of research with indigenous people is engagement with the local Indigenous population from project initiation to developing the foundation for the app to informing project implementation and participant recruitment. For this project it meant partnering with the provincial Indigenous health authority, forming an advisory circle of young Indigenous women and addressing the unique ethical considerations in this population such as data ownership and value to the community. To ensure the app is culturally competent and meets the needs of young Indigenous women, qualitative interviews are being conducted to understand the barriers and facilitators to PA they experience. The results of the interviews will be used to develop in-app content. Early feedback has indicated the app should include PA direction that connects the user to Indigenous culture and the land. Through respectful engagement and partnership, health research in Indigenous people can be successfully conducted for the betterment of their communities.

# Intersectional Sampling in Research: A Scoping Review of Methodological Approaches

**Mr. Usman Sani Dankoly<sup>1</sup>**, Mrs Gaia Segantin<sup>2</sup>, Dr Philippa Dall<sup>1</sup>, Prof. Sebastien Chastin<sup>1</sup>  
<sup>1</sup>GLASGOW CALEDONIAN UNIVERSITY, <sup>2</sup>VRIJE UNIVERSITEIT AMSTERDAM

## **S2.41: Righting Recruitment: Opportunities and Approaches to Create more Representative Research, Waitakere 1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** The concept of intersectionality highlights how overlapping social identities, such as race, gender, socioeconomic status, sexual orientation, can intersect to produce distinct experiences of discrimination or privilege, including effects on health. Sampling defines who is included in a research study, influencing the external validity and generalizability of findings, whilst recruitment determines how participants are attracted to take part. In health research recruitment has been widely studied, yet the research often lacks diversity, underscoring the need for intersectional sampling approaches. This systematic review examined how intersectionality has been applied to sampling methodologies in health research.

**Methods:** We searched seven databases (PubMed, CINAHL, EMBASE, Web of Science, Scopus, PsychInfo, APA PsycArticles). We searched intersectionality and sampling terms, excluding recruitment, with no date/field restrictions. Title and abstract screening were conducted with an AI assisted review management tool (ASreview); four reviewers screened independently with end criteria of screening at least 5% and 100 consecutive irrelevant articles. Identified records were re-screened by title and abstract (jointly by two reviewers), and then by full text (one reviewer, verified by three reviewers).

**Results:** The search found 51,154 articles, 220 and 70 records remained after two rounds of title and abstract screening, and 23 articles were included in the review. Most (91%) articles were published in the last five years, indicating recent growing interest. Sample compositions focused on capturing intersectional identities across gender, race/ethnicity, socioeconomic status, and LGBTQ and transgender populations. Stratified sampling was predominantly used in quantitative studies and purposive sampling in qualitative research. Most studies applied Intersectionality Theory (39%) or Health Equity Frameworks (17%). Studies reported 52% effectiveness in capturing intersectional disparities, however 44% reported limitations in representation of rural and underserved populations, and 30% noted resource constraints affected their ability to collect in-depth intersectional data. Many studies disaggregated data by race, ethnicity, and socioeconomic factors when reporting results.

**Conclusion:** Stratified sampling in quantitative studies and purposive sampling in qualitative research were the most used methods for capturing intersectional identities. To enhance inclusivity, there is need for dynamic sampling methods and larger sample sizes to improve statistical power and address underrepresentation, especially for marginalized groups.

# Recruitment Strategies for Vulnerable Populations and Underserved Areas: Lessons from Movement Behavior Research in Mexico

**Dr. Alejandra Jauregui<sup>1</sup>**, Mr. Nabetse Blas Miranda<sup>1</sup>, Dr. Gabriela Argumedo<sup>1</sup>

<sup>1</sup>*National Institute of Public Health*

## **S2.41: Righting Recruitment: Opportunities and Approaches to Create more Representative Research, Waitakere 1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** This presentation aims to highlight the recruitment strategies and key lessons learned from conducting movement behavior research in Mexico, focusing on the SUNRISE pilot study, the Mexican site of the Global Adolescent and Children Physical Activity Questionnaire (GAC-PAQ), and the Mexican Guidelines for Physical Activity, Sedentary Behavior, and Sleep project.

**Methods:** The projects targeted vulnerable populations, including pregnant women, children ages 3 to 17, and adults with limited mobility, in urban and rural areas. The recruitment process involved engaging with participants from various socioeconomic backgrounds and settings. Specific strategies included outreach through schools and early childcare centers to recruit children, collaboration with community leaders for rural access, and partnerships with healthcare and social programs for pregnant women and adults with limited mobility.

**Results:** Successful recruitment required adapting to local contexts and cultural dynamics. Engaging trusted local figures and organizations enhanced participant enrollment and cooperation, particularly in underserved rural areas. Incentives in underserved areas were primarily non-monetary to avoid perceptions of coercion, such as providing in-kind goods or services. These strategies not only facilitated recruitment but also fostered community buy-in and minimized dropout rates. Seeking community leaders and local contacts in rural areas ensured the safety of the research team while conducting research in these settings, where limited services exist (e.g., lack of accommodation options or places to eat). Practical demonstrations of study methodologies, in-person interactions, and audio recordings available for self-completed mobile app questionnaires were particularly effective in rural communities, helping to build trust and understanding of the research objectives. Flexibility in timing was crucial for pregnant women and adults with limited mobility, as they often have other responsibilities and may face challenges in reaching study sites. Recruitment through social programs typically required participants to arrive early and wait for long periods, affecting their willingness and energy to engage fully. To address potential ethical concerns, the research team trained fieldworkers on obtaining informed consent and children's assent, ensuring respect for autonomy, especially for individuals with limited mobility and children.

**Conclusions:** A flexible, context-sensitive approach enabled the inclusion of underrepresented groups in movement behavior research. Lessons from Mexico highlight the importance of cultural competence and community collaboration. These strategies offer valuable insights for researchers working in similar socio-political contexts, promoting equity and respect in research

## Grocer Gift Cards - preliminary evaluation of a voucher program to increase access to culturally relevant food for low-income communities in Melbourne Australia

**Dr. Suzanne Kleve<sup>1</sup>**, Ms. Georgia Savage<sup>2</sup>, Ms. Tess Gardiner<sup>2</sup>  
<sup>1</sup>Monash University, <sup>2</sup>The Community Grocer

### S2.42. Global perspectives on Healthy Food Incentive Program designs, implementation, outcomes, scalability and sustainability, Waitakere 2, June 13, 2025, 3:15 PM - 4:30 PM

**Purpose:** In 2020, The Community Grocer (TCG) developed and piloted the Grocer Gift Card Program to provide people experiencing food insecurity with digital and physical vouchers to enable them to shop at our weekly markets with dignity and choice. Vouchers are distributed by local partner agencies, including health and social services. A preliminary evaluation using data from 2021-2023 was conducted to understand the reach and potential effectiveness of the program.

**Methods:** The Grocer Gift Evaluation Framework and Toolkit was developed to collect process data related to program reach, satisfaction, utilisation, functionality and sustainability, and to understand the impact of Grocer Gift Cards on recipients' finance, nutrition and sense of dignity. Data was collected using customer surveys, interviews and focus groups across three market settings and via the Grocer Gift platform.

**Results:** Since 2021, TCG has partnered with 20+ local partner agencies to provide over 5000 individual vouchers valued at over \$85,000. 11% of all transactions at TCG are made using a Grocer Gift Card. Program recipients are typically 45 years or older (83%) and have a Government Health Care Card (100%). 82% of recipients surveyed reported worrying about running out of food in the previous 12 months, and 60% actually did. As a result of access to a Grocer Gift Card, 88% of recipients surveyed indicated they increased their fruit and vegetable consumption by 1-2 servings/week, while 75% indicated they were able to allocate more of their income to other necessities. 85% of recipients surveyed reported that a Grocer Gift Card provided greater food variety and choice compared to other emergency food relief options.

**Conclusions:** TCG's Grocer Gift Card Program is reaching a food insecure population, who report utilising and preferencing Grocer Gift Cards to increase their consumption of a greater variety of fruit and vegetables. This program offers an innovative and alternative way of addressing food insecurity, with TCG planning to comprehensively examine the impact and return on investment of the Grocer Gift Card Program in 2025. Such data are necessary to inform the increasing number of voucher programs and discussions by policymakers. Other contributors to this work include students from Monash University: Jie Shi Li, Carly Ko, Anthony Duong, Alisha Maric, Alisha Carpinteri and Sabrina Power.

## Evaluating Purchase and Health Outcomes changes from SuperSNAP in North Carolina, USA

**Prof. Shu Wen Ng<sup>1</sup>**, Dr. Ashley Price<sup>2</sup>, Ms. Amy Lo<sup>1</sup>, Ms. Heather Batchelder<sup>2</sup>, Dr. Thomas Keyserling<sup>1</sup>, Dr. Truls Østbye<sup>2</sup>

<sup>1</sup>University of North Carolina, <sup>2</sup>Duke University

### **S2.42. Global perspectives on Healthy Food Incentive Program designs, implementation, outcomes, scalability and sustainability, Waitakere 2, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** We will describe SuperSNAP, a produce prescription program funded through USDA GusNIP Nutrition Incentive Pilot program and implemented by a community-based organization, health clinics serving low-income communities, and a chain supermarket with nearly 500 store locations across North Carolina and lessons learned.

**Methods:** Using propensity matched difference-in-difference analyses with controls, we evaluated changes in purchases using frequent shopper's weekly transaction data comparing the purchases of SuperSNAP shoppers (N=1440) to regular SNAP shoppers (N=45851) before and while in SuperSNAP. Similarly, we evaluated changes in health and healthcare utilization outcomes using electronic health record (EHR) data from the clinics comparing 600+SuperSNAP participants to 1200+ non-participants with matched health-related profiles pre-program enrollment. We will control for medications, number and types of medical procedures and visits, number of tests and number of referrals made.

**Results:** SuperSNAP participants were in the program for an average of 17.4 months. SuperSNAP participation was associated with a 6.7 percentage point increase in share of calories from fruits, vegetables, nuts, and legumes without additives. SuperSNAP shoppers' share of total calories from sugary beverages and ultra-processed non-essential foods decreased by 1.7 and 2.4 percentage points, respectively. Decreases in the carbohydrates to fiber ratio and saturated fat per 1000 calories indicates that some of the shifts in purchases had positive nutritional implications. Preparation of the EHR analytical data are underway; Key outcomes include changes in food security, depression, blood pressure, cholesterol, weight and ratio of preventative vs treatment visits. Among prediabetic patients or patients with type 2 diabetes, we will also look at changes in HbA1c.

**Conclusions:** SuperSNAP led to food purchase improvements but maintaining funding for these programs remain challenging, particularly when health outcome changes may take time to manifest. The Food is Medicine movement is seeking to build a financial case for public and private payers (e.g., Medicare, Medicaid and insurance companies) to reimburse produce prescriptions. However, in the USA, EHR data is complex and requires harmonization and sense-making across clinics. Future analyses will look at dose-response to consider factors such as household-composition, length of being in the program, and redemption rates. Other key contributors to this work include: Neal Curran and Sam Hoeffler (Reinvestment Partners, Durham North Carolina), David Smith and Donna Elliott (Kintegra Health, Gastonia North Carolina), and Maxime Bercholz and Sierra Mullen (University of North Carolina at Chapel Hill).

## The Bolsillo Saludable Pilot Lessons and Scaling towards a national program for Chile

Prof. Camila Corvalan<sup>1</sup>, Ms. Daniela Montes de Oca<sup>2</sup>, Ms. Sofia Bustos<sup>3</sup>, **Dr. Isabel Pemjean<sup>1</sup>**, Mr. Jonathan Lara Arevalo<sup>4</sup>, Dr. Lindsey Taillie<sup>4</sup>, Prof. Shu Wen Ng<sup>4</sup>

<sup>1</sup>University of Chile, <sup>2</sup>Pontificia Universidad Catolica de Chile, <sup>3</sup>Corporación Actuemos,

<sup>4</sup>University of North Carolina

### **S2.42. Global perspectives on Healthy Food Incentive Program designs, implementation, outcomes, scalability and sustainability, Waitakere 2, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Share lessons learned from designing and piloting a new smartphone app-based healthy incentive benefit program, Bolsillo Saludable, for low-income families to use on fruits and vegetables in ferias (open markets) and implications for scaling nationally.

**Methods:** In formative work, we took a community-based approach by observation and informational interviews with key stakeholders (feria trade associations, vendors, feria users and non-users) in 3 geographic regions of Chile. Additionally, we used past social support programs and auxiliary data to estimate benefit amounts, eligibility, cycle, allowed use, and programmatic costs to the government if scaled nationally. Importantly, we engaged various ministries (Social Development, Health, Finance, Agriculture) and a benefit distribution software company by sharing proposed program design components and options. In June-Aug 2024, we ran an 8-week feasibility pilot, conducted surveys (pre-post) and focus groups discussions (FGD) among 30 participants (3 FGDs) and 8 vendors from one feria (1 FGD).

**Results:** Based on formative work, families from 40% of the most socially vulnerable segments received 16,000 CLP (~US\$17) electronic monthly transfer for each eligible household member, including children 18 years or younger, students 25 years or younger, and individuals with disabilities. While the feasibility pilot was not powered, the surveys showed increases in quantities of fruits and vegetables purchased and increases of likelihood of consuming various fruits and vegetables. In focus groups, beneficiaries reported substituting unhealthy snacks with fruit, the importance of limiting the benefit use to only healthy items and their willingness to navigate some of the limitations of the programs such as the limited availability of vendors. Vendors reported increases in sales and social capital by more interactions with customers but a few reported concerns about cashflow due to electronic payments and tax payments. Several beneficiaries and vendors noted some technical difficulties initially that were resolved within 1-2 weeks.

**Conclusions:** The pilot showed high acceptability of the program among beneficiaries and feria vendors. However, for successful scaling-up, it is essential to engage more feria vendors in the program. This could involve lowering or exempting the current 19% tax on goods and services for items purchased under the program.

## Scaling out – validating a Spanish version of the Family Nutrition Physical Activity (FNPA) Survey in the Dominican context

**Dr. Jenny Cepeda<sup>1</sup>, Dr. Joshua Yudkin<sup>2, 3</sup>**

<sup>1</sup>Universidad Iberoamericana (UNIBE), <sup>2</sup>Texas A&M University, <sup>3</sup>Fogarty International Center, National Institutes of Health LAUNCH

**S2.43: Translational Issues with the Adoption and Utilization of the Family Nutrition and Physical Activity (FNPA) Tool for Child Obesity Prevention, Waitakere 3, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** The Family Nutrition and Physical Activity (FNPA) survey was developed to assess obesogenic behaviors and predict weight diagnoses of children. In the status quo, the updated FNPA survey has been validated only in English. The survey's increasing role in pediatric weight management – including as an ad hoc workflow in the Epic electronic health record system effective 2024 – has led to inequitable care in the United States, offering preferential treatment to children with English-speaking parents. Additionally, aligned with global health equity principles, there is a need for such tools in global settings like Latin America, which is disproportionately affected by the pediatric obesity pandemic. This presentation describes how the updated Spanish version of the FNPA survey was validated – both in terms of content and statistical validity.

**Methods:** During the fall of 2024, a certified bilingual healthcare professional from the United States and a local bilingual healthcare professional from the Dominican Republic conducted forward and backward translations of the validated English FNPA survey to Spanish, reconciling any inconsistencies. Then, this survey was shared with 5 local physicians in Santo Domingo, who provided additional recommendations to tailor the survey to the local context. Next, 50 adult parents completed the self-administered survey and a content validation interview with a researcher, who helped identify which questions were unclear and suggestions to improve comprehension. The survey was then updated and shared with 217 additional parents to allow for statistical testing of validity, including the Rasch measurement model and Pearson's r.

**Results:** In this presentation, we begin identifying the key changes between the 2009 and 2017 versions. Then, the updated translation will be presented, showing which changes were made in each round of feedback to achieve content validity. Providers were curious about how a parent can discern what “enough sleep” might be objectively. Parents asked for clarification on terms like “fast food,” and “screen time.” Finally, the results from the statistical testing for validity will be presented.

**Conclusions:** All 10 constructs were retained, although conceptualized differently. This effort advanced health equity strategies both in the U.S. and global contexts. Additional efforts are needed to rigorously validate the FNPA in other languages.

## Methodological limitations in pediatric weight management: How the Family Nutrition and Physical Activity (FNPA) Survey may offer a path forward with eHealth interventions

**Dr. Joshua Yudkin<sup>1, 2</sup>**

<sup>1</sup>Texas A&M University, <sup>2</sup>Fogarty International Center, National Institutes of Health LAUNCH

**S2.43: Translational Issues with the Adoption and Utilization of the Family Nutrition and Physical Activity (FNPA) Tool for Child Obesity Prevention, Waitakere 3, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** The Family Nutrition and Physical Activity (FNPA) tool provides utility to both guide, support and evaluate behavioral interventions focused on child obesity prevention. The purpose of this presentation is to summarize the importance of these issues in pediatric obesity prevention and to share insights and examples of how the FNPA was applied in eHealth intervention called Dynamo Kids!/¡Niños Dinámicos!. Specific emphasis is placed on the advantages of the FNPA as an evaluation tool for evidence-based pediatric weight management interventions - as an alternative or complement to Body Mass Indicator (BMI data).

**Methods:** The presentation will explain the elements of the Dynamo Kids!/¡Niños Dinámicos! intervention in the context of the broader pediatric weight management literature. The current limitations in evaluation methodology are highlighted to explain the need to develop alternative and validated ways to interventions that capture the full impact of an intervention in a way that allows for comparability in diverse populations and settings.

**Results:** In Dynamo Kids!/¡Niños Dinámicos!, the FNPA survey was used novelly as a primary outcome for an intervention, rather than as a screener to assess risk for overweight and/or obesity. This approach is significant, considering BMI%95 has been demonstrated to be an esoteric measurement that providers struggle to understand and serves little utility in clinical visits with families. Moreover, there has been increased scrutiny over BMI measurements, with increased research calling for alternative and validated measurements to assess the effectiveness of such interventions. Finally, evidence-based approaches to pediatric weight management are family-based, and this was the first study to validated measurements on both the child and family level.

**Conclusions:** The FNPA survey measures behavioral changes on the household level, while also both educating and measuring change in knowledge for guardians that may be more feasible and equitable when measuring the impact of family-based behavioral interventions, especially interventions that employ use eHealth. Future research should consider incorporating the FNPA as an alternative outcome for evaluation and explore how the FNPA can be implemented in contexts where English is not spoken.

## Family Nutrition and Physical Activity Screening in Pediatric Preventive Care: RE-AIM Outcomes

**Dr. Lisa Bailey-Davis<sup>1</sup>**, Dr. Stacey Cummings<sup>2</sup>, Dr. David Dzewaltowski<sup>3</sup>, Dr. Jennifer Franceschelli Hosterman<sup>2</sup>, Dr. Daniel Huston<sup>2</sup>, Dr. H. Lester Kirchner<sup>1</sup>, Dr. Carolyn McCabe<sup>1</sup>, Dr. Amy Moore<sup>4</sup>, Dr. Melissa Poulsen<sup>1</sup>, Dr. Jennifer Savage<sup>4</sup>, Mr. G. Craig Wood<sup>1</sup>, Dr. Gregory Welk<sup>5</sup>

<sup>1</sup>Geisinger College of Health Sciences, <sup>2</sup>Geisinger Clinic, <sup>3</sup>University of Nebraska Medical Center, <sup>4</sup>The Pennsylvania State University, <sup>5</sup>Iowa State University

### **S2.43: Translational Issues with the Adoption and Utilization of the Family Nutrition and Physical Activity (FNPA) Tool for Child Obesity Prevention, Waitakere 3, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** The study describes Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) outcomes associated with Family Nutrition and Physical Activity (FNPA) screening via the electronic health record at well-child visits.

**Methods:** Data from health system-wide primary care FNPA implementation from 2020-2023 are described related to RE-AIM (Pennsylvania, USA). Regarding Effectiveness, behavior outcomes are derived from a cluster-randomized controlled trial (c-RCT) that compared 3 models for well-child visits among a subset of clinics serving children aged 2-5 years. Models include standard of care, FNPA screening, and FNPA screening plus telehealth coaching (FNPA/telehealth). Food frequency and physical activity questionnaires were collected at baseline, 6- and 12-months. Mixed linear regression was used for per protocol statistical analysis. Differences-in-differences (Mean [SE]) are reported.

**Results:** The FNPA reached 227,391 parents of children aged 2-12. Parent adoption of FNPA increased across 2020-2023 as 13%, 28%, 33%, and 39% of visits had screening data. Screening implementation shifted from 2020 (15% patient portal, 1% waiting room, 84% exam room) to 2023 (19% patient portal, 35% waiting room, 46% exam room). Nutrition and physical activity counseling increased from 52% of visits in 2020 to 68% in 2023. During the same period, a subset of parent/child dyads enrolled in the c-RCT. Participants per model include n=515 standard, n=283 FNPA, and n=156 FNPA/telehealth. The largest differences were observed for sweets and sugar-sweetened beverages (SSB) (12-months only). Sweets in the standard group increased (+0.03 [0.06]) at 6 months but decreased in the FNPA/telehealth group (-0.20 [0.10], p=0.050). At 12 months, sweets in the standard group increased (+0.13 [0.06]) but decreased in the FNPA (-0.07 [0.07], p=0.025) and FNPA/telehealth groups (-0.17 [0.10], p=0.009). At 12 months, SSBs increased in the standard group (+0.54 [0.20]) but decreased in the FNPA/telehealth group (-0.39 [0.36], p=0.025). FNPA screening continues to be maintained in preventive care.

**Conclusion:** Enhancing well-child visits with FNPA is an effective and sustainable strategy to reach and engage parents and clinicians in preventive counseling. FNPA offers benefit to young children's behavior, and outcomes are enhanced with telehealth. Strategies to scale up FNPA clinical dissemination via electronic health records and research needs will be discussed.

## Empowering rehabilitation staff to lead implementation of our Active Wards Principles across a large health care setting in Scotland #ActiveWards: Evaluation & Follow-Up

**Dr. Juliet Harvey<sup>1,2</sup>**, Mrs. Erin Walker<sup>1</sup>, Dr. Heather Cameron<sup>3</sup>, Other NHS Greater Glasgow & Clyde Active Wards Group<sup>1</sup>

<sup>1</sup>NHS Greater Glasgow & Clyde, <sup>2</sup>University of Dundee, <sup>3</sup>NHS Lothian

**S2.44: Developing guidelines, practice environments and measures for function-focused physical activity interventions in hospitalised older adults., Limelight 1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** A physiotherapy and occupational therapy group was formed to increase confidence in clinical leadership, provide peer support and act as a platform for sharing strategies to increase physical activity and reduce sedentary behaviour in the inpatient setting. An evaluation was completed to determine the experiences of staff engaging in this work and the outputs from the group.

**Methods:** Based on barriers, needs and opportunities reported by staff in 2018 (N=69) and the results of scoping, permission was given by senior leaders to create the group using participatory practice development methods. Initially in 2018, the group had 18 members, now it has 52 members. Members were invited to complete an online self-reporting questionnaire defining their experiences of participating in the group in 2020 (N=14), and in 2024 (N=12). The results were assessed by thematic analysis. Outputs from the group are also recorded by quality improvement projects result and annual reports.

**Results:** By participating in the group, staff development was improved through i) use of active learning techniques, ii) diverse communication strategies, iii) ensuring group cohesion by tailored practice-based initiatives where staff work to a common set of principles developed by the group. Group members and team leads observed improvement in personal, professional and service development. Participants made new connections, had a sense of a common vision and felt part of a collaborative process where ideas and feedback were shared. Ongoing evaluation demonstrates this effect has remained through changes in the group membership. The Active Wards Principles are now included in health board wide guidelines, demonstrating the wide impact of the bottom-up approach.

**Conclusions:** Participatory approaches to change and active learning techniques are effective in bringing diverse clinical groups together to empower staff to lead change in their local clinical environments and define where efforts can be pooled and shared. Increasing activity in the clinical area requires consideration of the complexity of the specific needs of each clinical environment and patient population. To achieve this, clinicians need adequate time, space and support to work together with their team and patient cohort to improve opportunities for activity.

## Recommendations for older medical inpatients on incorporating body-movement into daily care activities.

**Dr. Claire Baldwin**<sup>1</sup>, Dr. Elizabeth Lynch<sup>1</sup>, Prof. Zachary Munn<sup>2</sup>, Prof. Kasia Bail<sup>3</sup>, Prof. Brian Dolan<sup>4</sup>, Prof. David Dunstan<sup>5</sup>, Dr. Sarah Edney<sup>6</sup>, Dr. Christina Ekegren<sup>7</sup>, Mr. Jeff Fiebig<sup>1</sup>, Ms. Briohny Francis<sup>8</sup>, Ms. Leila Mohammadi<sup>9</sup>, Dr. Anna Phillips<sup>10</sup>, Ms. Sally Vuu<sup>1</sup>, Ms. Lynda Whiteway<sup>1</sup>, Prof. Craig Whitehead<sup>1</sup>, Prof. Lucy Lewis<sup>1</sup>

<sup>1</sup>Flinders University, <sup>2</sup>The University of Adelaide, <sup>3</sup>University of Canberra, <sup>4</sup>Bond University, <sup>5</sup>Deakin University, <sup>6</sup>National University of Singapore, <sup>7</sup>Monash University, <sup>8</sup>Southern Adelaide Local Health Network, <sup>9</sup>Central Coast Local Health District, <sup>10</sup>University of South Australia

### **S2.44: Developing guidelines, practice environments and measures for function-focused physical activity interventions in hospitalised older adults., Limelight 1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** To develop world first consumer-focused, evidence-based recommendations about incorporating body-movement into daily care activities, for older adults (≥50 years) hospitalised with an acute medical illness.

**Methods:** A 15-member guideline panel comprising multi-disciplinary health professionals, researchers, consumers and methodologists was convened, alongside a 5-member consumer advisory group. Grading of Recommendations, Assessment, Development and Evaluation' (GRADE) methods and Guidelines International Network principles were used. Evidence for incorporating movement into daily activities for older medical inpatients was reviewed and compared to usual care through a systematic review with meta-analysis. Outcomes deemed critical to consumers during hospitalisation were functional maintenance/improvement, independence in activities of daily living, self-efficacy, mental wellbeing, quality of life, and risk of clinical deterioration (delirium, falls, other acquired complications). The GRADE 'Evidence to Decision' framework was used to evaluate the balance of intervention effects, uncertainty and variability in the value of main outcomes, and intervention acceptability and feasibility. Recommendations were developed in the form a clinical guideline and consumer handout, for use in Australian acute care hospitals.

**Results:** From the systematic review of 16 studies, estimates of potential desirable effects with intervention were small, with trivial potential undesirable effects. Variability in how older Australians value certain outcomes and make risk-benefit judgments was identified, leading to the need for a conditional recommendation as follows: "The guideline panel suggests that older adults who are hospitalised for an acute medical illness use functional and self-care activities as opportunities to accumulate body-movement throughout the day (very low evidence certainty)". Activities may include performing self-care tasks as independently as possible, increasing incidental activity around routine tasks, additional walking, and/or doing chair/standing exercises. To enact the recommendations, older adults likely need encouragement, assistance, risk mitigation strategies and symptom management strategies that are tailored to their physical and cognitive capabilities.

**Conclusions:** Older adults' risk sensitivity and preferences should be considered when moving more to maintain/improve their independence while hospitalised with an acute illness. Evidence-based recommendations may influence clinical decisions and care quality from hospital staff, with an accompanying handout being useful for consumers at the bedside, to encourage physical activity and autonomy in their own care.

## **“If you cannot measure it, you cannot improve it” - The role of routine physical activity measurement in creating sustainable behaviour change in hospital settings**

**Dr. Christina Ekegren**<sup>1</sup>, Prof. Maureen Ashe<sup>2</sup>, Prof. Nicholas Taylor<sup>3</sup>, Dr. Geeske Peeters<sup>4</sup>, Dr. Claire Baldwin<sup>5</sup>, Dr. Amelia Crabtree<sup>6</sup>, Dr. Samuel Nyman<sup>7</sup>, Mr. Steen Bastkjaer<sup>8</sup>, Ms. Elaine Docherty<sup>8</sup>, Dr. Michelle Shannon<sup>9</sup>, Dr. Laura Jolliffe<sup>9</sup>, Dr. Nicole Freene<sup>10</sup>, Dr. Sze-Ee Soh<sup>9</sup>, Dr. Michelle Callisaya<sup>9</sup>, Dr. Natasha Brusco<sup>9</sup>

<sup>1</sup>Monash University, <sup>2</sup>The University of British Columbia, <sup>3</sup>La Trobe University, <sup>4</sup>Radboud University, <sup>5</sup>Flinders University, <sup>6</sup>Monash Health, <sup>7</sup>University of Winchester, <sup>8</sup>Waitemata District Health Board, <sup>9</sup>Monash University, <sup>10</sup>University of Canberra

### **S2.44: Developing guidelines, practice environments and measures for function-focused physical activity interventions in hospitalised older adults., Limelight 1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Routine measurement of clinical indicators can act as an important driver for quality improvement. Despite this, physical activity, which is critical for maintaining function in older adults, is rarely measured and poorly documented in hospital settings. The aims of this global study were to determine the perspectives of hospitalised older adults and clinicians on the potential value of routine physical activity measurement in hospital settings, as well as 'what matters' and 'what is feasible' with respect to hospital-based physical activity measurement.

**Methods:** A descriptive qualitative research design was employed. Multidisciplinary acute and sub-acute hospital clinicians and hospitalised older adults were purposively recruited from Australia, NZ, the UK, Canada and the Netherlands. Online/in-person focus groups were conducted with clinicians, and telephone-based/in-person semi-structured interviews with hospitalised older adults. Qualitative content analysis was used to analyse transcripts, focussing on the perceived benefits, challenges, important outcomes and ideal procedures involved in measuring physical activity in hospitals.

**Results:** Over a two-year period, we recruited 64 staff and 19 patients from eight local and international health services. Content generated from focus groups and interviews included that: i) physical activity is not measured in hospitals, but clinicians and patients believe it should be; ii) doing so could help set staff/patient expectations, provide a goal setting tool, and act as a trigger for intervention; iii) an indicator of patients' level of independence should be included in physical activity measurement; iv) participation in functional activities such as bathing, dressing and toileting are critical measurement outcomes for hospitalised older adults; and v) nurses would play a key role in collecting/reporting physical activity data and that, if quick to administer, this could be integrated into their routine monitoring tasks.

**Conclusions:** This global consultation confirmed that routine physical activity measurement has the potential to drive behaviour change, highlighting physical activity as a critical component of care and improving outcomes for hospitalised older adults. The results of this study will be used to develop, test and implement a new physical activity vital sign for hospital settings, contributing significant value to understanding patient activity levels in real-world hospital settings.

## Using a co-design approach to adapt a publicly available, evidence-based lifestyle program to cater for the unique needs of individuals with Polycystic Ovary Syndrome (PCOS)

Dr. Stephanie Cowan<sup>1</sup>, **Ms. Margaret McGowan<sup>1</sup>**, Dr. Anjana Reddy<sup>1</sup>, Ms. Kristie Cocotis<sup>2</sup>, Ms. Chelsea Arceri<sup>2</sup>, Ms. Emily You<sup>2</sup>, Ms. Carli Leishman<sup>2</sup>, Dr. Rhonda Garad<sup>1</sup>, Prof. Lisa Moran<sup>1</sup>, Dr. Siew Lim<sup>1</sup>, Ms. Pareen Gulati<sup>1</sup>

<sup>1</sup>Monash University, <sup>2</sup>Diabetes Victoria

### **S2.46: Tailoring the fit: A co-designed community, evidence-based lifestyle program for polycystic ovary syndrome, Waihorotiu #1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Polycystic ovary syndrome (PCOS) is a common endocrine condition associated with increased risk of type 2 diabetes (T2D) and cardiovascular disease. Lifestyle interventions are critical for managing PCOS and delaying cardiometabolic complications, yet public health systems provide limited support tailored to the specific needs of women with PCOS. The Life! program is a free, evidence-based community lifestyle program for people with increased cardiometabolic risk. However, it has not been adapted to address the unique challenges faced by women with PCOS. This research aimed to evaluate and improve the Life! program's design, content, and delivery for women with PCOS.

**Methods:** Co-design workshops with previous Life! participants with PCOS (n=14) and program facilitators (n=5) were informed by the LAUNCH Roadmap and TiDiER checklist to design an ideal program and prioritise unmet needs. Semi-structured interviews with program facilitators (n=12) were informed by the Theoretical Domain Framework (TDF) and the Capability, Opportunity, Motivation and Behaviour (COM-B) model to understand barriers and enablers to delivering an adapted PCOS program. Workshops and interviews were recorded and transcribed. Data was thematically synthesised using template analysis.

**Results:** The results highlighted significant barriers at both individual and systems levels. Facilitators had limited understanding of PCOS-specific needs and lacked access to PCOS-specific training and resources. The program's generic content and the emphasis on weight loss, combined with inadequate time to address psychological impacts of PCOS, were major concerns. Participants expressed a need for less generic, more PCOS-centric topics with a focus on a broad range of health outcomes beyond weight loss. They also desired more inclusive, non-stigmatizing language and flexible program delivery options, such as a blend of in-person, online, one-on-one, and group sessions. One-on-one sessions were preferred for individualized advice, while group sessions were valued for peer support and shared learning.

**Conclusion:** Enhancing PCOS-specific knowledge among facilitators and adopting a more tailored, patient-centred approach are essential for improving relevance and engagement of the Life! program in PCOS. Future community-based programs should engage key stakeholders in co-design to address unmet needs and move beyond population-level recommendations, ensuring more personalized care and improved patient satisfaction.

## Food Insecurity and Symptoms of PCOS among Hispanic Adolescents in Texas

Dr. Heidi Vanden Brink<sup>1</sup>, Ms. Joelle Sfeir<sup>1</sup>, Ms. Rosalie Castaneda<sup>2</sup>, Dr. Rosaleen Bloom<sup>1</sup>, **Dr. Melissa Olfert**<sup>3</sup>

<sup>1</sup>Texas A&M University, <sup>2</sup>Driscoll Children's Hospital, <sup>3</sup>West Virginia University

**S2.46: Tailoring the fit: A co-designed community, evidence-based lifestyle program for polycystic ovary syndrome, Waihorotiu #1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** While PCOS is estimated to affect 10% of females, ~70% of females living with PCOS are thought to be undiagnosed, implying a high and unrecognized chronic disease burden of PCOS. Although lifestyle interventions are recommended for PCOS, it is unclear if lifestyle interventions are feasible, particularly among those living with health disparities. To begin to address this question, we conducted a cross-sectional study to evaluate the relationship between food security and emergence of PCOS symptoms among Hispanic adolescents living in South Texas.

**Methods.** Hispanic adolescents within 6 years of menarche were recruited. Participants underwent collection of dried blood spots to measure reproductive hormones, fasting insulin, and HbA1c, a reproductive, menstrual, and medical history, and basic anthropometry. At-risk for PCOS was defined as the presence of irregular menstrual cycles and the presence of either clinical androgen excess or biochemical hyperandrogenism. Food security status of both the adolescent and parent (if <18 years) and young adult participant (if 18+ years) was obtained using The Hunger Vital Sign.

**Results.** In our preliminary analysis of 52 Hispanic adolescents (10-18 years; mean 15 years), most (n=41; 79%) were of Mexican Origin. 17% of participants met both diagnostic features of PCOS; 32% did not exhibit any features of PCOS, and 52% presented with one diagnostic feature of PCOS (30% menstrual irregularity; 21% isolated androgen excess). Overall, 30% (14/47) of parent respondents and 17% (9/52) of adolescent participants reported being at-risk for food insecurity. 3/7 participants with PCOS were from food insecure households, versus 3/13 with no PCOS symptoms (Fishers Exact  $P > 0.05$ ). Among Hispanic adolescents whose parents reported food insecurity, total testosterone ( $p = 0.03$ ) was elevated among food insecure adolescents versus those who were not.

**Conclusions.** Hispanic adolescents in South Texas exhibit a higher prevalence of PCOS symptoms versus global estimates, supporting the notion that PCOS may be underdiagnosed, particularly among under-represented groups. Food insecurity is substantial in this population and may be associated with emerging symptoms of PCOS. Food insecurity and other factors that affect reliable access to nutrient-dense foods should be considered, particularly when lifestyle interventions are warranted.

## A community-based lifestyle program for women with Polycystic Ovary Syndrome (PCOS): Assessing efficacy and improving referral pathways into the Life! Program

Dr. Stephanie Cowan<sup>1</sup>, **Prof. Lisa Moran<sup>1</sup>**, Dr. Siew Lim<sup>1</sup>, Ms. Kristie Cocotis<sup>2</sup>, Ms. Chelsea Arceri<sup>2</sup>, Ms. Emily You<sup>2</sup>, Ms. Carli Leishman<sup>2</sup>, Dr. Anjana Reddy<sup>1</sup>, Dr. Anju Joham<sup>1</sup>, Dr. Jillian Tay<sup>1</sup>

<sup>1</sup>Monash University, <sup>2</sup>Diabetes Victoria

### **S2.46: Tailoring the fit: A co-designed community, evidence-based lifestyle program for polycystic ovary syndrome, Waihorotiu #1, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Polycystic Ovary Syndrome (PCOS) is an endocrine disorder with reproductive, metabolic and psychological manifestations. While lifestyle management is a first line therapy, access to funded community-based services is limited. This study aimed to: a) evaluate referral, retention and efficacy of an Australian community lifestyle program (Life!) for people with increased cardiometabolic risk; b) Co-design and implement integration pathways between a hospital outpatient PCOS clinic and Life!.

**Methods:** The Life! audit used routine data collected between July 2016-June 2023. Data were analysed using linear mixed-effects models for changes over time. To integrate referral pathways three six-week Plan Do Study Act (PDSA) cycles were conducted within the hospital outpatient clinic. PDSA worksheets were thematically analysed and deductively mapped to the Normalisation Process Theory constructs.

**Results:** Of the n=20,723 women who participated in Life!, 2.4% (n=737) had PCOS (n=619 pre-menopausal (21-48 years), n=118 post-menopausal (>48 years)). Referral sources differed between pre-menopausal women with and without PCOS (17 vs 29% from registered Life! providers and 33 vs 21% from general practitioners respectively,  $p \leq 0.05$ ). Withdrawal rates were 10% lower in post-menopausal women without PCOS (41%) versus postmenopausal women with PCOS (50%,  $p \leq 0.05$ ). No significant differences in changes to weight, waist circumference and blood pressure for women with and without PCOS. Following the conclusion of the PDSA cycles clinicians self-reported their referral rates had increased by 70%. Interventions to improve referral numbers addressed coherence (e.g., education about Life! embedded within clinic staff onboarding procedures), cognitive participation (e.g., formal clinic protocols for referrals imposed), collective action (e.g., streamlined PCOS-specific referral pathways created by Life!), reflexive monitoring (e.g., 6-monthly email reminders with relevant Life! updates included).

**Conclusions:** The audit data showed that while Life! was equally as efficacious in those with and without PCOS, there is a need for improved referral pathways and tailoring of content to increase engagement and retention. The PDSA data highlights key strategies needed to improve referral processes across healthcare settings. Future research should co-design updates for the current program to ensure future iterations can better meet the needs of PCOS women.

# The SCANNER AI System for Assessing Youth Exposure to Online Marketing

**Dr. Kathryn Backholer<sup>1</sup>**

<sup>1</sup>*Deakin University*

**S2.47: Closing Gaps in Food Marketing Regulations: Evidence for the Inclusion and Effective Monitoring of Brand Advertising and Digital Marketing, Herald Theatre, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Despite mounting concern about the prevalence and impact of unhealthy food marketing online, few attempts have been made to regulate this marketing. Hesitancy to regulate online food marketing is partly due to difficulties with assessing children's exposure to the variety of food promotions across online channels. This presentation provides a demonstration of the SCANNER system, an AI-powered deep learning tool developed in Australia that can identify food brands from recordings of online screen time. Findings are presented from applying this tool to quantify Australian youth's exposure to harmful products online, including unhealthy foods.

**Methods:** Screen recordings were collected from 300 youth aged 8-25 years in Australia as part of the #DigitalYouth project. Recordings were taken on one weekday and one weekend day and captured 30% of the total 'usual' amount of time youth spend using their device across those 2 days. Recordings were analyzed with the SCANNER system to identify the presence of branded products, including time on screen for each product. All marketing instances were assessed against the WHO nutrient profile model to assess whether they would be 'permitted' or 'not permitted' for marketing and to describe the platforms and marketing techniques used. Findings from the SCANNER system were compared with post-study self-reports in which participating youth were asked for their recall of exposure to this marketing.

**Results:** On average, children aged 8-13 years were exposed to 13 unhealthy food marketing posts for every day they spend online, children aged 14-17 years were exposed to 30 unhealthy food marketing posts and young adults aged 18-25 were exposed to 33 unhealthy food marketing posts. Food marketing posts often used engaging techniques, including clickable content such as 'learn more' and 'shop now' buttons.

**Conclusions:** Evidence corroborates concerns of the high prevalence of exposure to unhealthy food promotions and supports policy that restricts unhealthy food marketing online. Furthermore, the success of using the SCANNER system within the Australian context presents a promising avenue for application in other contexts to support policy development, as well as monitoring for policy compliance and effectiveness.

## Evidence and Policy Implications for Regulating Brand-Only Food Marketing

**Dr. Emma Boyland<sup>1</sup>**

<sup>1</sup>*University of Liverpool*

**S2.47: Closing Gaps in Food Marketing Regulations: Evidence for the Inclusion and Effective Monitoring of Brand Advertising and Digital Marketing, Herald Theatre, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** The UK is among a growing number of countries to regulate the advertising of foods above government-defined thresholds in fat, sugar, and sodium (hereafter high-in fat, sugar, and sodium or HFSS). However, these restrictions do not extend to the advertising of food brands that do not promote specific products. This presentation offers an explanation of mechanisms underlying effects of brand-only advertising and features results of research testing the impact of food advertising promoting HFSS products versus brand-only advertising on UK children's energy intake immediately and across the remainder of the day.

**Methods:** First, a systematic review and meta-analysis synthesizes existing evidence of the effects of brand marketing for food and beverage brands on consumption and related outcomes in children and adults. The results of eligible studies will be reported. Second, differences in immediate energy intake and intake across the day are assessed in a randomised controlled trial (RCT) of children aged 7-15 years (N = 230) exposed to either HFSS food advertising (two conditions: brand-only and product-based advertising) or non-food advertising. Immediately following exposure, children's individual ad libitum intake of snack foods are measured. Later intake is also measured via an ad libitum lunch meal and an online diary completed by parents.

**Results:** Review findings suggest brand marketing can influence preference, choice, and purchase intent but evidence is of mixed quality. RCT results are pending. Data will be analysed with linear mixed models with energy intake as the outcome variable, and we will conduct models to explore potential moderating effects of variables such as socioeconomic status and weight status.

**Conclusions:** Evidence to date supports restriction of marketing of brands associated with HFSS products. Additional evidence of behavioural impacts will further strengthen the case for action. Suggestions and challenges for policymakers are also discussed. This presentation ends with an update on food marketing policy in the UK, with particular focus on digital marketing.

# Developing Policies for Protecting Children from Harmful Digital Food Marketing

**Dr. Fiona Sing<sup>1</sup>**

<sup>1</sup>*University of Auckland*

**S2.47: Closing Gaps in Food Marketing Regulations: Evidence for the Inclusion and Effective Monitoring of Brand Advertising and Digital Marketing, Herald Theatre, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** A noted challenge in efforts to restrict children's exposure to unhealthy food marketing is the ubiquitous, growing, global, and evolving nature of digital food promotions. Drawing from document analyses and interviews, this presentation outlines legal and technical considerations for developing, implementing, and monitoring policies aimed at reducing children's exposure to unhealthy food marketing online. Specific challenges are discussed and guidance for addressing these challenges are offered.

**Methods:** A desktop review of policy documents relating to the regulation of online marketing was combined with 15 semi-structured interviews with key informants including policymakers, academics, and marketing professionals with expert knowledge on digital marketing. Analyses of documents and interviews were focused on technical and legal design for controlling harmful marketing and informed by the Public Health Law Framework.

**Results:** Key needs for developing policies to regulate digital food marketing include a strong justification for legal intervention, communication across government sectors to assess policy feasibility and support, consideration of technical requirements for regulating existing and future capabilities in the online space, and a plan for consistent monitoring and evaluation of policy effectiveness. Coordinating food marketing restrictions with other legal efforts to regulate digital marketing, defining a broad regulatory scope that extends beyond industry-owned and paid promotions, and specifying mechanisms for holding key parties accountable for compliance and sanctions for non-compliance are among the possible measures identified for overcoming challenges with regulating the digital environment.

**Conclusions:** Although challenges exist for regulating digital food marketing, these challenges are not insurmountable. Protecting children from the harmful impacts of online food marketing is possible with regulatory designs that include coordination within government and across sectors with similar interests in online regulation, a scope comprehensive enough to include current and new promotional efforts, and specific attention to monitoring and compliance.

## ePlatform for Promoting Health in Schools – The ePro-Schools project

**Dr. Rodrigo Lima**<sup>1</sup>, Dr. Albert Espelt<sup>2</sup>, Dr. Josep Vidal-Alaball<sup>3</sup>, Dr. Judith van der Waerden<sup>4</sup>, Dr. Gonneke Stevens<sup>5</sup>, Dr. Cesar Agostinis-Sobrinho<sup>6</sup>, Dr. Inese Gobina<sup>7</sup>, Dr. Marina Bosque-Prous<sup>8</sup>, Dr. Karsten Köhler<sup>9</sup>, Dr. Rüdiger Pryss<sup>10</sup>

<sup>1</sup>Parc Sanitari Sant Joan de Déu; Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM), Instituto de 18 Salud Carlos III, <sup>2</sup>Universitat Autònoma de Barcelona (UAB); Centro de Investigación Biomédica en Red de Salud Mental (CIBERESP), Instituto de 18 Salud Carlos III, <sup>3</sup>Central Catalonia Research Support Unit. Foundation University Institute for Primary Health Care Research Jordi Gol i Gurina, and Gerència d'Atenció Primària i a la Comunitat de Catalunya Central, Institut Català de la Salut, <sup>4</sup>Institut Nationale de la Santé et de la Recherche Médicale (INSERM), Institut Pierre Louis d'Épidémiologie et de Santé Publique (U1136-IPLESP), Équipe de Recherche en Épidémiologie Sociale, <sup>5</sup>Utrecht University, Department of Interdisciplinary Social Science, <sup>6</sup>Klaipėda University, Faculty of Health Sciences, Health Research and Innovation Science Center, <sup>7</sup>Rigas Stradina Universitate, Department of Public Health and Epidemiology, <sup>8</sup>Universidad Oberta de Catalunya, Faculty of Health Sciences, <sup>9</sup>Technical University of Munich (TUM), Department of Sport and Health Sciences, <sup>10</sup>University Hospital Würzburg, Institute of Medical Data Science

### **S2.48: Increasing health equity through promoting healthy diets and physical activity, Balcony Foyer, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** ePro-Schools will co-design, pilot and evaluate an evidence-based modular eHealth intervention platform to promote physical activity and healthy eating, and reduce time in sedentary behaviours.

**Methods:** ePro-Schools will evaluate high-quality epidemiological data to identify the determinants of physical activity, sedentary behaviour and dietary habits as well as to which extend these lifestyle behaviours are associated with physical and mental health in adolescents from socially disadvantaged settings. A profound co-creation process with 15 and 20 participants from each stakeholder group (adolescents, teachers, school directors and policy makers) together with the adaptation of previous interventions conducted by the consortium members will support the development of the program. The ePro-Schools program will contain modules for adolescents and their parents, teachers and school administration. The implementation and testing of the ePro-Schools program will be conducted in six secondary schools from socially disadvantaged settings in Catalunya Central during January 2025 to June 2025.

**Results:** By June 2025, the co-creation will gather relevant information from stakeholders (approximate 50 participants involved) regarding the content of the program (e.g., type of content desired, format of the content, topics to be addressed) and collect input on relevant barriers of program implementation. Around 1000+ adolescents and their families besides physical education teachers and school directors from the secondary schools will be involved in the testing of the program. Furthermore, we will have preliminary results of the effectiveness of the program on the promotion of physical activity and health diet among adolescents from socially disadvantaged settings.

**Conclusions:** It is expected that the ePro-Schools program promote sustainable physical activity and healthy dietary habits among adolescents as well as to equip schools and families. Using

implementation science methodology, ePro-Schools will co-design transferable evidence-based practices and methodologies and guidance for scaling up the platform with policymakers and stakeholders as well as informing specialists, policymakers and the general public.

## A scoping review examining the evidence for enhancing equity in physical activity (PA) through public policy

Ms. Fleur Heuvelman<sup>1</sup>, Sven Messing<sup>2</sup>, Ms. Leonie Birkholz<sup>2</sup>, Dr. Antonina Tcymbal<sup>2</sup>, Prof. Catherine Woods<sup>3</sup>, Dr. Jeroen Lakerveld<sup>1</sup>, Prof. Joline Beulens<sup>1</sup>, Dr. Karim Abu-Omar<sup>2</sup>, Dr. Kevin Volf<sup>3</sup>, Dr. Petru Sandu<sup>4</sup>, Dr. Rasa Jankauskiene<sup>5</sup>, Ms. Anna Gobis<sup>6</sup>, Dr. Joanna Wachnicka<sup>6</sup>, Prof. Joanna Żukowska<sup>6</sup>, Prof. Peter Gelius<sup>2</sup>, Ms. Linda J. Schoonmade<sup>7</sup>, **Dr. Nicole Den Braver<sup>1</sup>**

<sup>1</sup>Amsterdam UMC, <sup>2</sup>Friedrich-Alexander University Erlangen-Nürnberg, <sup>3</sup>University of Limerick,

<sup>4</sup>University Babes-Bolyai, <sup>5</sup>Lithuanian Sports University, <sup>6</sup>Gdansk University of Technology,

<sup>7</sup>Vrije Universiteit Amsterdam

### **S2.48: Increasing health equity through promoting healthy diets and physical activity, Balcony Foyer, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** Reducing physical inactivity requires system-level action. Public Physical Activity (PA) policies targeted at the general population, without addressing socially disadvantaged populations, might unintentionally increase health inequities. This is particularly concerning since disadvantaged groups are less likely to meet PA recommendations. This scoping review aims to assess the evidence on the effects of public PA policies in improving equity in PA.

**Methods:** A systematic search across six databases was conducted. Peer-reviewed publications were included when they a) focused on changes in PA behaviour, PA proxies/indirect PA behaviour, or the PA environment as outcomes, b) examined public policy as the independent variable, and c) included a (sub)population experiencing inequities, defined as unnecessary, avoidable, unfair and unjust differences between groups of people. Screening of records was done in duplicate. Data were extracted according to the study protocol published in PROSPERO. Policies were categorized into domains based on ISPAH'S Eight Investments (e.g., school, healthcare, transport), and their impact on inequities was classified as reducing, increasing, or having no effect on inequity. These impact ratings were synthesized using vote counting.

**Results:** Out of 10,350 records screened, 50 studies were included. Preliminary results showed that 35% of the policies reduced inequities, 17% increased them, and 48% had no effect. The least policy effects occurred in the community domain (N=11) and most in the sport-for-all domain (N=23). Policies in the education and transport domains most often showed reduced inequities in PA behaviours. However, for transport, this reduction in inequities did not extend to indirect PA behaviours, such as cycle lane use. Urban design policies predominantly showed reduced inequities in indirect PA behaviours such as park use. Effective policies for reducing inequities in PA across domains included health promotion and PA programs in community and educational settings, mass media campaigns, financial incentives for sports, cycling and walking infrastructure, bike-sharing expansions, urban regeneration/ renewal, and park renovation/ development.

**Conclusions:** This review identified several types of policies, particularly in the education and transport domains, with the potential to reduce inequities in PA. These findings offer valuable insights for future policymaking aimed at promoting equitable PA behaviour.

## Improving Physical Activity policies in urban design to enhance their impact on physical activity and health equity

**Dr. Kevin Volf<sup>1,2</sup>**, Dr. Wojciech Kustra<sup>3</sup>, Prof. Rasa Jankauskiene<sup>4</sup>, Dr. Migele Bacaviciene<sup>4</sup>, Dr. Anna Barrero<sup>1,2</sup>, Dr. Anna Gobis<sup>3</sup>, Dr. Joanna Wachnicka<sup>3</sup>, Ms. Leonie Birkholz<sup>5</sup>, Dr. Sven Messing<sup>1,5</sup>, Ms. Fleur Heuvelman<sup>6</sup>, Dr. Nicolette R Den Braver<sup>6, 7</sup>, Dr. Petru Sandu<sup>8</sup>, Dr. Laszlo Peters<sup>8</sup>, Dr. Aurelie Van Hoyer<sup>2,9</sup>, Dr. Enrique Garcia<sup>2</sup>, Prof. Joanna Zukowska<sup>3</sup>, Prof. Catherine Woods<sup>1,2</sup>

<sup>1</sup>Physical Activity for Health Research Cluster, Health Research Institute, University of Limerick,

<sup>2</sup>Department of Physical Education and Sport Sciences, University of Limerick., <sup>3</sup>Faculty of Civil and Environmental Engineering, Gdansk University of Technology,, <sup>4</sup>Health Research and Innovation Science Center, Faculty of Health Sciences, Klaipeda University, <sup>5</sup>Department of Sport Science and Sport, Friedrich-Alexander-Universität Erlangen-Nürnberg, , <sup>6</sup>Amsterdam UMC, VU University Amsterdam, Department of Epidemiology and Data Science, Amsterdam Public Health Research Institute, <sup>7</sup>Upstream Team, <sup>8</sup>Department of Public Health, Faculty of Political, Administrative and Communication Sciences, Babeş-Bolyai University, <sup>9</sup>UMR1319 INSPIRE, Université de Lorraine

### **S2.48: Increasing health equity through promoting healthy diets and physical activity, Balcony Foyer, June 13, 2025, 3:15 PM - 4:30 PM**

**Purpose:** The urban environment can provide, or limit, opportunities for engaging in physical activity (PA). Purposeful public policies may ensure that urban environments are maximally supportive of PA for all. As part of the IMproving Physical Activity policies and their impact on health eQuiTy (IMPAQT) project's efforts to identify PA policy good practice, this systematic review collates evidence of urban design policies which have demonstrated effectiveness in supporting PA outcomes.

**Methods:** Six electronic databases (MEDLINE, CINAHL, SportDiscus, Cochrane Library, Scopus and Web of Science) were systematically searched using keywords related to urban design, public policy, and physical activity. The review team screened title and abstracts and full text in duplicate using predefined eligibility criteria. Studies were considered eligible if they examined the effects of government actions, which target elements of the physical urban setting, on PA. No restrictions were placed on study design. Study quality was assessed using checklists appropriate for the various study designs: a Modified Downs and Black checklist for primary quantitative studies, AMSTAR checklist for systematic reviews, MMAT checklist for mixed methods studies and CASP for qualitative. Evidence from the included papers will be used to formulate urban design policy propositions and these propositions will be prioritise based on the evidence attesting to their policy effectiveness.

**Results:** 10986 unique records were retrieved from the database search. Forty-two full text papers have been selected for evidence synthesis after screening. Evidence synthesis will account for the observed impact on PA levels of a policy proposition, across all groups, and the quality of the supporting evidence.

**Conclusions:** The findings of this review will have important practical implications. It is confided that the policy evidence highlighted will point to principles of urban design policy that are generally effective in promoting PA. Furthermore, cases of effective policy enactment will be highlighted by the IMPAQT project as best practice exemplars. By highlighting exemplary cases

of effective policy implementation, the review will support policy advocacy efforts aimed at fostering healthier, more active urban environments.



## Understanding daily time-use and its associations with evaluative and experienced wellbeing through multilevel compositional analysis

**Dr. Anantha Narayanan<sup>1</sup>**, Dr. Tom Stewart<sup>1</sup>, Prof. Scott Duncan<sup>1</sup>

<sup>1</sup>Auckland University of Technology

### S3.49 Innovations in Compositional Analysis: Unpacking Time-Use Behaviours for Health and Wellbeing, Kiri Te Kanawa Theatre, June 14, 2025, 8:30 AM - 9:45 AM

**Purpose:** Understanding the composition of daily time-use physical behaviours—such as sedentary behaviour (SB), light physical activity (LPA), moderate-to-vigorous physical activity (MVPA), and sleep is crucial for overall health and wellbeing. This study examined the associations between these time-use behaviours and both evaluative wellbeing (life satisfaction) and experienced wellbeing (momentary happiness, anxiousness, and tiredness). Evaluative wellbeing reflects an individual's overall life assessment, while experienced wellbeing captures real-time emotional states. We investigated these associations by reallocating time among behaviours and assessing the predicted impact on wellbeing outcomes.

**Methods:** Time-use behaviours were obtained from 211 adults who wore Axivity AX3 accelerometers on their wrists for seven days. Participants also completed a survey to assess demographics and life satisfaction, before using a custom smartphone app to report their real-time happiness, anxiousness, and tiredness scores over seven days (at three random times each day). Time-use data were processed using UK Biobank machine learning algorithms, and we employed multilevel compositional analysis (using the multilevelcoda R package) to investigate how time-use behaviours, and reallocating time between behaviours, were associated with both life satisfaction and the three momentary affective states.

**Results:** Increasing sedentary time (relative to other behaviours) was negatively associated with happiness and positively associated with anxiousness. Conversely, increasing the proportion of MVPA (relative to other behaviours) was associated with reduced anxiousness and tiredness. Substitution analysis showed that reallocating 20 minutes SB to MVPA increased happiness by 0.12 units, 95% CI [0.014, 0.222] and reduced anxiousness by 0.2 units, 95% CI [-0.336, -0.07]. Additionally, reallocating 20 minutes of time spent in LPA to MVPA reduced tiredness by 0.16 units, 95% CI [-0.28, -0.031]. No significant associations were found between time-use behaviours and life satisfaction.

**Conclusion:** Time-use behaviours appear to be more strongly associated with experienced wellbeing outcomes than evaluative wellbeing. Studies that focus solely on examining time-use behaviours and long-term wellbeing outcomes, such as life satisfaction (common in population studies), may overlook the dynamic interplay and immediate impacts of behaviours on wellbeing. The next step is to explore sequential associations, such as behaviours occurring immediately before or after a momentary affect response is recorded.

## When the outcome is compositional - a method for conducting compositional response linear mixed models for physical activity, sedentary behaviour and sleep research.

**Mr. Aaron Miatke**<sup>1,2</sup>, Dr. Ty Stanford<sup>1</sup>, Prof. Tim Olds<sup>1,2</sup>, Dr. Francois Frayssse<sup>1</sup>, Prof. Carol Maher<sup>1</sup>, Dr. Josep Antoni Martin-Fernandez<sup>3</sup>, Dr. Dot Dumuid<sup>1,2</sup>

<sup>1</sup>Alliance for Research in Exercise, Nutrition and Activity, Allied Health and Human Performance, University of South Australia, <sup>2</sup>Centre for Adolescent Health, Murdoch Children's Research Institute, <sup>3</sup>Department of Computer Science, Applied Mathematics and Statistics, University of Girona

### S3.49 Innovations in Compositional Analysis: Unpacking Time-Use Behaviours for Health and Wellbeing, Kiri Te Kanawa Theatre, June 14, 2025, 8:30 AM - 9:45 AM

**Purpose:** Time use is compositional in nature because time spent in sleep, sedentary behaviour (SB), light-physical activity (LPA) and moderate-to-vigorous physical activity (MVPA) will always sum to 24h/day meaning any increase in one behaviour will necessarily displace time spent in another behaviour(s). Given the link between time use and health, and its modifiable nature, public health campaigns and interventions often aim to change the way people allocate their time. However, relatively few studies have investigated how movement-behaviour composition changes longitudinally (with repeated measures) due to experimental design elements or participant characteristics. This may be because most mixed model packages that account for the random effects of repeated measures do not natively allow for a multivariate outcome such as movement-behaviour composition.

**Methods:** We provide a practical framework of how to implement a compositional multivariate response linear mixed model, that simultaneously models multiple isometric-log ratio (ilr) response variables, to investigate how movement-behaviour compositions change with repeated measures over time. In examples, we show how movement-behaviour composition changes longitudinally in children across five timepoints during the school-year and summer holiday period, and how the method can be used to investigate how movement-behaviour compositions change due to intervention.

**Results:** Across the five timepoints estimated movement-behaviour composition for an average participant were, Sleep: range 581-586 min/day. SB: range 481-520 min/day. LPA: range 280-298 min/day. MVPA: range 55-77 min/day. A significant interaction was observed between the vector of ilrs representing movement-behaviour composition and timepoints  $F(12, 2475) = 9.832$ ,  $p < 0.001$ , suggesting movement-behaviour composition change longitudinally. Post-hoc comparisons showed children accrue significantly more SB and less MVPA during the summer holiday periods.

**Conclusions:** We outline a method to investigate compositional outcomes in a multilevel framework. Future studies should consider investigating compositional outcomes in repeated measures designs using a compositional multivariate response linear mixed model.

## Combining compositional analysis with latent profile analysis to understand cross-sectional and 12-month associations between Australian children's waking movement profiles and health outcomes

**Dr. Simone Verswijveren**<sup>1</sup>, Mr. Aaron Miatke<sup>1,2,3</sup>, Prof. Jo Salmon<sup>1</sup>, Dr. Nicola Ridgers<sup>2</sup>, Dr. Ana Maria Contardo Ayala<sup>1</sup>, Dr. Dorothea Dumuid<sup>2</sup>, Prof. Anna Timperio<sup>1</sup>, Dr. Charlotte Rasmussen<sup>4</sup>, Prof. Narcis Gusi<sup>5</sup>, Dr. Ty Stanford<sup>2</sup>, Prof. Kylie Hesketh<sup>1</sup>

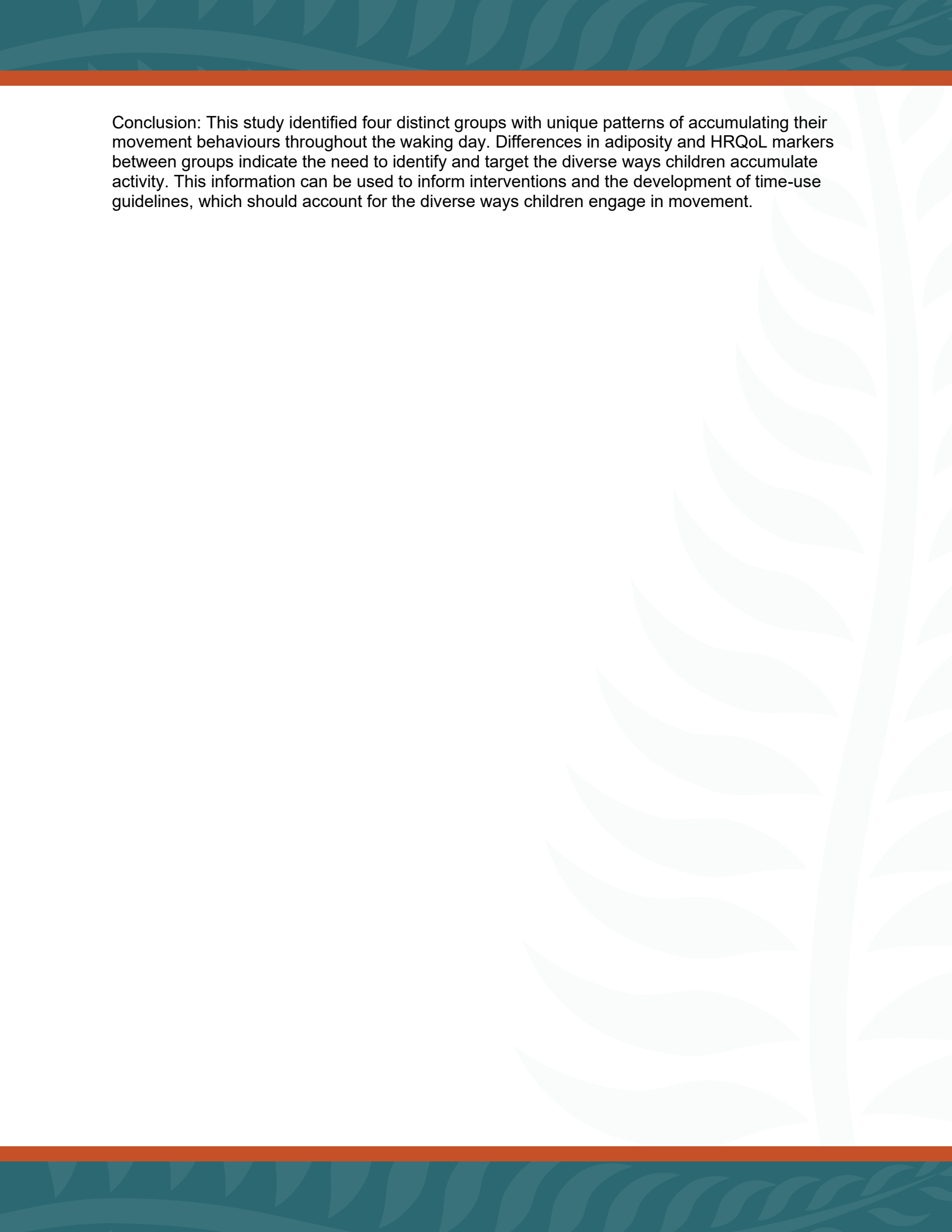
<sup>1</sup>*Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University*, <sup>2</sup>*Alliance for Research in Exercise, Nutrition and Activity*, <sup>3</sup>*Centre for Adolescent Health, Murdoch children's Research Institute*, <sup>4</sup>*Curtin School of Allied Health, Faculty of Health Sciences, Curtin University*, <sup>5</sup>*Faculty of Sport Sciences, University of Extremadura*

### S3.49 Innovations in Compositional Analysis: Unpacking Time-Use Behaviours for Health and Wellbeing, Kiri Te Kanawa Theatre, June 14, 2025, 8:30 AM - 9:45 AM

**Purpose:** Previous compositional analysis (CoDA) studies have linked children's daily movement behaviour compositions to health outcomes. However, these typically utilized CoDA alongside variable-centred approaches, which assume a homogeneous population distribution and neglect that distinct subpopulations may exhibit unique activity patterns. Considering profiles of activity patterns may provide greater understanding of children's movement behaviours. Therefore, this study aimed to combine CoDA with latent profile analysis to identify groups of children with distinct activity profiles. Secondly, the cross-sectional and 12-month associations of these profiles with adiposity markers and health-related quality of life outcomes (HRQoL) were examined.

**Methods:** ActiGraph GT3X+ accelerometer data, BMI, waist circumference (WC), and self-reported HRQoL were collected from 792 children (7-11 years). Sedentary time, light physical activity (LPA), and moderate- to vigorous-intensity physical activity (MVPA), along with their respective mean bout lengths, were derived from raw acceleration data. Latent profile analysis utilized total times (expressed as isometric log ratios) and mean bout lengths as input variables to probabilistically classify distinct participant profiles. Latent classes were then characterised by time-use, bouts, and demographics. Subsequently, linear regression models analysed associations between obtained profiles and measures of adiposity and HRQoL.

**Results:** Four distinct groups were identified: Profile 1 "Rapid Rabbits" (n=184) comprised mostly boys and exhibited the highest levels of MVPA but also had high sedentary levels comparable to Profiles 3 "Lazing Lions" and 4 Hibernating Bears", albeit for shorter durations on average. Profile 2 "Energetic Hummingbirds" (n=54) included the youngest participants and the highest proportion of low socioeconomic position, and demonstrated considerably lower sedentary time and higher LPA for longer durations than all other profiles. Lazing Lions (n=405) and Hibernating Bears (n=149) showed similarly high levels of sedentary time; however, Lazing Lions had lower mean sedentary bout durations than the Hibernating Bears. Compared to the Hibernating Bears, the Rapid Rabbits showed better adiposity levels (cross-sectionally; zBMI  $\beta = 0.270$ ,  $p = 0.031$ ; WC  $\beta = -0.279$ ,  $p = 0.017$ ) and Lazing Lions had higher odds of pain problems (longitudinally; OR=2.0,  $p = 0.013$ ). No further significant associations were observed at the  $\alpha = 0.05$  significance level.



Conclusion: This study identified four distinct groups with unique patterns of accumulating their movement behaviours throughout the waking day. Differences in adiposity and HRQoL markers between groups indicate the need to identify and target the diverse ways children accumulate activity. This information can be used to inform interventions and the development of time-use guidelines, which should account for the diverse ways children engage in movement.

## Parent-Targeted Marketing on Commercial Food for Infants and Young Children

**Dr. Alexandra Chung**<sup>1</sup>, Mr. Kostas Hatzikirikiadis<sup>1</sup>, Dr. Florentine Martino<sup>2</sup>, Mr. Mitchell Bowden<sup>1</sup>, Dr. Helen Skouteris<sup>1</sup>

<sup>1</sup> Monash University, <sup>2</sup>Deakin University

**S3.50: Marketing and Labeling of Foods for Infants and Young Children: Examining the State of Play, Misleading Claims, Parental Perceptions, and Policy Interventions, Hunua 1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Early childhood is a critical time to protect and promote healthy dietary behaviours. The food industry seeks to influence early childhood diets through marketing and promotion of commercial foods for infants and young children. This presentation will draw on evidence from two studies to discuss the marketing techniques used to promote foods for infants and young children, and their influence on parents' product perceptions and buying behaviours.

**Methods:** A systematic scoping review was conducted to identify and analyse published literature on the impact of marketing techniques displayed on foods for infants and young children on parents' perceptions and behaviours. The review identified nine studies from four countries (Australia, the United States, the United Kingdom, and Canada). Data were extracted and synthesized to generate an inventory of parent-appeal marketing techniques. To complement the scoping review, in-depth interviews were conducted with parents of infants and young children (aged 6 months to 3 years) living in Victoria, Australia. The audio recordings were transcribed verbatim, and the transcripts were coded to identify key themes related to the influence of front-of-pack marketing on parents' behaviours when buying foods for their young children.

**Results:** The review found that marketing features including health claims, nutrition claims, images of healthy ingredients, and celebrity endorsements created positive perceptions of products and influenced parents' food choices for their children. The interviews revealed that parents commonly relied on health and nutrition claims when buying foods, expecting front-of-pack information to be truthful. However, parents were also wary of misleading marketing tactics and fact-checked marketing claims against nutrition information panels and ingredients lists.

**Conclusion:** Marketing techniques used to promote commercial foods for infants and young children influence parents' perceptions and buying behaviours. Findings underscore the need for government-led regulation of all forms of marketing intended to influence children's diets. This research provides critical evidence to facilitate the design and implementation of comprehensive regulatory controls and is timely in the context of the Australian Government's current interest in improving commercial foods for infants and young children.

## Foods for infants and young children in NZ and Australia fall short of nutrient and promotional recommendations.

**Dr. Sally Mackay<sup>1</sup>**, Ms. Andrea Schmidtke<sup>2</sup>, Dr. Berit Follong<sup>1</sup>, Ms. Maree Scully<sup>3</sup>

<sup>1</sup>University of Auckland, <sup>2</sup>Food for Health Alliance, <sup>3</sup>Cancer Council

**S3.50: Marketing and Labeling of Foods for Infants and Young Children: Examining the State of Play, Misleading Claims, Parental Perceptions, and Policy Interventions, Hunua 1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** New Zealand (NZ) and Australia have a bi-national food system and labelling of commercial foods for infants and young children is a current area of concern. The World Health Organisation (WHO) Regional Office for Europe Nutrient and Promotion Profile Model (NPPM) sets out nutrient and promotional requirements for these foods. This study aims to identify on-pack labelling and claims on commercial packaged foods for infants and young children in NZ and Australia and assess these foods against the WHO NPPM recommendations.

**Methods:** A comprehensive audit of foods labelled as suitable for children aged less than 36 months was conducted in September/October 2022 in Australia (n=330) and between April and July 2023 in New Zealand (n=210). Information (nutrients, ingredients, claims) on each side of the package was coded using a pre-existing coding structure to assess the specific nutrient composition requirements and composition, nutrition, health and marketing claims.

**Results:** No products met both the nutrient and promotion standards. Only 36% and 28% of foods in NZ and Australia, respectively, complied with all nutrient composition standards, with compliance lowest for energy density and total sugar. One in three products had a product name that did not accurately describe the product. All products failed to meet the requirement of having no compositional, nutritional, health or marketing claims. On average, there were seven unique types of claims per product (range 3-14) in NZ and eight (range 2-20) in Australia. In both countries, nearly all products (97%) carried a 'free from' claim, with those referring to the absence of flavours (71% NZ, 83% Australia), colours (71%, 82%) and preservatives (43%, 68%) being most common.

**Conclusions:** All foods for infants and young children available in NZ and Australia are unsuitable for sale based on international recommendations. Bi-national regulation needs to be strengthened to ensure the composition of foods is appropriate for infants and young children and that parents and caregivers receive accurate information when making purchasing decisions for their children.

## Policy action and interventions - what's on the table and what could be

**Ms. Andrea Schmidtke**<sup>1</sup>, Dr. Mamaru Awoke<sup>2</sup>, Dr. Jennifer McCann<sup>4</sup>, Ms. Alison McAleese<sup>2</sup>, Dr. Ashleigh Haynes<sup>2,3</sup>, Dr. Bridget Kelly<sup>5</sup>, Dr. Lindsey Smith Taillie<sup>6</sup>, Dr. Jane Martin<sup>1</sup>, Dr. Mihiri Silva<sup>7,8,9</sup>, Dr. Anthea Rhodes<sup>9,10</sup>, Dr. Belinda Morley<sup>2</sup>, Dr. Helen Skouteris<sup>11</sup>, Mr. Derek McCormack<sup>12</sup>, Dr. Siarn Rakic<sup>11</sup>, Dr. Mikaela Chinotti<sup>12</sup>, Dr. Helen Dixon<sup>2</sup>, Ms. Maree Scully<sup>2,3</sup>  
<sup>1</sup>Food for Health Alliance, <sup>2</sup>Cancer Council, <sup>3</sup>The University of Melbourne, <sup>4</sup>Deakin University, <sup>5</sup>University of Wollongong, <sup>6</sup>University of North Carolina at Chapel Hill, <sup>7</sup>Murdoch Children's Research Institute, <sup>8</sup>Melbourne Dental School, University of Melbourne, <sup>9</sup>The Royal Children's Hospital Melbourne, <sup>10</sup>Department of Paediatrics, University of Melbourne, <sup>11</sup>School of Public Health and Preventive Medicine, Monash University, <sup>12</sup>Raising Children Network, <sup>13</sup>Australian Dental Association

### **S3.50: Marketing and Labeling of Foods for Infants and Young Children: Examining the State of Play, Misleading Claims, Parental Perceptions, and Policy Interventions, Hunua 1, June 14, 2025, 8:30 AM - 9:45 AM**

Policy context: Australian and New Zealand governments are currently considering improvements to readymade infant and toddler foods (RITFs). This presentation will explore the current policy context for improvements to RITFs focusing on front-of-pack marketing claims. It will present the options government has put forward, and the public health community's response and suggested alternatives to these, including World Health Organization recommendations and a potential intervention to counteract potentially misleading front-of-pack marketing claims on sugary RITFs: added sugar warning labels (ASWLs). Findings from an online experiment aimed at identifying the most effective ASWL design for promoting accurate evaluations of sugary RITFs and reorienting parents' preferences towards healthier options will be presented. Method: We tested four ASWL conditions with N= 1,368 Australian parents of infants and toddlers (6 to 36 months): text warning, text + sugar icon, text + tooth decay icon, and control (no ASWL). Effects of the respective ASWL designs on parent's perceptions of the sugar content and suitability of various RITFs for babies or toddlers, their ability to identify RITFs with added sugar and their purchase intentions, and choices of RITFs for their child were assessed.

Results: Compared to the control condition, all ASWLs significantly enhanced parents' perceptions of added sugar levels and ability to correctly identify RITFs containing added sugar. The only ASWL that significantly reduced perceptions of the suitability of sugary RITFs for babies/toddlers was the text + sugar icon. Both ASWLs with icons (text + sugar/decay) promoted significantly lower intentions to purchase sugary RITFs cf. control. Compared to the control conditions, none of the ASWLs prompted a significant reduction in parents' choice of less sugary RITFs.

Conclusions: All ASWLs showed beneficial effects. However, the text warning plus sugar icon design was most effective in helping parents identify and evaluate sugary RITFs and curb their purchasing intention for these products. ASWLs are a potentially scalable policy intervention that can help parents identify and evaluate sugary RITFs and support optimal early childhood nutrition.

## Optimal design of added-sugar menu warning labels: A randomized experiment

Ms. Brittany Lemmon<sup>1</sup>, Dr. Aviva Musicus<sup>2,3</sup>, Ms. Andrea Gil<sup>1</sup>, Dr. Marissa Hall<sup>4</sup>, Dr. Christina Roberto<sup>5</sup>, **Dr. Jennifer Falbe<sup>1</sup>**

<sup>1</sup>University of California, Davis, <sup>2</sup>Harvard T.H. Chan School of Public Health, <sup>3</sup>Center for Science in the Public Interest, <sup>4</sup>Gillings School of Global Public Health, University of North Carolina Chapel Hill, <sup>5</sup>Perelman School of Medicine at the University of Pennsylvania

**S3.51: Menu labeling interventions to promote health and sustainability in restaurants, Hunua 2, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Overconsumption of added sugar is a risk factor for the development of cardiometabolic diseases. To address overconsumption of added sugar from restaurants, there is growing interest among policymakers in the use added-sugar warning labels that would indicate which items contain an excessive amount of added sugar. However, the best design for added-sugar menu labels is unknown. This is the first study to compare the effects of multiple added-sugar menu label designs on behavioral outcomes and outcomes that precede behavior change, including noticing and comprehension of the label and recognition of the label.

**Methods:** In a 3x2x2x2 online factorial experiment, 3,931 adults were recruited to reflect the national distribution of gender, age, race, ethnicity, and education in the United States. Participants were randomized to added-sugar warning labels that differed by label type (icon-plus-text vs. boxed-icon vs. icon-only), color (red vs. black), size (150% vs. 100% of menu text height), side (right vs. left side of item name). All labels contained a triangle icon depicting an exclamation mark over a spoon. Participants ordered a hypothetical meal from both a fast-food and a full-service restaurant menu displaying their assigned label next to high-added-sugar items (containing >25g added sugar). Outcomes included (1) noticing and comprehending that one's label indicated high-added-sugar content, (2) recognizing one's assigned label among other labels (e.g., sodium warnings), (3) ordering  $\geq 1$  high-added-sugar item, and (4) the grams of added sugar ordered, averaged across both menus. Bivariate analyses used Poisson regression with robust error variance to directly estimate probability ratios for dichotomous outcomes and linear regression for continuous outcomes.

**Results:** The icon-plus-text labels increased label noticeability and comprehension by 492% and recognition by 261% vs. icon-only labels ( $p < 0.001$ ). Red color increased label noticeability and comprehension by 18% ( $p = 0.012$ ) and recognition by 20% vs. black ( $p < 0.001$ ). Larger label size increased recognition by 13% ( $p = 0.001$ ). For icon-only labels, right placement increased noticeability and comprehension by 54% ( $p < 0.05$ ). Only icon-plus-text labels reduced the risk of ordering a high-added-sugar item by 9% and amount of added sugar ordered by 10 grams vs. icon-only labels.

**Conclusion:** Icon-plus-text added-sugar warning labels increased label noticeability and comprehension, recognizability, and substantially decreased grams of added sugar ordered relative to icon-only designs. To a lesser extent, red color, larger size, and right placement of labels additionally improved noticeability and recognition, especially for icon-only designs. Policymakers should prioritize icon-plus-text designs for added-sugar menu labeling policies.

## Federal Calorie Menu Labeling Policy and Calories Purchased in Restaurants in a National Fast Food Chain

**Dr. Pasquale Rummo**<sup>1</sup>, Dr. Todq Mijanovich<sup>2</sup>, Mr. Emil Hafeez<sup>1</sup>, Mr. Lloyd Heng<sup>1</sup>, Ms. Eriia Wu<sup>1</sup>, Dr. Beth Weitzman<sup>2</sup>, Dr. Marie Bragg<sup>1</sup>, Dr. Simon Jones<sup>1</sup>, Dr. Brian Elbel<sup>1,2</sup>

<sup>1</sup>NYU Grossman School of Medicine, <sup>2</sup>New York University

**S3.51: Menu labeling interventions to promote health and sustainability in restaurants, Hunua 2, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** A few studies have leveraged sales data to evaluate the impact of the national rollout of menu labeling legislation on restaurant purchases, but this previous work has limitations in causal inference and generalizability. Thus, we sought to estimate the association between the rollout of national menu labeling legislation with average calories purchased in the U.S.

**Methods:** We used a quasi-experimental design and actual transaction data from 5,821 unique Taco Bell restaurants in the U.S. from 2016 to 2019 (346,404 restaurant-month observations). Using synthetic control methods, restaurants that implemented menu labels after nationwide labeling in April 2017 (n=5,821 restaurants) were matched to comparison restaurants that added calorie labels to menus after local labeling legislation between August 2008 and May 2012. We compared the differences in calories per transaction (primary outcome) before and after the national rollout of menu labeling legislation between menu labeling and comparison restaurants using a two-way fixed effects regression model, with time modeled as relative month from implementation and fixed effects for calendar month and restaurant.

**Results/findings:** In the baseline period, average calories per transaction was 1,246 (SD=187) in the menu labeling group and 1,245 (SD=184) in comparison group. Trends in calories purchased were approximately parallel between menu labeling and comparison groups in the baseline period. Difference-in-differences model results indicate customers purchased 7.4 (95% CI: 7.3, 7.5) more calories per transaction from restaurants in the menu labeling group in the two-year follow-up period, relative to the comparison group.

**Conclusions:** In this quasi-experimental study, we observed a negligible change in calories purchased in restaurants that added calorie labels due to national legislation relative to those with calorie labels from earlier local legislation, indicating that national rollout of menu labeling had little effect on restaurant purchases.

## Effect of environmental sustainability “ecolabels” on the carbon footprint and healthfulness of restaurant selections: A randomized trial

**Dr. Anna Grummon<sup>1</sup>**, Ms. Cristina Lee<sup>1</sup>, Ms. Amanda Zeitlin<sup>1</sup>, Dr. Joshua Petimar<sup>2</sup>

<sup>1</sup>Stanford University School of Medicine, <sup>2</sup>Harvard Medical School

**S3.51: Menu labeling interventions to promote health and sustainability in restaurants, Hunua 2, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Food production accounts for approximately one-third of human-caused greenhouse gas emissions, making it a key modifiable contributor to climate change. Displaying environmental sustainability labels, or ‘ecolabels,’ on more sustainable foods is a highly scalable, low-cost strategy for encouraging consumers to choose more sustainable foods, but few studies have examined whether ecolabels affect purchases in restaurants. This is an important gap because restaurant foods account for one-third of calorie intake. The objective of this study was to test whether ecolabels improve the environmental sustainability of restaurant selections. We also examined whether ecolabels affect the nutritional quality of restaurant selections.

**Methods:** In 2024, we recruited 3,113 US participants ages 18+ to complete an online randomized trial. Participants were randomized to 1 of 2 trial arms: ecolabels or control. Participants viewed a restaurant menu mimicking a major full-service restaurant chain and selected foods they wished to order. In the ecolabels arm, the menu displayed ecolabels next to more sustainable entrees and appetizers (i.e., those in the bottom half on ‘carbon footprint,’ or the amount of greenhouse gas emissions associated with producing the food). In the control arm, the menu did not display ecolabels. To encourage participants to select foods they actually wanted, participants were informed that 25 would be chosen to receive their selections. After making their selections, participants responded to survey questions.

**Results:** Participants in the ecolabels arm selected foods with a lower total carbon footprint than participants in the control arm (difference= -0.82 kg CO<sub>2</sub>-equivalents,  $p<.001$ , an approximate 10% reduction). Participants in the ecolabels arm also selected foods with more fiber (difference=0.82 grams,  $p=.03$ ) than control. By contrast, participants in the ecolabels arm selected foods with similar sugar, saturated fat, sodium, calorie, and protein content and similar overall healthfulness as participants in the control arm (all  $ps>.07$ ). Most participants (75%) across both arms reported that ecolabels made them feel more in control of making sustainable eating decisions.

**Conclusions:** Ecolabels are a promising strategy for encouraging consumers to select more sustainable restaurant foods. Ecolabels may also lead to modest improvements in the nutritional quality of restaurant selections (e.g., increased fiber content).

## Dining Dynamics: Observing parental feeding practices at mealtimes

**Ms. Celeste Bouchaud<sup>1</sup>**, Dr. Georgia Middleton<sup>2</sup>, Dr. Tamara Cohen<sup>1</sup>

<sup>1</sup>*The University of British Columbia, Food, Nutrition and Health, Faculty of Land and Food Systems*, <sup>2</sup>*Flinders University, College of Nursing and Health Sciences, Caring Futures Institute*

### **S3.52: Messiness of Family Mealtimes – exploring measurement, messaging and experiences of family meals, Hunua 3, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Family meals provide an excellent opportunity to observe parent-child interactions around food. Parents play a crucial role in teaching their children eating behaviours. Promoting the development of optimal eating behaviours in childhood is essential for long-term health. Observational mealtime studies can capture parental feeding practices in real-time. While such studies are common for younger children, there is a lack of research focusing on school-aged children. The purpose of this project was to describe parental feeding practices commonly viewed in family mealtime videos of school-aged children.

**Methods:** Families (n=38) from Montreal, Quebec, Canada with a child between 5-11 years were recruited and asked to film four 'typical' family meals at home. For this study, n=10 videos were analyzed using the Family Mealtime Coding System (FMCS), capturing parental feeding practices and the Mealtime Observation Form (MOF), capturing meal structure. Additionally, inductively derived codes captured other mealtime elements.

**Results:** On average, children were 9.2±2 years old, parents (9 mothers, 3 fathers) were 42.6±6 years old. Meals lasted approximately 24 minutes (6 to 45 minutes). The sample included two two-parent households (2 mothers, 2 fathers) and eight one-parent households (7 mothers and 1 father). The children included three girls and seven boys. Preliminary findings indicate that most families (practice observed in one or both parents in two-parent households) used verbal pressure to encourage eating (n=8/10 families). Few families physically fed their child (n=3/10) or placed food in the child's area as a physical prompt to eat (n=4/10). Verbal and physical restriction of foods was uncommon (n=2/10), but the use of incentives or conditions was more frequent (n=7/10). Inductive codes relating to food parenting included food- and eating-based reciprocal discussions (n=9/10) parents providing a service related to food to their child (n=8/10) and encouraging proper deportment (n=9/10).

**Conclusions:** These findings demonstrate that mealtimes involve varied opportunities for parents to shape their children's eating behaviours. This analysis is the first step in understanding what parental feeding practices are practised at family meals with school-aged children. The broader analysis will provide a deeper understanding of how these practices are linked to eating behaviours using survey data.

## Insta-family meals: Exploring representations of #familymeals on Instagram

**Dr. Georgia Middleton<sup>1</sup>, Dr. Emily Denniss<sup>2</sup>, Dr. Eloise Litterbach<sup>2,3</sup>**

<sup>1</sup>Flinders University, College of Nursing and Health Sciences, Caring Futures Institute, <sup>2</sup>School of Exercise and Nutrition Sciences, Deakin University, <sup>3</sup>The Australian Centre for Behavioural Research in Diabetes (ACBRD), Diabetes Victoria

### **S3.52: Messiness of Family Mealtimes – exploring measurement, messaging and experiences of family meals, Hunua 3, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Family meals are considered important for health. However, many parents feel guilt, shame and failure when family meals are challenging or infrequent. Social media is a popular source of food and nutrition information, and parents are spending increasing amounts of time online. The purpose of this study was to explore how family meals are portrayed on Instagram and what messages parents are being exposed to.

**Methods:** This study employed a mixed-methods content analysis approach. Four popular family meal Instagram hashtags were identified through systematic screening: #familymeals, #familybreakfast, #familylunch, #familydinner. Data were collected from the top 15 posts from each hashtag once/week for 14 weeks (Feb-May 2024). Post image/video, caption, engagement and account details were collected for each post. Data were content analysed in REDCap. Three coders designed the codebook collaboratively and coded independently.

**Results:** A total of 564 posts (36.7% Reels/videos, 33.1% single images, 30.1% carousels) from 359 unique accounts were included. Preliminary results show most posts were from individuals (74%), predominantly women (87%) of which 50% were mothers. Recipe developers were the most common posters (38%), followed by food bloggers (21%) and parenting bloggers (9%). Image/video content mostly depicted food/beverages (90.6%); 88.6% plated food, 42.6% cooking and 32.5% instructional recipes. Majority of food/beverage posts depicted items aligned with healthy eating guidelines (75.7%) compared to discretionary items. Visual elements appeared to be staged rather than authentic in 62.6% of posts. Most post captions (68.6%) contained meal ideas, of which 40.1% were described as quick and easy to prepare, 25.8% family friendly, 8.5% comfort food, 8% healthy.

**Conclusion:** This study provided insight into how family meals are portrayed on social media. The provision of meal ideas that are family friendly, quick and easy to prepare, suggests that Instagram may be useful for promoting home cooking and supporting meal planning. However, most posts depicted staged mealtimes, which may contribute to guilt and shame experienced by parents. Research into how these representations and messages impact parents is needed. Further, understanding how we can use social media to promote realistic family meals may help parents to feed their family without added pressure.

## Measuring family meals in the context of young children's nutrition related outcomes: An exploration of four definitions

**Dr. Eloise-kate Litterbach**<sup>1, 2, 3, 4</sup>, Dr. Jazzmin Zheng<sup>2</sup>, Prof. Karen Campbell<sup>2</sup>, Dr. Rachel Laws<sup>2</sup>, Dr. Alison Spence<sup>2</sup>

<sup>1</sup>The Australian Centre for Behavioural Research in Diabetes (ACBRD), Diabetes Victoria,

<sup>2</sup>Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Sciences, Deakin University, <sup>3</sup>Institute for Health Transformation, Deakin University, <sup>4</sup>School of Psychology, Deakin University

### S3.52: Messiness of Family Mealtimes – exploring measurement, messaging and experiences of family meals, Hunua 3, June 14, 2025, 8:30 AM - 9:45 AM

**Purpose:** Family mealtimes are consistently associated with healthier child diets. However, varied measures within the literature make it difficult to interpret study findings and translate those to health recommendations with practical application to diverse families. This study aimed to investigate how various measures of family meal frequency associate with children's dietary intake, and preferences.

**Methods:** The Family Meals with Young Kids Study was an online survey of caregivers with a young child (6 months-8 years). Frequencies of family meals were assessed for breakfast, lunch, dinner and snacks, using four definitions (respondent and child eating together; whole family eating together; any caregiver and child eating together; respondent and child eating same foods at meals). Linear and logistic regressions examined associations between family meal frequency, weekly (28 opportunities; daily breakfast, lunch, dinner and snack) and at dinner only (<1-4 days/week Vs 5-7 days/week), and children's daily intakes and liking of fruit and vegetables, and demands for discretionary foods/drinks.

**Results:** 352 caregivers (97% mothers) were included in analyses. Frequencies of family meal participation varied widely across definitions (e.g., 40-85% participation at dinner, 7 nights/week). Children eating the same foods as the responding caregiver at mealtimes was most consistently associated with higher intakes and odds of liking fruit (OR(95%CI): 1.09(1.04-1.13); 1.05(1.00-1.10)) and vegetables (OR(95%CI): 1.08(1.05-1.12); 1.08(1.04-1.12)), and fewer discretionary foods/drinks ( $\beta$ (95%CI): 0.98(0.97-0.99)) and demands for discretionary foods/drinks (OR(95%CI): 0.96(0.92-0.99)). Dinner times with any caregiver and child were significantly associated with higher liking of fruit (OR(95%CI): 2.29(1.08-4.8)) and vegetables (OR(95%CI): 2.08(1.04-4.13)), lower demands for discretionary foods/drinks (OR(95%CI): 0.32(0.13-0.77)), and fewer discretionary foods/drinks ( $\beta$ (95%CI): 0.72(0.55-0.95)) but not associated with fruit and vegetable intakes. Few associations were found for family meals with everyone, and those with the responding parent and child.

**Conclusions:** The family meal measure used impacts the reported frequencies and associations with children's dietary intakes and preferences. Of the four measures assessed, only family meals defined as child(ren) and caregiver eating the same food at mealtimes, was consistently associated with healthy child outcomes. Future research and translation into health recommendations should carefully consider what the important elements of a "family meal" are going forward.

## Evaluating food insecurity stigma interventions: A scoping review

**Ms. Evyn Appel**, Ms. Allison Karpyn, Ms. McKenna Halverson

<sup>1</sup>*University of Delaware*

### **S3.53: Stigma and Food Insecurity, Waitakere 1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** This review sought to describe and uncover the efficacy of interventions to reduce food stigma in government (i.e., SNAP, WIC) and emergency food programs (i.e., food banks, pantries). Our goal was to characterize the type and efficacy of stigma-reduction interventions within these settings.

**Method:** We systematically searched for peer-reviewed articles in five databases (PubMed, PsychINFO, Web of Science, CINAHL, Sociological Abstracts). Articles were included if they consisted of an original study that focused on an intervention of food stigma in a high-income country. Study details such as intervention type, population, stigma instances, and intervention efficacy were extracted and coded. Descriptive statistics and thematic analysis were applied to identify trends and emergent themes. We will present data from ten studies identified for inclusion that contained results of individual-level stigma— including those who experience stigma directly, called targets (ie. food pantry clients), those that project stigma onto targets, called perceivers (ie. food pantry staff/volunteers), and structural-level stigma (ie. policies and procedures).

**Results:** Of the ten included studies, technology-based interventions were the most common (N = 4). These interventions, which included transitioning from paper vouchers to electronic benefit transfer (EBT) and altering eligible product identification codes, reduced stigma by providing a more seamless checkout experience for participants. Education-based interventions aiming to improve knowledge around the targets' experiences were the second most commonly reported (N = 3), also showed promise for reducing food insecurity-related stigma. Environmental (N = 2), food access (N = 1), and financial (n=1) interventions were also represented.

**Conclusions:** This review highlights interventions aiming to reduce food insecurity-related stigma within high-income countries. Technology- and education-based interventions were the most frequent intervention types. Findings emphasize the importance of reducing administrative burdens and simplifying the user experience. Few studies have systematically tested the effectiveness of stigma-reduction interventions within food assistance settings. Therefore, future research in this area is warranted.

## Understanding the Stigma and Food Inequity Framework

**Dr. Shreela Sharma<sup>1</sup>**

<sup>1</sup>*University of Texas Health Science Center at Houston*

**S3.53: Stigma and Food Insecurity, Waitakere 1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** The social determinants of health aspire to acknowledge social interactions as a key determinant of health; yet, stigma is not readily incorporated into this framework. Stigma has been identified as a fundamental cause of population health inequities; however, its role in food insecurity is understudied, perhaps because there is not a framework to guide this research. The purpose of this session is to introduce the Stigma and Food Inequity Framework, recently established by Earnshaw and Karpyn, which proposes processes whereby stigma leads to food inequities.

**Methods:** To build on prior conceptions of stigma and empirical research in public health, initially, we reviewed similar frameworks used in other sectors including the Health Stigma and Discrimination framework, the Sigma and HIV disparities Model, and others. Next, we identified supporting empirical evidence for associations proposed by the framework. Last, a team of experts in both food access and stigma refined the model to create the Stigma and Food Inequality Framework.

**Results:** The new framework conceptualizes stigma as a social process which is manifested at multiple levels: structural as well as at the individual-level which includes both targets (e.g., WIC shopper; food pantry client) and perceivers (e.g., cashier, food pantry staff). At the individual level, stigma manifestations experienced by targets include enacted, anticipated, internalized, and stereotype threat. These are a result of perceiver actions including stereotyping, prejudice, and discrimination. Structural stigma can be manifested at policy, practice, infrastructure, or environmental levels. Mediating mechanisms are identified to include access to resources, home food environments, psychosocial as well as behavioral processes. Intersectionality, contexts of history, culture and human development are further situated as important contexts for the model's interpretation.

**Conclusions:** The Stigma and Food Inequity Framework sets the stage for research specifically intended to study stigma, its manifestations, and mediating mechanisms in the context of food insecurity. It is an important complement to the social determinants of health. The framework points to several methodological approaches that may be particularly well suited to study the role of stigma in food inequities. Future research is needed to test hypothesized pathways and identify strategies to address stigma to promote food equity.

# Reports of Food Insecurity-Related Stigma in the Literature: Insights and Gaps from a Scoping Review

**Ms. McKenna Halverson<sup>1</sup>**

<sup>1</sup>*University of Delaware*

**S3.53: Stigma and Food Insecurity, Waitakere 1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** We sought to characterize the individual- and structural-level stigma associated with participation in government (i.e., SNAP, WIC) and emergency food programs (i.e., food banks, pantries) in the U.S. Our goal was to describe what is known about how stigma manifests and influences the use of food assistance programs.

**Methods:** Five databases (PubMed, PsychINFO, Web of Science, CINAHL, Sociological Abstracts) were systematically searched for peer-reviewed articles published between January 2004 and June 2024. Studies were included if they provided original data on stigma and food program participation in the U.S. Data were extracted on study characteristics, stigma manifestations, and outcomes using a structured template. Descriptive statistics and thematic analysis were applied to identify trends and emergent themes. We will present data from 99 studies identified which describe stigma related to food assistance programs, analyzing individual-level stigma which includes both individuals who experience stigma directly, called targets (ie. food pantry clients) and those that project stigma, called perceivers (ie. staff) and structural stigma (ie. policies).

**Results:** The review identified 465 instances of stigma across the 99 studies. Individual-level stigma target stigma was reported most frequently, with anticipated stigma (29.9%) being the most common. Enacted stigma, particularly disrespectful treatment from program staff or volunteers, and internalized stigma, such as feelings of shame or failure, were also prevalent. Structural stigma, including administrative burdens and surveillance in food assistance environments, further hindered program utilization. The findings highlight the need for targeted interventions and policy guidance to reduce both individual- and structural-level stigma to improve food assistance program uptake and also make clear the need for a measurement tool for stigma in this context.

**Conclusions:** This review underscores the significance of addressing food insecurity-related stigma to enhance the effectiveness of food assistance programs. Given the extensive evidence of the impact of stigma on program participation, policymakers and program administrators should design, implement and test strategies tailored to prevalent forms. Future research should explore intersectional stigma and the long-term impacts of stigma-reduction interventions on food insecurity outcomes, the development of a food insecurity related stigma measure, as well as the testing of interventions across program settings.

## Co-creating strategies to promote physical activity and reduce sedentary behavior of prison inmates.

**Dr. Maria Giné-Garriga<sup>1</sup>**, Dr. Carol Palma<sup>1</sup>, Dr. Raül Romeva<sup>1</sup>, Dr. Sara Signo<sup>1</sup>, Dr. Carme Isanta<sup>1</sup>, Mr. Mario Cortés<sup>2</sup>, Mr. David Ballester<sup>2</sup>, Dr. Enric Sebastiani<sup>1</sup>

<sup>1</sup>*Faculty of Psychology, Education and Sport Sciences Blanquerna – Ramon Llull University,*

<sup>2</sup>*Department of Justice, Government of Catalonia*

**S3.54: Engaging end-users and stakeholders in supporting physical activity and sleep behaviour change – sharing approaches to making user engagement more inclusive., Waitakere 2, June 14, 2025, 8:30 AM - 9:45 AM**

**Background:** The prison population in Europe has increased by 5% since the year 2020 despite efforts in many countries to reduce prisoner numbers. Incarceration is generally coupled with unhealthy behaviors such as smoking, drug abuse, inactive lifestyle and irregular diet that favours a higher rate of acute and chronic physiological and psychological diseases. Physical activity (PA) and sedentary behaviour (SB) levels among prison inmates are much worse than the not incarcerated counterparts. To promote movement among prison inmates, we aimed to conduct a co-creation process with a group of inmates and professionals in a prison setting to prioritize strategies within daily routines and within the build environment.

**Methods:** 26 male inmates 39.5 (12.3) years old and 8 professionals recruited in several modules of one prison in Catalonia (Spain) participated in the co-creation process. Several recruitment methods were applied to ensure diverse participation. SB and number of daily steps was measured with an ActivPAL device. We conducted three discussion groups with groups of 8-10 inmates and three with professionals with a final discussion group to validate the prioritized strategies with all participants mixed (in groups of 10-12 participants). We used the Our Voice Discovery tool to collect information about how the built environment could be modified to promote movement in the common spaces. Discussion groups and voice recordings (from the Our Voice app) were transcribed and analysed with qualitative thematic analysis, and strategies were prioritized with an Eisenhower matrix method.

**Results:** Strategies were divided into six themes: common spaces, material, activities, staff/people, rules/regulations, and schedule. The Eisenhower method showed relevant insight into inclusiveness of voices and provided a list of actions prioritized according to importance and feasibility.

**Conclusions:** When working with vulnerable populations it is difficult to feel engaged and included. This study may help provide a better understanding of how to reach diverse population within a complex system to promote physical activity behaviour change.

## What do older women want from a physical activity behaviour change program? Stakeholder consultation to inform trial setup

**Dr. Heidi Gilchrist**<sup>1,2</sup>, Dr. Abby Haynes<sup>1,2</sup>, Ms. Geraldine Wallbank<sup>1,2</sup>, Prof. Cathie Sherrington<sup>1,2</sup>, Ms. Courtney West<sup>1,2</sup>, Dr. Juliana Oliveira<sup>1,2</sup>, Ms. Sandra O'Rourke<sup>1,2</sup>, Prof. Anne Tiedemann<sup>1,2</sup>

<sup>1</sup>*Institute for Musculoskeletal Health, School of Public Health, The University of Sydney,*

<sup>2</sup>*Sydney Local Health District*

**S3.54: Engaging end-users and stakeholders in supporting physical activity and sleep behaviour change – sharing approaches to making user engagement more inclusive., Waitakere 2, June 14, 2025, 8:30 AM - 9:45 AM**

**Background:** Incorporating stakeholder feedback in the design of program components and recruitment materials can optimise recruitment reach and the engagement of participants throughout programs and trials. The Active Women over 50 randomised controlled trial is testing a behaviour change program which supports women aged 50+ to be more physically active. The aim of this qualitative research was to review and refine the proposed content of the Active Women over 50 program and trial recruitment flyers with a wide range of women aged over 50. We were particularly interested in women residing in rural and regional locations, in order to optimise the program's chance of success with diverse end-users.

**Methods:** This was a pragmatic qualitative study design using framework and abductive analysis. Participants were 21 women aged 50 to 80 years (mean 62 years). We conducted one focus group and 17 interviews with diverse purposively sampled women living across New South Wales, Australia. Women were asked to review and refine recruitment flyers and the four proposed program components: 1. health coaching, 2. dedicated website with resources, 3. private Facebook group and 4. motivational email and SMS messages. Data was analysed inductively to develop themes and deductively using the Adapted Mobile App Rating Scale for evaluating websites.

**Results:** Five themes were identified in relation to recruitment flyers: I want to see (women like) myself, Keep it real, Readability is for everyone, Why should I do it? and Find us where we live. The four intervention program components were strongly supported as a package but were valued differently for their relative importance. Program flexibility was considered crucial.

**Conclusions:** This consultation resulted in substantial enhancements to all recruitment and program components. We anticipate this will increase the reach and appeal of the trial and optimise future scale-up. Consultation feedback may have wider transferability for recruitment and the design of programs with similar components targeting women aged 50+.

## Teachers' experiences on co-creating an implementation plan for a school-based healthy sleep intervention: A Health CASCADE study

**Ms. Janneke de Boer**<sup>1</sup>, Ms. Lea Rahel Delfmann<sup>1</sup>, Ms. Lauren McCaffrey<sup>2</sup>, Prof. Greet Cardon<sup>1</sup>, Dr. Teatske Altenburg<sup>3,4</sup>, Prof. Benedicte Deforche<sup>1,5</sup>, Ms. Veerle Van Oeckel<sup>1</sup>, Dr. Maite Verloigne<sup>1</sup>

<sup>1</sup>Ghent University, <sup>2</sup>Glasgow Caledonian University, <sup>3</sup>Amsterdam UMC location Vrije Universiteit Amsterdam, <sup>4</sup>Amsterdam Public Health, <sup>5</sup>Vrije Universiteit Brussel

**S3.54: Engaging end-users and stakeholders in supporting physical activity and sleep behaviour change – sharing approaches to making user engagement more inclusive., Waitakere 2, June 14, 2025, 8:30 AM - 9:45 AM**

**Background:** Few school-based interventions are implemented with fidelity, therefore teachers, often deliverers of the intervention (components), should be involved in co-creation processes to develop and/or implement such interventions. Teachers' high workload makes this challenging, which highlights the need to evaluate co-creation processes with teachers and provide insights on how to improve them. This study explores teachers' experiences during the co-creation of an implementation plan for a school-based healthy sleep intervention.

**Methods:** An action group of six teachers was formed to develop the implementation plan. The experiences of the teachers involved in the action group were examined through transcripts from six co-creation sessions and one semi-structured focus group. Reflexive thematic analysis (RTA) was conducted using NVivo 14.

**Results:** The co-creation process was performed in the highly demanding school context, which significantly affected the teachers' experiences. Teachers expressed a preference for a guided co-creation process to use their time efficiently. Positive experiences to engage in the co-creation process included school principal support, the ability to voice their opinion, and having decision-making power. Negative experiences included inter-role conflict between the roles of teacher and co-creator, low group cohesion due to frequent absences, and insufficient support from colleagues. Moreover, a misunderstanding of the co-creation process's purpose affected teachers' motivation, as they anticipated concentrating on the health issue itself instead of creating an implementation plan to address the health problem among adolescents.

**Conclusions:** While teachers valued having a voice and decision-making power, they struggled with time constraints that hindered their full engagement in the co-creation process. It is therefore essential for researchers to achieve a balance between efficiently guiding teachers through the co-creation process and upholding their decision-making power.

## Preparing a School-Based Physical Activity Program for Scale Up in NSW Australia

**Mrs. Carly Gardner**<sup>1,2,3</sup>, Dr. Cassandra Lane<sup>1,2,3</sup>, Dr. Adam Shoesmith<sup>1,2,3</sup>, Prof. Luke Wolfenden<sup>1,2,3</sup>, Dr. Alix Hall<sup>1,2,3</sup>, Dr. Rachel Sutherland<sup>1,2,3</sup>, Dr. Nicole Nathan<sup>1,2,3</sup>

<sup>1</sup>University of Newcastle, <sup>2</sup>Hunter New England Local Health District, <sup>3</sup>National Centre of Implementation Science

### **S3.55: The Next Step: Disseminating School-Based Health-Promoting Interventions to a Wider Population., Waitakere 3, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Despite the mandate of school-based physical activity policies in many jurisdictions, implementation is often inconsistent, limiting health benefits for children. The Physically Active Children in Education (PACE) intervention effectively increases policy implementation in schools. However, scaling evidence-based interventions to real-world settings requires adaptation. This presentation shares key lessons learned from a series of randomized controlled trials (RCTs) that optimized PACE for scale up across the state of NSW Australia.

**Methods:** Our aim was to identify a PACE model that is as effective as possible within the resource constraints of end-users for delivery at scale. We conducted three sequential RCTs in NSW primary schools, using both quantitative and qualitative data to iteratively improve PACE. Lessons were drawn from assessments of intervention effectiveness (measured as teacher's minutes of scheduled physical activity as per a State policy mandate), cost-efficiency, and implementation processes. The focus with each cycle of data collection, analyses, and interpretation was to use the information to adapt strategies for scalability.

**Results:** The 2017 pilot RCT (12 schools) showed that PACE was feasible and improved schools' adherence to physical activity policies. This early success confirmed the potential for broader implementation. The 2018 implementation-effectiveness RCT (61 schools) demonstrated the effectiveness and cost-effectiveness of PACE, but also revealed that some strategies were resource-intensive. Thus, adaptations were made, transitioning from in-person support to more remote support which maintained program fidelity while lowering delivery costs—a crucial step in ensuring scalability. The 2019 noninferiority RCT (48 schools) confirmed that PACE's adapted, lower-cost version was still effective.

**Conclusions:** The optimised PACE intervention is an effective, cost-effective, and scalable model for service delivery. Key lessons from the sequential RCTs include the importance of balancing effectiveness with cost, drawing on stakeholder insight and collaboration, and making data-driven adaptations.

# The Impact of the Healthy Primary School of the Future and Green Schoolyards on Children's Health, Cognitive Performance, and Behavior

**Mrs. Bo van Engelen<sup>1</sup>**, Dr. Bjorn Winkens<sup>1</sup>, Prof. Onno van Schayck<sup>1</sup>  
<sup>1</sup>Maastricht University

## S3.55: The Next Step: Disseminating School-Based Health-Promoting Interventions to a Wider Population., Waitakere 3, June 14, 2025, 8:30 AM - 9:45 AM

**Objective:** This study investigates the effects of the Healthy Primary School of the Future (HPSF) and green schoolyards (The Green Healthy Primary School of the Future (GHPSF)) on children's BMI z-score, cognitive performance, well-being, and behavior.

**Methods:** The HPSF study involved 2236 children aged 4-12 from eight primary schools in the Netherlands over four years. Four schools implemented HPSF interventions focusing on healthy diets and physical activity, while four schools served as controls. Annual measurements included BMI, waist circumference, dietary behaviors, and physical activity levels (using accelerometers). In a related study, 170 children aged 8-12 from four primary schools in Belgium and the Netherlands participated in a two-year follow-up. Two schools converted their schoolyards into biodiverse green spaces, while two retained their grey playgrounds. Cognitive performance, BMI, well-being, and pro-social behavior were assessed using questionnaires and the Minds Test Manager. Mixed-effects models were used in both studies to assess intervention effects.

**Results:** The HPSF intervention significantly halted increases in BMI z-scores in both full HPSF ( $B=-0.17$ ,  $p=0.000$ ) and partial HPSF ( $B=-0.16$ ,  $p=0.001$ ) schools, compared to control schools, where BMI increased over time. Analyses revealed further significant positive intervention effects on children's waist circumference, and dietary and PA behaviours. The GHPSF study showed improvements in cognitive performance, and physical activity and a decreasing trend in BMI z-scores in the intervention group. The standardized effect size of the GHPSF is determined to be  $-0.02$ , which is determined to be a small effect. In the HPSF study the standardized effect size after 1 year intervention was determined as  $-0.04$ . Even though, these effect sizes seem small, they are observable after only 1 year and they seem to suggest a decreasing trend in BMI-z scores

**Conclusions:** The HPSF and green schoolyards positively influenced children's physical health, with additional cognitive and behavioral benefits from greening. These interventions provide robust evidence for implementing sustainable, school-based health initiatives to improve children's overall well-being.

## Implementing health-promoting activities in diverse primary school contexts in the Netherlands: practical lessons learnt

**Dr. Marla Hahnraaths<sup>1</sup>**, Dr. Maartje Willeboordse<sup>2</sup>, Prof. Onno van Schayck<sup>1</sup>

<sup>1</sup>Maastricht University, <sup>2</sup>Mulier Institute

### **S3.55: The Next Step: Disseminating School-Based Health-Promoting Interventions to a Wider Population., Waitakere 3, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** To gain insight into factors enhancing or obstructing implementation in various school-settings, which is vital for widespread dissemination and sustainable integration of school-based health-promoting interventions. The research aimed to answer the following research questions: - How and to what degree are activities promoting physical activity (PA) and healthy dietary habits implemented in twelve real-world school settings? - Which factors are of influence on the implementation of activities promoting PA and healthy dietary habits in twelve real-world school settings?

**Methods:** A mixed methods multisite comparative case study to investigate (factors influencing) the implementation of health-promoting activities in twelve Dutch primary schools. Data were collected during three school years (2019–2022) through observations, questionnaires, and interviews. Qualitative data were coded and analysed deductively and guided by Fleuren et al.'s framework (Fleuren et al., 2004). Quantitative data were analysed using IBM SPSS Statistics for Windows. Baseline descriptives and data from observations and minutes, were used to describe the schools' pre-existing contexts. T1 and T2 questionnaire data were combined with data from interviews, observations, and minutes to describe the schools' implementation processes.

**Results:** Small, incidental activities were implemented. Important reasons for the limited implementation were lack of commitment and bottom-up involvement. School directors and teachers were not involved early on in the project, which limited project support and commitment. On school level, directors largely carried project responsibility themselves, hindering project sustainability and integration. COVID-19 made that schools had difficulties forming long-term visions and plans. Other observed barriers included limited perceived necessity to change, high workload and high staff turnover. Important facilitators were the presence of a process coordinator and sharing experiences from other schools.

**Conclusions:** This research provided valuable insights into (factors influencing) the implementation of health-promoting initiatives in diverse, real-world school contexts. More extensive support is needed to create commitment, bottom-up involvement, and a project vision. Furthermore, empowering in-school champions and/or school-wide project groups is desirable to decrease schools' dependence on long-term external support. The findings can be used by various stakeholders throughout development, adoption, and implementation and can facilitate widespread dissemination and sustainable integration of school-based health-promoting interventions.

## Pringles: Public Policy Should Prioritize the Reduction of UPFs

**Dr. Lindsey Smith Taillie<sup>1</sup>**

<sup>1</sup>*University of North Carolina, Department of Nutrition, Gillings School of Global Public Health*

**S3.56: Pringles Versus Peaches: Should Public Policy Prioritize Promoting Whole Foods or Eliminating Ultra-Processed Foods?, Limelight 1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** This side of the debate will focus on the urgent need to use public policy to reduce ultra-processed foods (UPFs) intake as a means towards chronic disease prevention.

**Methods:** We will use original data as well as a literature review to showcase the rapid increases in sales, purchase, and intake of UPFs globally. Similar to the "pro" side, we will present the landscape of existing or potential policies that support UPF reduction. The discussion of the policy landscape will cover the benefits and challenges of implementing these policies and the evidence of their effectiveness. Additionally, we will examine the role of socioeconomic contexts as well as the effects of extemporaneous trends such as increasing global conflict, pandemics, and climate change, and how these intersect to lend urgency to UPF prevention and reduction efforts. A case study of public policy which supports UPF reduction will be discussed using Latin American examples including Chile, Colombia, and Brazil.

**Results:** UPF sales and intake are rapidly increasing across the globe, contributing to increases in chronic diseases. Insufficient regulation of the food industry has contributed to a food environment which promotes UPFs through widespread availability, cheap pricing, aggressive marketing, and confusing labeling. These problems are likely to worsen as climate change, increasing global conflict, and more frequent pandemics disrupt local food supply chains, creating reliance on UPFs that are cheap, shelf-stable, and heavily promoted. Policies, such as warning labels, marketing bans, school feeding programs, and taxes—as have been implemented in several countries in Latin America—can reshape the food environment to reduce UPF intake. However, policies focused on UPFs must also consider socioeconomic and cultural factors. For example, policies to reduce UPF must consider whether women, who remain primarily responsible for food shopping and preparation across the globe, have the time and resources available to shift from UPFs to preparing fresh foods. Such policies may require tailoring for high vs. low-income country contexts or considering the socioeconomic status of subpopulations within countries.

**Conclusions:** Policies to reduce and prevent UPF intake are timely and urgent to create healthy food environments and protect against chronic disease.

# Peaches: Public Policy Should Prioritize the Promotion of Whole Foods

**Dr. Carmen Byker Shanks<sup>1</sup>**

<sup>1</sup>*Center for Nutrition and Health Impact*

**S3.56: Pringles Versus Peaches: Should Public Policy Prioritize Promoting Whole Foods or Eliminating Ultra-Processed Foods?, Limelight 1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** This side of the debate will examine how prioritizing public policies that encourage whole foods—such as fruits, vegetables, whole grains, and lean proteins—can foster supportive environments, empowering individuals to make informed dietary choices that lead to improved health outcomes.

**Methods:** The landscape of existing or potential policies that support whole foods will be presented. The discussion of the policy landscape will cover the benefits and challenges of implementing these policies, resources needed to effectively promote whole foods initiatives for public health in different countries, and the evidence regarding their effectiveness. Additionally, the historical, sociocultural, environmental, and socioeconomic contexts that has led to decreased availability, access, and affordability of whole foods in our eating environments will be considered. A case study of public policy which supports whole foods through financial incentives for fruits and vegetables will be discussed from the United States Department of Agriculture (USDA's) National Institute of Food and Agriculture (NIFA) Gus Schumacher Nutrition Incentive Program's (GusNIP) National Training, Technical Assistance, Evaluation, and Information Center (NTAE).

**Results:** Whole foods are underrepresented in diets globally, contributing to various chronic diseases. Historically, insufficient policy support has diminished whole food availability, access, and affordability in eating environments. Moreover, sociocultural dynamics (e.g., gender), socioeconomics (e.g., income inequality), and disruptive environmental events (e.g., climate crisis) further the need to focus public policy towards support for whole foods. Recently, public policy initiatives around whole foods—such as financial incentives, improved school nutrition standards, enhanced efforts to market whole foods in enticing ways, and subsidies—have demonstrated the potential to create positive food environments that encourage healthier choices among individuals, although each may need to be tailored to different countries and contexts.

**Conclusions:** Policies that collectively aim to create environments that support the consumption of whole foods will positively impact dietary behaviors and improve public health outcomes.

## Enhancing Childcare Menus with Plant-Based Proteins Without Going Fully Vegan

**Dr. Audrey Elford<sup>1,2</sup>**, Dr. Alison Spence<sup>1,2</sup>, Prof. Ewa Szymlek-Gay<sup>1,2</sup>, Dr. Ros Sambell<sup>3</sup>, Ms. Muhe Wu<sup>2</sup>, Dr. Penelope Love<sup>1,2</sup>

<sup>1</sup>*Institute for Physical Activity and Nutrition, Deakin University*, <sup>2</sup>*School of Exercise and Nutrition Sciences, Deakin University*, <sup>3</sup>*Nutrition and Health Innovation Research Institute, Edith Cowan University*

### **S3.57: Plant-Based Diets for Early Childhood Education settings: Nutritional and Environmental Triumph or Gamble?, Limelight 2, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** This presentation will outline key considerations regarding plant-based menus in Early Childhood Education and Care (ECEC) settings. The results of two Australian research studies will be presented. Study1 aimed to understand plant-based vs animal-based protein food provision in ECEC and key nutrient provision. Study2 assessed food served and wasted in ECEC highlighting child food consumption.

**Methods:** Study1: Two weeks' ECEC menus/recipes were entered into Foodworks10. Desktop analysis categorized meals as animal-based or plant-based or combined. Total daily energy, protein, calcium and iron were compared to Australian menu planning recommendations (50% of the Australian Recommended Daily Intake for 2–3-year-olds). Study2: ECEC centres in Victoria, Australia participated in a 1-day weighed food provision audit. Serving waste (prepared, not served) and plate waste (served, not eaten) was calculated.

**Results.** Study1 (n=18 centres): Preliminary findings of provided menus (n = 180 days, 540 meals) found 73% of meals contained animal-based protein, and 4% contained plant-based protein. Mean ( $\pm$  SD) iron provision was below recommendations ( $2.86\text{mg} \pm 1.47\text{mg}$ ). Mean energy provision was below recommendations ( $2177\text{Kj} \pm 962\text{Kj}$ ). For the main (lunch) meal, average serving sizes for plant-based and animal-based meals were  $154\text{g} (\pm 62\text{g})$  and  $197\text{g} (\pm 92\text{g})$ , respectively. Study2 (n=12 centres): On average, 27% of food prepared was wasted (range 9%-64%), 14% being plate waste.

**Conclusions:** Current practice in Australian ECEC suggest very low plant-based protein provision. Whilst there is an opportunity for increasing plant-based protein foods on ECEC menus, transitioning to fully plant-based (vegan) menus may be difficult to achieve. Menus containing both animal and plant proteins did not meet energy or iron requirements, raising concerns about the ability to meet nutritional adequacy, especially given the smaller portion sizes of plant-based meals. High food waste suggests that on average only 70% of food provided is consumed, accentuating the challenge of meeting nutritional adequacy. These findings highlight the need for further assessment of ECEC food provision for nutritional adequacy. Food consumption/wastage data should inform the development of appropriate menu planning guidance when transitioning to menus that contain more plant-based proteins to ensure requirements during the vulnerable stage of childhood are met.

## Plant-based menus in childcare are nutritionally, economically, and logistically feasible

**Ms. Katherine Eckert<sup>1</sup>**, Ms. Valerie Trew<sup>1,2</sup>, Ms. Elyse Serediuk<sup>2</sup>, Ms. Abby Galvez<sup>1,2</sup>, Prof. Jess Haines<sup>1</sup>

<sup>1</sup>Department of Family Relations and Applied Nutrition, University of Guelph, <sup>2</sup>Child Care Operations, University of Guelph

### **S3.57: Plant-Based Diets for Early Childhood Education settings: Nutritional and Environmental Triumph or Gamble?, Limelight 2, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Strategies to increase consumer consumption of plant-based protein foods are necessary for promoting human and environmental health. This presentation will describe the nutritional, financial, and logistical feasibility of transitioning to a plant-based menu in Early Childhood Education and Care (ECEC) settings. To achieve this aim, research findings from a Canadian childcare centre will be presented.

**Methods:** This case study was conducted at a licenced childcare centre in Guelph, Canada, where 150 meals and 300 snacks were served daily. To improve the environmental sustainability, efficiency, safety, and inclusivity of the menu, the centre transitioned to a plant-based menu. The nutritional adequacy of the plant-based menu was assessed by comparing the daily totals of 16 key nutrients with Daily Reference Intake (DRI) requirements. As Canadian guidelines recommend that childcare centres provide 50% of children's nutrient requirements, a cut-point of 50% of the DRI was used to identify nutrient values for comparison. A financial analysis was conducted by comparing annual food expenditures before and after the plant-based menu implementation, and the logistical feasibility was evaluated by comparing food preparation practices and food purchasing practices before and after the transition.

**Results:** The plant-based menu provided more than 50% of the DRI for all nutrients except Vitamin D. This issue was amended through the provision of 1 additional cup of fortified almond milk. Economically, annual food expenditures decreased by 9.5% after transitioning to a plant-based menu. Logistically, food preparation was more efficient, with the number of tailored meals decreasing from up to 15 iterations each day to 2 tailored meals. Moreover, food purchasing practices were simplified due to the ability to store a greater inventory of dried plant-based goods compared to animal-based proteins that must be purchased on a weekly basis.

**Conclusions:** Implementing a well-planned plant-based menu in ECEC settings is nutritionally, economically, and logistically feasible. Future research should formally evaluate acceptability of the menu changes among staff and children and conduct a food waste audit before and after menu changes to assess environmental sustainability.

## Piloting a simulation model of implementation determinants for healthy food environment interventions

**Dr. Miranda Blake<sup>1</sup>**, Dr. Gloria Leung<sup>1</sup>, Dr. Andrew Brown<sup>1</sup>, Prof. Steven Allender<sup>1</sup>, Dr. Sze Lin Yoong<sup>1, 2, 3</sup>

<sup>1</sup>Global Centre for Preventive Health and Nutrition (GLOBE), Institute for Health Transformation, Deakin University, <sup>2</sup>National Centre of Implementation Science (NCOIS), University of Newcastle, <sup>3</sup>School of Medicine and Public Health, University of Newcastle

**S3.58: The best of both worlds: applying systems science and implementation science to enhance public health nutrition interventions, Waihorotiu #1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** System maps and dynamic simulation models are potentially useful tools to increase our understanding of how to sustain healthy food retail interventions. This presentation describes the development of a systems map and the process of parameterizing a dynamic simulation model of sustained healthy food outlet systems.

**Methods:** The presentation will describe the development of a 'Systems Thinking Approach for Retail Transformation' (START) map which presents a dynamic hypothesis of how the structure of food retail interventions impact food purchasing behaviours in recreation and healthcare settings. It uses stock and flow diagrams to identify cause and effect, with emphasis on accumulation, time delays and feedback loops. The development included a series of case studies, qualitative mapping and internal validity testing. Following this, we sought to convert the map into a simulation model to enable the generation of meaningful, testable insights to increase the sustainment of healthy food retail interventions for encouraging healthy customer purchases. The model will support the design of system change strategies by making trade-offs and alternate implementation strategies explicit.

**Results:** This presentation will provide an overview of the START causal loop diagram and describe in detail the process of developing the simulation model, refining the model, the insights gained, and demonstrate the pilot simulation model. It will outline the process of i) engaging with end-users to identify causal relationships; ii) synthesising the literature to build the reference mode (healthiness of the consumer food retail environment over 2 years); and iii) identifying the key START variables to construct a 'base model' in Stella Architect software. Robustness will be iteratively tested by adding new variables, comparing model performance to the reference mode by running model simulations using real-world data identified from the literature, and refining to build a parsimonious model.

**Conclusions:** This presentation describes the process of developing a simulation model representing the determinants of sustained healthy consumer retail environments. While the model represents a significant contribution to healthy food retail interventions, outlining the process of achieving this is crucial to promote application of such methods to address complex public health nutrition challenges.

## Leveraging participatory system dynamics modelling to ensure equitable reach of a healthy weight intervention in a community setting

**Dr. Alexandra Morshed<sup>1</sup>**, Dr. Rachel Tabak<sup>2</sup>, Ms. Allison Kemner<sup>3</sup>

<sup>1</sup>Rollins School of Public Health, Emory University, <sup>2</sup>Prevention Research Center, Brown School, Washington University in St. Louis, <sup>3</sup>Parents as Teachers National Center

**S3.58: The best of both worlds: applying systems science and implementation science to enhance public health nutrition interventions, Waihorotiu #1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** Participatory computational modelling approaches are important tools for expanding the reach of evidence-based interventions and advancing equity in weight gain prevention. The evidence-based Healthy Eating and Active Living Taught at Home (HEALTH) intervention is embedded within the Parents as Teachers program, shown to be effective for preventing weight gain in participating mothers, and is planned to be disseminated nationally. There is an opportunity to promote equitable reach and impact during HEALTH dissemination. In this presentation, we describe the participatory approach to support system dynamics computational modelling to identify practice-informed leverage points for equitable HEALTH dissemination.

**Methods:** To optimize strategies to support HEALTH reach, we endeavoured to computationally specify program theory for how HEALTH is implemented in practice in partnership with Parents as Teachers (PAT), which embeds HEALTH within its services, and identify gaps in access, retention, engagement, and reach. We used group model-building to conduct workshops with stakeholders at multiple levels of a home-visiting program with sites across the country. The group model-building sessions and simulation modelling were supported by analyses of program administrative datasets and literature synthesis.

**Results:** We describe the modelling process as a case study of developing implementation strategies in a way that draws on scientific, practice-based, and lived experience knowledge. In partnership with PAT, we identified key indicators to use in simulation, areas of uncertainty in how they are measured, practice-informed conceptual model, and feedback-based explanations for disparities in engagement. The simulation model structure, parameters, and mathematical functions representing model dynamics are based on analyses of PAT administrative, review of existing literature, and HEALTH trial data.

**Conclusions:** Engaging implementation partners prior and during simulation modelling nurtures and deepens community partnerships, aligns the research direction with practice needs and context, and builds capacity in systems science research. Subsequently, this results in higher quality simulation models that help identify strategies for increasing in evidence-based intervention reach and access.

## Systems Thinking with Active Implementation Research (STAIR) to prevent childhood obesity

Prof. Colin Bell<sup>1</sup>, **Michelle Jackson<sup>1</sup>**, Dr. Jillian Whelan<sup>1</sup>, Prof. Steven Allender<sup>1</sup>, Prof. Luke Wolfenden<sup>2, 3, 4, 5</sup>, Melanie Nichols<sup>1</sup>, Vicki Brown<sup>1, 6</sup>, Prof. Liliana Orellana<sup>7</sup>, Kristy Bolton<sup>8</sup>, Dr. Prabhat Lamichhane<sup>9</sup>, Dr. Nicole Nathan<sup>2, 3, 4, 5</sup>, Dr. Penny Love<sup>8</sup>, Associate Prof. Sze Lin Yoong<sup>1, 2, 3</sup>

<sup>1</sup>Global Centre for Preventive Health and Nutrition, Institute for Health Transformation, Deakin University, <sup>2</sup>School of Medicine and Public Health, University of Newcastle, <sup>3</sup>National Centre of Implementation Science (NCOIS), University of Newcastle, <sup>4</sup>Hunter Medical Research Institute (HMRI), <sup>5</sup>Population Health, Hunter New England Local Health District, <sup>6</sup>Deakin Health Economics, Deakin University, <sup>7</sup>Office of the Executive Dean Health, Deakin University, <sup>8</sup>Institute for Physical Activity and Nutrition, Deakin University, <sup>9</sup>La Trobe University

**S3.58: The best of both worlds: applying systems science and implementation science to enhance public health nutrition interventions, Waihorotiu #1, June 14, 2025, 8:30 AM - 9:45 AM**

**Purpose:** The purpose of this study is to protect primary school children in Victoria, Australia from unhealthy weight gain and test implementation strategies for sustaining healthy school environments.

**Methods:** STAIR is a hybrid type 2 cluster randomised controlled trial in 28 primary school communities in Southwestern Victoria. Schools will be randomised to receive STAIR (a community-based systems dynamics co-designed intervention and, implementation support guided by the active implementation framework) over 3 years (2025-2027) or usual support for promoting student wellbeing (control), which includes access to a healthy eating service and government resources.

**Results:** In this presentation, we will describe the process of applying group model building and designing implementation strategies. Using indicators based on Proctor's taxonomy of implementation outcomes, we will gather data before, during, and after intervention initiation to determine if schools consider STAIR implementation support to be effective (acceptable, adopted, appropriate, feasible, delivered as intended, sustained, and level of penetration).

**Conclusions:** If successful, STAIR will be the first Australian study to protect children from obesity and promote wellbeing over a sustained period. It will also be the first to simultaneously test implementation strategies for helping schools sustain healthy environments. Our findings will provide insights on how to prevent obesity in school communities, how to support schools with implementation, and quantify the return on investment for school-based obesity prevention.