WE CAPTURED GOLDEN SUN
IN A BOTTLE

Introducing
The Amazingly Small Clinical D3 MicroTab

Winter and early spring months are associated with an increase in pro-inflammatory immune responses that lead to seasonal symptoms. Several supplements provide immune support including vitamin D3[1].

1. Cannell JJ et al. Epidemic influenza and vitamin D. Epidemiol Infect. 2006;134:1129-40.

5,000 IU Vitamin D Per Tablet

MicroTab Technology

High potency, low cost

Amazingly small micro-tab!

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CLINICAL D3

CLINICAL D3 5000 UI ITEM #: 3624-0060-01

INTRODUCTION Humans are designed to derive the majority of their vitamin D from the sun and not from food. Unfortunately, sunshine-derived vitamin D is limited because most individuals spend 40 or more hours per week working indoors. Additionally, we have also been directed to avoid sun exposure due to fear of skin cancer and most apply sunscreen which effectively blocks the body's ability to produce vitamin D3. Consequently, a large majority of the population does not exhibit normal vitamin D blood test levels of serum 25(OH)D3, which is thought to best reflect vitamin D levels. The normal range for the vitamin D blood test is 32-100 ng/mL and researchers argue that 40 to 70 ng/mL is optimal[1].

VITAMIN D PRODUCTION & FUNCTION Vitamin D is produced in the body when sunshine strikes the skin and converts 7-dehydrocholesterol into previtamin D3, which is converted into cholecalciferol (vitamin D3). The liver converts vitamin D3 into 25(OH)D3 (calcidiol). Most cells are able to convert 25(OH)D3 into 1,25(OH)2D3 (calcitriol), which is most well-known for its modulatory influence on **bone metabolism, parathyroid hormone activity, and intestinal calcium absorption.** We now know that 1,25(OH)2D3 functions as a seco-steroid and influences some 1000 different genes[2]. Vitamin D is involved in numerous bodily functions, such as the modulation of **inflammation, immune function, blood sugar regulation, and cell proliferation.**[1,3,4]

HISTORICAL VS. MODERN VITAMIN D RECOMMENDATIONS Researchers have demonstrated that the recommended dietary intake of about **400 IU and the upper limit of 2000 IU is too low**[1]. It is thought that approximately **4000 IU of vitamin D3 represents a physiological dose and 10,000 IU is proposed as the new upper limit**[5]. While these numbers seem high to some, it should be understood that 10,000 IU is a mere 250 microgram (mcg) or ¼ of a milligram (mg). Our ability to absorb supplemental vitamin D3 and replenish serum 25(OH)D levels are not uniform. While varying among individuals, on average for every 1000 IU of daily supplemental vitamin D3, we can expect about a 10 ng/ml increase in serum 25(OH)D over a 3-4 month period[1].

CONTRAINDICATIONS - HYPERCALCEMIA As vitamin D increases intestinal absorption of calcium, supplemental vitamin D3 is contraindicated in patients with hypercalcemia. In such patients, serum calcium and 25(OH) D3 need to be monitored on a regular basis. Symptoms of hypercalcemia include: depression, anxiety, cognitive dysfunction, headaches, fatigue, polyuria, polydipsia, nocturia, constipation, abdominal pain, muscle weakness, musculoskeletal aches/pains, and bone fractures in the long term. Individuals with hypercalcemia will commonly indicate that sunshine tends to generate one or more of the symptoms of hypercalcemia.

SAFE LEVELS OF VITAMIN D For those without hypercalcemic conditions, 150 ng/mL of 25(OH) D3 is often not associated with hypercalcemia, indicating that 32-100 ng/mL is a very safe range. Vitamin D toxicity is thought to occur when serum 25(OH) D3 levels reach 200 ng/mL.In the absence of adequate sun exposure, vitamin D supplementation is considered a requirement. Everyone should have their serum 25(OH)D levels assessed as it appears to be a more important marker of human health/disease potential then serum cholesterol levels.

For those without a chronic condition, it is important to understand that vitamin D levels influence our daily lives in ways that patients may not typically consider. For example, vitamin D adequacy is related to feelings of wellbeing. Physical activity issues are related to adequate vitamin D levels including exercise performance and the propensity to fall in the elderly[1,6]. Resistance to upper respiratory tract infections[4] and the flu[2] are associated with adequate levels of vitamin D.

FORMULA

One microtab provides	Amount	RDI
Vitamin D3 (cholecalciferol)	5000 IU	1250%

DIRECTIONS

Take 1 microtab per day with meals or as a directed by your health professional. Store in a cool dry place and keep out of reach of children.

Supplement Facts

Serving Size 1 Microtab	Servings Per Container 60	
Amount Per Serving		**% Daily Value**
Vitamin D3 (as cholecalciferol from wool oil)	5,000 IU	1250%

Other Ingredients: Cellulose, stearic acid, silica, and magnesium stearate.

REFERENCES

1. Cannell JJ, Hollis BW. Use of vitamin D(3) in clinical practice. Alt Med Rev. 2008;13(1):6-20.
2. Cannell JJ, Zasloff M, Garland CF, Scragg R, Giovannucci E. On the epidemiology of influenza. Virology J. 2008; 5:29.
3. Holick MF. Vitamin D: importance in prevention of cancers, type 1 diabetes, heart disease, and osteoporosis. Am J Clin Nutr. 2004; 79:362-71.
4. Holick MF, Chen TC. Vitamin D deficiency: a worldwide problem with health consequences. Am J Clin Nutr. 2008; 87(4):1080S-86S
5. Hathcock JN, Shao A, Vieth R, Heaney R. Risk assessment for vitamin D. Am J Clin Nutr. 2007; 85(1):6-18.
6. Cannell JJ, Hollis BW, Sorenson MB, Taft TN, Anderson JJ. Athletic performance and vitamin D. Med Sci Sports Exerc. 2009; 41(5):1102-10

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