

## How Much Summer Sunshine? Balancing Vitamin D and Skin Cancer

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AMES, Iowa – Go play outside and soak up some Vitamin D from all that sunshine. That's what parents told their kids back in the day – when sunburn didn't matter and sunscreen was unheard of.

And it's true: the human body can synthesize Vitamin D simply by being outdoors, says Matthew Rowling, an assistant professor of food science and human nutrition at Iowa State University. The sun's ultraviolet radiation triggers a two-step process by the liver and kidneys to create the active form of Vitamin D.

"Our parents were on to something when they sent us outside for Vitamin D. Now we know that the lack of Vitamin D is linked to numerous chronic inflammatory diseases such as type 2 diabetes, cardiovascular disease, certain types of cancer and autoimmune disorders such as multiple sclerosis," Rowling said. "But we also know that exposing unprotected skin to too much sunlight increases the risk of skin cancer. It's a balancing act."

Vitamin D has been advocated to prevent the bone disease rickets since the early 1900s. It also has been advocated to prevent osteoporosis and hip fractures in older adults. Recent research has discovered that nearly every kind of tissue in the body is equipped with Vitamin D receptors, suggesting it may be involved in all kinds of functions. Vitamin D deficiency has been linked with increasing incidence of chronic inflammatory and autoimmune disorders, Rowling noted.

This research has spurred debate about the current guidelines for Vitamin D established by the Institute of Medicine (IOM) 12 years ago. Current recommendations for Vitamin D are only 200 IU (International Units) for children and adults to age 50, 400 IU for adults age 51 to 70 and 600 IU for adults age 71 and older. However, Vitamin D researchers are recommending intakes of 3,500 to 4,000 IU daily to achieve optimal Vitamin D levels in the blood.

That's a lot of Vitamin D. So what should parents suggest now?

"You can get some Vitamin D from food," said Ruth Litchfield, an associate professor and ISU Extension nutrition specialist. However, Vitamin D occurs naturally in only a handful of foods. These foods, including fatty fish (salmon, tuna, mackerel and herring) and eggs, contain relatively small amounts of the vitamin.

"You'd have to eat excessive amounts of these foods to consume the recommended amount of Vitamin D," Litchfield said. "Other foods are fortified with Vitamin D, including milk and breakfast cereal. But these foods contain amounts far less than the recommended intake."

This is where sunshine and the balancing act come in. Research shows that 20 minutes of direct sunlight (between 10 a.m. and 2 p.m.) will stimulate adequate Vitamin D production.

"Experts recommend exposing a small area of skin, about a four-by-four-inch square, to 20 minutes of direct sunlight before applying sunscreen to that skin," Rowling said. "The next day that you're outside, expose a different area of skin for 20 minutes."

If direct sunlight is not accessible, Litchfield suggests taking a Vitamin D supplement along with eating food that contains or is fortified with Vitamin D to achieve the recommended intake of 3,500 to 4,000 IU.

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