

Low levels of two components of vitamin D can help predict risk of heart attack

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Low levels of total vitamin D and bioavailable vitamin D can help predict a person's risk of major adverse cardiovascular events such as a heart attack, stroke, heart failure or death, according to a first-of-its-kind study from the Intermountain Medical Center Heart Institute in Salt Lake City.

"Our study found that low levels of both total [vitamin D](#) and bioavailable vitamin D appear to be associated with poor cardiovascular outcomes," said lead author Heidi May, PhD, MSPH, a cardiovascular epidemiologist with the Intermountain Medical Center Heart Institute.

The study evaluated 4,200 participants between the ages of 52 and 76. A quarter of the study participants were diabetic and 70 percent had coronary artery disease.

Clinicians tested participants' vitamin D metabolite levels, which included components of vitamin D that are formed during metabolism, to determine the metabolites' association with future major adverse [cardiovascular events](#). Bioavailable vitamin D results from vitamin D being absorbed into the blood stream without binding to surrounding proteins.

During metabolism, only 10-15 percent of total vitamin D is available in the body to act on target cells, as most are bound to vitamin D binding proteins. Therefore, evaluating whether the proportion of vitamin D that can be used may be important, as only unbound vitamin D, such as

bioavailable vitamin D, is available to act on target cells.

The study tested many different types of vitamin D, but found that measuring total vitamin D and bioavailable vitamin D were the most accurate in predicting harmful cardiovascular events.

"This study is the first research that evaluates the association of vitamin D metabolites with cardiovascular events," said Dr. May. "And evaluating usable vitamin D could mean the difference on the amount of vitamin D prescribed, if it's prescribed at all."

The study expands on the results of several observational studies, including some performed at Intermountain Healthcare, but researchers recommend conducting more studies on non-Caucasian populations because past research shows vitamin D metabolites affect Caucasian and non-Caucasian races differently.

Results of the study will be presented at the American College of Cardiology Scientific Sessions in Chicago, on Saturday, April 2, at 2:45 p.m., CST.

Provided by Intermountain Medical Center

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