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Vitamin D Could Help Extend Your Life

Analysis by Dr. Joseph Mercola ✔ Fact Checked | December 19, 2022

STORY AT-A-GLANCE

- People genetically predisposed to vitamin D deficiency are 25% more likely to die from any cause compared to those with different genetics conducive to healthy vitamin D levels
- Researchers with the University of South Australia also revealed that vitamin D deficiency increases the risk of chronic diseases like heart disease, respiratory diseases and cancer
- The more severe the vitamin D deficiency, the greater the risk of mortality became
- For the study, low levels of vitamin D were defined as less than 10 ng/ml (25 nmol/L), which is a severe deficiency state; higher levels of 60 to 80 ng/ml are likely necessary for optimal health and longevity benefits
- Strive to get your vitamin D from healthy sun exposure; higher levels of vitamin D may serve as a marker for sun exposure, which in turn may be responsible for many of the beneficial health effects attributed to vitamin D

What are your vitamin D levels? If you're not sure, getting tested — and then optimizing your levels — could help you live longer. While low vitamin D levels have long been associated with increased risk of death, data on severely deficient individuals are lacking.

Now, it's been shown that people genetically predisposed to vitamin D deficiency were 25% more likely to die from any cause compared to those with different genetics conducive to healthy vitamin D levels.[1]

The data came from researchers with the Australian Center for Precision Health at the University of South Australia, who also revealed that vitamin D deficiency driven by genetics increases the risk of chronic diseases like heart disease, respiratory diseases and cancer.[2]

Too Little Vitamin D Increases Risk of Death, Cancer

To find out vitamin D deficiency's role in mortality, researchers used data from 307,600 people included in the U.K. Biobank, a cohort from England, Scotland and Wales containing data about genetics and health. Study author Josh Sutherland explained in a news release:[3]

> *"Vitamin D deficiency has been connected with mortality, but as clinical trials have often failed to recruit people with low vitamin D levels — or have been prohibited from including vitamin deficient participants — it's been challenging to establish causal relationships ...*
>
> *We used a new genetic method to explore and affirm the non-linear relationships that we've seen in observational settings, and through this we've been able give strong evidence for the connection between low vitamin D status and premature death."*

In addition to increasing risk of all-cause mortality by 25%, people genetically predisposed to vitamin D deficiency also had a:[4]

- 25% greater risk of dying from a heart-related illness
- 16% greater risk of dying from cancer
- 96% greater risk of dying from a lung-related illness

Further, the more severe the vitamin D deficiency, the greater the risk of mortality became.[5] It should be noted that low levels of vitamin D were defined as less than 10 ng/ml (25 nmol/L), which is a severe deficiency state. I would consider 20 ng/ml as a bare minimum level for health.

"While severe vitamin D deficiency is rarer in Australia than elsewhere in the world, it can still affect those who have health vulnerabilities, the elderly, and those who do not acquire enough vitamin D from healthy sun exposure and dietary sources," Sutherland said. "Our study provides strong evidence for the connection between low levels of vitamin D and mortality, and this is the first study of its kind to also include respiratory disease related mortality as an outcome."[6]

Optimize Vitamin D to Lower Cancer, Disease Risk

Optimizing your vitamin D level is one strategy that can boost your health in myriad ways. A deficiency in vitamin D has been implicated in such problems as multiple sclerosis[7] and Parkinson's disease,[8] for instance. The link between Parkinson's and vitamin D is so strong that one study found people with high vitamin D levels had a 65% lower risk of Parkinson's compared to those with low vitamin D levels.[9]

Vitamin D also significantly reduces oxidative stress in your vascular system, which can prevent the development of heart disease.[10] And, based on data from 191,779 American patients, people with a vitamin D level of at least 55 ng/mL (138 nmol/L) had a significantly lower SARS-CoV-2 positivity rate compared to those with a level below 20 ng/mL (50 nmol/L).[11] In addition, optimizing your vitamin D levels is one of the absolute best strategies to slash your cancer risk.

Previous research found that a vitamin D level of 47 ng/ml was associated with a 50% lower risk of breast cancer.[12] Further, researchers at University of California, San Diego School of Medicine reported that raising your vitamin D level to at least 40 ng/ml can slash your risk of all invasive cancers by 67%.[13]

Another analysis — this one conducted by GrassrootsHealth and published June 2018 in PLOS ONE — showed women with a vitamin D level at or above 60 ng/ml (150 nmol/L) had an 82% lower risk of breast cancer compared to those with levels below 20 ng/ml (50 nmol/L).[14]

An earlier study, which looked at women in the U.K., found having a vitamin D level above 60 ng/mL resulted in an 83% lower breast cancer risk.[15,16] As for how vitamin D fights cancer, GrassrootsHealth explained:[17]

> *"Vitamin D may play a number of roles in the prevention of breast cancer development and progression.*
>
> *The biologically active form of vitamin D, 1,25(OH)2D3, binds to the vitamin D receptor (VDR) in normal breast epithelium and this complex regulates the cell cycle, promotes differentiation, increases cell-to-cell adhesion, protects cells from DNA damage, regulates cytokines, activates immune cells, and suppresses inflammation, all of which may act to reduce malignant transformations.*
>
> *In breast cancer cells, this complex also activates apoptosis and other mechanisms to suppress tumor growth."*

Vitamin D Deficiency Leads to Dementia

In another study utilizing data from the U.K. Biobank, University of South Australia researchers revealed that vitamin D deficiency may lead to dementia.[18] Those who were deficient had an increased risk of dementia and stroke, with the strongest association found for people with vitamin D levels below 10 ng/ml (25 nmol/L).[19]

Low vitamin D levels were also associated with lower brain volumes, and genetic analyses suggested there's a causal relationship between vitamin D deficiency and dementia. Further, the researchers found that up to 17% of dementia cases in some populations may be prevented if people raised their vitamin D levels to 20 ng/ml (50 nmol/L).[20] Study author Professor Elina Hyppönen explained:[21]

> *"Vitamin D is a hormone precursor that is increasingly recognized for widespread effects, including on brain health, but until now it has been very difficult to examine what would happen if we were able to prevent vitamin D deficiency.*

> *... Dementia is a progressive and debilitating disease that can devastate individuals and families alike. If we're able to change this reality through ensuring that none of us is severely vitamin D deficient, it would also have further benefits and we could change the health and wellbeing for thousands."*

In a separate six-year study that followed 1,658 people, vitamin D deficiency was also associated with a substantially increased risk of dementia, including Alzheimer's disease.[22] In fact, people who were severely deficient in vitamin D had a 125% increased risk of developing dementia, whereas those who were moderately deficient were at a 53% greater risk.

For Alzheimer's disease specifically, being severely vitamin D deficient was linked to a 122% increased risk compared to a 69% increase for those who were moderately deficient.[23] In addition:

- Higher intake of dietary vitamin D was associated with a lower risk of developing Alzheimer's disease among older women[24]
- Among the elderly (including the "oldest-old") in China, low vitamin D levels were associated with increased risk of cognitive decline and impairment[25]
- Low vitamin D levels among older women in the U.S. were associated with a higher risk of cognitive impairment and decline[26]

What Are Optimal Vitamin D Levels?

I've long recommended a vitamin D level of 60 to 80 ng/ml (150-200 nmol/L) for optimal health and disease prevention. A level upward of 100 ng/mL also appears safe and **beneficial for certain conditions, especially cancer**.

Remember that the only way to determine how much sun exposure is enough and/or how much vitamin D3 you need to take is to measure your vitamin D level, ideally twice a year. The D*Action Project by GrassrootsHealth is a cost-effective way to do this, while simultaneously progressing valuable research.

To participate, simply purchase a D*Action Measurement Kit and follow the registration instructions included. When supplementing, also remember to take synergistic effects with other nutrients into account. If you take high-dose vitamin D, you may also need to increase your intake of:

- Magnesium
- Vitamin K2
- Calcium

These four nutrients — vitamins D and K2, calcium and magnesium — all work in tandem and rely on sufficient amounts of each to work optimally. Once you've confirmed your vitamin D levels via testing, remember to retest in three to four months to make sure you've reached your target level.

If you have, then you know you're taking the correct dosage and/or getting the right amount of sun exposure. If you're still low (or have reached a level above 80 ng/ml), you'll need to adjust your dosage accordingly and retest again in another three to four months.

Is Vitamin D a Marker for Sun Exposure?

I strongly recommend getting your vitamin D from proper sun exposure if at all possible. This is because not only will adequate sun exposure naturally raise your vitamin D levels to healthy levels, but it will provide numerous other benefits, many of which are only beginning to be understood.

It's quite possible that having higher levels of vitamin D serves as a marker for healthy sun exposure, which in turn may be responsible for many of the beneficial health effects attributed to vitamin D — including increased longevity and lower cancer risk.

Many people are not aware that only 5% of your body's melatonin — a potent anticancer agent — is produced in your pineal gland. The other 95% is produced inside your mitochondria — provided you get proper sun exposure. So vitamin D is more than likely a

biomarker or surrogate for sun exposure, which is intricately involved in melatonin production.[27]

During the day, if you get enough sun exposure, near-infrared rays from the sun penetrate deep into your body and activate cytochrome c oxidase, which in turn stimulates the production of melatonin inside your mitochondria. Your mitochondria produce ATP, the energy currency of your body. A byproduct of this ATP production is the creation of reactive oxidative species (ROS), which are responsible for oxidative stress and free radicals.

Excessive amounts of ROS will damage the mitochondria, contributing to suboptimal health, inflammation and chronic health conditions such as diabetes, obesity and thrombosis (blood clots). But melatonin essentially mops up ROS that damage your mitochondria.

So by getting plenty of sun exposure during the day, your mitochondria will be bathed in melatonin, thereby reducing oxidative stress[28,29] and offering a host of health benefits. In short, while vitamin D is important, for optimal health and longevity strive to get it from the sun, not by swallowing it.

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