



## How much Vitamin D is enough?

Vitamin D is becoming a hot potato in the world of nutrition. A number of researchers, including some who set the recommendations for vitamin D in 1997, are speaking out -- questioning the values they previously established.

The recommended level for vitamin D intake set in 1997 ranges from 200 to 600 international units (IU) per day, depending on age. The tolerable upper intake level (UL) was established at 2,000 IU per day. Since then, new research indicates that some people might need twice the UL.

**Question:** What are the effects of inadequate vitamin D?

**Answer:** The classic problem is loss of bone mineral content. But researchers are finding that a multitude of other ailments could be related to vitamin D deficiency, including certain cancers, diabetes, heart disease, multiple sclerosis, high blood pressure, obesity and depression.

**Q:** Why is there a controversy?

**A:** There are four main reasons:

» Nutrient intake recommendations are based on research available at the time they are set. New research, with new techniques, can lead to new recommendations.

» Recommendations are typically set to prevent deficiency signs and establish adequate stores of a nutrient in the body. But as the nutrition knowledge base grows, researchers can find health problems unrelated to "classic" deficiency signs.

» Excess vitamin D in the diet can damage organs such as the kidneys.

» Vitamin D is unique among vitamins because it is produced in the body when skin is exposed to sunlight.

Of course, this raises another controversy. Dermatologists caution against any sun exposure, yet some vitamin D experts argue that moderate doses of sun exposure are beneficial.

Sun exposure needed to produce enough vitamin D depends on time of year, latitude, skin color and age.

In a sunny location such as Hawaii, five to 10 minutes of midday sunlight on the arms and face or legs two to three times a week can produce adequate vitamin D in people with light skin. Those with dark skin can require 10 to 50 times the sunlight exposure to produce the same amount of vitamin D.

Also, the ability of the skin to

make vitamin D declines with age. At that point food sources of the vitamin become more important.

An SPF 8 sunscreen reduces the production of vitamin D by more than 95 percent but helps prevent skin damage, so getting adequate vitamin D in the diet might be the safest approach.

**Q:** Which foods are good sources of vitamin D, and how much should a person consume each day?

**A:** Oily fish, such as salmon, mackerel and sardines, contain 300 to 400 IU of vitamin D per 3- to 4-ounce serving. A teaspoon of cod liver oil has about 450 IU of vitamin D. Fortified foods can contain vitamin D; milk is the most common source, containing 100 IU per cup. Other fortified foods that could add vitamin D are some fruit juices, cereals and breads.

Based on current research, a varied diet along with one multivitamin containing 400 IU vitamin D and one calcium pill with 400 IU vitamin D is likely to be enough, without getting into issues related to toxicity.

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