

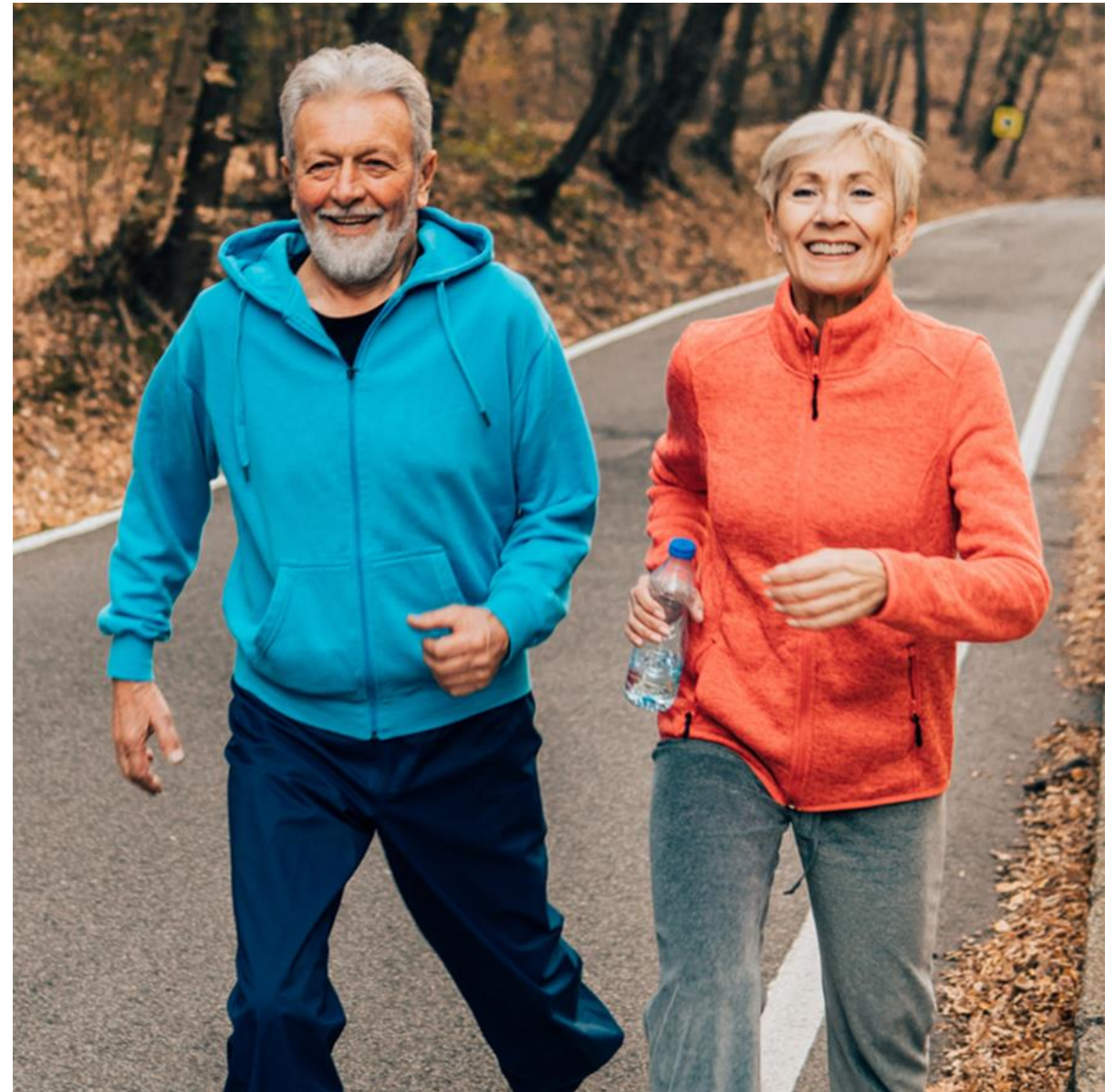


**Institute for  
Musculoskeletal  
Health**

*A research partnership between Sydney Local Health District and the University of Sydney in musculoskeletal health and physical activity*

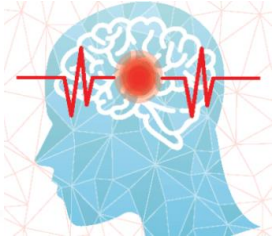
# Physical activity for healthy ageing and fall prevention: translating evidence into action

Professor Anne Tiedemann  
University of Sydney Robinson Fellow



# Physical activity is an investment in future health..... with short term benefits as well

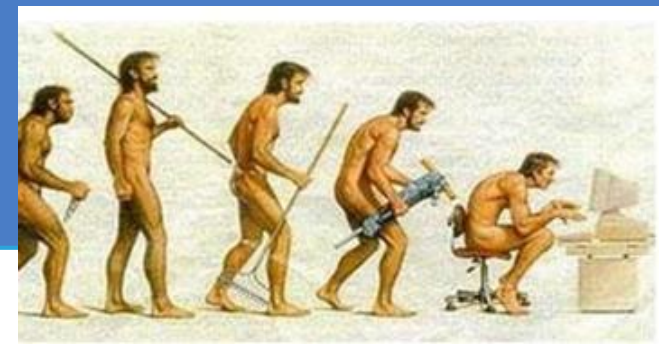
Reduces risk of:



Promotes:



# An inactive world....



- In Australia 50% of adults aged 65+ are insufficiently **active** (AIHW, 2023)
- Globally **5.3 million deaths/year due to inactivity** (Lee et al, 2012)
- Physical inactivity of **similar importance** as a modifiable risk factor for chronic disease as **obesity** and **tobacco**
- Economic cost of physical inactivity estimated at **INT\$67.5 billion** worldwide in 2013 (Ding et al, 2016)
- Physical inactivity described as a **pandemic** back in 2012 Lancet Special Issue

# WHO Global Action Plan on Physical Activity

GLOBAL ACTION PLAN ON PHYSICAL ACTIVITY 2018-2030

## MORE ACTIVE PEOPLE FOR A HEALTHIER WORLD

### GOAL TO REDUCE PHYSICAL INACTIVITY

BY 2025  
**10%**

BY 2030  
**15%**

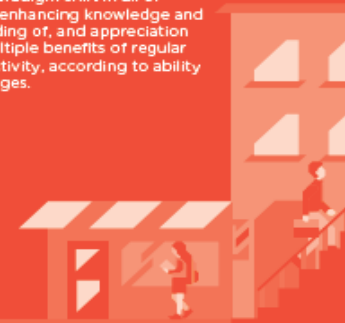


Health

## 1 CREATE ACTIVE SOCIETIES

### SOCIAL NORMS AND ATTITUDES

Create a paradigm shift in all of society by enhancing knowledge and understanding of, and appreciation for, the multiple benefits of regular physical activity, according to ability and at all ages.



## 2 CREATE ACTIVE ENVIRONMENTS

### SPACES AND PLACES

Create and maintain environments that promote and safeguard the rights of all people, or all ages, to have equitable access to safe places and spaces, in their cities and communities, in which to engage in regular physical activity, according to ability.



## 3 CREATE ACTIVE PEOPLE

### PROGRAMMES AND OPPORTUNITIES

Create and promote access to opportunities and programmes, across multiple settings, to help people of all ages and abilities to engage in regular physical activity as individuals, families and communities.



## 4 CREATE ACTIVE SYSTEMS

### GOVERNANCE AND POLICY ENABLERS

Create and strengthen leadership, governance, multisectoral partnerships, workforce capabilities, advocacy and information systems across sectors to achieve excellence in resource mobilization and implementation of coordinated international, national and subnational action to increase physical activity and reduce sedentary behaviour.



GOVERNMENT | Local Health District

# WHO Global Guidelines on Physical Activity and Sedentary Behaviour 2020

## Guidelines



### World Health Organization 2020 guidelines on physical activity and sedentary behaviour

Fiona C Bull <sup>1,2</sup>, Salih S Al-Ansari,<sup>3</sup> Stuart Biddle,<sup>4</sup> Katja Borodulin,<sup>5,6</sup> Matthew P Buman <sup>7</sup>, Greet Cardon,<sup>8</sup> Catherine Carty,<sup>9,10</sup> Jean-Philippe Chaput <sup>11</sup>, Sebastien Chastin <sup>12</sup>, Roger Chou,<sup>13</sup> Paddy C Dempsey,<sup>14,15</sup> Loretta DiPietro,<sup>16</sup> Ulf Ekelund <sup>17,18</sup>, Joseph Firth,<sup>19,20</sup> Christine M Friedenreich,<sup>21</sup> Leandro Garcia,<sup>22</sup> Muthoni Gichu,<sup>23</sup> Russell Jago <sup>24</sup>, Peter T Katzmarzyk,<sup>25</sup> Estelle Lambert <sup>26</sup>, Michael Leitzmann,<sup>27</sup> Karen Milton <sup>28</sup>, Francisco B Ortega,<sup>29</sup> Chathuranga Ranasinghe,<sup>30</sup> Emmanuel Stamatakis <sup>31</sup>, Anne Tiedemann,<sup>32</sup> Richard P Troiano <sup>33</sup>, Hidde P van der Ploeg,<sup>34,35</sup> Vicky Wari,<sup>36</sup>

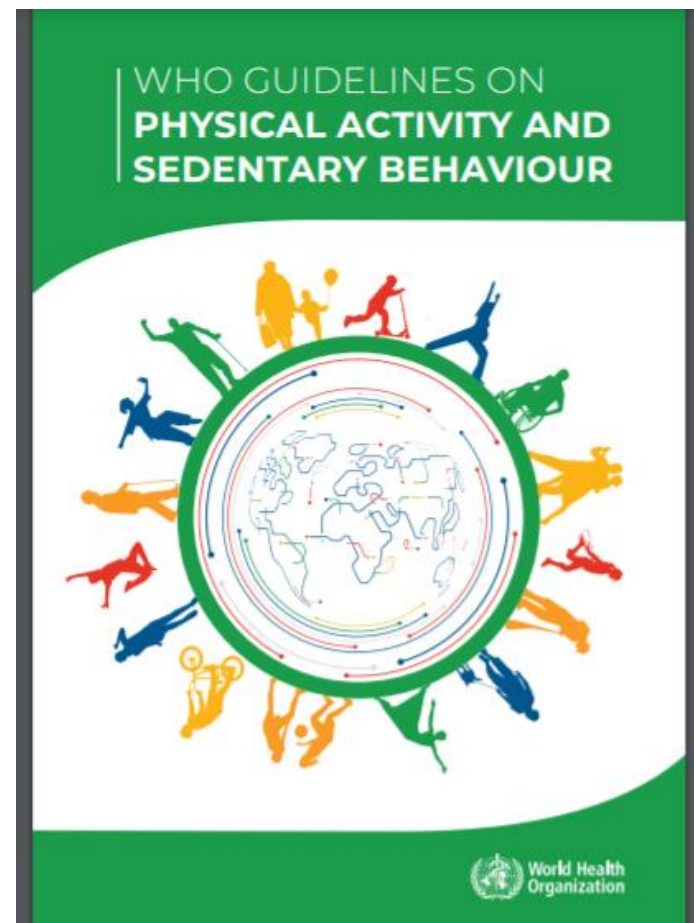
#### Physical activity:

Any bodily movement produced by skeletal muscles that requires energy expenditure

#### Exercise:

A subcategory of physical activity that is planned, structured, repetitive, and purposeful and that aims to improve or maintain physical fitness.

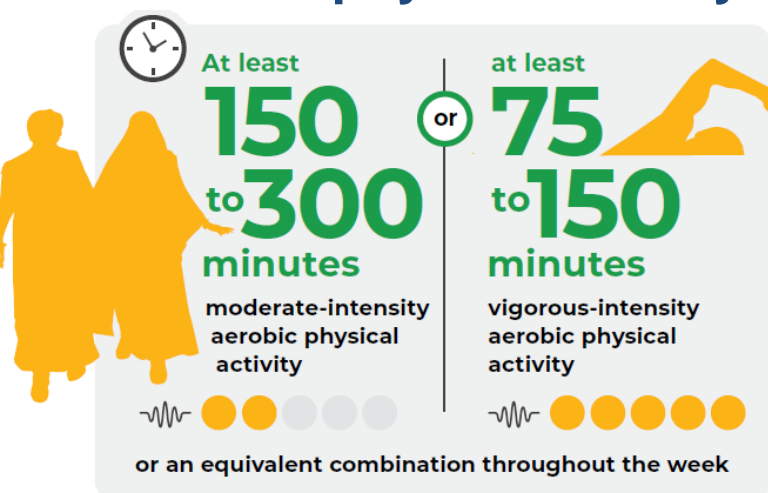
Br J Sports Med: first published as 10.1136/bjsport



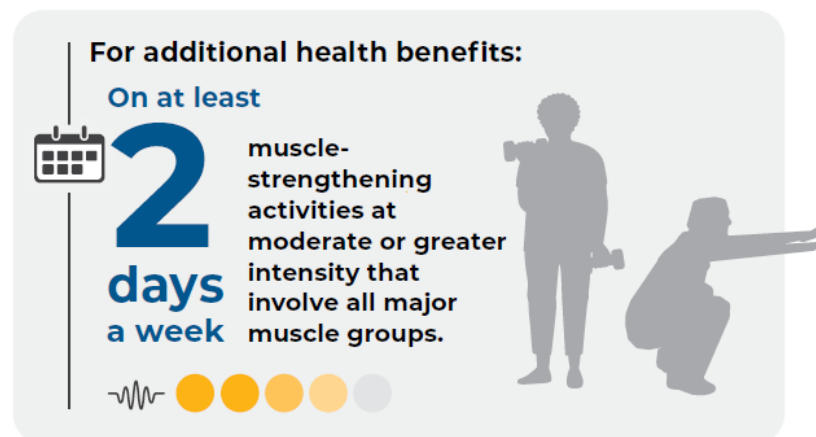
# WHO Global Guidelines on Physical Activity and sedentary behaviour 2020- recommendations for older adults

**Overall recommendation:** All older adults should undertake regular physical activity.

## Aerobic physical activity



## Muscle strengthening



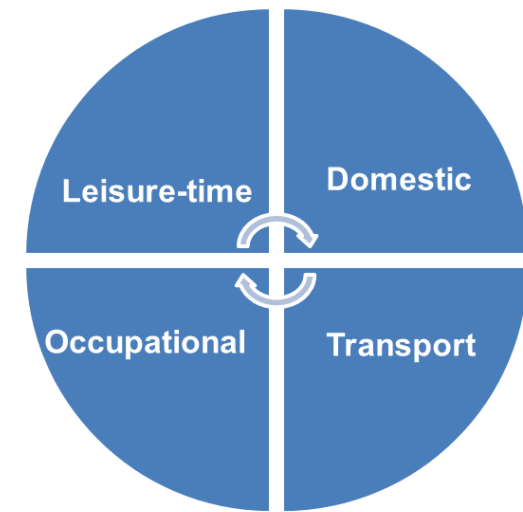
## Functional balance and strength training



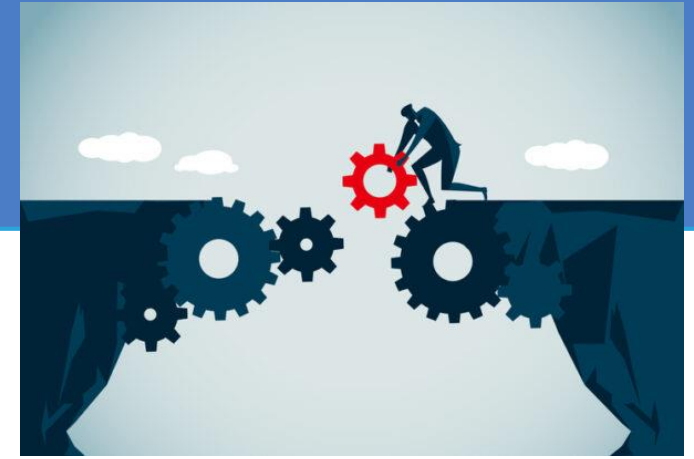
## Limit sedentary time

- Limit the amount of time being sedentary.
- Replace sedentary time with physical activity of any intensity.

# Every move counts- WHO video



# How can we be part of the solution?



## Key learnings from current research

- **Active Women over 50-** Online support to promote physical activity in women aged 50+
- **Coaching for Healthy AGEing (CHAnGE) trial-** Health coaching to support fall prevention and physical activity behaviour change
- **Successful AGEing (SAGE) yoga trial-** Trial of **yoga** for **preventing falls** in people aged 60+





## TBM

### ORIGINAL RESEARCH

### Background:

Middle-aged women often juggle carer & work demands & are often inactive. Tailored support could help increase physical activity.

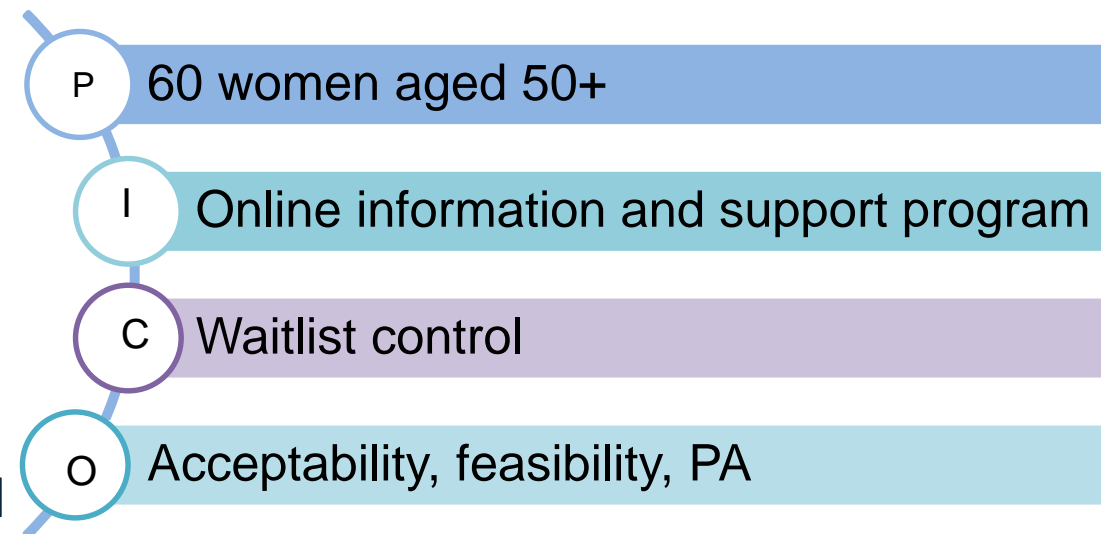
### Aim:

Pilot test the Acceptability, Feasibility, Impact on physical activity of the *Active Women over 50* program in 60 community-dwelling women aged 50+.



### Acceptability and feasibility of an online physical activity program for women over 50: a pilot trial

Geraldine Wallbank,<sup>1,2,6</sup> Catherine Sherrington,<sup>1,2</sup> Leanne Hassett,<sup>1,2,3</sup> Dominika Kwasnicka,<sup>4,5,6</sup> Josephine Y. Chau,<sup>6,7,8</sup> Philayrath Phongsavan,<sup>2,7,8</sup> Anne Grunseit,<sup>2,7,8</sup> Fiona Martin,<sup>9</sup> Colleen G. Canning,<sup>3</sup> Marian Baird,<sup>10</sup> Roberta Shepherd,<sup>3</sup> Anne Tiedemann<sup>1,2</sup>





## Be inspired

Here are some stories from real women and their experiences with physical activity - why they do it and what keeps them going. Look for ideas to inspire you to be more active.



### ANNIE'S STORY

Does yoga, plays golf, walks and swims.

"It's no longer about being able to run a marathon"

Being over 50, Annie took an audit of how physical activity could help her enjoy life. [Listen to Annie's story...](#)



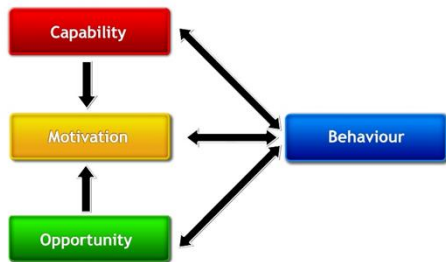
### FIONA'S STORY

Does daily strengthening exercises, brisk walking, weekend swimming.

"It's important for me to feel fit so I can enjoy life"

Having health challenges herself, being a carer, and commuting 3 hours daily for work, physical activity helps Fiona

MACQUARIE University



Why be active? **How to be active**

- Getting started
- Find an activity or sport
- Mobile apps
- Tools to keep going
- General information
- FAQs

Want to be more active? Get ideas to keep going

### Getting started

There are many more physical activity options than you think, and there are many ways to get started.

### Find an activity or sport

A directory of activities and sports for people 50+.

### Mobile apps

Technology can help you stay active. There are many apps available for your smartphone or tablet.

### Tools to keep going

1) Acceptability: “Would you recommend the Active Women over 50 study to another person such as yourself?”

83% would recommend it.

**Acceptable**

2) Feasibility of the intervention and study methods

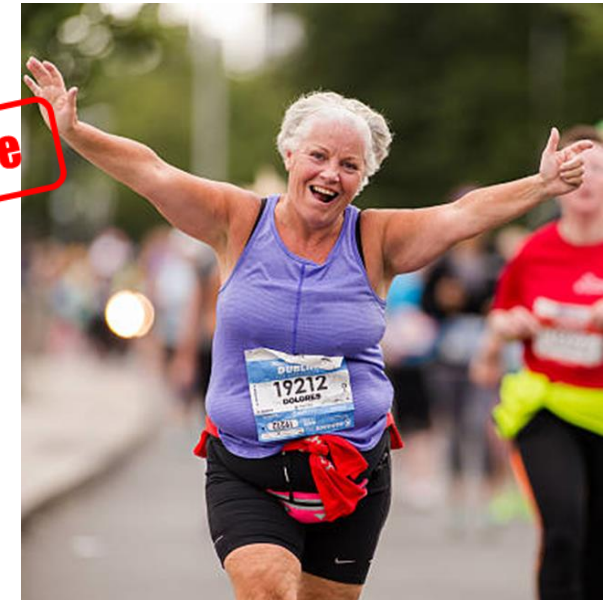
High uptake, data completion and participant retention

**Feasible**

3) Impact of the intervention on physical activity

Increase in daily steps and MVPA

**Impact**



# Intervention participants' feedback

...the flu  
which lasted  
several weeks

Enjoyed the  
email support

Joined work team for  
Global Challenge...  
making mindful  
decisions about walking  
for transport

Time,  
motivation and  
fear of injury

Family health  
issues

Fitbit encouraged  
me and monitored  
my activity

Just will power!

Too much to do  
and not enough  
time



Set smaller goals  
towards my  
bigger goal



# Key learnings to inform practice and next steps...

- Behaviour change techniques such as goal setting, feedback and monitoring, social support, and others can be active components of health promotion interventions for women in middle age
- Simple, scalable interventions that are remotely delivered can allow equity of access and flexibility for women with multiple responsibilities
- Two new trials to commence soon!!

# The Coaching for Healthy AGEing (CHAnGE) trial

Open Access

Protocol

## Background:

Increases in general physical activity may bring an increased risk of falls due to the exposure to additional hazards. Important to promote fall prevention alongside physical activity

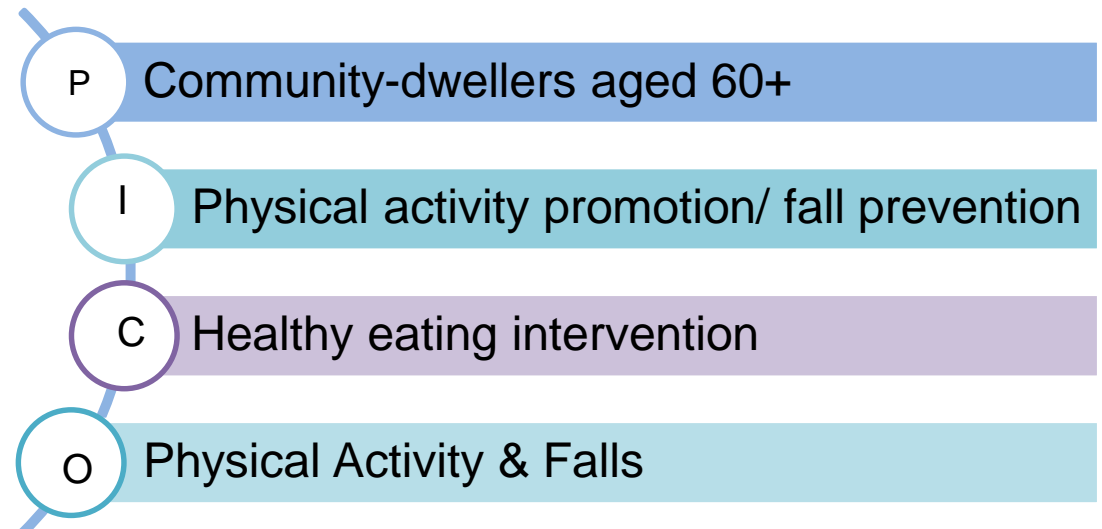
## Aim:

To establish the impact of a physical activity and fall prevention program compared with a healthy eating program on **physical activity** and **falls** among 600 people aged 60+ years.



**BMJ Open** Health coaching and pedometers to enhance physical activity and prevent falls in community-dwelling people aged 60 years and over: study protocol for the Coaching for Healthy AGEing (CHAnGE) cluster randomised controlled trial

Anne Tiedemann,<sup>1</sup> Chris Rissel,<sup>2</sup> Kirsten Howard,<sup>2</sup> Allison Tong,<sup>2</sup> Dafna Merom,<sup>3</sup> Stuart Smith,<sup>4</sup> James Wickham,<sup>5</sup> Adrian Bauman,<sup>2</sup> Stephen R Lord,<sup>6</sup> Constance Vogler,<sup>7,8</sup> Richard I Lindley,<sup>1</sup> Judy M Simpson,<sup>2</sup> Margaret Allman-Farinelli,<sup>9</sup> Catherine Sherrington<sup>1</sup>



# CHAnGE trial physical activity/ fall prevention intervention



*Fall prevention  
and physical  
activity plan*

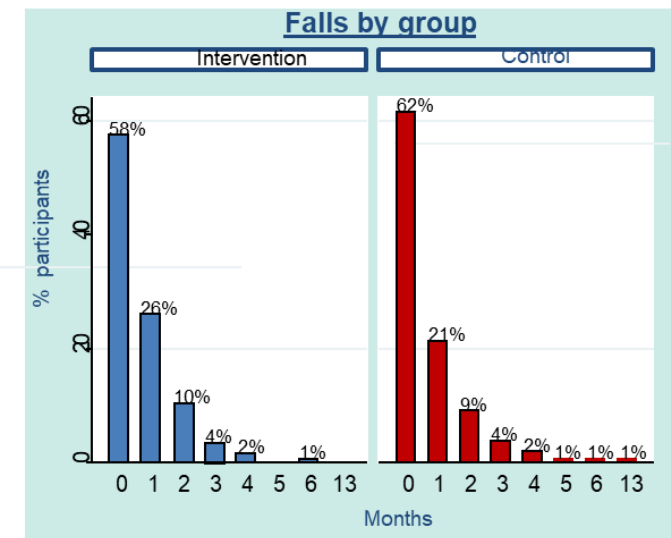
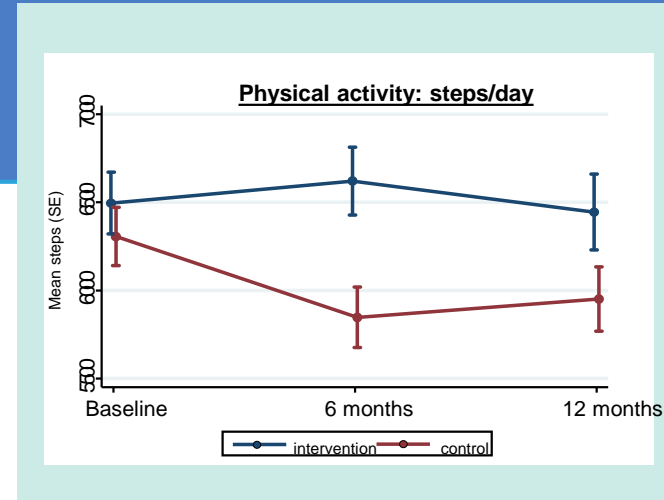


# Results

**Physical activity** significantly higher in intervention group at 6 months (**MD 649 steps/day**) and 12 months (**MD 460 steps/day**).

Lower **fall rate** in intervention group (**0.71 falls per person/year**) versus control group (**0.87 falls per person/year**); however not statistically significant (**IRR 0.86, 95% CI 0.6 to 1.1**).

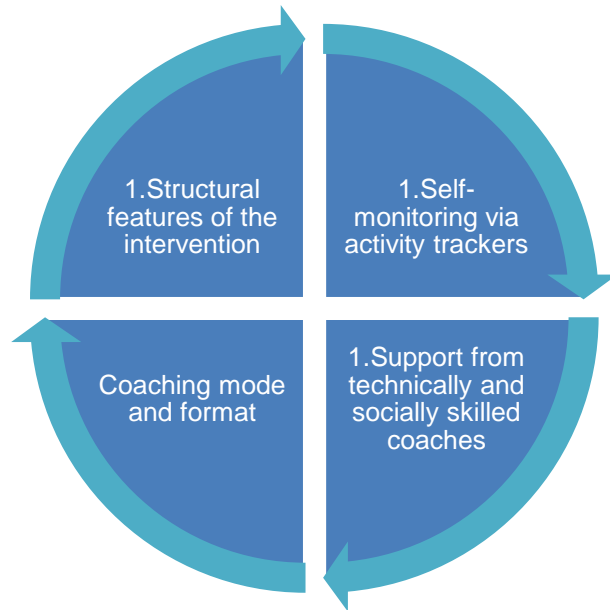
Exploratory analysis suggested a fall prevention effect in participants who had fallen 2+ times in the past year (n=61) at baseline.





# Results: Process evaluation to explore participant's experience

- Most of the 32 interviewed participants felt that the intervention increased physical activity levels, embedded activities, and generated positivity about physical activity
- Participants were motivated by quantified feedback (from Fitbit), self-directed goals and person-centred coaching that supported their behaviour change.



Essential ingredients of CHAnGE intervention

*Journal of Aging and Physical Activity*, (Ahead of Print)  
<https://doi.org/10.1123/japa.2020-0116>

Human Kinetics   
ORIGINAL RESEARCH

## “Someone’s Got My Back”: Older People’s Experience of the Coaching for Healthy Ageing Program for Promoting Physical Activity and Preventing Falls

Abby Haynes, Catherine Sherrington, Geraldine Wallbank, David Lester, Allison Tong, Dafna Merom, Chris Rissel, and Anne Tiedemann

The Coaching for Healthy Ageing trial evaluated the impact on physical activity (PA) and falls based on a year-long intervention in which participants aged 60+ receive a home visit, regular health coaching by physiotherapists, and a free activity monitor. This interview study describes the participants’ experiences of the intervention and ideas for improvement. The authors sampled purposively for maximum variation in experiences. The data were analyzed thematically by two researchers. Most of the 32 participants reported that the intervention increased PA levels, embedded activities, and generated positivity about PA. They were motivated by quantified PA feedback, self-directed goals, and person-centered coaching. Social connectivity motivated some, but the intervention did not support this well. The intervention structure allowed participants to trial and embed activities. Autonomy and relatedness were emphasized and should be included in future program theory. The authors identified synergistic effects, likely “essential ingredients,” and potential areas for improving this and similar interventions.

**Keywords:** activity tracking, health coaching, intervention trial, older adults, qualitative methods

# Results: Participants' experiences of the intervention

**Table 1.** What makes health coaching positive? Themes from participant interview data.

| Theme                      | Aspects of the theme   |
|----------------------------|--|
| Encouragement              | Expressing belief in the participant and their capabilities, pushing gently and suggesting possible solutions but also advocating other forms of self-care when appropriate, never making them feel bad about unachieved goals |
| Person-centered respect    | Supporting autonomy/self-direction, recognizing participants' knowledge, active listening, being non-judgmental  |
| Professional expertise     | Credibility and skill in providing evidence-based guidance and resources, breadth of knowledge in wider spheres of physical and mental health, cultural competence   |
| 'Being human'              | Likability, friendliness, empathy, sense of humor, showing an interest in the whole person, willingness to chat informally and share interests   |
| Commitment and reliability | Doing what they said they'd do, going the extra mile (e.g. attending aqua class, exchanging non-essential e-mails), practicing what they preach  |

PHYSIOTHERAPY THEORY AND PRACTICE  
<https://doi.org/10.1080/09593985.2021.1946872>

Taylor & Francis  
Taylor & Francis Group

Check for updates

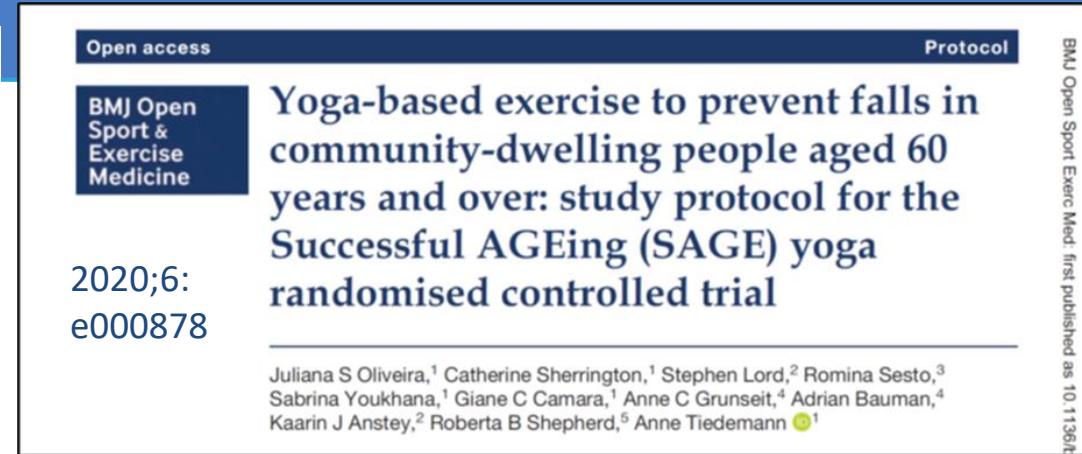
**“Sharing Success with Someone”: Building therapeutic alliance in physiotherapist-delivered physical activity coaching for healthy aging**

Abby Haynes, BSW, PhD<sup>a,b</sup>, Catherine Sherrington, PT, MPH, PhD, FACP, FAHMS<sup>a,b</sup>, Elisabeth Ramsay, BSc (Hons), PT<sup>a,b</sup>, Catherine Kirkham, PT<sup>a,b</sup>, Shona Manning, PT<sup>a,b,c</sup>, Geraldine Wallbank, PT<sup>a,b</sup>, Leanne Hassett, PT, PhD<sup>a,b,d</sup>, and Anne Tiedemann, PhD<sup>a,b</sup>



# Key learnings to inform practice

- Older people appreciate support and guidance to be more active
- Therapeutic alliance can enhance program engagement and adherence and therefore improve outcomes and satisfaction
- Older people's motivations for being more physically active are diverse

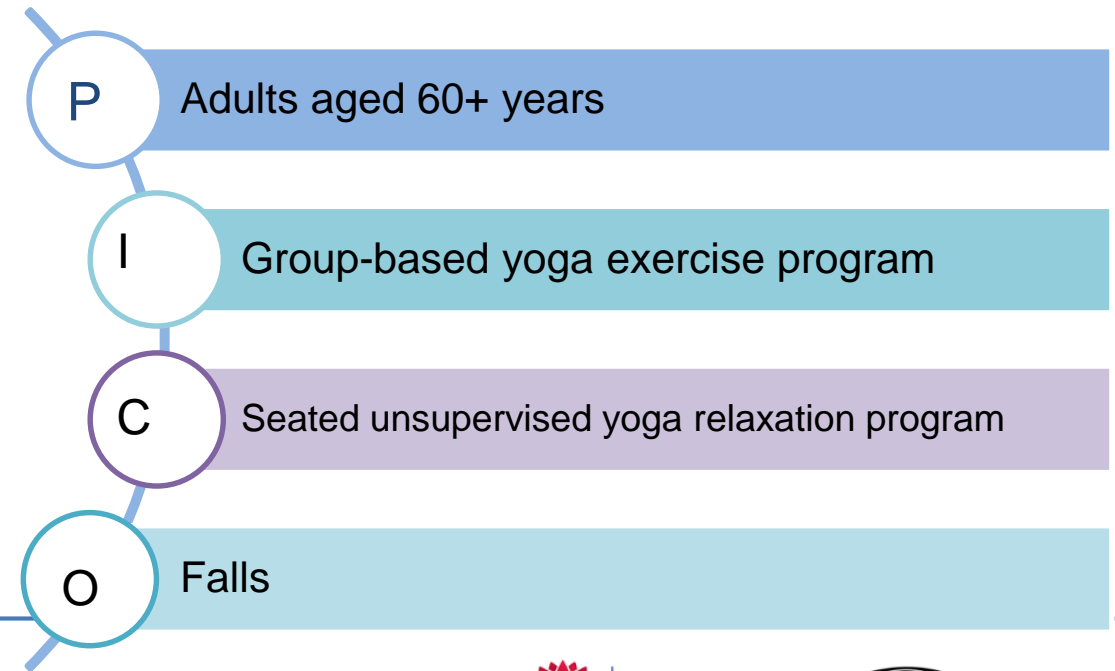


## Background:

Yoga is growing in popularity and can improve balance and mobility. It's effect on falls has not been tested.

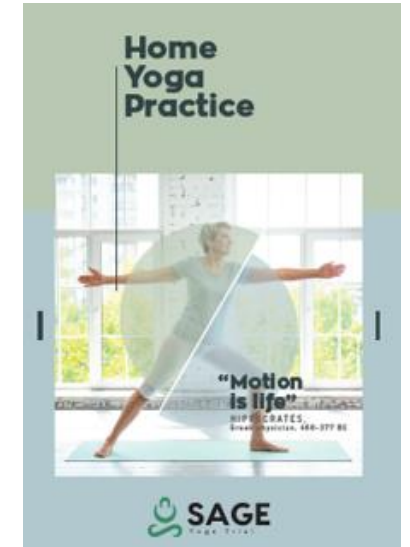
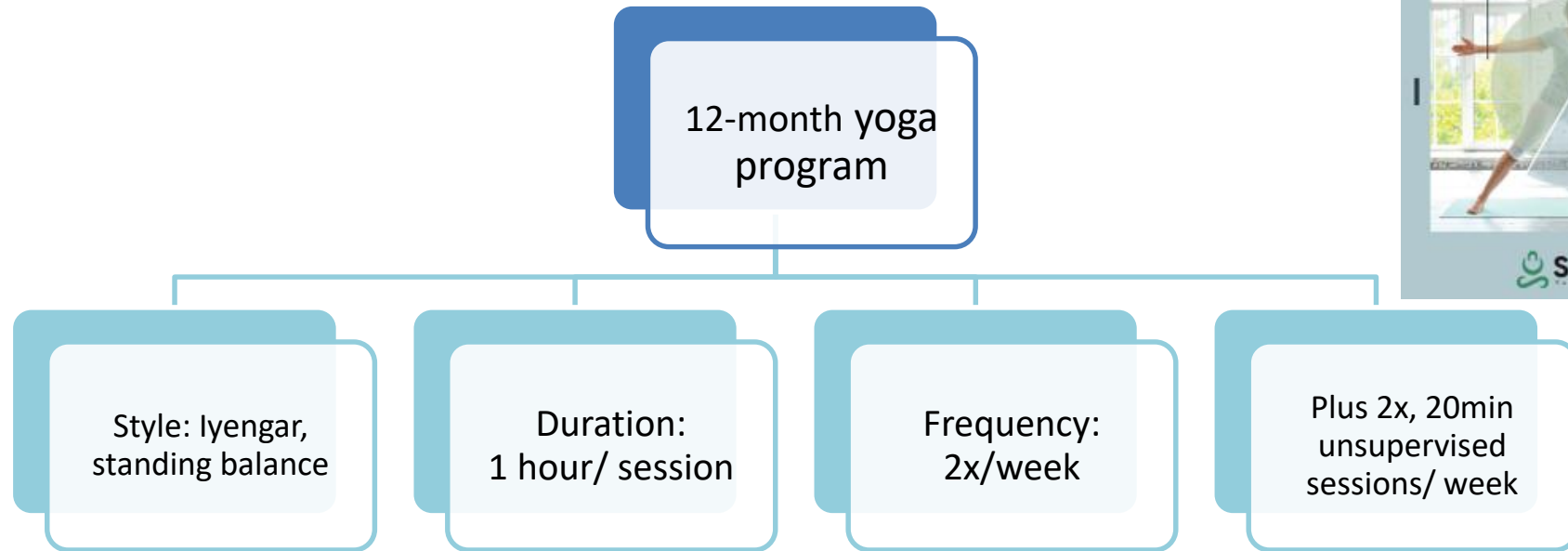
## Aim

To measure the effectiveness and cost-effectiveness of a **group-based yoga exercise program** on **falls** over 12 months, compared to a seated yoga relaxation program in 700 community-dwellers aged 60+

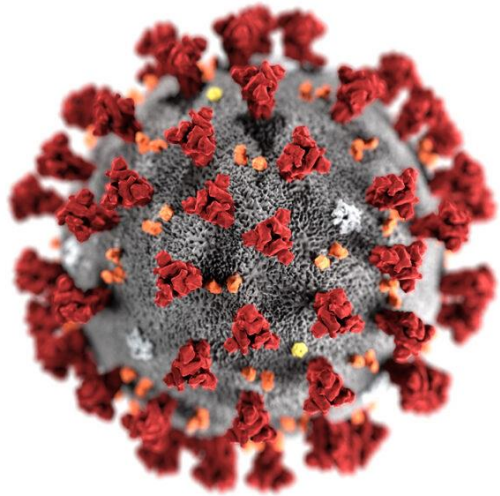
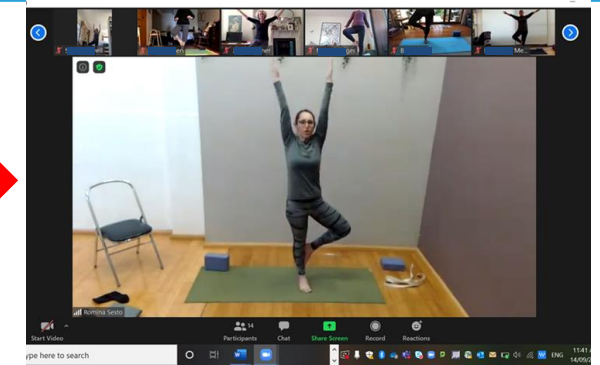




## Group-based yoga exercise program



## Intervention delivery



## Recruitment



## Social connection



## Participant feedback...

*"more able to get down to the floor"*

*"feeling a positive benefit in overall strength and calm mind"*



*"the yoga is definitely helping with balance and positioning of the body, limbs and transferring of weight consciously"*

*"more confident walking down steps"*



## For most people the online delivery retained much of the value of a face-to-face program

- participants enjoyed the shared experience of taking part with their peers
- online format provided a welcome routine during COVID lockdowns
- participants felt well looked after by experienced instructors
- relaxation, breathing and the mind-body connection practised in yoga created a satisfying internal focus on bodily sensation (mindfulness and embodiment)


Haynes et al. *BMC Public Health* (2022) 22:463  
<https://doi.org/10.1186/s12889-022-12818-5>

BMC Public Health


RESEARCH Open Access

What helps older people persevere with yoga classes? A realist process evaluation of a COVID-19-affected yoga program for fall prevention

Abby Haynes<sup>1,2\*</sup>, Heidi Gilchrist<sup>1,2</sup>, Juliana S. Oliveira<sup>1,2</sup>, Anne Grunseit<sup>3</sup>, Catherine Sherrington<sup>1,2</sup>, Stephen Lord<sup>4,5</sup> and Anne Tiedemann<sup>1,2</sup>



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<https://doi.org/10.1123/japa.2021-0503>  
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 First Published Online: June 25, 2022






etics RESEARCH

**The Value of Mind–Body Connection in Physical Activity for Older People**

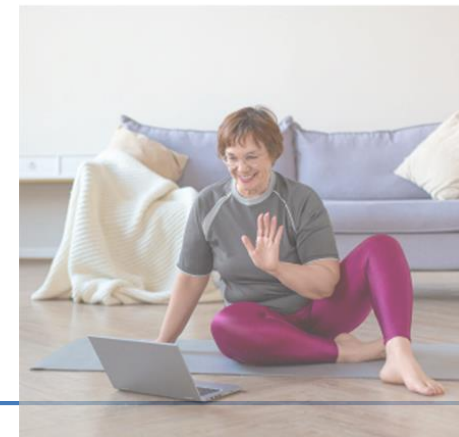
Heidi Gilchrist,<sup>1,2</sup> Abby Haynes,<sup>1,2</sup> Juliana S. Oliveira,<sup>1,2</sup> Anne Grunseit,<sup>3,4</sup> Catherine Sherrington,<sup>1,2</sup> Adrian Bauman,<sup>4</sup> Roberta Shepherd,<sup>5</sup> and Anne Tiedemann<sup>1,2</sup>

<sup>1</sup>Institute for Musculoskeletal Health, The University of Sydney and Sydney Local Health District, Sydney, NSW, Australia; <sup>2</sup>Faculty of Medicine and Health, School of Public Health, The University of Sydney, Sydney, NSW, Australia; <sup>3</sup>Faculty of Health, School of Public Health, University of Technology Sydney, Sydney, NSW, Australia; <sup>4</sup>NSW Government, Sydney Local Health District; <sup>5</sup>Sydney Local Health District



- Older people can adapt and can embrace technology
- Mindfulness/Embodiment theme could be relevant to other physical activity programs
  
- How to deliver online yoga (or other physical activity) for older people:
  - Technical instructions and support
  - Initial one-to-one Zoom chat between instructor and participant
  - Class sizes  $\leq 15$
  - Variety of class times
  - WhatsApp or similar for social connection



# Promoting physical activity to older adults: take home messages

- Relationships and trust are crucial
- Ask the right questions and listen to the answers
- Older people are diverse in their abilities, motivations and goals
- Their goals are often different to our goals
- An individualised approach is more effective than a 'one size fits all' approach
  
- Changing physical activity behaviour is complicated but the potential benefits make it worth the effort!



# IMH Physical Activity, Ageing and Disability research group





# Institute for Musculoskeletal Health

*A research partnership between Sydney Local Health District and the University of Sydney in musculoskeletal health and physical activity*

## Acknowledgements

- Robinson Fellowship
- NHMRC & MRFF research funding
- Study participants
- Research staff
- Collaborators



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