Human Factors & Ergonomics Society of Australia Inc.

Sedentary Behaviour: HFESA Position on Prolonged Unbroken Sitting Time
(Published November 2015)

"Practice less sitting in total as well as less prolonged sitting. Think non-seated activity".

The digital world is significantly changing behaviour associated with work, school, home and leisure pursuits. The HFESA recognises that modern lifestyle changes have resulted in people sitting for longer periods. This position paper relates to the significant use of computers and other digital devices and what actions can be taken to reduce the seated lifestyle that can link to adverse health effects.

Recent experimental research shows that spending time in prolonged unbroken sitting can contribute to an increase in blood sugar levels and a decrease in metabolic rates, due to a lowering of overall activity. This prolonged unbroken sitting may also negatively impact on back, neck and shoulder pain, cardiovascular disease, type 2 diabetes and certain cancers including bowel cancer.

Although there is no hard evidence about the amount of physical movement per hour required to reduce these adverse health effects, there are some evidence-based strategies that can minimise risks. These are applied at two levels which are the 'corporate' workspace design level and in the behaviour of individuals in the choices they make to move more often. Successful risk reduction requires a combination of these two approaches, for example, the supply of a new desk or chair is unlikely to be sufficient on its own.

Workspace Design approach

It may be argued that as evidence-based health research grows and becomes part of the greater public knowledge and our common conversation, this contributes to readily available information for an organisation and therefore health risks are now "foreseeable risks" that should be prevented through superior work design. We have seen this historically in the safety field for issues such as exposure to respirable dust and the prevalence of silicosis, or sun exposure and skin cancers as examples. Similarly, information is readily available about sedentary behaviour as a contributor to metabolic ill-health; the subject of research over the last 30 years. In the research literature it is clear that unbroken sitting at a desk all day is not good for your health, it is therefore a foreseeable risk that should now be included on risk registers and safety audits. That is, is there a design strategy to help encourage movement to achieve a suggested level of movement time in ones work shift through available work equipment, work space, training/education, and functional job task design?

Ergonomists have promoted a person centred design for many years and bring a wealth of experience in interpreting the research to achieve an environment that enhances health, safety and productivity. Ergonomists have been recommending sit-stand adjustable workstations for at least 20 years and at least 15 years discussing strategies for movement based working arrangements and functional work where teams of workers collaborate rather than simply relying on intense solo work. This functional work design is referred to as Activity Based Work (ABW).

Designing a work space or other environment, such as schools, to integrate activity and movement and break up prolonged sitting has the potential to greatly reduce the health risks. At a corporate level this has been undertaken in a number of Australian corporations and can be incorporated into an 'Activity Based Work' design philosophy. The Green Building Council of Australia recognises the importance of this and Certified Professional Ergonomists can provide further advice. There is opportunity to also consider design that promotes health in a broad context such as that which supports our natural circadian rhythms – natural ventilation, daylight lighting or lighting to mimic daylight hues and temporal changes, green design with vegetation, noise regulation, emotive colour hues in palette selection, or similar.

Designing an individual workstation or workspace to increase flexibility of work positions, the person's movement and activity can be as simple as having both a sitting and a standing area to work or using the individual choices described below to build change into the work routine. Where it is not practical to regularly get up from the chair due to the nature of the work, there are solutions are available for fixed height standing workstations (with higher chair) or sit to stand adjustable workstations (using standard height chairs). These are available in gas lift and electric adjustments fitted to the whole desk surface or as a desktop unit.

Substituting all sitting for standing is not recommended as there are other health risks associated with prolonged static standing. But substituting some sitting for standing may have health benefits. The idea recommended by ergonomists is not to swap one for the other, but to promote frequent variation and adding movement. The key is to have small and frequent changes from sitting and adding regular movement in addition to regular daily exercise. When adapting or setting-up workstations for both sitting and standing, it is important to have the workstation dimensions suited to the individual user both in standing and in siting, as well as ensuring the chair used when seated provides stability and support.

Individual choices approach

Changing work behaviours can be challenging, particularly if work environments are not conducive for such changes to occur. Work design needs to *enable* healthy behaviour and choices. Behavioural change is easier to achieve when work demands and arrangements accommodate change in work practice. However there are likely to be benefits of improved energy and concentration if frequent and light (walking, standing) activity is interspersed with sitting time. At work, home, school or leisure, frequently stand-up at your desk or workstation for short durations, and in addition where practical, take 2 minutes of movement away from the desk or workstation every 20-30 minutes.

For example:

- get a glass of water
- go to a printer further away from your desk
- check your mobile phone in standing
- walk to a colleague's desk rather than email or calling
- take a walking meeting
- use a Bluetooth headset to take a phone call in standing or slow walking
- have a standing meeting or conversation at locations that enable standing. This might be at a room with benches and no chairs, a kitchen, canteen or anywhere with a bench.

In addition:

- encourage colleagues to be part of this new way of working
- ensure you get outside during lunch breaks
- as a team consider changing meetings to 50 minutes allowing 5 minutes before and after for walking, standing, stretching

Through collaborative design, a culture of well-being through reductions in prolonged sitting may be fostered. As the body of evidence grows in health research, Australian workplaces shoulder significant responsibility to embrace smart design and promote good health. The health literature is clear that sitting

at a desk all day is not good for one's health. Movement, even low-intensity, increasingly incorporated into one's workday with high frequency, is accessible to a diverse population. Prolonged sitting (e.g. sitting at a desk all day and 'too busy' to take a break), is now a recognised foreseeable risk for ill-health metabolic conditions and, as such, should be addressed. Design of work and the work environment for activity, movement, and natural ways of living, is a strategy that promotes health of our workers.

Finally, talk amongst your work co-workers, class-mates, friends and family about this important issue and encourage each other to reduce the total time you spend sitting. Creatively collaborate to explore ways to regularly get-up from the chair and re-design your daily routines at home, leisure, school and work.

If your workplace would like advice on how to review functional job tasks, facilitate design-thinking for health, or achieve the Green Star Ergonomics Credit for Interiors, contact the HFESA to locate a Certified Professional Ergonomist near you.

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