**One Vitamin You Should Never Take**  
Many of my patients are confused as to which vitamin D supplement to take: vitamin D2 or D3?   
  
Vitamin D2 (or ergocalciferol) is created by plants when they are exposed to sunlight. It is really for plants, invertebrates and fungi.   
  
Humans make [vitamin D3](http://www.lifespa.com/product.aspx?prod_id=325&https_check=true) (or cholecalciferol) when the skin is exposed to UVB rays from the sun. The evidence is overwhelming that vitamin D3 is the best vitamin D for human supplementation.   
  
Vitamin D2 is a plant based vitamin that was never found in humans until we put it there as a supplement.  It is the wrong vitamin. In fact, in 2006, the American Journal of Clinical Nutrition argued that D2 should no longer be considered as a nutrient "suitable for fortification or supplementation," given the strong hormonal advantages of D3(2).   
  
**Vitamin D3 is an Essential Hormone**  
At optimal levels [vitamin D3](http://www.lifespa.com/product.aspx?prod_id=325&https_check=true) begins to act like a hormone rather than a vitamin. In fact vitamin D3 is the most powerful steroid hormone in the human body. This hormone is optimized only when vitamin D3 blood levels are between 50-80 ng/ml, according to the Vitamin D Council. Vitamin D2 never acts like a hormone.   
  
**Vitamin D2 is the Wrong Vitamin**  
After testing thousands of patients for vitamin D, I have yet to see a patient in my practice who was prescribed high doses of vitamin D2 that was able to reach optimal blood levels for vitamin D – even at doses as high as 50,000 IU a week for 16 or more weeks.  Patients on these high doses of vitamin D2 tend to have blood levels in the low 30s ng/ml, no higher.  
  
Vitamin D2 has lower bioactivity, poorer stability, and shorter duration of action, resulting in approximately 33% lower potency compared with [vitamin D3](http://www.lifespa.com/product.aspx?prod_id=325&https_check=true)(3).  
  
**Are Vitamin D2 Fortified Foods Really “Fortified”**?  
Unfortunately all the milk and orange juice is fortified with, you guessed it.... the wrong vitamin: D2 (ergocalciferol).  Pharmaceutical companies patented the process of synthesizing  vitamin D2 in the 1930's and though it is effective enough to prevent rickets, it is  not the vitamin the sun intended us to have. Only in the past 10 years has the unbridled truth about [vitamin D3](http://tempuri.org/tempuri.html) potency taken most of the research community by storm.  However, the pharmaceutical companies have not yet switched from vitamin D2 to the more potent form of D3.  
  
What's worse is that many medical doctors receive a large portion of their continuing education from the pharmaceutical reps who just are not talking about vitamin D at all - most likely because they don't sell it.  
  
As a result, the real crime is that the general public isn't being told about the incredible importance of this vitamin. Every one should know exactly what their vitamin D levels are. Every one should be tested to determine the necessary dose to reap the benefits of this miraculous vitamin.   
  
The bottom line is that if you take any living organism away from the sun, it will wither and die. For the last 100 years or so we have been slowly withering with chronic disease, much of which can be attributed to lack of sunshine. In our modern world, even with great sun exposure in the summer, most of us will become deficient in the winter. This is a huge health risk we simply cannot allow to continue.  
  
**How to Optimize Your Vitamin D Levels**  
After many years of clinical observation, I have realized how extremely difficult it is to optimize our vitamin D levels to the  range suggested by the Vitamin D Council, which is 50-80ng/ml.  Almost everyone is 35ng/ml or below - with an astonishing number of patients in the teens - unless they are taking around 5000 IU of [vitamin D3](http://tempuri.org/tempuri.html) per day through the winter.  
      
As I write this article it is October, a time of year when vitamin D levels should be the highest. At the end of summer we have hopefully stored significant levels of vitamin D from sun exposure which we can use throughout the winter. After October, the sun is too low in the sky in most of the US for us to receive adequate UVB and make vitamin D – even in places like Colorado that have notoriously sunny winters.  This is why vitamin D deficiencies become epidemic. In one study, 97% of Canadians were deficient in vitamin D.(4). Surprisingly, about half of the patients I have tested this fall are below 25ng/ml, which is dangerously low.   
  
**Why Are So Many People Deficient?**  
Here are a few reasons why so many people are too low in such an essential vitamin:

* UVB radiation is inconsistent, even in the summer.
* Only midday summer rays will deliver UVB radiation, which varies from day to day (typically 10am – 2pm).
* It takes about an hour for UVB radiation to convert cholesterol on the skin to pre-vitamin D.  Wait at least an hour before taking a shower or jumping into a body of water after spending time in the sun.
* We live in houses, work in buildings and commute by cars where we get zero UVB radiation.
* Up until 100 years ago most humans spent the better part of the day outside in the fields. Genetically we are still totally dependent on the sun.
* Traditionally diets in the northern latitudes included cold water  fish, fish oil and organ meats which are high in vitamin D – but rare in today's society.
* We have been told for 25 years that the sun is dangerous and have thus avoided it like the plague.
* Sunscreens for the past 25 years have blocked only the good UVB vitamin D making rays and let in all the UVA skin cancer causing rays.

**Do You Know Your Vitamin D Levels?  Don't Guess!**  
  
The research is too compelling.  Everyone should have a very good sense of their vitamin levels. Are you between 50-80ng/ml?   
  
I recommend that my patients get tested in the fall to determine an optimal winter dose and again in the spring to determine an optimal summer dose. After these two tests most patients can supplement safely without testing for years and maintain optimal levels. Get tested this fall in your home with our [Vitamin D Test Kit](http://www.lifespa.com/product.aspx?prod_id=335) (without a doctors visit or prescription) and receive a free vitamin D supplement protocol.     
  
**Benefits of Vitamin D3**  
According to studies sited by The Vitamin D Council, optimal vitamin D levels may prevent and or treat:

* 50-60% of all cancers.
* Cardiovascular disease
* 10% of the gene pool from expressing negative traits.
* Auto immune diseases
* Diabetes
* Depression
* Fatigue
* Obesity
* Muscle and joint pain
* Alzheimer’s Disease
* Parkinson’s Disease
* Stroke
* Chronic pain
* Osteoarthritis
* Muscle weakness
* Muscle wasting
* Birth defects
* Periodontal disease
* Autism
* Asthma (severe childhood)
* Atherosclerosis
* Bladder cancer
* Breast cancer
* Chronic fatigue syndrome
* Colon cancer
* Congestive heart failure
* Crohn's disease
* Ovarian cancer
* Epilepsy
* Fibromyalgia
* Heart attack
* Inflammatory bowel disease
* Insulin resistance
* Kidney disease
* Leprosy
* Liver disease
* Metabolic syndrome
* Multiple sclerosis
* Myofascial pain syndrome
* Osteoporosis
* Periodontal disease
* Preeclampsia
* Psoriasis
* Rectal cancer
* Rheumatoid arthritis
* Senile dementia
* Tinnitus
* Tuberculosis
* Ulcerative colitis

**Related Articles:**

1. [Surprising Health Risks of Vitamin D Deficiency](http://www.lifespa.com/article.aspx?art_id=100)
2. [Vitamin D3 Protocol for Dosages](http://www.lifespa.com/article.aspx?art_id=120)
3. [The Truth About Sunscreen](http://www.lifespa.com/article.aspx?art_id=61)
4. [Don't Be Fooled By Your Sunscreen](http://www.lifespa.com/article.aspx?art_id=114)

**References:**

1. Alvarez JA and Ashraf A. Role of Vitamin D in Insulin Secretion and Insulin Sensitivity for Glucose Homeostasis. International Journal of Endocrinology, vol. 2010, Article ID 351385, 18 pages. 2010.
2. Houghton LA and Vieth R. The case against ergocalciferol (vitamin D2) as a vitamin supplement. Am J Clin Nutr. 2006 Oct;84(4):694-7. 2006.
3. The Value of Vitamin D3 over Vitamin D2 in Older Persons’ Barbara J. Zarowitz PharmD, FCCP, BCPS, CGP, FASCP
4. www.vitaminsociety.org. September 4, 2008