VitaminD3

1.000 IU Code: FE1490 (15 ml) / FE3127 (60 sg) / FE3128 (120 sg)
2.500 IU Code: FE3126 (15 ml) / FE3129 (60 sg) / FE3130 (120 sg)
4.000 IU Code: FE3133 (15 ml)

Our formulation provides vitamin D in the form of vitamin D_3 (cholecalciferol) which plays a fundamental role in maintaining bone and muscle health by regulating calcium metabolism. It prevents the loss of bone mass associated with age and decreases the risk of fracture both in elderly patients and menopausal women. VITAMIN D_3 also contributes to maintaining immune system integrity. In a society in which it is estimated that over 50% of the population is at risk of suffering from vitamin D deficiency, more and more experts suggest increasing the vitamin D recommendation to at least 800-2000 IU, a difficult dose to reach without supplementation.

Liquid: drops

15 ml

Ingredients:
Coconut oil (medium-chain triglycerides) and cholecalciferol (vitamin D_3).

Nutritional information:	**1 Drop (0,03 ml)**
Vitamin D3 (1.000 IU)	25 µg (500 %*)
Vitamin D3 (2.500 IU)	62,5 µg (1.250 %*)
Vitamin D3 (4 000 IU)	100 µg (2.000 %*)

*NRV: Nutrient Reference Value in %
One bottle contains approx. 500 drops

Softgels

Ingredients:
Sunflower oil (*Helianthus annuus*), D-alpha-tocopherol (natural vit. E, from sunflower *Helianthus annuus*), cholecalciferol (vit.D3), softgel (glazing agent: gelatin; humectants: glycerol and purified water).

Nutritional information:	**1 softgel (235 mg)**
Vitamin D3 (1.000 IU)	25 µg (500 %*)
Vitamin D3 (2.500 IU)	62,5 µg (1.250 %*)
Vitamin E	3,35mg α-TE (28%)

*NRV: Nutrient Reference Value in %

Format :

15 ml (drops)
60, 120 softgels

Recommended daily dose:

1 softgel daily or

1 drop daily under the tongue. Shake well.

Do not exceed the stated recommended daily dose.

Indications and uses:
Different studies have shown that Vitamin D3 is necessary for:
Maintaining bone health and preventing vitamin D deficiency which can contribute to the onset of bone disease (osteomalacia, osteoporosis). Preventing the loss of bone mass associated with age. Preventing fracture risk in elderly patients and menopausal women. Preventing the loss of bone mass associated with treatment with corticosteroids.
It contributes to maintaining immune system integrity.

Cautions:
The safety and efficacy of this product have not been established in children; consequently, it should not be administered to this age group.
Due to its high content in vitamin D, **VITAMIN D3** is not indicated for use during pregnancy or while breastfeeding since the daily allowance of vitamin D during pregnancy or while breastfeeding should not exceed 600 IU.
At high doses and during prolonged treatment with vitamin D, hypercalcemia may occur, which can be avoided by adjusting the dose.
Vitamin D can interact with the aluminium in some anti-acid preparations, so they should be taken separately.
Special monitoring in recommended for patients receiving treatment with cardiac glycosides.
Its use requires special precautions for patients with renal insufficiency or kidney stones.

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VITAMIN D is known as 'the sun vitamin' since the body makes it upon exposure to the sun's rays. 10 to 15 minutes of sun exposure, three times a week should be enough to produce the body's requirements for this vitamin[1]. However, many people who live in sunny climates do not produce enough vitamin D and need to obtain more through diet or supplements. This is why hypovitaminosis D is frequent among the population in our country, and numerous studies have shown that certain groups are at risk for hypovitaminosis D, such as women of child-bearing age or the elderly, who have a lower capacity for cutaneous synthesis. A 70 year-old adult produces 75% less vitamin D than a 20 year-old[2]. It's noteworthy that vitamin D deficiency affects around 50% of adults, young adults and children who are apparently healthy. Reduced cutaneous production of vitamin D is partially due to the existence of protective strategies to minimize sun exposure. A sunscreen of SPF 15 blocks approximately 99% of cutaneous vitamin D production. Ethnic groups with cutaneous hyperpigmentation require more sun exposure to synthesize equivalent amounts of vitamin D compared to individuals with white skin. Obesity is also associated with vitamin D deficiency, probably due to the vitamin's decreased bioavailability[1]. Vitamin D deficiency is a known risk factor for osteoporosis and falls and hip fractures in the elderly. Maintaining adequate levels of vitamin D in the adult population would help decrease the loss of bone mass in post-menopausal women[3].

Vitamin D is transformed in the liver to 25-hydroxyvitamin D (25[OH] D), the main metabolite of vitamin D in circulation. It is transformed in the kidneys into its active form 1.25-dihydroxyvitamin D (1.25[OH]2 D), which plays a fundamental role in maintaining bone and muscle health by regulating calcium metabolism. Vitamin D deficiency reduces the intestinal absorption of calcium by over 50%. A decrease in serum calcium concentration signals the secretion of the parathyroid hormone (PTH) in order to quickly correct calcemia by mobilizing bone calcium[4]. All of the guidelines and therapeutic consensus for treating osteoporosis indicate treatment with calcium and vitamin D. An optimal vitamin D status is necessary while treating osteoporosis in order to maximize the response to antiresorptive agents (alendronate, risedronate, raloxifene), in terms of changes to anti-fracture efficacy[6,11]. Diverse epidemiological studies show that low serum concentrations of vitamin D are associated with a higher risk of chronic diseases such as diabetes, cardiovascular disease, breast, prostate and colon cancer and some autoimmune diseases, as well as rickets in children and osteomalacia in adults[4-6].

Recent evidence suggests that vitamin D deficiency plays an important role in the genesis of coronary risk and cardiovascular disease. In this sense, vitamin D deficiency seems to be a predisposing factor for the onset of arterial hypertension, diabetes mellitus, metabolic syndrome, left ventricular hypertrophy, congestive heart failure and chronic vascular inflammation. One study described that a daily dose of 800 IU of vitamin D led to a reduction in type II diabetes by 33%. A correlation has been shown between vitamin D deficiency and the occurrence of serious cardiovascular episodes in a study in which it was observed that the cardiovascular event rate, made up of fatal and non-fatal myocardial infarction, ischemia, ictus and cardiac insufficiency, was 53-80% higher in subjects with hypovitaminosis D[8].

Patients with secondary hyperparathyroidism (increased levels of the PTH hormone from vitamin D deficiency) show a coronary risk twice that of patients with normal PTH levels[7]. A recent meta-analysis including 57,000 individuals from 18 clinical trials concluded that 500 IU or more of vitamin D per day improved overall mortality rates, in part due to the decrease in cardiovascular mortality[9].

The participation of vitamin D in the immune system is clear, as it modulates adaptive immune response and strengthens innate immune response and therefore has a relevant role in infections. Vitamin D acts by inducing the differentiation of monocytes into macrophages, increasing the phagocytosis rate and the production of lysosomal enzymes, decreasing the production of interleukin (IL 2) and increasing that of IL10[10]. An adult ingests on average about 230 IU of vitamin D per day. However, it has been estimated that 1,000-2,000 IU per day are needed to satisfy the body's requirements for many individuals. Numerous experts suggest increasing the vitamin D recommendation to at least 800-2 000 IU/day, a difficult dose to reach without supplementation[1].

References:

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2) Quesada Gómez JM, et. al. Nutrición y osteoporosis. Calcio y vitamina D. Rev. Osteoporos Metab Miner. 2010; 3(4):165:182.
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