

The D-bate Rages

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Over the last several years, there has been much debate regarding vitamin D and how it should be obtained. There are several epidemiological studies suggesting there is an association between low serum vitamin D levels and increased risk for certain types of cancers, neurologic disease, autoimmune disease, and cardiovascular disease.¹⁻⁹

Garland et al³ evaluated the relationship between vitamin D and the prevention of breast cancer. They performed a literature search for all studies that reported risk for breast cancer by quantiles of 25-hydroxyvitamin D (25[OH]D) and identified 2 studies with 1760 individuals.^{10,11} Data were pooled to assess the dose-response association between serum 25(OH)D and risk for breast cancer. According to the pooled analysis, individuals with serum 25(OH)D of approximately 52 ng/mL had a 50% lower risk for breast cancer than individuals with serum 25(OH)D less than 13 ng/mL. This serum level corresponded to intake of 4000 IU/d, which exceeds the current recommendations for vitamin D intake.³

Recently, Melamed et al⁹ evaluated the association between 25(OH)D levels and the prevalence of peripheral arterial disease (PAD) in the general US population. They analyzed data from 4839 participants of the National Health and Nutrition Examination Survey 2001-2004 to evaluate the relationship between 25(OH)D and PAD (defined as an ankle-brachial index <0.9). After multivariable adjustment for demographics, comorbidities, physical activity level, and laboratory measures, the prevalence ratio of PAD for the lowest compared to the highest 25(OH)D quartile (<17.8 and ≥29.2 ng/mL, respectively) was 1.80 (95% confidence interval, 1.19-2.74). For each 10 ng/mL lower 25(OH)D level, the multivariable-adjusted prevalence ratio of PAD was 1.35 (95% confidence interval, 1.15-1.59). The authors concluded that low serum 25(OH)D levels were associated with a higher prevalence of PAD.⁹

These findings have led to anecdotal suggestions that sun avoidance, with a goal of skin cancer prevention, may result in vitamin D insufficiency and therefore compromise overall health. Unfortunately, because the UV action spectra for DNA damage leading to skin cancer and for vitamin D synthesis are virtually the same, the harmful and beneficial effects of UV irradiation are inseparable.

The American Academy of Dermatology (AAD) recently released a position statement on vitamin D stating the following: "The American Academy of Dermatology recommends that an adequate amount of vitamin D should be obtained from a healthy diet that includes foods naturally rich in vitamin D, foods/beverages fortified with vitamin D, and/or vitamin D supplements; it should not be obtained from unprotected exposure to ultraviolet (UV) radiation."¹²

The AAD provided additional recommendations for physicians and their patients.¹² A comprehensive photoprotective regimen, including the regular and proper use of a broad-spectrum sunscreen, is recommended to minimize the risk for UV-induced skin cancers. In discussions with patients, physicians should provide options for obtaining sufficient dietary or supplementary sources of vitamin D. Furthermore, the AAD noted that the currently recommended adequate intake levels of vitamin D established by the Institute of Medicine may be revised upward because of evolving research on the increasing clinical benefit of vitamin D.¹²

Currently, I recommend a vitamin D supplement to patients for whom I encourage photoprotection. Given that the appropriate dose is unclear at this time, I generally recommend 1000 to 2000 IU/d for my adult patients. The appropriate management of vitamin D is an evolving area of research and requires our continued attention. The AAD position statement is useful because it helps to solidify our strong position on proper sun protection. Stay tuned; this debate is probably far from over.

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