

REPORT

Vitamin D:
The Underrated Essential
Researcher Michael F. Holick, M.D. shares
his insight into this overlooked necessity



Despite being one of the most crucial components of healthy bones, a protector against cancer and diabetes, and a valuable component of the immune system, vitamin D has gone largely unnoticed in the public eye. To uncover some of the benefits of this underrated nutrient, Life Extension spoke with Dr. Michael F. Holick, a vitamin D researcher at Boston University's Medical Center and the author of *The UV Advantage*.

Life Extension Foundation: What is the role of vitamin D in the human body?

Dr. Michael Holick: Vitamin D has a multitude of effects, the principal of which is the development and maintenance of bone health from birth to death. In people who are vitamin D deficient, you will see a wide variety of bone disorders, such as osteoporosis and osteomalacia-the inability to mineralize bone, causing pain and weakness.

But while its effect on bones may be its most commonly known property, vitamin D also has many other subtle but very important functions. For example, it reduces the risk of diabetes and certain forms of cancer including ovary, breast, colon and prostate; it has been shown to improve hypertension; help psoriasis; and it drastically reduces the risk of heart disease. There are even some studies that link Alzheimer's disease, depression and multiple sclerosis to low vitamin D levels.

LEF: How critical is vitamin D for bone development in children?

Holick: In children, vitamin D is critically important. Without it, you'll have growth retardation, rickets and other skeletal deformities. In fact, rickets-once considered a disease from a hundred years ago-is on the rise. Why? There is not enough vitamin D in breast milk. Children in particular need to get more vitamin D.

LEF: How does the average person get a sufficient supply of vitamin D?

Holick: Sunlight is a crucial factor in maintaining proper levels of vitamin D. It's so important that our body-our skin-makes vitamin D when exposed to UVB radiation from the sun. Studies have shown that between 80% and 100% of the daily requirement for vitamin D comes simply from being in sunlight for about 15 minutes a day. One problem with that is, according to modern perception sun exposure is "bad" because of the risk of cancer. We stay indoors more often, wear sunscreen-things that don't allow us to get the proper amount of sun. The bottom line is, the public needs to be aware that adequate sunlight is an important part of good health.

LEF: Some people just don't have the ability to get adequate sunlight. Are there any foods that are rich in vitamin D?

Holick: Herein lies the problem-not many. Few foods actually contain any appreciable level of vitamin D naturally. Certain fish, like mackerel and salmon have some, as do oils from fish like cod, shark and tuna. Meats and egg yolks also have some vitamin D in them, but very little. Of course fortified milk has vitamin D, but the amounts in every container are highly variable-it simply might not have as much as the label says that it does. Besides that, in order to get a high enough level of vitamin D from milk you would have to drink about 10 glasses of it every day. That's a lot of milk.

LEF: What about tanning salons? Can your body make vitamin D from the light of a tanning bed?

Holick: Yes. Research has shown that certain types of low pressure lamps supply UVB radiation-which is exactly what you need to make vitamin D. But not all places use those, so you have to check first.

LEF: Who is most at risk for having a vitamin D deficiency?

Holick: While anyone who doesn't get enough exposure to sunlight or supplement their diet is at risk, studies from the Center for Disease Control (CDC) have shown that African Americans suffer from vitamin D deficiencies the most. As many as 42% of all African Americans ages 15 to 45 have low levels of vitamin D. In fact, they need five to ten times more exposure to make the same amount as a caucasian because the melanin is a sunscreen.

People who live at higher latitudes are also at high risk for being deficient. We just completed a study in Boston which showed that 36% of young adults ages 18 to 29 had insufficient levels of vitamin D. Our subject pool was that of local medical school students and hospital residents whose work or studies limit their exposure to sunlight. The bottom line here is, people-especially if they live in the north or spend most of their time indoors-need to find ways to get outside and replenish their levels of vitamin D.

LEF: How critical is vitamin D to the functioning of the immune system?

Holick: In terms of the immune system, vitamin D has extremely important, yet subtle effects. For example, studies have shown that people at higher latitudes have a higher rate of multiple sclerosis (MS)-possibly due to deficiency in vitamin D. In fact, several animal models have shown that with animals that can be induced with MS, they will not get MS if treated with vitamin D beforehand. Another study in Finland found that proper levels of vitamin D actually reduce the occurrence of Type 1 diabetes in children by about 80%.

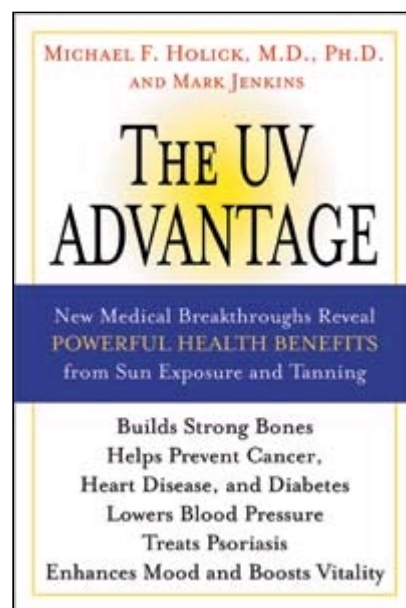
LEF: How do vitamin D supplements fit into all of this?

Holick: Supplements can be an excellent source for vitamin D. The problem is, many people only take a multivitamin and if you're already low in vitamin D, your body needs more than the 400 IU it can get from a single multivitamin. While 400 IU may be fine for some people, those who do not have adequate sun exposure need more-about 1000 IU a day to satisfy their body's requirement for vitamin D. Some moderately deficient people may benefit from even higher daily doses, but I'd say, 2000 IU is the safe upper limit.

In extreme cases of vitamin D deficiency, some patients will need to get a prescription to take very high doses 50,000 IU/week for eight weeks. Why? If you are extremely deficient, taking 400 or even 1000 IU a day would be like putting in a gallon of gas into an empty car it won't get you very far. You need to fill up your tank to get the necessary amount.

LEF: Would you say that vitamin D is an underrated vitamin? Why?

Holick: Yes, it is definitely underrated-we simply take it for granted because it is a factor in our everyday lives. However, vitamin D is critically important for maintaining normal calcium levels in the blood and for bone health. Not only that, but we have found that if blood levels of vitamin D are good, it reduces the rate of colon cancer by about 50%. In short, vitamin D plays a crucial role in many metabolic functions as well as neural, cardiac and muscle function.



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