Questions and Answers on Vitamin D
from the Vitamin D Newsletter, April 2008

Dear Dr. Cannell:

I am a 54-year-old African-American woman who started my vitamin D journey by taking 2,000 IU/day. Being obese, over 350 pounds, that amount of supplementation didn't do much for me. I eventually increased my supplementation to 300,000 IU/day for eight months. I have severe Seasonal Affective Disorder (SAD). Vitamin D has helped my SAD and has given me more strength and flexibility. When I saw my doctor, my 25[OH]D was 242 ng/ml, with normal calcium. My doctor advised me to stop supplementing with vitamin D or to cut my dose in half.

Over the years, I developed degenerative arthritis in my knees. Finally, my knees deteriorated to the point of bone rubbing on bone. Shortly thereafter, my specialist advised knee replacements. That is when I started injecting vitamin D directly into the area around my knees. The pain went away almost immediately, but it took much longer for my mobility to come back. Now I can walk more easily for long distances and without pain.

I did cut down my dose but was still taking about 100,000-150,000 IU of vitamin D3/week and injecting my knees monthly with 300,000 IU. My last 25[OH]D was 462 ng/ml, again with normal calcium levels. That's when I decided to stop taking the vitamin D3 unless I start to feel under the weather. At the end of March last year, I weighed 347 pounds; in October, I weighed 292 pounds. As long as my calcium is normal, is it okay to keep taking these amounts of vitamin D? Will injecting into my knees hurt me?

Fay, Washington, D.C.

Dear Fay:

No, it is not okay to take that amount of vitamin D, and injecting it into your knees is a first for me. The first sign of vitamin D toxicity is hypercalcuria (excess calcium in the urine), not hypercalcemia (excess calcium in the blood). As vitamin D must be transported in the blood to be hydroxylated by the liver, you should get the same effect for your knees by injecting it in your elbows, and I don't recommend either. The amount of vitamin D you are taking and your 25(OH)D levels indicate you will calcify your internal organs, starting with your kidneys. I advise you get your 25(OH)D down to less than 100 ng/ml by immediately stopping all vitamin D and staying out of the sun. I'm glad you have lost so much weight, and there is reason to think vitamin D will induce weight loss. However, one does not need the doses you are using to induce weight loss. Fay, what you are doing is experimenting with vitamin D as a pharmaceutical agent, not a supplement. It may be that future studies will show pharmaceutical doses of vitamin D (50,000 IU per day) have a treatment effect on certain diseases, but, to date, no studies support what you are doing, and other studies indicate you are taking toxic doses of vitamin D. Again, stop your vitamin D and stay out of the sun.

Dear Dr. Cannell:

I have pericarditis and retired about three months ago. Once I started getting out and sunbathing in my bathing suit, my symptoms disappeared!! Thank you very much. When I went to my doctor, he was amazed at my improvement but refused to believe sunshine had anything to do with it. He said he had never heard of sunshine curing pericarditis!

Jeanne, San Diego, California

Dear Jeanne:

No, like your doctor I have never heard of it either, but unlike your doctor, I believe it is possible the sunlight cured your pericarditis. The majority of pericarditis cases are infectious, with viruses the most common agent. Sunlight will trigger formation of antimicrobial peptides, which are potent and broad spectrum antibiotics. Anyone who takes more than 2,000 IU per day knows that lower respiratory infections are less common, and by sunbathing in your bathing suit, you were getting about 10,000 IU per day.

Dear Dr. Cannell:

For as long as I can remember, I have been subject to missed heart systolic beats. I went to a heart specialist about it. He did ECG, etc. and told me that he thought anxiety might be involved as he had the same thing once. In any case, my missed systole happened anytime - anxiety or no anxiety. When I got the message from you that vitamin D was involved in heart action, I started taking 2,000 IU a day. The missed systole stopped after about two months, and it is no longer with me. Was it the vitamin D?

Dan, Seattle, Washington
Dear Dan:

I don't know. If your vitamin D level was low enough to affect your blood calcium, the vitamin D would help that. Without 25(OH)D levels, there is no way of knowing what your level was or if your level is in the ideal range now. I personally know of a patient with severe heart disease who refused to go to the hospital. He was on standard medical therapy plus 5,000 IU per day. However, both his severe congestive heart failure and his arrhythmia improved after he started taking 10,000 IU per day. A case report found sick sinus syndrome disappeared after vitamin D. Other than the case report, I'm not aware of any literature on the subject, one way or the other.


Dear Dr. Cannel:

Personally, I am at 6,000 IU per day. After taking 4,000 IU per day for two months, I was still deficient at 15. So based on my weight (285 pounds), I bumped it up. And I haven't had a cold or flu in over two years — no bronchitis either, and my bronchitis usually bothers me all winter. Thank you. What can I do to help spread the word?

Bill, Boston, Massachusetts

Dear Dr. Cannel:

Your case highlights the need to get repeat blood tests. I've been surprised at just how ineffective supplementation can be, especially in obese patients. One has to supplement, get 25(OH)D blood test, adjust supplementation, get another level, etc. Many obese people will need 10,000 IU per day to obtain a level of 50 ng/ml, but getting a 25(OH)D is the only way to know how much you need to take. And levels will go higher in the summer due to incidental sun exposure. It is becoming widely known that adequate doses of vitamin D helps prevent colds and flu. I'm proud of the fact that the first time such a finding was ever published in the world's literature, it was published in this newsletter.

As far as helping is concerned, the Vitamin D Council would like to run a national advertising campaign. We did run three ads in parts of California to the tune of $4,800. You can see the three ads on our YouTube Channel. We would like to run them all around the country but that would cost more than $200,000.00. We need contributions before we can run anymore.

Dear Dr. Cannel:

I seem to be reacting to vitamin D pills even at the 400 IU level, with dry eye and mouth. Please address overdose symptoms for vitamin D, as any good advice column should do. Can you also address what a person like me should do to absorb vitamin D supplements? Can a person get vitamin D from the tanning machines? I hope you take my questions to heart. Your website is valuable and could be more helpful to all.

Robert, Fairfield, Connecticut

Dear Roberta:

The symptoms of vitamin D toxicity are weakness, nausea, vomiting, pain in the joints, loss of appetite, and weight loss. The patient may experience constipation alternating with diarrhea or have tingling sensations in the mouth. The toxic dose of vitamin D depends on its frequency. In infants, a single dose of 15 mg (600,000 IU) or greater may be toxic and has to exceed .5 mg (20,000 IU) per day over a prolonged period to be toxic. In adults, a daily dose of 1.0-2.0 mg (40,000 - 80,000) of vitamin D may be toxic when consumed for a prolonged period. A single dose of about 50 mg (2,000,000 IU) or greater is probably toxic for adults. The immediate effect of an overdose of vitamin D is abdominal cramps, nausea, and vomiting, not dry mouth and eyes. Toxic doses of vitamin D taken over a prolonged period of time result in deposits of calcium crystals in the soft tissues of the body that may damage the heart, lungs, and kidneys. For people who have trouble with supplements, I recommend sunbathing during the warmer months and sun-tanning parlors in the colder months. Yes, sun-tanning parlors make vitamin D; the older types of sunbeds make the most. Another possibility is a Sperti vitamin D lamp.

Dear Dr. Cannel:

After reading your previous newsletter, I looked for and found a definite correlation between the average UV radiation in a state and the number of quality athletes the state produces per million population. Hawaii is way in front, and the southern states way ahead of northern states. I've also found a correlation of multiple Super Bowl appearances/wins with teams' geographic UV radiation. I've also found a correlation between the per capita number of PGA golfers (with most annual wins) and UV radiation (not published yet).

Tonis, Greensboro, North Carolina

Dear Tonis:

Good work. And, once again, the first reference in the world's literature that vitamin D will help athletes was published by this newsletter. Can you imagine what will happen in professional sports when athletes realize that vitamin D improves their speed, strength, timing, and quickness?

Dear Dr. Cannel:

I am not able to raise my 25(OH)D levels past 38 nm/L, and I am on 8,000 IU D3 a day now! (trying for three years.) I have gut issues. So, I am thinking that maybe Calderol or Dedrogyl might be appropriate. Can you lead me to links on that aspect? I have fibromyalgia and osteoporosis. I would like to talk about this with my doctor.

Mary, Quebec, Canada
Q & A on D

Dear Mary:
You didn’t give your weight so I don’t know if you’re not absorbing it or if it is depositing itself in fat tissues. I suspect you are not absorbing it. The two prescription items you mentioned, Calderol and Dedrogyl, are both 25(OH)D. Although they are effective, there is no reason to use them unless your liver is not hydroxylating vitamin D. I suspect that your level would be fine if you started using a sun-tanning parlor twice a week. Or, you could go to 10,000 - 15,000 IU per day. However, at that dose, you should get your 25(OH)D level checked every four months. For malabsorption syndromes, a sun-tanning parlor once or twice a week or a home vitamin D lamp like Sperti is ideal.

Dear Dr. Cannell:
Thank you! I have been reading quite a bit on vitamin D deficiency on your website. Very, very interesting! Thank you too, for the great work you’re doing in getting the word out! I’ll be spending a lot more time on the shores of Lake Michigan again this summer! I’m also supplementing with D this winter. About five years ago, I was diagnosed with COPD. I had a respiratory incident last fall and was hospitalized, and after that, I started taking 5,000 IU per day. I want you to know that I ran up the steps from the mailbox this morning and yesterday morning. I haven’t done that in years. I am a 55-year-old female who smoked for almost 30 years. Very anecdotal but it’s happening. I can breathe deeper too. I don’t know how I can thank you.

Debbie, South Bend, Indiana

Dear Debbie:
COPD appears to respond to vitamin D in two ways. It improves pulmonary function through an unknown mechanism, and it prevents lower respiratory infections that usually exacerbate underlying lung disease. As far as helping, we need donations in order to run a national TV advertising campaign.

Dear Dr. Cannell:
I have been taking 10,000 IU vitamin D per day for over three years, and my arthritis and prostate cancer are gone (at least my PSA returned to normal). I am paddling my canoe and starting to run again and feel much stronger now. I had my 80th birthday this July. Thank you for your website and newsletter. I think I’d literally be dead without it.

Frank, Waterbury, Connecticut

Dear Frank:
You’re welcome. While there are no interventional trials using vitamin D in arthritis, cross sectional and longitudinal epidemiological studies suggest it would have a treatment effect. Professor Reinhold Vieth, in an open trial, discovered that 2,000 IU of vitamin D per day slowed the rate of growth of PSA. Other men with prostate cancer have written to me that their PSA returned to normal with higher doses of vitamin D although it takes up to a year.

Dear Dr. Cannell:
I’m a physician, and many of my patients have difficulty getting a normal 25(OH)D, even with 4,000 units per day over four months. Did you read anything about resistance to vitamins D supplementation? Thank you for all your work. A bit of good news: in France, the labs have put up the normal level of blood vitamins D from 20 ng/ml to 30 ng/ml.

Dr. Philippe, Paris, France

Dear Dr. Philippe:
The resistance is probably due to the relatively low dose and patient’s body fat. Many larger adults need 5,000 to 10,000 IU per day to get adequate levels. I’m glad they have increased the lower limit in
France. However, it should be 40 and not 30. Remember, Bruce Hollis—in a crucial paper—showed that the kinetics of vitamin D’s metabolism is not normalized until levels are above 40 and often 50. His discovery is compelling evidence that levels of 40-50 represent the lower limit of the ideal human range.


Dear Dr. Cannell:
I am a family physician in Edmonton, Alberta, Canada. I was fascinated by the information regarding plausible causation of autism and vitamin D and would love to have more information on this. Over the past two years, testing and then repleting patients with vitamin D has revolutionized my practice with so many conditions improving. I have been absolutely astonished at how many different diseases respond.

Dr. Gerry, Edmonton, Canada

Dear Dr. Cannell:

I am a pain management physician in Grand Rapids, Michigan, and I prescribe a lot of vitamin D. Typically, I write for 50,000 IU as a weekly tablet and dispense this to a lot of my elderly patients with osteoporosis. Occasionally, one of them takes it daily because they cannot or do not read their label on the bottle. My most recent patient to do this is a 75-year-old female about weighing 250 pounds. She has had non-healing venous stasis ulcers in bilateral lower extremities for over five years, despite the best efforts of the local wound care clinic. When she received her prescription for vitamin D, she proceeded to take it daily until all 13 tabs were gone. When I saw her at her next visit, we caught her mistake, wrote her for a new RX and made sure she knew how to take it. However, since her accidental overdose, the wounds have started healing! The

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Q & A on D

Again, Dr. Marshall conducted no experiment and published no study. He wrote an essay. He presented no evidence for his first hypothesis: sunlight’s vitamin D is different than supplements. From all that we know, cholecalciferol is cholecalciferol, regardless if it is made in the skin or put in the mouth. His second hypothesis is certainly possible, and that is why all scientists who do association studies warn readers that they don’t know what is causing what. Certainly, when low levels of vitamin D are found in certain disease states, it is possible that the low levels are the result, and not the cause, of the disease. Take patients with severe dementia bedridden in a nursing home. At least some of their low 25(OH)D levels are likely the result of confinement and lack of outdoor activity. However, did dementia cause the low vitamin D levels or did low 25 (OH)D contribute to the dementia? One way to look at that question is to look at early dementia, before the patient is placed in a nursing home. On the first day, an older patient walks into a neurology clinic, before being confined to a nursing home, what is the relationship between vitamin D levels and dementia? The answer is clear, the lower your 25(OH)D levels, the worse your cognition.

These studies suggest that the low 25(OH)D levels are contributing to the dementia but do not prove it. Only a randomized controlled trial will definitively answer the question – a trial that has not been done. So you will have to decide if vitamin D is good for your brain or not. Dr. Marshall seems to be saying demented patients should lower their 25(OH)D levels. Keep in mind, an entire chapter in Feldman’s textbook is devoted to the ill effects low vitamin D levels have on brain function.

It is true that in some diseases, high doses of vitamin D may be harmful. For example, in the early part of last century, the American Medical Association (AMA) specifically excluded pulmonary tuberculosis (TB) from the list of TB infections that ultraviolet light helps. They did so because many of the early pioneers of solariums reported that acutely high doses of sunlight caused some patients with severe pulmonary TB to bleed to death. Thus, these pioneers developed very conservative sun exposure regimes for pulmonary TB patients in which small areas of the skin were progressively exposed to longer and longer periods of sunlight. Using this method, sunlight helped pulmonary TB, often to the point of a cure. Furthermore, it is well-known that sunlight can cause high blood calcium in patients with sarcoidosis. In fact, sarcoidosis is one of several granulomatous diseases with vitamin D hypersensitivity, where the body loses its ability to regulate activated vitamin D production, causing hypercalcemia.

Furthermore, although medical science is not yet convinced, some common autoimmune diseases may have an infectious etiology. I recently spoke at length with a rheumatologist who suffers from swollen and painful joints whenever he sunbathes or takes high doses of vitamin D. As long as he limits his vitamin D input, his joints are better. To the extent vitamin D upregulates naturally occurring antibiotics of innate immunity, sunlight or vitamin D supplements may cause the battlefield (the joints) to become hot spots. I know of no evidence this is the case, but it is certainly possible.

However, if Dr. Marshall’s principal hypothesis is correct, that low vitamin D levels are the result of disease, then he is saying that cancer causes low vitamin D levels, not the other way around. The problem is that Professor Joanne Lappe directly disproved that theory in a randomized controlled trial when she found that baseline vitamin D levels were strong and independent predictors of who would get cancer in the future. The lower your levels, the higher the risk. Furthermore, increasing baseline levels from 31 to 38 ng/ml reduced incident cancers by more than 60% over a four-year period. Therefore, advising patients to become vitamin D-deficient, as the Marshall protocol clearly does, will cause some patients to die from cancer.

I will not write again about Dr. Marshall’s theories. No one in the vitamin D field takes him seriously. Personally, I admire anyone willing to swim against the tide and raise alternative theories. I have done the same with influenza and autism. However, I agree with the New York Times, “An Oldie Vies for Nutrient of the Decade,” and Jane Brody’s conclusion, “In the end, you will have to decide for yourself how much of this vital nutrient to consume each and every day and how to obtain it.” I agree. You will have to decide for yourself.


John Cannell, MD

The Vitamin D Council

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TOWNSEND LETTER – JULY 2008