

# Clinical Update

## Vitamin C May Play Role in Stroke Prevention

Experts suspect that healthy diet and lifestyle are at root of reduced risk

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Having higher levels of vitamin C in your blood may reduce your risk of stroke, new research suggests. People with the highest concentrations of vitamin C in their blood had a 42 percent lower risk of stroke than people with the lowest levels, according to the study. But, that doesn't mean that popping mega-doses of vitamin C supplement can ward off a brain attack, health experts cautioned.

"In the study itself, the authors made a strong point that they couldn't conclude that vitamin C directly lowers stroke risk," said Dr. Keith Siller, medical director of New York University Medical Center's Comprehensive Stroke Care Center. "It's not necessarily the vitamin C itself. Vitamin C may be a marker of a general healthy lifestyle, and high levels of plasma vitamin C probably mean that you're more health conscious."

Dr. Mark Levine, chief of the molecular and clinical nutrition section at the U.S. National Institute of Diabetes and Digestive and Kidney Diseases, agreed that vitamin C alone probably isn't responsible for the stroke risk reduction.

"It's just an association. It could be vitamin C, it could be vitamin C plus other nutrients, and it could be other things independent of vitamin C. People who eat lots of fruits and vegetables may be eating less fast food," said Levine, who also co-authored an editorial in the same issue of the journal. The real message, said Levine, is that people should be eating more fruits and vegetables to prevent stroke and other health problems. "Get five or more fruits and vegetables daily in a rainbow of colors," he advised.

The new study included information from more than 20,000 people between the ages of 40 and 79 from the United Kingdom. All of the participants completed a health questionnaire, and one blood sample was analyzed for vitamin C levels for each study volunteer. The average follow-up time was 9.5 years, and the final study included almost 200,000 person-years. During that time, 448 of the study participants had a stroke.

After compensating for other risk factors, such as gender, smoking history, body mass index, blood pressure, cholesterol levels, diabetes, alcohol consumption, physical activity and a history of heart disease, the researchers found that those with the highest levels of vitamin C in their blood had a 42 percent reduced risk of stroke compared to those with the lowest levels. The difference between the vitamin C levels between the lowest and highest group roughly translates to about one extra fruit or vegetable daily, according to the study.

"The strong inverse association between plasma vitamin C and stroke suggests that plasma vitamin C is likely to be a good biomarker of whatever causal factors affect stroke risk, most plausibly the dietary intake of plant foods," the study's authors wrote.

"This study did not prove that vitamin C directly causes these benefits. It could be related to something else you do in your diet. We just don't know what the mechanism is that reduces stroke risk," said Siller, who added, "People should still go ahead with the American Dietetic Association recommendations to incorporate more fruits and vegetables into their diet. Don't rush to the store to buy vitamin C supplements."

"Many, many studies show a strong association between those who eat fruits and vegetables and a health benefit, and that benefit comes from eating foods, not supplements," Levine added.

