

# VITAMIN D DOWNLOAD



## U.S. Cities At Risk for Vitamin D Deficiency

Cities north of 42 degrees latitude receive significantly less sunlight during the winter months.<sup>1</sup> Due to the lack of sunlight, living at higher latitudes increases the risk of chronic diseases.<sup>2</sup>



## People At Risk For Vitamin D Deficiency

**Cold Climate Dwellers:** Those who live in colder climates and all cities north of 42 degrees latitude.<sup>1</sup>

**Darker Colored Skin:** Greater amounts of the pigment melanin result in darker skin and reduce the skin's ability to produce vitamin D from exposure to sunlight.<sup>1</sup>

**Children:** Due to inadequate sun exposure, vitamin D deficiency can cause rickets, a disease characterized by a failure of bone tissue to properly mineralize, resulting in soft bones and skeletal deformities.<sup>1</sup> It can also increase children's risk of type 1 diabetes.<sup>2</sup>

**Elderly:** As people age, skin cannot synthesize vitamin D as efficiently, and the kidney is less able to convert vitamin D to its active hormone form.<sup>1</sup>

**Obesity:** Greater amounts of fat take away some of the vitamin D that would normally be used by the rest of the body.<sup>1</sup>

**Sunscreen Users:** Use of sunscreen markedly reduces natural production of vitamin D.<sup>1</sup>

## Health Effects of Vitamin D

An emerging body of science, including laboratory, animal and epidemiological studies, suggests that higher intakes of vitamin D may be protective against some cancers, including pancreatic, breast, colon and colorectal cancers.<sup>3,4,5,6</sup>

Scientists are exploring links between low vitamin D status and increased risk for a number of chronic diseases, including heart disease, type 1 diabetes, and multiple sclerosis.<sup>7,8,9</sup>

For 10,366 children in Finland who were given 2,000 IU of vitamin D3 per day during their first year of life, the risk of type 1 diabetes was reduced by approximately 80 percent.<sup>10</sup>

While most people recognize that Vitamin D is essential for healthy teeth and bones, few may know that vitamin D may help support a healthy immune system.<sup>1</sup>

## Mushrooms: Natural Hidden Treasure for Vitamin D



Mushrooms are the only fruit or vegetable with vitamin D.

**Which mushrooms?** The USDA National Nutrient Database was recently updated to incorporate the vitamin D content of nearly 3,000 food entries, including mushrooms. The top three selling mushroom varieties (white button, crimini and portabella) have vitamin D ranging from 1 to 97 percent of the Daily Value (400 IU) per raw 84 gram serving.

**How do they do it?** Similar to the way that humans absorb sunlight and convert it to vitamin D, mushrooms contain a plant sterol—ergosterol—that converts to vitamin D when exposed to real or simulated sunlight.

## Call to Action

The Institute of Medicine has convened a committee to evaluate the current daily recommendation of vitamin D, to see if it should be increased based on further review.<sup>11</sup>

**Know Your Numbers:** If you don't know your numbers, contact your doctor.

1. Office of Dietary Supplements. Dietary Supplement Fact Sheet: Vitamin D. <http://ods.od.nih.gov/factsheets/vitamind.asp#h3>.
2. Holick, MF. Vitamin D Deficiency. *N Engl J Med* 2007; 357:266-81.
3. Skinner HG, Michaud DS, Giovannucci E, Willett WC, et al. Vitamin D intake and the risk for pancreatic cancer in two cohort studies. *Cancer Epidemiol Biomarkers Prev.* 2006;15(9):1688-1695.
4. Giovannucci E, Liu Y, Rimm EB, Hollis BW, et al. Prospective study of predictors of vitamin D status and cancer incidence and mortality in men. *J Natl Cancer Inst.* 2006;98:451-9.
5. Spina CS, et al. Vitamin D and cancer. *Anticancer Res.* 2006;26(4A):2515-24.
6. Palmieri C, MacGregor T, Girgis S, Vigushin D. Serum 25 hydroxyvitamin D levels in early and advanced breast cancer. *J Clin Pathol.* 2006; online edition: <http://jcp.bmj.com/cgi/content/abstract/59/12/1334>
7. Zitterman A, Koerfer R. Vitamin D in the prevention and treatment of coronary heart disease. *Curr Opin Clin Nutr Metab Care.* 2008 Nov;11(6):752-7.
8. Bailey R, et al. Association of the vitamin D metabolism gene CYP27B1 with type 1 diabetes. *Diabetes.* 2007 Oct;56(10):2616-21. Epub 2007 Jul 2.
9. Munger KL, et al. Serum 25-hydroxyvitamin D levels and risk of multiple sclerosis. *JAMA.* 2006 Dec 20;296(23):2832-8.
10. Hypponen E, et al. Intake of vitamin D and risk of type 1 diabetes: a birth-cohort study. *Lancet.* 2001 Nov 3;358(9292):1500-3.
11. <http://www.iom.edu/CMS/3788/61170.aspx> (retrieved 2/12/09)
12. U.S. Department of Agriculture, Agricultural Research Service, USDA Nutrient Data Laboratory. 2009. USDA National Nutrient Database for Standard Reference, Release 22. USDA Nutrient Data Laboratory website: <http://www.ars.usda.gov/nutrientdata>