Optimal Health University™

Presented by Dr. Michael K. Corey

Late-Breaking Research: Most People Are Not Getting Enough Vitamin D

Alarming new research reveals that not only is vitamin D deficiency related to a plethora of chronic conditions, but it may also be far more widespread than previously thought. Dr. Corey wants patients to know about these new findings, which may be crucial to their health.

Triggers Vast Array of Diseases

Most people know that vitamin D wards off bone diseases like rickets in children and osteoporosis in adults. However, Dr. Corey is concerned that many individuals remain unaware that this nutrient is fundamental to preventing a myriad of other chronic conditions.

Specifically, recent research links vitamin D deficiency with cancer, obesity, cardiovascular disease, poor immune function and cognitive problems such as dementia. It is also associated with autoimmune diseases such as multiple sclerosis and rheumatoid arthritis.

Other recent investigations tie vitamin D deficiency to colds and flu: "The findings of our study support an important role for vitamin D in prevention of common respiratory infections, such as colds and the flu," says lead author Adit Ginde, MD, MPH.

"Individuals with common lung diseases, such as asthma or emphysema, may be particularly susceptible to respiratory infections from vitamin D deficiency." (*Arch Intern Med* 2009;169:384-90.)

Another analysis evaluated 3,000 people with type 1 diabetes and found a decreased risk in disease severity for people who took vitamin D supplements. Observational studies also reveal that supplementation may prevent type 2 diabetes (*Circulation* 2008;118:1476-85).

Weekly Wellness Research Education From Dr. Michael K. Corey

If you are interested in wellness and nutrition research, you have come to the right place! We are committed to providing patients with the latest cutting-edge research in chiropractic wellness and related fields.

To this end, each week Dr. Corey presents a new, hot-off-the-presses *Optimal Health University*™ topic. This office is focused on teaching our patients and community about this vital health information, which will jump-start them on the road to wellness. To find out more about this revolutionary approach to patient education, or to suggest future *Optimal Health University*™ topics, please call our office today!

The Inflammation Link

Scientists have recently discovered that inflammation is the underlying factor behind a plethora of disease processes, including those associated with vitamin D deficiency.

Now, research conducted at the University of Missouri further demonstrates that vitamin D deficiency is indeed associated with inflammation.

In the experiment, researchers detected elevated concentrations of serum TNF-α (a blood marker of inflammation) in apparently healthy women with insufficient vitamin D levels (*J of Inflammation* 2008;5:10).

"The findings reveal that low vitamin D levels negatively impact inflammation and immune response, even in healthy women," says study author Catherine Peterson. "Increased inflammation normally is found in people with obesity or chronic diseases; a small decrease in vitamin D levels may aggravate symptoms in people who are sick." (*J of Inflammation* 2008;5:10.)

Vitamin D Deficiency on the Rise

Average blood levels of vitamin D decreased significantly over the past several years. In fact, a whopping 75 percent of individuals may now be deficient, according to a just-released report in *Archives of Internal Medicine*.

Humans naturally produce vitamin D when sunlight hits their skin. However, increased time spent indoors, coupled with campaigns to limit sun exposure in hopes of preventing skin cancer, have reduced exposure to sunlight. In addition, "fast-food" diets lack vitamin D rich foods.

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Specifically, new evidence finds that vitamin D blood levels of 30 nanograms per milliliter to 40 nanograms per milliliter are needed for optimum health (*Arch Intern Med* 2009;169:626-32).

Serum 25-hydroxyvitamin D (25[OH]D) is a blood marker that reflects the level of vitamin D in the blood. Adit Ginde, MD, MPH and colleagues tested levels of this marker in 18,883 individuals whose blood was collected between 1988 and 1994 — and in 13,369 participants whose blood was collected between 2001 and 2004.

"Overall, the mean [average] serum 25(OH)D level in the US population was 30 nanograms per milliliter during the 1988-1994 collection and decreased to 24 nanograms per milliliter during the 2001-2004 collection," the authors write. The prevalence of levels lower than 10 nanograms per milliliter increased from 2 percent to 6 percent between the two time periods, and fewer individuals had levels 30 nanograms per milliliter or higher (45 percent vs. 23 percent).

"These findings have important implications for health disparities and public health," the authors write. "We found that the mean serum 25(OH)D level in the US population dropped by 6 nanograms per milliliter from the 1988-1994 to the 2001-2004 data collections. This drop was associated with an overall increase in vitamin D insufficiency to nearly three of every four adolescent and adult Americans." (*Arch Intern Med* 2009;169:626-32.)

Natural Sources of Vitamin D

"To improve vitamin D status and achieve its related health benefits, most people should get at least 1000 IU of vitamin D per day" notes researcher Catherine Peterson. "Sunlight is a readily-available, free source of vitamin D. Exposing 25 percent of the skin's surface area to 10 minutes of sunlight three days per week will maintain adequate levels in the majority of people; however, people with darkly-pigmented skin need more. Only a few foods contain vitamin D naturally, such as fatty fish; other sources are dietary supplements and vitamin-D-fortified foods, including milk and orange juice."

What About Supplements?

Do vitamin D supplements prevent not only bone-related disorders, but also all the other conditions associated with vitamin D deficiency, such as immune problems, cognitive dysfunction and cardiovascular disease? If so, how much vitamin D should supplements contain?

"Vitamin D supplementation appears to mitigate the incidence and adverse outcomes of these diseases and may reduce all-cause mortality," write investigators. However, they note that currently recommended levels of supplementation — 200 international units per day from birth to age 50; 400 international units per day from age 51 to 70; and 600 international units per day for adults age 71 and older — focus primarily on improving bone health, and may not be sufficient to prevent other disorders associated with lack of vitamin D (*Arch Intern Med* 2009;169:626-32).

"Current recommendations for dosage of vitamin D supplements are inadequate to address this growing epidemic of vitamin D insufficiency," they conclude. "Increased intake of vitamin D (1,000 international units per day or more) — particularly during the winter months and at higher latitudes — and judicious sun exposure would improve vitamin D status and likely improve the overall health of the US population. Large randomized controlled trials of these higher doses of vitamin D supplementation are needed to evaluate their effect on general health and mortality." (*Arch Intern Med* 2009;169:626-32.)

Kids Need Vitamin D, Too

Insufficient vitamin D isn't just a problem for adults. One in seven adolescents is vitamin D deficient, according to a new study published in the journal *Pediatrics*, which pooled data from 2,955 participants aged 12 to 19 years.

The study employs a new definition of vitamin D deficiency recommended by a group of scientists attending the 13th Workshop Consensus for Vitamin D Nutritional Guidelines in 2007. These experts collectively proposed that the minimum acceptable serum vitamin D level be raised from 11 nanograms per milliliter (ng/mL) to at least 20 ng/mL for adolescence. (Other experts argue that even these new higher guidelines remain far too low.)

Using the newer criteria, the study finds more than half of African-American teens are vitamin D deficient. Girls had more than twice the risk of deficiency compared with boys. And overweight teens had nearly double the risk of their counterparts (*Pediatrics* 2009;123:797-803).