

D-2000 Micro Emulsion Forte



Clinical Applications

- Supports Modulation of Immune Function*
- Supports Bone and Dental Health*
- Supports Healthy Cell Differentiation*
- Supports Musculoskeletal Comfort*
- Supports Cardiovascular Health and Healthy Blood Sugar Metabolism*

D-2000 Micro Emulsion Forte supplies 2,000 IU per drop of vitamin D3 as a micro-emulsion for enhanced absorption and utilization, which is particularly important for those with malabsorption conditions.

All Omnivits Formulas Meet or Exceed cGMP Quality Standards

Discussion

D-2000 Micro Emulsion Forte is an oil-in-water emulsion. Vitamin D oil has been dispersed into microscopic particles to aid absorption and assimilation.

While we are all familiar with the importance of vitamin D in calcium absorption and bone metabolism, many may not be aware of the recent research on vitamin D and the widening range of applications available for cholecalciferol, which can be classified as both a vitamin and a pro-hormone⁽¹⁾. Additionally, while it has commonly been assumed the upper limit of safe intake is approximately 1,000 IU per day, we now know that the physiologic requirement of vitamin D may be as high as 4,000 IU per day, which is less than half of the 10,000 IU that can be produced endogenously with just a few minutes of sun exposure⁽²⁾.

Vitamin D deficiency is associated with dull, achy musculoskeletal pain that is incompletely responsive to both pharmacologic and manual therapies. The pain may be widespread or confined to a particular area, most commonly the lower back and lumbar spine. The process by which this occurs has been clearly defined: 1) vitamin D deficiency causes a reduction in calcium absorption, 2) production of parathyroid (PTH) hormone is increased to maintain blood calcium levels, 3) increase PTH results in increased urinary excretion of phosphorus, which leads to hypophosphatemia, 4) insufficient calcium phosphate results in deposition of unmineralized collagen matrix on the endosteal (inside) and periosteal (outside) surface of bones, 5) when the collagen matrix hydrates and swells, it causes pressure on the sensory-innervated periosteum resulting in pain.⁽³⁾ Indeed, several clinical investigations have recently shown vitamin D deficiency is particularly common among people with musculoskeletal pain.^(4,5)

Both the peripheral and central nervous systems have multiple sites of action for vitamin D, and it appears likely that vitamin D modulates serotonin and melatonin synthesis and metabolism. Alterations in vitamin D levels appear to explain, at least in part, the adverse psychological effects of sunlight deprivation that often occur due to geographic location and climate.⁽⁶⁾ Preliminary evidence suggests vitamin D deficiency may also be particularly common among patients with inflammatory and autoimmune disorders, and that vitamin D may modulate inflammatory responses.^(7,8,9)

Vitamin D by Omnivits is micro-emulsified to enhance absorption and utilization, which are particularly important for those with malabsorption conditions. Independent clinical experience suggests the micro-emulsion form of vitamin D provides significant improvements in serum levels of 25-OH-vitamin D following supplementation.

***These statements have not been evaluated by the Food and Drug Administration.
This product is not intended to diagnose, treat, cure, or prevent any disease.**



Supplement Facts

Serving Size: 1 Drop (0.04 mL)

	Amount Per Serving	% Daily Value
Vitamin D (as cholecalciferol)	2,000 IU	500%

Other ingredients: Water, gum arabic and sesame seed oil.

This product is gluten and dairy free.

Direction: One (1) drop each day as a dietary supplement or as otherwise directed by a healthcare professional.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area. Sealed with an imprinted safety seal for your protection.

References:

1. Norman AW. Vitamin D. In: Brown ML (Editor). Present Knowledge in Nutrition. Sixth Edition. Washington: International Life Sciences Institute Nutrition Foundation; 1990. P.108-116
2. Vieth R. Vitamin D supplementation, 25-hydroxyvitamin D concentrations, and safety. Am J Clin Nutr. 1999 May; 69(5):842-56 Available online at <http://www.ajcn.org/cgi/reprint/69/5/842.pdf>
3. Holick M F. Vitamin D deficiency: what a pain it is. Mayo Clin Proc. 2003 Dec;78(12):1457-9
4. Al Faraj S, Al Mutairi K. Vitamin D deficiency and chronic low back pain in Saudi Arabia. Spine. 2003 Jan 15;28(2):177-9
5. Plotnikoff GA, Quigley JM. Prevalence of severe hypovitaminosis D in patients with persistent, nonspecific musculoskeletal pain. Mayo Clin Proc. 2003 Dec;78(12):1463-70
6. Lansdowne AT, Provost SC. Vitamin D3 enhances mood in healthy subjects during winter. Psychopharmacology (Berl). 1998 Feb;135(4):319-23
7. Yamashita H, Noguchi S, Takatsu K, Koike E, Murakami T, Watanabe S, Uchino S, Yamashita H, Kawamoto H. High prevalence of vitamin D deficiency in Japanese female patient with Graves' disease. Endocr J. 2001 Feb;48(1):63-9
8. Huisman AM, White KP, Algra A, Harth M, Vieth R, Jacobs JW, Bijlsma JW, Bell DA. Vitamin D levels in women with systemic lupus erythematosus and fibromyalgia. J Rheumatol 2001 Nov;28(11):2535-9
9. Van den Berghe G, Van Roosbroeck D, Vanhove P, Wouters PJ, De Pourcq L, Bouillon R. Bone turnover in prolonged critical illness: effect of vitamin D. J Clin Endocrinol Metab. 2003 Oct;88(10):4623-32
10. Vasquez A, Manso G, Cannell J. The Clinical Importance of Vitamin D (Cholecalciferol): A Paradigm Shift with Implications for All Healthcare Providers. Alternative Therapies in Health and Medicine and Integrative Medicine: A Clinician's Journal In press 2004

***These statements have not been evaluated by the Food and Drug Administration.
This product is not intended to diagnose, treat, cure, or prevent any disease.**