STANDING ROOM ONLY

Is sitting the new smoking and what does it mean for workplaces?

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Front cover image: Medibank Workplace, Melbourne, Australia.
Photography by Earl Carter

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Photography by Earl Carter
While the ‘father’ of Occupational Medicine, Bernardino Ramazzini, first highlighted the health effects of prolonged sitting over 300 years ago, it’s only recently that terms such as ‘Sitting is the New Smoking’ \cite{1,2} have started appearing in the mainstream press.

Analysis using Google Trends\cite{3} shows that ‘Sitting vs Standing’ first appeared in Google searches in 2010, while ‘Sitting is the New Smoking’ only started trending in 2013. During the same period there have been numerous articles and industry reports promoting standing desks and sit-to-stand workstations as the solution to the health effects associated with sitting for long periods.\cite{4,5}

This trend also coincides with a huge upswing in interest in the health and wellbeing of office workers. In response, many organisations have incorporated standing desks and adjustable workstations in their workplaces. However, recently articles such as “5 Ways Your Standing Desk is Doing More Harm than Good”\cite{6} have started appearing suggesting that standing desks and sit-to-stand workstations may not, by themselves, be the ‘magic bullet’ to solve the issue of prolonged sitting.

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"The maladies that afflict the clerks . . . arise from three causes: First, constant sitting, secondly the incessant movement of the hand and always in the same direction, thirdly the strain on the mind…”

Bernardino Ramazzini
Disease of Workers
De Morbis Artificum Diatriba, 1713
The average office worker can spend a considerable period of their day sitting down. Australian research, published in 2009, reported that office workers included in the study were sitting for over 70 percent of the working day. Studies undertaken in the UK and elsewhere have reported similar figures. All this sitting is creating numerous health issues with one study calculating the effects as reducing a person’s lifespan by two years, leading some to draw the analogy between smoking and sitting.

In 2015, Canadian researchers undertook a meta-analysis of published academic research on the effects of sitting and other sedentary behaviours and found that it increased the risk of diabetes, heart disease and cancer.

Worryingly, the study showed the increased risk remained even for people who exercised regularly, suggesting that exercising at lunchtime or outside work hours may not completely counteract the effects of prolonged sitting.

While Ramazzini may have identified constant sitting as a health issue over 300 years ago, doctors in London in the 1870’s were reporting on the effects of prolonged standing amongst female shop workers, primarily various foot ‘ailments’.

Researchers have subsequently identified a range of other serious consequences from prolonged standing including back pain, varicose veins, increased stroke risk and problems during pregnancy. Most recently, research published in the US journal Human Factors found long term muscle fatigue amongst workers who stood for the majority of their working day even after rest breaks.

02 Health impacts of prolonged sitting (and standing)

‘The average office-based employees spend around 80,000 hours seated during their working life”

Victorian Health Promotion Foundation

01 Medibank Workplace, Melbourne, Australia
Photography by Earl Carter

02 Medibank Workplace, Melbourne, Australia
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03 Medibank Workplace, Melbourne, Australia
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04 Suncorp Workplace, Melbourne, Australia
Photography by Dianna Snape

05 Suncorp Workplace, Melbourne, Australia
Photography by Dianna Snape
If standing and sitting for long periods are equally problematic and the effects can’t be completely negated by rest or exercise, what is the answer? Instead of promoting standing over sitting or visa versa, leading ergonomic and health experts are saying that the best approach is for people to do both. Their advice is to regularly shift between sitting and standing combined with walking. But how often and for how long?

The advice on this is still evolving. In 2014, Professor Alan Hedge of Cornell University recommended that people should aim to sit for twenty minutes, stand for eight minutes, stretch for two minutes and then repeat this cycle throughout the day.¹²

More recently, research undertaken for Public Health England by a number of leading international experts,¹³ including Professor Hedge, recommended that office workers should initially aim for two hours per day of standing and light walking and progressively increase this to four hours per day. They also recommended that workers should regularly shift from sitting to standing/light walking and back again.

While the researchers did not nominate a specific maximum time before changing from sitting to standing, they did stress the importance of gradually introducing movement to avoid fatigue, discomfort, musculoskeletal pain and other issues.

“In the end, the best posture is the next posture”

Ergonomics@work
UC Berkeley

¹² The key is movement

“In the end, the best posture is the next posture”

Ergonomics@work
UC Berkeley

Medibank Workplace, Melbourne, Australia
Photography by Earl Carter

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So how do you create workplaces that encourage movement? In 2015, UK researchers published a systematic review that assessed over 1,000 academic studies to determine the effectiveness of various workplace strategies for reducing sedentary behaviours, primarily prolonged sitting.

They found the most promising approaches included providing information of the health consequences of sitting, self-monitoring techniques and changes to the workplace environment. This means that while initiatives such as awareness campaigns play a role in encouraging movement in the workplace, the design of workplaces also needs to support and promote movement.

Sit-to-stand Workstations and standing desks

Sit-to-stand workstations and standing desks are an important component in helping people to shift between sitting and standing. However, questions such as how many to provide, which type to use and where they should be located need to be considered.

In terms of how many workstations to provide, the WELL Building Standard, which focuses on the health and well-being of building occupants, recommends that at least 80 percent of workstations should be either height adjustable standing desks or standard desks with a height adjustable desktop. Interestingly, in the Ergonomics: Visual and Physical section of the standard the recommendation is for at least 30 percent of workstations to have the ability to shift between sitting and standing.

While WELL and other standards can provide some guidance the specific number or percentage for each workplace requires detailed consideration of issues such as the types of work activities being undertaken, the mobility of workers, what percentage of the day people are in the office and whether the workplace has allocated or unallocated seating.

For example, if the majority of people in a workplace are highly mobile and spend a significant portion of the day at meetings or working remotely then a mixture of fixed height and sit-to-stand workstations as well as standing desks may be appropriate. If the tasks being undertaken are largely desk based and the workplace has allocated seating then a higher percentage of sit-to-stand workstations would be required. The ultimate goal is to have everyone in a workplace being more active and spending less time sitting, without reducing and potentially improving work performance.

Activity Based Working (ABW)

The nature of work now undertaken in most workplaces involves a number of different activities, not all suited to being undertaken from an individual’s desk. The course of an average day can include time in meetings, working with colleagues on projects, as well as undertaking individual focused work. By analysing the variety of different activities undertaken within a particular organisation the most appropriate work settings can be developed to support the particular nature of each task being undertaken. By providing different work settings this can encourage people to physically move around the workplace as they undertake different work tasks.

“90% of office workers in Scandinavia now have access to sit stand workstations, while the figure in the UK is 1%”

Estimate based on data from Furniture Industry Research Association (UK)
Meeting and collaboration spaces

Early studies on proxemics suggest that non-verbal communication influences behaviour and the way people interact with each other. As such maintaining same eye height during meetings and collaborations might be important. This is because in situations where people are seated and one person stands up it can introduce a psychological feeling of dominance. A standing height table, with people standing or using stools, enables people to remain at the same eye height regardless of whether they are presenting an idea or listening. This allows people to equally contribute and respond to ideas as well as allowing them to stand and move.

Stairs

More workplaces are integrating stairs into their design to increase connectivity and interaction. Stairs also offer a great opportunity to increase physically movement. However research has shown that just asking people to use the stairs instead of taking the elevator is not effective by itself. In order for people to use the stairs they must be highly visible and conveniently located. The central stair in the Medibank Melbourne workplace is a good example of how the design and placement of stairs can encourage movement.

Distributed facilities

Distributing common facilities such as print rooms, staff breakout spaces and kitchens also offers opportunities to encourage people to move more. However care does need to be taken to not place these too distant as people will find workarounds to avoid having to travel too far or too frequently in order to get to these facilities.
The average office worker currently spends more than a third of their working life in an office, most of which is sitting down. The vast weight of research suggests that this can have serious health consequences. The constant movement currently recommended by health and ergonomic experts to help prevent these issues means that workplaces need to support and encourage movement. Along with management initiatives and programs, the design of workplaces including the use of sit-to-stand workstations and standing desks, has an important role to play in supporting movement. However, like all fields of research, the body of knowledge on movement in the workplace is constantly evolving.

One area that warrants further exploration is the potential conflict between the recommendations for regular movement and research on the impact of interruptions on workplace effectiveness. A study undertaken by the University of California Irvine has shown that it takes an average of 23 minutes for people to return to a task after being interrupted.\textsuperscript{19} Related to this is research that suggests that people are most individually productive when they are able to concentrate without interruption.\textsuperscript{20} ‘The Flow’ or ‘The Zone’ is described as when you are so immersed in an activity that you lose track of time and one of the conditions for entering a “Flow” state is the absence of distractions. Given the number of physical interruptions and digital distractions that already occur in the typical workplace, will adding regular movement create even further interruptions or will the health benefits outweigh them?

Another area requiring more research is whether different work activities are more effectively undertaken sitting, standing or moving. The previously mentioned research into the effects of treadmill desks on cognition are part of a growing field of research. Walking meetings have been promoted as being shorter and more effective than sitting meetings, while researchers at Stanford University have conducted a series of experiments that showed people were more creative whilst walking.\textsuperscript{21} Other studies have shown that tasks requiring fine motor skills and concentration are better undertaken sitting down.\textsuperscript{22}

With the all insights and guidance being developed on how people can be healthier and more effective in the workplace another issue arises. How do people deal with all this information and remember to move or work in the most effective position. This is where wearable technology such as the Apple Watch potentially has a significant role to play. Tim Cook, CEO of Apple recently said “if I sit for too long, it will actually tap me on the wrist to remind me to get up to move...” Wearables offer the ability to monitor movement, heart rate, blood pressure and potentially stress levels in real time and provide their wearers with immediate feedback. How long will it be before wearables have the ability to recognise what activities people are doing and assess how effectively they are being done and then offer guidance on how and where to do them better? Although a survey undertaken in the US in 2014 revealed that half of people who had purchased a wearable device stopped wearing them within 12 months.\textsuperscript{23} Time and further research will tell whether wearable technology is a novelty or a real aid to help people be healthier and more effective at work.
06 References


