Replacing Sitting Time with Physical Activity Associated with Lower Risk of Death

For those who get the least amount of physical activity, replacing a half hour of sitting time with physical activity was associated with up to a nearly 50% reduction in mortality, according to a new study from the American Cancer Society. The study, appearing in the *American Journal of Preventive Medicine*, suggests that replacing modest amounts of sitting time with even light physical activity may have the potential to reduce the risk of premature death among less active adults.

Regular moderate- to vigorous-intensity physical activity (MVPA) is associated with a lower risk of cardiovascular disease; certain cancers; and premature death. In addition, the amount of time spent sedentary–distinct from physical inactivity—is associated with a higher risk of death and disease. That may be a result, at least in part, from sedentary behavior displacing physical activity.

Most previous studies have explored the potential effect of sedentary time without considering the physical activity it displaces, leaving a gap in the understanding of the issue. To explore further, investigators led by Erika Rees-Punia, PhD, analyzed self-reported sitting time, light physical activity, and moderate/vigorous physical activity among 92,541 participants in the ACS's Cancer Prevention Study II Nutrition Cohort.

The analysis reviewed sedentary time and activity levels over 14 years. It found among those who were the least active at baseline (≤17 minutes/day moderate to vigorous physical activity), replacing 30 minutes/day of sitting with light physical activity was associated with a 14% reduced risk of death, while replacement with moderate to vigorous physical activity was associated with a 45% reduced risk of death.

> *"These findings suggest that the replacement of modest amounts of sitting time with even light physical activity may have the potential to reduce the risk of premature death among less active adults,"*

The investigators found similar but smaller associations among moderately active participants: replacing a half hour of sedentary time with light physical activity was associated with a 6% reduction in mortality among those who were moderately active; replacing 30 minutes of sitting time with moderate to vigorous physical activity was associated with a 17% mortality reduction in this group. However, for the most active (>38 minutes/day of MVPA), substitution of sitting time with light physical activity or MVPA was not associated with a reduction in mortality risk.

Participants reporting more moderate/vigorous physical activity were leaner, had a higher educational attainment, and were less likely to be current smokers. For all participants, sitting time largely included watching TV (39%) and reading (20%).

The study did have some limitations: it relied on self-reported physical activity and sitting time; it lacked information on certain activities of daily living (e.g., cleaning, self-care, cooking) that are particularly common for older adults. And participants were predominately white and educated, so may not represent the general U.S. population.

"These findings suggest that the replacement of modest amounts of sitting time with even light physical activity may have the potential to reduce the risk of premature death among less active adults," conclude the authors.

Article: Mortality Risk Reductions for Replacing Sedentary Time with Physical Activities; Erika Rees-Punia, Ellen M. Evans, Michael D. Schmidt, Jennifer L. Gay, Charles E. Matthews, Susan M. Gapstur, Alpa V. Patel, PhD Am J Prev Med 2019 DOI: https://doi.org/10.1016/j.amepre.2018.12.006

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