

Vitamin D-Cisions in Chronic Pain & Fibromyalgia

by Mark Pellegrino MD

Despite its name, vitamin D is more like a hormone than a vitamin. Its vast influence on various cells and organ activity far exceed the limited function defined by a “vitamin”. Many good review articles have been written on this key vitamin and I wish to summarize my specific D-experience.

D-PENDENT

Vitamin D plays a necessary role in maintaining healthy bone, cardiovascular, pancreas and immune system functioning. It also has been found to help lower inflammation, protect neurological function, and modify musculoskeletal pain, which suggests a link between vitamin D and chronic pain.

We are not sure of vitamin D's exact role in modifying chronic pain. Perhaps adequate calcium levels and metabolic health decrease the chance of pain nerve hypersensitization. Vitamin D may prevent damage to pain receptors and nerves and help with nerve repair and growth. It may ultimately provide a stabilizing and protective effect on the neurological systems to help prevent chronic pain, depressed mood, fatigue and weakness.

D-PLETION

Many millions of people are deficient in vitamin D. We may become deficient because we do not consume enough, convert enough to active form, maintain healthy levels in our bodies, or a combination of these factors. Lack of sunlight plays a major role since we need this to make the active form of vitamin D, calcitriol. Lack of sun exposure, pollution, using sun block, older age and darker skin color all decrease the skin's ability to make active vitamin D.

Diets may not contain enough food sources rich in vitamin D (cod liver oil, salt water fish, egg yolk, beef liver) or the quality of dietary vitamin D may be poor. External sources of vitamin D must be properly absorbed to become bioavailable for our bodies' needs.

Our health can also adversely affect internal processing of ingested or ultraviolet-converted vitamin D. Disorders of the intestines, kidneys and parathyroid glands can impair our ability to maintain adequate vitamin D levels. Many people have more than one risk factor. For example, a person

with fibromyalgia may have a number of risk factors for developing low D levels: inadequate dietary intake, sun avoidance, GI issues from IBS, obesity, and certain medications that are used to treat fibromyalgia.

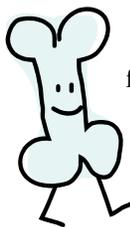
Once a person becomes D deficient, other health issues may arise specific to the vitamin D deficiency.

D-PRIVED

People with depleted levels of D are at risk for health problems. Rickets is a well-publicized bone disease caused by vitamin D deficiency, and one that was successfully treated with D supplementation and fortification. Although rickets is a specific disease attributed to vitamin D deficiency, other disease conditions may be affected by low D levels.

Different studies suggest those with chronic painful conditions, immune diseases, multiple sclerosis, and other disorders have

inadequate D levels. Multiple studies also link vitamin D deficiency to chronic aches and pains, muscle fatigue and weakness. It seems pretty clear to me that inadequate D levels are causing, contributing to, and perpetuating the symptoms we experience with fibromyalgia, to some degree.



A 2006 study of 56 patients with chronic musculoskeletal pain (including fibromyalgia) found over half the patients have moderate to severe D deficiency regardless of age. Clearly there is a relationship between low D and widespread body problems not just limited to bone disease such as rickets.

A November 2010 study was done specifically on 40 female patients who met the American College of Rheumatology

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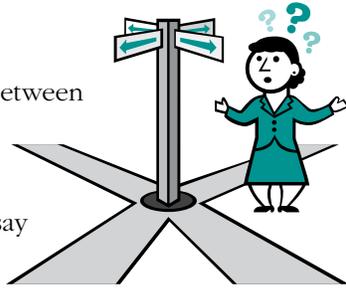
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criteria for fibromyalgia. The researchers found 32 or 80% D deficient with an average level of 17 ng/mL! Another surprising statistic is the average age of the participants was 37. They concluded “although the sample size was small”, the figures were “so alarming”.

THE VITAMIN D-BATE

Despite the relationship between low vitamin D and chronic pain in fibromyalgia, we do not know the exact connection yet. Also, some say it is controversial whether vitamin D supplementation is helpful if we are not sure how much vitamin D contributes to the condition/symptoms in the first place.



I have not seen a controlled study yet that proves boosting D levels reduces pain, but there is emerging (D-merging!?) literature that supports D's effectiveness in treating chronic pain.

For example, a Mayo Clinic Study in 2008 (Michael Turner, M.D.) showed a correlation between decreased vitamin D and the amount of narcotic medicine taken by the patient. The lower the D level, the higher the narcotic medicine dosage required. Often, twice as much narcotic was required by those with D deficiency to achieve the same pain relief as those with adequate D levels.

A study done on fibromyalgia patients in the Middle East found a significantly lower vitamin D concentration in women with fibromyalgia compared to those without fibromyalgia (43% versus 19%). Perhaps vitamin D receptors have different genetic makeup and activity causing some individuals to be more prone to developing D deficiency.

The evolving (D-volving?) thinking, I believe, is that aggressively identifying and correcting vitamin D deficiency is more likely to be helpful in treating one's chronic condition, including chronic pain. Many clinicians experience favorable outcomes in their patients when treating D deficiencies and I have not seen any study that shows aggressive D replacement is harmful. So it would seem that potential benefits far outweigh potential risks when treating D deficiencies.

D-CODE

How does a doctor try to convert abnormal D-data into healthier bodies?

We start by suspecting D deficiency in any patient with certain chronic problems such as fibromyalgia. Studies have confirmed the best way to determine one's D status is with



a blood test called 25-hydroxy vitamin D or a 25 (OH) D. Recently revised guidelines indicate a level between 30-80 ng/mL is desirable. Below 30 ng/mL is insufficient, and below 15 ng/mL is deficient.

Most of my fibromyalgia patients (in Northeast, Ohio) have initial 25 (OH)D levels below 40 ng/mL, many below 15 ng/mL. I find extremely low levels in young females seemingly as often as older ones.

Dr. John Cannell, renowned vitamin D expert and Executive Director of the Vitamin D Council, recommends taking vitamin D₃ to get the 25 (OH)D levels to 50 ng/mL. I try for 25 (OH)D level of around 50 which means I'm usually recommending D₃ supplements to anyone who is below this level.

Generally speaking, 100 IU (2.5 mcg) of vitamin D per day can raise the vitamin D blood test only 1 ng/mL. Therefore, the daily dose will vary by individual D status.

There is a synthetic D₂ form by prescription, typically dosed at 50,000 IU once a week but D₃ is more bioavailable. An optimal result can be achieved with the D₃ taken on a daily basis, too.



The dose of D₃ I recommend depends on the degree of deficiency; very low levels may require 50,000 IUs of D₃ 1-2 times/week initially and mild decreased D-values may require 1000 to 2000 IUs/day. The 25 (OH)D level is repeated periodically to monitor the response to the supplements and determine dose adjustments. I usually recommend ongoing maintenance daily D once the target level is achieved.

MY D-SULTS

I find treating vitamin D deficiencies to be an important part of one's overall chronic pain treatment program. I wish I could report that within weeks of beginning D supplements, all my fibro patients reported significant improvement in their pain and other symptoms. Many tell me they have less pain and more energy. Once in a while a patient will report feeling “miraculously” better. Sometimes it takes longer to get the level to increase. Higher doses may have to be used. The highest 25 (OH)D level I have seen is 88 ng/mL. I have not seen any problems or toxicity with D treatments in my patients, even in the two patients who mistakenly took 50,000 IUs once/day for eight days instead of once/week for eight weeks.

I suspect the patients are benefiting in many ways and are healthier overall with vitamin D therapy, even if they are not able to directly correlate any specific fibromyalgia improvement with D therapy. Knowing the body-wide importance of the D “hormone” reinforces the goal of maintaining therapeutic D levels.

I advise fibromyalgia patients to work with their doctors to correct any low D level. Even if you cannot tell that vitamin D

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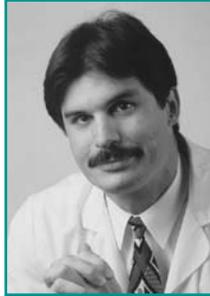
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therapy is making you feel better, I think D is too important and should be maintained at adequate levels. I think you will be healthier overall if you go from D-fective to D-effective!

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Dr. Pellegrino is Board Certified in Physical Medicine and Rehabilitation and Electrodiagnostic Medicine and is one of the nation's leading experts on fibromyalgia. Dr. Pellegrino is the author of numerous books and articles on fibromyalgia including Fibromyalgia: Up Close and Personal. Despite having FMS himself, he maintains an active medical practice in Ohio with more than 15,000 patients experience.



References

1. Badsha et al. Myalgias or Nonspecific Muscle Pain in Arab or Indo-Pakistani Patients May Indicate Vitamin D Deficiency. *Clin Rheumatol* 2009.
2. Bhatta SA et al. Vitamin D Deficiency in Fibromyalgia. *Pak Med Assoc* Nov 2010.
3. Gostine ML, David FN Vitamin D Deficiencies in Pain Patients. *Prac Pain Manag* Jul/Aug 2006.
4. Heaney RP et al. Vitamin D₃ is More Potent than Vitamin D₂ in Humans. *J Clin Endocrinol Metab* 12/10 epub.
5. Office of Dietary Supplements, NIH, Vitamin D Fact Sheet 2011
6. Squires, Margy. The Vitamin D Dilemma. *Health Points* May 2011.
7. Squires, Margy. Vitamin D for Bones and More. *Health Points* Oct 2006.
8. Turner, Michael et al. Prevalence and Clinical Correlates of Vitamin D Inadequacy Among Patients with Chronic Pain. *Pain Med* 2008.
9. Vitamin D For Pain: Update of Research Evidence. *News/Research Updates* Jan 2010. <http://Pain-Topics.org>

Dr. Pellegrino's D-Briefing

- ◆ Assume all patients are D-ficient
- ◆ Test for 25 (OH)D level
- ◆ Treat if under 50 ng/mL
- ◆ Use only D3 form to supplement
- ◆ If very low, try 50,000 IU D3 1-2 x week
- ◆ If moderately low, try 5000 IU D3 daily
- ◆ If low, try 1000-2000 IU D3 daily
- ◆ Recheck D levels to monitor progress & adjust if necessary
- ◆ Base dose on individual results (one size does not fit all)
- ◆ Maintain an adequate D level for multiple benefits beyond pain relief
- ◆ Work with your healthcare professional

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