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Study highlights:

- In a nearly 12-year follow-up study, women who walked two or more hours per week had a significantly lower risk of stroke than women who didn't walk.
- Women who reportedly walked at a brisk pace also had a significantly lower risk of stroke than non-walkers.

American Heart Association rapid access journal report:

Walking associated with lower stroke risk in women

DALLAS, April 6, 2010 — Women who walked two or more hours a week or who usually walked at a brisk pace (3 miles per hour or faster) had a significantly lower risk of stroke than women who didn't walk, according to a large, long-term study reported in *Stroke: Journal of the American Heart Association*.

The risks were lower for total stroke, clot-related (ischemic) stroke and bleeding (hemorrhagic) stroke, researchers said.

Compared to women who didn't walk:

- Women who usually walked at a brisk pace had a 37 percent lower risk of any type of stroke and those who walked two or more hours a week had a 30 percent lower risk of any type of stroke.
- Women who typically walked at a brisk pace had a 68 percent lower risk of hemorrhagic stroke and those who walked two or more hours a week had a 57 percent lower risk of hemorrhagic stroke.
- Women who usually walked at a brisk pace had a 25 percent lower risk of ischemic stroke and those who usually walked more than two hours a week had a 21 percent lower risk of ischemic stroke — both “borderline significant,” according to researchers.

“Physical activity, including regular walking, is an important modifiable behavior for stroke prevention,” said Jacob R. Sattelmair, M.Sc., lead author and doctoral candidate in epidemiology at Harvard School of Public Health in Boston, Mass. “Physical activity is essential to promoting cardiovascular health and reducing risk of cardiovascular disease, and walking is one way of achieving physical activity.”

More physically active people generally have a lower risk of stroke than the least active, with more-active persons having a 25 percent to 30 percent lower risk for all strokes, according to previous studies.

“Though the exact relationship among different types of physical activity and different stroke

subtypes remains unclear, the results of this specific study indicate that walking, in particular, is associated with lower risk of stroke,” Sattelmair said.

Researchers followed 39,315 U.S. female health professionals (average age 54, predominantly white) participating in the Women’s Health Study. Every two to three years, participants reported their leisure-time physical activity during the past year — specifically time spent walking or hiking, jogging, running, biking, doing aerobic exercise/aerobic dance, using exercise machines, playing tennis/squash/racquetball, swimming, doing yoga and stretching/toning. No household, occupational activity or sedentary behaviors were assessed.

They also reported their usual walking pace as no walking, casual (about 2 mph), normal (2–2.9 mph), brisk (3–3.9 mph) or very brisk (4 mph).

Sattelmair noted that walking pace can be assessed objectively or in terms of the level of exertion, using a heart rate monitor, self-perceived exertion, “or a crude estimate such as the ‘talk test’ – wherein, for a brisk pace, you should be able to talk but not able to sing. If you cannot talk, slow down a bit. If you can sing, walk a bit faster.”

During 11.9 years of follow-up, 579 women had a stroke (473 were ischemic, 102 were hemorrhagic and four were of unknown type).

The women who were most active in their leisure time activities were 17 percent less likely to have any type of stroke compared to the least-active women.

Researchers didn’t find a link between vigorous activity and reduced stroke risk. The reason is unclear, but they suspect that too few women reported vigorous activity in the study to get an accurate picture and/or that moderate-intensity activity may be more effective at lowering blood pressure as suggested by some previous research.

Stroke is the third leading cause of death and a leading cause of serious disability in the United States, so it’s important to identify modifiable risk factors for primary prevention, Sattelmair said.

An inverse association between physical activity and stroke risk is consistent across genders. But there tend to be differences between men and women regarding stroke risk and physical activity patterns.

“The exact relation between walking and stroke risk identified in this study is not directly generalizable to men,” Sattelmair said. “In previous studies, the relation between walking and stroke risk among men has been inconsistent.”

The study is limited because it was observational and physical activity was self-reported. But strengths are that it was large and long-term with detailed information on physical activity, he said.

Further study is needed on more hemorrhagic strokes and with more ethnically diverse women, Sattelmair said.

The American Heart Association recommends for substantial health benefits, adults should do at least 150 minutes a week of moderate-intensity or 75 minutes a week of vigorous-intensity aerobic physical activity or a combination.

Co-authors are: Tobias Kurth, M.D., Sc.D.; Julie E. Buring, Sc.D.; and I-Min Lee, M.B.B.S., Sc.D. Individual author disclosures are on the manuscript.

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Editor's note: The American Heart Association's Start! initiative is celebrating National Start! Walking Day on Wednesday, April 7 by encouraging all Americans to grab their sneakers and get moving! Walking for as little as 30 minutes a day will improve circulation, lower cholesterol and blood pressure, and promote weight loss. Find a local Start! Walking Path near you by visiting www.startwalkingnow.org.

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Additional Resources:

- For more information on physical activity, click here: [Exercise and Fitness](#)
- For more information on stroke, visit the American Stroke Association Web site: strokeassociation.org.
- **Downloadable video stock footage** and animation which includes physical activity may be found at <http://americanheart.mediaroom.com/> then click "multimedia."