

Sedentary behavior linked to poor health in adults with severe obesity

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Sedentary behavior is associated with poor cardiovascular health and diabetes in adults with severe obesity, independent of how much exercise they perform, a University of Pittsburgh Graduate School of Public Health-led study showed for the first time.

The finding, published online and scheduled for the March issue of the journal *Preventive Medicine*, could be used to design and test programs for adults with severe obesity that emphasize reducing time spent sitting, rather than immediately working toward increased moderate- to vigorous-intensity [physical activity](#) or exercise, such as brisk walking. In the U.S., 15 percent of adults have severe obesity, placing them at high risk of cardiovascular and metabolic disease, and premature mortality.

"Adults with severe obesity often have difficulty following national guidelines to participate in at least 30 minutes per day of moderate- to vigorous-intensity physical activity for health benefits," said lead author Wendy C. King, Ph.D., associate professor in the Department of Epidemiology at Pitt Public Health. "Our findings suggest that replacing sedentary behavior, like watching television or sitting at the computer, with low-intensity physical activities, such as light housework or going for a casual stroll, may improve cardiometabolic health in this population."

In addition, Dr. King and her colleagues determined that defining "[sedentary time](#)" as 10 minutes or more without walking yielded stronger associations between sedentary behavior and cardiometabolic health

compared to allowing sedentary time to be as short as one minute, which has been the norm in the field.

"This is important because accurate assessment of sedentary behavior is crucial to being able to evaluate if and how this behavior is related to health outcomes. If our estimate of sedentary behavior is poor, we may not detect true associations," said Dr. King.

She and her colleagues followed 927 patients participating in the Longitudinal Assessment of Bariatric Surgery-2 , a prospective study of patients undergoing weight-loss surgery at one of 10 different hospitals across the U.S. For a one-week period before surgery, the research team measured the participants' activity—or lack of activity—using monitors that tracked the number of steps taken each minute.

For every hour per day participants spent in sedentary bouts of at least 10 minutes, their odds of having diabetes increased by 15 percent, metabolic syndrome by 12 percent and elevated blood pressure by 14 percent, and their waist circumference was a half inch larger, after adjusting for their sex, age, household income, smoking status, alcohol use, depressive symptoms, body mass index (BMI) and time spent in moderate- to vigorous-intensity physical activity.

"These findings indicate the importance of investigating sedentary behavior as a distinct [health](#) risk behavior, not simply lack of moderate- to vigorous-intensity physical activity, among adults with severe obesity," said Dr. King. "This ultimately may inform physical activity guidelines for this special population."

Future research is needed to determine whether replacing [sedentary behavior](#) with low-intensity physical activity is an effective approach to preventing and managing cardiovascular and metabolic diseases in adults with [severe obesity](#), and evaluate strategies to help this population make

such lifestyle changes.

Provided by University of Pittsburgh Schools of the Health Sciences

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