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 D\(^3\) (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 D\(^3\), or cholecalciferol, is produced by the action of ultra violet light (UVB\(^3\)) in the skin of humans and other vertebrates. Vitamin D\(^2\), or ergocalciferol, is derived from plants and fungi. These forms (D\(^2\) and D\(^3\)) are metabolized similarly in humans. However, it is very important to supplement with Vitamin D\(^3\) because presently there is no accurate way of measuring Vitamin D blood levels when D\(^2\) is used. UVB\(^3\) 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.

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 (I recommend 5000 or 6000 IU per day in the winter months) 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 D\(^3\) 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.

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 D\(^3\) production in the elderly. For these reasons, I suggest that adults need a minimum of 1000 IU (as I have in my multis). In northern climates in the winter an additional 5000 IU is recommended. At this level it is important to supplement 800 mg chelated calcium per day.

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 osteo malacia, 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.

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**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*
- *The Vitamin D Solution*, by Michael Hollick, MD
- Vitamin D Council, [www.vitaminDcouncil.org](http://www.vitaminDcouncil.org)
- [http://Pain-Topics.org/VitaminD](http://Pain-Topics.org/VitaminD)

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