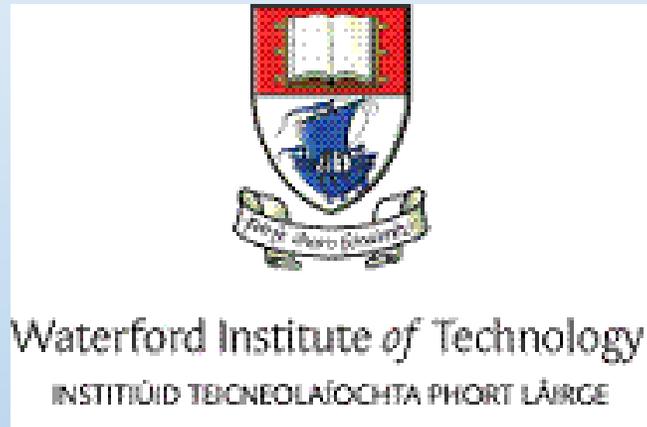


Efficacy and feasibility of reducing workplace sitting among administrative staff

The WIT-SIT Study



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Sedentary Behaviour

- Sedentary Behaviour (SB) = waking activities that require an energy expenditure of ≤ 1.5 metabolic equivalents while in a seated or reclined posture (Barnes et al., 2012).



Sedentary Behaviour

Prolonged SB

Total Volume Per Day
≥ 7 HOURS
Per Day

For every additional hour accumulated after seven hours the risk of mortality increases by 5% (Chau et al., 2012).

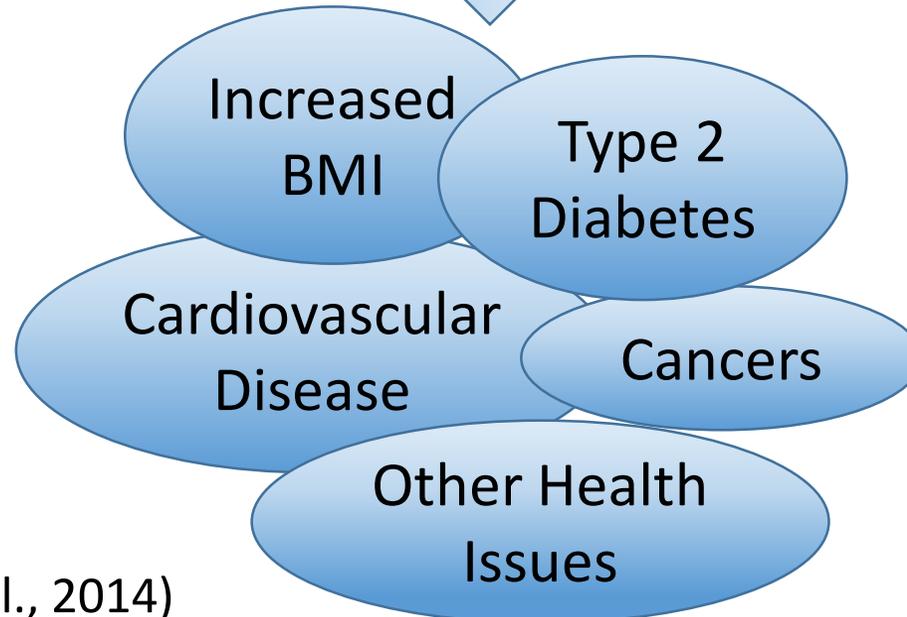
(Van Uffelen et al., 2010; Owen et al., 2014)

**Prolonged
Sedentary
Behaviour**

Pattern

≥ 30 minutes of sitting
without breaks in
between

Accumulating total daily sedentary time in bouts of 30 minutes or more is associated with increased metabolic risk (Honda et al., 2016).



Prevalence

- Average adult sits 10 hours a day (Healy et al., 2008; Matthews et al., 2008).
- Employees who work full-time can spend over a third of their day, 5 days a week, within their **workplace** (National Center for Chronic Disease Prevention and Health Promotion, 2014).
- Desk-based office workers can spend **high amounts** of time sitting throughout the day, usually for long durations **without taking breaks** (Dunstan et al., 2013).



Tackling the Negative Health Effects

Reduce Daily
Sedentary
Time
(≤ 7 hours)

- Replace sedentary time with purposeful physical activity (PA) and physically demanding tasks.
- Break up our sitting time with short walking and/or standing breaks (1 to 3 minutes) (Healy et al., 2008).

Increase the
Frequency of
Breaks
(< 30 minutes
per bout of
sitting)

- Short walking and/or standing breaks are found to reduce some of the negative effects associated with prolonged sedentary behaviour (Owen, Healy, Matthews, & Dunstan, 2010; Healy et al., 2008; Hamilton et al., 2004; Bey, & Hamilton, 2003).
- Higher frequency in breaks has a beneficial effect on Cardio-metabolic health (Healy, G. N., Matthews, Dunstan, Winkler, & Owen, 2011).

Intervention

Intervention: Three- week multicomponent SB Trial

Location: Waterford Institute of Technology

Population sample: 12 staff members (≥ 15 hours of computer or seated work per week)

Aims & measurement tools:

1. Reduce SB during work hours.

- Occupational Sitting and Physical Activity Questionnaire (OSPAQ)

2. Reduce SB and Increase PA throughout the total workday.

- Waist-worn ActiGraph Accelerometer



Occupational Sitting and Physical Activity Questionnaire

1. How many hours did you work in the last 7 days? _____ hours

2. During the last 7 days, how many days were you at work? _____ days

Example:
Jane is an administrative officer. Her work day involves working on the computer at her desk, answering the phone, filing documents, photocopying, and some walking around the office. Jane would describe a typical work day in the last 7 days like this:

Sitting (including driving)	90 %
Standing	5 %
Walking	2 %
Heavy labour or physically demanding tasks	0 %
Total	100 %

3. How would you describe your typical work day in the last 7 days? (This involves only your work day, and does not include travel to and from work, or what you did in your leisure time)

(a) Sitting (including driving)	_____ %
(b) Standing	_____ %
(c) Walking	_____ %
(d) Heavy labour or physically demanding tasks	_____ %
Total	_____ %

Make sure this adds up to 100%

Scoring:
Minutes sitting at work per week = Item 1 * Item 3a
Minutes sitting per workday = (Item 1/Item 2) * Item 3a
Similar calculations can be done for standing, walking, and heavy labour.



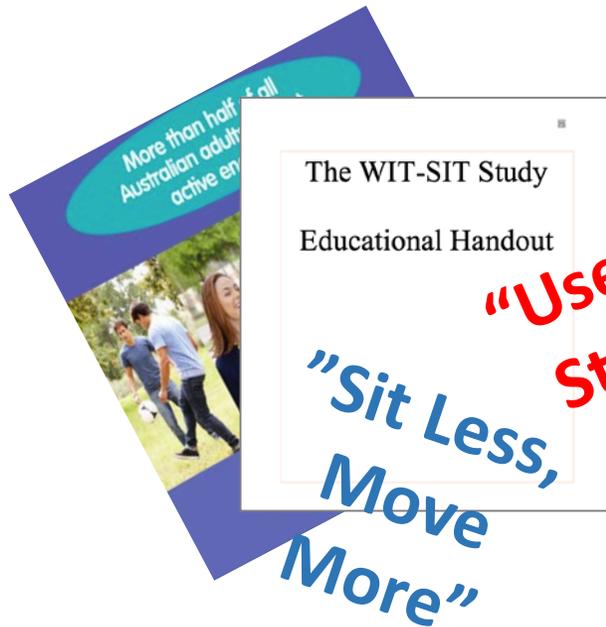
Intervention Components

Multicomponent

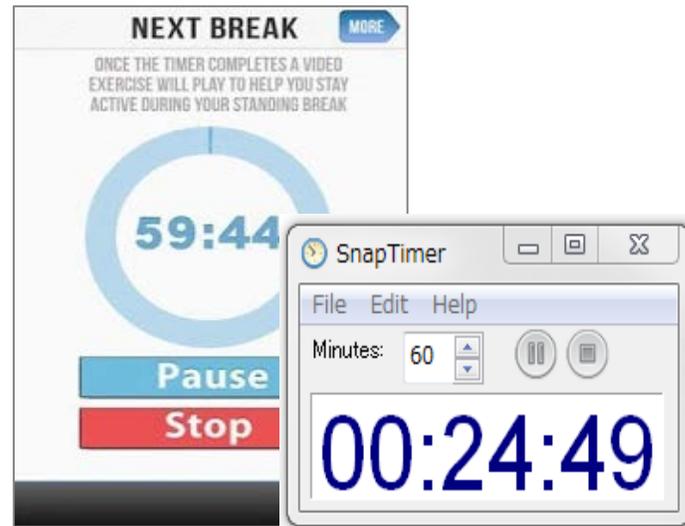
Education
Component

Computer/Mobile
Phone Prompting

Sit-Stand
Workstations



"Use The Stairs"



Findings

Objectively Measured SB & PA Levels

All participants;

- Regularly broke up sitting time in a healthy manner (<30 minutes).
- But sat for > 9 hours a day



**Need to further reduce
total sedentary time**

75% met PA guidelines in week 1, this reduced to 64% meeting guidelines by week 3.



Displacement effect??

Findings

Work Hours and Total Workday

- A significant reduction in subjectively measured sedentary time during work hours was observed (OSPAQ; P=.021)
- A trending towards significance in increased time spent standing was observed in the final week of the intervention.
- No significant changes in objectively measured total workday SB & PA were observed (Accelerometer).

Total Workday SB & PA

Limitations

- Waist-worn ActiGraph accelerometers find it difficult to distinguish between sitting and standing postures
- Small sample
- Short intervention period
- Low dosage of PA promoting and SB reducing conditions were provided for outside of the workplace.

Acceptability

Acceptability for all 3 components was high

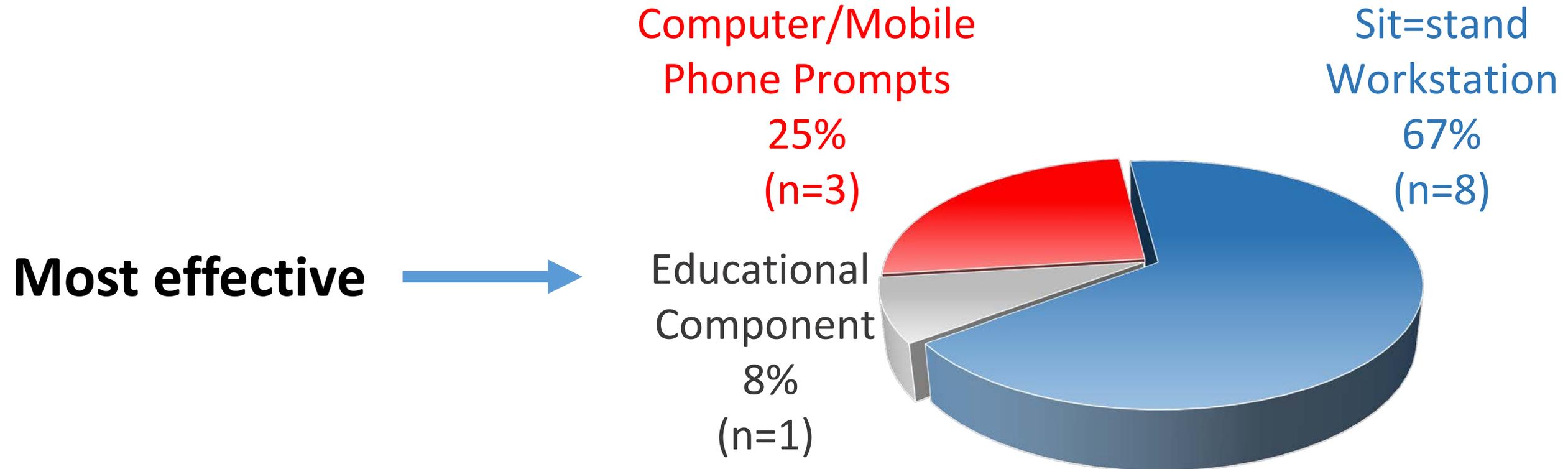
- 92% (n=11) thought the sit-stand workstation was not disruptive to co-workers
- 92% in favour of using the sit-stand workstation in the future
- 58% (n=7) need the sit-stand workstation to continue breaking up sitting time

Participants reported that the sit-stand workstation

- Alleviated muscle/joint pain
- Improved posture
- Improved concentration
- Increased alertness

Acceptability

A high number of participants reported all the components to be effective at encouraging them to sit less and move more



To stimulate autonomous motivation to break up sitting time providing education on the current evidence on SB is required (De Cocker et al., 2015).

Acceptability

Education component



Autonomous Motivation

- Over half of the participants (58%; N=7) reported that they now walk more during work hours.
- 67% (N=8) reported that they now break up sitting outside of work time
- Half of the participants (50%; N=6) reported that they used the stairs more often.

Conclusion

1. A significant reduction in sedentary time was observed during work hours.
2. The intervention was acceptable among the participants.
3. Sit-stand workstation reported as the most effective component at encouraging the participants to sit less and move more.

Results add strength to existing evidence

4. No significant changes in SB and PA were observed throughout the total workday.

Future interventions may need to provide higher doses of PA promoting and SB reducing conditions inside and especially outside of the workplace

What now?

The next step is to upscale the intervention and examine the effects on a wider workplace population



Thank You
Any Questions?