

Source: [Journal of the National Cancer Institute](#)

Posted: February 15, 2006

Antioxidant Supplementation Not Associated With Decreased Risk Of Prostate Cancer

Intakes of dietary or supplemental [antioxidants](#) were not associated with a decreased risk of [prostate cancer](#) among men in the Prostate, [Lung](#), Colorectal, and Ovarian (PLCO) Cancer Screening Trial, according to a study in the February 15 issue of the *Journal of the National [Cancer Institute](#)*. The study did find that [vitamin E](#) and beta-carotene supplementation may be associated with reduced prostate cancer risk in certain population subgroups.

Research suggests that micronutrients such as vitamin E, vitamin C, and carotenoids may play a role in preventing cancer development because of their ability to combat free radicals, agents that can damage cellular DNA, lipid membranes, and [proteins](#). In many studies, vitamin E has been associated with a reduced risk of prostate cancer, and beta-carotene has been associated with increased lung cancer risk in previous studies. However, no studies have examined associations between intakes of these three antioxidant micronutrients and the risk of prostate cancer.

Richard B. Hayes, Ph.D., at the National Cancer Institute, and colleagues assessed the risk of prostate cancer for 29,361 men ages 55 to 74 enrolled in the PLCO Cancer Screening Trial, based on their daily intake of beta-carotene, vitamin E, and vitamin C. The researchers looked at intake of antioxidants from both dietary sources and from supplements.

The authors found that, overall, dietary or supplemental intake of vitamin E, vitamin C, or beta-carotene was not associated with prostate cancer incidence in this group of PLCO trial participants. However, certain micronutrients were associated with prostate cancer risk in specific subgroups of men. For current or recent smokers, high-dose, long-duration vitamin E supplementation was associated with a reduced risk of advanced prostate cancer. For men with a low dietary intake of beta-carotene, high-dose supplements of beta-carotene were associated with a reduced risk of prostate cancer.

"Our cohort findings, although based on relatively short follow-up, do not provide strong support for population-wide implementation of high-dose antioxidant supplementation for the prevention of prostate cancer," the authors write. "They do suggest, however, that in certain population subgroups there was an association between supplement intake and reduced risks of prostate cancer."

In an accompanying editorial, I-Min Lee, Sc.D., of Brigham and Women's Hospital in Boston, Mass., and colleagues discuss the implications of Hayes and colleagues' study in the context of earlier studies of vitamin E supplementation and cancer risk. The editorialists agree that the study results do not provide strong support for the implementation of antioxidant supplementation for the prevention of prostate cancer. They note that the data remain unclear about the benefits of vitamin E supplementation for prostate cancer prevention in the general population; however, there are strong data supporting smoking cessation

to reduce cancer incidence. The authors write, "Now and in the future, regardless of the eventual findings on vitamin E supplementation and prostate cancer risk, an important course of action for overall cancer prevention is to continue efforts to prevent the initiation of smoking and to promote the cessation of smoking among those who do smoke."

###

Citations:

Article: Kirsh VA, Hayes RB, Mayne ST, Chatterjee N, Subar AF, Dixon LB, et al. Supplemental and Dietary Vitamin E, Beta-Carotene, and Vitamin C Intakes and Prostate Cancer Risk. *J Natl Cancer Inst* 2006;98:245-254.

Editorial: Lee I-M, Gaziano JM, Buring JE. Vitamin E in the Prevention of Prostate Cancer: Where Are We Today? *J Natl Cancer Inst* 2006;98:225-227

Note: The *Journal of the National Cancer Institute* is published by Oxford University Press and is not affiliated with the National Cancer Institute. Attribution to the *Journal of the National Cancer Institute* is requested in all news coverage. Visit the *Journal* online at <http://jncicancerspectrum.oxfordjournals.org/>.