

Study questions value of calcium and vitamin D supplements

7 August 2012

Prescribing calcium and vitamin D supplements for men at risk of bone loss from hormonal treatment for prostate cancer seems like good medicine.

But new research from epidemiologists at Wake Forest Baptist Medical Center showed that this type of supplementation did not prevent [bone loss](#) and, in fact, may increase the [risk of cardiovascular disease](#) and aggressive prostate cancer. The study was published online in the July issue of the journal *The Oncologist*.

"It wouldn't be so bad if there simply was no obvious benefit," said Gary G. Schwartz, Ph.D., who is a nationally-recognized prostate cancer [epidemiologist](#) at Wake Forest Baptist and lead author of the study. "The problem is that there is evidence that [calcium supplements](#) increase the risk of cardiovascular disease and aggressive prostate cancer, the very disease that we are trying to treat."

Androgen deprivation therapy (ADT) is the mainstay treatment for men with advanced prostate cancer. It reduces [serum levels of androgens](#) on which most prostate cancers depend. Like women undergoing menopause, a side effect of ADT in men is bone loss, or osteoporosis. Consequently, many physicians recommend calcium and vitamin D supplements to help reduce [fracture risk](#) in these men, which can be a significant problem. One in 10 of these men will experience a fracture within two years of therapy.

"Calcium and/or vitamin D supplementation to prevent loss of bone mineral density in these men seems so logical that no one had questioned whether it works," said Mridul Datta, Ph.D., co-author of the study and a postdoctoral fellow who works with Schwartz at Wake Forest Baptist.

In the study, the researchers reviewed guidelines for calcium and/or vitamin D supplementation.

They also reviewed the results of 12 clinical trials of supplemental calcium and/or vitamin D in a total of 2,399 men with prostate cancer undergoing ADT, as well as the measurements of bone mineral density before and after ADT.

"We used these data to determine whether calcium and vitamin D supplements prevented bone loss in these men," Datta said. "The answer clearly is, 'No.'" The study showed that at the doses commonly recommended -- 500 to 1,000 mg of calcium and 200 to 500 IU of vitamin D per day -- men undergoing ADT lost bone mineral density.

The lack of an obvious benefit is worrisome because other data show an association between increased dietary calcium and an increased risk of aggressive prostate cancer and heart disease, Schwartz said.

Further research is needed to verify these findings, he said, by comparing a calcium and vitamin D supplement treated group vs. a non-supplemented group and looking not only at the potential benefits - in [bone mineral density](#) and in the risk of fracture -- but also at the possible risks, including unwanted cardiovascular effects and the effects on [prostate cancer](#) itself.

"The wakeup call of these findings," said Datta, "is that the presumption of benefit from calcium and vitamin D supplements that have been routinely recommended to these men must be rigorously evaluated."

Provided by Wake Forest University Baptist Medical Center

APA citation: Study questions value of calcium and vitamin D supplements (2012, August 7) retrieved 5 May 2021 from <https://medicalxpress.com/news/2012-08-calcium-vitamin-d-supplements.html>

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