

New studies show Vitamin D could be key factor in fighting Covid-19 infections

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Vitamin D could be a key factor in the fight against Covid-19. Three international studies have shown correlations, and a new US study shows correlation while explaining the medical reason for the correlations and a reason for the racial death differences and the surprising lack of symptoms in the homeless.

The US study, "Vitamin D Insufficiency is Prevalent in Severe COVID-19," was done in New Orleans. It showed the Vitamin D Insufficiency, VDI, prevalence in ICU patients was 84.6% vs. 57.1% in floor patients. Insufficiency is defined as < 30ng/mL. The study states that "VDI affects 80-90% of the African American population."



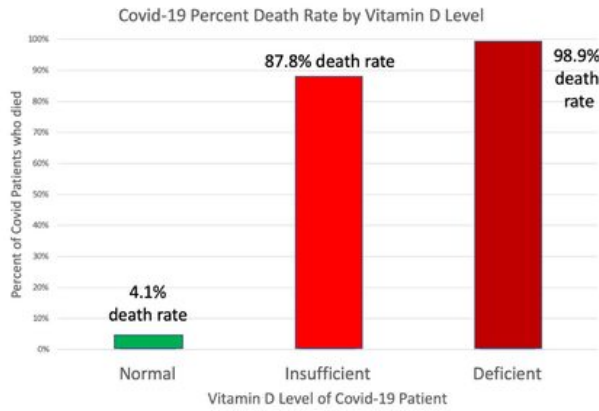
[The Indonesian Study](#) showed the largest death differences, the large number of deaths is likely due to only studying hospitalized patients, although that is not made explicitly clear in the article. They also found that,

"When controlling for age, sex, and comorbidity, Vitamin D status is strongly

Patterns of COVID-19 Mortality and Vitamin D: An Indonesian Study

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This is a retrospective cohort study which included two cohorts (active and expired) of 780 cases with laboratory-confirmed infection of SARS-CoV-2 in Indonesia



Data from Indonesian SSRN study, "Patterns of COVID-19 Mortality and Vitamin D: An Indonesian Study"

14% All Americans, 36% Black Americans, 30% Native Americans have deficient vitamin D levels, below 19.6 ng/mL. 50% of Americans have insufficient levels, below 29ng/mL

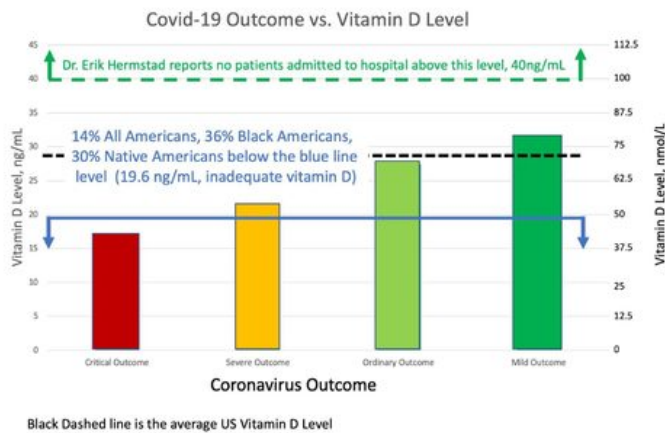
Patient numbers from study:

Vit. D level	Total #	# Expired	% Death Rate
Normal	388	16	4.1%
Insufficient	213	187	87.8%
Deficient	179	177	98.9%

A Philippines study, "Vitamin D Supplementation Could Possibly Improve Clinical Outcomes of Patients Infected with Coronavirus-2019 (COVID-2019)" by Mark Alipio, also showed correlation.

Vitamin D Supplementation Could Possibly Improve Clinical Outcomes of Patients Infected with Coronavirus-2019 (COVID-19)

papers.ssrn.com The rapid spread of COVID-19 in many areas of the world calls for preventive health measures. Although basic guidelines on infection control are suggested...

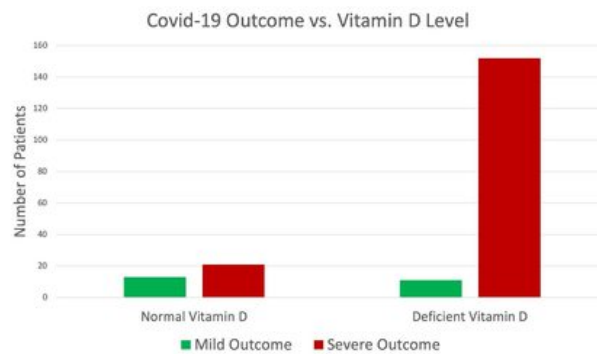


A Study in India, "Vitamin D Level of Mild and Severe Elderly Cases of COVID-19: A Preliminary Report" found similar correlations with vitamin D. "Majority (84.6%) of COVID-19 critical patients had Vitamin D insufficiency and 100% of critical patients less than 75 years old

had Vitamin D insufficiency." The article has many interesting graphs showing Vitamin D correlations plotted in various ways

Vitamin D Level of Mild and Severe Elderly Cases of COVID-19: A Preliminary Report [papers.ssrn.com]

[This preliminary report hypothesized that immune system's response to infections in the lung may play a role in 25\(OH\)D levels of elderly patients infected with...](#)



Data from "Vitamin D Level of Mild and Severe Elderly Cases of COVID-19: A Preliminary Report" by El James Glicio, Delhi, India

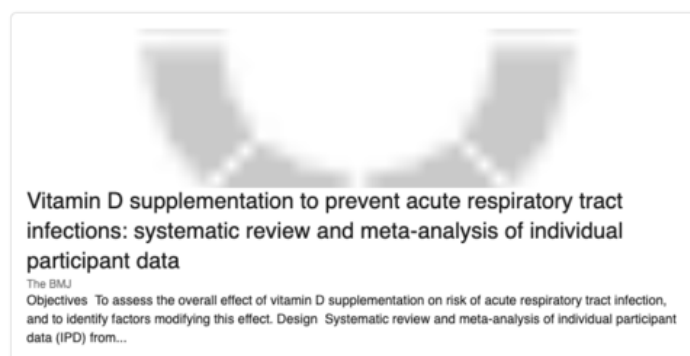
Deficient vitamin D was defined as < 30 ng/mL

40% of all Americans, 75% of African Americans are below 30 ng/mL

Dr. Erik Hermstad has found vitamin D correlations in his patients, he reports that he has not had to admit any patients to the hospital whose vitamin D levels were over 40ng/mL.

While these 4 studies are observational and correlational, [a large study of 11,000+ patients](#) was causal for vitamin D supplementation and other respiratory diseases. [The study found](#) that effective vitamin D supplementation was daily or weekly, but not bolus, dosing.

"Vitamin D supplementation reduced the risk of acute respiratory tract infection among all participants (adjusted odds ratio 0.88, 95% confidence interval 0.81 to 0.96; P for heterogeneity <0.001). In subgroup analysis, protective effects were seen in those receiving daily or weekly vitamin D without additional bolus doses (adjusted odds ratio 0.81, 0.72 to 0.91) but not in those receiving one or more bolus doses"



[This article](#) explains how vitamin D may protect against cytokine storm.



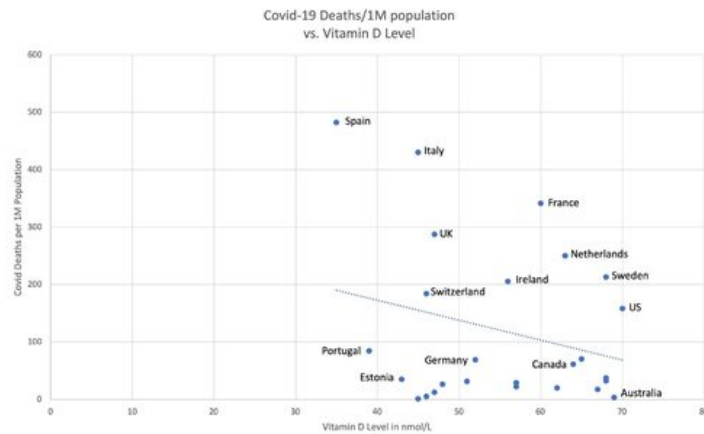
The US study goes into several medical reasons vitamin D may be helpful, but also explains the puzzling blood findings that have recently been found in Covid-19 patients,

"Studies have established that vitamin D metabolites are integral to vascular function and disease, including inflammation and thrombosis. For example, 1,25(OH)₂D exerts anticoagulant effects by upregulating the expression of thrombomodulin (an anticoagulant glycoprotein) and downregulating the expression of tissue factor (a critical coagulation factor) in monocytes and human aortic smooth muscle cells."

Vitamin D from the sun is available at most latitudes right now, although Anchorage, Alaska will not reach 50 degrees of sun angle (the angle required for your body to make vitamin D) until 25 May. **To make vitamin D, you need to be outside with minimal clothing around solar noon. Also, sunscreen blocks UVB, leading to decreased vitamin D synthesis. [Here is how to safely make vitamin D from the sun:](#)**



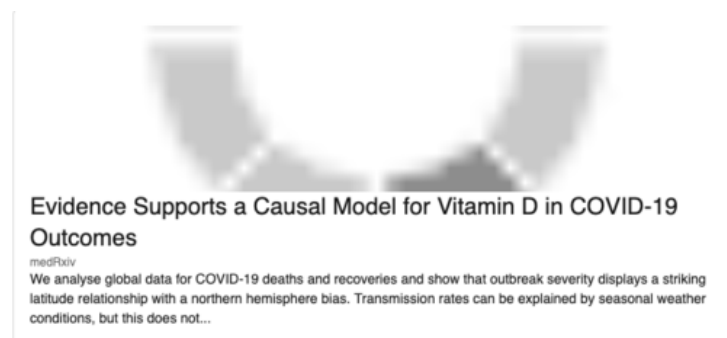
There are also interesting Country level correlations with vitamin D. **Spain and Italy have low levels of vitamin D despite being sunny locations. The Nordic countries supplement with cod liver oil and routinely eat fish, resulting in higher vitamin D levels than would be expected from the sun alone.** In France, the vitamin D levels are widely different in different parts of the country, levels in the North are 43nmol/L but are 80nmol/L in the South. **Most of France's Covid-19 deaths have been in Northern France.** I used the country wide average of 60 nmol/L for France in the following scatter plot.



A study looked at similar data plotted above but just for European countries and found, "The mean level of vitamin D (average 56mmol/L, STDEV 10.61) in each country was strongly associated with the number of cases/1M (mean 295.95, STDEV 298.73 $p=0.004$, respectively with the mortality/1M (mean 5.96, STDEV 15.13, $p < 0.00001$)."

A preprint article, ["Evidence Supports a Causal Model for Vitamin D in COVID-19 Outcomes"](#) used math and modeling to examine many factors associated with vitamin D, examining their interactions, and concluded,

"Recent and historical data are highly consistent with a causal protective role for Vitamin D in respiratory disease risk and especially in the case of COVID-19. By contrast, the same evidence conflicts with predictions made by an acausal/bystander model."



Vitamin D could also explain the high levels of asymptomatic rates in the homeless and prisoners. Prisons in Arkansas, North Carolina, Tennessee, Virginia and Ohio tested all prisoners in several prisons and found asymptomatic rates between 95% and 100%. In the Coldwater Correctional Facility in Michigan, the furthest north of all these prisons, however, the asymptomatic rate was 80%, another interesting correlation.

Vitamin D could make a big difference in our fight against Covid-19. Widespread supplementation during the winter months could also be helpful for our next flu season since vitamin D supplementation has been found to reduce the risk of acute respiratory tract infection. While you cannot overdose from the sun, it is possible to take too much vitamin D from supplements, so supplementation should be done under a doctor's care.

Elizabeth Brown served in the U. S. Air Force for 11 years as a scientist and a statistician. She has been a volunteer literacy tutor for 26 years and is the director of 40L, a nonprofit whose mission is: To transform lives by improving educational foundations through the Word of God

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