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Life Extension Update Exclusive

### ***New England Journal of Medicine* review concludes vitamin D deficiency is common yet preventable**

The July 19, 2007 issue of the *New England Journal of Medicine* published a review authored by renowned vitamin D expert Michael Holick, MD, PhD, which concluded that vitamin D deficiency is widespread although easily prevented. An estimated 1 billion people have levels of the vitamin that are either insufficient or deficient.

Dr Holick, who is a professor of medicine, physiology, and biophysics, and director of the General Clinical Research Center at Boston University School of Medicine and Director of the Bone Healthcare Clinic at Boston Medical Center, introduces his subject by stating that "rickets can be considered the tip of the vitamin D deficiency iceberg." While reduced levels of the vitamin in utero and childhood can cause growth retardation, skeletal deformities and increased hip fracture risk later in life, a deficiency in adults can result in osteopenia, osteoporosis, muscle weakness, fractures, autoimmune diseases, infectious diseases, cardiovascular disease, and some cancers.

Having insufficient vitamin D means that only 10 to 15 percent of calcium and 60 percent of the phosphorus we consumed are absorbed. Diminished absorption of these minerals is reflected in low bone mineral density, which is associated with fractures, decreased muscle strength, and falls. Individuals living at higher latitudes whose skin is unable to produce adequate amounts of vitamin D have been found to be at greater risk of Hodgkin's lymphoma, colon, pancreatic, prostate, ovarian, breast, and other cancers.

Fortification of dairy products with vitamin D has helped lower the incidence of rickets, yet Dr Holick believes the current recommended Adequate Intakes for vitamin D need to be increased to at least 800 IU vitamin D3 per day. Greater amounts are needed to treat deficiency states or specific conditions.

"Providing children and adults with approximately at least 800 IU of vitamin D3 per day or its equivalent should guarantee vitamin D sufficiency unless there are mitigating circumstances, he writes. "Unless a person eats oily fish frequently, it is very difficult to obtain that much vitamin D3 on a daily basis from dietary sources. Excessive exposure to sunlight, especially sunlight that causes sunburn, will increase the risk of skin cancer. Thus, sensible sun exposure (or ultraviolet B irradiation) and the use of supplements are needed to fulfill the body's vitamin D requirement," he concludes.

Health Concern

### **Multiple sclerosis**

Vitamin D is emerging as a far more important immune system component than was previously appreciated. Long known to play a key role in the regulation of calcium and in the formation and maintenance of healthy bones, vitamin D is now known to

influence cell differentiation, function, and survival (Montero-Odasso M et al 2005). In fact, the most bioactive form of vitamin D acts as a hormone in the body, and receptors for it have been discovered in a wide range of tissues.

Vitamin D may also be involved in preventing MS. This was originally inferred from epidemiological data. Scientists noted that MS is more prevalent in people living at higher latitudes (in either the Northern or Southern hemispheres) where sunlight is weaker, particularly in winter. The most bioactive form of vitamin D is generated in the body through a biosynthetic process that begins with, and is dependent on, exposure of bare skin to sunlight.

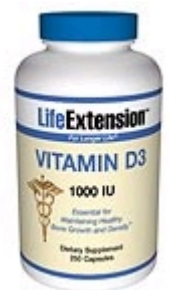
Scientists now believe that vitamin D (commonly depleted in people who have MS) may play a crucial role in preventing the disease (Ponsonby AL et al 2005a; Wingerchuk DM et al 2005). Low vitamin D levels are also an emerging risk factor for other diseases and disorders such as type 1 diabetes, heart disease, and rheumatoid arthritis (Holick MF 2005; Merlino LA et al 2004; Munger KL et al 2004; Ponsonby AL et al 2002; Ponsonby AL et al 2005b).

[http://www.lef.org/protocols/neurological/multiple\\_sclerosis\\_01.htm](http://www.lef.org/protocols/neurological/multiple_sclerosis_01.htm)

## Featured Products

### Vitamin D3 1000 IU Capsules

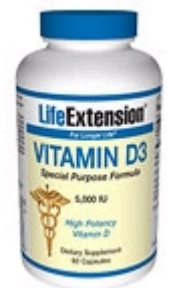
Vitamin D is necessary for utilization of calcium and phosphorus and in many ways acts as a hormone. The two most important forms of vitamin D are cholecalciferol (D3), which is derived from our own cholesterol and ergocalciferol (D2), a plant analogue derived from the diet. The cholecalciferol supplied by the Life Extension Buyers Club is synthetic, but its form is identical to that which is derived from cholesterol and synthesized by sunlight on the skin. Cholecalciferol Vitamin D is essential for bone growth and maintenance of bone density.



<http://www.lef.org/newshop/items/item00251.html>

### Vitamin D3 5000 IU Capsules

Vitamin D3 is synthesized in the body from sunlight. However, the winter season, weather conditions, and sunblocks inhibit the body's ability to produce optimal levels of vitamin D. All of these factors point to the value of taking a daily supplement to ensure optimal vitamin D intake.



For those who need to take very high doses of vitamin D3 and are under a physician's supervision, Life Extension now makes available a 5000 IU vitamin D3 supplement.

<http://www.lef.org/newshop/items/item00713.html>

## What's Hot

### Greater vitamin D levels associated with protection from cardiovascular risk factors

A report published in the June 11, 2007 issue of the journal *Archives of Internal Medicine* concluded that having higher serum levels of 25-hydroxyvitamin D is associated with a lower risk of hypertension, diabetes, obesity, and elevated triglyceride levels, all risk factors for cardiovascular disease.

Researchers at Charles R. Drew University of Medicine and Science in Los Angeles and colleagues at the University of California, Los Angeles, and Harvard examined data obtained from 7,186 men and 7,902 women enrolled in the Third National Health and Nutrition Examination Survey (NHANES III), conducted from 1988 through 1994. Blood samples were tested for serum vitamin D, cholesterol, triglycerides, fasting blood glucose and other factors, and height, weight, body mass index, and blood pressure were determined. Interviews with the subjects confirmed pre-existing diabetes and hypertension.

Mean serum vitamin D levels, particularly in women, people aged 60 and older, and minorities, were well below the recommended national goal. The team found significant relationships between lower vitamin D levels and the presence of cardiovascular disease risk factors. Participants whose vitamin D levels were in the lowest one-fourth of the study population had a 30 percent greater

risk of hypertension, a 98 percent higher risk of diabetes, more than double the risk of obesity, and a 47 percent greater risk of having high serum triglyceride levels than subjects whose vitamin D levels were in the top 25 percent.

[http://www.lef.org/whatshot/2007\\_06.htm#gvdI](http://www.lef.org/whatshot/2007_06.htm#gvdI)

If you have questions or comments concerning this issue or past issues of *Life Extension Update*, send them to [ddye@lifeextension.com](mailto:ddye@lifeextension.com) or call 954 202 7716.

For longer life,



Dayna Dye  
Editor, Life Extension Update  
[ddye@lifeextension.com](mailto:ddye@lifeextension.com)  
954 766 8433 extension 7716  
[www.lef.org](http://www.lef.org)

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