



2019 exceptional surveillance of physical activity in the workplace (NICE guideline PH13)

Surveillance report

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Surveillance decision

We will update the guideline on [physical activity in the workplace](#). This update will focus on components of a workplace physical activity programme including sit-stand desks. The update will not proceed until the results from the ongoing [SMART Work & Life trial](#) are available (expected 2021).

Reason for the decision

Assessing the evidence

The purpose of this exceptional review was to examine any impact on NICE's guideline on physical activity in the workplace following the publication of the [Effectiveness of the Stand More AT \(SMArT\) Work intervention: cluster randomised controlled trial](#). This project was funded by the Department of Health Policy Research Programme and the research was supported by the National Institute for Health Research (NIHR) Leicester Biomedical Research Centre which is a partnership between University Hospitals of Leicester NHS Trust, Loughborough University and the University of Leicester. Additional evidence on sit-stand desks identified through the [2018 surveillance review](#) of the NICE guideline was also considered by this exceptional review.

Methods

The SMArT Work study is a randomised controlled trial (RCT) assessing the impact of a multicomponent intervention on occupational sitting time. Trial participants were recruited from the University Hospitals of Leicester NHS Trust and included office-based workers who spent $\geq 75\%$ (self-reported) of their working day sitting down. The intervention group received the SMArT Work intervention for 12 months which included a height adjustable workstation, feedback on sedentary behaviour, action planning, goal setting and coaching.

The control group did not receive any lifestyle advice or feedback on sedentary behaviour, although they did receive results from the health measurements taken throughout the study.

Participants were followed-up at 3, 6 and 12 months post introduction of the intervention. The primary outcome was change in occupational sitting time measured by the activPAL micro accelerometer which determines body posture. Secondary outcomes included:

- Daily sitting and standing time.
- Prolonged sitting time (≥ 30 minutes).

- Amount of moderate to vigorous physical activity during work and daily levels (measured using an ActiGraph Link accelerometer).
- Musculoskeletal health measured using the Standardised Nordic Questionnaire.
- Work related measures such as engagement (measured using a 9 item questionnaire with a 7-point Likert Scale), occupational fatigue (assessed using the Need for Recovery Scale, an 11 item questionnaire) and cognitive function (assessed using computerised and paper based tasks).
- Mood and affective states were assessed using the Mood Affect Adjective Check List-Revised.
- Quality of life was measured using the World Health Organization Quality of Life-BREF.

Results

The results of the SMARt trial have been described in detail in an [NIHR signal](#). In summary, the new evidence suggests:

- SMARt Work reduced occupational sitting time at 12 months (adjusted difference in favour of intervention –83.28 min/workday, 95% confidence interval [CI] –116.57 to –49.98 min/workday).
- SMARt Work reduced prolonged sitting time at 6 months (occupational: –35.31 min/ workday, daily: –25.38 min/day) and 12 months (occupational: –44.93 min/workday, daily: –58.34 min/day) but not at 3 months.
- The intervention had no effect on moderate to vigorous physical activity at any time point ($p>0.05$).
- No differences were observed between groups at the 12 month follow-up in the proportion of participants reporting musculoskeletal problems (neck, lower back, upper extremity, lower extremity, any part).

Guideline development

NICE's guideline on physical activity in the workplace recommends that employers should introduce and monitor an organisation-wide, multi-component programme to encourage and support employees to be physically active but there is currently no guidance on sit-stand desks.

Previous surveillance

Evidence on sit-stand desks was identified in the [2018 surveillance review](#) of the NICE guideline. Findings from a Cochrane review ([Shrestha et al. 2018](#)) demonstrated that sit-stand desks, either alone or in combination with information and counselling, reduced sitting time at work on average by 100 minutes per workday at short-term follow-up (up to 3 months) compared to sit-desks (95% CI -116 to -84, 10 studies, low-quality evidence).

Additionally, a meta-analysis of 2 studies comparing sit-stand desks with sit-desks indicated that sitting time was reduced at medium-term follow-up (3 to 12 months) by an average of 57 minutes per day (95% CI -99 to -15).

Four RCTs were also identified, however these were all included in the Cochrane review so have not been summarised again here.

Although the research on sit-stand desks indicated positive results for some outcomes, the SMART Work study was also identified through the surveillance and it was noted that this would add further evidence to this area when published.

Research landscape

The NIHR has funded additional research in this area including [a three arm cluster randomised controlled trial to test the effectiveness and cost-effectiveness of the SMART Work & Life intervention for reducing daily sitting time in office workers](#). This study aims to determine whether SMART Work & Life, delivered with and without a height adjustable desk, leads to reductions in daily sitting time compared to usual practice at 24-month follow-up. Secondary outcomes include improvements in health markers such as reduced blood pressure and improvements in cholesterol. This research remains ongoing and the results are not expected until 2021 at the earliest. We will monitor the progress of this study.

Policy landscape

Public Health England and a UK community interest company (Active Working CIC) commissioned an international group of experts to [develop guidance](#) in 2015 aimed at helping employers to make workplaces less sedentary and more active. In this consensus statement 'sit-stand adjustable desk stations are highly recommended'. It was noted, however, that 1 of the authors of this declared they own a website that sells sit-stand desks which could have had an influence on the final statement.

Views of topic experts

In this exceptional review we engaged with topic experts who were either members of the guideline committee involved in the development of the NICE guideline or were recruited to the NICE Centre for Guidelines Expert Advisers Panel to represent their specialty. We received feedback from 5 topic experts of which 4 thought the guideline should be updated.

One topic expert felt that the evidence base was insufficient to recommend sit-stand desks in the NICE guideline. The main reason being that although the SMARt trial reduced sitting time, it remains unclear what the health implications of such a change may be. The topic expert also suggested that other evidence indicates that replacing sitting with static standing may not be sufficient to improve metabolic health outcomes. The topic expert also queried how generalisable the study findings are and how transferable such a complex multi-level intervention would be to other workplaces. It was noted that the results of the SMART Work & Life intervention may change the evidence base substantially as it will include measures of biomarkers of health status and therefore, any update to the guideline should include the results from this trial. However, feedback from other topic experts indicated that there is already an evidence base on sit-stand desks and an update of the guideline could go ahead without the results from the SMART Work & Life intervention.

The remaining topic experts were supportive of an update to the NICE guideline to consider the role of sit-stand desks in the workplace. It was noted that the availability of sit-stand desks has increased very quickly with many organisations considering whether to implement them but their knowledge of the evidence base is lacking. Costs were also cited as a potential barrier to organisations introducing sit-stand desks for their employees.

There was also a general view that the guidance on physical activity in the workplace remains relevant but is dated as the work environment has changed dramatically since it was developed (mobile working and remote/home working are more common).

Impact

The SMARt trial results are directly relevant to NICE's guideline and form the basis of this update decision.

Although the NICE guideline recommends that employers should introduce and monitor an organisation-wide, multi-component programme to encourage and support employees to be physically active, there is currently no guidance on sit-stand desks. The new evidence from the SMARt trial and also studies identified through a recent surveillance review of the guideline

indicated positive results for some outcomes, in particular a reduction in occupational sitting time. Topic experts were broadly supportive of an update to the guideline to consider the place of sit-stand desks as a component of a workplace physical activity programme.

Strengths of the SMArT trial are that it is a UK-based study that considered a number of outcomes. However, some limitations are the generalisability of the results to other workplaces which may be more open plan than those included in the study and the fact that some outcomes were assessed by self-report, which could have been subject to reporting bias. Additionally, SMArT does not provide any longer-term data compared with the evidence already considered in the [2018 surveillance review](#) and did not consider broader health outcomes such as metabolic outcomes.

The NIHR has funded the SMART Work & Life study which remains ongoing. This study is expected to build upon the results from the SMArT trial but will also include measures of health markers such as reduction in blood pressure and improvements in cholesterol and will have a longer follow-up time of 2 years.

Following consideration of the results published in the SMArT trial, as well as topic expert feedback, the new evidence may have an impact on the current NICE guideline which does not include recommendations on the use of sit-stand desks. It is recommended that the update to the guideline does not proceed until the results from SMART Work & Life study are available.

Other clinical areas

This exceptional surveillance review did not search for new evidence relating to other clinical areas in the guideline.

Equalities

No equalities issues were identified during the surveillance process.

Overall decision

See [how we made the decision](#) for further information.

How we made the decision

Exceptionally, significant new evidence may mean an update of a guideline is agreed before the next scheduled check of the need for an update. The evidence might be a single piece of evidence, an accumulation of evidence or other published NICE guidance.

For details of the process and update decisions that are available, see [ensuring that published guidelines are current and accurate](#) in developing NICE guidelines: the manual.

Evidence

This surveillance report provides an overview of 1 study published since the end of the search period for the guideline (March 2007). The results of this study were considered in detail to determine if there is an impact on guideline recommendations.

Views of topic experts

We considered the views of topic experts, including those who helped to develop the guideline.

Views of stakeholders

Because this was an exceptional surveillance review we did not consult on the decision.

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