

Appendix A: Summary of evidence from surveillance

2018 surveillance of [Physical activity in the workplace](#) (2008) NICE guideline PH13

Summary of evidence from 2018 surveillance

Studies identified in searches are summarised from the information presented in their abstracts.

Feedback from topic experts who advised us on the approach to this surveillance review, was considered alongside the evidence to reach a final decision on the need to update each section of the guideline.

2018 surveillance summary	Intelligence gathering	Impact statement
Recommendation 1: policy and planning		
No relevant evidence was identified.	No relevant evidence was identified.	This recommendation should not be updated.
Recommendation 2: implementing a physical activity programme		
Recommendation 3: components of the physical activity programme		

<p>Alternative work stations</p> <p>Two systematic reviews were identified which examined the effectiveness of interventions to reduce sedentary behaviour and increase physical activity in the workplace (1). Findings from a Cochrane review (1) (20 studies, n = 2,180) indicated that sit-stand desks may decrease sedentary time by 30 minutes per day, however the evidence was low quality and there were no data on long term effects. Other interventions such as physical workplace changes, policy changes and information/counselling were found to have little or inconsistent effects.</p> <p>Results from the second review (2) of 40 studies (n not reported) indicated that alternative workstations are effective at reducing sedentary behaviour, whilst stair use promotion and personalised behavioural interventions were found to improve physical activity at work and overall physical activity levels respectively.</p> <p>In addition, four RCTs were identified which examined the effectiveness of sit-stand workstations on office-workers' sedentary behaviour and physical activity. Intervention periods varied between 4 weeks (3),(4), 12 weeks (5) and 13 weeks (6) and sample sizes were 25 (5), 26 (4), 32 (6), 42 (3). The Intervention groups were either compared to a sitting desk control (3,5,6)) or baseline (4). Results indicated that sit-stand work stations significantly reduced sedentary time (3–5), increased standing time (3–5) and increased total physical activity (6).</p>	<p>One topic expert highlighted that there may be a cost barrier to one of the actions in recommendation 2 which states “offer of a confidential, independent health check administered by a suitably qualified practitioner”.</p> <p>Another topic expert noted that the range of interventions listed in the guideline may be limited. They mentioned that the guideline does not include any recommendations on step counters, which are covered in guidance elsewhere (such as the Centres for Disease Control and Prevention and British Heart Foundation).</p> <p>A voluntary and community sector organisation noted that the behaviour aspect of encouraging physical activity may be neglected in the guideline. They mentioned that ‘Workplace Champions’ can enable peer-to-peer promotion of active travel and also highlighted that the guideline does not cover building features such as providing employees with shower facilities.</p> <p>Another topic expert expressed concern over the generalisation of guidance related to ‘workplaces’, suggesting that this implies a homogeneity that is not representative of today’s workplaces. Similarly, it was highlighted that lower-paid jobs often involve more physical activity in certain sectors.</p> <p>It was also felt that the guideline should cite the barriers to physical activity in the workplace and include information on why employees may or</p>	<p>Alternative work stations</p> <p>There was some evidence to suggest that sit-stand desks may be effective in reducing sedentary behaviour in the workplace. There is also an ongoing trial ‘SMArT Work: Stand More AT Work’ which will be monitored and the results will be considered when they are published. Currently however, findings from a recent Cochrane review indicate that the evidence in this area at the moment is low quality and there are no data on the long term effects. Results from more recent trials are consistent with this, showing positive results but with short follow-up times. There are currently no recommendations on sit-stand desks in PH13. However, until there is more evidence showing a long term impact on sedentary behaviour the guideline will not be changed.</p> <p>Walking and exercise programmes</p> <p>Results from a Cochrane review suggested that there was insufficient evidence on the effectiveness of pedometer interventions to increase physical activity in the workplace. The guideline does not currently make any specific recommendations on the use of pedometers so no impact is expected at this point.</p> <p>There was evidence to suggest that a walking programme with an educational component was effective in raising employee step count. However the reporting of the study was insufficient to identify the true effect of the intervention, as between-</p>
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One RCT (7) (n = 41) examined the effect of a shared treadmill desk on improving physical activity in overweight office workers. The intervention lasted 3 months and was compared to a usual working control group. Results indicated a significant increase in daily steps and light physical activity as well as a decrease in sedentary time during working hours.

Walking and exercise programmes

A Cochrane review examined the effectiveness of pedometer interventions to increase physical activity in the workplace (4 studies, n = 1809) (8). The authors concluded that all of the studies had a high risk of bias and that there was insufficient evidence to assess the effectiveness of pedometer interventions in the workplace.

Two RCTs were also identified which examined the effectiveness of different walking and exercise programmes on increasing physical activity in the workplace:

- A pedometer-driven walking programme for employees with an educational component was found to significantly increase step counts and self-reported physical activity at 3 months, compared to baseline. The control group received education only, however change in step count and between-group differences were not reported. (9) (n = 58).
- A 10-week lunchtime exercise programme was found to significantly increase physical activity levels in employees compared to baseline. The intervention was called 'active rest' and consisted

may not engage in physical activity. However it was felt that this is already taken into account in NICE guideline PH49 ([Behaviour change: individual approaches](#)).

The policy paper "[Moving More, Living More: Olympic and Paralympic Games legacy](#)" (21) was highlighted as a useful resource on how to increase physical activity in the workplace. It recommends: incentive schemes; signposting to opportunities; providing cycle parking and shower/changing facilities; encouraging cycle hire by making reimbursement easier; encouraging team activities with element of friendly competition.

An ongoing trial was identified which may have an impact on the guideline in future. The [SMArT Work: Stand More AT Work](#) trial assesses the effectiveness of sit-stand desks on employee sitting time at work. The intervention will also include other behaviour change techniques informed by the 'behaviour change wheel'. The follow-up time will be 12 months.

group differences between intervention and control were not reported. Due to this uncertainty, no impact on the guideline is expected.

Similarly, structured lunchtime exercise programme was found to increase physical activity levels compared to baseline. However, these results were based on a single study with a small sample size. Further evidence is needed before impact on guidance can be assessed.

Incentive programmes

There was evidence to suggest that various incentive schemes may increase physical activity in the workplace, which is in line with the guideline. However results from 2 RCTs suggested that the benefit may be short-term, with some, but not all, of the effects not lasting to 14-26 weeks or 12 month follow-up periods. Until there is more evidence on the long term effects of incentive programmes, the guideline will not be affected.

Other interventions and comments

A range of studies was identified on the use of computer-based programmes, support programmes and counselling in the workplace to encourage physical activity. These interventions included elements such as tailoring messages to individuals, providing pedometers to track progress and offering support to increase physical activity. This is broadly consistent with the guideline which already recommends introducing a multiple-component programme which could include

of warm-up, cognitive functional training, aerobic exercise, resistance training and cool down for 10 minutes per day, 3 times a week. Between-group differences between intervention and control were not reported. (10) (n = 59)

Computer-based interventions

Four RCTs were identified which examined the effectiveness of computer-based interventions on increasing physical activity in the workplace:

- An internet-based walking programme for employees with tailored step goals was found to significantly increase step counts after 6 weeks, compared to a no-treatment control. (11) (n = 265).
- A 19-week workplace web-based intervention was found to significantly reduce self-reported occupational sitting, compared to a no treatment control. (12) (n = 264).
- A computer-tailored pedometer intervention in the workplace, which gave personalised advice, was found to significantly increase daily step counts after 1 and 3 months compared to control. (13) (n = 174).
- A computer-based intervention ('Booster Break') was found to significantly increase weekly step counts and decrease sedentary behaviour in employees compared to a usual break control group. The intervention prompted employees to take a 15-minute activity break (no further details reported in the abstract). Self-reported physical

information provision, advice and support, monitoring distances covered, health checks and encouraging physical activity during breaks or around the building. Although there is no specific mention of computer-based interventions, it is likely that these are covered by the broader recommendations in this guideline. Therefore no impact on the guideline is expected.

A topic expert raised concerns about the limited range of interventions recommended in the guideline. We identified some new evidence on interventions not currently covered in the guideline, however the evidence was considered too preliminary at this point to impact recommendations. We are monitoring ongoing trials considering new interventions and will assess this area again when results are available.

A concern was also raised about the potential cost barrier of the health checks suggested in [recommendation 2](#). Health checks are 1 of the 5 suggestions in this recommendation on physical activity programme components. Whilst it is acknowledged that this might not be a feasible option to some workplaces, it was felt that it could still be a relevant suggestion to others, so no impact on the guideline is expected at this time. We will monitor this area and review again at the next surveillance review.

We did not identify any evidence on the use of 'Workplace Champions', as suggested by a voluntary and community sector organisation.

<p>activity during leisure time was also found to significantly increase in the intervention group compared to control. The duration of the programme is not reported in the abstract, however authors state that the study ran from 2010 to 2013. (14) (n = 175).</p> <p>Incentive programmes</p> <p>Three RCTs were identified which examined the effectiveness of incentive programmes on increasing physical activity in the workplace:</p> <ul style="list-style-type: none"> ● Activity trackers with cash incentives for employees were found to significantly increase time spent in moderate to vigorous physical activity (MVPA) compared to a control after 6 months but not after 12 months. Activity trackers with a charity incentive were found to significantly increase time spent in MVPA compared to a control at both 6 and 12 months. There was no difference in MVPA between incentive groups and the activity tracker only group at 6 months. There was also no difference in MVPA between the Fitbit only group and control. (15) (n = 800). ● A 9-month enhanced walking programme with incentives was shown to significantly increase employee step counts compared to a standard walking programme. The intervention consisted of incentives, feedback, competitive challenges, and monthly wellness workshops. (16) (n = 474). 		<p>Therefore the guideline will not be changed at this point.</p> <p>There were some concerns that the guideline may generalise the workplace setting. Similarly, it was pointed out that many lower paid occupations are inherently more physically active. Recommendation 2 already makes reference to tailoring information according to working practices, taking into account shift work for example. Furthermore, part of recommendation 3 states “take account of the nature of the work and any health and safety issues. For example, many people already walk long distances during the working day, while those involved in shift work may be vulnerable if walking home alone at night” which demonstrates how the guideline takes into account different working environments and work patterns. However, we will monitor this area and review at the next surveillance point.</p> <p>A policy paper highlighted several interventions to increase physical activity in the workplace such as incentive schemes and signposting which are consistent with the current recommendations. Other interventions listed include team-based activities with friendly competition, reimbursement for cycle hire, cycle parking and shower facilities which are not covered in the guideline. We did not find any further evidence on team-based activities or reimbursement for cycle hire, however this area will be monitored and considered at the next surveillance. Providing cycle parking and shower</p>
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- An RCT compared different types of financial incentive schemes to a no incentive control. All participants received daily feedback on reaching a 7000 steps target, with 3 intervention groups receiving either \$50 for meeting their goal (individual incentive), \$50 if all team members met the goal (team incentive), or \$20 for individual goal with an added \$10 for each team member reaching their goal (combined incentive). During the 13-week intervention period, the combined incentive group were significantly more likely to reach 7000 steps compared to the control group. There were no differences between control and individual or team incentive groups. During the 14-26 week follow-up period, there were no differences between study arms, indicating no long-term effect. (17) (n = 304).

Support and counselling

Three RCTs were identified which examined the effectiveness of supportive or counselling interventions on increasing physical activity in the workplace:

- A 12-month intervention of organisational support both with and without activity trackers significantly reduced prolonged sitting time at work and increased standing time. The only significant between-group differences were greater stepping time and step count in the activity tracker assisted group. Organisational support strategies lasted 12 months and included manager support and emails

facilities are interventions relevant to NICE guideline NG90 on [physical activity and the environment](#) and will be considered there at the next surveillance review. The guideline currently cross refers to NG90.

In summary, there was a range of evidence identified on interventions to increase physical activity in the workplace. Most of the intervention components are broadly covered by the current recommendations, which means that there is unlikely to be an impact on the guideline. We will monitor the area of sit-stand work stations and long-term impacts of incentive schemes and review again at the next surveillance point.

New evidence is unlikely to change guideline recommendations.

2018 surveillance summary	Intelligence gathering	Impact statement
<p>whereas the activity tracker gave feedback and prompts on sitting and posture. (18) (n = 66).</p> <ul style="list-style-type: none"> ● A pedometer-based group counselling intervention for female employees significantly increased total steps after 3 months, compared to baseline. This was also the case for a pedometer-based counselling intervention for individuals. However, the increase in step count was significantly higher in the group counselling employees compared to the individual counselling group. After 6 months, no effect on physical activity in any group was observed. The third comparator group were given aerobic training but no difference in physical activity levels over the study period were observed. (19) (n = 195). ● A 10-week theory-based group walking intervention for employees was found to significantly increase step counts compared to a comparator group. The intervention consisted of a weekly walking group followed by a meeting to discuss cognitive-behavioural strategies targeting self-efficacy. The comparator group also had a weekly walk but no further support. After 20 and 30 weeks, step counts were maintained but significance is not reported in the abstract. (20) (n = 56). 		

2018 surveillance summary	Intelligence gathering	Impact statement
<u>Recommendation 4: supporting employers</u>		
No relevant evidence was identified.	A topic expert raised concerns about the recommendation to focus on small and medium-sized enterprises (SMEs) if initial demand for support exceeds the resources available. They mentioned that this may no longer be realistic criteria, given the increase in SMEs seen in recent years. It was also suggested that the guideline make reference to Local Enterprise Partnerships (LEPs) under the 'Who should take action?' heading of recommendation 4 .	<p>Although we did not find any evidence relating to this section of the guideline, we did receive some feedback from topic experts. There was a concern that the recommendation to focus on SMEs if resources are limited may no longer be realistic given the increase in SMEs since the guideline was published. Focussing on SMEs is 1 of the 3 suggestions in this recommendation on how to deal with limited resources. Whilst it is acknowledged that this might not be a preferred option to some regions, it was felt that it could still be a relevant suggestion to others. Therefore it is unlikely that the recommendations will be impacted.</p> <p>Since the guideline was first published, LEPs have been introduced which help lead economic growth and job creation in a specific local authority area. It was felt that these would be covered by local strategic partnerships already mentioned under 'Who should take action?' therefore the recommendation is unlikely to be impacted.</p> <p>New evidence is unlikely to change guideline recommendations.</p>

2018 surveillance summary	Intelligence gathering	Impact statement
Research recommendation 1: How is the effectiveness of workplace physical activity interventions influenced by the characteristics (for example, age, ethnicity, gender, socioeconomic status or disability) of employees?		
No new evidence relevant to the research recommendation was found and no ongoing studies were identified.	No topic expert feedback was relevant to this section.	This research recommendation will be considered again at the next surveillance point.
Research recommendation 2: How is the effectiveness of workplace physical activity interventions influenced by the characteristics (for example, age, ethnicity, gender, socioeconomic status or disability) of employees?		
No new evidence relevant to the research recommendation was found and no ongoing studies were identified.	No topic expert feedback was relevant to this research recommendation.	This research recommendation will be considered again at the next surveillance point.
Research recommendation 3: Do employer schemes to encourage employees to walk or cycle to work increase the individual's overall level of physical activity? For example, does an increase in the use of transport involving physical activity to commute to work lead to a decrease in other types of physical activity? Or is there an overall net increase in the individual's physical activity levels?		
No new evidence relevant to the research recommendation was found and no ongoing studies were identified.	No topic expert feedback was relevant to this research recommendation.	This research recommendation will be considered again at the next surveillance point.
Research recommendation 4: To what extent do employers benefit from increased productivity and reduced sickness absence if their employees become more physically active?		

2018 surveillance summary	Intelligence gathering	Impact statement
No new evidence relevant to the research recommendation was found and no ongoing studies were identified.	No topic expert feedback was relevant to this research recommendation.	This research recommendation will be considered again at the next surveillance point.
Research recommendation 5: How effective are incentive schemes at increasing workplace physical activity levels?		
See evidence under recommendations 2 and 3 above.	No topic expert feedback was relevant to this research recommendation.	<p>New evidence relevant to this research recommendation was found but an update in this area is not planned.</p> <p>The new evidence suggests that various incentive schemes may be effective in increasing physical activity in the workplace, however evidence on the long term effects is inconsistent.</p> <p>This research recommendation will be considered again at the next surveillance point.</p>
Research recommendation 6: Are black, Asian and other minority ethnic groups aware that they are at the same risk of type 2 diabetes and mortality at a lower BMI, compared to the white population?		
No new evidence relevant to the research recommendation was found and no ongoing studies were identified.	No topic expert feedback was relevant to this research recommendation.	This research recommendation will be considered again at the next surveillance point.

2018 surveillance summary	Intelligence gathering	Impact statement
<p>Research recommendation 7: Are clinicians, practitioners and weight management service providers aware that black, Asian and other minority ethnic groups are at the same risk of type 2 diabetes and mortality at a lower BMI compared to the white population? If so do they intervene at lower BMI and waist circumference thresholds?</p>		
<p>No new evidence relevant to the research recommendation was found and no ongoing studies were identified.</p>	<p>No topic expert feedback was relevant to this research recommendation.</p>	<p>This research recommendation will be considered again at the next surveillance point.</p>
<p>Research recommendation 8: How effective and cost effective are lifestyle interventions for people from black, Asian and other minority ethnic groups at different BMI and waist circumference thresholds, compared to the general population? Ideally this evidence should come from randomised controlled trials.</p>		
<p>No new evidence relevant to the research recommendation was found and no ongoing studies were identified.</p>	<p>No topic expert feedback was relevant to this research recommendation.</p>	<p>This research recommendation will be considered again at the next surveillance point.</p>

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