Dietary Inorganic Phosphate Linked to Elevated Risk of Lung Cancer

Escalating amounts of inorganic phosphate in the diet may damage lung health and set the stage for lung cancer, according to a new report.*

Phosphate is an essential nutrient that occurs naturally in the diet. Escalating amounts of inorganic phosphate have entered the modern food supply, as manufacturers frequently add them to processed foods such as meats, cheeses, beverages, and baked goods to improve product texture and water retention.

Since excess phosphate has been shown to stimulate a metabolic pathway associated with lung cancer promotion, Korean researchers investigated the effects of excess dietary phosphate on lab mice bred to model human lung cancer. Mice received either a normal (0.5%) or high (1.0%) phosphate level in the diet for four weeks. Analysis revealed that mice receiving the higher amount of dietary phosphate experienced “increased lung tumor progression and growth compared with normal diet.”

The findings suggest that “careful regulation of dietary phosphate may be critical for lung cancer prevention as well as treatment.”  

—Dale Kiefer

Selenium May Slash Women’s Bladder Cancer Risk by One-Third

A new study by researchers at Dartmouth Medical School suggests that increased levels of the essential micronutrient selenium may play an important role in preventing bladder cancer, at least among women and moderate smokers. Increased selenium intake was also associated with a reduced incidence of a particular class of cancers, related to mutations in the tumor suppressor gene p53.1

Researchers measured levels of selenium in the toenails of more than 1,800 people, including subjects with newly diagnosed bladder cancer and healthy control subjects. Higher selenium levels were associated with a 34% reduced risk of bladder cancer among females, a 39% risk reduction among moderate smokers, and a 43% reduction in the risk of p53-positive bladder cancer.1

While previous studies have identified a link between selenium intake and bladder cancer risk,2,3 this is believed to be the first study to link selenium with a reduced risk of p53-positive bladder cancer.1

L-Carnitine Decreases Oxidized LDL in Diabetic Patients

Supplementation with L-carnitine significantly reduces levels of oxidized low-density lipoprotein (LDL) in patients with diabetes.* Oxidized LDL plays a role in atherosclerosis and coronary artery disease, especially when blood sugar is elevated. L-carnitine is a micronutrient with antioxidant and lipid-lowering effects.

In this study, 81 men and women with type 2 diabetes were randomly assigned to take L-carnitine (2,000 mg/day) or placebo for three months along with a low-calorie diet. The L-carnitine group showed significant decreases in lipids including total cholesterol, LDL, triglycerides, and apolipoproteins, as well as a significant increase in beneficial high-density lipoprotein (HDL), compared with placebo. Supplementation also decreased oxidized LDL and other measures of oxidative stress.

Glycosylated hemoglobin, a long-term measure of blood sugar, also decreased in the L-carnitine group.

The reduction in oxidized LDL after only three months of L-carnitine supplementation may indicate a preventive effect on cardiovascular disease.

—Laura J. Ninger, ELS
