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Vitamin E and the risk of prostate cancer: Updated results of the Selenium and Vitamin E Cancer Prevention Trial (SELECT).

Eric A. Klein, Ian Thompson, Catherine M. Tangen, M. Scott Lucia, Phyllis Goodman, Lori M. Minasian, Leslie G. Ford, Howard L. Parnes...

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Abstract

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Background: The initial report of the Selenium and Vitamin E Cancer Prevention Trial (SELECT) found no reduction in risk of prostate cancer with either selenium or vitamin E supplements but a non-statistically significant increase in prostate cancer risk with vitamin E. Longer follow-up and more prostate cancer events provide further insight into the relationship of vitamin E and prostate cancer.

Methods: SELECT randomized 35,533 men from 427 study sites in the United States, Canada and Puerto Rico in a double-blind manner between August 22, 2001 and June 24, 2004. Eligible men were 50 years or older (African Americans) or 55 years or older (all others) with a PSA <4.0 ng/mL and a digital rectal examination not suspicious for prostate cancer. Included in the analysis are 34,887 men randomly assigned to one of four treatment groups: selenium (n=8752), vitamin E (n=8737), both agents (n=8702), or placebo (n=8696). Data reflect the final data collected by the study sites on their participants through July 5, 2011.

Results: This report includes 54,464 additional person-years of follow-up since the primary report. Hazard ratios (99% confidence intervals [CI]) and numbers of prostate cancers were 1.17 (99% CI 1.004-1.36, p=.008, n=620) for vitamin E, 1.09 (99% CI 0.93-1.27, p=.18, n=575) for selenium, 1.05 (99%CI 0.89-1.22, p=.46, n=555) for selenium + vitamin E vs. 1.00 (n=529) for placebo. The absolute increase in risk compared with placebo for vitamin E, selenium and the combination were 1.6, 0.9 and 0.4 cases of prostate cancer per 1,000 person-years.

Conclusions: Dietary supplementation with Vitamin E significantly increases the risk of prostate cancer among healthy men.