



PURE  VEGAN

Vitamin D-2 Spray (as Ergocalciferol)

- **Serving Size: 1 Spray**
- **Servings per 1 oz container: 175**
- **Delivers: 400 IU of Vitamin D2 per spray**

What is [vitamin D](#)?

Early in the 20th century scientists discovered that rickets, a childhood disease characterized by improper bone development, could be prevented by a compound isolated from cod liver oil, referred to as "fat-soluble factor D," now known as vitamin D. The vitamin was also called "calciferol," since it was found to boost calcium deposits in bone. Because vitamin D is so important in skeletal growth and strong bones, many foods are fortified with this vitamin to ensure that children obtain adequate amounts.

There are two basic types of vitamin D. Ergosterol is the basic building block of vitamin D in plants. Cholesterol is the basic building block of vitamin D in humans. When ultraviolet light from the sun hits the leaf of a plant, ergosterol is converted into ergocalciferol, or vitamin D2. Ergosterol is a component of fungal cell membranes, serving the same function that cholesterol serves in animal cells. Ergocalciferol is sometimes considered a vegan source of vitamin D, since it can be plant-derived. Yeast is also commonly used as a source of D2, as are other fungi (like ergot).

Common symptoms of Vitamin D deficiency

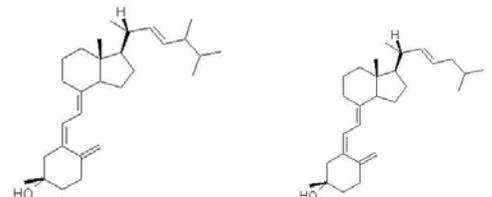
Vitamin D deficiency will cause a decrease in calcium and phosphorous absorption. As a result, prolonged vitamin D deficiency has a negative impact on bone mineralization. In infants and children, such a deficiency manifests itself as rickets, a condition characterized by bone deformities and growth retardation. Adults with vitamin D deficiency may experience bone pain and/or osteomalacia (soft bone).

It is particularly important for individuals with limited sun exposure to include good sources of vitamin D in their diets. Homebound individuals, people living in northern latitudes, individuals who wear clothing that completely covers the body, and individuals working in occupations that prevent exposure to sunlight are at risk for vitamin D deficiency.

Symptoms that can indicate a need for supplemental vitamin D

- Bone pain and/or soft bones
- Frequent bone fractures
- Bone deformities or growth retardation in children
- Lack of exposure to sunlight for any reason, including geography, use of sunscreen, or wearing of protective clothing

Vitamin D2 Vitamin D3



Continued on page 2

Aerobic Life Industries

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Pure Vegan Vitamin D2 spray continued

Maintaining healthy immune function and preventing excessive inflammation

Vitamin D also helps regulate immune system activity, preventing an excessive or prolonged inflammatory response. Our immune cells, specifically our active T-cells, have receptors for vitamin D. This is important because autoimmune diseases, including multiple sclerosis, diabetes, rheumatoid arthritis and irritable bowel diseases (such as Crohn's disease and ulcerative colitis) all have a T-cell component of inflammation.

For example, in multiple sclerosis, T helper cells drive the progression of the disease by recruiting other inflammatory immune cells (macrophages and inflammatory cytokines), particularly when vitamin D is deficient. When vitamin D levels are adequate, the body switches on a vitamin-D mediated system that can help shut down the inflammation.

Aging

The production of vitamin D precursors in the skin decreases with age, and the kidney is less able to convert vitamin D to its active hormone form.



American Journal of Geriatric Psychiatry [HOME](#)
C. H. Wilkins, Y. I. Sheline, C. M. Roe, S. J. Birge, and J. C. Morris
Vitamin D Deficiency Is Associated With Low Mood and Worse Cognitive Performance in Older Adults
Am J Geriatr Psychiatry, December 1, 2006; 14(12): 1032 - 1040.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

Why do Vegans shop for [Vitamin D2](#)?

A common source for the D3 in supplements is sheep's wool, or lanolin. (Since the fur of animals typically blocks the ability of their skin to make vitamin D, the fur itself often has a capacity to make this vitamin). Remember, a vegan consumes plant products only. Vegans do not use products derived from animals, such as fur or leather.

What can supplemental Vitamin D do for you?

- Help prevent a growing list of chronic diseases, including type 2 diabetes, heart disease, hypertension, osteoporosis, breast cancer, colon cancer, and ovarian cancer
- Help keep your bones and teeth strong and healthy
- Regulate the growth and activity of your cells
- Reduce inflammation

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