

Vitamin D3

Purpose & Rationale

This formula supplies a source of vitamin D3 (ergocalciferol) that can help the body achieve total vitamin D [serum 25-hydroxyvitamin D concentration] to a bodily level of >30 ng/mL (75-100 nmol/L)], which has recently been associated with greater health outcomes in many areas.

Additionally, higher levels (>40 ng/mL) are associated with improvements in athletic performance.

The desired level of >30 ng/mL (75-100 nmol/L) is generally unachievable without supplementation based on the typical American diet, lack of natural sources and negative health implications from regular exposure to UVB radiation from sun exposure. According to the Center for Disease Control, 70% of Americans have insufficient levels of vitamin D. Older individuals, those with darker skin pigmentation, and people who have higher body-fat levels are at risk for insufficient levels. As we age, the body becomes less efficient at making vitamin D. Melanin, a pigment in the skin acts as a natural sunscreen, blocking UVB radiation and thus vitamin D production. Because vitamin D is fat soluble, it is stored in body fat and is less available to other tissues throughout the body among those with higher body-fat levels.

Typical Use

- Use as a supplement to all other vitamin D sources including a multivitamin and mineral (MVM) formula to achieve the desired level.
- Take with meals as needed to achieve desired level.

Unique or Features

- Progressive target usage recommendation noted on product label.
- NSF Certified for Sport—third-party tested for purity, potency and absence of contaminants.
- When this formula is combined with other dotFIT products, a safe and optimal range of supplemental vitamin D3 (2,000 – 2,600 IUs/day) is maintained.
- The tolerable upper intake level is 4,000 IUs/day.

Contraindications

People using medications that are metabolized in the gastrointestinal tract by cytochrome P450 3A4 (CYP 3A4) enzymes should use vitamin D supplements under physician supervision because vitamin D is thought to induce this enzyme and may result in a reduced bioavailability of these types drugs and other CYP3A4 substrates.¹ Drugs include: Atorvastatin (Lipitor), lovastatin (Mevacor), clarithromycin (Biaxin), cyclosporine (Neoral, Sandimmune), diltiazem (Cardizem), estrogens, indinavir (Crixivan), triazolam (Halcion), and others.¹ If using Orlistat (Xenical, Alli), which decreases absorption of fat-soluble vitamins including vitamin D, patients are recommended to supplement with a MVM that contains all fat-soluble vitamins.² The MVM with vitamin D should be taken at least two (2) hours from any Orlistat dose.² Overuse of sunscreens can lead to vitamin D deficiency and therefore supplementation and monitoring as noted in dosing section, of serum 25(OH)D concentrations, is warranted.^{3,4,5} In all cases, consult with a physician.

Supplement Facts		
Serving Size: 1 Softgel Capsule		
	Amount Per Serving	% DV
Vitamin D-3 (as cholecalciferol)	25 mcg (1,000 IU)	125%*
*% Daily Values are based on a 2,000 calorie diet.		

References

- ¹ Schwartz JB. Effects of vitamin D supplementation in atorvastatin-treated patients: A new drug interaction with an unexpected consequence. *Clin Pharmacol Ther* 2009;85:198-203.
- ² Roche, Inc. Xenical package insert. Nutley, NJ. May 1999.
- ³ MacLaughlin J, Holick MF. Aging decreases the capacity of human skin to produce vitamin D3. *J Clin Invest.* 1985;76(4):1536- 1538
- ⁴ Holick MF. Vitamin D: its role in cancer prevention and treatment. *Prog Biophys Mol Biol.* 2006;92:49-59.
- ⁵ Holick MF. Sunlight "D"ilemma: risk of skin cancer or bone disease and muscle weakness. *Lancet* 2001;357:4-6.