

Moderate Level Of Aerobic Fitness May Lower Stroke Risk

ScienceDaily — A moderate level of aerobic fitness can significantly reduce stroke risk for men and women, according to a large, long-running study presented at the American Stroke Association's International Stroke Conference 2008.

“Fitness has a protective effect regardless of the presence or absence of other stroke risk factors, including family history of cardiovascular disease, diabetes, high blood pressure, elevated cholesterol levels and high body mass index,” said Steven Hooker, Ph.D., the study's lead author.

“This study is the first to suggest that there may be a significant independent association between cardiorespiratory fitness (CRF) and fatal and nonfatal stroke in men and nonfatal stroke in women,” said Hooker, director of the Prevention Research Center at the University of South Carolina Arnold School of Public Health, Columbia, S.C.

About 780,000 U.S. adults suffer a stroke each year, and stroke is a leading cause of serious, long-term disability in the United States, according to the American Stroke Association. It's often fatal, claiming about 150,000 lives and ranking as the No. 3 cause of death. Researchers analyzed data on more than 60,000 people — 46,405 men and 15,282 women who participated in the Aerobics Center Longitudinal Study between 1970 and 2001 at the Cooper Aerobics Center in Dallas. The participants, ages 18 to 100 and free of known cardiovascular disease when they entered the study, were followed for an average of 18 years. During that time, 863 people — 692 men and 171 women — had strokes.

Upon entering the study, each participant took a test to measure CRF in which they walked on a treadmill at increasing grade and/or speed until they reached their maximal aerobic capacity.

Although many previous studies have looked at an association between self-reported physical activities and cardiovascular disease, few have used direct measurements such as the CRF measure used in this study, Hooker said. This is also the first study to explore the association between CRF and risk of stroke in women.

Men in the top quartile (25 percent) of CRF level had a 40 percent lower relative risk of stroke compared to men in the lowest quartile. That inverse relationship remained after adjusting for other factors such as smoking, alcohol intake, family history of

cardiovascular disease, body mass index (an estimation of body fatness), high blood pressure, diabetes and high cholesterol levels, he said.

Among women, those in the higher CRF level had a 43 percent lower relative risk than those in the lowest fitness level.

The overall stroke risk dropped substantially at the moderate CRF level, with the protective effect persisting nearly unchanged through higher fitness levels. That corresponds to 30 minutes or more of brisk walking, or an equivalent aerobic activity, five days a week.

“We found that a low-to-moderate amount of aerobic fitness for men and women across the whole adult age spectrum would be enough to substantially reduce stroke risk,” Hooker said.

“Although stroke death rates have declined over the past few decades, the public health burden of stroke-related disabilities continues to be large and may even increase in coming years, as the population ages.”

Physical activity is a major modifiable cardiovascular disease risk factor. Increasing the nation’s CRF through regular physical activity could be a vital weapon to lower the incidence of stroke in men and women, he said.

One of the study’s limitations is that most of the participants were white, well-educated and middle-upper income, he said. He recommended that data be collected from other populations.

Co-authors include Xuemei Sui, M.D.; Natalie Colabianchi, Ph.D.; John Vena, Ph.D.; James Laditka, Ph.D.; Michael J. LaMonte, Ph.D.; and Steven N. Blair, P.E.D. The study was supported by National Institutes of Health grants and the Communities Foundation of Texas.

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