

Vitamin D3 5,000 I.U.



Clinical Applications

- Supports Bone and Dental Health*
- Supports Modulation of Immune Function*
- Supports Musculoskeletal Comfort*
- Supports Cardiovascular Health & Healthy Blood Sugar Metabolism*

Vitamin D is inadequate in many individuals and daily need appears to be higher than previously thought. Vitamin D's role in calcium metabolism and bone health is well known. However, it has many other important physiologic roles that are not as well appreciated.

All Adaptogen Research Formulas Meet or Exceed cGMP Quality

Discussion

Vitamin D3 5,000 I.U. supplies a naturally derived and bioavailable version of vitamin D known as cholecalciferol or vitamin D3. Supplied in high-potency amount of 5,000 IU for those needing to conveniently augment dietary intake. Daily vitamin D3 intake of 1,000 to 2,000 units, an amount shown to be safe and effective by clinical studies, is now advised by many experts.*

Vitamin D is inadequate in many individuals and daily need appears to be higher than previously thought. The role of vitamin D in calcium metabolism and bone health is well known.* However, it has many other important physiologic roles that are not as well appreciated. Vitamin D receptors are widely distributed in the body, including colon, prostate, breast, and ovary, where it acts to inhibit the excessive growth of body cells and tissues and helps cells mature normally.* Adequate amounts of vitamin D come from consistent exposure to sunshine and are difficult to obtain from dietary sources. Postmenopausal women, older individuals, and those with malabsorption, limited sun exposure, or certain illnesses may need higher intakes of vitamin D. In the diet, this fat-soluble vitamin occurs naturally in only a few foods, such as mushrooms and some types of fish.

Product Features

Bone and Dental Health* Numerous studies have highlighted the importance of vitamin D to maintaining healthy bone density. In one 2013 study, 52 overweight men and women with suboptimal vitamin D levels were given either 7,000 IU of cholecalciferol daily or a placebo for 26 weeks. The vitamin D group significantly increased vitamin D levels in the blood and improved biomarkers of bone health.^{1,2}

Cardiovascular Health and Healthy Blood Sugar Metabolism *In light of the role that vitamin D plays in a variety of tissues and body systems, it comes as no surprise that much research from recent years has underscored its contribution to cardiometabolic wellness.³ There is accumulating evidence that calcitriol helps strengthens cardiomyocyte function, vascular smooth muscle cells, and the vascular endothelium. Low levels of 25-hydroxyvitamin D are associated with diminished cardiovascular health.⁴ In a recent study of 222 participants, slow coronary function was significantly higher in those with insufficient blood levels of the vitamin⁵; optimal vitamin D status has also been linked with a 40% cardiovascular system protective effect⁶ as well as maintenance of healthy blood pressure levels.⁷ Vitamin D has also been shown to support healthy blood sugar metabolism.^{8,9}

***These statements have not been evaluated by the Food and Drug Administration.
This product is not intended to diagnose, treat, cure, or prevent any disease.**



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Modulation of Immune Function * One of the more profound functions of vitamin D is its ability to modulate immunity. An important recent study suggested that improving vitamin D status significantly affects the expression of genetic pathways linked to immune activity.¹⁰ Vitamin D has been shown to boost the immune response by up-regulating specific genes that increase cellular production of natural compounds that protect us against pathogens.¹¹

Musculoskeletal Comfort* Numerous studies also point to the key role of vitamin D in supporting musculoskeletal strength and comfort.¹² In one study, among 62 adult patients with nonspecific musculoskeletal discomfort, over 95% had vitamin D deficiency and responded to replenishment of vitamin D. Moderate deficiency of vitamin D has also been shown to predict knee discomfort over a five year period and hip discomfort over two years.¹³

Supplement Facts		
Serving Size 1 Full Dropper (1.0 mL)		
Servings Per Container 120		
Amount Per Dropper	% Daily Value	
Calories	10	
Calories from Fat	10	
Total Fat	1 g	2%†
Saturated Fat	1 g	5%†
Vitamin D (as cholecalciferol)	5,000 I.U.	1250%

†Percent Daily Values are based on a 2,000 calorie diet.

Other ingredients: Medium chain triglycerides (MCT Oil).

Suggested Use

1 dropperful (1.0 mL) daily or as directed by a healthcare professional.

Allergy Statement

Free of the following common allergens: milk/casein, eggs, fish, shellfish, tree nuts, peanuts, and wheat. Contains no artificial colors, flavors, or preservatives.

Caution

Not intended for use in infants. If you are pregnant, nursing, have a medical condition, or taking prescription drugs, consult your healthcare professional before using this product. Keep out of reach of children.

References

1. Wamberg L, Pedersen SB, Richelsen B, Rejnmark L. The effect of high-dose vitamin d supplementation on calciotropic hormones and bone mineral density in obese subjects with low levels of circulating 25-hydroxyvitamin d: results from a randomized controlled study. *Calcif Tissue Int.* 2013 Jul;93(1):69-77.
2. Cauley JA, Lacroix AZ, Wu L, Horwitz M, Danielson ME, Bauer DC, Lee JS, Jackson RD, Robbins JA, Wu C, Stanczyk FZ, LeBoff MS, Wactawski-Wende J, Sarto G, Ockene J, Cummings SR. Serum 25-hydroxyvitamin D concentrations and risk for hip fractures. *Ann Intern Med.* 2008 Aug 19;149(4):242-50.
3. Wang C. *J Diabetes Res.* Role of vitamin D in cardiometabolic diseases. 2013;2013:243934. Epub 2013 Feb 25.
4. Zittermann A, Koerfer R. Vitamin D in the prevention and treatment of coronary heart disease. *Curr Opin Clin Nutr Metab Care.* 2008 Nov;11(6):752-7.
5. Oz F, Cizgici AY, Oflaz H, Elitok A, Karaayvaz EB, Mercanoglu F, Bugra Z, Omer B, Adalet K, Oncul A. Impact of vitamin D insufficiency on the epicardial coronary flow velocity and endothelial function. *Coron Artery Dis.* 2013 May 20.
6. Ng LL, Sandhu JK, Squire IB, Davies JE, Jones DJ. Vitamin D and prognosis in acute myocardial infarction. *Int J Cardiol.* 2013 Feb 13.
7. Martini, L.A. and Wood, R.J. Vitamin D and blood pressure connection: update on epidemiologic, clinical, and mechanistic evidence. *Nutr Rev.* 2008; 66(5):291-297.
8. Teegarden D, Donkin SS. Vitamin D: emerging new roles in insulin sensitivity. *Nutr Res Rev.* 2009 Jun;22(1):82-92.
9. Chiu KC, Chu A, Go VL, Saad MF. Hypovitaminosis D is associated with insulin resistance and beta cell dysfunction. *Am J Clin Nutr.* 2004 May;79(5):820-5.
10. Hossein-nezhad A, Spira A, Holick MF. Influence of vitamin D status and vitamin D3 supplementation on genome wide expression of white blood cells: a randomized double-blind clinical trial. *PLoS One.* 2013;8(3):e58725.
11. Cannell JJ, Vieth R, Umhau JC, Holick MF, Grant WB, Madronich S, Garland CF, Giovannucci E. Epidemic influenza and vitamin D. *Epidemiol Infect.* 2006 Dec;134(6):1129-40.
12. Abbasi M, Hashemipour S, Hajmanuchehri F, Kazemifar AM. Is vitamin D deficiency associated with nonspecific musculoskeletal pain? *Glob J Health Sci.* 2012 Nov 11;5(1):107-11.
13. Laslett LL, Quinn S, Burgess JR, Parameswaran V, Winzenberg TM, Jones G, Ding C. Moderate vitamin D deficiency is associated with changes in knee and hip pain in older adults: a 5-year longitudinal study. *Ann Rheum Dis.* 2013 Apr 17.

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