

Vegan D3 with VitaShine D3

**Doctor's
BEST**

Science-Based Nutrition™



INGREDIENTS

Doctor's Best Vegan D3 features Vitashine D3, a sustainably harvested plant source of the vitamin that is registered with the prestigious UK Veg-an Society. Common supplemental forms of vitamin D include D3 (cholecalciferol) and D2 (ergocalciferol). Vitamin D3 is the only naturally occurring form in humans.¹ Although traditionally the two forms were believed to be equivalent in terms of potency, current research suggests otherwise.² A recent study demonstrated that D3 was 56% to 87% more potent than D2 in raising blood 25(OH)D levels in humans, and more than 3 times as potent in increasing fat calciferol.³

Mounting research highlights how an optimal vitamin D status is beneficial beyond the vitamin's classical role as a bone nutrient. Yet only two-thirds of the U.S. population has sufficient vitamin D (as defined by the Institute of Medicine),⁴ and 40% to 100% of U.S. and European elderly men and women still living outside of nursing homes are deficient in vitamin D.⁵ Deficiency of vitamin D may well be the most common nutritional deficiency.⁶

The standard assessment for vitamin D levels is measuring the level of the marker 25(OH)D in the blood (25-hydroxy vitamin D). Some experts suggest that levels in the 40–70 ng/mL (nanogram per milliliter) range are optimal for supporting health.⁷ In a study of 2,606 postmenopausal women, more than 64% had vitamin D levels of less than 30 ng/mL as measured by blood 25(OH)D.⁸ Additionally, a new study of 2,037 individuals aged 55–88 revealed that long-term use of common medications was associated with lower levels of 25(OH)D.⁹

It is common knowledge that vitamin D can be obtained from exposure of the skin to sunlight, but less commonly known is that people living above the latitude of 33° north (that is, anywhere north of Atlanta, GA across to San Diego, CA) typically will only

make vitamin D in their skin between 10 a.m. and 3 p.m. from April to September.¹⁰ During the months when soaking up rays could be helpful, sunscreens with a sun protection factor of 30 can reduce vitamin D production by 95%.

The vitamin D situation is further complicated by the fact that individuals with darker skin need longer sun exposure than individuals with lighter skin to produce the same amount of vitamin D. Age is also a factor, and typically a 70-year-old man produces only 25% the vitamin D that a 20-year-old man produces. Furthermore, UV rays from the sun usually do not penetrate indoors through windows, and therefore indoor vitamin D skin production is minimal. With all these factors in operation, it is not surprising that many experts have raised concerns about widespread vitamin D insufficiency.^{11,12} Dietary supplementation with vitamin D3 is one convenient option to help avoid deficiency.

After sunlight, the second most common source of vitamin D is from dietary intake. However, few foods are naturally high in vitamin D, with fatty fish like salmon being the richest source. Since fortified foods often don't use a form of vitamin D that is vegan, vitamin D supplementation can be crucial for strict vegetarians when sun exposure is insufficient.¹³

The Food and Nutrition Board (FNB) of the Institute of Medicine of the U.S. National Academies increased the Recommended Dietary Allowance (RDA) levels for vitamin D in 2010. For adults between 19 and 70 years of age, the FNB advises an intake of 600 IU per

Supplement Facts

Serving Size 1 Veggie Capsule
Servings Per Container 60

	Amount Per Serving	% Daily Value
Vitamin D3 (as cholecalciferol)(Vitashine D3)	62.5 mcg (2500 IU)	310%

Other Ingredients: Microcrystalline cellulose, modified cellulose (vegetarian capsule), maltodextrin, starch, sucrose, silicon dioxide, d-alpha tocopherol, ascorbyl palmitate.

Suggested Adult Use: Take 1 capsule daily with food, or as recommended by a nutritionally-informed physician.

Non-GMO/Gluten Free/Soy Free/Vegan

Store in a cool dry place.

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day, while for individuals aged 71 years and older, an intake of 800 IU per day is recommended.¹⁴ Despite increases in the RDA, some researchers suggest that significantly higher doses are needed to ensure levels are optimal enough to promote health.^{7,15}

BENEFITS

Enhances overall health and longevity*

Promotes healthy bone density and structure*

Vitamin D has well-established hormonal effects, and like other hormones it can act as a “molecular switch” by influencing the expression of multiple genes.⁷ One of its major hormonal effects is to regulate calcium’s homeostasis activities in the body. This is of vital importance, since calcium is involved in the functioning of all cells but most cells require only very little of it. Vitamin D helps the body manage calcium homeostasis (keep calcium within healthy ranges in all the body’s cells, tissues and organs). Vitamin D research has rapidly expanded into exploring its diverse roles in human health.

Vitamin D’s clinically proven bone benefits are directly related to its management of calcium homeostasis and specifically to calcium balance in bone.¹⁶ Calcium balance is essential for bone growth and formation. Vitamin D is essential to ensure healthy control over calcium absorption and the availability of calcium to bone. Multiple studies have shown its support for healthy bone structure from childhood through old age.^{8,17-20}

The body’s activated vitamin D (25-hydroxy vitamin D3) not only influences bone health but helps support immune system responses, the heart and circulation, the lungs, the musculoskeletal system and virtually all the body’s other functional systems. It is increasingly becoming clear that optimal vitamin D status may have beneficial impact on longevity. In a recently published prospective study of thousands of elderly men in Sweden, Hong Kong, and the USA, a significant association was found between healthy blood 25(OH)D levels and a healthy lifespan.²¹

Recent research also suggests the prevalence of subclinical vitamin D deficiency is increasing worldwide, and this is paralleled by an increasing number of overweight individuals. It has been proposed that being overweight may contribute to lower blood 25(OH)D levels because the storage of vitamin D in adipose tissue decreases its bioavailability.²²

Supports cognitive health*

A recent systematic review of studies on vitamin D and cognitive health assessed the relationship between measurements of 25(OH)D and cognition.²³ The overall results of this meta-analysis showed that higher vitamin D concentrations were associated with superior cognitive function. In a recently published study, the highest consumption of dietary vitamin D was associated with superior cognitive function in 498 older French women who were followed for 7 years.²⁴

These results built upon previous findings from the same research group with 5,596 older women, that cognitive function was significantly better with the recommended dietary intake of vitamin D, compared with inadequate vitamin D intake.²⁵ Animal research suggests that Vitamin D supports neurons by influencing the production of neurotrophins (nerve cell growth factors) and nitric oxide synthase (linked to healthier circulation).^{23,26}

Enhances and regulates immune function*

Vitamin D—whether from dietary intake or sun exposure—requires two enzyme mediated activation steps in the body. It has been known for some time that the first activation step occurs in the liver, and the second occurs in the kidneys. Recently it has become clear that receptors for activated vitamin D (proteins that functionally respond to its presence) are present in tissues throughout the body, including the skin, cartilage, heart, prostate, bones and intestines. It is likely that many of these tissues can do the second activation step.¹⁶ This opens up a new dimension of health implications for this hormone-like vitamin.



Recent discoveries have highlighted the important effects of vitamin D on the immune system. Various immune cell types, including monocytes, macrophages, dendritic and other antigen-presenting cells, and T-lymphocytes express the vitamin D receptor on their surfaces when activated.¹⁰ Vitamin D can influence their expression of cytokines, chemical messenger substances that influence immune responses but can also influence the other tissues. Vitamin D may support a balanced immune response and keep the immune system in a normal healthy state of vigilance.²⁷

Supports optimal cardiovascular function*

The degrees of importance of vitamin D for heart and blood vessel health are potentially far-reaching. In 1,739 participants from the long-running Framingham Offspring Study, those individuals with the highest levels of vitamin D had superior cardiac function in relation to those with low vitamin D levels.²⁸ In a recent systematic review of the relevant clinical trial literature, researchers conducted a meta-analysis from the results of 19 studies that included a total of 65,994 research participants. They found the majority of trials support an association between higher initial blood 25(OH)D and better cardiovascular health at follow-up.²⁹

In a randomized, double blind, placebo-controlled trial of 200 healthy but overweight individuals, participants received either 3332 IU cholecalciferol (D3) or placebo daily for one year in addition to following a weight-loss plan. Vitamin D had no undesirable effect on weight loss, yet it had a generally positive effect on markers of cardiovascular health in individuals with a low vitamin D status.³⁰ This vitamin D research focus is continuing to rapidly expand.

SAFETY

Since excessive sun exposure can't cause the body to produce too much of the vitamin, vitamin D toxicity almost always occurs from the overuse of supplements. The weight of the evidence in published literature suggests that toxicity is usually a concern for most adults with prolonged use of the vitamin at or above 10,000 IU daily.³¹ When used in the recommended amounts, vitamin D3 is very safe.

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