OPTIMAL HEALTH UNIVERSITY™

Presented by Dr. Smith

Be Sun-Savvy With Vitamin D

As the days grow warmer, you may be planning trips to the beach, the local pool, or other summertime hot spots. Or maybe you'll just be outdoors getting more exercise, doing yard work and enjoying the warm weather. Before you automatically slather on the SPF 50 sunscreen, consider the health benefits of moderate sun exposure. Without sunshine, our bodies fail to produce vitamin D, a critical element in maintaining a healthy immune system.

Don't get us wrong: We are not talking about excessive sun exposure, which may lead to burning and cancer. However, a small dose of daily sunshine (about five to 30 minutes, depending on climate and individual characteristics) may actually be good for you. Dr. Smith welcomes the summer by bringing the facts about ultraviolet (UV) radiation out of the shadows — and explaining how and why to welcome sensible sun exposure into your daily routine.



The Melanoma Scare

Many people avoid sun exposure out of fear of skin cancer — certainly a valid concern. Numerous studies in recent years have connected sun exposure to melanoma, the least common but deadliest form of skin cancer. Melanoma is five times more common today than 30 years ago, with an estimated 132,000 new cases globally each year (*Dtsch Arztebl Int* 2008; 105:845-51). The World Health Organization warns that continued depletion of the ozone layer — which filters the sun's UV radiation — will continue to drive up that number.

It's worth remembering, says Dr. Smith that melanoma has a range of risk factors aside from UV exposure. Certain eye and hair colors, a large number of moles, family history of melanoma, weakened immune system and advanced age all make an individual more susceptible to this cancer. In all, 75 percent of melanomas develop on areas that receive little or no exposure to the sun, such as the feet and genitals, and often do not correlate with patients' overall UV exposure (*BMJ* 2008;337:a764; *J Photochem Photobiol B* 2010; Epub).

Furthermore, sun exposure may actually protect against or improve prognosis of melanoma. A study of 260 melanoma patients in Italy showed that those exposed to more sun prior to their diagnoses were less likely to die of the cancer (*Eur J Cancer* 2008;44:1275-81). Scientists are continuing to investigate the role of UV radiation in protecting us from melanoma, perhaps because of sunlight's importance in the production of immunity-boosting vitamin D.

Vitamin D: The Sunshine Vitamin

Vitamin D is often called the "sunshine vitamin" because 90 percent of our bodies' required amount of this nutrient must be produced in the skin through exposure to UV-B radiation via sunlight (*Br J Dermatol* 2009;161 S3:54-60).

However, calling D a "vitamin" may actually be a misnomer because D is produced by one part of the body and sends signals to other parts of the body, it may be better classified as a hormone.

We have long known that vitamin D helps the body metabolize calcium to ensure bone health. But recent research uncovers this nutrient's critical role in the immune system. One study reveals that vitamin D is necessary for disease-fighting T cells to defend the body against viruses and other invading microorganisms (*Nat Immunol* 2010;11:344-9).

Vitamin D's power to help us maintain optimal health is also apparent in its connection to lower rates and better prognoses of many types of cancer, including those of the breast, colon and throat (*Anticancer Res* 2009; 29:3495-500). Greater exposure to vitamin D-producing sunlight may also explain the plethora of studies showing lower cancer rates among populations living at higher altitudes (*Med Hypotheses* 2010; Epub).

Vitamin D Deficiency:
A Public Health Crisis

Various studies show that vitamin D deficiency is rampant — half of British adults, 59 percent of Americans and over 70 percent of Canadians lack adequate levels of this critical nutrient (*BMJ* 2010;340:b5664; *J Clin Endocrinol Metab* 2010;95:1076-83; *Public Health* 2010; Epub).

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Public health campaigns that encouraged us to shun the sun in order to prevent skin cancer are partly to blame. Lifestyle changes are also responsible. Today, children and adults alike spend more and more time indoors playing video games and using the Internet.

The doctor warns parents that widespread vitamin D deficiency has even led to a resurgence of rickets, the bone-weakening childhood disease of the Victorian era. Mothers with subpar stores of vitamin D pass on insufficient levels to their babies both in utero and through breast milk. Then, per common "wisdom", these babies are sheltered from UV exposure (*Am Fam Physician* 2010;81:745-8.)

Furthermore, vitamin D deficiency is linked to autoimmune diseases such as multiple sclerosis (MS). Childhood exposure to the sun's ultraviolet rays seems to decrease risk for developing MS — which is much less common in the tropics compared to higher latitudes. And, UV exposure has been shown to reduce MS symptoms in mice (*Neurology* 2007;69:381-8; *PNAS* 2010;107:270-75).

Use Vitamin D Supplements With Care

Current daily recommendations call for 200-600 IUs, depending on age. However, many experts advise 1,000 IUs or more.

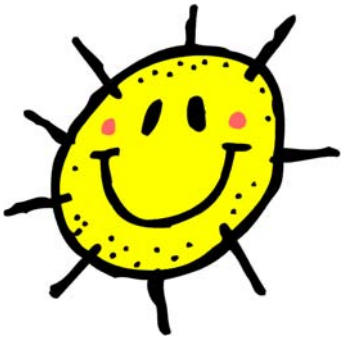
When geography or time of year make it impossible to get adequate UVB exposure to maintain optimal vitamin D levels, supplements are available — but should be used with caution. Look for vitamin D3 (cholecalciferol), the natural form of D produced by our bodies. D3 is also found in eggs, fatty fish and liver. Cod liver oil is an easily available and potent source. However, it is essential that you choose a formula free of heavy-metal pollutants.

Avoid the synthetic vitamin D2 (ergocalciferol). Synthetic D2 is abundant in cheaper supplements and vitamin D-fortified foods. D2 is extremely toxic if overused. In addition, it does not include the essential accompanying micronutrients that occur naturally with vitamin D3 (*Ann Epidemiol* 2009;19:441-5). To avoid toxicity, consider having your vitamin D levels checked before beginning a supplementation program.

How Much Sun Exposure Is Enough?

The exact amount of sun exposure needed for ideal vitamin D production involves several variables, such as time of day and location. UVB is most plentiful in the midday sun from about 10:00 to 3:00, and even more so in the summer. Higher altitudes and locations nearer the equator also receive more UVB radiation.

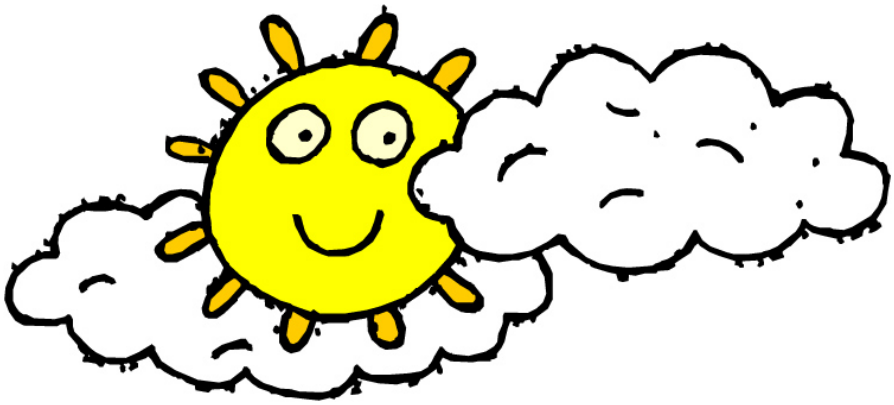
UVB penetrates lighter skin more easily, so the darker your skin, the more time in the sun it needs to produce enough vitamin D (*Arch Intern Med* 2009;169:626-32). Older adults also need more UVB exposure because the skin produces vitamin D less efficiently with age (*Diabetes Care* 2009;32:1278-83).



Most experts agree that an appropriate amount of sun exposure should just barely begin to turn the skin pink. Depending on the factors described above, this could be anywhere from five to 30 minutes per day. Any more change in skin color can lead to sunburn, which is connected to skin damage and cancer.

After appropriate exposure, seek the shade or block further UV rays with clothing and a safe and natural sunscreen. Finally, if you have been avoiding sunlight, begin exposure gradually to minimize risk of damage.

For a helpful resource to determine your personal optimal UV exposure time, the Norwegian Institute for Air Research has a calculator at http://bit.ly/2A0Hyr (*Photochem Photobiol* 2006;82:1697-1703).



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