

Vitamin E and selenium don't prevent polyps that can lead to colorectal cancer

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Eight years ago, results from a landmark cancer prevention trial run by SWOG showed that a daily dose of vitamin E and selenium did not prevent prostate cancer. In fact, the Selenium and Vitamin E Cancer Prevention Trial (SELECT) showed that vitamin E supplementation increased the risk of prostate cancer in healthy men.

Now, a SWOG review of ancillary SELECT results definitively shows that these two antioxidants also don't prevent colorectal adenomas - polyps that are the premalignant precursors to most colorectal cancers. Results are published in *Cancer Prevention Research*.

"The message to the public is this: Vitamin E and selenium will not prevent colorectal adenomas, which are surrogates for colorectal cancer," said Dr. Peter Lance, lead author of the journal article and deputy director of the University of Arizona Cancer Center. "We have no evidence that these supplements work to prevent cancer."

Despite the billions spent in the United States each year on [vitamin](#) supplements, there is scant evidence they prevent cancer. According to the National Cancer Institute, which funds SWOG through its National Clinical Trials Network (NCTN) and NCI Community Oncology Research Program (NCORP), results from nine randomized trials did not provide evidence that antioxidant supplements are beneficial in primary [cancer prevention](#). An in-depth review conducted for the United States Preventive Services Task Force likewise found no clear evidence of benefit.

"There's a whole industry that has people dosing themselves thinking that vitamins will keep them healthy," Lance said. "But we have little evidence that they protect against [cancer](#)."

To arrive at their conclusions, Lance and his SWOG team used data from SELECT, a [prostate cancer](#) prevention trial that enrolled an astonishing 35,533 healthy men - 21 percent men of color - in just 33 months at 427 study sites the United States, Canada, and Puerto Rico. Men were randomized into four groups. Some took a daily dose of vitamin E, others a dose of selenium, others took both antioxidants, and the rest took a placebo only.

A substantial number of SELECT participants incidentally underwent a lower endoscopy - colonoscopy or sigmoidoscopy - as part of their usual clinical care while taking part in the trial. In an ancillary study, Lance and his team went back into the SELECT data to review the lower endoscopy and pathology reports. They were able to evaluate information on 6,546 participants who received the procedure as part of SELECT, and found that 2,286 had more than one polyp detected by cameras used in the procedures. A statistical analysis showed that the occurrence of one or more premalignant polyps was about the same among men, regardless of whether men were taking selenium or vitamin E, alone or together, or double placebo.

What makes these results definitive, Lance said, is that SELECT was so large and was a randomized controlled study - a design that reduces bias and is considered the gold standard in clinical research.

Lance led another University of Arizona Cancer Center team that has just published similar results from a separate randomized trial of selenium and celecoxib. In December 2016, in the *Journal of the National Cancer Institute*, the team reported that [selenium](#) didn't prevent colorectal adenomas - and was associated with increased risk for Type 2

diabetes.

Provided by SWOG

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