

Okay, I'll admit it: I'm confused.

I am now kicking myself for writing this article, but it's too late. I'm all in, so to speak. I have chosen to write about Vitamin D, because it is one of the most discussed topics out there, presently. Vitamin D is truly a hormone, so, talk about confusing. Anyway, now the American Medical Association and others are weighing in on the topic, so I may as well, too. Plus, my Dad was just shown to be deficient in Vitamin D, so now it's personal.

On one hand, physicians and others are concerned because literature suggests the intake of Vitamin D, which is mostly obtained from sun exposure and drinking fortified milk, has significantly decreased. You may also obtain Vitamin D in the diet by consuming eggs, fish, and cod liver oil. I don't think the latter will be very popular, as cod liver oil pre-dates even my generation. With the advent of sun screens, which block Vitamin D, there is growing concern about human deficiencies. Studies connect Vitamin D deficiencies to bone problems (osteopenia, osteoporosis), cancer, mental problems, cardiovascular disease, muscle weakness, diabetes, and a host of other maladies, including problems with our immune system. To be completely fair, some experts argue data is lacking that low levels of Vitamin D cause problems and that increasing intake makes a difference. I told you it was confusing.

I will even add another layer of complexity, so you will see what is covered in both the lay press as well as medical journals:

Caucasian skin produces roughly 10,000 IU of Vitamin D as a result of 20-30 minutes of sun exposure, which is higher than the recommended 4,000 IU per day. I will qualify that statement, as the United States Institute of Medicine recommends 4,000 IU of Vitamin D per day for those aged 9-69. So, you would think that would suffice. Well, maybe not. A study performed on Hawaiian surfers and skate boarders showed 51 percent had low levels of Vitamin D. These were people who received more than enough sunlight. No wonder people throw up their hands, as this is all very perplexing. Let's delve more into this from a scientific standpoint.

There are three forms of Vitamin D; cholecalciferol, calcidiol, and calcitriol. We will briefly cover each one:

Cholecalciferol (Vitamin D3) is the naturally occurring form of Vitamin D. It is made when sunlight hits your bare skin, unless you are wearing sunscreen. It is also the form which should be taken as a supplement, if you choose to do so.

Calcidiol, is called 25 hydroxyvitamin D or 25 D3. It is a prehormone directly made from cholecalciferol, (see above). When tested for Vitamin D levels, this is what is measured.

Calcitriol, is called 1,25 dihydroxyvitamin D, or 1,25 D3. It is made from Calcidiol in the kidneys and in other tissues. In fact, it is the most potent steroid hormone in the human body. There are a reported 2,700 binding sites for Calcitriol on the human genome, so this demonstrates the importance of this hormone.

You, now at least have heard of some of these terms. At this point, let's see if we can make some sense out of all this and put it to practical use.

I think Vitamin D plays an important role in development, growth, and maintenance of a healthy, human body. There are over 30 tissues and organs in our bodies which contain Vitamin D receptors. They are present for a reason. There is a great deal of literature dealing with every aspect of its possible role in humans, but I selected what I thought may be of particular interest. I mention these conditions, because they are the ones most discussed, and we have already covered some of these illnesses listed. Let us now proceed and learn a little more on each condition or disease where Vitamin D is felt to play a role as seen in the medical literature:

Asthma: Evidence suggests maternal Vitamin D intake during pregnancy is inversely associated with asthma symptoms in early childhood. In other words, the less taken in during pregnancy, the greater the chance the child exhibits asthma symptoms.

Autism: Decreased Vitamin D3 levels in a pregnancy may affect a developing brain.

Autoimmune Diseases: Vitamin D helps the immune system defend the body.

Breast Cancer: Females with decreased levels of Vitamin D have increased risks for developing breast cancer.

Cancer (general): Vitamin D inhibits inappropriate cell division and enhances anti-cancer action of the immune system.

Celiac Disease: Remember this one? People with this disease have a high prevalence of Vitamin D deficiency.

COPD: Chronic Obstructive Pulmonary Disease, such as emphysema and bronchitis are associated with low levels of Vitamin D.

Cystic Fibrosis: Prevalence of Vitamin D deficiency and poor skeletal health are seen in CF patients.

Diabetes: Vitamin D helps maintain insulin levels.

Hypertension: Vitamin D metabolism is involved in blood pressure regulation.

Inflammatory Bowel Disease, such as Crohn's Disease and Ulcerative Colitis: D3 may inhibit symptoms of Inflammatory Bowel Disease.

Immunity: Low levels are associated with more viral respiratory infections, such as colds and flu.

Mineral Metabolism: Vitamin D is necessary for intestinal absorption of Calcium, Phosphorus, and Magnesium.

Obesity: Obese patients have low levels of Vitamin D compared to those who are not.

Osteopenia/Osteoporosis: Please pay attention to this one in particular. These terms deal with bone density, and weakened bones break, or fracture, if you will. Osteopenia is the early stages or beginning of osteoporosis, which affects millions of both men and women. Vitamin D intake during adolescence and continued intake as an adult are positively associated with increased bone density.

Pediatric: There is a world wide deficiency of Vitamin D among children, especially African American teenagers in winter.

Premenstrual Syndrome: Studies show association of decreased Vitamin D levels and PMS.

Requirements: It is recommended persons take in 5,000 IU of D3 every day either from sunlight or supplements to achieve blood levels in the desired range of 50-80 ng/ml.

Toxicity: Over dosage does not occur until more taken than 100 times the RDA, or recommended daily allowance for a number of months.

Some reports say Vitamin D deficiency is a world wide epidemic with over one billion people at risk.

Here are my thoughts, and please know there are many differing opinions, as I have demonstrated. You must seek the answers for yourself by having a discussion with your own physician. These are my personal guidelines and what I do:

The only true way to know you have the correct level of Vitamin D is proof through a blood test. That does not mean everyone should get one. However, if you have any of the conditions listed above, have minimal outdoor sun exposure, or take in very little Vitamin D in your diet, then I think you should consider testing. Based on the results, you may or may not need to take supplements.

I personally take one Vitamin D3 tablet a day, which is 2,000 IU during bike riding season, as I do receive sun exposure during the spring, summer, and fall. I double the dose in winter.

Some recommend receiving mid-day sun exposure to bare skin for 20-30 minutes per day being careful never to burn. People with dark skin need longer exposure, which may increase skin cancer risks. I tend to be more concerned about skin cancer than I am Vitamin D deficiency, but I truly think it is good for you to at least get some sunshine in your life without wringing your hands about minimal exposure. Not playing outside leads to many other risks, which I constantly preach about in my other articles concerning obesity. There has to be a happy medium in here somewhere. I don't want people baking in the sun for long periods, but I don't think going outside in a bee keeper's suit is recommended either. We aren't vampires. I think the 20 minutes per day unprotected sunshine exposure rule is a logical one. Obtaining adequate amounts of Vitamin D in the diet is possible, but you know what you eat. If you think you may be deficient, again, get a Vitamin D level drawn, and discuss it with your doctor.

Please refer back to the osteopenia/osteoporosis section to understand this next statement regarding my own product, Dr. Steve's Pro Bites. I have a very personal interest in bone health, because I am so active and want strong bones for support. This is one reason I take Vitamin D supplements.

I also consume one bag of Pro Bites a day specifically for this reason: A study published in the Annals of Internal Medicine in 2005 concluded the following: When people consumed 13 grams of soy protein a day, the risk of osteoporosis-related bone fractures was reduced by 50 percent. One bag of Dr. Steve's Pro Bites contains 13 grams of soy protein. These fractures, when they occur are very serious, in that they are most commonly seen in the spine and hip. These fractures carry a significant morbidity and mortality rate. Bone health is very important, especially when you are an active athlete and when you age.

I truly believe it is important to have adequate levels of Vitamin D in your body to protect it from the various diseases we discussed.

Remember, prevention of injury and illness is one of the main reasons I write these articles. As always, please know when you take great care of your body, it will take great care of you, especially under the stress of athletic competition or medical/surgical illnesses.

Thank you.

Sincerely,

Dr. Steve

Steven L. Snodgrass, M.D., F.A.C.S.

Dr Steve's Pro-Bites may be purchased at www.probites.com or www.samsclub.com by entering search dr steve.