



Green Tea Supplement Decreases Cardiovascular Risk Factors

A supplement capsule of green tea constituents improves several measures of cardiovascular health among US adults, according to a report published in the journal *Nutrition*.*

In this study, 111 healthy men and women were randomly assigned to take a standardized green tea supplement capsule (containing decaffeinated extracts of *Camellia sinensis*) or matching placebo twice a day.

By three weeks, blood pressure had decreased in the supplement group, and these results largely persisted three months later. Total cholesterol and low-density lipoprotein (LDL) declined in the supplement group among men and among patients with elevated LDL at baseline. Serum amyloid-alpha, a marker of inflammation, and serum malondialdehyde, a marker of oxidative stress, both declined after supplementation. No significant beneficial changes were found in the placebo group.

A green tea supplement therefore may mitigate cardiovascular risk factors in patients with elevations of blood pressure, cholesterol, inflammation, and oxidative stress.

—Laura J. Ninger, ELS

* Nantz MP, Rowe CA, Bukowski JF, Percival SS. Standardized capsule of *Camellia sinensis* lowers cardiovascular risk factors in a randomized, double-blind, placebo-controlled study. *Nutrition*. 2008 Oct 8.

L-Carnitine Slows Signs of Aging in Rats

Supplementation with L-carnitine improves muscle function, reduces abdominal fat, and slows bone loss in two rat models of aging.^{1,2} L-carnitine is an amino acid that aids in fat metabolism and generation of energy.

In the first study, aged rats were given a diet supplemented with L-carnitine or a control diet for 12 weeks.¹ Aged rats had 34% lower levels of L-carnitine in their muscle cells than younger rats, but supplementation restored levels of L-carnitine. Supplementation also improved the muscle's oxidative capacity by 55% and decreased abdominal fat mass despite no change in the amount of food intake.

In another study, a rat model was used to simulate postmenopausal bone loss.² Aging female rats subjected to ovary removal were treated with L-carnitine or a control diet for eight weeks. L-carnitine significantly increased bone mineral density and decreased bone turnover.

The results suggest a future role for L-carnitine to prevent age-related muscle atrophy, body weight gain, and bone deterioration in humans.

—Laura J. Ninger, ELS

1. Bernard A, Rigault C, Mazue F, Borgne FL, Demarquoy J. L-carnitine supplementation and physical exercise restore age-associated decline in some mitochondrial functions in the rat. *J Gerontol A Biol Sci Med Sci*. 2008 Oct;63(10):1027-33.

2. Hooshmand S, Balakrishnan A, Clark RM, Owen KO, Koo SI, Arjmandi BH. Dietary L-carnitine supplementation improves bone mineral density by suppressing bone turnover in aged ovariectomized rats. *Phytomedicine*. 2008 Aug;15(8):595-601.

Vitamin E Decreases Lung Cancer Risk

Vitamin E (alpha tocopherol) reduces the risk of lung cancer according to a recent case-control study.* Vitamin E is known for its antioxidant effects.

Investigators reviewed the dietary habits and vitamin E intake of 1,088 patients with lung cancer and 1,414 healthy controls of similar age and smoking status. Subjects taking vitamin E as alpha tocopherol were divided into four groups from the lowest intake (≤ 4.1 mg/day) to the highest (> 7.7 mg/day). Compared with the lowest intake, progressively higher intake of alpha tocopherol was associated with decreases in lung cancer risk of 34%, 36%, and 53%, respectively, after controlling for other risk factors. Other tocopherols (beta, gamma, and delta tocopherol) did not provide meaningful risk reduction on their own.

Mean intake of alpha tocopherol in this study was 5.5 mg/day among patients and 6.3 mg/day among controls, which the authors note is markedly lower than the recommended daily allowance of 15 mg/day.

While this study result is intriguing, *Life Extension* points out that the subjects in these study groups did not consume the higher potencies of *alpha* and *gamma* tocopherols taken by many health-conscious people today. It is therefore difficult to extrapolate these findings to serious vitamin E takers.

—Laura J. Ninger, ELS

* Mahabir S, Schendel K, Dong YQ, Barrera SL, Spitz MR, Forman MR. Dietary alpha-, beta-, gamma- and delta-tocopherols in lung cancer risk. *Int J Cancer*. 2008 Sep 1;123(5):1173-80.



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