

# Vitamin D may not provide protection from COVID-19 susceptibility or disease severity

June 1 2021

---



Credit: Pixabay/CC0 Public Domain

Observational studies have suggested that increased vitamin D levels may protect against COVID-19. However, these studies were inconclusive and possibly subject to confounding. A study published in *PLOS Medicine* by Guillaume Butler-Laporte and Tomoko Nakanishi at McGill University in Quebec, Canada, and colleagues suggests that

genetic evidence does not support vitamin D as a protective measure against COVID-19.

The ability of [vitamin](#) D to protect against severe COVID-19 illness is of great interest to public health experts, but has limited supporting evidence. To assess the relationship between vitamin D levels and COVID-19 susceptibility and severity, researchers conducted a Mendelian randomization study using genetic variants strongly associated with increased vitamin D levels. The authors analyzed genetic variants of 4,134 individuals with COVID-19, and 1,284,876 without COVID-19, from 11 countries to determine whether genetic predisposition for higher vitamin D levels were associated with less-severe disease outcomes in people with COVID-19.

The results showed no evidence for an association between genetically predicted vitamin D levels and COVID-19 susceptibility, hospitalization, or severe disease, suggesting that raising circulating vitamin D levels through supplementation may not improve COVID-19 outcomes in the general population. However, the study had several important limitations, including that the research did not include individuals with vitamin D deficiency, and it remains possible that truly deficient patients may benefit from supplementation for COVID-19 related protection and outcomes. Additionally, the genetic variants were obtained only from individuals of European ancestry, so future studies will be needed to determine the relationship with COVID-19 outcomes in other populations.

According to the authors, "Vitamin D supplementation as a public health measure to improve outcomes is not supported by this study. Most importantly, our results suggest that investment in other therapeutic or preventative avenues should be prioritized for COVID-19 randomized clinical trials".

Dr. Butler-Laporte notes, "Most vitamin D studies are very difficult to interpret since they cannot adjust for the known risk factors for severe COVID-19 (e.g. older age, institutionalization, having chronic diseases) which are also predictors of low vitamin D. Therefore, the best way to answer the question of the effect of vitamin D would be through randomized trials, but these are complex and resource intensive, and take a long time during a pandemic. Mendelian randomization can provide more clear insights into the role of risk factors like vitamin D because they can decrease potential bias from associated risk factors like institutionalization and chronic disease. In the past Mendelian randomization has consistently predicted results of large, expensive, and timely vitamin D trials. Here, this method does not show clear evidence that vitamin D supplementation would have a large effect on COVID-19 outcomes."

**More information:** Butler-Laporte G, Nakanishi T, Mooser V, Morrison DR, Abdullah T, Adeleye O, et al. (2021) Vitamin D and COVID-19 susceptibility and severity in the COVID-19 Host Genetics Initiative: A Mendelian randomization study. *PLoS Med* 18(6): e1003605. [doi.org/10.1371/journal.pmed.1003605](https://doi.org/10.1371/journal.pmed.1003605)

Provided by Public Library of Science

Citation: Vitamin D may not provide protection from COVID-19 susceptibility or disease severity (2021, June 1) retrieved 6 May 2024 from <https://medicalxpress.com/news/2021-06-vitamin-d-covid-susceptibility-disease.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
---