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Exercise and Vitamin D Better Together for Heart Health

A new study published in Journal of Clinical Endocrinology & Metabolism provides further evidence that exercise and adequate vitamin D can reduce the risk of heart attacks and strokes. Data of more than 10,000 American adults for nearly 20 years were analysed by researchers to investigate the relationship between these two health factors and their joint role in heart health.

See Also: Study: Vitamin D Protects Against Cold & Flu

Johns Hopkins researchers observed a positive and direct relationship between exercise and vitamin D levels in the blood, which may provide evidence that exercise may boost vitamin D stores. They also found that the two factors working together seemed to somehow do more than either factor alone to protect the cardiovascular system. As the study is an observational one, researchers say that long-term, carefully controlled clinical trials would be needed to establish evidence for cause and effect.

The researchers reviewed data previously gathered from the federally funded Atherosclerosis Risk in Communities study beginning in 1987 and collected from 10,342 participants initially free of heart or vascular disease. The participants were an average age of 54 at the start of the study and 57 percent were women. Twenty-one percent were African-American, with the remaining participants identifying as white.

In the first visit between 1987 and 1989, participants self-reported their exercise levels, which were compared to the American Heart Association recommendations of more than 150 minutes per week of moderate intensity exercise or 75 minutes per week or more of vigorous intensity. Researchers used the information to classify each participant's exercise level as adequate, intermediate or poor. About 60 percent of the participants had inadequate exercise in the poor or intermediate categories.

Reviewing data from the second study visit by each participant between 1990 and 1992, the researchers measured vitamin D levels in the blood by detecting the amount of 25-hydroxyvitamin D. Anyone with less than 20 nanograms per millilitre (NPM) of 25-hydroxyvitamin D was considered deficient for vitamin D, and levels above 20 NPM were considered adequate. Thirty percent of participants had inadequate vitamin D levels.

The results showed a direct relationship between exercise and vitamin D levels, such that the more one exercised, the higher their vitamin D levels seemed. For example, people with adequate exercise had an average 25-hydroxyvitamin D level of 26.6 NPM, those with intermediate exercise had 24.4 NPM, and those with poor exercise had 22.7 NPM. Those meeting recommended levels of exercise at visit 1 had a 31 percent lower risk of being vitamin D deficient at visit 2.

In addition, the most active participants with the highest vitamin D levels had the lowest risk for future cardiovascular disease. After adjusting the data for age, sex, smoking, alcohol use, blood pressure and other factors, the researchers found that those people who met both the recommended activity levels and had vitamin D levels above 20 NPM experienced about a 23 percent less chance of having an adverse cardiovascular event than those people with poor physical activity who were deficient for vitamin D. On the other hand, people who had adequate exercise but were vitamin D deficient didn't have a reduced risk of an adverse event. In other words, the combined benefit of having adequate vitamin D and exercise levels was better than either health factor alone.

"In our study, both failure to meet the recommended physical activity levels and having vitamin D deficiency were very common," says Erin Michos, MD, MHS, associate director of preventive cardiology and associate professor of medicine at the Ciccarone Center for the Prevention of Heart Disease at the Johns Hopkins University School of Medicine. "The bottom line is we need to encourage people to move more in the name of heart health." Exposure to a few minutes a day of sunlight in non-winter seasons, eating a well-balanced meal that includes oily fish such as salmon, along with fortified foods like cereal and milk, may be enough to provide adequate levels of vitamin D for most adults, Michos adds.

Source: Johns Hopkins Medicine
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