

Vitamins E and C supplements not effective for prevention of cardiovascular disease in men

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Neither vitamin E nor vitamin C supplements reduced the risk of major cardiovascular events in a large, long-term study of male physicians, according to a study in the November 12 issue of *JAMA*. The article is being released early online November 9 to coincide with the scientific presentation of the study findings at the American Heart Association meeting.

Most adults in the United States have taken vitamin supplements in the past year, according to background information provided by the authors. "Basic research studies suggest that vitamin E, vitamin C, and other antioxidants reduce cardiovascular disease by trapping organic free radicals, by deactivating excited oxygen molecules, or both, to prevent tissue damage." Some previous observational studies have supported a role for vitamin E in cardiovascular disease prevention. Some previous observational studies have also shown a role for vitamin C in reducing coronary heart disease risk.

In this study, known as the Physicians' Health Study II, Howard D. Sesso, Sc.D, M.P.H., and colleagues from Brigham and Women's Hospital, Harvard Medical School and School of Public Health and VA Boston Healthcare System, Boston, assessed the effects of vitamin E and vitamin C supplements on the risk of major cardiovascular disease events among 14,641 male physicians. These physicians were 50 years or older and at low risk of cardiovascular disease at the beginning of the

study in 1997, and 754 (5.1 percent) had prevalent cardiovascular disease. The study participants were randomized to receive 400 IU of vitamin E every other day or a placebo and 500 mg of vitamin C daily or a placebo.

"During a mean (average) follow-up of 8 years, there were 1,245 confirmed major cardiovascular events," the researchers report. There were 511 total myocardial infarctions (heart attacks), 464 total strokes, and 509 cardiovascular deaths, with some men experiencing multiple events. A total of 1,661 men died during follow-up. Compared with placebo, neither vitamin E nor vitamin C had an effect on the prevention of major cardiovascular events. "Neither vitamin E nor vitamin C had a significant effect on total mortality, but vitamin E was associated with an increased risk of hemorrhagic stroke."

In conclusion the authors write: "In this large, long-term trial of male physicians, neither vitamin E nor vitamin C supplementation reduced the risk of major cardiovascular events. These data provide no support for the use of these supplements for the prevention of cardiovascular disease in middle-aged and older men."

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