

Alpha and Gamma Tocopherol Reduce Oxidative Stress, Inflammation in Metabolic Syndrome

Supplementing with alpha and gamma-tocopherol reduces oxidative stress and inflammation in men and women with metabolic syndrome.*

Eighty men and women who had at least three metabolic syndrome features (such as increased waist circumference, elevated triglycerides, hypertension, elevated fasting blood sugar, or low HDL [high-density lipoprotein]) supplemented with 800 milligrams alpha tocopherol, 800 milligrams gamma tocopherol, 800 mg alpha tocopherol plus 800 milligrams gamma tocopherol, or a placebo daily for six weeks.

Those who received both tocopherols experienced reduced levels of the inflammatory marker, C-reactive protein. The combination group as well as those who received only alpha tocopherol experienced a reduction in tumor necrosis factor-alpha. Oxidative stress biomarkers declined in all the supplemented individuals.

"The combination of alpha tocopherol and gamma tocopherol supplementation appears to be superior to either supplementation alone on biomarkers of oxidative stress and inflammation and needs to be tested in prospective clinical trials to elucidate its utility in cardiovascular disease prevention," the authors concluded.

—Dayna Dye

* Devaraj S, Leonard S, Traber MG, Jialal I. Gamma-tocopherol supplementation alone and in combination with alpha-tocopherol alters biomarkers of oxidative stress and inflammation in subjects with metabolic syndrome. *Free Radic Biol Med.* 2007 Dec 23 [Epub ahead of print].

Curcumin May Prevent and Reverse Heart Enlargement

Curcumin may help prevent or even reverse cardiac enlargement, a prelude to heart failure, according to recent animal and laboratory studies.^{1,2} Heart failure occurs when the heart cannot pump enough blood to satisfy the body's demands.

In a Canadian study, curcumin helped overcome cardiac hypertrophy, inflammation, and heart muscle scarring in living mice and mouse cells by switching off genes that code for proteins involved in enlargement of the heart muscle.¹

In a related report, Japanese investigators showed that curcumin prevented heart enlargement in rats with high blood pressure and in rats that had undergone experimentally induced heart attack.²

Curcumin is a highly bioactive polyphenol derived from the curry spice turmeric. Curcumin's protective activity in rodent models of human heart disease suggests that it may find important applications in averting cardiovascular disease, the number one killer of adults in the industrialized world.

—Dale Kiefer

1. Li HL, Liu C, de Couto G, et al. Curcumin prevents and reverses murine cardiac hypertrophy. *J Clin Invest.* 2008 Mar 3;118(3):879-83.
2. Morimoto T, Sunagawa Y, Kawamura T, et al. The dietary compound curcumin inhibits p300 histone acetyltransferase activity and prevents heart failure in rats. *J Clin Invest.* 2008 Mar 3;118(3):868-78.

Soy Isoflavones Offer Multiple Benefits for Menopausal Women's Bone Health

Soy isoflavones not only help inhibit bone resorption and increase bone formation, they also improve spinal bone mineral density, according to two meta-analyses conducted by Japanese scientists.^{1,2}

The first meta-analysis involved 432 perimenopausal or postmenopausal women who consumed high-isoflavone soy protein or isoflavone tablets for 4-48 weeks. Scientists measured a urinary marker of bone resorption and a serum marker of bone formation before and after treatment periods. They concluded, "isoflavone intervention significantly inhibits bone resorption and stimulates bone formation."¹

The second meta-analysis included 608 perimenopausal or postmenopausal subjects who ingested soy products or isoflavones for 3-48 months. Spine bone mineral density increased by 20.6 mg/cm³ in those receiving isoflavones compared with those receiving placebo. Bone mineral content also increased, but to a lesser extent. "The results clearly suggested that isoflavones contributed significantly to the increase of spinal bone mineral density, especially in postmenopausal women," the scientists concluded.

These findings pave the way for large randomized clinical trials exploring the role of isoflavones in building bones and preventing fractures.

—Dayna Dye

1. Ma DF, Qin LQ, Wang PY, Katoh R. Soy isoflavone intake inhibits bone resorption and stimulates bone formation in menopausal women: meta-analysis of randomized controlled trials. *Eur J Clin Nutr.* 2008 Feb;62:155-61.
2. Ma DF, Qin LQ, Wang PY, Katoh R. Soy isoflavone intake increases bone mineral density in the spine of menopausal women: meta-analysis of randomized controlled trials. *Clin Nutr.* 2008 Feb;27(1):57-64.

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