

Advocate Vitamin D Supplements, Not More Sun

BY SHERRY BOSCHERT
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SAN FRANCISCO — The burning issue of how best to make sure that patients get enough vitamin D comes down to this conclusion: Recommending intentional exposure to the sun is inappropriate, Dr. Henry W. Lim said.

For patients at risk of vitamin D deficiency, it is better to recommend a vitamin D-fortified diet and daily supplements of

800 IU of vitamin D (ideally vitamin D₃) plus calcium, he said at the annual meeting of the American Academy of Dermatology.

Dr. Lim, chair of the dermatology residency program at Henry Ford Hospital, Detroit, organized a 2005 consensus conference for the academy called Sunlight, Tanning Booths, and Vitamin D. At the annual meeting he discussed more recent data on vitamin D and presented his approach to vitamin D management.

Intentional sun exposure is a problem

because the harmful side effects of UVB can't be separated from the beneficial vitamin D photosynthesis that sunlight provides. UV light acutely damages skin DNA and can cause erythema, sunburn, and photoimmunosuppression. In the long term, UV irradiation leads to photoaging and possible photocarcinogenesis. Half of all cancers in humans are skin cancers.

In addition, vitamin D synthesis appears to occur at different rates in people of different skin types. That, plus significant dai-

ly and seasonal variability in weather patterns and availability of sunlight make it difficult to craft public health policies based on intentional sun exposure, Dr. Lim said.

Studies have identified certain populations that may not be getting adequate vitamin D, including the elderly, people with darkly pigmented skin, and those living in wintry climates. Other studies, however, show that most people achieve adequate vitamin D serum levels in the course of normal daily life, even when using sunscreen,

WHI Analyses Raise New Doubts

The failure of vitamin D and calcium supplementation to reduce the risks of fracture or colorectal cancer in two recently published placebo-controlled studies generated abundant media coverage and controversy.

Both studies had significant limitations, however, and ultimately shouldn't negate the epidemiologic evidence for the beneficial effects of vitamin D, Dr. Lim said.

Both of the recent studies analyzed data from 36,282 postmenopausal women in the Women's Health Initiative who were randomized to daily placebo or to supplementation with 1,000 mg calcium and 400 IU vitamin D₃ for 7 years.

One study found no significant differences between groups in the risk of fracture, but did find an increased risk for kidney stone formation in the supplementation group (N. Engl. J. Med. 2006;354:669-83). The results surprised medical experts. "This is contradictory to what we all expected and what we all believe is true," Dr. Lim said. The second study found no difference between groups in the incidence of colorectal cancer or in tumor characteristics (N. Engl. J. Med. 2006;354:684-96).

Editorials in the same issue pointed out the studies' limitations. The 400 IU/day dose of vitamin D in both studies may have been suboptimal. There is a growing consensus to revise recommended doses upward.

In the study of fracture risk, subjects were not selected based on low bone mineral density, and 75% in both groups were on hormone replacement therapy. All subjects were allowed to take personal supplements. In the placebo group, 64% of women took calcium supplements, and 42% took 400 IU/day of vitamin D (N. Engl. J. Med. 2006;354:750-2).

In the other study, the mean age at entry was 62 years, "which is just reaching the high-risk age for development of colorectal cancer," Dr. Lim said, and the 7-year follow-up was too early to detect significant differences between groups for cancer incidence (N. Engl. J. Med. 2006;354:752-4).

—Sherry Boschert



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presumably through incidental sun exposure, dietary intake, and supplementation.

Recent data suggest that levels in U.S. whites averaged 80 nmol/L, "which is considered nowadays by most studies to be an adequate level of serum vitamin D," Dr. Lim noted. In Hispanic Americans, however, serum levels averaged 60 nmol/L, and in U.S. blacks, serum vitamin D averaged 50 nmol/L.

Very modest sun exposure produces maximal vitamin D photosynthesis in fair-skinned people. This makes prolonged sun exposure unnecessary and potentially dangerous for these people, he said.

Separate data on individuals older than

60 years—who presumably are less active and spend more time indoors—suggest that 67% of whites and 88% of blacks have serum vitamin D levels below 80 nmol/L.

The 2005 consensus conference concluded that it may be time to increase recommended dietary levels of vitamin D for both the frail elderly and dark-skinned people who get little sun exposure.

Natural dietary sources of vitamin D are few: saltwater fish, cod liver oil, and egg yolks. U.S. guidelines have led to vitamin D fortification of foods, most commonly milk, orange juice, cereal, butter, margarine, and chocolate mixes.

Current U.S. recommendations for dai-

ly vitamin D intake call for 200 IU for children and adults up to age 50 years, 400 IU for those aged 51-70 years, and 600-800 IU for those older than 70 years. "In the past few years there is increasing evidence that these recommendations probably are too low," Dr. Lim said.

One recent study suggested that maintaining sufficient vitamin D levels requires 800-1,000 IU per day of vitamin D₃ or 50,000 IU once per month, a dose that's available by prescription only (Photochem. Photobiol. 2005;81:1246-51).

Keep in mind that vitamin D intoxication doesn't occur until daily doses exceed 10,000 IU, Dr. Lim said. "Therefore, even

at 800-1,000 IU, there is still a significant margin of safety."

Dr. Lim advised reading three articles about the ongoing vitamin D debate:

► Results of the 2005 consensus conference: *J. Am. Acad. Dermatol.* 2005;52:868-76.

► A series of seven articles on UV radiation, beginning with one entitled, UV radiation, vitamin D, and human health: an unfolding controversy: *Photochem. Photobiol.* 2005;81:1243-5.

► An overview of the proceedings from the experimental biology 2004 symposium on vitamin D insufficiency: *J. Nutr.* 2005;135:301-37. ■

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Reference: 1. Clarebout G, Leclercq R. Fluorescence assay for studying the ability of macrolides to induce production of ribosomal methylase. *Antimicrob Agents Chemother.* 2002;46:2269-2272.