

Study bolsters link between heart disease, excessive sitting

March 5 2015

Sitting for many hours per day is associated with increased coronary artery calcification, a marker of subclinical heart disease that can increase the risk of a heart attack, according to research scheduled for presentation at the American College of Cardiology's 64th Annual Scientific Session in San Diego. Coronary artery disease is the most common type of heart disease and the leading cause of death in the United States.

The study found no association between [coronary artery calcification](#) and the amount of exercise a person gets, suggesting that too much sitting might have a greater impact than exercise on this particular measure of heart health. The results suggest that exercise may not entirely counteract the negative effects of a mostly sedentary lifestyle on [coronary artery calcium](#).

"It's clear that exercise is important to reduce your cardiovascular risk and improve your fitness level," said Jacquelyn Kulinski, M.D., assistant professor of cardiovascular medicine at the Medical College of Wisconsin and the study's lead author. "But this study suggests that reducing how much you sit every day may represent a more novel, companion strategy (in addition to exercise) to help reduce your [cardiovascular risk](#)."

The research comes on the heels of recent studies linking excess sitting with an increased risk for [cardiovascular disease](#), diabetes, cancer and early death. The phenomenon has been dubbed "sitting disease," though

it is a lifestyle risk factor and not a true medical condition.

This study offers a unique perspective on the effects of sedentary behavior because it links sitting with an early marker for [heart disease risk](#), laying the foundation for future studies that could investigate whether changing your habits could potentially reverse the damage before you develop full-blown heart disease.

Coronary [artery calcification](#), measured through a non-invasive CT heart scan, indicates the amount of calcium contained in plaques within the heart's arteries. Coronary artery disease occurs when such plaques accumulate over time, causing the arteries to narrow.

Analyzing heart scans and physical activity records of more than 2,000 adults living in Dallas, the researchers found each hour of sedentary time per day on average was associated with a 14 percent increase in [coronary artery](#) calcification burden. The association was independent of exercise activity and other traditional [heart disease](#) risk factors.

"I think the study offers a promising message. Reducing the amount of time you sit by even an hour or two a day could have a significant and positive impact on your future cardiovascular health," Kulinski said.

A particular strength of the study is that the researchers used a motion-tracking device called an accelerometer to measure how long participants were sedentary and how much they exercised, whereas most previous studies have relied on surveys.

"With surveys, there's more subjectivity," Kulinski said. "With this device, we're able to log activity levels minute-by-minute."

The results revealed participants sat for a little more than five hours per day on average, with a range of two to 12 hours. More sedentary

participants were more likely to be older, have a higher body mass index, and have diabetes or hypertension. The analysis accounted for these factors, as well as for income, marital status, smoking, cholesterol, and other demographic and health-related factors. People with known cardiovascular disease, such as a previous stroke or [heart attack](#), were excluded from the analysis.

"The lesson here is that it's really important to try to move as much as possible in your daily life; for example, take a walk during lunch, pace while talking on the phone, take the stairs instead of the elevator and use a pedometer to track your daily steps," Kulinski said. "And if you do have a very sedentary job, don't go home at night and sit in front of the TV for hours on end."

More information: The study, "Sedentary Behavior is Associated with Coronary Artery Calcification in the Dallas Heart Study," will be presented on March 15 at 9:30 a.m. PT/12:30 p.m. ET/4:30 p.m. UTC at the American College of Cardiology's 64th Annual Scientific Session in San Diego. The meeting runs March 14-16.

Provided by American College of Cardiology

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