Protective effect of fruits and vegetables on development of stroke in men.

Gillman MW, Cupples LA, Gagnon D, Posner BM, Ellison RC, Castelli WP, Wolf PA.

Department of Ambulatory Care and Prevention, Harvard Medical School, Boston, MA 02215, USA.

OBJECTIVE--To examine the effect of fruit and vegetable intake on risk of stroke among middle-aged men over 20 years of follow-up. DESIGN--Cohort. SETTING--The Framingham Study, a population-based longitudinal study. PARTICIPANTS--All 832 men, aged 45 through 65 years, who were free of cardiovascular disease at baseline (1966 through 1969). MEASUREMENTS AND DATA ANALYSIS--The diet of each subject was assessed at baseline by a single 24-hour recall. The estimated total number of servings per day of fruits and vegetables was the exposure variable for this analysis. Using Kaplan-Meier survival analysis, we examined age-adjusted cumulative incidence of stroke by quintile of servings per day. To adjust for multiple covariates, we used proportional hazards regression to calculate the relative risk (RR) of stroke for each increment of three servings per day.

MAIN OUTCOME MEASURE--Incidence of completed strokes and transient ischemic attacks. RESULTS--At baseline, the mean (+/- SD) number of fruit and vegetable servings per day was 5.1 (+/- 2.8). During follow-up there were 97 incident strokes, including 73 completed strokes and 24 transient ischemic attacks. Age-adjusted risk of stroke decreased across increasing quintile of servings per day ($\log$ rank P for trend, <0.01). Age-adjusted RR for all stroke, including transient ischemic attack, was 0.78 (95% confidence interval [CI], 0.52 to 0.98) for each increase of three servings per day. For completed stroke the RR was 0.74 (95% CI, 0.57 to 0.96); for completed stroke of ischemic origin the RR was 0.76 (95% CI, 0.57 to 1.02), and for completed stroke of hemorrhagic origin, 0.49 (95% CI, 0.25 to 0.95). Adjustment for body mass index, cigarette smoking, glucose intolerance, physical activity, blood pressure, serum cholesterol, and intake of energy, ethanol, and fat did not materially change the results.

CONCLUSION--Intake of fruits and vegetables may protect against development of stroke in men.

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