



# WellnessOne Newsletter

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## The Vitamin that is Better than Fluoride in Reducing Cavities

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**By Dr. Mercola**

Studies have linked geographical variations in dental health and tooth loss to sun exposure.

Dental caries has been shown to be inversely related to mean hours of sunlight per year, with people living in the sunny west having half as many cavities as those in the much less sunny northeast.

As [reported by the Vitamin D Council](#):



*"There were also several studies reported on vitamin D and dental caries in the 1920s and 1930s. May Mellanby and coworkers in Sheffield, England, did studies on the role of vitamin D on teeth in the 1920s.*

*The first experiments were with dogs, where it was found that vitamin D stimulated the calcification of teeth. Subsequently, they studied the effect of vitamin D on dental caries in children, finding a beneficial effect.*

*Additional studies were conducted on children in New York regarding dental caries with respect to season, artificial ultraviolet-B (UVB) irradiance, and oral intake of vitamin D with the finding that **it took 800 IU/day to prevent caries effectively.**"*

Two proposed mechanisms causing this beneficial effect include:

- Vitamin D beneficially affects calcium metabolism, and
- Vitamin D, which is produced in your body in response to sunlight exposure, induces cathelicidin, an antimicrobial peptide, which attacks oral bacteria linked to dental caries

[According to the Vitamin D Council](#):

*"Use of vitamin D appears to be a better option for reducing dental caries than fluoridation of community water supplies, as there are many additional health benefits of vitamin D and a number of adverse effects of water fluoridation such as fluorosis*

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(mottling) of teeth and bones. ... **Serum 25-hydroxyvitamin D concentrations around 30-40 ng/ml (75-100 nmol/L) should significantly reduce the formation of dental caries.** (The average white American has a level near 25 ng/ml, while the average black American has a level near 16 ng/ml.)"

## Oral Health, Heart Disease, and Vitamin D

As you probably know, many public water supplies around the US are fluoridated, allegedly to help prevent dental caries. However, there's overwhelming evidence showing that ingesting fluoride is NOT the way to protect your teeth. On the contrary, fluoride is a potent toxin, and over 40 percent of American children and teens are showing signs of fluoride overexposure in the form of [dental fluorosis](#)—unsightly yellow or brown spots or mottling on their teeth.

Fluoride consumption has also been linked to a [long list of other health problems](#).

The idea that vitamin D may help protect against cavities is very interesting, and actually makes loads of sense since we already know it is necessary for bone health. Vitamin D also upregulates a specific gene that produces over 200 anti-microbial peptides, some of which work like broad-spectrum antibiotics, including cathelicidin that attacks oral bacteria.

It's also interesting to note the [connections between oral health, heart health](#), and vitamin D status.



For example, gum disease increases your risk of several other serious diseases, including, pneumonia, lung disease, diabetes and stroke—and vitamin D deficiency has also been linked to an increased risk of all of these conditions! This is a beautiful illustration of the interdependency between seemingly disparate systems within your body.

## Sun Exposure May Be Essential for Heart Health

The link between gum disease and heart disease may not be obvious, but *chronic inflammation* is a hallmark of both conditions and inflammation in your body plays a major role in the build-up of plaque in your arteries, which can lead to a heart attack. And vitamin D helps combat inflammation, as just mentioned.

Furthermore, according to [research by Dr. Stephanie Seneff](#), the vitamin D produced in your skin in response to sun exposure will impact your *sulfur status*, which may also play a crucial role in heart disease, so there are many interrelated factors affecting each other, thereby raising or lowering your risk of a number of health problems.

So what does sun exposure have to do with heart health?

Your heart requires *cholesterol sulfate* for optimal function. When you are deficient in cholesterol sulfate (due to a lack of cholesterol in your body), your body tries to protect your heart by

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creating arterial plaque, because the platelets *produce cholesterol sulfate in the plaque*. Dr. Seneff believes that the mechanism we call "cardiovascular disease," of which arterial plaque is a hallmark, is actually your body's way to compensate for not having enough cholesterol sulfate.

Now, when you expose your skin to sunshine, your skin synthesizes vitamin D3 *sulfate*, which is a water soluble form of sulfur that can travel freely in your blood stream, making it readily available.

Oral vitamin D3, on the other hand, is unsulfated, and this form needs LDL (the so-called "bad" cholesterol) as a vehicle of transport. Her suspicion is that the simple oral non-sulfated form of vitamin D may not provide as much of the same heart-healthy benefits as the vitamin D created in your skin from sun exposure, because it cannot be converted to vitamin D sulfate, and therefore will not improve your sulfur status. This is yet another reason to really make a concerted effort to get ALL your vitamin D requirements from exposure to sunshine!

### **Your Vitamin D Level is Directly Related to Your Risk of Heart Disease**

But that's not all. Dr. Carlos Camargo of Harvard University recently [wrote an editorial](#) about the growing number of studies that link low vitamin D levels to heart attack, heart failure, stroke, hypertension and diabetes. One recent study found that every 10 ng/ml lower blood vitamin D concentration resulted in a nine percent greater risk of death, and a 25 percent greater risk of heart attack.



As noted in [Dr. Camargo's editorial](#), credit is due to the first man to discover the connection, an epidemiologist in New Zealand by the name of Professor Robert Scragg, who first noticed the association in 1981. His population-based case-control study found a strong inverse association between 25-hydroxyvitamin D level in the blood and risk for heart attack.

[As reported by the Vitamin D Council](#), there are currently two large, population-based, randomized, double-blind, placebo controlled trials on the health effects of vitamin D supplements underway. One is at Harvard, which is looking at cancer and heart disease. The other is being done in New Zealand, and is focused on heart disease, infection and fractures. Unfortunately, the results from these studies are not expected to be available until 2017. Six years is a long time to sit around and wait for the results from these studies. I strongly encourage you NOT to wait and see. The evidence that optimal vitamin D levels are necessary for general health and disease prevention is overwhelming.

### **Vitamin D and Cancer**

Two grassroots organizations are now focusing on vitamin D as a preventive measure for cancer. There are already [over 800 studies](#) supporting the theory that vitamin D may prevent a large percentage of several types of cancer, and I'm very pleased to see that this information is starting to gain foothold.

Vitamin D has a protective effect against cancer in several ways, including:

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- Increasing the self-destruction of mutated cells (which, if allowed to replicate, could lead to cancer)
- Reducing the spread and reproduction of cancer cells
- Causing cells to become differentiated (cancer cells often lack differentiation)
- Reducing the growth of new blood vessels from pre-existing ones, which is a step in the transition of dormant tumors turning cancerous

The Vitamin D Council, a nonprofit educational corporation based in California, recently launched their "Vitamin D and Cancer" campaign, presenting 20 detailed summaries of the evidence. The summaries were prepared by epidemiologist Dr. William Grant, founder of the nonprofit organization, Sunlight, Nutrition and Health Research Center (SUNARC). He also serves as the Science Director for the Vitamin D Council. I highly recommend reviewing these summaries, which can be found at <http://www.vitaminDCouncil.org/health-conditions/cancer/> (Just select the type of cancer you want to review from the listing on the left.)

According to the Vitamin D Council:

*"Some researchers believe the link between vitamin D sufficiency and a decreased risk in cancer is promising. A randomized controlled trial found a 77 percent reduction in all-cancer incidence when the study group supplemented with 1,100 IU/day of vitamin D plus 1,450 mg/day calcium. Says Dr. Grant, "Based on various studies of UVB, vitamin D and cancer to date, it appears that **global cancer burden can be reduced by 15-25 percent if everyone had vitamin D blood levels above 40 ng/ml.**"*



Some of the facts presented in these summaries include:

1. Geographical studies have found reduced risk in mortality rates for 20 types of cancer in regions of higher solar UVB doses.
2. Observational studies have found that the risk of breast, colon, and rectal cancer fall as vitamin D blood levels rise at least up to 40 ng/mL (100 nmol/L).
3. Those with higher vitamin D blood levels at time of cancer diagnosis have nearly twice the survival rate of those with the lowest levels.
4. Higher UVB exposure early in life is associated with reduced risk of breast and prostate cancer.

### **World's First Breast Cancer Prevention Study Underway!**

In addition to the Vitamin D Council's educational campaign, [Grassroots Health](#) is now in the process of initiating the world's first breast cancer prevention project and study, to investigate and evaluate vitamin D as a preventive strategy for breast cancer.

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"We are looking now for some really serious funding to support that as a major research project," says Carole Baggerly, director and founder of [Grassroots Health](#).

If you would like to [sign up as a participant in this groundbreaking study](#), or make a donation to support this project, you can do so at <http://www.grassrootshealth.net/>. This project is only for women who are:

1. 60 years of age and older
2. have no current cancer
3. are not currently being treated for cancer

### **Make Sure You're NEVER Deficient in Vitamin D if You are Critically Ill**

Dr. Paul Lee of the University of Queensland in Australia believes that people all over the world are needlessly dying because they have vitamin D deficiency. He believes severe immune dysfunction, bone hyper-resorption, blood poisoning, and hyper-inflammation in critically ill patients could all be resolved with sufficient vitamin D. He notes that the stress of surgery uses up tremendous amounts of vitamin D, and cites studies showing that death in the ICU and the CCU is two to three times higher for the vitamin D deficient.



#### [According to Dr. Lee:](#)

*"Vitamin D deficiency is highly prevalent and has been associated with a diverse range of chronic medical conditions in the general population. In contrast, the prevalence, pathogenesis and significance of vitamin D deficiency have received little attention in acute medicine. Vitamin D deficiency is seldom considered and rarely corrected adequately, if at all, in critically ill patients."*

*Recent recognition of the extra-skeletal, pleiotropic actions of vitamin D in immunity, epithelial function and metabolic regulation may underlie the previously under-recognized contribution of vitamin D deficiency to typical co-morbidities in critically ill patients, including sepsis, systemic inflammatory response syndrome and metabolic dysfunction. Improved understanding of vitamin D metabolism and regulation in critical illness may allow therapeutic exploitation of vitamin D to improve outcome in critically ill patients."*

This echoes [previous findings that your vitamin D status is critical for overall health](#), prevention of disease, and for successful recuperation—whether you're recuperating from a case of the flu, from surgery, or even cancer treatment.

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## The Best Source of Vitamin D

Exposing your skin to sunlight is the best way to get vitamin D as this will also produce vitamin D3 sulfate, which I discussed earlier. As a general guideline, getting about 15 to 20 minutes of sun exposure a day, with at least 40 percent of your skin exposed, will boost the vitamin levels above 40 ng/ml in many. However, this is highly variable and dependent on a number of factors, including your skin color, location and altitude, for example. If you're able to get out in the sun for an adequate time period each day, your vitamin D levels should be naturally optimized.

If you can't get enough sun exposure during certain parts of the year, [I advise using a safe tanning bed](#) to allow your body to produce vitamin D naturally. Safe tanning beds have electronic ballasts and produce less UVA than sunshine.

A third option is taking a high-quality vitamin D supplement. The most important thing to keep in mind if you opt for oral supplementation is to use natural vitamin D3 (cholecalciferol) only. Do not use the [synthetic and highly inferior vitamin D2](#). Unless you get a deep dark tan, it is wise to get your blood levels checked as that is the only way to know for certain you have reached therapeutic levels. To determine the appropriate dose, you need to [get your vitamin D levels tested](#). Ideally, you'll want to be between 50-70 ng/ml. Based on recent research published by Grassroots Health from the D\*Action study, the average adult needs to take 8,000 IU's of vitamin D per day in order to elevate their levels above 40 ng/ml, which they believe is the bare minimum for disease prevention.

We encourage you to talk to your WellnessOne practitioner about what doses he recommends you take and what is available in the office.

