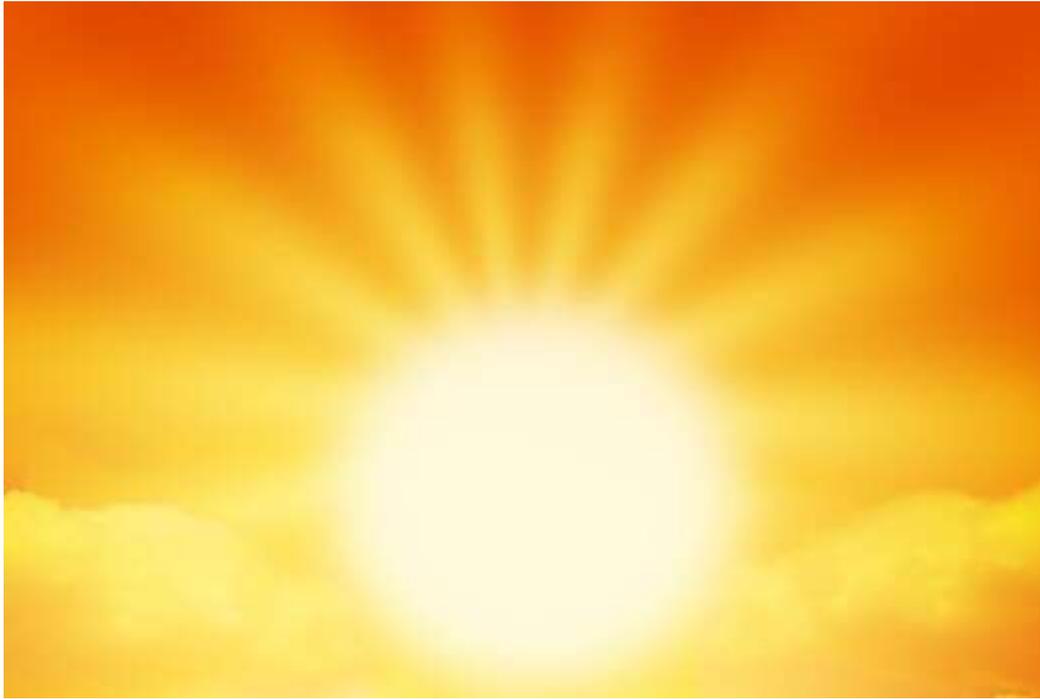


## More Vitamin D, Lower Risk of Severe COVID-19?

*By Kathleen Doherty, Webmd Health News*



Could having a healthy blood level of vitamin D help you avoid the intensive care unit and death if you become infected with COVID-19?

Several groups of researchers from different countries have found that the sickest patients often have the lowest levels of vitamin D, and that countries with higher death rates had larger numbers of people with vitamin D deficiency than countries with lower death rates.

Experts say healthy blood levels of vitamin D may give people with COVID-19 a survival advantage by helping them avoid cytokine storm, when the immune system overreacts and attacks your body's own cells and tissues.

Jackie Wilcox and her family are taking vitamin D supplements out of an abundance of caution.

The early research is not yet peer-reviewed, and other experts say scientific proof is lacking that vitamin D could prevent COVID-19 or make the infection milder.

Researchers are trying to figure that out -- at least 8 studies are listed on [clinicaltrials.gov](https://clinicaltrials.gov) to evaluate vitamin D's role in preventing or easing COVID-19.

In the meantime, some people say there's no harm in taking the vitamin as a precaution.

"I feel like if there is anything we can be doing at the moment to support our body, I am totally on board," says Jackie Wilcox, 38, of Newburyport, MA, near Boston. Her family, including her husband and two children, are taking daily supplements.

## **How Did Researchers Start Looking at Vitamin D?**

Vitamin D, produced when the sun hits your skin, has many other benefits, such as bone health. It's also found in some foods and supplements.

Among recent studies finding a link between vitamin D levels and how severe COVID-19 is:

- Researchers from the U.K. evaluated the average vitamin D levels and the number of COVID-19 cases, as well as the death rates, across 20 European countries. Countries with low average vitamin D blood levels in the population had higher numbers of COVID-19 cases and deaths, says study leader Petre Cristian Ilie, MD, PhD, research and innovation director at the Queen Elizabeth Hospital Foundation Trust in King's Lynn, U.K.
- At Northwestern University, researchers used modeling to estimate that 17% of those deficient in vitamin D would develop a severe COVID-19 infection, but only about 14% of those with healthy vitamin D levels. They estimated the association between vitamin D and severe COVID-19 based on a potential link between vitamin D deficiency and C-reactive proteins, or CRP, a surrogate marker for severe COVID-19
- In a small study, Louisiana and Texas researchers evaluated 20 patients hospitalized with COVID-19, finding that 11 of the patients admitted to the ICU were vitamin D deficient, but only four of those not needing the ICU.
- Indonesian researchers evaluated 780 documented cases of COVID-19 and found that most patients who died had vitamin D levels below normal.
- Irish researchers analyzed European population studies and vitamin D levels, finding countries with high rates of vitamin D deficiency also had higher death rates from COVID-19. Those researchers asked the government to raise the vitamin D recommendations.

## **Pre-COVID-19 Research on Vitamin D's Benefits**

While the recent research on vitamin D and COVID-19 is just starting, other research has found that vitamin D supplements can help reduce the risk of respiratory infection. And researchers who looked back at the 1918-1919 influenza pandemic found that patients with healthy vitamin D blood levels were less likely to die.

The research linking vitamin D levels and COVID-19's cytokine storm is also just starting, but not surprising, says Bart Roep, PhD, chair of the department of diabetes immunology at City of Hope, a cancer center in Duarte, CA. Vitamin D, he says, is "the negotiator" because "it doesn't suppress the immune system, it modulates it. Vitamin D makes the immune cells less inflammatory."

While research finds that low vitamin D may affect how severe COVID-19 is, it's not yet known if restoring vitamin D to normal levels would help as a treatment. Nor can anyone say for sure that having a healthy vitamin D level will help you avoid the virus.

A researcher from the University of Southeastern Philippines evaluated the vitamin D blood levels of 212 people diagnosed with COVID-19 and found the blood level of vitamin D was lowest in those in critical condition and highest in those with a milder infection. The conclusion of his paper, not peer-reviewed, is that supplements "could possibly improve clinical outcomes of patients infected with COVID-19."

"We already know we need it for bone health," says Ilie, the U.K. researcher. "Waiting for the evidence on vitamin D and COVID-19 -- how do I say this -- the evidence may come too late to help."

But not everyone agrees that vitamin D may be useful in taming COVID-19. Researchers from the Center for Evidence-Based Medicine posted a "rapid review" of the evidence on May 1, concluding "There was no evidence related to vitamin D deficiency predisposing to COVID-19, nor were there studies of supplementation for preventing or treating COVID-19."

The researchers also say that while there is "overlap" between some groups at risk of being low in vitamin D and groups at high risk of getting COVID-19, including older adults, people of color, and those with chronic diseases, those associations are not proven.

In a recent peer-reviewed study, researchers who evaluated more than 348,000 people, including 449 with confirmed COVID-19, found no link between vitamin D levels and risk of infection, nor a link that might explain ethnic differences in developing the infection.

## **More about Vitamin D**

A simple blood test can detect whether your levels of vitamin D are healthy or deficient. A level of 20 nanograms per milliliter or over is needed to maintain bone health; under 12 nanograms/ml is termed deficient.

Vitamin D also helps modulate cell growth and reduce inflammation. Some research suggests it could help prevent and treat diabetes, high blood pressure, and blood sugar problems, but the National Institutes of Health views that research as not clear-cut.

To maintain a healthy blood level of vitamin D, the Institute of Medicine recommends children under age 1 year take in 400 international units (IUs) of vitamin D daily, and people ages 1 year to 70 years take in 600 IUs. People over age 70 should get 800 IUs a day.

Vitamin D is naturally present in few foods, but it's added to others and is also available as a supplement. Three ounces of cooked salmon has 570 IUs, while 3 ounces of rainbow trout has 645. A cup of 2% vitamin D-fortified milk has 120.

But during the pandemic, it may be wise to take more, says JoAnn Manson, MD, DrPH, a professor of medicine at Harvard Medical School and chief of the Division of Preventive Medicine at Brigham and Women's Hospital. "The recommended dietary allowance of vitamin D is 600-800 IU/daily, but during this period, a multivitamin or supplement containing 1,000-2,000 IU/daily of vitamin D would be reasonable," she told Medscape.

Vitamin D toxicity can occur with doses of 50,000 to 60,000 IUs daily, experts say. Too much can lead to a buildup of calcium in the blood, along with vomiting, weakness, frequent urination, and an irregular heartbeat.

Manson also told Medscape that she and her colleagues are planning to launch a clinical trial to see if vitamin D supplements could reduce the risk of getting infected or make the infection less severe.

- Cytokines are proteins normally released by the immune system but, in some people, this reaction goes into overdrive, causing dangerous organ inflammation.
- Cytokine storm is being increasingly reported in COVID-19 patients several weeks after the initial infection and is linked to many deaths.
- Cytokine storm is similar to the immune response seen in people with Still's disease, a type of arthritis.
- Several anti-inflammatory drugs used to treat arthritis are being investigated as possible treatments for COVID-19.