Casual Sun Exposure Yields Inadequate Vit. D

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GOTHENBURG, SWEDEN – The popular practice of trying to improve serum vitamin D status through controlled sun exposure is a no-win proposition that's unlikely to result in adequate vitamin D levels year-round without compromising skin health, Brian L. Diffey, Ph.D., asserted in a plenary lecture at the congress.

"Failure to understand the nature of human exposure to sunlight has led to widespread misguided public health ad-

vice concerning the sun exposure necessary for adequate vitamin D status. Messages concerning sun exposure should remain focused on the detrimental effects of excessive sun exposure and avoid giving specific advice on what may be thought to be optimal sun exposure," said Dr. Diffey, professor emeritus of photobiology at the University of Newcastle (England) who has been publishing studies on the relationship between sun exposure and skin cancer for more than 20 years.

"The recommendation for short, casual sun exposure as adequate for a healthy vitamin D status is simply ubiquitous. We read it everywhere. It has become part of our conventional wisdom. Nobody really questions it.

"But there's been a gross oversight in all of these recommendations: These calculations relate only to exposure under a clear sky with no clouds, [while] lying horizontal in the middle of the day in midsummer with no shade and roughly 25% of our body surface exposed," he explained.

That's simply not how sun exposure occurs in contemporary life. A person walking around in an urban environment with shade from nearby buildings and trees receives a sun exposure on the vertical body surfaces that's typically one-sixth of that of a sunbather lying horizontally, Dr. Diffey continued.

As examples of the widespread public health messages encouraging limited sun exposure to enhance vitamin D levels, he noted that the United Kingdom's National Osteoporosis Society recommends trying to get 10 minutes of sun exposure once or twice a day without sunscreen between May and September for bone health.

Furthermore, the United Kingdom Health Protection Agency states that short periods outdoors will produce sufficient vitamin D. And "The UV Advantage," by Dr. Michael Holick, professor of medicine at Boston University and winner of the 2009 Linus Pauling prize for health research, containing the "Holick formula for safe sun," is a brisk seller.

Dr. Diffey pointed to a recent large international study of serum vitamin D levels month-by-month for individuals living at various latitudes in the United Kingdom, which concluded that most people have adequate but suboptimal levels during the summer months, with a mean of 70 nmol/L.

The investigators deemed a level greater than 75 nmol/L to be optimal. In the winter months, most people fall into the "inadequate" range, with a mean serum vitamin D of 48 nmol/L. About 16% have severe deficiency during winter and spring, with higher prevalences in the northernmost latitudes (BMJ 2010;340:b5664. [doi: 10.1136/bmj. b5664].

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In light of study data showing that most people in Europe and North America spend an average of 1-2 hours per day outdoors during the summer, they are generally regarded as having suboptimal vitamin D levels during those months and are vitamin D insufficient the rest of the year.

A recommendation for 10-20 minutes of daily casual sun exposure followed by sun avoidance would be "grossly insufficient" to maintain adequate vitamin D levels, he said.

"In fact, if people really did follow the conventional public health advice, we would be much more vitamin D insufficient than we now are," according to the photobiologist.

The safe and effective ways to raise vitamin D levels, Dr. Diffey said, are more widespread fortification of foods or the use of supplements, especially during the winter months.

For dermatologists, he added, there's another effective option: "Pop into your UVB cabin once a week from November to February when nobody's looking and give yourself 1 SED [standard erythema dose], which is about one-third of the minimal erythema dose."

His recently published mathematical model (Br. J. Dermatol. 2010;162:1342-8) predicts this modest UVB exposure, adding up to a little over one-tenth of a typical UVB treatment course for psoriasis, would keep the recipient in the adequate range for serum vitamin D throughout the dark months.

Dr. Diffey said he has no relevant financial conflicts of interests. ■