

Shining a Light on the Health Benefits of Vitamin D

By CLAUDIA DREIFUS

A visit to the office of Dr. Michael F. Holick in the Boston University Medical Center quickly conveys his enthusiasm for his favorite hormone, vitamin D.

On the office walls are letters from sixth graders responding to a talk he gave.

"The important fact I learned from you yesterday is that most living things or persons need vitamin D," one child wrote.

Another added, "Even frogs need vitamin D."

To advance his point, Dr. Holick — a 56-year-old endocrinologist and a professor of dermatology, biophysics and physiology — handed a reporter a copy of a paper he had recently written, "Vitamin D: The Underappreciated D-lightful Hormone That Is Important for Skeletal and Cellular Health," published in the journal *Current Opinions in Endocrinology and Diabetes*.

Dr. Holick has spent 30 years researching the many ways that vitamin D serves the creatures of this planet. His proudest accomplishments, he says, include discoveries that show how activated vitamin D can be used to treat osteoporosis, kidney failure and psoriasis. His psoriasis finding, he notes, has become a widely employed therapy in treating some forms of the disorder.

His research into the way skin converts sunlight into vitamin D has led him to a new crusade, encouraging people to let some sun shine on their skin and, thus, some vitamin D into their systems, a controversial idea in some corners of the dermatology world.

Q. Would you describe vitamin D as an underrated vitamin?

A. I would say vitamin D has been taken for granted and, as a result, has been ignored.

However, this vitamin is critically important for maintaining normal calcium in the blood and for bone health. The vitamin plays a crucial role in most metabolic functions and also, muscle, cardiac and neurological functions. Without enough of it, a child can get rickets, and an adult might suffer bone softening, a mineralization defect. Vitamin D deficiency can precipitate and exacerbate osteoporosis.

Moreover, there is evidence that vitamin D may have subtle but profound effects on regulating cell growth and on our cardiovascular and immune systems. There is a strong association of sunlight exposure and increased blood levels of vitamin D with a decreased risk of many common cancers: colon, breast, prostate, ovarian.

Additionally, vitamin D deficiency has been associated with an increased risk for Type 1 diabetes. The converse is also true. Adequate vitamin D equals less risk for diabetes. So yes, I would say despite being ignored, this is a very important vitamin.

Q. How does an average person obtain a sufficient daily supply of vitamin D?

A. It's been estimated that about 80 to 100 percent of an individual's requirement comes from exposure to sunlight. The skin absorbs the ultraviolet energy from the sun and then converts it to vitamin D. Now, there are a few foods that contain vitamin D naturally — salmon and mackerel. Also, the oils from some fish like cod, shark and tuna have it. But, to get enough, you'd have to eat these fish and/or their oils three times a week. There is, of course, vitamin D in fortified milk. But you'd have to drink six to eight glasses a day to get enough.

So sunlight is the main source of vitamin D. And there is some research that's begun to be published that shows a lot of people, particularly people who live in northerly places, just aren't getting enough sunlight to meet their vitamin D needs.

Q. You have done some research here at Boston University on who exactly is suffering from vitamin D deficiency. What are you finding?

A. We completed a study last year that shows that 36 percent of young adults in the Boston area, ages 18 to 29, were vitamin D insufficient at the end of the winter. Amazingly, 11 percent of our group were vitamin D deficient at the end of the summer. Our subject pool was taken from local medical students and hospital residents, people who work so hard and so long that they rarely see the light of day.

The thing is a person can actually store vitamin D. You store it in your body fat! And that's why if you get adequate amount of exposure to sunlight in spring, summer and fall, you will store it in your body fat, and it will later be released during the wintertime. Our hard-working medical students just weren't getting enough sunlight, not even in the summertime.

I suspect this is true for a lot of office workers and others who work at indoor jobs. Or even people who don't work. We and others have shown over and over again that older adults are prone to vitamin D deficiency. A study done in Baltimore, for example, shows that up to 50, 60 percent of free-living adults over the age of 65 were severely vitamin D deficient.

The bottom line is many who live in northern places and who spend most of their time indoors need to find ways to get outdoors, so that they can get their bodies to make and store reserves of vitamin D.

Q. Doesn't the idea of being in the sunlight run contrary to the conventional wisdom, which says that sun exposure causes skin cancers and should be avoided?

A. I'm not advocating tanning. But the fact is inescapable. Our vitamin D requirement comes from our casual everyday exposure to sunlight. We're not interested in recommending that you get sunburn or that you stay out for prolonged periods of time. We encourage the opposite.

We say: "Go out there that 5 or 10 or 15 minutes. Make your vitamin D in your skin. Then put on your sunscreen with an S.P.F. of 15 to prevent the effects of the chronic excessive exposure to sunlight."

Q. Do you think that dermatologists have gone overboard in pushing their patients to shun the sun?

A. That's changing. I'm a professor of dermatology myself, and I've noticed that many of my colleagues are realizing that maybe we've gone too far on that. I don't think that "no

sun" is a healthy recommendation. And I think that, just like anything in life, moderation probably helps maximize our health.

Q. Is your 5- to 15-minute sunlight prescription something you recommend across the board to prevent vitamin D deficiency?

A. No. It depends on the person and their particular sensitivity to sunlight. New research, for instance, is showing that African-Americans may require more time outdoors to make enough vitamin D. We estimate that up to 40 percent of African-Americans in the Boston area are vitamin D deficient.

In general, I recommend that whatever your ethnicity or skin tone, you get outdoors without a sunscreen somewhere around 20 percent of the amount of time it would take to cause a sunburn, however long that might be. I also recommend an additional daily multivitamin that contains a minimum of 400 units of vitamin D.

Q. What is your own vitamin D regimen?

A. Well, I love to garden and play tennis. In those activities, I wear a broad-rimmed hat, and I wear a lot of protection over my arms and legs, but not for the whole time. As I start my activities, I usually have my face and arms and legs exposed to sunlight for about 10 minutes, and then I cover myself up. I don't ever get sunburned.