A Systematic Review of Physical Activity, Task Performance, and Injury Risk Considerations for Treadmill Workstations

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Treadmill workstations have been suggested to improve the amount of daily physical activity experienced by people in traditional sedentary occupations. **PURPOSE:** To identify gaps in prior research investigating the positive and negative impacts of treadmill workstations on employee performance. **METHODS:** A systematic search of the PubMed, EBSCO, and EMBASE literature databases was conducted and supplemented with a manual search of reference lists. Studies meeting predetermined selection criteria were rated by 3 raters on study design, data collection methods, selection bias, confounders and dropout rates (the GRADE approach to systematic reviews). Studies received a rating of "strong", "moderate" or "weak". **RESULTS:** Fifteen original studies investigating the effects of treadmill workstations on employee performance were identified and assessed for methodological quality. Of the original studies, five considered physical health effects, two considered the effects on cognitive performance, three considered the effect on motor skill performance, and five considered a combination of these aspects. Walking workstations were found to increase physical activity as measured by such means as footsteps per day, total active time, kcals per day, etc. Treadmill walking was found to have little effect on cognitive ability and a small but significant negative effect on motor skills. The quality assessment determined that out of the 15 studies reviewed none were "strong" and nine were "weak." Furthermore, no studies prioritized injury risks or associated legal implications that could arise from the use of treadmill workstations. **CONCLUSION:** Walking workstations improve physical activity levels with little significant effects on cognitive tasks, but a decrease in performance for motor tasks (such as typing and mouse clicking) may be experienced. More longitudinal studies are recommended to analyze the potential for overuse and traumatic injuries.