

Vitamin D levels appear to be associated with risk of skin cancer, although relationship is complex

August 15 2011

As an individual's level of vitamin D increases, the risk of nonmelanoma skin cancer (NMSC) seems to increase as well, although factors such as ultraviolet (UV) radiation exposure may complicate the relationship, according to a report published Online First by *Archives of Dermatology*.

According to background information in the article, NMSC is the most common [malignant tumor](#) in the United States, and more cases of this cancer are diagnosed each year than prostate, lung, colorectal, ovarian and breast cancer combined. Prior research has found a clear association between radiation from the sun and skin cancer, with UV exposure believed to be an important risk factor for NMSC. Although UV-B exposure causes the body to create vitamin D, the authors note that "evidence of the association of vitamin D levels with skin cancer has been inconsistent," especially the relationship between NMSC and serum (circulating) vitamin D levels. Some research suggests vitamin D could reduce the risk for [basal cell carcinoma](#) (BCC), the most common subtype of NMSC; [squamous cell carcinoma](#) (SCC) is another form. The authors sought to understand more about the relationship between [serum levels](#) of vitamin D and the risk of both BCC and SCC.

Melody J. Eide, M.D., M.P.H., and colleagues from Henry Ford Hospital, Detroit, conducted a study among 3,223 white members of a health maintenance organization (HMO) who had a high probability of developing NMSC. Between January 1997 and December 2001,

participants had sought counseling regarding osteoporosis or low-bone density; the mean (average) length of follow-up was 9.8 years.

Assessment included levels of serum 25-hydroxyvitamin D (25-OHD, an indicator of vitamin D levels) as well as parathyroid hormone, creatinine and [calcium levels](#). The HMO claims database was used to identify cases of NMSC, including BCC and SCC.

More than two-thirds of participants (n = 2,257) appeared to have insufficient levels of vitamin D. Diagnoses of NMSC were made in 240 patients, including 49 cases of SCC, 163 cases of BCC and 28 cases in which patients developed both forms. Individuals who were not deficient in vitamin D appeared to have an increased risk of developing NMSC, even when researchers considered other risk factors. The association between 25-OHD and NMSC appeared positive but not statistically significant for tumors that developed on body parts not routinely exposed to [UV radiation](#) (such as the trunk, arms and legs).

The authors write that their findings contribute "to the limited and conflicting epidemiological investigation regarding the relationship between vitamin D and NMSC." Aside from the role of UV radiation, patients' historical vitamin D levels and consumption of vitamin D supplements could be confounders. The authors suggest that more research into these relationships is needed "to further elucidate the highly complex relationship between vitamin D and NMSC."

More information: Arch Dermatol. Published online August 15, 2011. [doi:10.1001/archdermatol.2011.231](https://doi.org/10.1001/archdermatol.2011.231)

Provided by JAMA and Archives Journals

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is complex (2011, August 15) retrieved 4 May 2024 from
<https://medicalxpress.com/news/2011-08-vitamin-d-skin-cancer-relationship.html>

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