

VITAMIN D FACT SHEET



WHAT IS VITAMIN D?

Vitamins are nutrients that the body needs to function properly. Vitamin D, which strengthens bones, muscles and teeth, is a fat-soluble vitamin that can be stored in the body until needed. It exists in two forms D₂ and D₃, which are equally effective.¹ D₂ occurs naturally in yeast, whereas D₃ is produced by lanolin and is synthesized in the skin upon exposure to UV rays. In other words, vitamin D can be obtained naturally in the human body through exposure to sunlight or through the ingestion of specific food sources.

WHY DO WE NEED VITAMIN D?

Scientists recognize that vitamin D does much more than build strong bones. Growing evidence suggests that vitamin D also helps boost our immune system, reduce inflammation, and maintain muscle strength. Furthermore some studies suggest that vitamin D may help in the prevention of several chronic diseases such as cancer (especially breast and colorectal cancer), diabetes, multiple sclerosis, hypertension, arthritis, heart diseases and even infectious diseases such as influenza.

VITAMIN D DEFICIENCY

Most vitamins can be obtained from a balanced diet, yet vitamin D, unlike other vitamins, can also be obtained from exposure to the sun. Several factors will however limit the amount of vitamin D that the body absorbs, such as the use of sun block with a SPF factor higher than 8, age, people with darker skin pigmentation, the distance from the equator, the time of day, the season, a person's weight etc. Due to the growing concern about the sunlight as well as the limited consumption of vitamin D rich food sources, vitamin D deficiency has been increasing in countries around the world. According to Scientists at the University of Tennessee Health Science Center in Memphis as much as 87.3% of the general population in the US may have inadequate levels of vitamin D. The Albert Einstein College of Medicine of Yeshiva University estimated that 7 out of 10 U.S. children have low levels of vitamin D.

DIETARY SOURCES OF VITAMIN D

Vitamin D is contained in a limited number of foods, either naturally or added. Natural food sources of vitamin D include fish oils, fatty fish (mackerel, salmon, sardines, tuna and herring) and egg yolks.

Dietary Source of Vitamin D	Quantity	IUs per Quantity	% DV (400 IU)
Cod liver oil	1 tablespoon	1,360	340
Salmon, cooked	3.5 ounces	360	90
Mackerel, cooked	3.5 ounces	345	86
Sardines, canned in oil, drained	1.75 ounces	250	70
Tuna fish, canned in oil	3 ounces	200	50
Milk, nonfat, reduced fat, and whole, vitamin D-fortified	1 cup (250 ml)	98	25
Margarine, fortified	1 tablespoon	60	15
Ready-to-eat cereal, fortified with 10% of the DV for vitamin D	0.75-1 cup	40	10
Bread made with 1% dry,3% compressed or 5% cream yeast	100 g	25	6.25
Egg yolk	1 whole	20	5
Liver, beef, cooked	3.5 ounces	15	3.75
Swiss Cheese	1 ounce	12	3

Data derived from National Institutes of Health.

Bread and baked goods made with Lallemand baker's yeast is now also a natural and vegetarian source of vitamin D. Depending on the level of yeast usage in the recipe they can even become 'good' or 'excellent' sources. Adding Lallemand's 'VitaD Plus' baker's yeast, containing an especially high natural concentration of vitamin D, all breads and baked goods can become "good" and even "excellent" source of vitamin D.

FDA allows a claim, which deals with calcium, vitamin D and the reduction of risk of osteoporosis. For example a claim could be formulated in the following way: "Adequate calcium and vitamin D throughout life, as part of a well-balanced diet, may reduce the risk of osteoporosis". "Bread" is an excellent source of calcium and vitamin D". Foods providing 20% or more of the daily value (DV) can be considered as excellent sources of the nutrient and the maximum level in yeast-raised baked goods allowed by FDA is currently 90 IU/ Day.

RECOMMENDED DAILY INTAKE OF VITAMIN D

The vitamin D recommendations have increased over the years, yet both US and Canadian governments (US National Institutes of Health and Health Canada) are reviewing the current recommended dietary intakes of vitamin D, and are likely to increase them in spring 2010 due to the evolving research on the increasing benefits of vitamin D.

Age	1975-1983 IU/ Day	1990 IU/ Day	IOM 1997+ IU/ Day	IU/ Day
0-50 years	100	200	200	400*
51-70 years	100	200	400	400
>71 years	100	200	600	600

Data derived from Committee for the Revision of Dietary Standards in Canada, Scientific Review Committee and Institute of Medicine.

*recommended by the American Academy of Pediatrics (Oct. 2008)

+the current dietary recommendations for vitamin D, as set in 1997 by the Food and Nutrition Board of the Institute of Medicine (IOM)

Furthermore, the USDA Dietary Guidelines for Americans recommend to people exposed to insufficient ultraviolet light for the production of vitamin D substantially higher daily intakes of vitamin D, i.e. 1,000 IU of vitamin D per day.

CAN I HAVE TOO MUCH VITAMIN D?

Too much exposure to sunlight does not lead to higher vitamin D levels in the body. However, some studies suggest that the consistent ingestion of quantities greater than 80,000 IU per day may have a harmful effect on the body. The current upper safe limits set by IOM (Institute of Medicine) for vitamin D consumption for infants is 1,000 IU per day and 2000 IU per day for children and adults, yet this number is likely to increase as further research develops. Current estimate is that the upper limit could be increased to 10,000 IU/ day.

ⁱ Holick MF et al. Vitamin D2 is as effective as vitamin D3 in maintaining circulating concentrations of 25-hydroxyvitamin D, Dec. 2007.