

Editorial

James V. Felicetta, MD

Editor-in-Chief



Put Down the Sunscreen—And Soak in the Vitamin D!

I'm serious: You need to drop your bottle of sunscreen, and you need to do it right away, so no one gets hurt. Believe it or not, that sunscreen of yours is much more likely to do you harm than good.

What? What kind of nonsense am I spouting so publicly, and in a medical journal no less? Haven't we heard for years from our friendly neighborhood dermatologist that sunscreen is just the ticket? Won't we all wind up with tons of awful actinic keratoses and basal cell carcinomas unless we slavishly slaver the stuff on?

Perhaps. It's not really my intention to try to refute the evidence that sunscreen will protect you from some skin malignancies. The CME article ("Skin Cancer Prevention: Current Modalities and Future Implications") on page 40 of this issue discusses this evidence, along with other modalities that hold promise for the future in skin cancer prevention. Rather, my mission is to warn you about a far less known yet, possibly, much more important problem that can result from following current recommendations regarding sunscreen use.

By now you may have figured out that I'm talking about vitamin D deficiency, a condition that has become rampant in this country. A very large fraction of the U.S. population, perhaps up to half,¹ is deficient in this most basic vitamin. And this is no humdrum vitamin deficiency that we're dealing with here. It turns out that vitamin D deficiency has some very serious consequences, many of which you may not be fully aware.

I developed an interest in this problem through the back door, if you will. As an endocrinologist, I've had many patients referred to me

over the past several years because of modest elevations in their parathyroid hormone (PTH) levels. The referral question is almost always the same: Does this poor soul have that much-feared entity of primary hyperparathyroidism, in which case he'll likely require throat surgery to remove the offending adenoma? Fortunately, the answer in most cases is no. Instead, the more frequent culprit turns out to be vitamin D deficiency, which leads to modest elevations in PTH levels as the glands try to compensate for the relative calcium deficiency caused by insufficient vitamin D levels.

At this point, you may be wondering how vitamin D deficiency could be turning up so frequently in my practice. Don't I work in Arizona, one of the most sun-drenched places in the country? The fact that I do see so many patients with this deficiency, even in the heart of Phoenix, simply emphasizes that people have gone overboard in their attempts to protect themselves from the sun—not just with sunscreen; I actually see people strolling down the street with parasols. These people think they're doing the right thing, but what they don't realize is that by blocking out the sun's rays, they're preventing their bodies from absorbing that essential vitamin D. And, of course, the problem is even worse in northern climes, where huge fractions of the population suffer from vitamin D deficiency related to inadequate sun exposure, especially during the long winter months.

But just what damage does vitamin D deficiency do to the body? The problem is a much bigger one than you may have realized. It turns out that there are more consequences than simply exacerbation of osteopo-

rosis through inadequate deposition of calcium in bone—although that's plenty serious in its own right. There are also now very credible data linking vitamin D deficiency to increases in insulin resistance, such that it may be a major contributing factor to the worldwide epidemic of type 2 diabetes. This mechanism could help explain the observed link between vitamin D deficiency and increased cardiac risks, as well as some data showing lower levels of cognitive functioning—including memory, learning ability, and ability to sort through complex mental tasks—in patients with vitamin D deficiency. Vitamin D deficiency also may be implicated in the etiology of multiple sclerosis, which could explain why this awful affliction has always been more common in northern latitudes.

Furthermore, there's credible evidence that vitamin D deficiency may increase a person's vulnerability to certain critical malignancies, including breast, colon, and prostate cancers. For example, a recent pooled analysis by Garland and colleagues suggested that the risk of breast cancer is 50% lower in individuals with normal levels of vitamin D than in those with deficient vitamin D levels.² The evidence correlating breast cancer and colorectal cancer with low vitamin D levels was strong enough to lead the Canadian Cancer Society in June 2007 to recommend that every adult living in Canada should supplement with 1,000 IU of vitamin D during the fall and winter months.³ They also recommended year-round supplementation for those who are older, have dark skin, don't go outside often, or wear clothing that covers most of their skin.³

Continued on page 12

Continued from page 10

A recent study in the *Archives of Internal Medicine* showed that both all-cause mortality and death from cardiovascular causes are doubled among both men and women with below-average vitamin D levels.⁴ The researchers in this study found that low vitamin D levels were correlated with markers of inflammation, oxidative cell damage, and cell adhesion, suggesting that these factors all work together to create a more atherogenic risk profile.

Clearly, this is really serious stuff. Vitamin D deficiency is very real, and it's very, very common. (For a handout on vitamin D deficiency you can give to patients, see Patient Information on page 29 of this issue.) So before you automatically apply your morning sunscreen and don your protective

gear, think twice. The sun actually can be your ally in promoting health, rather than your enemy. My advice is to get as much exposure as you can safely tolerate—you'll probably live longer for it. ●

Author disclosures

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