

Background

- Many negative health consequences to prolonged bouts of sedentary behavior, independent of those attributable to low physical activity, have been identified (Healy et al., 2007).
- Over 27% of the U.S. labor force works in low activity, sitting occupations, a number that has continued to increase with the rise of the desktop computer (Straker & Mathiassen, 2009).
- The increased prevalence of low activity occupations coupled with a decline in labor intensive occupations has contributed to an estimated decrease of 100 kcals of daily occupation-related energy expenditure amongst men and women in the U.S. over the past 50 years (Church, et al. 2011).
- LifeBalance Station® (LBS), a recumbent elliptical trainer paired with a height adjustable desk, is designed to allow desk workers to engage in low-intensity physical activity while sitting and completing usual desk/computer working tasks.
- To date, no study has tested the feasibility or acceptability of LBS for use amongst sedentary employees

Purpose

To determine the acceptability and feasibility of the LifeBalance Station® (LBS) for reducing sedentary time at work among full-time, desk dependent employees.

Methods

- Forty-five adults (42.9±10.5 years; body mass index=28.8 ± 7.4 kg/m², 73% female) working in full-time (8.3±0.6 hrs/week), sedentary (sitting 79.5% working time) jobs were recruited.
- Participants pedaled on the LBS for 30 minutes while performing their usual work tasks (typing, mousing, speaking on telephone).
- Participants then completed a 24-item, 5-point Likert scale (1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree) acceptability questionnaire.
- Medians and quartiles of the feasibility/acceptability data were calculated and are presented in Table 1.
- Participants also answered two questions about their perceived long term use of LBS if provided access to one (Figure 3)
- Thematic responses to potential limitations and improvements to LBS were recorded and are presented in Table 2.
- Participants were compensated with a \$10 gift card for completing the study.

Results

Figure 1. LifeBalance Station use options and display monitor.



Table 1. Likert scale responses ((1=Strongly Disagree; 5=Strongly Agree) to feasibility/acceptability questions following use of LBS (N=45).

Do you agree with the following statement?	Q1	Median	Q3
LBS was easy to use.	4.0	5.0	5.0
LBS could easily be used in the typical office work setting.	4.0	5.0	5.0
LBS was too noisy.	1.0	1.0	2.0
I would use LBS as an alternative to my normal exercise routine.	2.0	3.0	4.0
I would use LBS in addition to my normal exercise routine.	4.0	4.0	5.0
I would feel comfortable using LBS in the presence of others at my work	4.0	5.0	5.0
My work-related productivity decreased while using LBS.	1.0	2.0	3.0
The quality of my work decreased while using LBS.	1.0	2.0	3.0
I felt more focused on my work while using LBS.	2.3	3.0	4.0
I could maintain a professional telephone conversation while using LBS.	4.0	4.0	5.0
I could type on a keyboard comfortably while using LBS.	4.0	4.0	5.0
I could use a computer mouse comfortably while using LBS.	4.0	4.5	5.0
I had more back pain as a result of using LBS.	1.0	1.0	2.0
I had more joint (hip or knee) pain as a result of using LBS.	1.0	1.0	2.0
I would be less sedentary at work if I had access LBS at work.	4.0	5.0	5.0
I believe my health would improve if provided LBS by my employer.	4.0	5.0	5.0
I pedaled at a speed/intensity that I could maintain for several hours.	4.0	4.0	5.0

Table 2. Thematic responses to: (1) What limitations (if any) would prevent you from using LBS at work? (2) What improvements (if any) would you like to see made to the LifeBalance Station?

Limitations (N=42)		Improvements (N=38)	
Space Issues	33.3%	None	47.3%
Perspiration	11.9%	Comfort	36.8%
Cost	7.1%	Allow Higher Intensity	7.9%

Conclusions

- These findings suggest participants found LBS as an acceptable/feasible option for use in the sedentary, desk/computer work environment.
- Most participants (96%) reported they would use LBS on a daily basis if provided access by their employer in their private office.
- More than half of participants (51%) reported they would use LBS at least 2-3 times/week if provided access in a public kiosk setting at work.
- 'Space issues' was the most often reported limitation to LBS while 'comfort' was the most often reported suggested improvement from users.
- With sedentary occupations on the rise, options for reducing sedentary working time are needed.
- Future studies on short and long term impact of LBS use on physical, mental health and work performance are warranted.