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How Much Vitamin D Should You Take to Lower Your Risk of COVID-19 Symptoms

By: Karen Asp | June 24, 2020

If there's one star that emerges from this pandemic, it might not just be Dr. Anthony Fauci but vitamin D. This nutrient has been making headlines during the COVID-19 crisis, namely because emerging research shows a link between vitamin D deficiency and the worst of COVID-19 cases. That's spurred the public to start taking huge doses of D supplements, but doctors warn that this can cause other health complications from nausea to kidney failure. While vitamin D can never replace your need to practice physical distancing and wear a mask, we found out:

How much D is the right amount, and can you get it from sunshine, or do you need a daily supplement? Here is the scoop on your D needs.

Vitamin D and the Immunity, COVID-19 Connection

Vitamin D is making headlines because your body needs it and can't get enough of it on a normal diet. "Vitamin D is a hormone-like, fat-soluble vitamin responsible for regulating your body's uptake and use of calcium, promoting bone mineralization, and supporting a healthy immune function," says Whitney English, M.S., R.D.N., dietitian, and NASM certified personal trainer in Los Angeles.

While calcium absorption is one of its biggest roles, so, too, is the role it plays in the immune system, and for that, vitamin D does two things, adds **Elroy Vojdani, M.D., functional medicine pioneer and founder of Regenera Medical in Los Angeles.**

First, it boosts the "innate immune system," which is your body's built-in primary defense against bacterial infections and viruses. Secondly, it enhances the function of dendritic cells, which chomp up bacteria and viruses and present them to be added to the immune system in a process called adaptive immune function, which creates antibodies to new threats.



“Overall, vitamin D, which is known as a signaling hormone, will boost immune function in the first line of defense and then balance the immune system overall,” Vojdani says. This is one reason people with optimal vitamin D status have fewer viral and bacterial infections, English adds. It's also why those with deficiency end up in the worst position when a new virus such as COVID-19 comes along since their immune systems go into overdrive trying to fight it off.

The 3 Sources of Vitamin D: Direct Sunlight, Food, and Supplements

Humans are designed to produce vitamin D in their bodies by absorbing sunlight. Yet whether you should seek to get unprotected sun exposure is a controversial and complicated topic, says Vojdani, since different skin tones need different amounts of sun to get enough D, and we know that prolonged exposure can lead to skin cancer.

The Institute of Medicine recommends that adults up to 70 years of age get 600 IU and older people get 800 IU. However, watch out for supplements that deliver multiples of that amount since taking too much D can cause kidney stones and other toxicity in the body.

And while you can get vitamin D from food, the amount in most food is inadequate to make up the recommended dose. “Very few foods naturally contain vitamin D,” English says. With the exception of UV-treated mushrooms and fortified plant milk, vitamin D is found in egg yolks, cheese, cod liver oil, beef liver, and fatty fish like tuna, salmon, sardines, herring, and mackerel. Yet the amount of vitamin D in these foods is quite small, and of course, if you're following a plant-based diet, these foods won't be on your menu.

That leaves supplements as the best viable option. “Vitamin D supplements are just as effective at raising blood levels of active vitamin D as food or sunshine,” English says.

The Relationship Between Vitamin D and COVID-19

Given vitamin D's impact on the immune system, it makes sense that it's snagged headlines through this pandemic. “Vitamin D represents an inexpensive and potentially powerful way to help balance the immune system and boost its function, and it has particular application with COVID-19,” Vojdani says.

The reasons for the confusion lies in a fact that a lack of D causes the body to go into what's known as immunity overdrive: By analyzing publicly available patient data from around the globe, Vadim Backman and his team at Northwestern discovered a correlation between vitamin D levels and cytokine storm—the hyperinflammatory condition caused by an overactive immune system that causes severe damage to the lungs and respiratory distress that can lead to death.

Observational studies seem to agree that there's a risk if you have a deficiency. “Patients with vitamin D deficiency are more likely to suffer from serious cases of the illness,” English says, adding that this doesn't mean that taking supplementary vitamin D when your levels are optimal will result in any added benefit. Too much vitamin D can lead to toxicity, which at the extreme can lead to calcification of the heart and blood vessels.



How to Get the Right Amount of Vitamin D You Need

Figuring out how to tackle your vitamin D needs starts with knowing what your vitamin D status is. That's why you should get your vitamin D levels checked (it's a simple blood test) to determine if you're getting enough D from sunlight and your diet, English says.

While there's controversy about optimal vitamin D blood levels, Vojdani believes the general population should be somewhere between 40 and 60 nanograms per milliliter (ng/mL). Somebody with an autoimmune disease or an individual who might have problems defending against viruses should shoot for 60 to 80 ng/mL, but anything above 100 or 120 ng/mL is too high. If you're low, your doctor will most likely recommend a supplement and then recheck your levels in a few weeks.

Sunlight and Vitamin D Deficiency

Because vitamin D deficiency is so widespread, even in sunny spots like southern California it means low levels are not due to lack of sunlight, Vojdani says it's reasonable to supplement, especially during the COVID-19 pandemic. "As we make our way to the other end of this pandemic, vitamin D3 should maintain itself as a staple supplementation for the majority of people because I don't think this is our last rodeo with a viral pandemic," he says. English recommends choosing a supplement with a dosage in line with the RDA which is 600 to 800 IU per day and avoiding high-dose supplements of over 2000 IU. Choose D3 over D2 "Most studies show D3 is more effective at raising blood levels of calcifediol, the active form of vitamin D," Vojdani says. So look for vegan-friendly D3 derived from lichen, a type of microorganism, versus sheepskin.

So what about sunlight? Excessive sun exposure can up your risk of skin cancer, and while these experts recommend supplementation over sunlight, you'll have to weigh your risks. If you're light-skinned and have a significant family history of skin cancer, or have already had it once, you should avoid sun exposure, Vojdani says. For people with darker skin or who have a low risk for skin cancer—that doesn't mean sunning yourself is risk-free. Although obtaining vitamin D through sunshine is how the body is designed, "humans are different than they used to be," he adds. People are living longer, and because skin cancer is a cumulative risk, the more you are exposed, the more your lifetime risk goes up.

No matter how you get Vitamin D, just remember that it isn't a silver bullet against experiencing complications from the COVID-19 virus. "The best way to avoid COVID-19 is by following safety guidelines, especially by wearing protective face coverings and social distancing," English says.

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