Here Comes the Sun…

By Gregory S. Cohn, M.D.

Last month, I introduced you to some basic facts about vitamin D. Chief among these were that exposure to sunlight is necessary for the skin to produce vitamin D, that levels previously considered to be normal are now felt to be too low, and that consequently, many Americans are vitamin D deficient. Moreover, while the importance of this vitamin to bone metabolism is well known, the presence of vitamin D receptors in most other organ systems suggests a broader, more vital role in health maintenance. This month, I will review some of the emerging evidence that may help to more precisely define the role played by vitamin D.

Some studies have shown that patients with lung, colorectal, and breast cancer have greater survival if their diagnosis is made in the summer versus the winter. Because of reduced sun exposure (and naturally lower levels of vitamin D) in the winter, it has been hypothesized that variations in the level of vitamin D may account for this difference. This hypothesis is made more plausible by experimental evidence that activation of the vitamin D receptor may inhibit cellular growth and promote cellular maturation, both of which could conceivably reduce the aggressiveness of cancerous processes. In 2008, a study utilizing a national database found that vitamin D levels less than 18 ng/ml were associated with a 26% higher risk of all-cause mortality, independent of other traditional risk factors. In addition, another study which compiled the results of 18 separate trials and included over 57,000 patients, found that intake of vitamin D supplements in conventional doses was associated with decreases in total mortality rates.

Other recent evidence points to a possible connection between vitamin D and risk factors for cardiovascular disease and cardiovascular disease death. Several studies have shown that lower levels of vitamin D were associated with greater risks for hypertension, diabetes, obesity, myocardial infarction, peripheral vascular disease, and congestive heart failure. Again there is a biologically plausible explanation: vitamin D appears to lower activity in the renin-angiotensin system (an important regulator of blood pressure) and to reduce inflammation, smooth muscle cell growth, and vascular calcification. All of these effects would be expected to diminish atherosclerotic plaque production and instability. Interestingly, the processes of atherosclerotic calcification and bone growth/development are regulated in similar fashions, and some scientists believe that the statin drugs may exert some or all of their beneficial effects by acting like vitamin D! Regarding diabetes, low levels of vitamin D have been linked to reduced production of insulin and increased levels of insulin resistance in tissues, while others suggest that replacing vitamin D may help to improve these abnormalities.

While our knowledge of vitamin D is still in its infancy, it is clear that this vitamin plays a part in many health issues that are significant to our well being. Ask your physician to check your 25-OH vitamin D level, and start supplementing if it is low. Now you have another reason to go outside, get some sun, and … it's all right.

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