

Low vitamin D predicts aggressive prostate cancer

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A new study provides a major link between low levels of vitamin D and aggressive prostate cancer. Northwestern Medicine research showed deficient vitamin D blood levels in men can predict aggressive prostate cancer identified at the time of surgery.

The finding is important because it can offer guidance to men and their doctors who may be considering active surveillance, in which they monitor the cancer rather than remove the prostate.

"Vitamin D deficiency may predict aggressive prostate cancer as a biomarker," said lead investigator Dr. Adam Murphy, an assistant professor of urology at Northwestern University Feinberg School of Medicine and a Northwestern Medicine urologist. "Men with dark skin, low vitamin D intake or low sun exposure should be tested for vitamin D deficiency when they are diagnosed with an elevated PSA or prostate cancer. Then a deficiency should be corrected with supplements."

Previous studies showing an association between vitamin D levels and aggressive prostate cancer were based on blood drawn well before treatment. The new Northwestern study provides a more direct correlation because it measured D levels within a couple of months before the tumor was visually identified as aggressive during surgery to remove the prostate ([radical prostatectomy](#)).

The relationship between vitamin D and prostate cancer may explain some disparities seen in prostate cancer, especially among African

American men. Prior research by Murphy and colleagues showed African American men who live in low sunlight locations are up to 1½ times more likely to have vitamin D deficiency than Caucasian men.

But because vitamin D is a biomarker for bone health and aggressiveness of other diseases, all men should check their levels, Murphy said.

"All men should be replenishing their vitamin D to normal levels," Murphy said. "It's smart preventive health care."

Aggressive prostate cancer is defined by whether the cancer has migrated outside of the prostate and by a high Gleason score. A low Gleason score means the cancer tissue is similar to normal prostate tissue and less likely to spread; a high one means the cancer tissue is very different from normal and more likely to spread.

The study was published in the *Journal of Clinical Oncology* Feb. 22. Murphy collaborated on the study with Rick Kittles, associate director of cancer disparities at the University of Arizona Cancer Center.

The study was part of a larger ongoing study of 1,760 men in the Chicago area examining vitamin D and prostate cancer. The current study included 190 men, average age of 64, who underwent a radical prostatectomy to remove their prostate from 2009 to 2014.

Of that group, 87 men had aggressive prostate cancer. Those with aggressive cancer had a median level of 22.7 nanograms per milliliter of [vitamin D](#), significantly below the normal level of more than 30 nanograms/milliliter. The average D level in Chicago during the winter is about 25 nanograms/milliliter, Murphy noted.

Most people in Chicago should be on D supplements, particularly during winter months, Murphy said.

"It's very hard to have normal levels when you work in an office every day and because of our long winter," he said. The Institute of Medicine recommends 600 international units of D per day, but Murphy recommends Chicago residents get 1,000 to 2,000 international units per day.

More information: Y. A. Nyame et al. Associations Between Serum Vitamin D and Adverse Pathology in Men Undergoing Radical Prostatectomy, *Journal of Clinical Oncology* (2016). [DOI: 10.1200/jco.2015.65.1463](https://doi.org/10.1200/jco.2015.65.1463)

Provided by Northwestern University

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