

## Vitamin D

### Why We Need It

Vitamin D, a fat-soluble vitamin, is needed for normal absorption of calcium and phosphorus. It also helps put these minerals into bones and teeth, making them stronger.

### Recommended Daily Intakes of Vitamin D

Age	Vitamin D per day	
	µg	IU
birth – 50 years	5	200
51-70 years*	10	400
71 years and over*	15	600
pregnancy	5	200
breastfeeding	5	200

µg= micrograms  
IU = International Units  
Note that more vitamin D is needed as we get older.\*

**Source:** adapted from the Dietary Reference Intakes series, National Academies Press. Copyright 1997, 1998, 2000, 2001, 2002, 2004, by the National Academies of Sciences.

Elderly people should consume the recommended amount of vitamin D and either get outside more often or sit by an open window for a few minutes several times per week.

### Sources

Vitamin D comes from two sources, sunlight and food.

**Sunlight:** When exposed to sunlight, the skin makes a compound that is converted to vitamin D in the liver and kidneys.

To make enough vitamin D, light-skinned people need about 10 to 15 minutes of sunlight on the face and arms, without sunscreen, two to three times a week. People in the northern U.S. need a longer time in the sun than those in the south for the same

effect. On the other hand, dark-skinned people don't absorb sunlight as easily as light-skinned people, so they may require up to three hours of sun exposure depending on the climate.

Several factors affect how well the body makes vitamin D:

- Older people make less vitamin D.
- Dark-skinned people make vitamin D less easily than people with lighter skin.
- Kidney or liver disease decreases vitamin D formation.
- Air pollution and the use of sunscreen keeps the sun's ultraviolet (UV) light from reaching the skin.

**Food:** Most fluid milk is fortified with vitamin D. People who drink milk every day probably get enough vitamin D.

### Sources of Vitamin D

Food	Vitamin D per day	
	µg	IU
<b>herring, pickled, 3 oz</b>	15	580
<b>salmon, cooked, 3 oz</b>	8	310
<b>sardines, canned in oil, 3 oz</b>	6	230
<b>tuna, canned, 3 oz</b>	5	200
<b>milk, fortified, 1 cup</b>	2.5	100
<b>shrimp, canned, 3 oz</b>	2.25	90
<b>orange juice, fortified, ¾ cup</b>	1.9	75
<b>cereal, fortified, 1 serving</b>	1-1.25	40-50
<b>egg yolk, cooked, 1 large</b>	0.6	25

µg = micrograms  
IU = International Units  
oz = ounces

## If We Don't Get Enough

Bones are affected by lack of vitamin D. Growing children who do not get enough vitamin D can develop *rickets*, which prevents their bones from supporting their weight.

Adults who don't get enough vitamin D have a high risk of softening of the bone (*osteomalacia*). They also can lose bone mass, which leads to brittle bones (*osteoporosis*). Rickets and osteomalacia are rare in the U.S., but osteoporosis is a common health issue, especially with the elderly.

Vitamin D deficiency also may be associated with increased risk for several chronic non-skeletal diseases, including some cancers and autoimmune disorders.

## Supplements

Older adults, people with dark skin, and anyone who does not get sufficient exposure to sunlight should get extra vitamin D from vitamin D-fortified foods and/or supplements. Kidney or liver disease, air pollution and use of sunscreen also affect how well the body makes vitamin D.

If you can't get enough vitamin D from your diet or sun exposure, consider asking your doctor about a supplement. Be careful with supplements, because high doses of vitamin D can be toxic (poisonous).

**Do not get more than 50 µg (2000 IU on supplement labels) of vitamin D per day from food and supplements.** Vitamin D toxicity can cause nausea, appetite loss, increased urination and thirst, mood changes, and calcium deposits in the lungs, kidneys and heart.

## For More Information

The Family and Consumer Sciences (FCS) agent at your county Extension office may have more written information and nutrition classes for you to attend. Also, your doctor, health care provider, or a registered dietitian (RD) can provide reliable information.

Reliable nutrition information may be found on the Internet at the following sites:

<http://hgic.clemson.edu>

<http://virtual.clemson.edu/groups/NIRC/>

<http://www.eatright.org>

<http://www.nutrition.gov>

<http://www.nal.usda.gov/fnic>

### Sources:

1. Bobroff, Linda B. and Isabel Valentin-Oquendo. University of Florida Extension. *Facts About Vitamin D*. FCS8640. April 2006. <http://edis.ifas.ufl.edu/publications.html>
- 2.Sizer, Frances and Eleanor Whitney. *Nutrition Concepts and Controversies, Tenth Edition*. 2006.
3. National Academies of Sciences. National Academies Press. *Dietary Reference Intakes series*. 2004.

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