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## How much vitamin D do I need?

How much vitamin D you need varies with age, body weight, percent of body fat, latitude, skin coloration, season of the year, use of sun block, individual variation in sun exposure, and - probably - how ill you are.

As a general rule, old people need more than young people, big people need more than little people, fat people need more than skinny people, northern people need more than southern people, dark-skinned people need more than fair skinned people, winter people need more than summer people, sun block lovers need more than sun block haters, sun-phobes need more than sun worshipers, and ill people may need more than well people.

What we need to know is whether or not we can attain sufficient vitamin D levels without supplementation. To answer this question we must first know how much vitamin D humans require and then we must learn what the natural, available sources of vitamin D are. Let's start with the human daily requirements.

According to Dr. Robert Heaney, humans utilize approximately 4000 IUs of vitamin D3 per day. Heaney et al. 2003 Human serum 25 hydroxycholecalciferol response to extended oral dosing with cholecalciferol. *Am. J Clin. Nutr.* 77: 204-210. Dr. John Cannell MD, the Executive Director of the Vitamin D council stated in a recent Vitamin D Council on-line newsletter [http:// www.vitaminDcouncil.org/vitaminDToxicity.shtml](http://www.vitaminDcouncil.org/vitaminDToxicity.shtml) entitled 'The Truth About Vitamin D Toxicity' that there is no evidence anywhere in the published literature that even 10,000 IUs per day of vitamin D is toxic to humans and that human toxicity does likely not occur until over 40,000 IUs of daily consumption. "Vieth reports human toxicity probably begins to occur after chronic daily consumption of approximately 40,000 IU/day (100 of the 400 IU capsules)." He goes on to state that "Physician ignorance about vitamin D toxicity is widespread" and concludes by stating that "In fact, living in America today while worrying about vitamin D toxicity is like dying of thirst in the desert while worrying about drowning." In other words any danger associated with vitamin D is from deficiency NOT toxicity.

The Food and Nutrition Board of the US Institute of Medicine has set the tolerable upper intake level (TUIL) for vitamin D at 2000 IU per day for adults. As you can see above many vitamin D experts disagree with this low setting and state that human adults can require supplementation with up to 4000 IUs per day in the winter months. With all this in mind it appears that it would be prudent to ensure a minimal daily intake of 1000 IUs of vitamin D3 for children, 2000 IUs for adults, and 4000 IUs for pregnant and lactating women who have not previously been sufficient. A pregnant or lactating woman who has maintained sufficient vitamin D levels for years prior to pregnancy will likely not require an increase in daily intake. It would also be prudent to have vitamin D levels tested.

Only about 10% of your vitamin D comes from diet, so it is nearly impossible to get adequate amounts of vitamin D from your diet.

The only 2 reliable sources of vitamin D are the sun and high quality supplements.

Sunlight exposure is the only reliable way to generate vitamin D in your own body. Vitamin D is produced by your skin in response to exposure to ultraviolet radiation from the sun. In fact, this is such an efficient system that most of us make 20,000 units of vitamin D after only 20 minutes of summer sun without suntan lotion. That's 100 times more than the government recommends per day! There must be a good reason why we make so much in so little time. The sun's rays cannot penetrate glass so you will need skin exposure outdoors to generate vitamin D in your skin. Also sunscreens, even weak ones, almost completely block your body's ability to generate vitamin D.

The other reliable source is supplements. Most important is that you take vitamin D3, (cholecalciferol) the active form of vitamin D. Do not take vitamin D2 as it is not as biologically active nor as effective, and nor as safe as vitamin D3. The current recommendations from the Food and Nutrition Board of the U.S. Institute of Medicine: from 200 to 600 IU/day depending on one's age, are way too low. These values were originally chosen because they were found to prevent osteomalacia (bone softening) and rickets

Small amounts found in fish and egg yolk and liver but not enough to get sufficient amounts.