

THE PROMOTION OF PHYSICAL ACTIVITY THROUGH WORKPLACE TRAVEL PLANS

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1. BACKGROUND

1.1. Physical Inactivity and Obesity

The importance of physical activity in improving the physical health of the working population has attracted much attention in recent years, not least because of growing concerns for levels of obesity across the nation.

Nearly one in four adults in England is obese and rates have trebled since 1980. Projections of current trends show that nearly 60% of the UK population could be obese by 2050 and it is recognised that physical activity is, like food intake, a major determinant of body weight. Ironically, although physical activity has been described as a 'best buy in public health' (Morris, 1994) it also has been described by the Chief Medical Officer for England as one of the most undervalued of all public health interventions (Donaldson, 2000).

Over the past 20 or 30 years, it appears that there has been a decrease in physical activity as part of daily routines in England, although there has been a small increase in the proportion of people reporting that they take physical activity for leisure. The overall reduction in population activity levels partly reflects other changes that have taken place in society. For example, in England, people undertake less regular travel on foot or by bicycle than in the past: over the last 25 years, both walking (which is the most common form of physical activity) and cycling are estimated to have declined by 26% (DH., 2004).

Currently 35% of men and 24% of women (aged 16 plus) are physically active enough to meet the current national recommendations (achieving at least 30 minutes of at least moderate activity on 5 or more days a week), moderate being defined in the recommendations as that which makes one feel warm and slightly out of breath.

1.2. The Costs of Inactivity

The UK Government currently estimates the cost of physical inactivity in England at around £8.3 billion annually (HM Government, 2009). This consists of costs to the NHS at around £1 billion to £1.8 billion, together with another £5.5 billion from sickness absence (according to DH 2004, obesity accounts for 18 million days of sickness per year) and £1 billion from premature deaths

of working-age people. These costs are expected to increase many-fold if current trends continue.

1.3. Physical Activity and the Workplace

The above statistics illustrate the scale of inactivity not only to Government, but also to businesses. Employers have an interest in reducing the costs of absenteeism through reducing inactivity of their staff, although this is not always fully recognised. The CBI however, calculates the cost of absenteeism (not limited to those caused by inactivity) at over £13 billion a year (CBI, 2006).

There are several ways that workplace settings can be influenced in order to improve health. Successes in the past have included workplace policies on healthy eating, and bans on smoking in public places. Many components of the environment can be modified by public sector agencies through changes to policy and practice which facilitate increased physical activity by employees.

One such way is through promoting active travel, i.e. cycling and walking, for the journey to work. Despite the large potential for the commute to offer a practical, cheap and accessible way of achieving the required amount of physical exercise, the role of commuting via active modes of transport (including cycling and walking) in increasing physical activity is still understated in public policy and in business decisions.

One organisation which has highlighted the importance of this issue is Transport for London (TfL). In recent years, it has promoted active modes of travel through various means including workplace travel plans (WTPs) – business management strategies aimed at helping employers change the travel behaviour of their employees. Under its “A New Way to Work” programme, TfL provides free advice and information tailored to various types of businesses, assists in identifying sources of funding and provides ongoing support (TfL, 2009).

TfL has set targets to increase levels of walking and cycling across the age range and settings through work on physical activity across the whole of its activities. The target is to increase the modal share of cycling, with an increase in cycling trips by 80% by 2010 and 200% by 2020 compared to cycling levels in 2000 (TfL, 2004a). There is also a target of increasing the modal share of walking for trips under two miles by 10% by 2015, and to increase the average number of trips made on foot per person / per year by 10% (TfL, 2004b). Potentially, achieving these targets could lead to a significant increase in physical activity amongst employees, with positive benefits for employers as well as employees if this in turn results in reduced absenteeism and increased productivity.

1.4. The Need for Clear Evidence

Despite the large potential benefits of active travel in reducing inactivity, there are still some barriers that need to be overcome in order for it to gain wider acceptance. For instance;

- There is little firm evidence for the effectiveness of physical activity promotion in the workplace.
- The collection of evidence is problematic for most people engaged with workplace physical activity promotion because of lack of time, lack of research training, lack of research equipment, and biases associated with a desire for job preservation.
- Case studies of workplace health promotion interventions suggest both positive and negative results, but lack scientific validity.
- More successful programmes have some common components: a project 'champion', consultation with the labour force and a choice of both activities and times at which participation is possible. One important negative factor, which would not arise with cycling or walking, is conflict with car-pool, bus or train schedules. Successful programmes also have interest and regular participation from senior management.
- Barriers to workplace health promotion are mainly a perceived lack of time and investment costs in the subject (NICE, 2006a).

The lack of clear evidence on the effectiveness of workplace interventions seems to underlie many of the above points. For instance, a 'review of reviews' by the National Institute for Health and Clinical Excellence (NICE) reported that findings on the effectiveness of interventions in the workplace were inconsistent and they concluded it was not possible to suggest evidence-based actions for practice.

In response to this situation, TfL commissioned TRL and JMP to conduct a review of the existing evidence (hereafter the Evidence Review) to provide a comprehensive basis of the impacts of physical activity promoted through the workplace on employee health, with a particular focus on how it affects absenteeism and productivity.

This paper outlines the main findings from the project, mainly the results of the evidence review and lessons learnt from disseminating the messages to employers in London. Further details of the project results are available in TfL, 2007 and Davis et al, 2007.

2. METHODOLOGY

2.1. General Approach

The project centred around a review of the international evidence on the relationship between employer-based schemes to promote physical activity and employee absenteeism.

The lack of evidence specific to promoting active travel and/or workplace travel plans has meant that it has been necessary to consider studies into a wider range of physical activity interventions in the workplace. However, it is expected that much of the information gathered will be transferable to the

promotion of walking and cycling to work as all aerobic activity promotes health and a reduction in the overall disease burden.

The methodology and general approach to the Evidence Review is modelled on that utilised by the National Institute for Health and Clinical Excellence (NICE). However, some adaptations were made where appropriate. For example, medical cost claims are likely, to a certain degree, to reflect illness and would thus have some impact on absenteeism rates; therefore studies which have reported on health care cost claims have been included if they also include data on physical activity. Also, two reviews have been included although it is acknowledged that strictly they are not themselves intervention studies.

2.2. Literature Search and Review

Studies conducted from 1980 to 2006 were considered for inclusion in this Evidence Review if they identified any potential reduction in levels of absenteeism resulting from:

- Before and after a physical activity intervention for employees;
- Between employees who were active at different levels;

In addition, any changes in employee productivity associated with physical activity were identified.

To identify the studies that would be reviewed, the TRL Library conducted a literature search of international databases, using a list of search terms agreed at the start of the project but tailored for individual databases. Typical search terms included: *absentee, physical activity, exercise, sick leave, productivity, health, walk, cycle, bicycle, employ, employee lifestyle, work place, travel behaviour; work place health promotion; active transport, employee well-being; cost-effectiveness.*

2.3. Study Type and Quality Appraisal

Each study was categorised by study type (categorised as Type 1-3) and graded for quality using a code '++', '+' or '-', based on the extent to which the potential sources of bias had been minimised (National Institute for Health and Clinical Excellence (NICE), 2006b, p27). The studies were categorised into the following study types:

- **Type 1:** Systematic reviews, meta-analyses of randomised controlled trials, (RCTs);
- **Type 2:** Systematic reviews of, or individual, non-randomised controlled trials, case-control studies, cohort studies, controlled before-and-after) studies, interrupted time series (ITS) studies, correlation studies;
- **Type 3:** Non-analytic studies (for example, case reports, case series studies, after only studies).

Studies were quality appraised against NICE quality criteria (NICE 2006b) appropriate for study types 1-3, and subsequently were classified into one of three categories (++, + or -) within a given type:

++ All or most of the data are adequately described and the conclusions of the study are thought very unlikely to be reversed by further studies (low risk of bias).

+ **Some** of the data are adequately described and the conclusions of the study are thought unlikely to be reversed by further studies (risk of bias).

- **Few or no** data are adequately described and the conclusions of the study are thought liable to be reversed by further studies (high risk of bias)

Finally, intervention durations were defined as short or long term. The former lasted no longer than 12 months while the latter included all interventions of more than 12 months duration. Most long term studies lasted no longer than 24 months.

3. FINDINGS

From the initial 2,542 titles that were produced by the search, 272 studies were selected by library staff as potentially meeting the criteria for inclusion in the Evidence Review. These were then assessed in greater detail by the lead researcher Adrian Davis and a member of TRL staff.

Twenty four studies were initially included, but this number was reduced to 14 after a review of the papers found that there was insufficient outcome data for either physical activity or absenteeism or both. A further three studies were included after input from expert reviewers of an initial draft report.

The studies included in the Evidence Review are listed below by their study type and quality.

Study type and quality	Lead Author
1+	Nurminen., 2002; Brox., 2005
1-	Proper., 2004
2++	Cox., 1981; Lechner., 1997; Marshall., 2004; Shephard., 1982; Song., 1982; Shephard., 1992b; Steinhardt., 1991
2+	Baun., 1986; Jacobsen., 2001; Wood., 1989
3+	Alanda., 2005; Bly., 1986; Shephard., 1992a; Wang., 2004

Details of the studies reviewed are available in Davis et al. (2007).

Few studies meeting the inclusion criteria also provided evidence on productivity changes. Three Type 1 studies were found. Ten studies were categorised as Type 2 with the remaining four as Type 3. It is important to note that the lack of higher level studies places limits on drawing firm conclusions.

The studies covered four main areas although it is important to recognise that there are significant overlaps between these categories:

- Work Place Health Promotion Programmes
- Fitness and physical activity focused interventions
- Physical activity counselling
- Physical activity and health care costs

The main findings from each of these categories are described below.

Workplace health promotion programmes

Evidence from three studies suggests that introduction of workplace health promotion programmes can lead to increases in levels of physical activity and reductions in absenteeism in both the short (up to 1 year) and long (1-2 year) terms. There is little evidence to suggest that the setting of the delivery of the intervention may be a major influence as to its effectiveness in the short term and long term. The nature of the intervention and other factors may be more important. Further, in such studies, it is unclear which component of the wellness intervention is responsible for any benefits.

Fitness and physical activity

There is evidence from ten studies to suggest that workplace exercise intervention programmes can lead to long term increases in levels of physical activity and reductions in absenteeism. One study provided evidence to the contrary.

Exercise classes, as a form of intervention content commonly used in workplaces to promote physical activity, appear to be effective. However, non-traditional and more environmental approaches have been proposed which may make physical activity interventions more attractive to employers through lower costs. This might also increase participation rates.

There is evidence to suggest that more intense interventions, i.e. above one hour per week, can lead to long term reductions in absenteeism. Some studies reported between a third and a halving of absentee days.

Physical activity counselling

The evidence from one study tends to suggest that counselling sessions to promote physical activity (and dietary changes) can lead to self-reported increases in physical activity and observed increases in fitness in the short term. The high cost of the counselling sessions may be offset in the longer

term by reductions in absenteeism but there is no statistically significant evidence to make this claim from this study.

Physical activity and health care costs

There is limited evidence from two studies to suggest that physical activity levels affect both short (up to 1 year) and long term (over 1 year) health care costs (and implicitly absenteeism rates), including among the obese and sedentary. A barrier to implementation may be reluctance on the part of obese employees to participate in physical activity intervention programmes.

The evidence comes from one Canadian and one US study but may be directly applicable to similar private sector settings in the UK because of health care costs and related escalating levels of adult obesity.

4. CONCLUSIONS

Despite limitations in the quantity and quality of the available evidence, the Evidence Review has drawn some key conclusions that have direct relevance for workplace travel plan practitioners.

The most significant finding is that an increase in physical activity of over one hour per week (e.g. 90 minutes), easily achieved through walking or cycling to work, would be expected to lead to a measurable reduction in levels of absenteeism. This is of clear commercial benefit to employees and supports the business case for investing in workplace travel plans.

The most cost- effective physical activity interventions are likely to be those that are applied over longer timescales, i.e. 12 months or more, which fits well with the timescale over which a travel plan would be implemented.

Successful interventions do not necessarily have to be on-site but at least employer supported. Employer-supported physical activity interventions were found to be the most effective, suggesting that promoting physical activity through workplace travel plans will be positively received. The greatest benefits in reduced absenteeism were achieved from getting those who are currently very inactive to take 1 to 2 hours activity per week; again a level of activity readily achievable through changed travel behaviour.

Importantly, the Evidence Review highlighted active travel as a potentially less cost intensive approach to increasing employee physical activity levels, especially among those less amenable to organised workplace activities.

5. COMMUNICATING THE FINDINGS

As explained in the outset, the issue of physical activity and health is highly relevant not only to health and transport professionals, but to businesses who have an interest in controlling absenteeism and other related costs, and to the employees themselves who have a stake in their own long-term health.

This implies the need for the main findings of this Evidence Review to be tailored to the wide range of businesses and organisations in the capital for them to fortify their messages or develop these in order to achieve the ultimate objective of increasing physical activity among their employees. Various efforts have been made since the completion of the Evidence Review, some of which are summarised below.

Beginning with employers, it is felt that there has been a clear benefit of understanding and communicating physical activity in terms of its effects on absenteeism and productivity, although the latter was a more difficult concept to prove under the existing knowledge. By placing the costs of inactivity in monetary terms, it is expected that employers will understand the severity of the problem, and act accordingly. Messages may be amplified by highlighting other costs attributed to travelling by more sedentary means (i.e. the private car) such as parking, journey time, and journey time unreliability.

The Evidence Review results were communicated through various channels including the 'Activate Your Workplace' programme coordinated by St. Mary's University College, Twickenham, which worked with 15 employers in Greater London to promote physical activity at the workplace. Active travel was one element of a programme of interventions under this scheme (St. Mary's University College, 2007).

Secondly for the employees themselves, efforts were taken to stress the positive messages of active travel including health benefits, financial savings and environmental friendliness. The design of TfL's Workplace Cycle Challenge 2007 workplace cycling challenge, recognised by the LCC with an award, is one such example.

Finally for transport and health policy makers, efforts are currently underway to communicate the messages from this Evidence Review, hopefully leading to an increased focus on the benefits of walking and cycling in the policy planning process. More specifically, it may help inform the business case for investing in measures such as Workplace Travel Plans that promote walking and cycling, which also have wider implications for reducing cities' transport costs as cars and local bus services are replaced by cycling and walking.

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