

# Vitamin D, Immunity, and Heart Health

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As an essential vitamin, your body requires vitamin D to sustain life. And yet, it's fairly difficult to get enough vitamin D from the foods you eat, which is why most dairy products and some other foods have been "fortified" with it. Remarkably, even though such foods have had vitamin D added to them to help guard the health of the general public, some studies suggest that as many as 50-78% of people have chronically low levels of vitamin D in their bodies at any given time.<sup>1,2,3,4</sup>

There are several reasons why it is important to have a sufficient amount of vitamin D circulating throughout your body. Most people are aware that vitamin D is intimately connected to the body's ability to properly utilize calcium; without sufficient vitamin D, no matter how much calcium you get, your bones will become weak and brittle, a condition called *osteoporosis*.<sup>5</sup> What most people are *not* aware of, however, are the many other roles that vitamin D plays in achieving and maintaining optimal health and wellness.

For example, vitamin D has been shown to be important for overall immunity. Considerable scientific evidence suggests that vitamin D not only enhances your body's innate immune system, but it may also help inhibit the development of autoimmune disorders.<sup>6</sup> As a hormone precursor, vitamin D has wide-ranging effects on the immune system, playing a part in reducing your risk of cancer, heart disease, immune deficiency, and overall mortality.<sup>7</sup>

Vitamin D's importance in heart health has also recently come into the spotlight. One of the nutrient's many functions is to deactivate a cellular-level system in your body that causes hypertension; the Linus Pauling Institute suggests that "adequate vitamin D levels may be important for decreasing the risk of high blood pressure."<sup>8</sup> Additionally, vitamin D helps lower levels of inflammation in vascular walls that can lead to hardening of the arteries, and from there, to heart attack and stroke.<sup>9</sup>

## At A Glance

- Vitamin D is an essential nutrient, yet is fairly difficult to get in optimal amounts via food and drink.
- Vitamin D is vital to bone health and helps guard against the weakening of bones (*osteoporosis*).
- Vitamin D enhances the immune system and may also help inhibit autoimmune disorders.
- Vitamin D is implicated in heart health, as it decreases high blood pressure and guards against atherosclerosis, heart attack, and stroke.
- Sources disagree as to the optimal dosage of vitamin D, though recent research suggests 4,600-10,000 IU/day of vitamin D<sub>3</sub> may be optimal.

Any way you look at it, making sure that you get enough vitamin D is an important step toward achieving optimal health. The Food and Nutrition Board at the Institute of Medicine recommends a daily intake of vitamin D<sub>3</sub> (*cholecalciferol*) between 200 and 600 IU, depending on age, gender, and other factors such as pregnancy.<sup>10</sup> Yet recent studies suggest that an optimal range is actually closer to 4,600-10,000 IU/day.<sup>11</sup>

Because most people don't get enough time bare-skinned in sunlight – the best way to get vitamin D (also famously and rightly known as the “sunshine vitamin”) – supplementation with a high-quality vitamin D supplement is a viable and effective alternative. Remember that there are two types of vitamin D on the market today, D<sub>2</sub> and D<sub>3</sub>. Of the two, vitamin D<sub>3</sub> has proven to be many times easier for your body to use.<sup>12</sup> So, look for a vitamin D<sub>3</sub> supplement from a trusted source that follows the current Good Manufacturing Practices (cGMP) set by the U.S. Food and Drug Administration.

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<sup>1</sup> High prevalence of vitamin D inadequacy and implic... [Mayo Clin Proc. 2006] - PubMed result. (n.d.). *National Center for Biotechnology Information*. Retrieved December 27, 2010, from <http://www.ncbi.nlm.nih.gov/pubmed/16529140>

<sup>2</sup> The vitamin D epidemic and its health consequences. [J Nutr. 2005] - PubMed result. (n.d.). *National Center for Biotechnology Information*. Retrieved December 27, 2010, from <http://www.ncbi.nlm.nih.gov/pubmed/16251641>

<sup>3</sup> Assessing the vitamin D status of the US populatio... [Am J Clin Nutr. 2008] - PubMed result. (n.d.). *National Center for Biotechnology Information*. Retrieved December 27, 2010, from <http://www.ncbi.nlm.nih.gov/pubmed/18689402>.

<sup>4</sup> Assessing the vitamin D status of the US populatio... [Am J Clin Nutr. 2008] - PubMed result. (n.d.). *National Center for Biotechnology Information*. Retrieved December 27, 2010, from <http://www.ncbi.nlm.nih.gov/pubmed/18689402>.

<sup>5</sup> Vitamin D. (n.d.). *Office of Dietary Supplements (ODS)*. Retrieved December 27, 2010, from <http://ods.od.nih.gov/factsheets/VitaminD-QuickFacts/>

<sup>6</sup> Linus Pauling Institute at Oregon State University. (n.d.). *Linus Pauling Institute at Oregon State University*. Retrieved December 27, 2010, from <http://lpi.oregonstate.edu/infocenter/vitamins/vitaminD>

<sup>7</sup> Life Extension Foundation. (n.d.). The Most Important Tool For Disease Prevention - Life Extension. Retrieved December 27, 2010, from [http://www.lef.org/magazine/mag2008/may2008\\_The-Most-Important-Tool-For-Disease-Prevention\\_01.htm](http://www.lef.org/magazine/mag2008/may2008_The-Most-Important-Tool-For-Disease-Prevention_01.htm)

<sup>8</sup> Linus Pauling Institute at Oregon State University. (n.d.). *Linus Pauling Institute at Oregon State University*. Retrieved December 27, 2010, from <http://lpi.oregonstate.edu/infocenter/vitamins/vitaminD/>

<sup>9</sup> Faloon, W. (n.d.). How to Circumvent 17 Independent Heart Attack Risk Factors - 2 - Life Extension. Retrieved December 27, 2010, from [http://www.lef.org/magazine/mag2009/may2009\\_Heart-Attack-Risk-Factors\\_02.htm](http://www.lef.org/magazine/mag2009/may2009_Heart-Attack-Risk-Factors_02.htm)

<sup>10</sup> Vitamin D: MedlinePlus Medical Encyclopedia. (n.d.). *National Library of Medicine - National Institutes of Health*. Retrieved December 27, 2010, from <http://www.nlm.nih.gov/medlineplus/ency/article/002405.htm>

<sup>11</sup> Faloon, W. (n.d.). Startling Findings About Vitamin D Levels in Life Extension Members - Life Extension. Retrieved December 27, 2010, from [http://www.lef.org/magazine/mag2010/jan2010\\_Startling-Findings-About-Vitamin-D-Levels-in-Life-Extension-Members\\_01.htm](http://www.lef.org/magazine/mag2010/jan2010_Startling-Findings-About-Vitamin-D-Levels-in-Life-Extension-Members_01.htm)

<sup>12</sup> Vitamin D2 Is Much Less Effective than Vitamin D3 in Humans -- Armas et al. 89 (11): 5387 -- *Journal of Clinical Endocrinology & Metabolism*. (n.d.). *Journal of Clinical Endocrinology & Metabolism*. Retrieved December 27, 2010, from <http://jcem.endojournals.org/cgi/content/full/89/11/5387>