Can We Reduce Prolonged Sitting? Feasibility of a Tactile Vibration Prompt To Initiate Movement

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Prolonged sitting behaviors are associated with an increased risk for cardiovascular disease, regardless of overall physical activity level. As such, there is a need for novel strategies to reduce prolonged sitting behavior. New activity monitoring devices are now capable of accurately monitoring sitting and can provide a tactile vibration prompt (TVP) to encourage users to stand/walk during bouts of prolonged sitting. In order to better inform future interventions there is a need to understand how individuals adhere to a TVP program. **PURPOSE:** The purpose of this study was to measure adherence rates to a TVP-based intervention in an exceedingly sedentary population. **METHODS:** Fourteen healthy adults who screened via online survey for self-reported sitting behaviors ≥7 hrs/day typically in bouts ≥30 min were eligible. Participants wore a thigh-based accelerometer with a TVP feature for seven days. The TVP vibrated when 30 min of consecutive sitting occurred. Following the TVP, participants were instructed to walk or stand for ≥1 min. **RESULTS:** Of the fourteen participants who enrolled in the study, two (14.2%) dropped out due to intolerability of the TVP intervention. Among the twelve participants who completed the study, the average number of TVPs per day was 5.6 (SE=0.6). Overall, adherence rates to the TVP intervention were moderate (M = 42.6%, SE = 7.4%, range=7.3-85.4%). The mean adherence in the morning, afternoon, and evening were 46.0% (SE=8.6%), 40.3% (SE=8.1%), and 49.7% (SE=8.2%), respectively. The mean adherence at work, outside of work, on weekdays, and on the weekend was 40.8% (SE=9.2%), 42.9% (SE=7.5%), 43.3% (SE=8.2%), and 43.9% (SE=9.2%), respectively. No significant difference was found for adherence rates by time of day (morning vs. afternoon: p=0.44, morning vs. evening: p=0.63, afternoon vs. evening: p=0.19), type of day (weekend vs. weekday: p=0.95), or work vs. non-work (p=0.74). **CONCLUSION:** Our findings indicate that participants showed only moderate adherence to a TVP regardless of context (work/non-work, time of day, weekend/weekday). These findings suggest a TVP as a stand-alone intervention tool may not be sufficient to dramatically reduce prolonged sitting and that further research is needed to elucidate factors for increasing adherence to a sedentary intervention.
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