Breaking Sedentary Behavior among Faculty and Staff: Are Acoustic and/or Vibrational Stimuli Effective?

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With the emergence of wearable technology, many commercially available activity monitors have some sort of sensory stimulus to gently remind people to move. Acoustic, vibrational, and a simultaneous combination of both are the considered preset stimuli for this study. The effectiveness of each type of stimulus to elicit a movement response is less known. **PURPOSE**: To objectively determine the differences in step count during individuals' 8hr workday for three work days using each type of stimulus. **METHODS**: Six (2M/4F, 48.3±9.6years, BMI 28.8±5.2kg/m^2) apparently healthy faculty and staff were recruited from The Pennsylvania State University, Berks. A wrist-worn Actigraph activity-tracker and a Vibralite watch with preset stimuli were deployed for 5 sessions (3day interval/session) to assess the stimulus elicited movement response. The Vibralite stimulus was preset to go off once/hr for 8hrs/day for 3 days. Participants wore Actigraph for the duration of the study (8hrs/day) for 5 sessions (3day interval/session): a) Vibralite without any stimuli (control); b) acoustic or vibrational, c) acoustic or vibrational (alternate to what was used in previous session) d) acoustic+vibrational, e) no Vibralite. **RESULTS**: Mean±SD; steps/8hr workday: Control 6031±2364 steps/day, Vibration 6210±2481 steps/day, Acoustic 5039±1466 steps/day, Combination 4826±1725 steps/day. An ANOVA test for the four groups (control, vibration, acoustic, and both) found no significant differences between the groups with p=0.5705. **CONCLUSION**: Although the vibrational stimulus was personally preferred by 67% of the cohort, our preliminary findings indicate that there were no significant differences between any of the stimuli to elicit movement responses. Further, our findings might help users customize their reminders to enhance user experience for effective health outcomes.