

# EQUISTRO®



**Description:** Vitamin D is a steroid hormone that regulates specific expression of certain genes. The biologically active form of the hormone is 1,25-dihydroxy vitamin D3 (calcitriol).

**Function:** Calcitriol regulates calcium and phosphorus concentrations. The classical target organs for vitamin D3 action are intestine, kidney and bone. Vitamin D3 facilitates calcium absorption from the intestine and reabsorption of calcium from the kidney, and influences both mobilization and accretion of calcium (and phosphorus) from bone. Vitamin D3 has also been demonstrated to influence cell growth and differentiation.

**Sources:** Active calcitriol is derived from ergosterol (vitamin D2, produced in plants) and from 7-dehydrocholesterol (produced in the skin). Vitamin D2 is found in sun-cured hay, particularly alfalfa. Vitamin D3 is abundant in some fish oil. Vitamin D3 is stored in body fat and it is estimated that the horse when supplemented adequately has between 3 and 6 months supply.

**Daily Requirements (NRC, 2007):** Not calculated. Maximum safe limit: 44 IU/kg body weight / day.

**Deficiency:** Decreased feed intake, reduced rate of growth, enlarged physis (ends of the long bones), bone demineralisation and very rarely rickets and osteomalacia.

**Excess:** Decreased feed intake and growth, dull hair, anaemia, hyperostosis, calcification of soft tissue.

**When problems may occur?** The deficiencies in vitamin D3, if they are likely to occur, result from a lack of UV sunlight exposure and animals housed outside for any period or on a standard diet are unlikely to suffer deficiency. When they are confined or when exposure to sunshine is restricted, or if they are fed for rapid growth and development of bone such as for racing at an early age, there may be some basis for supplying extra amounts of vitamin D. Several plant species synthesize this highly active hormone as the calcitropic principal, 1,25-(OH)<sub>2</sub>-D<sub>3</sub>-glycoside. Thus, horses grazing areas where the plants exist will develop rickets and soft-tissue calcification (for example, *Cestrum diurnum*, a member of the potato family, sometimes incorrectly called wild jasmine, found in Florida and other subtropical states, including Texas and California).

## VITAMIN D<sub>3</sub>



**Vétoquinol**  
Signe de Passion

