

# Sensible sun exposure key to unlocking health benefits of vitamin D, expert says

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By Tracy Rozens



The health benefits of vitamin D generated by sensible sun exposure, especially the maintenance of strong bones, outweigh the risk of skin cancer, according to one of the world's leading authorities on vitamin D for human nutrition.

The major source of vitamin D for most humans is sun exposure, but some dermatology and medical associations have argued that any sun exposure increases the risk of skin cancer.

"There really is, in my opinion, no evidence to suggest that adequate sensible sun exposure that would improve your vitamin D intake would increase risk for this deadly cancer melanoma," Michael Holick, professor of medicine, physiology and biophysics at Boston University School of Medicine (BUSM), said in a recent interview with Life Science Daily. "It's true that sunburns and excessive sun exposure increase risk for melanoma and non-melanoma skin cancers, but what I have been recommending is to go outside for about 50 percent of the time that it would take to get a sunburn, followed by good sun protection."

Holick developed global guidelines on sunlight exposure and vitamin D for human nutrition. He is director of both the Vitamin D, Skin and Bone Research Laboratory and the General Clinical Research Unit at BUSM. In addition, Holick is the author of the book, "The Vitamin D Solution," and has authored more than 400 peer-reviewed publications.

Holick estimates that adults need at least 1,500-2,000 International Units (IU) of vitamin D each day through sun exposure, supplements and dietary sources.

Exposing skin to sunlight for about half the time it takes to get a mild sunburn is the equivalent of ingesting approximately 10,000 IU of vitamin D.

The idea that a healthy diet produces all the nutrients that children and adults need, including vitamin D, is a myth, Holick said.

“It is impossible to get enough vitamin D from dietary sources,” Holick said, adding that a glass of milk contains approximately 100 IUs of vitamin D.

Vitamin D deficiency is a major health problem that afflicts approximately 40 percent of children and 60 percent of adults. Holick said, however, that wearing a properly applied SPF of 30 reduces the capacity of the skin to produce vitamin D by almost 98 percent.

Vitamin D deficiency leads to debilitating diseases like osteoporosis and rickets and increases the risk of developing common cancers, diabetes and autoimmune diseases, including multiple sclerosis and heart disease.

Studies have also shown links between vitamin D deficiency and brain disorders, including Alzheimer’s disease, depression and schizophrenia, and infants who are vitamin D deficient have a higher risk of developing asthma.

Determining the appropriate amount of time in the sun depends on a variety of factors – skin sensitivity and pigmentation, the time of day, the season, and even latitude.

“It is an undisputable fact that living at higher latitudes and having less sun exposure increases risk for many chronic illnesses, infectious diseases and mortality,” Holick wrote in a study published in March by the International Journal of Cancer Research and Treatment.

In order to help determine how much sun is safe and effective, Holick has developed a vitamin D tracking app with software developer Ontometrics. The app tracks the sun anywhere in the world and estimates how much vitamin D an individual is producing and when to get out of the sun to avoid a sunburn.

In another innovative development, Boston University has joined forces with RayVio Corp., an advanced health and hygiene company, to research new treatments for vitamin D deficiency.

The research, led by Holick, will expose skin samples to UV light generated by RayVio’s LEDs to determine the appropriate exposure times and intensity that can be safely used to treat disorders caused by vitamin D deficiency.

Holick’s previous work with RayVio demonstrated that low intensity UV light from LEDs – the kind that might be incorporated into today’s wearable technologies – will boost vitamin D production in skin.

Holick is also conducting ongoing studies on the photobiology of vitamin D. The studies suggest that as many as 10 vitamin D-like photoproducts are produced in human skin when exposed to sunlight.

“We have now begun to look at them to see if they have unique biological activity. Some of them do have anti-cancer properties,” Holick said.