



2019 Novel Coronavirus [COVID-19]

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Vitamin D and COVID-19

Recommendation

There are insufficient data to recommend either for or against the use of vitamin D for the prevention or treatment of COVID-19.

General Information about Vitamin D

Vitamin D is critical for bone and mineral metabolism. Vitamin D is also synthesized by immune system white blood cells and has the potential to modulate immune responses.¹

Vitamin D deficiency (defined as a serum concentration of 25-hydroxyvitamin D ≤ 20 ng/mL) is common in the United States, particularly among persons of Hispanic ethnicity and Black race. These groups are overrepresented among cases of COVID-19 in the United States.² Vitamin D deficiency is also more common in older patients and patients with obesity and hypertension; all additional factors associated with worse outcomes in patients with COVID-19.

In observational studies, low vitamin D levels have been associated with an increased risk of community-acquired pneumonia in older adults³ and children.⁴ Vitamin D supplements may increase the level and activity of white blood cells called T regulatory cells in healthy individuals and patients with autoimmune diseases.⁵ In a large analysis of several randomized clinical trials, vitamin D supplementation was shown to protect against acute respiratory tract infection.⁶ However, in two randomized, double-blind, placebo-controlled clinical trials, administering high doses of vitamin D to critically ill patients with vitamin D deficiency (but not COVID-19) did not reduce the length of hospital stay or the mortality rate (number of people who died) when compared to placebo.^{7,8}

High levels of vitamin D may cause dangerously high levels of calcium in the body (hypercalcemia) and accumulation of calcium in the kidneys, which can lead to kidney stones and damage (nephrocalcinosis).⁹



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The role of vitamin D supplementation in the prevention or treatment of COVID-19 is presently not known. The rationale for using vitamin D is based largely on its general immune system modulating effects, which could potentially protect against COVID-19 infection and/or decrease the severity of illness. Ongoing observational studies are evaluating the role of vitamin D in preventing and treating COVID-19. Also, investigational trials on the use of vitamin D in people with COVID-19 are being conducted. These trials are evaluating vitamin D alone, or in combination with other agents, to participants with and without vitamin D deficiency. The latest information on these clinical trials can be found on ClinicalTrials.gov.

If you are considering taking vitamin D supplement for general immune system health, the recommended daily dose is vitamin D3 (cholecalciferol), 600-800 international units (IU), taken once daily.

A common approach is to check your vitamin D levels first to determine if you need to take a supplement; this requires a blood test ordered by your healthcare provider.

Vitamin D is naturally available in many healthy food choices, and is synthesized by your body when your skin is exposed to sunlight.

Always talk to your healthcare provider first before starting vitamin D or any other over-the-counter supplements.



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References

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For current COVID-19 information visit <https://phd3.idaho.gov/coronavirus/>. The COVID-19 Hotline is available Monday-Friday 8:00 AM-5:00 PM (208) 455-5411

This document was created 08/13/2020 using information and guidance available to-date and is subject to change per emerging guidance.