

# Vitamin D Link In Chronic Pain, Inflammation & Disease

*"In a recent study of vitamin savvy consumers, 63% of those tested were low in vitamin D."*

Vitamin D is back in the news; wait, has vitamin D ever left the news? It seems like every week I see a new paper linking levels of vitamin D and chronic pain, inflammation and chronic disease.

For example, people with lupus taking 2,000 units of vitamin D per day had a significant reduction of flare-ups and the need for antibiotics compared to a matched group that took a placebo. People with respiratory illness when treated with vitamin D, 4,000 IU per day after one year had fewer respiratory illnesses and had less infections and less visits to the hospital. Older Americans with cognitive issues were found to be low in vitamin D. Those with sufficient levels of vitamin D tended to be more mentally alert.

Here are a few of the randomized controlled studies done in 2012 performed solely with vitamin D or in combination with other treatments.



Patients with sickle-cell disease were administered 4,000-100,000 units per week of vitamin D or placebo. Those who received vitamin D experienced less pain.

Researchers in Italy gave a onetime dose of 300,000 units of vitamin D for patients in musculoskeletal pain while on bisphosphonates. In 7 days the pain scores were reduced.

Patients with atopic dermatitis taking 1,600 IU of vitamin D per day showed improvement over those taking a placebo.

Researchers in Brazil found that 50,000 IU of vitamin D per week for 12 weeks increased the healing of chronic leg ulcers over placebo.

Patients hospitalized with traumatic brain injuries were given 1 mg/kg of progesterone every 12 hours for 5 days and 200 IU per kg of vitamin D once a day for 5 days. For a 150 pound person that would be 13,600 IU of vitamin D daily for 5 days. The combination of vitamin D and progesterone improved consciousness and decreased mortality over placebos.

Dr. William Grant shows evidence that a minimum blood level of 30 ng/ml of vitamin D is protective against breast cancer, cognitive decline, colorectal cancer, cardiovascular disease, diabetes mellitus, metabolic syndrome, all cause mortality, osteoarthritis of the hip, physical performance, pregnancy complications and respiratory infections. Numerous authors suggest optimal levels of 50-70 ng/ml. Lots of opinions yet overwhelmingly everyone agrees that "low levels of vitamin D are associated with exacerbations of almost every disease."

How widespread is vitamin D deficiency? Life Extension has collected blood data on 39,500 people using the 25-Hydroxy vitamin D test from January 2010 to September 2012. What's interesting is that these were sophisticated nutrient consumers who took supplements including vitamin D on a regular basis. Yet 63.8% of the people tested below 50 ng/ml. The significance of this report is that these were people who were very, very nutrient savvy. That means the average person who comes in your office is definitely low. The fact is, we make anywhere from 10,000-20,000 units of vitamin D in 20 minutes in full body sun. But we don't get 20 minutes of full body sun due to sun screens and northern latitudes.

Numerous clinicians report even patients in southern latitudes like Hawaii and southern Florida are deficient. Even countries in the Middle East show severe deficiencies.

President of the Vitamin D Council and author of "Athlete's Edge: Faster, Quicker, Stronger with Vitamin D," Dr. John Cannell says he has never seen a single study where 10,000 IU per day from sun exposure has caused a problem. He is quick to say that we may not need that much vitamin D. In fact 5,000 units a day should raise blood levels to

50 ng/ml in several months. Remember, vitamin D is more of a steroid than a vitamin. It is essential for DNA repair.

One of the major ways vitamin D works is by turning genes on and off. At least 1,000 genes and up to 2,000 genes are waiting for activation. No vitamin D, no activation. Furthermore vitamin D has been shown to reduce concentrations of inflammatory cytokines like IL-1B, IL-4 and IL-6, Interferon-gamma (IFN- $\gamma$ ) and Transforming Growth Factor beta (TGF- $\beta$ .)

Clinically, 2,000 IU is extremely safe and optimal values of 4,000-5,000 are suggested. Biotics Research Corporation makes two vitamin D supplements. Bio-D Mulsion, which contains 400 IU of emulsified vitamin D per drop; and Bio-D Mulsion Forte which contains 2,000 IU of emulsified vitamin D per drop. Emulsified vitamin D (as D3) by Biotics Research Corporation consistently raises blood levels and is the most cost effective vitamin D on the market.

For those clinicians that want to use higher doses for long periods of time; laboratory testing makes good sense. By monitoring 25(OH)D3 levels, serum calcium and 1,25(OH) D3 levels you can be confident that your patients are not getting too much of a good thing.

The research is clear; patients should be on vitamin D to repair genes, reduce inflammation and maintain healthy intestinal barrier function. True wellness means optimizing the factors that repair the body. Based on the data that continues to accumulate, I feel it is only ethical to continue to take the time to educate our patients on this important nutrient.

Thanks for reading this week's edition and I'll see you next Tuesday.