



# Get Adequate Vitamin D

**CHALLENGE**  
Get a daily dose  
of Vitamin D.

## Vitamin D deficiency

Vitamin D deficiency generally stems from a lack of exposure to sunlight or lack of vitamin D in the diet – or both. Disorders of the gastrointestinal tract can also interfere with vitamin D's effect in the body. Most people will not have any noticeable symptoms of low vitamin D until blood levels get very low, which may then result in demineralization of the bone – known as “rickets” in children and “osteomalacia” in adults and others.

Some studies have even suggested that vitamin D deficiency might be linked to diseases such as multiple sclerosis, diabetes, autoimmune diseases, cancer, heart and vascular disease, high blood pressure, arthritis, asthma, and fibromyalgia.

Many of these new studies need further investigation and verification, but the list is very impressive and very promising. One recent review of 18 studies on vitamin D found that people taking vitamin D supplements, even if as little as 400 IU daily, had a 7% reduction in total mortality during the study period. That's quite remarkable!

## Requirements to Complete this HEALTH CHALLENGE™

1. Read “D: An essential vitamin” and “Vitamin D sources.”
2. To complete the Challenge, you must get 2 sessions (at least an hour apart) of 10–15 minutes in the open sun on 22 days this month. If you live in northern areas, take Vitamin D supplements (1,000-2,000 IU/day).
3. Keep records of your completed Challenge in case your organization requires documentation.

## D: An essential vitamin

Vitamins are substances that are essential for the body to function normally. Many people think vitamin deficiencies are a thing of the past. But according to some experts, vitamin D deficiency might be an unrecognized epidemic in this country.

Vitamin D is a fat-soluble vitamin that is often associated with bone health. Vitamin D helps maintain proper levels of calcium and phosphorous in the body which contribute to healthy bones. Ongoing research suggests that vitamin D also plays a vital role in the function of our immune, nervous, and muscular systems. A lack of the vitamin might be contributing to a variety of serious health problems.

When researchers looked at vitamin D levels of 10,000 women taking part in the Women's Health Studies, they found that women with lower amounts of calcium and vitamin D in their diets were more likely to have high glucose levels and diabetes. Lower amounts of vitamin D were shown to affect the body's ability to produce and secrete insulin. A review of vitamin D levels in participants of the Framingham Offspring Study who did not have diabetes suggests that vitamin D status may be an important determinant for type 2 diabetes. Many of the 23 million Americans with diabetes have low vitamin D levels. An adequate intake of vitamin D may prevent or delay the onset of diabetes and reduce complications for those who have already been diagnosed.

### What's an IU?

IU stands for International Unit. It is a measurement of the biological effect of a vitamin or drug. Because an IU is dependent upon the potency of the substance, there is no standard measure, such as there would be for grams (weight) or liters (volume).



## Vitamin D sources

You can get lots of vitamin D from cod liver oil, and nearly all you need for a day from one serving of salmon or mackerel.

Vitamin D is added in small quantities to milk and some ready-to-eat cereals.

The sun is very efficient at making vitamin D. It's estimated that direct sun on your skin in the summer may make as much as 20,000 IU of vitamin D in only 10-15 minutes. For optimum production of vitamin D, aim for 2 sessions (at least an hour apart) of 10-15 minutes with at least your face and arms exposed to the sun. The more skin that is exposed, the more vitamin D your body will make.

A large percentage of both children and adults in the United States are not getting enough vitamin D on a daily basis. In a recent 5-year study of lack of vitamin D and risk of cardiovascular disease in the Boston area, researchers found that 1 out of every 4 people (28%) had low vitamin D levels in the blood, low enough that it increased their risk of a heart attack or stroke by over 60%. The winter sun in northern regions of North America is not sufficient for you to make enough, if any, vitamin D.



Other studies of African Americans found as many as 40% had low blood vitamin D levels (dark-skinned people make less vitamin D from sunshine).

Ask your doctor about your risk for vitamin D deficiency. Your doctor might order a vitamin D blood test (25-hydroxy-vitamin D). It is a little expensive and optimal blood values are still being decided. Values less than 15 ng/mL have been shown to significantly increase your risk of a heart attack and cancer among other problems. Most researchers – and the UC Berkeley Wellness Letter – suggest a blood level of at least 30-40 ng/mL is desirable. According to Dr. Bruce Hollis, a vitamin D researcher at the Medical University of South Carolina, a range of 50-60 mg/mL may be more ideal.

Your doctor might recommend you take vitamin D supplements. The Institute of Medicine (IOM) recommends that people from birth to 50 years old should receive 200 international units (IU) per day. Adults ages 51 to 70 should receive 400 IU per day. Adults over 71

should receive 600 IU per day. The National Institutes of Health's Office of Dietary Supplements follows the IOM recommendations.

Other researchers, however, have criticized these amounts as being too low. The IOM recommendations were based largely on preventing rickets, not heart disease and other conditions which are now known to be associated with low vitamin D levels. New research suggests adults may need at least 800-1,000 IU daily for best health. Vitamin D researchers are

urging the U.S. government to raise our current recommended vitamin D levels. The Canadian Cancer Society recently raised their recommended level of vitamin D to 1,000 IU daily for all adults in Canada.

It's important to note that you can take too much vitamin D, which can lead to toxicity and serious

health consequences. Safe levels are up to 2,000 IU daily. You doctor might recommend higher doses if your blood levels are low.

You should avoid excess sun exposure. Just 10-15 minutes of sunshine once or twice a day is all you need. After that time, apply sunscreen with an SPF of at least 15 to protect your skin.

### Where to get your dose of D

- ✓ Cod liver oil
- ✓ Salmon
- ✓ Mackerel
- ✓ Fortified milk
- ✓ Fortified cereal
- ✓ Sunshine!
- ✓ Supplements

#### Sources:

- Liu E, et al. *Plasma 25-hydroxyvitamin D is associated with markers of the insulin resistant phenotype in nondiabetic adults. Journal of Nutrition.* 2009;139(2):329-334.
- Wang TJ, et al. *Vitamin D deficiency and risk of cardiovascular disease. Circulation.* 2008;117:503-511.
- *Vitamin D: are you getting enough? UC Berkeley Wellness Letter.* Feb. 2008.
- *Medical News Today. Canadian Cancer Society Announcement.* Jan. 30, 2008.
- *Merck Manual. Seventeenth Edition. Merck Research Laboratories: Whitehouse Station, NJ.*
- *Harrison's Principles of Internal Medicine. Fourteenth Edition. McGraw-Hill. New York, NY.*
- Plunkett N. *Vitamin D Is the "It" Nutrient of the Moment. Loyola University Health System.* Jan. 12, 2009.
- *Dietary Supplement Fact Sheet: Vitamin D. National Institutes of Health Office of Dietary Supplements.* 2009.
- *Canadian Paediatric Society (CPS). Vitamin D supplementation: Recommendations for Canadian mothers and infants. Paediatrics & Child Health.* 2007;12(7):583-589.
- Autier P, Gandini S. *Vitamin D Supplementation and Total Mortality: A Meta-analysis of Randomized Controlled Trials. Archives of Internal Medicine.* 2007;167(16):1730-1737.
- Lappe JM, et al. *Vitamin D and calcium supplementation reduces cancer risk: results of a randomized trial. American Journal of Clinical Nutrition.* 2007;85(6):1586-1591.
- Liu S, et al. *Dietary calcium, vitamin D, and the prevalence of metabolic syndrome in middle-aged and older U.S. women. Diabetes Care.* 2005;28:2926-2932.
- Hollick MF. *The vitamin D epidemic and its health consequences. The Journal of Nutrition.* 2005;135:2739S-2748S.

Learn about vitamin D from the National Institutes of Health Office of Dietary Supplements: <http://ods.od.nih.gov/factsheets/vitaminD.asp#h2>





# Get Adequate Vitamin D

## Instructions

1. Post this calendar where you will see it daily (bathroom, kitchen, bedroom, etc.).
2. Record each day you get an adequate dose of vitamin D. Use this calendar to also record weight, exercise, and any other items you may want to track.
3. At the end of the month, total the number of days you ate a healthy breakfast. You must meet this goal at least 22 days during the month to complete the Challenge. Then keep up this healthy practice for a lifetime of good health!
4. Turn in your Health Challenge™ if requested, or enter your completion of this Health Challenge™ on the Health Activity Tracker report for the month, if applicable. Keep this record for evidence of completion.

**CHALLENGE**  
Get a daily dose  
of Vitamin D.

MONTH:							HC = Health Challenge™	ex. min. = exercise minutes
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	Weight & weekly summary	
HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____		
HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____		
HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____		
HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____		
HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____	HC <input type="checkbox"/> ex. min. _____		

\_\_\_\_\_ Number of days this month I got adequate vitamin D.

\_\_\_\_\_ Number of days this month I got 30+ minutes of physical activity such as brisk walking

### Other wellness projects completed this month:

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

