

New study links vitamin D deficiency to cardiovascular disease and death

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While mothers have known that feeding their kids milk builds strong bones, a new study by researchers at the Heart Institute at Intermountain Medical Center in Salt Lake City suggests that Vitamin D contributes to a strong and healthy heart as well - and that inadequate levels of the vitamin may significantly increase a person's risk of stroke, heart disease, and death, even among people who've never had heart disease.

For more than a year, the Intermountain Medical Center research team followed 27,686 patients who were 50 years of age or older with no prior history of [cardiovascular disease](#). The participants had their blood [Vitamin D](#) levels tested during routine clinical care. The patients were divided into three groups based on their Vitamin D levels - normal (over 30 nanograms per milliliter), low (15-30 ng/ml), or very low (less than 15 ng/ml). The patients were then followed to see if they developed some form of heart disease.

Researchers found that patients with very low levels of Vitamin D were 77 percent more likely to die, 45 percent more likely to develop [coronary artery disease](#), and 78 percent were more likely to have a stroke than patients with normal levels. Patients with very low levels of Vitamin D were also twice as likely to develop heart failure than those with normal Vitamin D levels.

Findings from the study will be presented at the American Heart Association's Scientific Conference on Monday, Nov. 16 in Orlando, Florida.

"This was a unique study because the association between Vitamin D deficiency and cardiovascular disease has not been well-established," says Brent Muhlestein, MD, director of cardiovascular research of the Heart Institute at Intermountain Medical Center and one of the authors of the new study. "Its conclusions about how we can prevent disease and provide treatment may ultimately help us save more lives."

A wealth of research has already shown that Vitamin D is involved in the body's regulation of [calcium](#), which strengthens bones — and as a result, its deficiency is associated with musculoskeletal disorders. Recently, studies have also linked Vitamin D to the regulation of many other bodily functions including blood pressure, glucose control, and inflammation, all of which are important risk factors related to heart disease. From these results, scientists have postulated that Vitamin D deficiency may also be linked to heart disease itself.

"Utah's population gave us a unique pool of patients whose health histories are different than patients in previous studies," Dr. Muhlestein says. "For example, because of Utah's low use of tobacco and alcohol, we were able to narrow the focus of the study to the effects of Vitamin D on the cardiovascular system."

The results were quite surprising and very important, says Heidi May, PhD, MS, an epidemiologist with the Intermountain Medical Center research team and one of the study authors.

"We concluded that among patients 50 years of age or older, even a moderate deficiency of Vitamin D levels was associated with developing coronary artery disease, [heart failure](#), stroke, and death," she says. "This is important because Vitamin D deficiency is easily treated. If increasing levels of Vitamin D can decrease some risk associated with these cardiovascular diseases, it could have a significant public health impact. When you consider that cardiovascular disease is the leading cause of

death in America, you understand how this research can help improve the length and quality of people's lives."

Because the study was only observational, definitive links between Vitamin D deficiency and heart disease could not be assigned — but the findings create an impetus for further study, says Dr. Muhlestein.

"We believe the findings are important enough to now justify randomized treatment trials of supplementation in patients with [Vitamin D deficiency](#) to determine for sure whether it can reduce the risk of heart disease," he says.

Source: Intermountain Medical Center

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