Vitamin K2+D3

Code: FE2247 – 15 ml

Our formulation provides vitamin K in the menaquinone-7 form (vitamin K2) and vitamin D in the cholecalciferol form (vitamin D3).

Ingredients: Medium-chain triglycerides, menaquinone-7 (vitamin K2) and cholecalciferol (vitamin D3).

Nutritional information:	**4 drops (0,12 ml):**
Vitamin K2 (menaquinone-7)	120 µg (160%*)
Vitamin D3 1.000 IU (cholecalciferol)	25 µg (500%*)

NRV: Nutrient Reference Value in %.

Size and format:
15 ml

Recommended daily dose:
4 drops daily. Shake well.
Do not exceed the stated recommended daily dose.

Indications and uses:
It helps maintain bone and muscle health. • It improves cardiovascular health. • It helps maintain immune integrity.

Vitamin D3 plays a fundamental role in maintaining bone and muscle health by regulating calcium metabolism. It is necessary for the absorption and use of calcium and phosphorous for the development of healthy bones and teeth. It also contributes to maintaining the integrity of the immune system.

Vitamin K2 helps transport calcium to bones, preventing its accumulation in arteries.

The combination of vitamins K2 and D3 helps improve bone density and cardiovascular health. They work synergically, with better results in bone density when administered together than when administered separately [1-4].

VITAMIN D: Vitamin D is known as the "sunshine vitamin" since the body synthesizes it upon exposure to solar rays. 10 -15 minutes of sun exposure three times a week should be enough to produce the body's requirements of this vitamin [5]. However, many people living in sunny climates still don't produce enough vitamin D and need to obtain more through diet or supplements. It's noteworthy that around 50% of apparently healthy adults, youths and children are vitamin D deficient. Lower vitamin D production is partly due to the existence of protective strategies aimed at reducing sun exposure. An SPF (sun protection factor) of 15 blocks approximately 99% of cutaneous vitamin D production.

Vitamin D is transformed in the liver to 25-hydroxyvitamin D (25[OH] D), the main circulating metabolite of vitamin D. In the kidneys, it is transformed 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 intestinal calcium absorption by over 50%. A descent in serum calcium concentration leads to the secretion of parathyroid hormone (PTH) in order to quickly correct the hypocalcaemia by mobilizing calcium from the bones (4). Diverse epidemiological studies show that low serum vitamin D is associated with a higher risk of chronic disease including diabetes and cardiovascular disease, some autoimmune diseases and rickets in children [6-7].

The participation of vitamin D in the immune system has become clear since 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 to macrophages, increasing the rate of phagocytosis, increasing the production of lysosomal enzymes, decreasing the production of interleukin (IL 2) and increasing that of IL 10 [8].

VITAMIN K2: Menaquinone-7 (vitamin K2) is the best, most bioavailable form of vitamin K, a liposoluble vitamin that is easily absorbed, quickly reaching the entire body. Additionally, it has a half-life in the body of 74 hours, much longer than other forms of vitamin K such as menaquinone-4 (average 1.5 hours) [9].

It acts as a cofactor, involved in gamma-carboxylation of glutamic acid, which is important for the production of osteocalcin, a specific bone protein [10]. There is a relationship between vitamin K intake, bone mineral density and the risk of fractures in the elderly. This is possibly due to a low supply of vitamin K, which makes for a less carboxylated and therefore less

functional protein. An inverse relationship between vitamin K intake and the risk of hip fracture and osteoporosis has been established [11-13].

References:
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