

# **Promoting Active Commuting – Success for Walking but not for Cycling**

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A pack entitled “Walk in to work out” was designed to encourage people to walk or cycle to work. Employees (n=295) from three workplaces, who were thinking about walking or cycling to work, were randomly assigned to an Intervention or Control group. The Intervention group (IG) received the pack immediately whilst the Control group (CG) waited 6 months for the pack. Both groups completed questionnaires, which explored physical activity, motivations and perceptions of health at baseline, 6 and 12 months. Focus groups provided qualitative information on these topics. The results indicate that the pack was successful in encouraging walking but not cycling. The IG was almost twice as likely to increase minutes walked to work as the CG at 6 months. The IG also reported greater improvements in physical and mental health functioning at 6 months in comparison to the CG. Only eighteen participants from the whole group reported cycling to work at 6 months, nine from the CG and nine from the IG. There were no differences in the reported average weekly minutes of cycling between the IG and CG. Follow-up focus group research identified less surmountable barriers faced by cyclists compared to walkers, for example, provision of safe cycle routes, cycle locking facilities etc. It is suggested that future work aimed at increasing the level of cycling in the UK needs to be a collaboration of structural, environmental and behavioural interventions.

## **1. Introduction**

Recent government White Papers on Public Health<sup>1</sup> and Transport<sup>2</sup> established targets to increase participation in regular physical activity and improve the environment. The physical activity target aims to increase the percentage of the population accumulating 30 minutes of moderate physical activity on five or more days each week. Active commuting (walking or cycling part or all of the way to work) could contribute to these targets. Research has shown that active commuting can increase fitness and improve health,<sup>3</sup> but to date, there have been no known trials of how to increase this behaviour in a Scottish workplace.

## **2. Aims**

This study aimed to test whether or not a cognitive behavioural intervention, delivered via written interactive materials (the “Walk in to Work out” pack), could increase active commuting (AC) behaviour (walking and cycling) in a workplace setting. The intervention was based on the transtheoretical model of behaviour change.<sup>4</sup> It targeted those who were thinking about active commuting (contemplators) and those who were doing some irregular active commuting (preparers). The Walk in to Work out pack, shown in Figure 1 below, contained the following components:

- Booklet containing educational and practical information on: choosing routes, maintaining personal safety, shower and safe cycle storage information, useful contacts.
- Wall Chart (activity diary)
- Workplace map
- Inserts:
  - distances from local stations
  - local cycle retailers and outdoor shops
  - organisations
  - Local maps
- Reflective accessories



**Figure 1**

### 3. Research Design

The study took the form of a randomised controlled trial, which targeted those who were in contemplation or preparation stages of change for active commuting. Three work sites were used, based within the West End of Glasgow and relatively well served by public transport and cycle networks. Participants completed questionnaires at baseline, 6 months and 12 months. Table 1 below shows questionnaire response rates at key response times. Questionnaires elicited information on the following areas: demographic details; stage of exercise behaviour change; stage of active commuting (AC) behaviour change; 7 day recall; motivations and barriers to active commuting.

Time Points	Response Rates Counts	Response Rates Percent
Baseline	295	100%
Baseline & 6 months	198	67%
Baseline, 6 and 12 months	141	48%

**Table 1: Questionnaire Response Rates**

### 4. Demographic Information

Subjects were stratified for distance travelled to work (under 2 miles, 2-5 miles, over 5 miles), matched, and then matched pairs were randomly assigned to an Intervention group (IG, n=145) and Control group (CG, n=150) by computer generated random numbers. Sixty four percent were female and 36% were male. The mean age was 38 years (range:19 to 69 years). The majority of participants were members of social economic class 1 and 2 (76%), the bulk of the remainder were in class 3 non manual (20%). The majority of participants travelled between 2 and 10 miles to work (70%) and travelled by car (73%).

### 5. Results

The study demonstrated that the intervention pack increased active commuting behaviour over a six month period. Over the 6 months, a significantly larger percentage of the IG progressed to a higher stage of AC behaviour change than the CG (49% compared to 31%). The average difference between the two groups was 18% with 95% Confidence Interval (CI) of 5% to 32%.

Analysis of a 7-day recall of physical activity showed that for those who were not walking to work at baseline (contemplators) there was a positive intervention effect with an average time

of 125 minutes of walking per week in the IG (n=14) compared to 61 minutes in the CG (n=12) at 6 months. Similarly, for those who were doing some walking to work at baseline (preparers) there was also a positive intervention effect with average increases of 27 minutes for the IG (n=61) and 10 minutes for the CG (n=43).

The intervention was not successful in increasing cycling to or from work. Only eighteen participants from the whole group reported cycling to work at 6 months, nine from the CG and nine from the IG. There were no differences in the reported average weekly minutes of cycling between the IG and CG.

## **6. Focus Group Analysis**

### *6.1 What motivated cyclists?*

Both walkers and cyclists saw active commuting time as relaxation time – a break from work routine. One of the cyclists saw it as being a complete contrast from a sedentary job, allowing him to use his body physically.

Both groups felt empowered by active commuting and in more control of their time. Cycling was seen as more convenient than relying on public transport. Certain cyclists had become so motivated that they had developed coping mechanisms to overcome barriers, for example, leaving late enough in the morning to exclude public transport as an option. One cyclist mentioned feeling morally superior whilst on a bike through consideration of the positive effect on the environment – this participant worked within an environmental remit in the workplace.

There were some important differences in motivations between walkers and cyclists. Walkers were generally new to physical activity; they were walking for health reasons and enjoyed a renewed sense of self worth. Cyclists seemed to be more motivated by convenience of travel, they did not mention physical health benefits other than improvements in fitness. Three of this group were experienced cyclists and the group as a whole were convinced of the benefits of cycling.

Although use of the pack had no significant effect on cycling behaviour during the project, certain components were seen as “enabling” such as luminous strips to improve visibility and local maps showing cycle and pedestrian routes in the area. Surprisingly, the distance chart was popular as it was used as a planning tool even though it outlined distances and walking times rather than cycling times from local stations. Local workplace maps illustrating location of showers, changing facilities and safe cycle storage were seen to be useful although some participants questioned the accessibility of showers.

Participants were also asked what their workplace could do to encourage them to actively commute. Flexible working arrangements and financial incentives generated some disagreement. Some felt that flexible time would be used as extra time in bed in the morning rather than for active commuting. The cyclists felt that with regard to cycle mileage, the purchase of the bicycle was the main outlay. Both walkers and cyclists felt that the workplace could improve the facilities offered in terms of cycle storage, showers and lockers.

### *6.2 What were the barriers to cycling?*

The major barriers to those who did not cycle were related to the cycling environment. The cycling group listed safe secure cycle storage and pollution as the main problems associated with cycling to work. This group had developed strategies to cope with barriers that had prevented others from cycling. In terms of other road users and their attitudes to cyclists, both the cycling group and non-cyclists perceived lorry drivers as “friendly” as they were seen as professionals in contrast to car and bus drivers who were perceived as hostile. The group as a whole was in agreement regarding the dangers associated with road cycling.

## **7. Discussion**

### *7.1 Why was the pack successful for walking but not for cycling?*

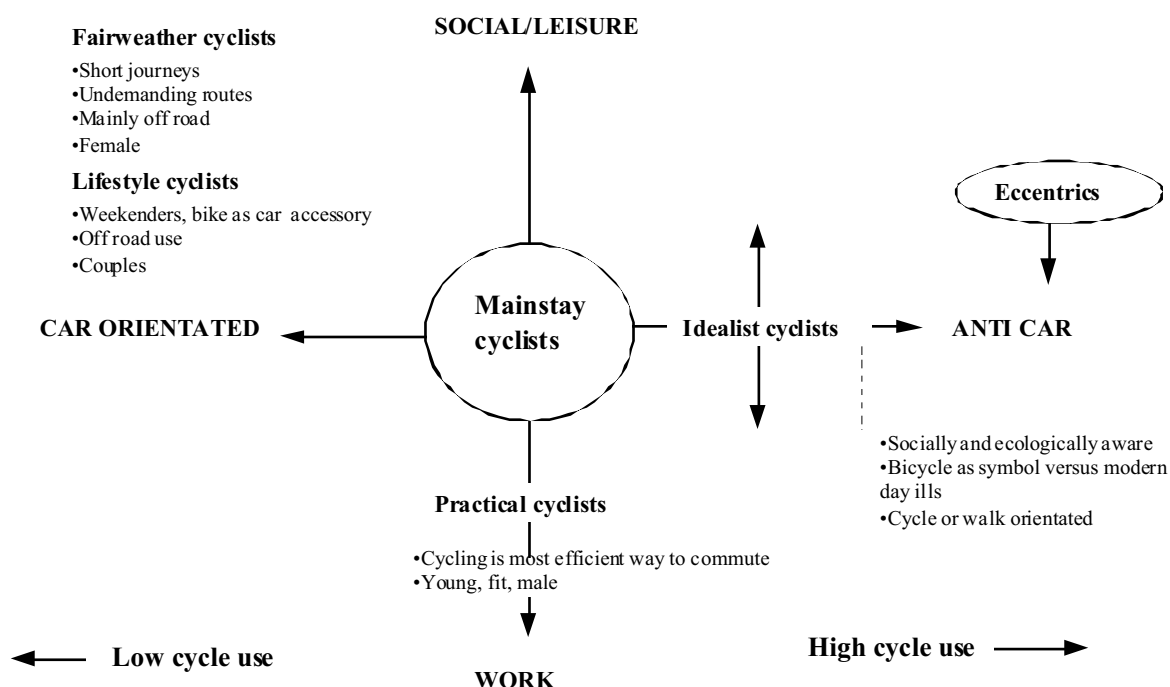
Only 18 participants from the entire group chose to cycle at the beginning of the project in comparison to 277 walkers. This small number reflects the national picture with regard to the proportion of the population who choose to cycle. Only 1% of all journeys in Scotland are currently made by bicycle despite a National Cycling Strategy<sup>5</sup> launched in 1996 with the aim of doubling the number of cycle trips by 2002. Structural improvements have also taken place for cyclists through the Sustrans National Cycle Network<sup>6</sup> and some local authority initiatives.

In terms of barriers to cycling, fear of injury from motor traffic while cycling is perhaps the most obvious and well-known barrier to cycling but Davies et al<sup>7</sup> proposed that there are other reasons for not cycling:

1. lifestyle reasons: belief that cycling detracts from sexual image, that the bicycle is impractical for transporting a young family or that frailty in old age prevents cycling
2. indirect deterrents: the cultural dominance of the car i.e. car users never consider the possibility of using other travel modes
3. direct deterrents, e.g. cycling's lack of status, danger from traffic, assault by other road users, sexual harassment, traffic fumes, weather

Although lifestyle reasons and indirect deterrents appear to be significant barriers to cycling, Davies et al also found that the most important factor contributing to non-cycle use, other than car dependence was the fear of danger from motor vehicles.<sup>7</sup> Driver behaviour and traffic speeds were cited as the most dangerous factors. Perceived fears of injury are borne out by the actual relative risk of injury as a cyclist compared to a car occupant. As a cyclist on road, one is seven more times likely to be killed than in a car.<sup>8</sup>

Davies's research identified 5 "types" of cyclist (see Figure 2 below). Focus group data from this study would support classification of the cycling group as "Practical cyclists." These are characteristically male, fairly young and fit regarding cycling as the most efficient way to get to work.



**Figure 2 Types of cyclist<sup>7</sup>**

## 8. Conclusions

This stage-matched cognitive behavioural intervention was effective in increasing walking part or all of the journey to work over a six month period. Twenty five percent of the initial Intervention group had moved from contemplation and preparation stages to action and maintenance stages and were walking to work one year after they received the intervention. This compares well to interventions aimed at changing other health behaviours, for example, only 2% of smokers successfully quit and did not relapse after one year after personal advice on how to stop.<sup>9</sup> These findings suggest that the "Walk in to Work out" pack is a relatively cheap and effective way of achieving recently set population targets for physical activity and the environment. The Intervention group also reported increased physical and mental health benefits.

The intervention was not successful in increasing cycling. Follow-up focus group research identified less surmountable barriers faced by cyclists compared to walkers, such as the provision of safe cycle routes, cycle locking facilities and changing accommodation. However, Wardman et al.<sup>10</sup> have calculated that significant increases in cycling are unlikely to be achieved by provision of cycle routes alone. They propose that a wider programme of transport

measures is needed rather than just improving cycle facilities. Davis's research suggests that a significant shift to cycling will only happen if co-ordinated action is taken in 3 areas: promotion of individual and social behaviour change, promotion of organisational change and implementation of situational and environmental measures.<sup>7</sup>

At a broader level, a recent report proposed that both walking and cycling should be given more importance within broader policies.<sup>11</sup> It goes on to make specific recommendations on possibilities for organisational change including joint planning on transport and health between health and local authorities with consideration of pooled budgets. Given the health and environmental benefits of walking and cycling, there is considerable scope for placing these much closer to the centre of transport and health policies than they are at present.

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