Treatment of Deficiency

http://www.vitamindcouncil.com/treatment.shtml

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We predict the future recommended daily allowance (RDA) for vitamin D (note, an RDA does not exist yet for vitamin D), for otherwise healthy people, will be at least 1000 IU/day (in the new official units for vitamins, this translates to 25 micrograms/day). This amount is already the consensus of nutrition experts in the field of osteoporosis and vitamin D. Such recommendations only apply to healthy people. If you have vitamin D deficiency, or the diseases of vitamin D deficiency, you need to be under the care of a physician.

We predict that treatment with physiological doses of vitamin D (between 4,000 and 10,000 IU/day from all sources, including sun, food and supplements) with periodic monitoring of 25(OH)D and calcium levels will become routine. There is reason to think it will help several vitamin D deficiency associated diseases (osteoporosis, cancer, heart disease, hyperparathyroidism, hypertension, autoimmune diseases, diabetes, myopathy, depression, or chronic pain) [1] [2].

At this time, we advise even healthy people (those without the diseases of vitamin D deficiency) to seek a knowledgeable physician and have your 25(OH) vitamin D level measured. If your levels are below 35 ng/ml you need enough sun, artificial light, oral vitamin D supplements, or some combination of the three, to maintain your 25(OH)D levels between 35 and 65 ng/ml year around.

If you refuse to see a physician, or can't find a knowledgeable one, purchase the 1000 IU/day vitamin D_3 (cholecalciferol) pills that are available over-the-counter in North America, and take an average of one pill a day (25 ug or 1,000 IU) year around if you have some sun exposure. Life Extension Foundation sells a high quality vitamin D.

If you absolutely avoid the sun, you should have your 25(OH)D levels measured and remember that a maximum of two pills a day (50 ug or 2,000 IU) is the upper limit (UL) currently listed by the Food and Nutrition Board as the amount not to exceed unless under the care of a physician. When it comes to vitamin D, the right amount is good, but a lot is not better and can be dangerous.

If you are suffering from any of the diseases associated with vitamin D deficiency you need to be under the care of a knowledgeable physician. Your physician needs to replete your vitamin D system with sunlight, artificial light, oral vitamin D or a combination of the three, while treating your vitamin D deficiency illnesses using conventional means. Regardless of the method used, we believe your physician should be certain your 25(OH)D levels are maintained between 35 and 65 ng/ml.

For those who do not fear the sun, judiciously expose as much skin as possible to direct midday sunlight for 1/4 the time it takes for their skin to turn red, during those months when the proper ultraviolet light occurs at their latitude (usually late spring, summer and early fall). Do not get sunburned. Vitamin D production is already maximized before your skin turns pink and further exposure does not increase levels of vitamin D but may increase your risk of skin cancer. Black patients may need five to ten times longer in the sun than white patients, depending on skin type. After several months of judicious sun exposure, a 25(OH)D level should again be obtaining to ensure levels between 35and 65 ng/ml.

Several artificial light sources are commercially available that provide the proper wavelength for vitamin D production. Sperti makes a good UVB lamp and has data on the vitamin D production of its sunlamps.

As far as vitamin D supplements are concerned, we believe cholecalciferol is the preferred oral form of vitamin D. It is the compound your skin makes naturally when you go in the sun. It is more potent and perhaps even safer than the synthetic analog, ergocalciferol, in more common use [3]. Cholecalciferol is 1.7 time more efficient at raising 25(OH)D levels than is ergocalciferol [4].

However, to our knowledge, no pharmaceutical company in the USA even makes cholecalciferol in pharmacological doses (10,000, 25,000 or 50,000 unit capsules), only in 400 and 1,000 unit capsules. This means your physician has to use 10 pills a day of the 1,000-unit cholecalciferol preparation just to replete you with 10,000 units a day of natural vitamin D (cholecalciferol). The vitamin D analog, ergocalciferol, is available in pharmacological doses of 25,000 and 50,000 IU and your physician may choose to use that preparation. Ergocalciferol has been used safely by physicians for years for a variety of indications. The Vitamin D Council will soon approach certain American drug manufacturers, asking that they begin making a pharmaceutical preparation of cholecalciferol for prescription use.

Unfortunately, when doctors don't prescribe ergocalciferol, they sometimes prescribe calcitriol or newer analogs of calcitriol, costing thousands of times more than cholecalciferol. Calcitriol or its analogs are contraindicated in vitamin D deficiency because they may cause hypercalcemia and they fail to address the real problem: low stores of 25(OH)D. Cholecalciferol repletes the vitamin D system by filling up your vitamin D tank with 25(OH)D, the vitamin D fuel [5]. Giving calcitriol or its analogs for vitamin D deficiency is like shooting ether into your engine to keep your car running. In addition, they pose a significant risk of hypercalcemia. If you have a simple vitamin D deficiency and your doctor insists on prescribing calcitriol or an expensive analog of vitamin D (other than cholecalciferol or ergocalciferol), find another doctor.

Ask your physician to take time to read the current vitamin D literature, it is changing almost daily. They should obtain a 25(OH)D level on any patient who is black, old, pregnant, institutionalized or avoids letting the sun strike their sun. They should then replete their patient's vitamin D system by recommending judicial sun exposure (1/4 of the time it takes the skin to turn red), artificial light, oral vitamin D or a combination of the three until their 25(OH)D levels are between 35 and 65 ng/ml.

Vitamin D hypersensitivity syndromes are often mistaken for vitamin D toxicity. This rare syndrome occurs when abnormal tissue subvert the kidney's normal regulation of endocrine 1,25(OH)D (calcitriol) production. Aberrant tissues, usually granulomatous in nature, convert 25(OH)D into 1,25(OH)D causing high blood calcium. The most common such conditions are sarcoidosis, oat cell carcinoma of the lung and non-Hodgkin's lymphoma but other illness, such as primary hyperparathyroidism, can cause the syndrome. Periodic measurements of 25(OH)D levels and serum calcium will alert the physician to the need to do more tests, such as 1,25(OH)D or PTH.

Restoring physiological serum levels of 25(OH)D will help many more patients than it will hurt. Toxicity is simply not a concern in doses below 10,000 units a day. In fact, living in America today while worrying about vitamin D toxicity is like worrying about drowning when dying of thirst.

[1] Zittermann A. Vitamin D in preventive medicine: are we ignoring the evidence? Br J of Nutr. 2003;89:552-572.

[2] Holick M. Vitamin D: A Millennium Perspective. J Cell Biochem. 2003;88:296-307.

[3] Vieth R, Chan PC, MacFarlane GD. Efficacy and safety of vitamin D3 intake exceeding the lowest observed adverse effect level. Am J Clin Nutr 2001 Feb;73(2):288-94.

[4] Trang HM, Cole DE, Rubin LA, Pierratos A, Siu S, Vieth R. Evidence that vitamin D3 increases serum 25-hydroxyvitamin D more efficiently than does vitamin D2. Am J Clin Nutr. 1998 Oct;68(4):854-8.

[5] Vieth R. The pharmacology of vitamin D, including fortification strategies. **In: Feldman D, Glorieux F, eds. Vitamin D, Chapter 61, in press, 2nd ed. Academic Press, San Diego.**