

Health Tips From the Godfather of Vitamin D Research

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STORY AT-A-GLANCE

- › Bruce Hollis, Ph.D., professor of pediatrics at the Medical University of South Carolina, discusses vitamin D's anti-inflammatory potential, which makes it useful for supporting optimal health throughout your lifespan
- › A vitamin D-focused anti-inflammatory regimen may successfully manage cluster headaches
- › The regimen involves a high loading dose of 600,000 to 800,000 IU of vitamin D spread over six to 12 days, followed by 10,000 IU a day of vitamin D3, adjusted as needed to keep vitamin D levels near 80 ng/mL
- › GrassrootsHealth recommends a vitamin D level of 40 to 60 ng/ml for optimal health and disease prevention
- › Higher levels of 60 to 80 ng/ml may be even better – and in some cases a level upward of 100 ng/mL appears safe and beneficial, especially for cancer, cluster headaches and autoimmune conditions
- › It's best to optimize your vitamin D levels via sensible sun exposure, but if this isn't an option for you then daily vitamin D3 supplementation may be necessary

Bruce Hollis, Ph.D., professor of pediatrics at the Medical University of South Carolina, has published more than 200 papers on vitamin D. In their interview, above, Craig Stewart refers to Hollis as "one of the godfathers of vitamin D research"¹ – and he's not

wrong. Many are aware that vitamin D plays a role in numerous diseases, from acute respiratory tract infections to cancer.²

Less known is vitamin D's anti-inflammatory potential, which makes it useful for supporting optimal health throughout your lifespan. Stewart is using a vitamin D-focused anti-inflammatory regimen to successfully manage his cluster headaches. It involves a high loading dose of 600,000 to 800,000 IU of vitamin D spread over six to 12 days, followed by 10,000 IU a day of vitamin D3, adjusted as needed to keep vitamin D levels near 80 ng/mL (200 nmol/l).³

"It is my hope sufferers will watch this and realize it is a safe and effective treatment option and everyone realizes the importance of maintaining physiological levels of Vitamin D," Stewart said.⁴ Indeed, if you're not yet aware of your vitamin D levels – and optimizing them to health-protective levels – this video is for you.

How High Should Your Vitamin D Levels Be?

Hollis is an adviser to GrassrootsHealth Nutrient Research Institute, a nonprofit public health research organization dedicated to moving public health messages regarding vitamin D from research into practice.

GrassrootsHealth recommends a vitamin D level of 40 to 60 ng/ml for optimal health and disease prevention. However, higher levels of 60 to 80 ng/ml may be even better – and in some cases a level upward of 100 ng/mL appears safe and beneficial, especially **for cancer**. According to Hollis:⁵

"The 40 to 60 ng/ml (100-150 nmol/l) of 25(OH)D is basically based on normal physiology, OK? So prevention of cancer ... mitigating the effect of covid, what have you ... it's not pharmacology. What I mean by that is if people have ... cluster headaches or they have active cancer, that's not normal physiology. That's pharmacology.

So under those conditions the need to boost vitamin D higher is probably therapeutic. Now for a normal person – somebody who doesn't have any

pathologies – 40 to 60 to 70 nanograms is probably a good place to be. But for people who have afflictions – autoimmune afflictions, headaches, active cancer like prostate cancer – then that's a different ball game, and then you need to maintain much higher levels."

Why Don't Health Agencies Recommend More Vitamin D?

In New Zealand and many other countries, a vitamin D level of 20 ng/mL to 40 ng/mL (50-100 nmol/l) is considered optimal, while levels as low as 10 ng/mL (25 nmol/l) are only described as a "mild deficiency."⁶ Research shows much higher levels are needed to reap all of vitamin D's therapeutic potential.

For instance, a 53% increase in COVID-19 infection rates was found among people with vitamin D levels below 20 ng/mL compared to those with levels of 55 ng/ml (138 nmol/l) or higher.^{7, 8} So why aren't more governments worldwide advocating for people to boost their vitamin D? Hollis explained, "The government in New Zealand, Europe, where ever you are, the official bodies do not recognize that vitamin D has any function beyond skeletal effects."⁹

For instance, Ministry of Health of New Zealand states only, "Adults that don't get enough vitamin D can develop bone weakness and increased risk of fracture"¹⁰ – ignoring the many other health detriments of vitamin D deficiency. "They don't believe it has any effect on cancer. They don't believe it has any effect on autoimmune [conditions]. They don't believe that it has any effect on your cluster headaches ... they call that anecdotal," Hollis said.¹¹

Calculating the Correct Vitamin D3 Dose

It's best to optimize your vitamin D levels via sensible sun exposure, but if this isn't an option for you then daily vitamin D3 supplementation may be necessary. There is no one-size-fits-all dose when it comes to optimizing vitamin D levels, however. Many factors influence the blood level of vitamin D that you'll attain from supplementing.

Body weight is one factor. "Does the vitamin D get sequestered into the fat tissue so it's not available?" Hollis said. "Nobody knows. But what we do know is people who are heavier, who have greater body mass indexes (BMIs), have to push the intake levels higher to achieve a given level of 25(OH)D in their blood."¹²

Vitamin D supplementation must also be balanced with other nutrients, namely vitamin K2 (to avoid complications associated with excessive calcification in your arteries), calcium and magnesium. Regarding magnesium, Hollis notes that blood tests to measure it are "next to useless." Since you cannot accurately test for it, he recommends taking 400 milligrams of magnesium daily.

When he started doing this, it boosted the efficiency of the vitamin D he was taking. "Basically, taking the same amount of vitamin D, it [magnesium] pushed my levels about 25 nanograms higher, which is substantial."¹³ For the average person seeking to optimize their health with no underlying conditions, Hollis recommends a minimum daily vitamin D intake of 5,000 IU if you don't have access to sunshine.

Personally, I haven't taken any vitamin D for 15 years. I walk nearly every day at solar noon on my local beach. Additionally, every week I remove 60 ml of my blood and since I have an IV in I take 3 grams of magnesium chloride IV. Magnesium is a cofactor that helps your body make vitamin D. This is why I believe I was able to reach 100 ng/ml (250 nmol/l) of vitamin D this year. That was in August and in December it dropped to 68 ng/ml.

Vitamin D for Psoriasis, Burn Recovery

Daily vitamin D3 supplementation, without any other therapy, was also effective for psoriasis, a 2022 study published in *Clinical Immunology Communications* revealed.¹⁴ Six cases were followed, involving daily vitamin D3 doses of 30,000 IU to 60,000 IU over a period of two to six months, followed by lower daily maintenance doses.

Two patients with severe vitamin D deficiency were also given a one-time loading dose of 600,000 IU. The patients were monitored to prevent hypercalcemia, and within two to

six months, "complete control of psoriasis was observed."

Hollis wasn't surprised by the results. "I did this for my sister 10 years ago," he said. "She suffered with ectopic eczema, psoriasis. She couldn't wear shorts. She had scars on her legs. I said, 'Do this,' [take vitamin D], and she hasn't had a problem in the last 10 years."¹⁵ Why isn't this standard treatment? Hollis continued:¹⁶

"If you send something like this to the New England Journal [of Medicine] or Lancet or JAMA, they send it right back to you without a review. They don't want to know this information. They would say it's anecdotal, it's not real. You need to do a randomized, controlled trial. Now think about this ... who's going to pay for that?"

There's no money. It's not a drug. There's no money to be made. Those trials are never going to be done, and so you will have to settle for these types of [observational] studies.... The drug companies don't want you to know this. I mean, my sister ... went through every cream and every steroid treatment ... but you never saw treatment results like this."

Hollis sent the psoriasis/vitamin D study to his physician and said, "Physicians need to have guts. If you have patients like this, you've got to step up and do this stuff."¹⁷ Thermal injury and critical illness also influence vitamin D levels, with many such patients being found vitamin D deficient.¹⁸

Stewart had a significant burn injury to his face and found his vitamin D levels, which were 96 ng/mL (240 nmol/l) a week before the accident, had fallen to the mid 50s two weeks after. "In trauma, vitamin D levels fall rapidly," Hollis said. "There's all sorts of reasons why that happens, fluid loss ... tissue injury, but it definitely is a real phenomenon."¹⁹

10% of Human Genes Respond to Vitamin D

To get an idea of the magnitude of vitamin D's importance, roughly 10% of our genes respond to the active form.

From ancient times, when people around the world had reverence for the sun, to the use of solariums to treat illness in the early 20th century, Stewart noted, "We've come full circle now to understand the biology, the complexity of this process by which the body grabs hold of that molecule. It's made in the skin and takes it through ... various metabolic processes to arrive at a point where it's influencing DNA."²⁰

In a study published in Scientific Reports,²¹ Michael Holick and colleagues found that varying doses of vitamin D3 led to broad changes in gene expression. Specifically:²²

- 600 IU/day – Upregulated 86 genes and downregulated 76 genes
- 4,000 IU/day – Upregulated 188 genes and downregulated 132 genes
- 10,000 IU/day – Upregulated 800 genes and downregulated 489 genes

Hollis explained the significance, considering most physicians would only recommend the lower end – 600 IU a day, or less:²³

"So 600 IUs per day is what any physician – if you go in and say I want to take vitamin D – and/or government organizations, they're going to say, 'Well, that's what you need.' Then the next one is 4,000, and they're going to say well that amount you ... could become toxic and then 10,000 a day, they're going to go crazy.

They're going to tell you you can't take that ... but the truth of the matter is you look at these genes upregulated, downregulated ... you can determine which gene clusters for a given process are affected by this ...

[At] 10,000 units a day, where your blood levels would be probably 60 to 80 ng/mL, which are certainly normal human physiology for sun-enriched environments – not how we live today – but look at the number of upregulated and downregulated genes compared to ...what they are at 600 IU.

To me that that indicates the top one [600 IU] would indicate the body's functioning in a deficient fashion. These genes aren't being utilized, whatever they're doing, whether they're protecting you against autoimmune attack or

they're protecting you against actual immune function ... preventing hyper immune attacks during COVID, whatever."

Have You Tested Your Vitamin D Levels?

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. 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.

As mentioned, data from GrassrootsHealth's D*Action studies suggest the optimal level for health and disease prevention is between 60 ng/mL and 80 ng/mL, with higher levels recommend for certain conditions like cancer and autoimmune disease. The cutoff for sufficiency appears to be around 40 ng/mL. In Europe, the measurements you're looking for are 150 to 200 nmol/L and 100 nmol/L respectively.

I strongly recommend getting your vitamin D from proper sun exposure if at all possible. In addition to raising vitamin D, sunlight provides numerous other benefits, the most important of which is the creation of melatonin in your mitochondria from the near infrared wavelengths. If you're not able to get out in the sun regularly, however, vitamin D supplementation may be necessary.

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