Exercise's Stroke Reduction Holds Up With Accelerometer Data

— Inactivity, especially for long periods, was associated with a higher risk for stroke

by Michal Ruprecht, Editorial Intern, MedPage Today
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People who fit in roughly half an hour of exercise a day tended to be at lower risk of stroke, according to a cohort study adding to the evidence that physical activity is protective for cardiovascular health.

Based on accelerometer measurements, the most sedentary individuals in the REGARDS study cohort carried a 44% increased risk for stroke that approached statistical significance (HR 1.44 for top tertile vs bottom tertile individuals by sedentary time, 95% CI 0.99-2.07),

reported Steven Hooker, PhD, dean of San Diego State University's College of Health and Human Services, California, and colleagues.

For every hour of inactivity, the risk for stroke rose in a linear fashion (HR 1.14, 95% CI 1.02-1.28). Long periods of sedentary time were also tied to incident stroke, according to the paper by Hooker's group in *JAMA Network Open*.

"Our results add to a growing amount of scientific evidence demonstrating the health hazards of prolonged sitting," said study coauthor Keith Diaz, PhD, exercise physiologist at Columbia University in New York City. "We can now add stroke to the growing list of health conditions that prolonged sitting can increase the risk for, which also includes cancer, heart disease, and early death."

"If you have a job or lifestyle where you sit for most of your day, we recommend taking movement breaks often," he told *MedPage Today*. "This one behavior could reduce your risk of stroke."

Previous studies already linked exercise with a consistently reduced risk of stroke (albeit based on self-reported physical activity measures, a method subject to recall bias and overestimation of total physical activity). And when strokes do occur, they were milder in those who regularly exercised.

Hooker's group reported that it took 25 minutes of objectively measured daily moderate- to vigorous-intensity physical activity to see a significant reduction in strokes. This is in line with the current activity guidelines from the CDC, which suggest that adults exercise for about 25 minutes per day (150 minutes per week).

However, study authors suggested that people may still be at lower risk for stroke if they exercise for less than 25 minutes. Because of this discrepancy, they wrote that more work needs to be done to determine whether the threshold for exercise can be lowered.

For people who are not capable or not willing to engage in moderate-to-vigorous exercise at the recommended levels, the authors found that low-intensity exercise, expressed as a continuous variable, was still associated with less stroke.

"However, caution is advised because the amount of accumulated daily time spent in [light-intensity physical activity] that was associated with reduced stroke risk in this cohort was 4 to 5 hours. This amount is not trivial and is likely only to be achieved with concerted effort," Hooker and colleagues wrote.

For their study, the authors collected data on more than 7,600 participants of the REGARDS study.

The study cohort had an average age of about 63, and 54.5% were women. More than two-thirds were white. Roughly one in three resided in the U.S. stroke belt known for high rates of stroke mortality; 21.5% were from the stroke buckle, a region within the stroke belt that is associated with even higher stroke deaths.

The investigators followed participants for about 7.4 years and found 286 stroke cases during the study period. More than 85% of these were ischemic strokes.

Accelerometer measurements separated individuals into sedentary, light-, and high-intensity exercise groups. Hooker and colleagues found that longer periods of exercise in both intensity groups were associated with a lower risk for stroke.

A limitation of the study was that the accelerometer did not measure the types of exercises performed by the participants.

"The accelerometer cannot distinguish between postures (such as sitting vs standing); thus, we relied on an intensity-only definition of sedentary behavior. Therefore, sedentary time might be overestimated because some standing may also have been included," the authors wrote.

Michal Ruprecht is a medical student based in Michigan. He is a former reporting intern for MedPage Today. Follow

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Disclosures

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Hooker reported no conflicts of interest.

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