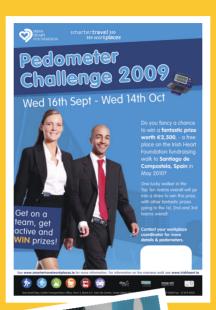


The Pedometer Challenge

Effectiveness Review 2008 — 2013













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A fun, free walking challenge 12th September – 9th October 2012

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Authors:

Sharon Daly, Pedometer Challenge Coordinator Arlene Finn, Smarter Travel Workplaces/Campus Coordinator

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1. Introduction

The Pedometer Challenge is a behavioural change initiative which acts as a stimulus to promote walking on the commute.

The Pedometer Challenge is a workplace team walking event, with groups of three to six members recording their step counts on pedometers, and aiming to increase this amount over the course of the Challenge. The Challenge is open to Partners of the Smarter Travel Workplaces programme, which is a voluntary programme for large employers implementing workplace travel plans, see *www.smartertravelworkplaces.ie*

As part of the Smarter Travel Workplaces travel plan programme, the National Transport Authority in partnership with the Irish Heart Foundation ran the sixth annual Pedometer Challenge, from Wednesday, September 11th to Tuesday, October 8th 2013.

The 2013 Pedometer Challenge was the largest Challenge in the Smarter Travel Workplaces programme to date, with 4,250 people from 56 organisations participating.

See Appendix 1 for a list of participating workplaces.

This document is a review of the effectiveness of the Pedometer Challenge 2008 - 2013.

2. Aims of the Pedometer Challenge within Smarter Travel

- **1.** The primary aim of the Pedometer Challenge **is to increase walking on the commute** in workplaces participating in the Smarter Travel Workplaces programme.
- **2.** The secondary aim is to **engage large employers in the Smarter Travel Workplaces programme** and workplace travel planning through an employee-focused walking event.
- **3.** The tertiary aim is to allow Partners which have implemented the main elements of their travel action plan **to continue to stimulate mobility management initiatives** through the Smarter Travel Workplaces programme.

3. Specific Objectives of the Pedometer Challenge

The objectives of the Pedometer Challenge are to:

- **1.** Use the principles and tools of community based social marketing and health promotion to change behaviour in favour of walking as a mode, both on the commute and for other journeys.
- 2. Promote walking as a mode by linking with health benefits for employees and employers.
- 3. To link with corporate objectives related to team-building and employee wellbeing.
- 4. Increase participation in the Challenge year on year.

4. Challenge Background

4.1 Smarter Travel – Government Policy

4.1.1 Targets

National targets on Smarter Travel include reducing work-related commuting by car from 65% (in 2006) to 45%, meaning that significant numbers of commuters (500–600,000 people) will be encouraged to walk, cycle, use public transport and car share to work, as an alternative to driving alone by car. This target is complementary to Government targets to reduce obesity and promote physical activity.

4.1.2 Trends

In 2011, the national average for walking on the commute was 10%. Figures from the 2006 Census showed that around 45,000 people drove less than 2km to work, with a further 160,000 people driving 2—4km to work. These individuals could be encouraged to walk or cycle to work, at least on an occasional basis, making a significant contribution to their health, and government targets relating to sustainable travel and the environment/ carbon reduction. Note: equivalent figures for 2011 do not exist.

However there is a significant gap between the potential for active travel and the current situation. The National Guidelines on Physical Activity recommend that adults take at least 30 minutes a day of moderate activity on 5 days a week (or 150 minutes a week)². However, the National Survey of Lifestyles Attitudes and Nutrition (SLÁN 2007) showed that only 41% of Irish adults took part in moderate or strenuous physical activity for at least 20 minutes three or more times a week. This level of activity has not changed much over the past ten years—40% in 2002 compared with 38% in 1998³. This cohort of inactive people are not likely to suddenly start commuting by active means without a significant intervention to encourage them to do so.

4.1.3 Need for Interventions

Given these statistics, the role of interventions becomes even more significant in bridging the gap between those currently choosing active modes, and those who could potentially walk some or all of the way to work. In addition to the Pedometer Challenge, interventions include promotions to increase usage of facilities for walking and cycling, such as in Galway City on the Seamus Quirke Road, and health promotion activities such as Get Ireland Active activities.

At a strategic level, such interventions also have a positive impact in terms of obesity and physical activity. Those who persistently participate in active commuting are more likely to engage in higher levels of physical activity in comparison to their passively commuting counterparts⁴.

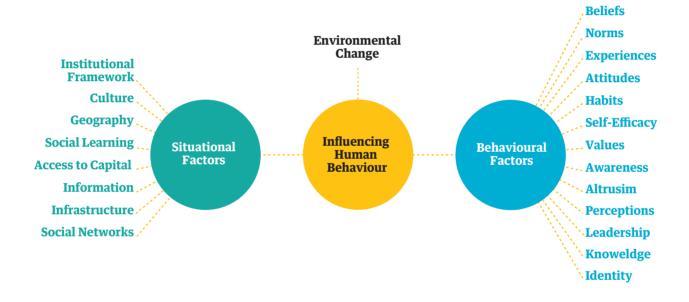
4.2 Evidence Base – Challenge Format

The format of the Pedometer Challenge draws from the fields and techniques of behavioural change in the area of sustainability and health promotion.

Many factors affect human behaviour, including situation, behavioural and environmental factors (*see Figure 1 below*). The infrastructure around us, where we live, our social networks and our culture are some of the situational factors that influence how we behave; these factors are outside of the remit of the Smarter Travel Workplaces programme.

However, behavioural factors including awareness, habits, norms, beliefs and experience are areas that the Smarter Travel Workplaces programme and the Pedometer Challenge can influence.

Figure 1. Factors Affecting Human Behaviour⁵



4.3 Behavioural Change Methodologies

The Pedometer Challenge is ultimately a behavioural change intervention, drawing on best available information and research in this area, in particular, the principles and examples of Community-Based Social Marketing. Community-Based Social Marketing (CBSM)

"draws heavily on research in social psychology, which indicates that initiatives to promote behavior change are often most effective when they are carried out at the community level and involve direct contact with people".

The development of CBSM interventions can be linked to an increasing understanding that programmes that

"rely heavily or exclusively on media advertising can be effective in creating public awareness and understanding of issues related to sustainability, but are limited in their ability to foster behavior change" (sic).

Many programmes aiming to promote sustainable behaviour use large-scale information campaigns, which are usually based on one of two perspectives regarding behavioural change — the Attitude-Behaviour approach, which assumes that changes in behaviour can be brought about by increasing public knowledge about an issue, and fostering attitudes that are supportive of the desired activity; and the Economic Self-Interest approach, which assumes that individual systematically evaluate choices and then act in accordance with their economic self-interest.

Numerous studies document that education alone or campaigns that concentrate on the financial advantages of a sustainable activity are often unsuccessful in changing behaviour. The principles and tools of Community-Based Social Marketing can be employed to greater effect, making use of information/awareness strategies, in conjunction with other tools to change behaviour. CBSM strategies employed in the Pedometer Challenge (and other Smarter Travel Workplaces/Campus initiatives) include:

- · Selecting behaviours;
- · Identifying barriers and benefits; and
- · Developing strategies, including the key principles of:
 - Getting public/group/written commitments;
 - Establishing social norms & building community support;
 - Social diffusion-speeding adoption of desirable behaviours;
 - Providing prompts to act;
 - Communicating effective messages (also drawing on the UK Institute for Government MINDSPACE behavioural economics research⁸);
 - Using incentives to enhance the motivation to act; and
 - Convenience making it easy to engage in the Challenge.

For further detail on how the Pedometer Challenge addresses each of these key components of a widely recognised behaviour change strategy, please see Appendix 3.

4.4 Use of Pedometers

The use of pedometers in the field of health promotion and management of disease has long been established. Research suggests that multi-faceted interventions e.g. pedometers used in conjunction with goal-setting, and those of longer duration appear to have a greater and more positive effect than pedometers alone¹⁰.

The Pedometer Challenge is complementary to both of these criteria, with participants working in teams, aiming to increase step counts and walking for a month, on an annual basis as part of a wider workplace event.

For a programme charged with promoting walking, tapping into people's desire for enhanced wellbeing and fitness is a key method of engagement. In 2013, 'fitness/exercise' was ranked as the top reason for participating (77% of participants) (See Figure 2).

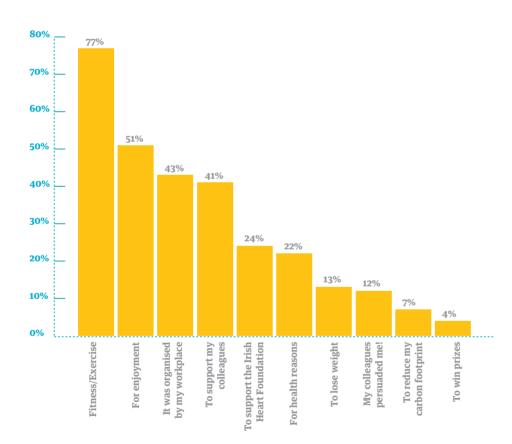


Figure 2. Reasons for Participation in the 2013 Challenge

(Note on 'To support the Irish Heart Foundation' – proceeds from sales of pedometers were donated to the Irish Heart Foundation.)

5. Results of the 2013 Challenge

4,250 people from 56 organisations participated in the 2013 Challenge (*see Appendix 1 for the full list of participating organisations*). This represents just over 50% of the Partners engaged with the Smarter Travel Workplaces and Campus programmes at that time, or 3% of the Partner workforce.*

At the start of the Challenge, only 12% of participants (510 people) walked to work on a regular basis.

5.1 Modal Shift¹¹

There was a 133 percentage increase in the number of people regularly walking to work as a result of the 2013 Pedometer Challenge, rising from 12% of participants pre-challenge, to 26% (or 1,105 people) post-challenge, see *Table 1 below*.

Significantly 8% of car drivers (50 people) intended to walk to work on a regular basis, with a further 18% (115 people) intending to walk on an occasional basis, *see Table 2 below*.

Table 1. Increase in Walking on the Commute, Pedometer Challenge 2013 – All Participants

	Before the Challenge	During the Challenge	Intend to walk post-Challenge
Walked to work on a regular basis	12%	28%	26%
Walked to work on an occasional basis	Not asked	15%	19%

Table 2. Increase in Walking on the Commute, Pedometer Challenge 2013 — Car Drivers Only

Drove to work on a regular basis before the challenge	51%
Intend to walk post-challenge on a regular basis—car drivers only	8%
Intend to walk post-challenge on an occasional basis—car drivers only	18%

Research indicates that behavioural intention is the most proximate predictor of behaviour¹² and has a high predictive validity in relation to behaviour¹³, meaning that individuals generally rate their intention to perform a particular behaviour accurately.

The impact of the Challenge on Activity Levels can be found in Appendix 2.

^{*} This figure does not include students as this intervention was not open to them.

5.2 Impact Year on Year

The Pedometer Challenge as a behavioural change intervention has recorded consistent changes in favour of walking since the Challenge began in 2008. Results from annual Pedometer Challenges show that the event has an impact in encouraging commuters to switch from other/inactive modes to walking. Year on year, the proportion of participants reporting walking on the commute is significantly above the national average, and increases over the course of the event, with intention to walk post-event significantly higher than the starting point. Figure 3 below shows the number of participants who intend to walk to work on a regular/occasional basis post-challenge from 2008–2013, compared to those driving/walking on the commute pre-challenge.

80% 70% 61% 60% 53% 50% 42% 40% 34% 30% 28% 27% 26% 21% 20% 18% 12% 12% 11% 10% 10% 2010 2011 2012 2013 Walk to work pre-challenge - usual mode

Figure 3 – Respondents intending to walk to Work Post-Challenge 2008–2013

5.2.1 Impact from 2012–2013

Drive to work pre-challenge — usual mode
INTEND to walk post challenge on a REGULAR basis
INTEND to walk post challenge on an OCCASIONAL basis

31% of respondents to the 2013 Evaluation survey took part in a previous Pedometer Challenge. Of this cohort, 26% continued to walk to work on a regular basis after the challenge ended. 19% continued to walk on an occasional basis. This is in spite of no further engagement with participants from one year to the next.

5.2.2 Impact on Car Drivers

For those commuting by car prior to the challenge, the results are even more revealing. Since 2008, on average almost one third of those regularly driving to work before the challenge began intended to switch modes in favour of walking post-event. *See Figure 4 with results for Car Drivers Only from 2008*–2013.

Figure 4. Car Drivers only – walking on the commute 2008–2013, during and post-event



Occasional walking during Intend to walk occasionally post challenge

5.2.3 Impact of Annual Interventions in the Workplace

Research indicates that Individuals are more likely to execute rather than neglect their intentions if they express these plans on more than one occasion, 14 giving support for annual walking challenges and walking interventions.

The impact of the workplace as the site of intervention is also supported by key health promotion research, which has its cornerstone in the World Health Organisation's Ottawa Charter. This Charter has 'a settings approach' as one of its five action areas. The Pedometer Challenge being run through the workplace is in keeping with this proven strategy as:

"Health is created and lived by people within the settings of their everyday life; where they learn, work, play, and love." 15

6. Comparison with other Behavioural Change Programmes

The effectiveness of campaigns in changing behaviour can vary significantly from campaign to campaign. Research demonstrates that interventions to change behaviour in favour of more sustainable practices must go beyond awareness-raising in order to exert change. Interventions must draw on other tools and principles of behavioural change, such as community based social marketing, as employed in the Pedometer Challenge.

In particular work place travel plan interventions must operate at the community (workplace) level, combining awareness-raising interventions with other hands-on, community-based activities, in conjunction with complementary infrastructure provision.

7. Challenge Benefits

The impact of the Pedometer Challenge is underlined by benefits to both participating employers and to the National Transport Authority.

7.1 Benefits to Participating Companies¹⁶

Coordinators agreed or strongly agreed that the Pedometer Challenge had many benefits for staff, including:

- 'good for team spirit/team building' (95%)
- 'raised awareness of activity levels' (95%)
- 'boosted staff morale' (78%)
- 'encouraged people to walk to work' (78%); and
- 'contributed to stress reduction' (65%).

These indicators tie well with Partners' corporate targets and indicators, including those relating to travel planning, corporate social responsibility, and employee wellbeing.

98% of Workplace Coordinators stated that their colleagues enjoyed the Challenge.

89% of respondents stated that Management was supportive of the event.

100% would encourage their workplace to take part in future challenges.

7.2 Benefits to the Authority

Benefits to the Authority include:

- Increased walking on the commute in participating Partner organisations, see section 5;
- An increased number of large employers are engaging in wider workplace travel planning as a result of the Pedometer Challenge. The Pedometer Challenge is the mechanism by which many Partner organisations hear about Smarter Travel Workplaces, and became involved in wider travel planning initiatives; and
- Positive media coverage, including inter alia in 2013—the Sunday Business Post, the Evening Herald, Waterford Today, the Nenagh Guardian, rollercoaster.ie, Dublin's Sunshine 106.8fm and there was increased traffic through the Smarter Travel Workplaces website and Facebook page. From the time the Challenge began to be publicised to the time of the Challenge prize giving (18th August to 15th November 2013), 12,718 people visited the Smarter Travel Workplaces website to register, view progress and log steps. There were 35,097 visits during this period. Of these 12,718 were unique visits. Average time spent on the site was 4.25 minutes. Facebook: 3,800 people saw content associated with the Pedometer Challenge page between the 18th of August and the 15th of November. 2,911 people shared stories about the Challenge page.

In addition, the National Transport Authority is participating in a leading behavioural change programme which is drawing on recent evidence-based research and techniques to promote more sustainable and active travel on the commute.

"This challenge was the first the Irish Navy took part in. It was wonderful to set it up and get the three teams and the fifteen of us involved. Every day we hit the road at lunch and had great banter as we marched out the road encouraging each other to go further each day. This event is a great way to get work colleagues together and encourage fitness.

The stone is rolling forward and after the cycle challenge and now the pedometer challenge many more are becoming aware of the smarter challenge workplace scheme and more questions are being asked. I have been so proud to lead this in the Navy and hope to continue to grow momentum in the coming years. I thank all involved in the running of these events and look forward to continued development."

Ultan Finegan, Naval Service

8. Recommendations

The key recommendation of this report is that the National Transport Authority should continue to facilitate and expand the annual Pedometer Challenge as part of the wider Smarter Travel Workplaces/Campus workplace travel planning programmes.

It is recommended that participation in the Challenge is increased with additional resources secured for this purpose. Partnership with a sponsor could be explored to allow the Challenge to expand or to secure further personnel to deliver this labour-intensive event. It could also be rolled out beyond Partner organisations, if resources were secured.

Note that increased participation would require IT support and appropriate tools.

In addition, as outlined in the Department of Transport Tourism and Sport/National Transport Authority Service Level Agreement, walking challenges aimed specifically at engaging the student population will be piloted and rolled out in third level campuses, as part of the Smarter Travel Campus programme.

9. Conclusions

The Pedometer Challenge is a cost-effective intervention to promote walking on the commute as part of the Smarter Travel Workplaces/Campus programmes. It is a goal-achieving programme, and year on year, demonstrates it is best in class in terms of behavioural change interventions.

The Challenge could be expanded, subject to resource availability, to reach more participants in the current Partner organisations, with even further potential for expansion as new Partners/campuses join the Smarter Travel Workplaces and Campus programmes.

Appendices



Appendix 1. Participating Workplaces 2013

Accenture Airtricity

An Bord Pleanála

Apple Aramark Arup Atkins

Bord Gáis Networks Central Bank of Ireland

Children's University Hospital Temple Street

Citi

Connolly Hospital
Cook Medical
Cork City Council
Cork County Council
Cork University Hospital

Croke Park

Department of Communications, Energy and

Natural Resources Dublin City Council

Dun Laoghaire Rathdown County Council

Eircom Eirgrid ESB

Galway City Council Hewlett-Packard

IBM IKEA

Institute of Art Design & Technology Dun Laoghaire

Institute of Technology Blanchardstown

Irish Dairy Board

KBC

Leo Pharma

Mount Carmel Hospital

National Rehabilitation Hospital National Transport Authority

National University of Ireland, Galway

The Naval Service

Oracle

Our Lady's Children's Hospital, Crumlin

Pfizei

Railway Procurement Agency Roughan & O'Donovan

Siemens

St. James' Hospital St. John's Hospital

St. Vincent's University Hospital

Symantec Takeda

Telefónica Ireland

Transdev

Trinity College Dublin University College Cork University College Dublin University Hospitals Galway University of Limerick Waterford County Council

Appendix 2. Impact on Activity Levels 2013

Before the Challenge

34% of participants were inactive prior to the Challenge (i.e. they did not meet the National Guidelines for Physical Activity). Of those who were inactive, 66% drove to/from work before the challenge.

During the Challenge

29% of those who were inactive before the Challenge walked to work on a regular or occasional basis.

Following the Challenge

34% of those stating they were inactive prior to the Challenge intend to walk to work on a regular or occasional basis.

70% of this cohort reported benefitting from increased levels of activity.

56% of this cohort reported increased fitness.

Appendix 3. Application of Community Based Social Marketing Principles and tools in the Pedometer Challenge

Commitment

Participants commit to participate in a four week Challenge. They agree to wear a pedometer and record their steps daily. Teams are also asked to sign a pledge to walk all or part of the journey to work at least 2 days each week during the challenge.

Workplaces sign up to coordinate the event and promote it internally.

Prompts

The pedometer (step counter) and step logs are the main prompts used in this Challenge.

These tools remind participants on an on-going basis of their participation in the event and act as a motivational tool to encourage walking.

Other prompts include Challenge posters, website, Facebook, emails, ezines and top/spot prizes awarded throughout the event.

The majority of Company Coordinators organised a promotion or launch event in their workplace, held events during the event to maintain motivation and held an internal prize giving event.

Social Norms/ Social Diffusion

New behaviours are frequently adopted because friends, colleagues or family members have adopted the behaviour—a process known as social diffusion¹⁷.

The Pedometer Challenge is a team based event and by the nature of this social diffusion occurs. Norms of walking are also established within the workplace, as the challenge is publicised, walks are promoted and leaderboards are posted.

41% of respondents to the post-event evaluation stated that they signed up to 'support my colleagues'. 70% of respondents stated that a benefit to them of taking part was that they 'enjoyed being part of a team' and 13% reported a benefit as 'making new friends at work'.

Social diffusion was also apparent at the end of the challenge when 183 participants nominated their captain/team member to be rewarded for their efforts during the challenge.

Communication

A variety of modes of communication are used for this Challenge including; workplace mailing lists, intranet, training seminar, the Smarter Travel Workplaces website, the Pedometer Challenge Facebook page, Challenge posters, ezines, a training manual as well as on-going emails throughout the event.

Teammates and Coordinators also communicate with each other throughout the event.

Incentives

Incentives are provided by way of spot prizes e.g. for meeting targets set, for being an inspirational team leader and team member, and for walking on the commute. Other incentives include publication of team photos and participant stories as well as publication of participants nominated by their colleagues for their exceptional efforts as team members or team captains.

Intrinsic benefits to participants could also include weight loss, getting fit, bonding with workmates, achieving walking targets etc.

Convenience

As the challenge is run in and through the workplace and supported by the workplace, participation in the challenge is highly convenient for participants.

The goals set for participants are also attainable e.g. aiming for 10,000 steps a day to reach the targets set in the 'virtual' challenges. 43% of respondents reported signing up to the challenge because it was 'organised by my workplace'.

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- **9.** Doug McKenzie-Mohr (2103), Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing, Third Edition, Canada, New Society Publishers.
- **10.** Ottawa Hospital Research Institute (2010), What Evidence Exists to Describe the Effect of Interventions that Use Pedometers to Reduce Risk for and Manage Chronic Disease? http://www.ohri.ca/kta/docs/KTA-Pedometers-Evidence-Summary.pdf (Accessed 3rd January 2014).
- **11.** From Post-Event Survey 1,288 participants responded giving a response rate of 30%. Of these 32% were Team Captains and 68% were team members. 70% of respondents completed their first Pedometer Challenge in 2013 while 30% had participated in 2 or more Challenges.
- **12.** Ajzen (1991) cited by National Library of Medicine, Consumer Health Informatics Resource http://chirr.nlm.nih.gov/behavioral-intention.php (Accessed 7th January 2014).
- **13.** Committee on Communication for Behavior Change in the 21st Century: Improving the Health of Diverse Populations (2002) cited by National Library of Medicine, Consumer Health Informatics Resource http://chirr.nlm.nih.gov/behavioral-intention.php (Accessed 7th January 2014).

- **14.** Cook & Sheeran (2004) cited by Moss, S. (2008) Theory of Planned Behaviour, http://www.psych-it.com.au/psycholopedia/article.asp?id=69 (Accessed 7th January 2014).
- **15.** World Health Organization (1986) The Ottawa Charter for Health Promotion. http://www.who.int/healthpromotion/conferences/previous/ottawa/en/index.html (Accessed December 2013).
- **16.** 37 out of 56 Coordinators responded, giving a response rate of 66%.
- 17. Rogers, E.M., (1993). Diffusion of innovations (6th ed.). New York: Free Press.

National Transport Authority Dún Scéine Harcourt Lane Dublin 2, Ireland

t. +353 1 879 8300

f. +353 1 879 8333

e. info@nationaltransport.ie



