People who take calcium supplements may be at increased risk for developing buildups of unhealthy plaque in their arteries, which is a contributor to heart disease, a new study found.

However, people who consume a lot of calcium through the food they eat may actually be at a lower risk of heart disease, the study showed.
The findings add to a growing body of evidence that some dietary supplements, such as calcium supplements, may have harmful effects.

"When it comes to using vitamin and mineral supplements, particularly calcium supplements being taken for bone health, many Americans think that more is always better," study co-author Dr. Erin Michos, associate director of preventive cardiology at the Johns Hopkins University School of Medicine in Baltimore, said in a statement. "But our study adds to the body of evidence that excess calcium in the form of supplements may harm the heart and vascular system." [7 Foods You Can Overdose On]

Taking a supplement may be a part of your daily routine, but a new study from Johns Hopkins shows that not all of them may be safe. After analyzing 10 years of medical data on over 2,700 people, researchers say that taking calcium supplements may actually damage your heart and put your health at risk.

The findings suggest that, when taken in supplement form, calcium has a tendency to cause plaque buildup in arteries, which can lead to lasting damage, or even a heart attack. This goes against preconceived notions that many consumers have about how much they should indulge when it comes to supplements.

"When it comes to using vitamin and mineral supplements, particularly calcium supplements being taken for bone health, many Americans think that more is always better," said Dr. Erin Michos, associate director of preventive cardiology and associate professor of medicine at the Ciccarone Center for the Prevention of Heart Disease at the Johns Hopkins University School of Medicine. "But our study adds to the body of evidence that excess calcium in the form of supplements may harm the heart and vascular system."
Confirming previous findings

As alluded to by Michos, this is not the first time that calcium supplements have been investigated. Previously, scientists found that “ingested calcium supplements – particularly in older people – don’t make it to the skeleton or get completely excreted in the urine,” leading them to believe that they were “accumulating in the body’s soft tissues,” according to co-author Dr. John Anderson, a nutritionist and professor emeritus of nutrition at the University of North Carolina at Chapel Hill.

Connections between old age and calcium-based plaque build-up – which leads to impeded blood flow and increased risk of heart attack -- had also already been discovered. So, in order to find out more, the researchers conducted a multi-ethnic study spanning 10 years that focused on 2,742 participants, each between the ages of 45 and 84.

After controlling for a variety of factors, each person was asked to provide information on their dietary habits and what kind of supplements they were taking so that the researchers could assess their calcium intake. Afterwards, a CT scan was taken to measure calcification of the arteries and provide a calcium score. Ten years later, participants were assessed again to check for developments of coronary heart disease.

Increased risk of heart problems

The findings showed that participants who took calcium supplements were 22% more likely to have a coronary artery calcium score above 0, which suggests the development of heart disease. The researchers believe that the difference derives from how the body handles calcium from food versus how it handles it in supplement form.
"There is clearly something different in how the body uses and responds to supplements versus intake through diet that makes it riskier," said Anderson. "It could be that supplements contain calcium salts, or it could be from taking a large dose all at once that the body is unable to process."

The researchers want to stress that consumers should not avoid calcium based on their findings. In fact, they say that making sure that your body gets calcium from your diet should be a major focus.

"Based on this evidence, we can tell our patients that there doesn't seem to be any harm in eating a heart-healthy diet that includes calcium-rich foods, and it may even be beneficial for the heart," says Michos. "But patients should really discuss any plan to take calcium supplements with their doctor to sort out a proper dosage or whether they even need them."

In the study, the researchers analyzed information from more than 2,700 people ages 45 to 84, who answered questions about their calcium intake, from both their diets and supplements.

The participants also underwent two CT scans, one at the beginning of the study and another 10 years later. The scans looked for plaques containing calcium in the arteries of the heart, which are the coronary arteries. The presence of such calcium-containing plaques means that a person is at increased risk of developing heart disease, or having a heart attack. At the start of the study, about 1,500 people did not have any calcium-containing plaques in their arteries.

In contrast, people who took calcium supplements were overall 22 percent more likely to develop calcium-containing plaques over the study period, compared with those people who
didn’t use such supplements. Forty-six percent of people in the study used calcium supplements.

It’s possible that large doses of calcium consumed in supplements may temporarily elevate calcium levels in the blood, which leads to calcifications in blood vessels, the researchers said.

"There is clearly something different in how the body uses and responds to supplements versus intake through diet that makes it riskier," said study co-author John Anderson, a professor emeritus of nutrition at the University of North Carolina at Chapel Hill. "It could be from taking a large dose all at once that the body is unable to process."

The researchers noted that they found only an association and cannot prove that taking calcium supplements causes an increase in the risk of developing calcium-containing plaques and heart disease. In addition, the participants self-reported their calcium intake, and it’s possible they did not always remember their intake correctly, which could affect the results, the researchers said.
Previous research supports the new study’s results, though. A 2012 study from Sweden found that consuming high amounts of calcium was linked with an increased risk of dying from any cause during the study period, including from heart disease.

The researchers said their new results are "hypothesis generating" and should spur more research in this area.

"Based on this evidence, we can tell our patients that there doesn't seem to be any harm in eating a heart-healthy diet that includes calcium-rich foods, and it may even be beneficial for the heart," Michos said. "But patients should really discuss any plan to take calcium supplements with their doctor to sort out a proper dosage or whether they even need" such supplements.

The study was published Oct. 11 in the Journal of the American Heart Association.
Foods That Contain Calcium

Broccoli  Bok Choy  Almonds  Pumpkin Seeds  Okra  Collards
Turnip Greens  Prickly Pear  Kohlrabi  Leeks  Brazil Nuts  Artichokes
Avocado  Celery  Green Beans  Coconut Meat  Onions  Gooseberry
Fennel  Dandelion Greens  Swiss Chard  Spinach  Kale  Butternut Squash
Brussels Sprouts  Mulberry  Cabbage  Sapote  Sesame Seeds  Asparagus

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