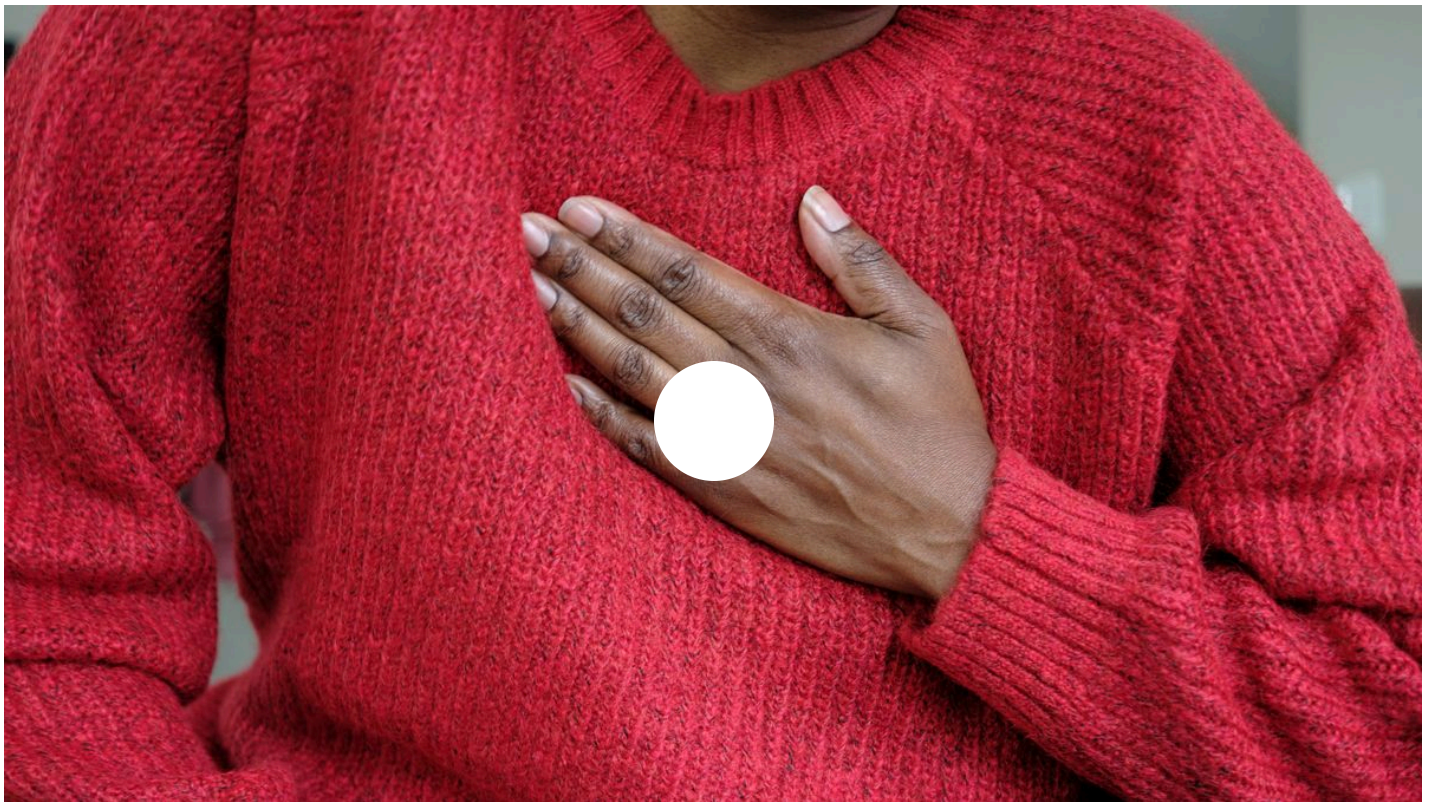


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Study Links High Levels of Niacin to Heart Disease Risk—All About Vitamin B3 and Heart Health

Once suggested to help lower heart disease risk, new research suggests that the vitamin may do the opposite.

BY [KORIN MILLER](#) PUBLISHED: FEB 21, 2024



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- *Niacin has been linked to a higher risk of heart disease.*
 - *It is often added to flour and fortified cereals in the U.S.*
 - *The B vitamin used to be a popular medication to lower high cholesterol.*
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High levels of niacin, a B vitamin that's found in many foods and added to fortified cereals and breads, can raise the risk of heart disease, according to new research.

The study, which was published in *Nature Medicine*, discovered that higher levels of niacin can trigger inflammation and damage blood vessels. For the study, researchers analyzed blood samples from 1,162 people who were evaluated for heart disease to look for common markers in their blood that could help identify new heart disease risk factors.

The researchers found that 4PY, a substance that's made when there is too much niacin in the body, was strongly linked with patients who have had a heart attack, stroke, or other cardiac event. The researchers also discovered that 4PY directly triggers vascular inflammation that damages blood vessels and can lead to atherosclerosis—the build-up of fats, cholesterol, and other substances in and on the artery walls—over time.

One in four study participants seemed to be getting too much niacin and had high levels of 4PY in their blood. But the researchers also pointed out in the study that they don't know how much niacin is unhealthy.

The study raises a lot of questions about niacin and its impact on heart health. Ahead, experts share what you need to know.

What is niacin (vitamin B3)?

Niacin, a.k.a. vitamin B3, is a water-soluble B vitamin, according to the National Institutes of Health (NIH). “Niacin is a micronutrient that we have to get from outside sources, such as supplements and food,” explains Scott Keatley, R.D., co-owner of Keatley Medical Nutrition Therapy.

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Niacin is added to flour, bread products, and fortified cereals to lower the risk of developing disease due to nutritional deficiency. It's also found in foods like chicken and turkey breast, salmon, and sunflower seeds, per the NIH.

Niacin breaks down into NAD⁺, which plays a key role in energy metabolism, the breakdown of fatty acids, DNA repair, cell signaling, and antioxidant defense, Keatley says. “Niacin also breaks down into niacinamide, which has many functions to protect skin,” he adds.

The recommended dietary allowance for adults is 16 milligrams of niacin for adult men and 14 milligrams for adult women.

Does niacin affect heart health?

Niacin's relationship with heart health is a little complicated. There are prescription medications like Niaspan and its generic equivalent niacin ER that deliver 500 to 1,000 milligrams of extended-release niacin that are used to treat high blood cholesterol levels, the NIH notes. But, the use of those medications has been questioned over the past few years after research didn't support using them to lower cholesterol.

“Niacin is something critical to our health—we cannot make enough of it, so need to have it in our diets,” says study co-author Stanley Hazen, M.D., Ph.D., chairman for the Department of Cardiovascular & Metabolic Sciences at the Cleveland Clinic.

“However, niacin is almost never used any longer as a prescriptive medication for cholesterol-lowering. That is because we have many alternative approaches to lower cholesterol that help lower cardiovascular disease risks much better.”

But the latest study takes things a step further, suggesting that niacin in the form of its breakdown metabolite 4PY actually raises the risk of heart attack and stroke.

“This study will put another nail in the coffin for the use of niacin in heart disease,” says Cheng-Han Chen, M.D., board-certified interventional cardiologist and medical director of the Structural Heart Program at MemorialCare Saddleback Medical Center in Laguna Hills, CA.

Who should avoid niacin?

Dr. Chen stresses that more studies need to be done to understand the right dosage in the relationship between niacin and cardiovascular disease. “For now, I would caution against routine intake of niacin supplements in the average person,” he says.

Keatley stresses that the latest study findings don't suggest that you'll raise your risk of developing heart disease after having fortified bread or cereal. "The RDAs for niacin is 14 to 18 milligrams, and the research involved doses of 500 to 2,000 milligrams," he points out. "To get 500 milligrams of niacin from enriched flour—one of our largest sources of niacin—one would have to eat about 30 lbs every day."

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Instead, Keatley says that people who should pay attention to this research are those who are currently taking large doses of niacin for cholesterol management.

"The main takeaway is not that we should cut out our entire intake of niacin—that's not a realistic or healthy approach," Dr. Hazen says. "Given these findings, a discussion over whether a continued mandate of flour and cereal fortification with niacin in the U.S. could be warranted."

Are there any benefits of niacin?

Niacin as a nutrient has several benefits, especially when it's taken at low doses. "It is essential for energy metabolism, neurological function, and the maintenance of healthy skin," Keatley says.

At higher doses, niacin has been used to treat high cholesterol and triglyceride levels, since it can help lower LDL ("bad") cholesterol and raise levels of HDL ("good") cholesterol. "However, its use for these purposes should be closely monitored by a healthcare provider," Keatley says.

But Dr. Chen stresses that the use of niacin in high doses to treat high cholesterol is falling out of favor.

Does niacin help with clogged arteries?

This is tricky. Some older research has shown that niacin was effective in reducing plaque buildup in arteries. Specifically, studies have found that niacin can help raise HDL ("good") cholesterol, which was thought to protect against heart disease.

But more recent data, including an analysis of 35,760 patients from 17 clinical trials, show that niacin has not been helpful in preventing any serious heart-related events like heart attack, stroke, or dying from heart disease. Researchers have largely concluded that niacin may be helpful for controlling cholesterol in people who can't take statins—common cholesterol-lowering medications—but it doesn't help with overall cardiovascular disease risk.

"There is a so-called niacin paradox stemming from past use of niacin as a therapeutic agent to treat [high cholesterol]," Dr. Hazen says. "The paradox arose from clinical trial findings that while niacin reduces LDL cholesterol, it does not reduce risk of cardiovascular disease and has even shown evidence of increasing overall mortality."

If you're currently taking niacin to lower your risk of heart disease, Dr. Chen says it's a good idea to check in with your doctor—but don't panic, and don't stop taking your medication until you speak with your provider. "It is too early to make

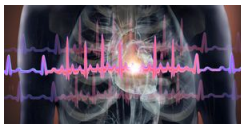
recommendations regarding avoiding niacin based on these results,” he says. “For now, I would recommend just holding off on taking extra niacin supplementation.”

“The science of nutrition, like all good science, is evolving as we learn more and our tools get better,” Keatley says. “Huge doses of a vital vitamin may not be as good as we once thought, so it’s always best to get your vitamins from food sources and try your best not to go to extremes.”

Dr. Hazen agrees. “Patients should consult with their doctors before taking over-the-counter supplements and focus on a diet rich in fruit and vegetables while avoiding excess carbohydrates,” he says.

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