# Walking for Health: man's best medicine


## Professor Marie Murphy

**Chair of Exercise & Health | Dean of Postgraduate Research**

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**The Power of Walking | 14th November 2019 | Riddel Hall**

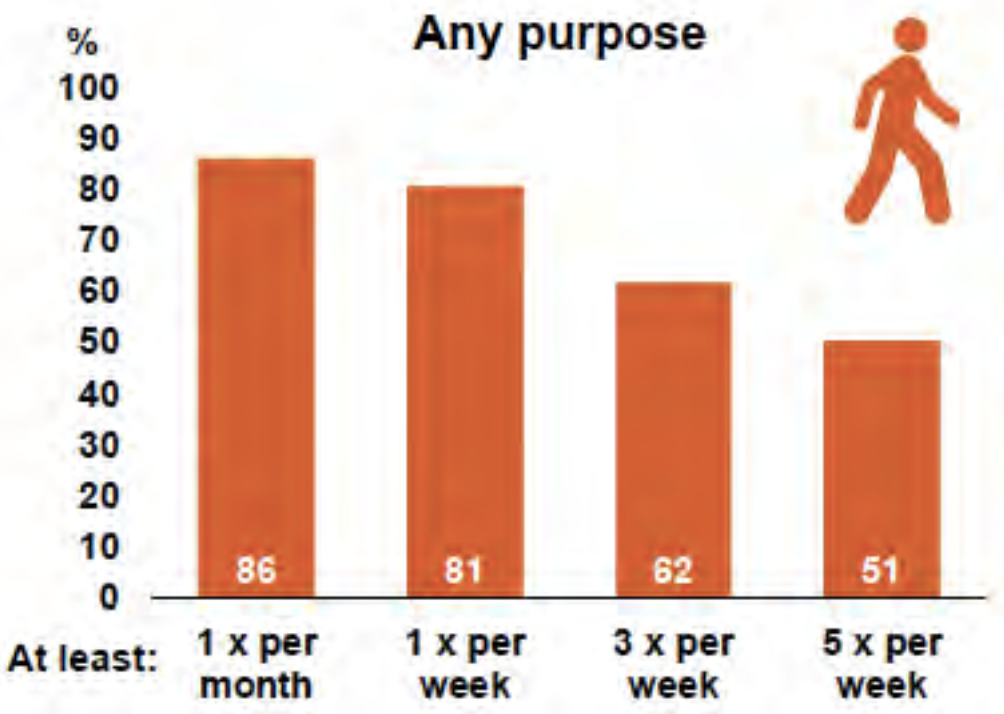
- Why walking? – the evidence for health benefit
- Volume (steps) or Intensity (pace) which is more important?
- Interventions to change walking behaviour
- Take home messages

# Walking promotion for public health?

* Socially acceptable
* Low/no skill
* No equipment or facility requirement
* Easily incorporated in lifestyle
* Personal transport
* Major muscle groups
* Low impact /injury

* Activity of <u>choice</u> for inactive seeking to become active

# Walking prevalence




Proportion of Adults walking 1x, 3x and 5x per week has increased since 2012

'Utility' walking has shown the greatest increase (4.4%)

No gender differences in self-reported walking

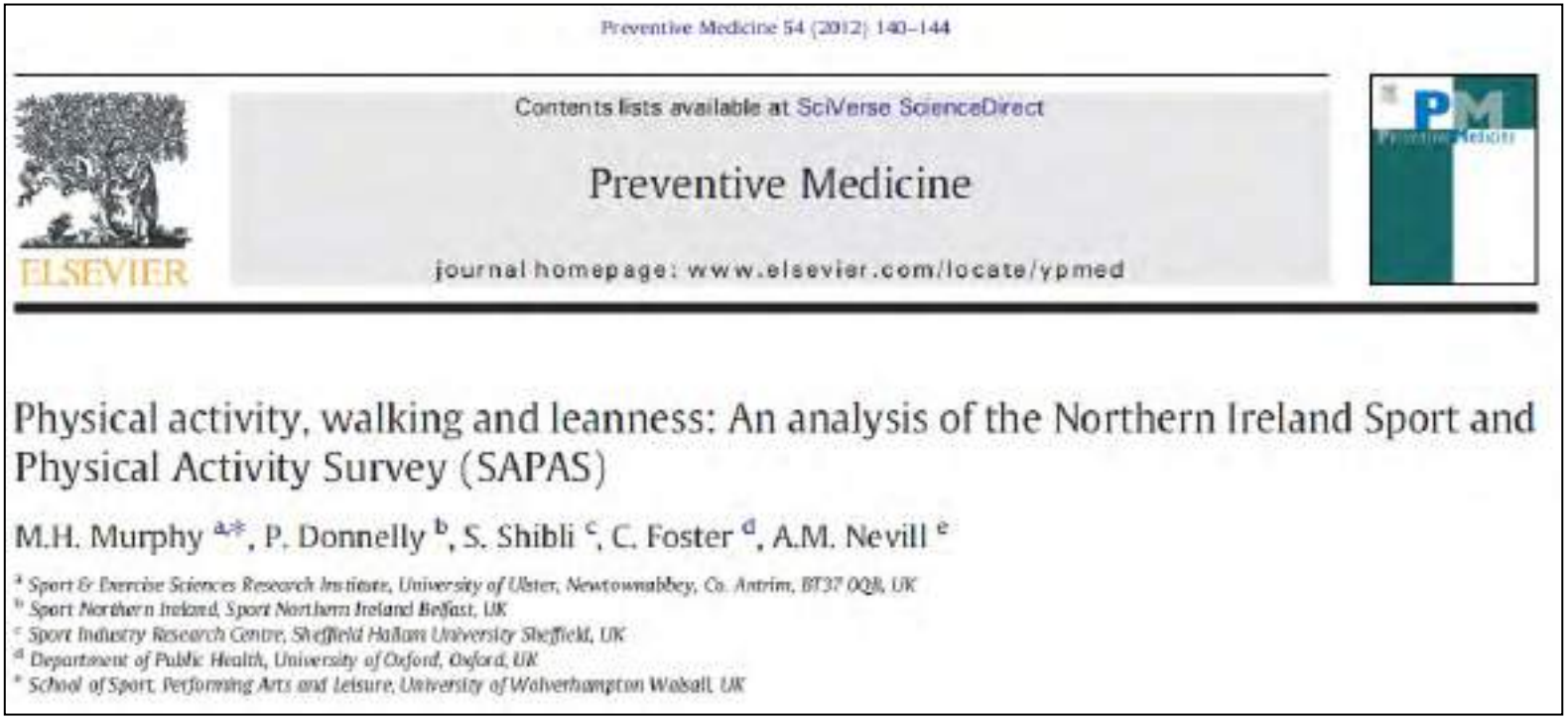
Slight decline in self-reported walking with increased age

No measure or estimate of walking speed

Department of Transport *(2016)* Local Area Walking and Cycling Statistics: England, 2014/15
https://www.gov.uk/government/statistics/local-area-walking-and-cycling-in-england-2014-to-2015

# Walking in Northern Ireland?

## Sport and Physical Activity Survey (SAPAS) 2010



Preventive Medicine 54 (2012) 140–144

Contents lists available at SciVerse ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Physical activity, walking and leanness: An analysis of the Northern Ireland Sport and Physical Activity Survey (SAPAS)

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*Murphy MH, Donnelly P, Shibli S, Foster C and Nevill A (2012) Physical activity, walking and leanness: An analysis of the Northern Ireland Sport and Physical Activity Survey (SAPAS). Preventive Medicine 52(2) 140-141.*

# Walking in Northern Ireland- SAPAS Survey

4563 Adults - self-reported walking > 10+ mins in past 7 days

**47.7% reported walking "to get somewhere"**

**21.5% reported walking while at work**

**50.9% reported walking for recreation**

**31.5% reported no walking > 10 mins in the previous week**

**only 24% reported walking at a brisk or very brisk pace**

# The effect of walking interventions on risk factors for CVD

Preventive Medicine 72 (2015) 34–43

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Review

## The effect of walking on risk factors for cardiovascular disease: An updated systematic review and meta-analysis of randomised control trials

Elaine M. Murtagh [a,*], Linda Nichols [b], Mohammed A. Mohammed [c], Roger Holder [b], Alan M. Nevill [d], Marie H. Murphy [e]

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ARTICLE INFO

Available online 8 January 2015

*Keywords:*
Walking
Exercise
Health
Cardiovascular risk

ABSTRACT

*Objective.* To conduct a systematic review and meta-analysis of randomised control trials that examined the effect of walking on risk factors for cardiovascular disease.

*Methods.* Four electronic databases and reference lists were searched (Jan 1971–June 2012). Two authors identified randomised control trials of interventions ≥4 weeks in duration that included at least one group with walking as the only treatment and a no-exercise comparator group. Participants were inactive at baseline. Pooled results were reported as weighted mean treatment effects and 95% confidence intervals using a random effects model.

*Results.* 32 articles reported the effects of walking interventions on cardiovascular disease risk factors. Walking increased aerobic capacity (3.04 mL/kg/min, 95% CI 2.48 to 3.60) and reduced systolic (−3.58 mm Hg, 95% CI −5.19 to −1.97) and diastolic (−1.54 mm Hg, 95% CI −2.83 to −0.26) blood pressure, waist circumference (−1.51 cm, 95% CI −2.34 to −0.68), weight (−1.37 kg, 95% CI −1.75 to −1.00), percentage body fat (−1.22%, 95% CI −1.70 to −0.73) and body mass index (−0.53 kg/m², 95% CI −0.72 to −0.35) but failed to alter blood lipids.

*Conclusions.* Walking interventions improve many risk factors for cardiovascular disease. This underscores the central role of walking in physical activity for health promotion.



**Contents**



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http://dx.doi.org/10.1016/j.ypmed.2014.12.041
0091-7435/

Original article

## Effects of frequency, intensity, duration and volume of walking interventions on CVD risk factors: a systematic review and meta-regression analysis of randomised controlled trials among inactive healthy adults

Pekka Oja,[1] Paul Kelly,[2] Elaine M Murtagh,[3] Marie H Murphy,[4] Charlie Foster,[5] Sylvia Titze[6]

► Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/bjsports-2017-098558).

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Accepted 19 December 2017

**ABSTRACT**

**Objective** Walking interventions in healthy populations show clinically relevant improvements for many cardiovascular disease (CVD) risk factors. We aimed to assess the changes in CVD risk factors and the dose–response relationship between frequency, intensity, duration and volume of walking and cardiovascular risk factors based on randomised controlled trials (RCTs).

**Design** A systematic review with meta-analysis and meta-regression.

**Data sources** Four electronic databases searched from January 1971 to April 2017.

**Eligibility criteria** Walking RCTs reporting one or more CVD risk factor outcomes; trials including at least one group with walking intervention and a no-walking control group; duration ≥8 weeks; participants ≥18 years old, inactive but healthy; risk factors assessed preintervention and postintervention; English-language articles in peer-reviewed journals.

**Results** Thirty-seven RCTs, involving 2001 participants (81% women) and assessing 13 CVD risk factors, were identified. Pooled meta-analysis showed favourable effects (P≤0.05) of walking intervention for seven CVD risk factors (body mass, body mass index, body fat, systolic and diastolic blood pressure, fasting glucose and $VO_2$max). ,here were no significant effects (P>0.05) for waist circumference, waist-to-hip ratio and four blood lipid variables. Despite testing 91 possible dose–response relationships, linear meta-regression analysis adjusted for age indicated just 7 (or 7.7%) statistically significant findings.

**Summary/conclusion** Walking interventions benefit a number of CVD risk factors. Despite multiple studies and tested metrics, only a few dose–response relationships were identified and the possibility of chance findings cannot be ruled out. There is insufficient evidence to quantify the frequency, length, bout duration, intensity and volume of the walking required to improve CVD risk factors.

**PROSPERO registration number** CRD42016039409.

Check for updates

**To cite:** Oja P, Kelly P, Murtagh EM, *et al*. *Br J Sports Med* 2018;**52**:769–775.

**INTRODUCTION**

Non-communicable diseases (NCDs) are a major burden worldwide.[1] It has been estimated that elimination of physical inactivity would remove between 6% and 10% of the major NCDs of coronary heart disease (CHD), type 2 diabetes, and breast and colon cancers, and increase life expectancy.[2] One key approach to increase population levels of physical activity is to promote safe, accessible and environmentally friendly activity options for all citizens, including improved infrastructure for walking and cycling for transport and recreation.[3]

Walking is the ideal physical activity intervention to improve health across the population.[4] A recent systematic review of 32 randomised controlled trials (RCTs) by Murtagh *et al*[5] showed that walking increases aerobic capacity and reduces blood pressure, waist circumference, body weight, per cent body fat and body mass index (BMI). Another systematic review[6] reported similar health benefits of recreational walking including reduced systolic and diastolic blood pressure, resting heart rate, body fat, BMI and total cholesterol, and increased $VO_2$max, physical functioning and the distance covered in a 6 min walk test.

National physical activity recommendations are based on summative volumes of different intensities of physical activity over a week, with walking as the cornerstone of health promotion efforts. However, walking can vary considerably in terms of the frequency, intensity, daily/weekly duration and total volume. Specific evidence on the dose–response relationships could increase health professionals' effectiveness in promoting physical activity and specifically walking for health benefits.

Observational data indicate some dose–response relationships at a population level. In a systematic review of epidemiological studies with all-cause mortality as the endpoint, Hamer and Chida[7] found that walking pace was a stronger independent predictor than walking volume. Through meta-analysis, Kelly *et al*[8] showed an increased reduction in the risk of all-cause mortality for higher walking volumes (in MET-hours per week). Also, randomised controlled walking trials have found some dose–response relationships. Asikainen *et al* searched for the minimum dose of walking for health benefits and found that a weekly dose of 1000 to 1500 kcal of walking improved the aerobic power and body composition of previously sedentary non-obese postmenopausal women.[9] Recently, Hanson and Jones[6] noted based on their systematic review of randomised controlled walking



Murtagh et al (2015) The effect of walking on risk factors for cardiovascular disease: An updated systematic review and meta-analysis of randomized control trials Preventive Medicine 72 (2015) 34–43

Oja et al (2018). Effects of frequency, intensity, duration and volume of walking interventions on CVD risk factors: a systematic review and meta-regression analysis of randomised controlled trials among inactive healthy adults. *British Journal of Sports Medicine*, *52*(12), 769-775.

# The effect of walking interventions on risk factors for CVD

- 37 walking RCTs conducted 1971-2017,
- Inactive participants > 18 yrs, walking intervention > 8 wks
- CVD risk factors measured pre- and post- walking intervention
- 2001 participants (30-83y); 22 Female only, 3 Male only, 14 both
- Intervention
  - Length: mean 18.7 weeks (range: 8–52 weeks)
  - Duration: 10–325 mins per week
  - Intensity: light (3), moderate (23), vigorous (3), “self-paced” (3), “brisk” (5)

# The effect of walking interventions on risk factors for CVD

In randomised controlled trials, walking interventions:

- Increased fitness ($VO_2$ max) (+10.5%)
- Reduced weight (-1.4 kg), body fat (-1.2%), waist (-1.5 cm) and BMI (-0.51 $kg/m^2$)
- Reduced systolic and diastolic blood pressure (3.6 / 1.5mm Hg)
- Reduced fasting blood glucose (0.4 $mmol.l^{-1}$)

**Clinical significance**

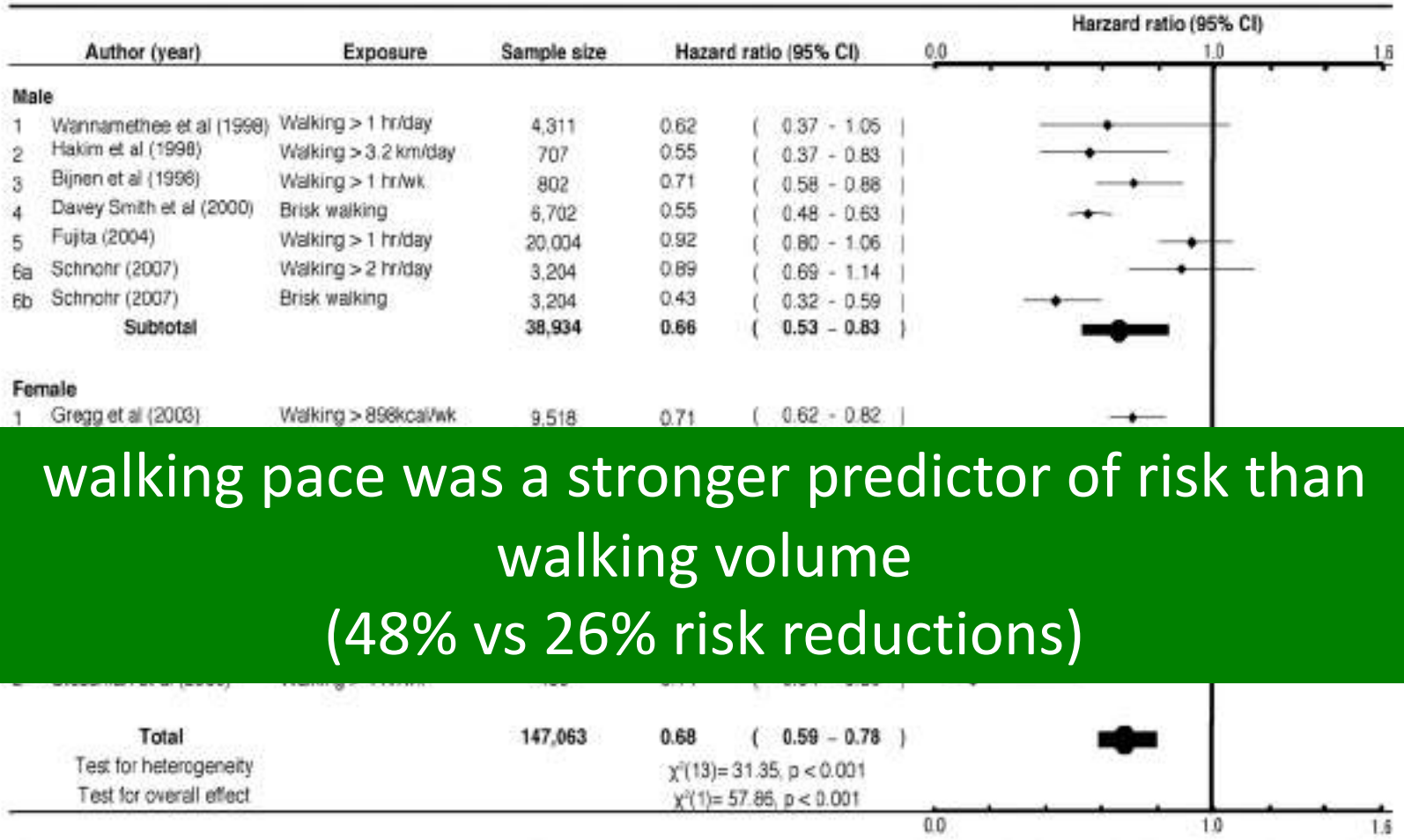
**Aerobic fitness:**
**10% improvement = 15% reduction in CVD mortality**

**Systolic BP**
**2 mm Hg reduction = 10% lower stroke mortality**

**Waist circumference**
**1 cm decrease = 2% increase in the relative risk of a CVD event**

# Walking and all-cause mortality

12 studies of self reported walking and mortality (n= 147,063)




walking pace was a stronger predictor of risk than walking volume
(48% vs 26% risk reductions)

**32% reduction in risk of all-cause mortality among those who reported walking**

Hamer, M., & Chida, Y. (2008). Walking and primary prevention: a meta-analysis of prospective cohort studies. *British journal of sports medicine*, *42*(4), 238-243.

# Effect of walking speed on mortality

Original article

Self-rated walking pace and all-cause, cardiovascular disease and cancer mortality: individual participant pooled analysis of 50 225 walkers from 11 population British cohorts

Emmanuel Stamatakis,[1,2] Paul Kelly,[3] Tessa Strain,[3,4] Elaine M Murtagh,[5] Ding Ding,[1,2] Marie H Murphy[6]

► Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/bjsports-2017-098677)

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**ABSTRACT**
**Background/objectives** Walking pace is associated with risk of premature mortality. However, whether this relationship is independent of total volume of physical activity and highest physical activity intensity remains unclear. We examined the associations between walking pace and cause-specific mortality, investigating the potential modifying effect of factors such as total physical activity volume, highest physical activity intensity, age, sex and body mass index (BMI).
**Methods** Prospective pooled analysis of 11 population-based baseline surveys in England and Scotland between 1994 and2008 that were linked with mortality records. Multivariate-adjusted Cox proportional hazards models examined associations between walking pace (slow, average, brisk/fast) and all-cause, cancer and cardiovascular disease (CVD) mortality.
**Results** 50 225 walkers were entered in the core analyses. Among participants who did not experience an event in the first 2 years of follow-up (n=49 731), walking at an average or brisk/fast pace was associated with a reduced risk of all-cause (20% (95% CI 12% to 28%) and 24% (95% CI 13% to 33%), respectively) and CVD mortality (24% (95% CI 9% to 36%) and 21% (95% CI 1% to 38%), respectively), compared with reporting walking at a slow pace. In stratified analyses, such associations were evident among those over 50 years, those not meeting the physical activity recommendations and those who did not undertake vigorous-intensity activity. There were no interactions by sex or BMI. No associations were seen between pace and cancer mortality.
**Conclusion** Walking benefits health. Assuming causality, these analyses suggest that increasing walking pace could reduce risk for all-cause and CVD mortality. Walking pace could be emphasised in public health messages, especially in situations when increase in walking volume or frequency is less feasible.

**INTRODUCTION**
Increasing population level walking remains a key focus of physical activity (PA) promotion. Regular walking is known to confer many physical, mental and social health benefits.[1] Meta-analyses of cohort studies have sought to quantify the association between regular walking and reduction in risk for all-cause mortality (ACM).[2–4] Kelly *et al* estimated that after adjustment for other PA, walking at a volume equivalent to PA guidelines was associated with an 11% reduction in risk for ACM compared with no walking.[5]

Considering specific health endpoints, cardiovascular disease (CVD) and cancer are the two most common avoidable causes of mortality in the UK.[6] Hamer and Chida conducted a meta-analysis of 13 cohort studies and found a 31% reduction in risk of CVD mortality in the highest walking categories compared with the lowest walking volume/intensity category.[2] A recent large analysis of over 250 000 adults in the UK found walking to work was associated with a 36% reduction in risk of CVD mortality compared with non-active commuting.[7] The results for cancer mortality are less clear, with, for example, Matthews *et al*[8] and Celis-Morales *et al*[7] finding no significant associations between walking volume and cancer mortality in large cohort studies.[7 8]

According to principles of overload, a higher relative activity intensity achieved by a faster pace of walking would provide the stimulus to produce a greater physiological response, and more substantial or even additional health benefits. Acute studies have shown that walking at a faster pace results in greater physiological responses.[1] However, while total volume of walking, for example, by distance or time has been frequently studied,[2–5] less is known about the long-term health effects of habitual walking pace.

A Copenhagen City Heart Study analysis[9] reported reduced risk of heart failure for moderate and high walking speed compared with slow speed. The authors also suggested that walking pace may have a stronger association with heart failure than total duration of walking. Manson *et al*[10] found that among 73 743 postmenopausal women aged 50–79 years, walking pace was associated with reduced incidence of CVD in a dose–response fashion. In a 40-year follow-up of the Whitehall study of 6981 British civil servants, Batty *et al*[11] compared slow walking pace with high walking pace and found a reduced risk of all-cause, coronary heart disease and total cancer mortality. None of these studies adjusted for total volume of PA and it is therefore unclear if the reported effects were partly attributable to the higher overall activity levels of brisk/fast walkers.

A recent analysis of 420 000 UK Biobank participants found significant associations between higher walking pace and reduced risk of all-cause and CVD mortality, but inconsistent findings for cancer

Check for updates

To cite: Stamatakis E, Kelly P, Strain T, *et al*. *Br J Sports Med* 2018;**52**:761–768.



Analysis of 11 population-based baseline surveys (1994 - 2008) linked with mortality records

50,225 respondents – self-reported walking at least once in previous 4 weeks – disease free at baseline

Participants asked about walking pace

- Walking at moderate pace reduced risk of all-cause mortality by 20%
- Walking at brisk pace reduced risk of all-cause mortality by 24%
- Pace did not alter reduction in cancer risk

## CONCLUSIONS

Walking is known to benefit health. Assuming causal relationships, these analyses suggest that increasing walking pace could be linked with lower risk for all-cause and CVD mortality. Walking pace should be emphasised in public health messages, especially in circumstances when increase in walking volume or frequency is less feasible.

Stamatakis, E., Kelly, P., Strain, T., Murtagh, E. M., Ding, D., & Murphy, M. H. (2018). Self-rated walking pace and all-cause, cardiovascular disease and cancer mortality: individual participant pooled analysis of 50 225 walkers from 11 population British cohorts. *Br J Sports Med*, *52*(12), 761-768.

# Will walking at 3 mph change population fitness?

*Journal of Sports Sciences*, December 2011; 29(15): 1629–1634

Routledge
Taylor & Francis Group

## Estimates of the number of people in England who attain or exceed vigorous intensity exercise by walking at 3 mph

PAUL KELLY[1], MARIE MURPHY[2], PEKKA OJA[3], ELAINE M. MURTAGH[4], & CHARLIE FOSTER[1]

[1]*BHF Health Promotion Research Group, University of Oxford, Oxford, UK,* [2]*University of Ulster, Sport and Exercise Science Research Institute, Jordanstown, UK,* [3]*UKK Institute for Health Promotion Research, Tampare, Finland, and* [4]*Mary Immaculate College, Arts Education and Physical Education, South Circular Road, Limerick, Co. Limerick, Ireland*

**3 mph = 4.83 km/h = 1.34 m/sec**

# Will walking at 3 mph change population fitness?

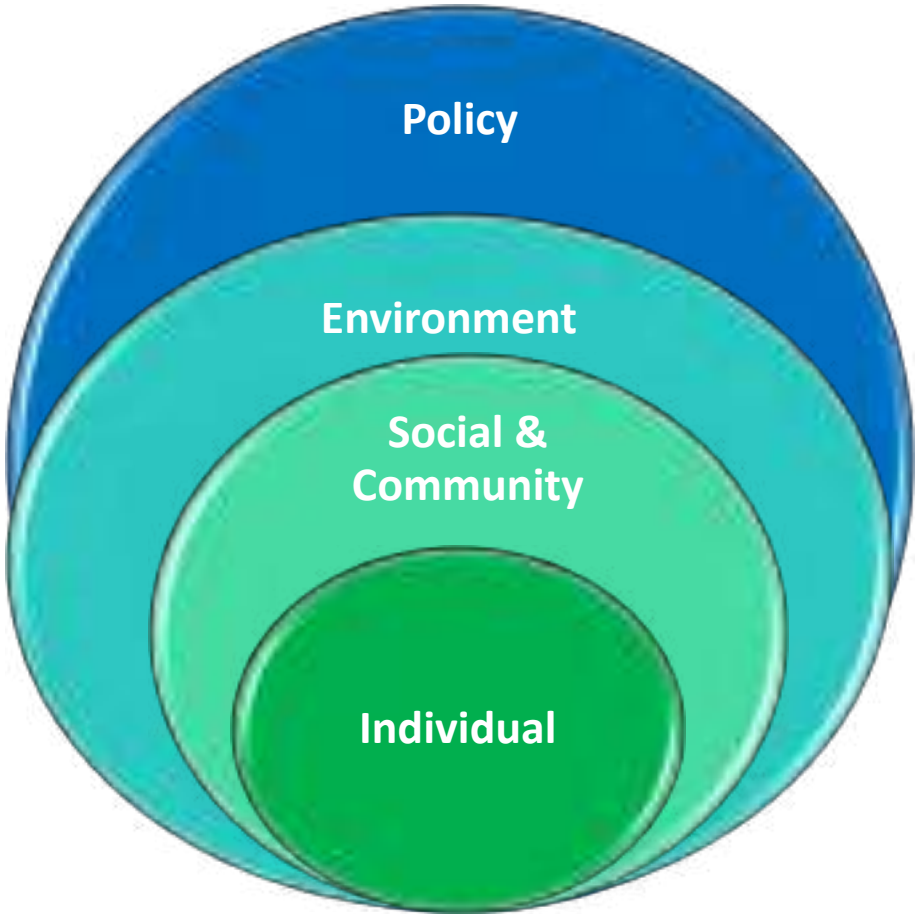
**Allied Dunbar National Fitness Survey (1992) 1741 adults walked 1 mile @3 mph**

| % of people reaching 75% HR max while walking at 3mph | | | | |
|---|---|---|---|---|
| Age | 25-34 | 35-44 | 45-54 | 55-64 |
| Women | 11 | 23 | 43 | 70 |
| Men | 2 | 8 | 9 | 30 |

- **11.6% of men and or 28.6% of women would achieve VIGOROUS intensity activity by walking at 3mph**
- **5.4 million individuals (20%) of all individuals aged 25-64 could achieve the intensity considered necessary for CV fitness gains**

Kelly, P., Murphy, M., Oja, P., Murtagh, E. M. & Foster, C. 2011. Estimates of the number of people in England who attain or exceed vigorous intensity exercise by walking at 3 mph. *Journal of Sports Sciences, 29, 1629-1634.*

# Increasing physical activity (walking) what works?




**moderate to strong evidence:**

- Community design
- Access to facilities

- Point of decision prompts
- Built environment for active transport

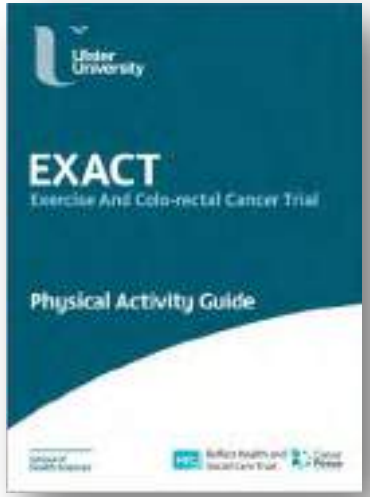
- Multicomponent
- Community-wide delivery
- Worksite intervention

- Behaviour Change Techniques
- Family / School support
- Peer-led

# Walking intervention research @Ulster

- 3 x 10  vs 1 x 30 min walking postmenopausal women
- ‘Walk to the Beat’ - pre-diabetic patients
- The APP trial - pregnant women (T2 and T3)
- EXACT trial - colon cancer survivors
- Peer-led walking - pupils with intellectual disability
- Walk with Me - socio-economically disadvantaged adults

- *GAP4 - prostrate cancer patients - feasibility study underway*
- *WORTH study -  adults with serious mental illness – feasibility study underway*
- *WISH - inactive adolescent girls - clustered RCT underway*




Wish
Walking In ScHools

Wish
Walking In ScHools


RESEARCH ARTICLE Open Access

Current influences and approaches to promote future physical activity in 11–13 year olds: a focus group study

Angela Carlin[1], Marie H. Murphy[2] and Alison M. Gallagher[3*]

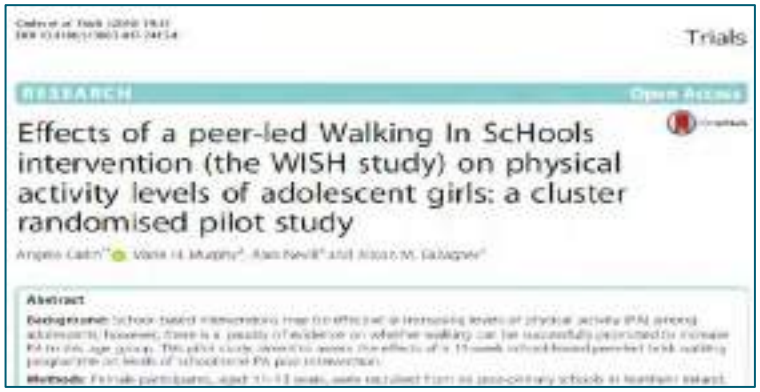
Abstract

**Background:** Many children and adolescents are failing to meet current physical activity (PA) guidelines and consequently not achieving the benefits associated with regular participation in PA, with girls consistently less active than boys. In order to design interventions to increase physical activity in adolescents it is important to understand their perceptions of and preferences for physical activity.

What would encourage **low active 11-13 year old girls** in NI schools to be more active?
Focus Groups (n=9)

- Non-competitive
- Can take part with friends
- No need to change clothes
- Not running
- Rewards or incentives
- Peer-mentoring schemes
- Non-traditional sports
- Low cost and little resources
- Fun, informal in nature

Carlin, A., Murphy, M. H., & Gallagher, A. M. (2015). Current influences and approaches to promote future physical activity in 11–13 year olds: a focus group study. *BMC Public Health*, *15*(1), 1270


Trials

RESEARCH Open Access

Effects of a peer-led Walking In ScHools intervention (the WISH study) on physical activity levels of adolescent girls: a cluster randomised pilot study

Abstract

**Targeted inactive/ non-sporty girls**

**199 girls aged 11-13 (27% overweight/obese)**

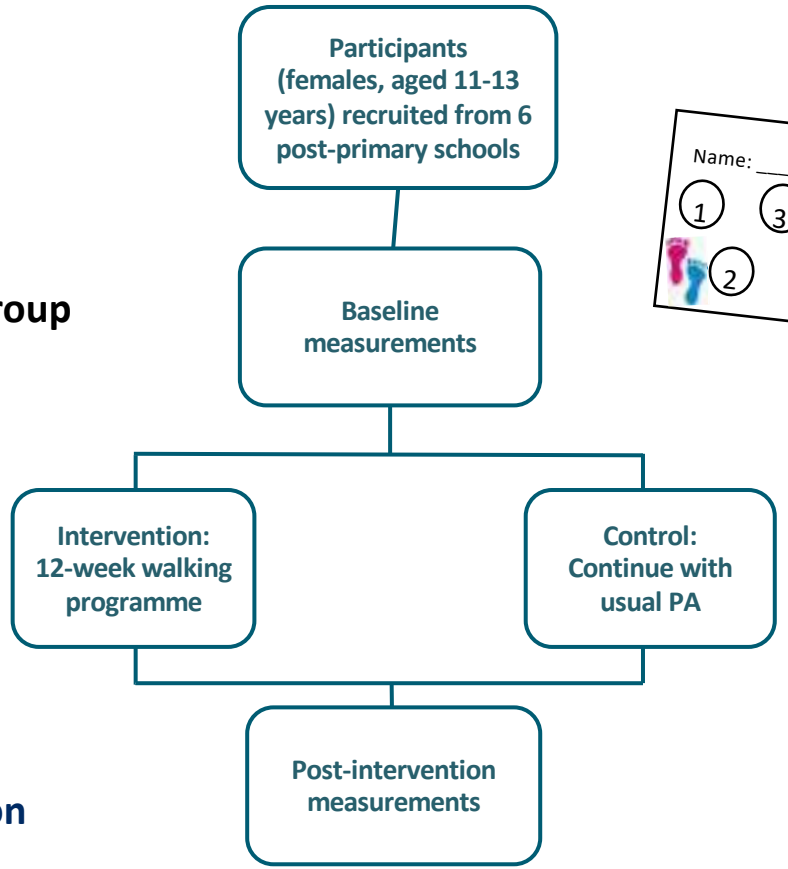
**Peer-led (pupils aged 16-18) –front and back of group**

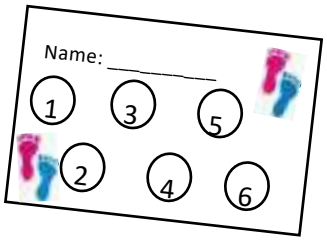
**Walks in school grounds**

**Before first bell, at break and at lunchtime**

**Encouraged to take 2+ walks per day**

**Demonstrated that a novel low-cost intervention was feasible and positively changed physical activity behaviour in the short-term**




Carlin, A., Murphy, M. H., Nevill, A., & Gallagher, A. M. (2018). Effects of a peer-led Walking In ScHools intervention (the WISH study) on physical activity levels of adolescent girls: a cluster randomised pilot study. *Trials*, *19*(1), 3

Wish
Walking In ScHools

# The Walking In ScHools (WISH) Trial: A cross-border trial to evaluate a walking intervention in adolescent girls

[ c h i t i n ]
*kite-tin*
Cross-border
Healthcare Intervention Trials
in Ireland Network

Interreg
Northern Ireland - Ireland - Scotland

HSC Public Health Agency
Research and Development

HRB Health Research Board

**Wave 1 underway (in 8 schools) 2019-20**

**Follow us on Twitter @WishStudy for updates**

# Take home messages

- Walking (at any speed) can contribute to a reduction in risk of over 22 diseases including CVD, obesity, Type 2 diabetes and some cancers.

- Walking faster can help adults meet current physical activity guidelines increase cardiorespiratory fitness and bring additional health benefits.

- Changing walking behaviour is likely to require interventions at the individual, community, environmental and policy level

Editorial

**What Hippocrates called 'Man's best medicine': walking is humanity's path to a better world**

Emmanuel Stamatakis,[1,2] Mark Hamer,[3] Marie H Murphy[4]

Whether it is a stroll on a sunny day, walking to and from work, or walking down to the local shops, the act of putting one foot in front of the other in a rhythmic manner is as much human nature as breathing, thinking and loving. This *Walking and Health* special issue of the *British Journal of SPorts Medicine (BJSM)* celebrates the 21st anniversary of Morris and Hardman's seminal Walking to Health review published in 1997.[1] This Special Issue is an opportunity to celebrate three decades of exciting multidisciplinary research on this seemingly mundane activity—walking. The member society lead on this Special Issue, the International Society of Physical Activity and Health (ISPAH), has been instrumental to the growth of this area of research and global advocacy for physical activity that has culminated in the development of the WHO Global Physical Activity Action Plan.[2] The forthcoming seventh ISPAH Congress (15–17 October 2018, London)—the first ISPAH conference in the UK—is a wonderful opportunity for the interested reader to engage with a welcome community of scientists, practitioners and policy-makers in walking and physical activity.

**COMPREHENSIVE UPDATE ON WALKING AND HEALTH IN THIS ISSUE**

This Special Issue includes three extended editorials,[3–5] three systematic reviews[6–8] (including one meta-analysis[6]), one narrative review, one scoping review[9] and one individual participant pooled analysis.[10] World Health Organization Program Leader Fiona Bull and the co-author of the 1997 review Adrianne Hardman[1] provide the historical context. What was state-of-the-art in 1997 and have we made much progress? Most importantly, Bull and Hardman remind us that walking promotes both the health of our planet and the health of individuals.[1] Indeed, one of the basic tenets of the emerging planetary health movement[11] is how the individual health benefits of walking, the reduction of carbon emissions and environmental sustainability in the increasingly urbanised world go hand in hand. Walking has strong social roots—it is much more than merely a physical and functional activity. The editorial by Hunter and colleagues[3] explains how walking behaviour is shaped by social norms and how it can be promoted by harnessing the power of social networks. This is a thoughtful attempt to bridge two dominant individual (micro-level) and population (macro-level) ways of thinking by introducing the social dimension (meso-level) of walking behaviour change. The systematic review by Ding and colleagues[7] takes a unique look at the influence of the local built environment on walking behaviour by synthesising studies of residential relocation, that is, studies that examined walking behaviour before and after people relocated between neighbourhoods that differ in environmental attributes. This review adds a valuable dynamic dimension to the existing, predominately cross-sectional, literature on built environment and physical activity. But what is the evidence that environmental and other population-wide interventions changes can actually change walking behaviour? This is a challenging question because, as Foster and colleagues[8] highlight in their systematic review on what works to promote walking, such evaluations are hard to plan and cannot be subjected to traditional medical research models such as randomised controlled trials. While social and built environment have established links with physical health and behaviour, does a vital behaviour like walking influence mental well-being? The scoping review by Kelly and colleagues[12] maps the progress that has been made since Morris and Hardman stated "The pleasurable and therapeutic, psychological and social dimensions of walking, while evident, have been surprisingly little studied" in their original text[1] and propose directions for future research.

**OK, BUT HOW MUCH AND HOW FAST?**

While it is beyond doubt that the physical and social environments can determine our walking behaviour, practitioners and individual members of the public still need to know how much and how fast walking should be to produce minimal and optimal health benefits. The huge popularity of fitness trackers[13] has been mostly founded on people's desire to monitor the number of steps in daily life, but the pace of those steps is often ignored. Oja and colleagues[6] meta-analysed 37 randomised controlled trials that examined the effect of walking characteristics (amount, frequency and intensity) on an array of cardiovascular risk markers to determine whether there is a dose–response effect. In other words, is 'more or faster (walking) the better' for cardiovascular health? Tudor-Locke and colleagues[9] address the issue of cadence: how many steps per minute is 'enough' for health benefits? Based on a review of controlled, epidemiological and intervention studies, the authors[9] propose a cadence that corresponds to moderate intensity physical activity for most adults; this cadence threshold will be of great value to public health and clinical recommendations. But since counting steps could be an arduous task for many, the question remains—Does *self-rated* (eg, slow, average, fast) walking pace associate with long-term indicators of health such as all-cause, cardiovascular disease–related and cancer mortality risk? We share the answers that were derived from a nearly half a million person-years pooled analysis of 11 British cohorts that included a sample of over 50 000 walkers from the general population.[10] A strength of that study was a relatively new direction in meta-analysis that involves individual participant-level data.[14]

**TRANSLATING IT ALL INTO POLITICAL ACTION**

No matter what the science says, little can change in practice if governments around the world do not acknowledge the huge potential of walking and invest on long-term strategies to increase its prevalence. Scotland is a rare example of action in the right direction, as the Minister for Public Health and Sport Aileen Campbell's and her colleagues[5] elaborate in their Bright Spots[15] editorial. The outcomes of the National Walking Strategy for Scotland[5] and the subsequent commitments made by the Scottish Government[16] set an inspiring example for other governments.

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## TRANSLATING IT ALL INTO POLITICAL ACTION

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**and our research participants**

# Walking for Health: man's best medicine


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The Power of Walking | 14th November 2019 | Riddel Hall

# A social marketing approach to encourage walking: Active 10


## Professor Marie Murphy

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# Active 10 – A new approach to increase physical activity in inactive people in England☆

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ABSTRACT

Public health physical activity (PA) guidelines are failing to increase levels of population PA, requiring a new approach. A national integrated marketing campaign was developed based on published literature and ethnographic research to get inactive lower socioeconomic 40–60 year olds to walk briskly for bouts of 10 or more minutes per day and move towards recommended levels of PA. National and local communications campaigns and partnerships promoted key messages and directed people to a free mobile phone app that provided the user with time, intensity and periodicity of walking, and included goal setting and encouragement to support behaviour change. Campaigns in the summers of 2017 and 2018 achieved around 500,000 downloads of the mobile phone app, with evaluation suggesting increases in brand and app awareness, and those taking action. Active 10 is a promising example of a physical activity promotion campaign based on evidence-based messages tailored for a target audience to change social norms rather than guidelines, an approach recognised as an effective population intervention for increasing walking.



Brannan, M. G., Foster, C. E., Timpson, C. M., Clarke, N., Sunyer, E., Amlani, A., & Murphy, M. H. (2019). Active 10–a New Approach to Increase Physical Activity in Inactive People in England. *Progress in cardiovascular diseases*.

https://www.nhs.uk/oneyou/active10/home

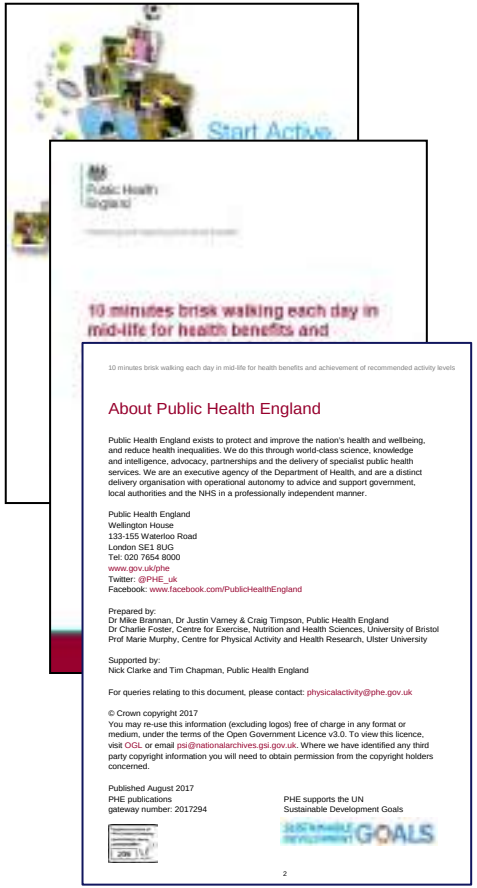
# Health benefits of 10 minutes brisk walking

UK physical activity guidelines encourage:

- Targeting inactive adults (<30 mins per wk)
- Promote easiest and most acceptable forms of  everyday activity
- Sessions of 10 minutes or more MVPA

Evidence summary of 10 minutes brisk walking each day:

- Achievable by inactive people with interventions achieving extra 30 minutes per week
- Breadth of health and functional benefits, with greater benefits for those with existing health conditions
- Potential to save 251 deaths and £310 million per year if 10% of 7 million inactive low socioeconomic 40-60 year olds walked briskly extra 10 mins .day




PHE (2017) *10 minutes brisk walking each day in mid-life for health benefits and towards achieving physical activity recommendations. Evidence summary*

# **Insight research:** Testing acceptability of 'what counts' messages

Walk a bit further and walk a bit faster

Build two or three extra 10 minutes a day into your life

10,000 steps a day

10 miles a week into your life

Build an extra 10-30 minutes a day into your life

Add at least three thousand, or even better five thousand steps a day to your daily average

An extra mile and a half a day

**These varied significantly in terms of how accessible (and therefore appealing) they seem in the first instance**


ONE YOU

# Active 10 campaign 'tasks'

| | | | |
|---|---|---|---|
| **Barrier** | **Walking isn't perceived as exercise** | **Finding the time to exercise can be difficult** | **They don't know what 'Active Walking' is** |
| **Task** | **Reframe** brisk walking | **Activate** 10 -30 mins of brisk walking | **Arm** with app |
| | (motivation) | (capability) | (opportunity) |

# Active 10 mobile phone app

Developed with University of Sheffield and Sheffield Hallam University to show :

- Amount of time spent walking
- Amount of time spent walking briskly
- Number of chunks of 10 minutes brisk walking achieved


The app:

✓Breaks brisk walking down into manageable chunks

✓Encourages at least one session every day

✓User sets own goals for long term behaviour change

✓Encourages progress to 30 minutes per day towards150 per week

**First free app showing walking briskly and long enough to get health benefits**

# Outcomes – Year 1

Broad coverage over traditional and social media

- 300 pieces of coverage
- #Active10 trended in top 5 on Twitter

Highly rated and downloaded phone app

- Over 850,000 downloads
- 4-star rating on App Store
- #1 Health and Fitness download / #7 overall download

Ongoing work:

- Local partnerships
- Trial of branded clinical advice pad in clinical care


# Outcomes – April-August 2018 (Year 2)

103,730 Active 10 app downloads during the campaign period

35% campaign awareness (25% among 40-60 year olds, C2DE)


Brand and app awareness continued to build since 2017

3 in 10 remembered seeing something

18%

18% reported taking action (11% 40-60 year olds, C2DE)

74% took message 10 minutes brisk walking counts as exercise

# Summary

Walking is prevalent, has no skill, facility or equipment requirement and more accessible and acceptable than other forms of physical activity

Insight research can engage inactive people to be more active through:

- Framing the message (motivation)
- Activating them about what to do (capability)
- Arming them with the ability to act (opportunity)