High Carotenoid, Selenium Levels Reduce Mortality Risk

A report published in the *Journal of Nutrition* reveals that older women with higher serum levels of carotenoids and selenium have a lower risk of dying over the course of five years than women whose levels of these nutrients are low.*

Selenium is a trace mineral found in small amounts in plant and animal foods. Carotenoids occur in plant foods and include alpha carotene, beta-carotene, lycopene, lutein, and zeaxanthin.

Researchers at Johns Hopkins analyzed data from 632 women aged 70 to 79 who enrolled in the Women's Health and Aging Studies I and II. The studies were designed to evaluate the causes and course of physical disability in older community-dwelling women. Selenium and carotenoid levels were measured upon enrollment, and participants were followed for five years.

At the end of the follow-up period, 14% of the women had died. Primary causes of death included cardiovascular disease, cancer, stroke, infection, chronic obstructive pulmonary disease, and accidents. Those who died were older and more likely to be African-American, smokers, and overweight. Higher levels of selenium and individual and total carotenoid concentrations appeared to be protective against mortality. Women whose selenium or total carotenoid levels were in the lowest 25% of participants had a greater risk of dying than those whose levels were in the top 75%, and as nutrient levels increased, mortality rates decreased. For those who died, mean carotenoid and selenium levels were 1.40 and 1.43 micromoles per liter, compared to 1.72 and 1.54 micromoles per liter for those who survived.

The authors noted that the underlying biological mechanism by which diminished levels of carotenoids and selenium contribute to an increased risk of death could be increased oxidative stress and inflammation. Serum carotenoid levels are considered to be the best marker for fruit and vegetable intake, and studies have shown that high intake of these foods reduces inflammatory biomarkers and protects against cardiovascular disease. Deficient selenium levels have been associated with atherosclerosis and increased oxidative stress.

The authors concluded that their work "provides some early insight into the relation between antioxidant nutrients and mortality among older women," and recommended further studies.

—Dayna Dye

Reference