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Low Vitamin D in COVID-19 Predicts ICU Admission, Poor Survival

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Having low serum vitamin D levels was an independent risk factor for having symptomatic COVID-19 with respiratory distress requiring admission to intensive care — as opposed to having mild COVID-19 — and for not surviving, in a new study from Italy.

"Our data give strong observational support to previous suggestions that reduced vitamin D levels may favor the appearance of severe respiratory dysfunction and increase the mortality risk in patients affected with COVID-19," the researchers report.

Luigi Gennari, MD, PhD, Department of Medicine, Surgery, and Neurosciences, University of Siena, Italy, presented these findings during the virtual [American Society of Bone and Mineral Research \(ASBMR\) 2020 annual meeting](#).

Gennari told *Medscape Medical News* that this analysis suggests determining vitamin D levels (25 hydroxyvitamin D) in people testing positive for SARS-Cov-2 infection might help predict their risk of severe disease.

However, further research is needed to explore whether vitamin D supplements could prevent the risk of respiratory failure in patients with SARS-Cov-2 infection, he stressed.

In the meantime, Gennari said: "I believe that, particularly in the winter season (when the solar ultraviolet-B (UVB) radiation exposure does not allow the skin to synthesize vitamin D in most countries), the use of vitamin D supplementation and correction of vitamin D deficiency might be of major relevance for the reduction of the clinical burden of the ongoing and future outbreaks of SARS-CoV-2 infection."

Invited to comment, David Meltzer, MD, PhD, chief of hospital medicine at University of Chicago Medicine, Illinois, who was not involved with the study, agrees.

"I think this body of work suggests that people should be taking supplements if they cannot increase sun exposure on a sustained basis," Meltzer said. "The abstract supports multiple prior findings that suggest that higher vitamin D levels are associated with improved outcomes."

And JoAnn E. Manson, MD, DrPH, of Harvard Medical School and Brigham and Women's Hospital, who was not involved with the research but has spoken about the topic in a [video report](#) for *Medscape*, said: "We know from several studies that a low vitamin D level is associated with a higher risk of having COVID-19 and severe illness, but correlation does not prove causation."

"I think that improving vitamin D status is a promising way to reduce the risk of severe illness, but we need randomized controlled trials to prove cause and effect," she told *Medscape Medical News*.

103 Patients With Severe COVID-19, 52 With Mild COVID-19, 206 Controls

Gennari said several lines of evidence suggest that vitamin D deficiency might be a risk factor for COVID-19 severity.

Countries with lower average levels of vitamin D or lower UVB radiation exposure have higher COVID-19 mortality, and "demographic groups known to be at higher risk of vitamin D deficiency (such as black individuals, the elderly, nursing home residents, and those with obesity and diabetes) are at high risk of COVID-19 hospitalization/mortality," he noted.

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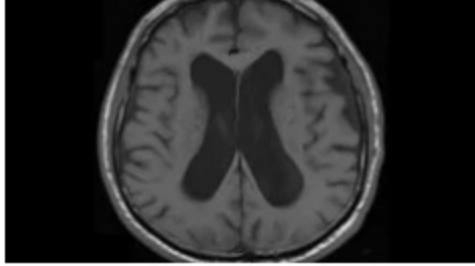
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