



Are you getting enough Vitamin D?

Benefits of vitamin D

In recent years, research has pointed to a link between low levels of vitamin D and a list of serious ailments, including severe asthma, cancer, cognitive impairment in older adults and an increased risk of death from cardiovascular disease. In addition, studies have pointed to vitamin D playing a role in preventing or treating diabetes, multiple sclerosis, hypertension and glucose intolerance.¹ Approximately 40 percent of babies and toddlers² and up to 50 percent of older adults³ have inadequate levels of vitamin D. Vitamin D deficiency is likely prevalent across all age groups and populations. Are you getting enough?

What does it do?

Vitamin D absorbs calcium and promotes bone growth. Lack of vitamin D can cause your bones to be soft and prone to breaks.⁴ In addition, vitamin D helps improve muscle strength and immune function, reduces inflammation⁵ and plays a part in the life cycle of cells – a cycle that, when disrupted, can lead to cancer growth.⁴

How do I get enough vitamin D?

The most efficient way to get the vitamin D we need is through exposure to the sun. Thirty minutes of unprotected sun exposure twice a week would provide plenty of vitamin D for most of us. However, because of the risk of skin cancer, the American Academy of Dermatology suggests avoiding unprotected exposure to the sun.⁶ Therefore, foods and vitamin supplements are your best bet. Vitamin D isn't naturally present in many foods, but in the U.S. most milk and breakfast cereal, as well as some margarines, yogurts and fruit juices, are fortified with vitamin D.⁷

Selected food sources of vitamin D⁷

The U.S. Food and Drug Administration recommends that adults and children age four and older consume 400 International Units (IUs) of vitamin D each day. Forty IUs equals 1 microgram (mcg). Food labels are not required to list vitamin D content unless a food has been fortified with it. Foods providing 20 percent or more of the daily value (DV) are considered to be high sources of a nutrient. See the table on the reverse page to find ways to add more vitamin D to your diet.

Food	IUs per serving	% Daily Value
Cod liver oil, 1 tablespoon	1,360	340
Salmon (sockeye), cooked, 3 ounces	794	199
Mushrooms that have been exposed to ultraviolet light to increase vitamin D, 3 ounces (not yet commonly available)	400	100
Mackerel, cooked, 3 ounces	388	97
Tuna fish, canned in water, drained, 3 ounces	154	39
Milk, nonfat, reduced fat and whole, vitamin D-fortified, 1 cup	115-124	29-31
Orange juice fortified with vitamin D, 1 cup (check product labels, as amount of added vitamin D varies)	100	25
Yogurt, fortified with 20% of the DV for vitamin D, 6 ounces (more heavily fortified yogurts provide more of the DV)	80	20
Margarine, fortified, 1 tablespoon	60	15
Sardines, canned in oil, drained, two sardines	46	12
Liver, beef, cooked, 3.5 ounces	46	12
Ready-to-eat cereal, fortified with 10% of the DV for vitamin D, 0.75-1 cup (more heavily fortified cereals might provide more of the DV)	40	10
Egg, one whole (vitamin D is found in yolk)	25	6
Cheese, Swiss, 1 ounce	6	2

The potential of vitamin D

Vitamin D is still being studied in order to determine all of its benefits. So far, studies have suggested vitamin D might prevent or treat the following:

Actinic keratosis

Asthma

Autism

Auto-immune disease

Bronchitis

Cancer (breast, colon, prostate)

Chronic obstructive pulmonary disease (COPD)

Chronic pain

Connective tissue diseases

Crohn's disease

Depression

Diabetes (types 1 and 2)

Fibromyalgia

Flu

Glucose intolerance

Heart disease

High cholesterol

Hyperparathyroidism

Hypertension

Inflammatory bowel disease (IBD)

Lupus vulgaris

Mental illness

Multiple sclerosis

Muscle weakness

Neuromuscular diseases

Obesity

Osteogenesis imperfecta

Osteomalacia (bone pain)

Osteoporosis

Premenstrual syndrome (PMS)

Psoriasis

Renal osteodystrophy

Rheumatoid arthritis

Tooth and gum disease

Vitiligo

Sources: *WebMD*; Vitamin D Council; American Cancer Society

Resources

The Vitamin D Council is a nonprofit group dedicated to educating the public and medical professionals about vitamin D deficiency and the diseases associated with it. Sign up to receive informative newsletters about the latest research on the benefits of vitamin D. Visit the organization online at vitamindcouncil.org. Or, read up on vitamin D in *WebMD's Live Well Vitamins & Lifestyle Guide* at webmd.com.

Sources

¹*WebMD, Vitamin D Deficiency* (July 13, 2009): webmd.com

²American Family Physician, *Prevalence of Vitamin D Deficiency in Children* (June 1, 2009): aafp.org

³Wilkins, C.H., Birge, S.J., Sheline, Y.I., Morris, J.C. (2009). *Vitamin D Deficiency Is Associated With Worse Cognitive Performance and Lower Bone Density in Older African Americans*. *Journal of the National Medical Association*, 101:349-354: nmanet.org

⁴*WebMD, Supplement Your Knowledge of Vitamin D* (May 19, 2008): webmd.com

⁵National Cancer Institute, *Vitamin D and Cancer Prevention: Strengths and Limits of the Evidence* (September 23, 2009): cancer.gov

⁶*WebMD, The Truth About Vitamin D* (December 17, 2009): webmd.com

⁷National Institutes of Health Office of Dietary Supplements, *Dietary Supplement Fact Sheet: Vitamin D* (November 13, 2009): ods.od.nih.gov



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