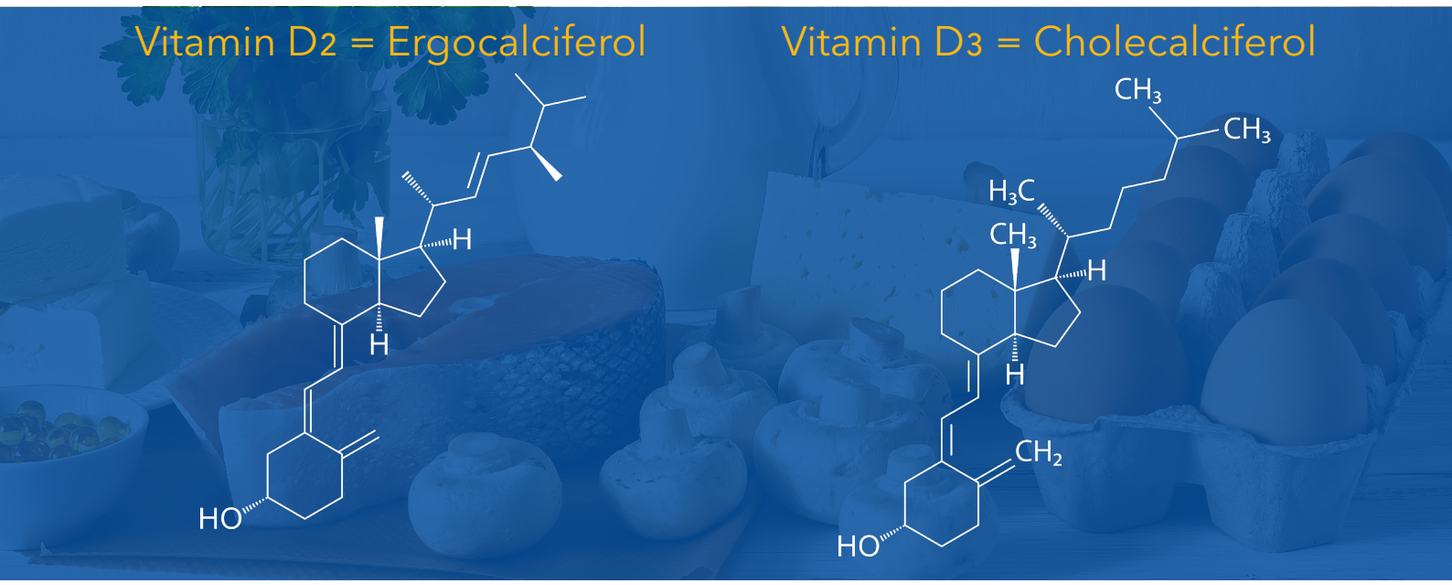
Vitamin **D**

Vitamin D (D2 Ergocalciferol, D3 Cholecalciferol) is both a nutrient we eat and a hormone our bodies make. In foods and dietary supplements, vitamin D has 2 main forms absorbed in the small intestine, D2 (ergocalciferol) and D3 (cholecalciferol), which differ chemically only in their side-chain structure. Both forms are produced in the presence of the sun's ultraviolet-B (UVB) rays - D2 is produced in plants/fungi and D3 in animals, including humans. The internal method used for the determination of vitamin D is HPLC with PDA detection.



Functions/Health effect:

Vitamin D is a fat-soluble vitamin helping the body absorb and retain calcium and phosphorus; both critical for building bones. In addition, laboratory studies show that vitamin D can reduce cancer cell growth, help control infections and reduce inflammation. The European Food Safety Authority approved the following health claims to be used on labels of food and food supplements containing vitamin D: normal function of the immune system, normal inflammatory response, normal muscle function, and reduced risk of falling in people over age 60.

Sources:

As vitamin D is present naturally in only a few foods (vitamin D3 in fish, meat, egg, and dairy; vitamin D2 in mushrooms), manufactured foods, especially infant formula, milk, cereals, or juices, are often fortified. It is also available in food supplements.

An important natural source is the cholecalciferol synthesis in the lower layers of epidermis through a chemical reaction dependent on sun exposure, hence the nickname, "the sunshine vitamin".

Did you know that?

Most people meet at least some of their vitamin D needs through exposure to **sunlight**. The vitamin D synthesis is thus affected by the season, time and length of the day, clouds, smog, skin melanin content, or sunscreen. UVB radiation does not penetrate glass, so exposure to sunshine through a window blocks the UVB light and no vitamin D is produced.

Vitamin D **deficiency** is widespread in the European population and estimated at 1 bn people worldwide. Deficiency may lead to a loss of bone density, which can contribute to osteoporosis and fractures. Some studies confirm that while under normal circumstances, the intestinal absorption of dietary calcium reaches 60-80%, it may go down to 10-15% for individuals deficient in vitamin D.

Both the US National Institutes of Health and the UK National Institute for Health and Care Excellence have stated there is insufficient evidence to recommend for or against using vitamin D supplementation to prevent or treat **COVID-19**. Both organizations noted, however, that more people may require supplementation due to lower amounts of sun exposure during the pandemic.

Some **mushrooms** available on the market have been treated with UV light to increase their levels of vitamin D2. The Food and Drug Administration (FDA) has approved UV-treated mushroom powder as a food additive for use as a source of vitamin D2 in food products.

Food *division*