

Relationship of Sedentary Behavior and Physical Activity to Cardiovascular Disease Risk

The following is a synopsis of “Relationship of Sedentary Behavior and Physical Activity to Incident Cardiovascular Disease: Results from the Women’s Health Initiative,” published in the June 2013 issue of the *Journal of the American College of Cardiology*.



What is already known on this topic?

Leisure-time physical inactivity is a major risk factor for cardiovascular disease (CVD), the leading cause of death for U.S. adults. Sedentary behaviors (e.g., sitting, television-watching, and other low-energy activities) also have been associated with increased risk for obesity, metabolic syndrome, type 2 diabetes, and CVD mortality. Sedentary behaviors may replace time spent in higher-intensity activities and contribute to lower levels of overall energy use. Even among individuals who meet current physical activity guidelines, high levels of sedentary activity might lead to negative health outcomes.

Globally, people are spending more and more time engaged in sedentary behaviors. This trend is likely to increase given the availability and popularity of computers, television, and other electronic devices that encourage physical inactivity as well as an increase in sedentary jobs and modes of transportation.

What is added by this document?

Few studies have examined the association between sitting time and risk for CVD, and few have looked beyond CVD mortality outcomes. The current analysis reviews CVD events (e.g., heart attack) and new cases of heart disease and stroke in relationship to sitting time and physical activity habits within a large sample. Examining the independent and joint effects of sedentary time and physical activity on the risk for CVD events in older women, the authors found that:

- ▶ Overall, a combination of low physical activity and prolonged sitting increases CVD risk.
- ▶ Extended sitting time was associated with increased risk for heart disease, stroke, and CVD, independent of physical activity levels. This association was strongest in women who were overweight or obese and women who were aged 70 years or older.
- ▶ Low levels of physical activity were strongly associated with increased CVD risk, independent of sitting time.

- ▶ Women who were physically inactive and spent 10 hours or more sitting each day were at 63% greater risk for CVD events compared with highly active women who spent 5 hours or fewer each day sitting.
- ▶ Women who met physical activity guidelines but sat for long periods each day were still at increased CVD risk.
- ▶ White women, women who attended college, and women with higher incomes were most likely to report sitting 10 hours or more per day.
- ▶ Smokers, women with a higher body mass index, and women who reported being depressed were more likely than others to spend prolonged periods sitting and were less likely to engage in physical activity.

What are the applications and implications for these findings?

Given the projected population growth of U.S. women aged 65 years and older and relatively low levels of physical activity for U.S. adults, these findings emphasize the importance of limiting time spent engaged in sedentary behaviors, particularly for overweight and obese individuals. Reducing sitting time among older women who are less active could possibly reduce risk for CVD, a major cause of morbidity in older women. Furthermore, these results indicate that older women may be more willing to change the amount of time they spend sitting than to increase levels of physical activity, especially for individuals who are unable or averse to exercise.

Resources

Centers for Disease Control and Prevention
Division for Heart Disease and Stroke Prevention
www.cdc.gov/dhdsp

Physical Activity
www.cdc.gov/physicalactivity

National Heart, Lung, and Blood Institute
Women's Health Initiative
www.nhlbi.nih.gov/whi

American Heart Association
Physical Activity
www.heart.org/HEARTORG/GettingHealthy/PhysicalActivity/Physical-Activity_UCM_001080_SubHomePage.jsp

Citations

Chomistek AK, Manson JE, Stefanick ML, Lu B, Sands-Lincoln M, Going SB, et al. Relationship of sedentary behavior and physical activity to incident cardiovascular disease. *J Am Coll Cardiol*. 2013;61:2346–53.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

National Center for Chronic Disease Prevention and Health Promotion
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