

Infrastructure Wellness and Productivity Initiative:

Sit-Stand Desk Trial Interim Results

Overview

Electric sit-stand desks are perceived by many as an expensive, novelty item for the modern office. Abundant research is available on the health, wellness and increased employee engagement benefits of the sit-stand desk. However, trying to identify and measure the productivity benefits of the sit-stand workstation has proven to be more difficult.

The Fletcher Construction Company Infrastructure Division have implemented a wellness and productivity initiative using five electric sit-stand desks in an effort to gauge productivity, wellness and engagement benefits. Although productivity is typically very difficult to measure within the workplace, for the purposes of this trial, anecdotal evidence was used.

High levels of sedentary time is resulting in weight gain, cardiovascular disease, damage to joints, diabetes and increased mortality. Some researchers have even stated that too much sitting is the new cancer.

Current research

Studies show that sit-stand work stations reduce the amount of time spent sitting and subsequent health improvements, although different studies produce varying degrees of reduction.

Key statistics from research include:

- ***Fewer sick days:*** A 2012 Vic Health Study estimated that between 15 and 22% of all sick leave in Australia could be attributed to problems related to prolonged sitting
- ***Improved productivity:*** One study found that productivity increased by around 10% by standing and working. This was measured using an app in a start-up incubator.
- ***Better health:*** A 2013 study by the BBC found that people could burn up to 4 kg of fat per year by getting off their chair and using their feet more.
- ***Increased life expectancy:*** A study in Britain found that by halving the number of hours we sit, we could increase our life expectancy by up to 2 years

Our trial

A call for interested participants was placed with 14 participants initially expressing interest and 5 chosen for the first round. A second round of five participants has been completed and a third round of five participants is underway. Once the sit-stand workstations were installed, further interest was shown and the trial continues to run with additional participants.

Participants were required to complete a sedentary lifestyle survey prior to starting the trial and then kept a daily log as to the activities they undertook at work and whether the workstation was in the up or down position in an attempt to identify whether there were any tasks which were considered easier or more productive to take place in a seated or standing position.

While the goal was not to stay standing for as long as possible each day, many participants predominantly stood for large parts of the day.

Two rounds of the trial have been completed with the following make up. A third round is currently underway and will be completed in late-March. Further rounds of the study will then be undertaken.

Round 1		
3 females, 2 males	2 with existing injuries (1 x hip replacement waiting list, 1 x scoliosis)	Managers x 3, Accounts x 2
Round 2		
2 males, 3 females	1 with existing injury (1 x back arthritis)	Managers x 1, Accounts x 3, Administration x 1
Round 3		
2 males, 3 females	No existing injuries	1 x accounts, 2 x administrators, 2 x managers

Existing sedentary lifestyle survey – Weekdays - snapshot

- 100% of participants prior to partaking in the study sat for at least 6 or more hours each weekday undertaking computer work or paper work.
- 55% of participants commuted for 2 or more hours in total each day with 27% commuting for at least 60 minutes a day and the remainder for less than 30 minutes
- Watching television (including DVD's) each day varied between three hours and none with the majority of participants being between 1 – 2 hours.
- Other sedentary activities including playing computer or video games, talking on the phone, reading books or participating in sedentary hobbies was generally limited to 30 minutes or less a day by participants.

Existing sedentary lifestyle survey – Weekends– snapshot

- 100% of participants sat doing computer or paperwork for 1 hour or less
- Time spent driving in vehicles generally increased with 55% spending at least two hours, 18% spending three hours or more and the remainder spending at least one hour each day.
- Watching television (including DVD's) increased significantly on the weekends with 1 respondent spending at least 4 hours on a typical day, and the majority of participants spending between 2 and three hours per day (64%).
- The time spent undertaking other sedentary activities such as book reading and hobbies increased to average approximately one hour per day.

In addition, most participants reported some degree of muscle fatigue or discomfort from their existing workstations prior to partaking in the trial. Most common ailments were backs and hands with the discomfort generally disappearing once they had moved away from the workstation.

Results

Participants did not spend 100% of their day standing up at their workstation and this was not the intention of the study as prolonged standing has its own health issues. Different participants spent the days in different ways with all participants choosing to sit down for lunch.

All participants started the day standing with only the occasional start to the day seated and this generally lasted only for the first few hours. No participant stopped using the workstation and all participants saw a massive increase in the time spent standing throughout their day.

On average, participants stood for approximately 72% of their day (approximately 5.75 hours). The variance between participants was 54% to 87%. Comparing this to the sedentary lifestyle survey where 100% of participants said they sat for at least 6 hours per day at their desk, this is a massive improvement.

Some patterns were observed in the data with most participants choosing to sit down for a few hours in the afternoon due to fatigue from standing. Emails and data entry were achieved mostly by standing up with some participants (including this one) finding report writing and thinking best achieved while seated.

Having the choice to sit or stand and the ability to vary this during the day very quickly was a key attribute to the success of this trial. Mechanical or wind up desks do not offer the same flexibility and it is anticipated that the seated mode would end up becoming the default position through the difficulty and time consumed in manually winding the desks.

All participants who had existing health issues (back or hip problems) reported vast improvements in the issue which clearly shows the advantages of sit-stand desks to posture and physical well-being.

Mental well-being and productivity was also tracked with all participants asked to tick as many boxes as they liked from the following commentary:

What specific benefits did you gain by altering between a seated and standing position?

- *Uncertain*
- *Less stressed*
- *More comfortable*
- *More productive*
- *More focussed*
- *Happier*
- *Energized*
- *Healthier*
- *None of the above*
- *Other (please specify)*

The most commonly ticked box was *more productive*, followed by *more energised*, *more focussed* and *more comfortable*. *Healthier*, *happier* and *less stressed* were also ticked regularly in that order.

Levels of engagement were also noticeably increased during the participation of the trial as fellow workers came to admire the desks and see how the participant was faring. There was a noticeable degree of disappointment and sadness when a participant's time was up on the trial and the desk had to go to a new member of the trial.

Additional comments from participants

"That is a shame [that my participation in the trial is coming to an end], but thank you anyway for the opportunity. Made a huge difference to my work day".

"There was a huge difference in my productivity and I was far more energised especially in the afternoons"

“I cannot believe why everyone does not have the opportunity to use an electric sit-stand desk. The payback in productivity, wellness and engagement is immense”.

“My back is seizing up again after sitting for too long. My knee has gotten bad again but that may not be due to going back to sitting. And I believe I was way more productive and more energetic”

“I find my lower back is starting to feel sore again by the end of the day since I have my old desk back. I feel more tired also towards the end of a day now”.

“I’d even be prepared to pay money as a contribution to getting an electric sit-stand desk”.

Cost benefit analysis

A standard 1800mm x 800mm desk ‘C-Leg’ desk costs approximately \$475 compared with an electric sit-stand desk of approximately \$700. It is recommended that all desks have a monitor arm rather than a monitor sitting on the desk. This allows for reduction in glare, correct positioning and reduces desk space requirements. As a result, the cost of a monitor arm is not considered to be an additional cost to the implementation of sit stand desks.

The pay-back from this \$225 difference in desks between the status quo and the electric sit-stand option is approximately 4.5 hours of work based on an average hourly rate at Head Office of \$60/hour. When each person who has an electric sit-stand desk takes one less sick day per year due to no longer having back issues or being more engaged, we see less ‘mental health’ days and the desks pay for themselves in less than a day. If the cost of the monitor arm is included (\$180), the desks still pay for themselves in less than a day of sick leave.

Across the Infrastructure business, an extra \$22,500 would be required to fit everyone out with a sit-stand desk (based on 100 desks).

All participants considered themselves to have an increase in productivity while using the electric sit-stand workstation. While difficult to quantify in dollar terms, the increased productivity would also result in a quick and large payback on the initial investment.

	Desk	Monitor arm	Total	Number of staff	Total Cost
Status Quo	\$ 475.00	\$ 180.00	\$ 655.00	100	\$ 65,500.00
Electric sit-stand desks	\$ 700.00	\$ 180.00	\$ 880.00	100	\$ 88,000.00

Where to from here?

The evidence is clear that electric sit-stand desks are not a fad. They are proven to result in increased levels of wellness, productivity and engagement. As an organisation who sees themselves as the employer of choice, the Penrose Campus redevelopment provides an exciting opportunity to provide all staff with an electric-sit stand desk to increase productivity and levels of engagement. While there is an additional cost, the time for payback on this investment is very short at approximately 4.5 hours per person.

In addition, the provision of sit-stand desks for staff is aligned with Pillar 1 of the Fletcher Building Operational Excellence programme.



- Reduce risk of occupational illness/disease
- Manage occupational illnesses
- Improve productivity & wellbeing (e.g. workplace factors, exercise, aging population, personal choice)

The implementation of electric sit-stand desks is also an excellent story for our new vision and values and fits well with **Be Bold, Better Every Day** and **Customer Leading**.

It is not about whether the electric sit-stand desk will be used or not, it is about giving people the **opportunity** to use them. At the M2PP project whose main office was previously a call centre and was already fitted with electric sit-stand desks, anecdotal evidence suggest that approximately 50% of staff use their sit-stand desks daily with at least 70% of staff using it at some stage during the week. In addition, a Christchurch based shipping company which installed sit-stand desks found that 90% of staff regularly used the sit-stand function.



A Christchurch based company with electric sit-stand desks

Summary

- Electric sit-stand desks are not significantly more expensive than standard desks (\$700 compared with \$475)
- Increased levels of engagement, productivity and wellness have occurred as a result of the Infrastructure division trial. This mirrors international research results.
- Electric desks rather than manual desks are critical to ensure the flexibility to vary the desk position depending on task or time of the day.
- The installation of electric sit-stand desks is aligned with Pillar 1 of FB's operational excellence programme and the values of Be Bold, Better Every Day and Customer Leading.

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