

New study links excessive amounts of vitamin D to onset of atrial fibrillation

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While previous studies have linked vitamin D deficiency to an increased risk for cardiovascular disease, new research at the Intermountain Medical Center Heart Institute shows that too much vitamin D can lead to the onset of a dangerous heart condition known as atrial fibrillation.

Researchers at Intermountain Medical Center, the flagship facility for the Intermountain Healthcare system, studied more than 132,000 patients and found the risk of developing [atrial fibrillation](#) was two and a half times greater in those with excess levels of vitamin D compared to patients with normal levels.

Results of the study will be presented on Wednesday, Nov. 16, at the [American Heart Association](#) Scientific Sessions in Orlando, Fla.

Atrial fibrillation is a condition in which the heart's upper chambers quiver instead of beating rhythmically, which can cause blood to pool and clot. Atrial fibrillation has been linked to an increased risk of stroke, [heart failure](#), [heart](#) attack, dementia and even Alzheimer's disease.

T. Jared Bunch, MD, a heart rhythm specialist at the Intermountain Medical Center Heart Institute and lead investigator on the study, says the findings are significant because so many Americans use vitamin supplements to promote their health.

"There are both benefits and harm to taking [vitamin supplements](#) of all kinds," says Dr. Bunch. "Our goal is to determine a safe dose and usage

range so patients can understand what amount is healthy, and what amount may be toxic."

To determine if there is a correlation between too much vitamin D and increased heart risk, Dr. Bunch and his colleagues examined blood tests from 132,000 patients in the Intermountain Healthcare database at Intermountain Medical Center.

Patients did not have any known history of atrial fibrillation, and all had previously received a vitamin D assessment as part of their routine care. Patients were then placed into categories to compare levels of vitamin D: low (less than 20 nanograms per deciliter), low/normal (21-40 ng/dl), normal (41-80 ng/dl), high/normal (81-100 ng/dl), and excess (more than 100).

Patients with vitamin D levels in the normal range were compared with other groups to assess their risk of developing atrial fibrillation. In patients with low, low-normal, normal and high-normal levels of vitamin D there was no increased risk of atrial fibrillation. However, in those with excess levels of vitamin D there was a significant [increased risk](#) of atrial fibrillation. Atrial fibrillation risk was two and a half times greater in patients with excess levels of vitamin D compared to those with normal levels.

The Institute of Medicine currently advises that healthy adults should be able to take as much as 4000 IU (international units) of vitamin D daily. But the reality is that doctors don't yet know how much vitamin D causes toxicity, which is why Dr. Bunch says communication between a patient and their healthcare provider is critical.

Vitamin D, which is synthesized by the body with exposure to sun, is used to regulate calcium and phosphate concentrations in the blood and is essential for growth and development, cellular health, and bone

remodeling, a process where mature bone tissue is removed from the skeleton and new bone tissue is formed.

In regions where sun exposure may be limited, supplemental vitamin D may be required to maintain normal blood levels. The exact amount of vitamin D to achieve normal levels is unknown and usage varies in different regions and communities, which can cause problems, say the researchers.

Dr. Bunch stresses that patients need to tell their doctors about all of the vitamins and supplements they take, as well as all medications, in order to ensure they get the best care possible. He says this research also suggests that checking blood levels of vitamin D in patients that develop atrial fibrillation may help uncover the cause of the abnormal heart rhythm disorder.

"Patients don't think of vitamins and supplements as drugs," says Dr. Bunch. "But any vitamin or supplement that is touted as 'healing' or 'natural' is a drug and will have effects that are both beneficial and harmful. Just like any therapy, vitamins need to be taken for the right reasons and at the right doses."

More than two millions Americans suffer from atrial fibrillation. The risk of developing atrial fibrillation increases as people age. About five percent of people over the age of 80 will develop the heart disorder during their lifetime.

Provided by Intermountain Medical Center

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