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## Vitamin D backed to boost diabetic heart disease risk

By Nathan Gray , 19-Nov-2012

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**Low levels of vitamin D may be responsible for the increased risk of heart disease that comes from diabetic people developing clogged up arteries, according to new research.**



The study – published in the *Journal of Biological Chemistry* – reports that diabetic people who receive good levels of vitamin D are less likely to develop atherosclerotic plaques that clog up the blood vessels, while people who with low levels of the sunshine vitamin cause are at higher risk of developing clogged up blood vessels.

Led by Carlos Bernal-Mizrachi from Washington University School of Medicine, USA, the research team suggest that their findings suggest low vitamin D levels may be to blame for the higher risk of heart disease often seen in people with diabetes.

"As obesity rates rise, we expect even more people will develop diabetes," said Bernal-Mizrachi. "Those patients are more likely to experience heart problems due to an increase in vascular inflammation, so we have been investigating why this occurs."

The researchers explained that the new study builds on previous findings from the group by not only suggesting that vitamin D is implicated in the risk of heart disease for diabetic people, but also that when vitamin D levels are low, a particular class of white blood cells known as macrophages are more likely to adhere to cells in the walls of blood vessels.

As a result, the authors suggest that vitamin D levels work to influence these immune to either keep arteries clear or to clog them.

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### Study details

Bernal-Mizrachi and his team investigated the vitamin D levels in 43 people with type 2 diabetes and in 25 others who were similar in age, sex and body weight but didn't have diabetes.

They found that in diabetes patients with low vitamin D — defined as less than 30 nanograms per milliliter of blood —macrophage cells were more likely to adhere to the walls of blood vessels. This then triggers cells to load with cholesterol, and eventually causes the vessels to stiffen and block blood flow, they explained.

*"We took everything into account," said first author Dr Amy Riek. "We looked at blood pressure, cholesterol, diabetes control, body weight and race. But only vitamin D levels correlated to whether these cells stuck to the blood vessel wall."*

However, both Riek and Bernal-Mizrachi said what is not yet clear is whether giving vitamin D to people with diabetes will reverse their risk of developing atherosclerosis.

The team said are now treating mice with vitamin D to see whether it can prevent immune cells from adhering to the walls of blood vessels near the heart, and are also conducting two clinical trials in patients.

In one of those studies, the researchers are giving vitamin D to people with diabetes and hypertension to see whether the treatment may lower blood pressure.

In the second study, African Americans with type 2 diabetes are getting vitamin D along with their other daily medications, and the research team is evaluating whether vitamin D supplements can slow or reverse the progression of heart disease.

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