



# *Vitamin D deficiency may raise risk of getting COVID-19, study finds*

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## UChicago Medicine researchers find association between vitamin deficiency, risk of infection

In a retrospective study of patients tested for COVID-19, researchers at the University of Chicago Medicine found an association between vitamin D deficiency and the likelihood of becoming infected with the coronavirus.

“Vitamin D is important to the function of the immune system and vitamin D supplements have previously been shown to lower the risk of viral respiratory tract infections,” said David Meltzer, Chief of Hospital Medicine at UChicago Medicine and lead author of the study. “Our statistical analysis suggests this may be true for the COVID-19 infection.”

The research team looked at 489 patients at UChicago Medicine (<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2770157>) whose vitamin D level had been measured within a year before being tested for COVID-19. Patients who had vitamin D deficiency (defined as less than 20 nanograms per milliliter of blood) that was not treated were almost twice as likely to test positive for COVID-19 compared to patients who had sufficient levels of the vitamin.

It's important to note that the study only found the two conditions were frequently seen together; it does not prove causation. Meltzer and colleagues are currently planning further clinical trials.

Half of Americans are thought to be deficient in vitamin D, with much higher rates seen in African Americans, Hispanics and individuals living in areas like Chicago where it is difficult to get enough sun exposure in winter. (However, research has also shown (<https://www.nejm.org/doi/full/10.1056/NEJMoa1306357>) that some kinds of vitamin D tests don't detect the form of vitamin D that is present in a majority of African Americans—which means those tests might falsely diagnose (<https://www.npr.org/sections/health-shots/2013/11/20/246393329/how-a-vitamin-d-test-misdiagnosed-african-americans>) vitamin D deficiencies in those individuals. This particular study accepted either kind of test as criteria.)

COVID-19 is also more prevalent among African American individuals, older adults, nursing home residents and health care workers—populations who all have increased risk of vitamin D deficiency.

“Understanding whether treating vitamin D deficiency changes COVID-19 risk could be of great importance locally, nationally and globally,” said Meltzer, the Fanny L. Pritzker Professor of Medicine. “Vitamin D is inexpensive, generally very safe to take, and can be widely scaled.”

Meltzer and his team emphasize the importance of experimental studies to determine whether vitamin D supplementation can reduce the risk, and potentially severity, of COVID-19. They also highlight the need for studies of what strategies for vitamin D supplementation may be most appropriate in specific populations. They have initiated several clinical trials at UChicago Medicine and with partners locally.

*NOTE: Patients should contact a physician to have their vitamin D levels tested. Only take the dose recommended by your doctor.*

*Citation: “Association of Vitamin D Status and Other Clinical Characteristics With COVID-19 Test Results,” Meltzer et al., JAMA Network Open, Sept. 3, 2020.*

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*(<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2770157>)*

*Findings were previously reported on [medRxiv](https://www.medrxiv.org/content/10.1101/2020.05.08.20095893v1)*

*(<https://www.medrxiv.org/content/10.1101/2020.05.08.20095893v1>), a preprint server for the health sciences.*

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