



Institute for Women's Health Research

Putting Women's Health First

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Dear Friends,

Now that the Food and Drug Administration has released new labeling guidelines for sunscreen to be effective next year, there has been a resurgence of discussion on whether or not sunscreen reduces the amount of Vitamin D we get from sun exposure and whether or not this may be harmful. In addition, Vitamin D has become the supplement 'de jour' among the popular press and the celebrity doctor talk shows. In fact, *The Nutrition Business Journal* (July 5, 2011) has reported a 30% jump in sales of Vitamin D in 2010 to \$550 million.

This edition of our monthly e-newsletter will explore this sudden interest in this vitamin and if it is science or hype that has increased its popularity.

The Institute Staff



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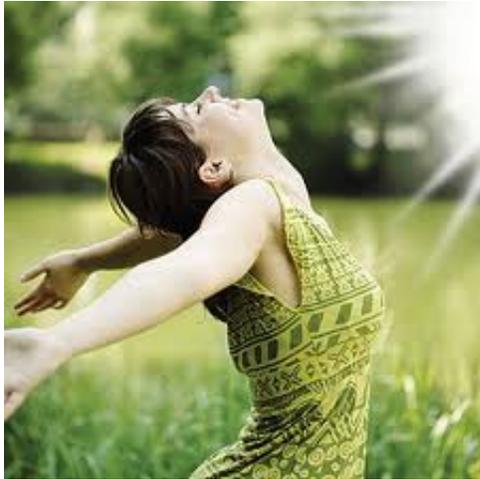
VITAMIN D IN THE NEWS

Vitamin D: Why the hype?

It seems that everywhere we turn, we hear about a new supplement we should be taking to prevent or lower our risk for disease. It is no surprise that multiple health news sources have latched on to current research on Vitamin D and the purported populations that are Vitamin D deficient. A simple online search of Vitamin D unearths

hundreds of articles that include information on adverse side effects of insufficient Vitamin D levels, where we can get more Vitamin D, and the numerous benefits of taking additional supplements.

The number of studies on Vitamin D has skyrocketed, and many of them seem to be communicating a wide range of diverse findings. Here is what we do know. First, Vitamin D has two major forms that are important for our bodies: ergocalciferol (Vitamin D2) and cholecalciferol (Vitamin D3). Plants make Vitamin D2, and humans synthesize Vitamin D3 when skin is exposed to the sun's UVB rays or when certain foods are consumed.(1,2)



According to the NIH's Office of Dietary Supplements, Vitamin D is necessary for proper calcium absorption, promoting strong bones and teeth, and for maintenance of normal blood levels of calcium and phosphorus. Further, it is also related to immune function, reduction of inflammation, and cellular processes such as cell differentiation and apoptosis (cell death).(3)

Because Vitamin D is so integrated in human bodily processes, it is no wonder that there exists an overwhelming interest in the molecule and a great number of questions surrounding it. Without Vitamin D, or with insufficient levels of Vitamin D, we are at risk for diseases of the musculoskeletal system such as Rickets (characterized by soft, weak bones in children) and [osteoporosis](#).(4)

Are we getting enough?

The Institute of Medicine's (IOM) *Dietary Reference Intakes for Vitamin D* reveals that for both men and women, 600 IU (international units)/day are recommended, based on a 2,000-calorie diet for the average adult. The determination of this amount is somewhat complicated, says the IOM, as sun exposure varies from person to person, and that must be factored in to recommended amounts since it affects Vitamin D levels in the body. Further, while 600 IU is stated to be sufficient for men and women ages 1-70 years, older adults and women of menopausal age that are at risk for osteoporosis do require more as changes in the body require nutrients that sustain bone health.(5)

The IOM suggests that the majority of North Americans are getting sufficient amounts of Vitamin D through certain foods and sun exposure. Still, some research suggests otherwise. For example, a recent review of data from the third [National Health and Nutrition Examination Survey](#) (NHANES III) suggests that African American and Mexican populations are at greater risk for Vitamin D deficiency. One explanation for these results is that people with darker skin have an decreased ability to produce Vitamin D due to greater amounts of the pigment melanin.(3) People who live in undeveloped third world countries with poor nutrition options may also be at risk.

A 2011 article from the *Washington Post* takes a critical stance toward the IOM's recommended 600 IU/day for vitamin D, stating that populations in some regions such as the Northeast or areas that do not get much sunlight might need as much as 3,000 IU/day.(6)

Positive Association: What benefits does Vitamin D have?

Upon review of current research available to the public, it might appear that Vitamin D plays some major role in the prevention and treatment of multiple ailments outside the musculoskeletal system. Ongoing research suggests that Vitamin D deficiencies may play a role in autoimmune diseases, cancer, metabolic disease, and heart health, though more extensive research is needed.(7)

Everyone agrees that Vitamin D protects against bone fractures associated with osteoporosis, especially when taken with calcium, since vitamin D is necessary for proper calcium absorption. For women, osteoporosis becomes a risk as we age and enter menopause. A Vitamin D intake between 500 and 800 IU/day has been shown to increase bone mineral density for women in their early 60s. Overall, for both older men and women, Vitamin D helps maintain bone strength as the body ages.

Although some evidence suggests that Vitamin D may provide some protection against colorectal and possibly other cancers, the evidence of potential benefit is limited and inconsistent. Moreover, some studies have suggested the possibility that higher vitamin D levels are associated with increased risk for some cancers, including pancreatic cancer.(1) As stated by the Office of Dietary Supplements, further research is needed to determine whether an insufficiency contributes to increased risks of certain cancers, or if supplementation acts as a preventive measure for cancer.(3)

How does our body get it?

The National Institutes of Health agrees that certain populations are at risk for insufficiency of Vitamin D and might benefit from additional supplements. These populations include older adults, women over age 50/postmenopausal women, people with limited sun exposure such as those that are homebound or those who hold occupations that limit time outdoors, populations with darker skin tones, and individuals (particularly women) with a body mass index (BMI) greater than 30, since greater amounts of fat hinder vitamin D's release into circulation. Babies that are solely breast fed in undeveloped third world countries may also lack sufficient Vitamin D to absorb enough calcium to prevent diseases like Rickets.(4)

If you belong to any of these populations or believe you may be at risk for insufficient Vitamin D levels, there are many options to get more of the vitamin into your body that can be found in the Health Tip section of this publication.

Is too much Vitamin D harmful?

There can be, however, too much of a good thing. At high levels (greater than 4,000 IU/day), Vitamin D can cause damage to certain tissues and contribute to kidney malfunctions and hypercalcemia. Signs of Vitamin D toxicity include nausea, weight loss, confusion, disorientation, weakness and problems with heart rhythm. Further, since Vitamin D aids in calcium absorption, too much can lead to high levels of calcium in the urine, which can increase the risk of kidney stones.(5)

Sources:

1. [NCI: Vitamin D and Cancer Prevention](#)
2. [Mayo Clinic](#)
3. [NIH Office of Dietary Supplements](#)
4. <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001384/>
5. [Institute of Medicine](#)
6. [Washington Post](#)
7. Moyano PC et al. Med Clin(Barc). 2011 June 22.

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UPCOMING EVENTS

September 21-24, 2011

[North American Menopause Annual Meeting](#)

Washington, DC

October 15, 2011, 10:00am

[Aware for All--A Clinical Research Education Day](#)

Robert H. Lurie Medical Research Center, Chicago, Illinois

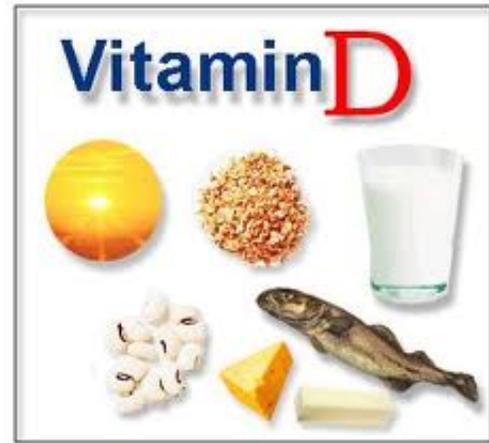
HEALTH TIP

Health Tip: Sources of Vitamin D

Food: dark greens, cod liver oil, eggs, dairy and soy products, fish such as salmon and sardines, and cereals or grains that are fortified with Vitamin D.

Sun: The factors that affect UV radiation exposure and research to date on the amount of sun exposure needed to maintain adequate vitamin D levels make it difficult to provide general guidelines. It has been suggested by some vitamin D researchers, for example, that approximately 5-30 minutes of sun exposure between 10 AM and 3 PM at least twice a week to the face, arms, legs, or back *without sunscreen* usually lead to sufficient vitamin D synthesis.

Individuals with limited sun exposure need to include good sources of vitamin D in their diet or take a supplement to achieve recommended levels of intake.



[Illinois Women's Health Registry News](#)

Note from the Registry Coordinator, Dr. Candace Tingen: At the end of August, I will be leaving my position as registry coordinator in order to pursue an exciting new job opportunity in women's health policy at the NIH, but I wanted to thank all the registry members for their participation and activism. It is only through the interest, education, and passion of our participants that the Illinois Women's Health Registry has grown to nearly 6500 participants and helped to fill 20 clinical trials across Illinois. As we move toward a goal of 10,000 registry participants, current members will remain the best advocate for the registry! Pass the word along to friends, coworkers and family and the Registry will continue to excel at increasing the involvement of women in clinical research in our state! I wish you good health; look forward to an introduction to the new registry coordinator, Nadia Reynolds, in the next newsletter!

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