

Vitamin D in Overall Health and Preventing Illness

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Written by: Aileen Horn - Junior in Exercise Physiology, DPT Program; AHPRC Intern

Mentor: Toni Uhrich

Edited by: Dr. Sandra Hunter, Mike Haischer

Key Points:

- **Vitamin D is an essential nutrient that can be obtained through sunlight and one's diet.**
- **It plays a vital role in bone health, as well as in maintaining regular immune function.**
- **In the winter months, exposure to sunlight decreases, so it is important to maintain adequate levels of vitamin D through one's diet.**

Vitamin D is essential for normal growth and development, even though vitamins do not provide any calories/energy. Vitamin D, along with vitamins A, E, and K are fat soluble vitamins. Hence, they are better absorbed when they are consumed with fat, can be stored on the body, and an excess cannot be simply excreted as water soluble vitamins can. Every nutrient has a Recommended Dietary Allowance, RDA, which is the average intake level needed for most people. For vitamin D, the RDA is 600 IU (International Units) per day¹. The upper limit of vitamin D is 4000 IU per day, and greater amounts can have toxic effects since it cannot be excreted.

Vitamin D has some noteworthy functions. It increases calcium absorption from the gastrointestinal system, which is important for strong bones. Research has confirmed that vitamin D plays a role as both metabolic enzymes and receptors in one's immune response². It regulates our antimicrobial protein levels, or in other words, our bodies defense mechanisms, making it a vital form of infection control. Due to this role in regulating our immune system, a lack of vitamin D can result in abnormal immune responses and illness².

In recent months, researchers have been studying possible correlations between vitamin D levels and susceptibility to COVID-19. Since it plays a vital role in the immune system, it makes sense that those with higher levels of vitamin D would be better equipped to fight off any virus. However, there are other factors to consider. Additional studies must be done to truly answer these questions. In the meantime, vitamin D remains a safe and beneficial nutrient in our general health and disease prevention.²

Food	Micrograms (mcg) per serving	International Units (IU) per serving	Percent DV*
Cod liver oil, 1 tablespoon	34.0	1,360	170
Trout (rainbow), farmed, cooked, 3 ounces	16.2	645	81
Salmon (sockeye), cooked, 3 ounces	14.2	570	71
Mushrooms, white, raw, sliced, exposed to UV light, ½ cup	9.2	366	46
Milk, 2% milkfat, vitamin D fortified, 1 cup	2.9	120	15
Soy, almond, and oat milks, vitamin D fortified, various brands, 1 cup	2.5-3.6	100-144	13-18
Ready-to-eat cereal, fortified with 10% of the DV for vitamin D, 1 serving	2.0	80	10
Sardines (Atlantic), canned in oil, drained, 2 sardines	1.2	46	6
Egg, 1 large, scrambled**	1.1	44	6

* DV = Daily Value. The FDA developed DVs to help consumers compare the nutrient contents of foods and dietary supplements within the context of a total diet. The DV for vitamin D is 20 mcg (800 IU) for adults and children aged 4 years and older [26]. The labels must list vitamin D content in mcg per serving and have the option of also listing the amount in IUs in parentheses. Foods providing 20% or more of the DV are considered to be high sources of a nutrient, but foods providing lower percentages of the DV also contribute to a healthful diet.

** Vitamin D is in the yolk.

Figure 1: List of foods with the greatest amounts of vitamin D. One can incorporate these into their diet to boost their vitamin D levels.³

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Vitamin D can be obtained both through one's diet and through sunlight exposure on one's skin. It can be found in high levels in seafood and vitamin D fortified food such as dairy products (Figure 1). The vitamin D we obtain from the sunlight is technically D3, and inactive, meaning it cannot function yet. It becomes an active form after passing through the liver and the kidney (Figure 2). For those living in Milwaukee, and in other northern climates, as we enter the winter months in which we are not as exposed to adequate sunlight, it is important to rely on diet to get appropriate vitamin D. Flu season and Daylight Savings can be a dangerous combination. It's time to bundle up and hunker down with a good meal filled with vitamin D.

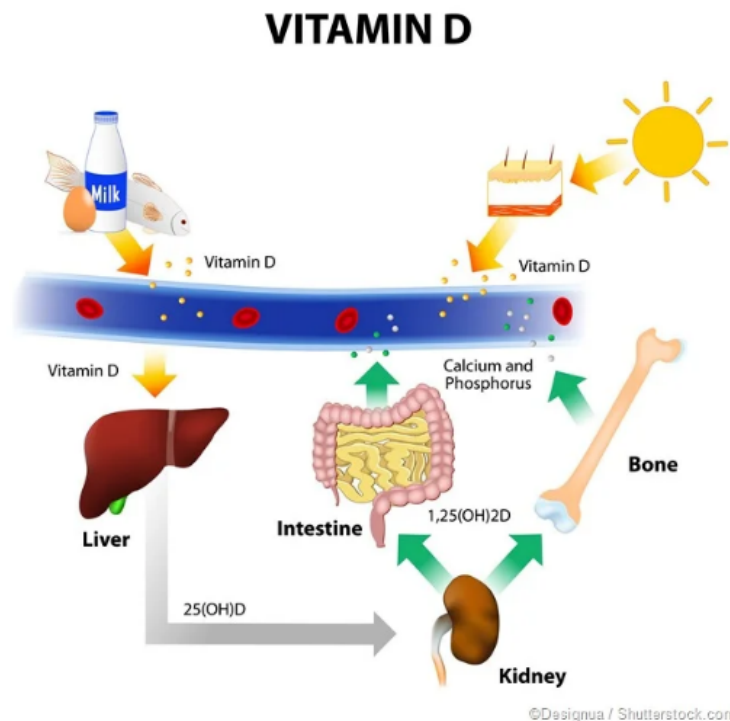


Figure 2: Vitamin D is absorbed from both food and sunlight into our bodies.⁴

References

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