



Life Extension Magazine

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AS WE SEE IT

Startling Findings About Vitamin D Levels in Life Extension® Members

By William Faloon

No other nutrient, drug, or hormone has gained more scientific credibility than **vitamin D**.

Insufficient vitamin D is linked to virtually every age-related disorder including **cancer**,¹⁻¹¹ **vascular disease**,¹²⁻¹⁷ and **chronic inflammation**.^{2,18-23} Adults (and children) with higher **vitamin D** levels contract substantially fewer cold, flu, and other **viral infections**.²⁴⁻²⁶

Specific biological mechanisms have been identified to explain how vitamin D protects against so many human ailments.²⁷⁻³¹

More than **13,000 Life Extension®** members have had their **vitamin D** level checked using our convenient **blood testing** service. The results from these tests represent a goldmine of never-before-published data about achieved vitamin D blood levels in a large group of dedicated supplement users.

Our findings will shock many in the medical community who think that supplementing with less than **1,000 IU** a day of vitamin D is adequate. To the contrary, even **Life Extension®**'s previous aggressive dosing suggestions are probably too low to ensure *optimal* vitamin D status.

In another surprising revelation, scientists have discovered that high-dose **vitamin A** antagonizes the beneficial action of **vitamin D** in the body.³²⁻³⁴ This finding might explain why certain studies of people using commercial multivitamins (that contain too much **vitamin A** and woefully inadequate **vitamin D**) have failed to yield expected health benefits.

This article will present startling findings we have uncovered about vitamin D levels in our members' blood, as well as newly published data about how much vitamin D (and vitamin A) aging people really need.

Combating Winter Infections

As daylight hours grow colder and shorter, incidence of the common cold, flu, and respiratory infections spikes upwards. Scientists have identified reduced vitamin D levels in winter months as a prime suspect for this increase in infectious disease cases.



Vitamin D from all sources (sunlight, sun lamps, or supplements) reduces the incidence of respiratory infections.^{24,26} Dutch children with the least **sun exposure** are twice as likely to develop a cough and three times more likely to develop a runny nose compared with children with the most sun exposure.³⁵

When Russian athletes were given sun lamps to stimulate vitamin D synthesis in the body, there were **50% fewer** respiratory infections and far fewer days of absence.³⁶

Children with the lowest vitamin D serum levels are **11 times** more likely to develop respiratory infection.³⁷ When 60,000 IU per week of **vitamin D** was administered (for six weeks) to children with frequent respiratory infections, the result was a **complete disappearance** of such infections in the following six months.³⁸

In a controlled trial of African women, a low dose (800 IU a day) of vitamin D resulted in a **three-fold** reduction in cold and flu symptoms compared to those given placebo.^{39,40}

Influenza kills around 36,000 Americans each year.⁴¹ Ensuring *optimal* vitamin D status, as will be described shortly, could slash influenza incidence and mortality.

How Vitamin D Boosts Immune Function and Suppresses Inflammation



William Faloon



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Flu viruses (including swine flu, or H1N1) can induce a massive inflammatory response capable of killing the victim. In other words, it is not the virus that kills, but the body's *hyper-reaction* to the virus—in the form of uncontrolled over-production of *pro-inflammatory cytokines*. Vitamin D down-regulates the expression of pro-inflammatory cytokines such as *tumor necrosis factor-alpha*.⁴²

As people age, they often over-express these same destructive *pro-inflammatory cytokines*. The result is chronic low-level inflammation that damages aging arteries, joints, and neurons.⁴³⁻⁴⁷ By down-regulating excess *pro-inflammatory cytokine* production, **vitamin D** could save the lives of those stricken with acute influenza, or the dozens of inflammatory diseases that afflict millions of aging Americans each year.



Antimicrobial peptides are components of the immune system that protect against bacterial, fungal, and viral infections. Secreted by immune cells throughout the body, **antimicrobial peptides** damage the *outer lipid membrane* of infectious agents (including influenza viruses), rendering them vulnerable to eradication.

Recent studies confirm that **vitamin D** dramatically upregulates the expression of these **antimicrobial peptides** in immune cells.⁴⁸ We now have a definitive *biological mechanism* to explain why vitamin D confers such dramatic protection against common winter illnesses.

What Are Minimum Vitamin D Blood Levels?

When blood is tested to assess vitamin D status, what is actually measured is the metabolically active **25-hydroxyvitamin D** form of the vitamin in the serum.

When irrefutable data emerged about vitamin D's role in preventing disease, experts initially recommended a minimum target blood level of **30 ng/mL** of *25-hydroxyvitamin D*.

In recognition of findings showing reduced incidences of disease in those with higher vitamin D levels, the standard laboratory **reference range** for *25-hydroxyvitamin D* was raised to **32-100 ng/mL**.



Based on recent and conclusive published studies, **Life Extension®**'s new minimum target level for *optimal* disease prevention is over 50 ng/mL of *25-hydroxyvitamin D*.⁴⁹⁻⁵⁴

As you will read next, **85.7%** of those utilizing our blood testing service have less than **50 ng/mL** of *25-hydroxyvitamin D*. While this may seem disconcerting, studies show that **50-78%**⁶⁵⁻⁵⁸ of the general population has less than **30 ng/mL** of *25-hydroxyvitamin D*, placing them at high risk for a host of degenerative diseases.

In fact, a startling **36%**⁶⁵⁻⁵⁹ of the general population has *25-hydroxyvitamin D* levels below 20 ng/mL, which may represent the world's *leading* cause of unnecessary disease and death.

Results from Life Extension®'s Vitamin D Tests

The **Life Extension Foundation®** analyzed results from 13,892 blood tests in members who had their blood levels of vitamin D (25-hydroxyvitamin D) evaluated from March 24, 2008 to September 27, 2009 (about 18 months).

The most disappointing finding was that **38%** of test results for *25-hydroxyvitamin D* were less than or equal to **30 ng/mL** (the previous minimum threshold). In addition, **69%** of test results were less than or equal to **40 ng/mL**, and **85%** of test results were less than or equal to **50 ng/mL**.

Life Extension®'s new minimum target level for *optimal* disease prevention is **50 ng/mL** of *25-hydroxyvitamin D*—and most members have less than this amount in their blood.

Figures 1 and 2 below show the startling percentages of supplement users with less than optimal vitamin D blood levels. Considering these people were probably taking at least **800-1,000 IU** of vitamin D daily, this widespread deficiency uncovers an urgent need for serious supplement users to increase their vitamin D intake. No blood test result revealed vitamin D to be excessively high in any individual.

The Foundation also analyzed vitamin D test results in members who purchased 5,000 IU vitamin D supplements and subsequently obtained a 25-hydroxyvitamin D blood test within three to nine months of product purchase.

These test results revealed markedly *higher* 25-hydroxyvitamin D levels. Specifically, 25-hydroxyvitamin D levels were nearly **30% greater!** (**Figure 3**) Interestingly, even many of these individuals did not achieve optimal status of over **50 ng/mL** of 25-hydroxyvitamin D, indicating the need for some people to take more than 5-6,000 IU a day of vitamin D.

The test results revealed quite a bit of individual variability, with many more older people testing out at the *lower* ranges of *25-hydroxyvitamin D*. Specifically, of the test results that showed 25-hydroxyvitamin D levels less than **30 ng/mL**, more than **double** were observed in Life Extension® members older than age 55 years, compared with younger members. (**Figure 4 below**) This is consistent with the published literature showing that as people age, they convert less vitamin D in their skin from sunlight.^{60,61} We were not able to evaluate *body mass index*, which is another determinant of vitamin D requirement. Heavier people require more vitamin D than thinner individuals.

How Much Vitamin D Do You Need?

John Cannell, MD, is the president of *The Vitamin D Council*, a non-profit group that advocates higher vitamin D intake. According to a letter written to us by Dr. Cannell, adults need to take **5,000 IU** a day of vitamin D to put the vast majority of them (**97.5%**) above the **50 ng/mL** level.

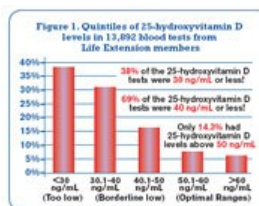


Figure 1

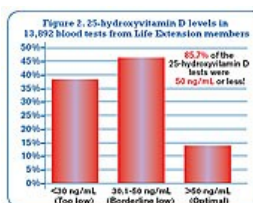


Figure 2

Dr. Cannell supplied us with published papers arguing that optimal doses for adults are between **4,600** and **10,000** IU, with persuasive evidence that **10,000** IU a day of supplemental vitamin D is not toxic.⁶²⁻⁶⁸

To answer the question as to *exactly* how much **vitamin D3** an individual needs requires a **blood test**. Members can obtain this test for **\$47** by calling **1-800-208-3444**.

Since our analysis uncovered **85%** of blood test results are far **below 50** ng/mL, it appears that virtually all members should supplement with **5,000** to **8,000** IU of vitamin D3 each day—especially in winter months!

Fears of vitamin D toxicity have caused health-conscious people to limit their vitamin D3 intake to only a few thousand IU (international units) a day. This amount is clearly inadequate to optimally protect against disease, based on recently published studies.^{52,64,69-72}

Those with a rare disorder called *sarcoidosis*, severe renal impairment, primary hyperparathyroidism, or any condition resulting in an elevated calcium level in the blood should consult with their physician before taking vitamin D supplements. A low-cost *blood chemistry* test easily rules out elevated blood calcium. The member price for a comprehensive CBC/chemistry test is only \$35.

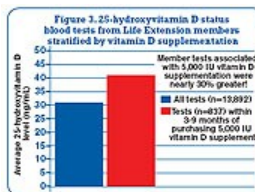


Figure 3

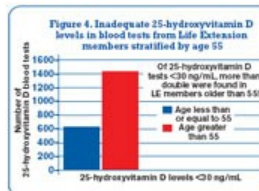


Figure 4

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