

Vitamin D Resource Page

It is estimated that up to 85 percent of people have insufficient levels of vitamin D and are unaware of their deficient state. While conventional media and medicine promote sun avoidance, doing so can actually put your health in grave danger and cause vitamin D deficiency.

The Role of Vitamin D in Disease Prevention

A growing body of evidence shows that vitamin D plays a crucial role in disease prevention and maintaining optimal health. There are about 30,000 genes in your body, and vitamin D affects nearly 3,000 of them, as well as vitamin D receptors located throughout your body.

According to one large-scale study, optimal vitamin D levels can slash your risk of cancer by as much as 60 percent. Keeping your levels optimized can help prevent at least 16 different types of cancer, including pancreatic, lung, ovarian, prostate, and skin cancers. Moreover, vitamin D can build your defenses against cancer by:

- Enhancing the self-destruction of mutated cells (which can replicate and cause cancer)
- Slowing down the production and spread of cancer cells
- Helping in the differentiation of cells (cancer cells are not differentiated)
- Preventing the formation of new blood vessels from pre-existing ones (this can help stop the progress of benign tumors into cancerous ones)

Vitamin D can also help reduce the risk of other conditions as well, including type 2 diabetes, chronic inflammation, age-related macular degeneration (the leading cause of

blindness), and Alzheimer's disease.

Vitamin D also exhibits its infection-fighting abilities in the treatment of tuberculosis, pneumonia, colds, and flu. It can also improve seizure control in epileptics.

While scientists refer to vitamin D as a vitamin, it is actually a steroid hormone obtained from sun exposure, food sources, and supplementation. Common types of vitamin D are vitamin D2 and D3. Compared to D2, vitamin D3 is 87 percent more effective, and is the preferred form for addressing insufficient levels of vitamin D.

The Vitamin D Epidemic in the United States

Today, many Americans are found to be in a serious deficiency state. Over 95 percent of senior citizens in the US may possibly be deficient, along with 85 percent of Americans. The late winter average vitamin D level was found to be about 15 to 18 ng/ml, which is far below optimal levels.

Cases of vitamin D deficiency are also seen more frequently in individuals (of all ages) that have increased skin pigmentation, including those whose ancestors are from Africa, the Middle East, or South Asia.

This deficiency problem also applies to people who often use sun protection, or those who spend more time indoors than outdoors. Regardless of skin pigmentation, deficiency can be even worse if they live in northern latitudes, as there is very little sun exposure (I'll discuss this in a bit).

The Vitamin D and Vitamin K2 Connection

Dr. Mercola Interviews Dr. Kate Rheaume-Bleue

Another critical point to remember is **you shouldn't take any vitamin D supplement without taking vitamin K2**. Vitamin K2 deficiency is connected to vitamin D toxicity symptoms, which includes excessive calcification that can contribute to the hardening of your arteries.

One of the functions of vitamin K2 is to direct calcium to areas in your body where it is needed, such as your bones and teeth. It also functions to keep calcium away from areas where it shouldn't be, including your soft tissues and arteries.

According to Dr. Kate Rheaume-Bleue, author of *Vitamin K2 and the Calcium Paradox: How a Little Known Vitamin Could Save Your Life*:

"When you take vitamin D, your body creates more of these vitamin K2-dependent proteins, the proteins that will move the calcium around. They have a lot of potential health benefits. But until the K2 comes in to activate those proteins, those benefits aren't realized. So, really, if you're taking vitamin D, you're creating an increased demand for K2. And vitamin D and K2 work together to strengthen your bones and improve your heart health.

*...For so long, we've been told to take calcium for osteoporosis... and vitamin D, which we know is helpful. But then, more studies are coming out showing that increased calcium intake is causing more heart attacks and strokes. That created a lot of confusion around whether calcium is safe or not. But that's the wrong question to be asking, because **we'll never properly understand the health benefits of calcium or vitamin D, unless we take into consideration K2. That's what keeps the calcium in its right place"***

The optimal ratios between vitamin D and K2 have yet to be determined. However, Dr. Rheaume-Bleue recommends that for every 1,000 IUs of vitamin D, you can benefit from about 100 to 200 micrograms of vitamin K2.

— **Healthy Sun Exposure Is Your Best Source of Vitamin D** —

Dr. Mercola on Healthy Sun Exposure

I strongly recommend ample sunlight exposure as your main source of vitamin D, as the sun provides beneficial UVB wavelengths that are needed to optimize your levels.

Although most dermatologists will tell you to avoid the sun to prevent diseases like cancer, exposure can actually aid in skin cancer prevention – and there are studies confirming this. Melanoma occurrence is found to decrease with greater exposure to direct sunlight. According to a study published in the *European Journal of Cancer*,

melanoma was found to be more common in workers who spent time indoors, and in body parts that are not exposed to the sun.

The sun emits two types of wavelengths at different periods in a day: UVA rays and UVB rays. Your body requires UVB for vitamin D production. UVA rays, on the other hand, have longer wavelengths and can penetrate the ozone layer, as well as clouds and pollution. Frequent exposure to this type of wavelength increases your risk of skin cancer and photoaging.

Occasional exposure of your hands and face to the sun does not constitute appropriate sunlight exposure. To optimize your levels, large portions of your skin needs to be exposed to the sun. However, over exposure to the sun can result in sunburn, which will increase your risk for skin cancer and premature skin aging.

Once you get the proper amount of sunlight, your body will stop producing vitamin D because of its self-regulating mechanism. Here are other important factors in safe sunlight exposure:

1. **Time** – The best time to expose yourself to the sun is as near to solar noon as possible (during Daylight Saving Time, solar noon is typically around 1 pm). UVB rays, unlike UVA rays that are present all throughout the day, are very low in the morning and evening, and are abundant during midday – around 10:00 am to 2:00 pm. Expose yourself to direct sunlight between these times for a short period, and you will have produced the most vitamin D3.
2. **Skin pigmentation** – Fair-skinned people can potentially max out their vitamin D production in just 10 to 20 minutes, or when their skin has turned the lightest shade of pink. However, if you have darker skin, you likely need to remain in the sun longer.
3. **Sensitive body parts** – The skin located around your eyes is thinner compared to other areas on your body. Since it has a small surface area, it will not do much to contribute to vitamin D production. You need to protect this part of your face, as it is very prone to photoaging and premature wrinkling. I recommend using a safe sunblock or wearing a cap that will keep your eyes in the shade.

If you get sunburned, aloe vera is one of the best remedies to help repair your skin. This plant is loaded with powerful glyconutrients that will induce healing. I suggest deriving the gel from a fresh plant.

4. **Using soap** – When UVB rays strike the surface of your skin, your skin will then convert a cholesterol derivative, which will turn into vitamin D3. However, the produced vitamin D3 does not immediately enter your bloodstream. It may take up to 48 hours before the vitamin D3 penetrates into your bloodstream.

When you shower immediately after sun exposure, you risk washing away the vitamin D3 formed by your skin and potentially reduce the benefits of sun exposure.

While those living in tropical regions have an abundance of sunshine, there are individuals who hardly have exposure, especially in most of the continental US. It doesn't make much sense to expose your skin to the sun when the temperature is lower than 50 degree F, which has a scarcity of UVB rays. This occurs a lot in most regions in the US, especially those who experience four seasons.

The charts below display the likelihood of vitamin D synthesis across the U.S. by month.

In those times of the year when UVB rays are very minimal, it may be wise to take a high-quality vitamin D3 supplement.

Proper Vitamin D Supplementation

Dr. Mercola on Vitamin D Testing

During winter months, you can go with supplementation. But this is not as simple as taking any vitamin D pill; there are many things to consider.

What your body requires is vitamin D3 and not vitamin D2, the synthetic form commonly prescribed by physicians. One microgram of vitamin D3 or 25-hydroxyvitamin D3 is about five times more potent in raising serum 25(OH)D than an equivalent amount of vitamin D2. Aside from being less effective, vitamin D2 can also pose potential harm to your body.

It is very, very important to have your blood levels of vitamin D tested before and during supplementation. There are two vitamin D tests currently being offered: 1,25(OH)D and 25(OH)D. The correct test to order is 25(OH)D – also known as 25-hydroxyvitamin D – because it is the better marker of overall D status.

Vitamin D Testing with the D*Action Study Measurement Kits

At Mercola.com, we offer vitamin D measurement kits courtesy of the D*Action study. The D*Action Project was initiated by GrassrootsHealth and is a worldwide project that aims to end the vitamin D epidemic by raising awareness on vitamin D testing (you can find out more about GrassrootsHealth and the D*Action Study in the resources provided below).

At the moment, the D*Action Project is looking for study participants, and you can be one of them. All you need to do is to purchase the D*Action Measurement Kit and follow the registration instructions included.

Using this kit, you can measure your vitamin D levels twice a year during a five-year program. Once you do, your health status will be shared to demonstrate the real significance of vitamin D. Take note that 100 percent of the kit proceeds will go to the D*Action study.

Below is a chart showing the ideal therapeutic levels of vitamin D you'll want to reach and maintain:

VITAMIN D LEVELS 25 HYDROXY D

Deficient	Optimal	Treat Cancer and Heart Disease	Excess
< 50 ng/ml	50-70 ng/ml	70-100 ng/ml	> 100 ng/ml

Multiply ng/ml by 2.5 to convert to nmol/litre

There is a risk of overdosing on a vitamin D supplement that doesn't exist with natural sun exposure, as your body simply stops producing vitamin D to prevent this. You need to consciously keep your vitamin D levels within the healthy range through regular vitamin D blood tests, and have your dosage adjusted accordingly.

Below are my vitamin D dosage recommendations for different age groups:

Vitamin D Dose Recommendations

Age	Dosage
Below 5	35 units per pound per day
Age 5 - 10	2500 units.
Adults	5000 units
Pregnant Women	8000 units

WARNING:

There is no way to know if the above recommendations are correct for you personally, as they are only guidelines. The **ONLY** way to know is to test your blood. You might need four to five times the amount recommended above. Ideally, your blood level of 25(OH)D should be 60ng/ml.

Free Vitamin D Educational Training for Medical Practitioners

Get your GrassrootsHealth D*certification by completing these one hour online CME's, available through University of California San Diego (UCSD). From the Accreditation Council for Continuing Medical Education> AMA PRA Category 1 Credit™ for each course.

In the first certification, Carol L. Wagner, MD, Medical University of South Carolina, discusses the role of vitamin D during pregnancy, its role in maternal health and in reducing comorbidities of pregnancy, including preterm birth.

[CLICK HERE TO VIEW DR. CAROL WAGNER'S PRESENTATION](#)

The second certification, Robert P. Heaney, MD from Creighton University explores why vitamin D is important, how it works, how we get it and how much we need.

These educational programs take approximately one hour to complete for each certification. To obtain credit immediately, participants should take a brief pre-activity survey, view the activity video, answer the multiple-choice questions, and complete the evaluation form online. Complete your one hour CME by [clicking here](#).

Vitamin D Resources

In addition to my vitamin D lecture and the information posted above, below are resources that will help you further understand the importance of vitamin D, and educate yourself about the growing vitamin D deficiency problem.

Top Vitamin D Articles on Mercola.com

The following articles provide information and updates on vitamin D research, as well as my recommendations on optimizing your vitamin D levels:

- [My One Hour FREE Vitamin D Lecture](#)

If you prefer to read your information rather than watch it, I've summarized the most important points of my vitamin D lecture in this article.

- [Important Vitamin D Update](#)

How does vitamin D impact your overall health? What factors affect your risk for vitamin D deficiency? Discover the answers in this article.

- [Vitamin D is a Key Player in Your Overall Health](#)
Find out what diseases vitamin D favorably

influences.

- **Avoid Flu Shots With the One Vitamin that Will Stop Flu in Its Tracks** 📺

Why expose yourself and your family to the dangers of an ineffective vaccine when the solution is right outside your door?

- **Vitamin D Journal Articles**

Take a look at this compilation of references proving the super-nutrient properties of vitamin D.

- **The Amazing Wonder Nutrient That May Prevent or Cure Seven Common Diseases**

Did you know vitamin D deficiency has been linked to cancer, diabetes, osteoporosis, rheumatoid arthritis, inflammatory bowel disease, multiple sclerosis, and autism?

Find out more on my FREE special report.

- **Why the New Vitamin D Recommendations Spell Disaster for Your Health**

How could the FDA conclude that the vitamin D needs of pregnant women and adults are the same as those of infants and children? Discover the more appropriate dosage recommendations from Dr. John Cannell and Carole Baggerly of GrassrootsHealth.

- **Pregnant? Why You Need to DEMAND This Test...**

A study finds that women who develop a severe form of pregnancy-related high blood pressure tend to have lower blood levels of vitamin D.

- **Why You Don't Want to Rely on Fortified Foods**

Is obtaining vitamin D from dietary sources sufficient to optimize your levels?

- **This Vitamin D Supplement Mistake Raises Your Death Rate by 2%**

Why is vitamin D2 inferior to vitamin D3? This article will give you the lowdown on these two types of supplements.

- **The Vitamin that is Better than Fluoride in Reducing Cavities**

Aside from influencing your bone health, vitamin D can also greatly contribute to your oral health.

- **New Study Shows This Vitamin Helps Prevent Depression**

Women with the highest intakes of vitamin D were significantly less likely to suffer from depressive symptoms.

- **The Wonder Vitamin That May Help You Prevent 16 Types of Cancer**

Theories linking vitamin D deficiency to cancer have been tested and confirmed in more than 200 epidemiological studies, and understanding of its psychological basis stems from more than 2,500 laboratory studies.

- **Little Sunshine Mistakes that Can Give You Cancer Instead of Vitamin D**

What constitutes safe sun exposure? Read this article to learn about my recommendations for safe sun exposure.

- **Are You Making These Sunshine Mistakes?**

While discussions about the health benefits of sun exposure typically center around vitamin D, UVB exposure has a number of other health

effects unrelated to vitamin D production, including mood and energy enhancement and the treatment of skin diseases.

- **Surprise! Vitamin D Can Help or Hinder Your Weight Management**

A study of more than 4,600 women age 65 and older shows that having low vitamin D levels can contribute to mild weight gain.

- **What You Need to Know About Vitamin K2, D, and Calcium**

Discover the interplay among vitamin K2, vitamin D, and calcium in this breakthrough discovery.

- **3 Reasons You May Not be Getting Enough Vitamin D this Summer**

How are mainstream health warnings about the dangers of sun exposure contributing to

the vitamin D deficiency problem? It's time to learn the truth about sun exposure and vitamin D.

- **This Everyday Outdoor Mistake Can Make You a Magnet for Melanoma**

Learn the toxic truth about most of the sunscreens on the market today, and the actual benefits of appropriate sun exposure.

- **This Vitamin Found to Rejuvenate Aging Eyes**

Research shows that vitamin D3 is a potent tool in promoting healthy vision.

- **Ignore This Deficiency... And Become 3 Times More Likely to Die?**

Addressing vitamin D deficiency can slash your risk of premature death by more than half, according to a recent analysis.

- **The Vitamin That Has Been Shown to Dramatically Improve Fertility**

Recent research has revealed the link between low levels of vitamin D and infertility.

- **How Vitamin D Can Help Slash Your Risk of 7 Different Acute and Chronic Diseases**

Studies are showing how vitamin D -- combined with proper strength training exercises -- can help slash your risk of certain diseases.

- **How Vitamin D Performance Testing Can Help You Optimize Your Health, and Aid the**

Health Freedom Movement

The D*Action project has been initiated by GrassrootsHealth and 42 leading vitamin D researchers to demonstrate how health can be achieved with what's known about vitamin D through a combination of vitamin D measurement and health outcome tracking.

- **Healthier Alternatives to the Seasonal Flu Vaccine: Garlic, Zinc, and Vitamin D**

These natural remedies just might be what you need to protect yourself during the cold and flu season in the US.

Websites

There are myriads of other resources on vitamin D on the World Wide Web. Aside from providing updates on vitamin D research, these sites will also introduce you to researchers and organizations with valuable work in raising vitamin D awareness.

- **Sunlight, Nutrition and Health Research Center (SUNARC)** – An organization dedicated to research and education associated with disease prevention through lifestyle changes.
- **Vitamin D Council Website**
The Vitamin D Council aims to raise awareness among the general public on the growing vitamin D deficiency pandemic and the benefits of sun exposure.
- **GrassrootsHealth**
Founded by Carole Baggerly, GrassrootsHealth is the vitamin D research organization that pioneered the D*Action Study, a worldwide public health campaign that aims to end the vitamin D deficiency epidemic by means of raising awareness on proper vitamin D testing.
- **Dr. James E. Dowd, MD**
Dr. James Dowd, author of *The Vitamin D Cure* and founder of the Arthritis Institute of Michigan, specializes in integrative holistic medicine, adult rheumatology, and pediatric rheumatology and has been practicing for more than 20 years.
- **SunlightAndVitaminD.com**
This page provides basic information about vitamin D, as well as details the work of its creator, nutritionist Krispin Sullivan, CN.
- **Vitamin D at OrganizedWisdom™**
This vitamin D resource page offers vitamin D information and other links that can raise awareness about this nutrient.

- [2013 Vitamin D Webinar Series | DiaSorin](#)

This resource provides a schedule of 2013 vitamin

D webinars conducted by experts.

Presentations and Lectures

Get the lowdown on vitamin D benefits and vitamin D deficiency from the experts themselves. This section provides resources from lectures and presentations on vitamin D held in recent years.

- [The Vitamin D Pandemic and its Health Consequences](#)

This lecture is presented by Dr. Michael Holick, PhD, MD, professor of medicine, physiology, and biophysics, and director of the General Clinical Research Center at Boston University Medical Center.

- [Vitamin D for Public Health – Integrating Sunshine, Supplements and Measurement for Optimal Health](#)

The University of California, San Diego School of Medicine and GrassrootsHealth held this seminar in December 2014. View presentations from vitamin D scientists from around the world.

- [Prospects for Vitamin D Nutrition by Dr. Reinhold Vieth](#)

This resource provides Dr. Vieth's lecture on vitamin D nutrition, as well as presentations by other experts on related health topics.

- **Vitamin D Scientists'**

- **Call to Action Statement**

- Created by scientists from GrassrootsHealth, this statement discusses the compelling link between vitamin D and cancer, along with information on oral vitamin D supplements.

- **Vitamin D and Prevention of Chronic Diseases**

- Here's a lecture by vitamin D expert, Dr. Michael Holick, PhD, MD,

discussing the relation of vitamin D to bone and muscle health and the prevention of autoimmune and chronic diseases.

- **Disease Incidence Prevention by Serum 25 (OH) D Level**

- This chart shows the incidence levels on certain diseases based on an individual's serum levels.

Useful Books

In this section, I have provided a list of books and reports that will help educate you about latest findings about vitamin D nutrition – specifically about vitamin D deficiency prevention and sunlight exposure.

- ***Dark Deception: Discover the Truth about the Benefits of Sunlight Exposure***

- By Joseph Mercola with Jeffry Herman

Enlighten yourself on the growing epidemic that is vitamin D deficiency, as well as methods that will help optimize your vitamin D levels.

- ***Solar Power for Optimal Health***

By Marc Sorenson,
foreword by William B.
Grant

How will vitamin D and
sunlight save your life?

This book will provide
you with the answer, plus
other information on
vitamin D's role in
disease prevention.

- ***The Vitamin D Cure***

By James E. Dowd and
Diane Stafford, John
Wiley & Sons

This phenomenal book
discusses breakthrough
research about the
causes of vitamin D
deficiency, and reveals a
five-step program that
can aid in disease
prevention and your
overall health.

- ***Naked at Noon:
Understanding Sunlight
and Vitamin D***

By Krispin Sullivan

(Available through [her website](#))

Nutritionist Krispin
Sullivan discusses
sunlight exposure as a
means to optimize
vitamin D levels, and
other important details
that even medical
practitioners are yet to
know.

- ***Sunlight Robbery***

By Oliver Gillie (Available
through [his website](#))

How is sunlight exposure
good for you when the
media and government
promote it as unsafe and
cancer-inducing?

Sunlight Robbery will
clear up misconceptions
about sun exposure and
provide you strategies
that will help you
address low vitamin D
levels.

- ***Scotland's Health Deficit:
An Explanation and a
Plan***

By Oliver Gillie

This report by Oliver Gillie tackles the vitamin D deficiency problem in Scotland and how this problem is given very little attention by the government.

- ***The UV Advantage***
By Michael F. Holick and

Mark Jenkins

Too much sunshine may cause health issues, but a lack of it puts you at risk for vitamin D deficiency. This book provides the benefits of exposure to sunlight – despite mainstream myths and misconceptions.