

Abstract

Am J Clin Nutr. 2008 Jan;87(1):64-9.

Plasma vitamin C concentrations predict risk of incident stroke over 10 y in 20 649 participants of the European Prospective Investigation into Cancer Norfolk prospective population study.

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BACKGROUND: The relation between plasma vitamin C and risk of stroke remains unclear. Although clinical trials showed no significant benefit of vitamin C supplementation in reducing stroke risk, they were not able to examine the relation between plasma vitamin C concentrations and stroke risk in a general population.

OBJECTIVE: The objective was to examine the relation between baseline plasma vitamin C concentrations and risk of incident stroke in a British population.

DESIGN: A population-based prospective study was conducted in 20,649 men and women aged 40-79 y without prevalent stroke at baseline and participating in the European Prospective Investigation into Cancer-Norfolk prospective population study. The participants completed a health questionnaire and attended a clinic during 1993-1997 and were followed up for incident strokes through March 2005.

RESULTS: Over 196,713 total person-years (average follow-up: 9.5 y), 448 incident strokes occurred. In a Cox proportional hazards model, persons in the top quartiles of baseline plasma vitamin C concentrations had a 42% lower risk (relative risk: 0.58; 95% CI: 0.43, 0.78) than did those in the bottom quartile, independently of age, sex, smoking, body mass index, systolic blood pressure, cholesterol, physical activity, prevalent diabetes and myocardial infarction, social class, alcohol consumption, and any supplement use. Similar results were obtained after exclusion of persons with illnesses, users of ascorbic acid-containing supplements, and persons with a history of early strokes during the initial 2 y of follow-up.

CONCLUSIONS: Plasma vitamin C concentrations may serve as a biological marker of lifestyle or other factors associated with reduced stroke risk and may be useful in identifying those at high risk of stroke.

PMID: 18175738

