Vitamin D3 (cholecalciferol)

• Vitamin D is used for the prevention and mitigation of viral infections including upper respiratory infections and influenza
• Vitamin D supplementation reduces systolic and diastolic blood pressure
• Additional benefits include bone and prostate health
• Chronic pain is often caused (or made worse) by low vitamin D levels in the body
• Vitamin D3 (cholecalciferol) is the natural vitamin D found in the human body.

Vitamin D, in conjunction with Parathyroid Hormone (PTH), regulates blood Calcium (Ca) and bone mineralization. It also stimulates the release of prolactin and growth hormone from the pituitary.

General Information:

Vitamin D3, or cholecalciferol, is produced by the action of ultra violet light (UVB3) in the skin of humans and other vertebrates. Vitamin D2, or ergocalciferol, is derived from plants and fungi. These forms (D2 and D3) are metabolized similarly in humans. However, it is very important to supplement with Vitamin D3 because presently there is no accurate way of measuring Vitamin D blood levels when D2 is used.

UVB3 rays do not penetrate the atmosphere in late fall, winter, and early spring. As a consequence, NO Vitamin D is produced by the body at these times in latitudes north of 35 degrees. (Los Angeles, CA to Charlotte, NC) In addition, very little Vitamin D is produced in latitudes below 35 degrees in individuals who are sedentary and do not have adequate skin exposure to the sun. In addition, older skin poorly converts sunlight to vitamin D in the body. In addition, any time that sun blocking techniques (sunscreen, long sleeves, etc.) are used, NO Vitamin D is made by the body.

To become biologically active, vitamin D is hydroxylated in the liver to 25-hydroxy vitamin D (25 [OH]D), also known as Calcidiol. In another step, the kidney forms 1,25-dihydroxy vitamin D (1,25 [OH]2 D, also known as Calcitriol.

Uses for Vitamin D:

Studies have shown that higher Vitamin D levels are protective against viral infections, including upper respiratory infections and influenza. Flare ups of COPD and Pneumonia are less common if vitamin D levels are in this higher range. Vitamin D3 can be used at 11,000 IU per day for 7 to 10 days in the event of upper respiratory bacterial or viral infections, including influenza.

Suffering from Shingles? One study of dialysis patients found that patients who received vitamin D and iron were less likely to develop shingles.

Another study shows vitamin D arms t-cells. These 'armed' t-cells seek & destroy harmful invaders. A Japanese study found that vitamin D performed better than vaccine in preventing flu, including pandemic flu.

Gastrointestinal disorders of mixing and fat emulsification, decreased transit time, and fat malabsorption reduce vitamin D absorption. The doses described in this paper overcome these problems.
Adults in the US typically consume only 100 to 150 IU of vitamin D daily. Thinning of the skin and reduced sun exposure may contribute to decreased vitamin D₃ production in the elderly.

Vitamin D is used for the prevention or slowing of osteoporosis, the correction of hypocalcemia secondary to hypoparathyroidism, and prevention of hypovitaminosis D in anticonvulsant osteomalacia, gastrectomy, small bowel resection, bypass surgery for weight loss, cholestatic liver disease, bowel inflammatory disease or anything that decreases bowel transit time. Vitamin D insufficiency has been implicated in prostate, breast and 11 other types of cancer. Some of the conditions that Vitamin D plays a key role in preventing or helping are hypertension, cardiovascular disease, diabetes, multiple sclerosis, rheumatoid arthritis, chronic pain and other autoimmune problems.

**Vitamin D and chronic pain.**  
The Mayo clinic has reported a correlation between vitamin D levels and the amount of narcotic medication by patients with chronic pain. The CDC reports that chronic pain is the leading cause of disability in the US.

**WARNING**: The Institute of Medicine has identified a safe upper limit as 2000 IU daily in normal adults. Larger doses should be used under the supervision of a health care professional. That said, we recently found a study called *The Big Vitamin D Mistake*. The authors conclude that much higher levels - for instance, 1000 IU for children <1 year on enriched formula and 1500 IU for those older than 6 months who are breastfed, 3000 IU for children >1 year of age, and up to 8000 IU for young adults - should be considered. And these are the official recommendations for Finland. According to Michael Hollick, MD, a low level of 25 hydroxy Vitamin D is 10 ng/ml. This ranges up to a maximum safe level <100 ng/ml. He considers 30-60 ng/ml a healthy range.

By John W Jones, MD, MPH  
Nutritional Consultant for Nutrition Pure and Simple  
[www.jjconsulting.net](http://www.jjconsulting.net)

**Supplement Facts for Vitamin D3 5000 or Vitamin D3 2000**:  
Serving Size: 1 Capsule, Servings per Container: 100  
Each capsule contains 5,000 IU (or 2000 IU) Vitamin D₃ (as cholecalciferol)  
Other ingredients: Calcium carbonate, magnesium stearate, gelatin  
Suggested Use: One capsule daily or as directed by a health professional.

How they are Supplied  
- VMD₃ (5000 IU) bottles of 100 capsules  
- VMD₃2 (2000 IU) bottles of 100 capsules  
Related Products: Vitamins D₃ 2000 + K (200 mcg) and Vitamins D₃ 5000 + K, (550 mcg)

**More Information:**  
*The UV Advantage* and  
*The Vitamin D Solution*, by Michael Hollick, MD  
Vitamin D Council, [www.vitaminDcouncil.org](http://www.vitaminDcouncil.org)

Phone: 888.953.5553  
[www.nutritionpureandsimple.com](http://www.nutritionpureandsimple.com)

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