Fruit and Vegetable Consumption and Risk of Coronary Heart Disease: A Meta-Analysis of Cohort Studies

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Abstract

The consumption of fruit and vegetables is associated with a reduced rate of coronary heart disease (CHD) in observational cohorts. The purpose of this study was to assess the strength of this association in a meta-analysis. Cohort studies were selected if they reported relative risks (RRs) and 95% CI for coronary heart disease or mortality and if they presented a quantitative assessment of fruit and vegetable intake. The pooled RRs were calculated for each additional portion of fruit and/or vegetables consumed per day, and the linearity of the associations were examined. Nine studies were eligible for inclusion in the meta-analysis that consisted of 91,379 men, 129,701 women, and 5,007 CHD events. The risk of CHD was decreased by 4% [RR (95% CI): 0.96 (0.93–0.99), P = 0.002] for each additional portion per day of fruit and vegetable intake and by 7% [0.93 (0.88–0.96), P < 0.0001] for fruit intake. The association between vegetable intake and CHD risk was heterogeneous (P = 0.0043), more marked for cardiovascular mortality [0.74 (0.75–0.84), P < 0.0001] than for fatal and nonfatal myocardial infarction [0.95 (0.92–0.99), P = 0.0058]. Visual inspection of the funnel plot suggested a publication bias, although not statistically significant. Therefore, the reported RRs are probably overestimated. This meta-analysis of cohort studies shows that fruit and vegetable consumption is inversely associated with the risk of CHD. This beneficial mechanism of this association, however, remains to be confirmed by randomized trials.

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