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Total Antioxidant Capacity of Diet and Risk of Heart Failure: A Population-based Prospective Cohort of Women.

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Abstract

BACKGROUND: Few studies have investigated the association between individual antioxidants and risk of heart failure. No previous study has investigated the role of all antioxidants present in diet in relation to heart failure. The aim of this study was to assess the association between total antioxidant capacity of diet, which reflects all of the antioxidant compounds in food and the interactions between them, and the incidence of heart failure among middle-aged and elderly women.

METHODS: In September 1997, 33,713 women (aged 49-83 years) from the Swedish Mammography Cohort completed a food-frequency questionnaire. Estimates of dietary total antioxidant capacity were based on the Oxygen Radical Absorbance Capacity assay measurements of foods. Women were followed for incident heart failure (hospitalization or mortality of heart failure as the primary cause) through December 2009 using administrative health registries. Cox proportional hazard models were used to calculate relative risks and 95% confidence intervals.

RESULTS: During 11.3 years of follow-up (394,059 person-years), we identified 894 incident cases of heart failure. Total antioxidant capacity of diet was inversely associated with heart failure (the multivariable-adjusted relative risk in the highest quintile compared with the lowest was 0.58 [95% confidence interval, 0.47-0.72; P for trend<.001]). The crude incidence rate was 18/10,000 person-years in the highest quintile versus 34/10,000 person-years in the lowest quintile.

CONCLUSIONS:

The **total antioxidant capacity of diet**, an estimate reflecting all antioxidants in diet, **was associated with lower risk of heart failure. These results indicate that a healthful diet high in antioxidants may help prevent heart failure.**