Reducing Covid-19 in Populations with Darker Skin

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Please share this information with your doctor and ask for the 25(OH)D test.

Research shows that Vitamin D protects against Covid-19: number of cases, severity of illness and death. This paper reviews the evidence, and why those with darker skin are at greater risk.

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Darker Skin = Greater Risk

- Covid-19 incidence and death rates are higher among the black populations in Chicago, Louisiana, and Michigan.
- Mostly black counties have more than 3-fold higher infection rate and 6-fold higher death rate than predominately white counties.[1]
- As of April 22, 2020, 63% of the healthcare workers who died of Covid-19 in the UK were from black and ethnic communities, and 94% of the doctors and 71% of the nurses who died from Covid-19 were black or ethnic[2].

Why is Dark Skin a Risk Factor?

- The skin, when exposed to the sun makes vitamin D3.
- Pigment in our skin protects us from sun damage, also slowing the production of Vitamin D.
- Vitamin D is needed for our immunity.
- Vitamin D protects against Covid-19, influenza[3], respiratory infections[4,5], certain cancers (colon[6], prostate[7] and breast[8]), diabetes type 2[9], and cardiovascular disease[10]. These illness are also more prevalent in those with darker skin.

Vitamin D - Covid-19 Research

- As of July 2020, studies had shown up to a 95% decrease in critical outcomes and death when Covid-19 patients had 25(OH)D levels greater than 30 ng/ml.[11,12]
- Countries with lower average D levels have more cases and deaths from Covid-19.[13,14]
- Since July, studies have provided further evidence of protection with sufficient vitamin D levels against SARS-CoV-2 infection and its severity.
- A study of 225 hospitalized Covid-19 patients found that levels of 25(OH)D over 30 ng/ml significantly reduced the severity of illness, hypoxia, and unconsciousness. Not only did higher levels reduce illness, but while the death rate among those with levels less than 30 ng/ml was 20%, 30 ng/ml reduced the death rate to 9.7% and for those over 40 ng/ml the death rate was 6.3%, showing that this higher D level reduced the death rate by more than two thirds.[15]
- Two large scale studies that included 191,799 patients from all 50 states and 556,000 patients and controls in Israel showed a highly significant correlation between Vitamin D levels and positive Covid cases.[16,17]
- Since D3 supplements take a few days to fully activate in the liver, high doses of Calcifediol, the active form of D, were given to patients hospitalized for Covid-19. Only 2 of 50 patients receiving Calcifediol were admitted to the ICU and none died. Of 26 controls, 13 were admitted to the ICU and 2 died. Despite a small sample size, results were highly significant ($p<0.001$). Dosing with Calcifediol, rather than D3, is more appropriate in emergency situations.[18]

Measure and Correct D Levels

- Serum 25(OH)D is the test for measuring D.
- The Endocrine Society has set the lower limit of 25(OH)D to 30 ng/ml, based on a thorough review of the scientific evidence.
- CDC statistics show that most of us have low vitamin D levels, but the black and hispanic groups are even more at risk.[19]
- The Endocrine Society recommends these doses of vitamin D3 supplements:
  - 600-1000 IU/day for children 1-18
  - 1500-2000 IU/day in adults
  - 3000 - 6000 IU/day if obese.
  - Initial doses should be higher, if 25(OH)D levels are lower than 30 ng/ml.[20]

Note: This is not meant to replace sanitation and personal protection, nor the recommendations of your physician.

References

[1] Yancy CW. COVID-19 and African Americans; JAMA. 2020;323(19):1891-1892. doi:10.1001/jama.2020.6548

[2] Kirby T. Evidence mounts on the disproportionate effect of COVID-19 on ethnic minorities. Lancet Respir Med. 2020 May 10, doi: 10.1016/S2213-2600(20)30228-9

[3] Urashima M, Segawa T, Okazaki M, Kurihara M, Wada Y, Ida H. Randomized trial of vitamin D supplementation to prevent seasonal influenza A in schoolchildren. The American Journal of Clinical Nutrition, May 2010, 91(5): 1255–1260, https://doi.org/10.3945/ajcn.2009.29094

[4] Jolliffe DA, Greenberg L, Hooper RL, Mathyssen C, Rafiq R, de Jongh RT, Camargo CA, Griffiths CJ, Janssens W, Martineau AR. Vitamin D to prevent exacerbations of COPD: systematic review and meta-analysis of individual participant data from randomised controlled trials. Thorax April 2019; 74(4).

[5] Martineau Adrian R, Jolliffe David A, Hooper Richard L, Greenberg Lauren, Aloia John F, Bergman Peter et al. Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data BMJ 2017; 356 :i6583

[6] McCullough ML, Zoltick ES, Weinstein SJ, Fedirko V, Wang M, Cook NR, Eliassen AH, et al. Circulating Vitamin D and Colorectal Cancer Risk: An International Pooling Project of 17 Cohorts, JNCI: Journal of the National Cancer Institute, Volume 111, Issue 2, February 2019, Pages 158–169. https://doi.org/10.1093/jnci/djy087

[7] Nyame YA, Murphy AB, Bowen DK, et al. Associations Between Serum Vitamin D and Adverse Pathology in Men Undergoing Radical Prostatectomy. J Clin Oncol. 2016;34(12):1345−1349. doi:10.1200/JCO.2015.65.1463

[8] Yao S, Kwan ML, Ergas IJ, Roh JM, Cheng TYD, Hong CC, McCann SE, Tang L, Davis W, Liu S, Quesenberry CP Jr, Lee MM, Ambrosone CB, Kushi LH, Association of Serum Level of Vitamin D at Diagnosis With Breast Cancer Survival: A Case-Cohort Analysis in the Pathways Study, March 2017, JAMA Oncol. 2017;3(3):351-357. doi:10.1001/jamaoncol.2016.4188

[9] Rafiq S, Jeppese PB. Is Hypovitaminosis D Related to Incidence of Type 2 Diabetes and High Fasting Glucose Level in Healthy Subjects: A Systematic Review and Meta-Analysis of Observational Studies. Nutrients. 2018 Jan; 10(1): 59. doi: 10.3390/nu10010059

[10] Saponaro F, Marcocci C, Zucchi R. Vitamin D status and cardiovascular outcome. J Endocrinol Invest 42, 1285–1290 (2019). https://doi.org/10.1007/s40618-019-01057-y

[11] Alipio M. Vitamin D supplementation could possibly improve clinical outcomes of patients infected with Coronavirus-2019. Preprint posted: 9 Apr 2020 Last revised: 7 May 2020. https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=3571484

[12] Raharusun P, Sadiah P, Cahni B, Erdie A, Cipta B. Patterns of COVID-19 Mortality and Vitamin D: An Indonesian Study (April 26, 2020). Available at SSRN: https://ssrn.com/abstract=3585561 or http://dx.doi.org/10.2139/ssrn.3585561

[13] Ilie, PC, Stefanescu S. & Smith L. The role of vitamin D in the prevention of coronavirus disease 2019 infection and mortality. Aging Clin Exp Res (2020). https://doi.org/10.1007/s40520-020-01570-8

[14] Laird E, Rhodes J, Kenny RA. Vitamin D and Inflammation: Potential Implications for Severity of Covid-19. Ir Med J; Vol 113; No. 5; P81. http://imj.ie/vitamin-d-and-inflammation-potential-implications-for-severity-of-covid-19/

[15] Maghbooli Z, Sahraian MA,Ebrahimi M, Pazoki M, Kafan S, Tabriz HM, Hadadi A, Montazeri M, Nasiri M, Shirvani A, Holick MF. Vitamin D sufficiency, a serum 25-hydroxyvitamin D at least 30 ng/mL reduced risk for adverse clinical outcomes in patients with COVID-19 infection. Sept 25, 2020 PLoS ONE 15(9): e0239799. https://doi.org/10.1371/journal.pone.0239799

[16] Kaufman HW, Niles JK, Kroll MH, Bi C, Holick MF (2020) SARS-CoV-2 positivity rates associated with circulating 25-hydroxyvitamin D levels. Sept 17, 2020. PLoS ONE 15(9): e0239252. https://doi.org/10.1371/journal.pone.0239252

[17] Ariel Israel A, Cicurel A, Feldhamer I, Dror Y, Giveon SM, Gillis D, Strich D, Lavie G. The link between vitamin D deficiency and Covid-19 in a large population. Sept 7, 2020. doi: https://doi.org/10.1101/2020.09.04.2018826

[18] Castillo ME, Costa LME, Barrios JMV, Díaz JFA, Miranda JL, Bouillon R, Gomez JMQ. Effect of calcifediol treatment and best available therapy versus best available therapy on intensive care unit admission and mortality among patients hospitalized for COVID-19: A pilot randomized clinical study. The Journal of Steroid Biochemistry and Molecular Biology, Vol 203, October 2020, 105751. https://doi.org/10.1016/j.jsbmb.2020.105751

[19] National Report on Biochemical Indicators of Diet and Nutrition in the U.S. Population 1999-2002. https://www.cdc.gov/nutritionreport/99-02/pdf/nr_ch2b.pdf

[20] Holick MF, Binkley NC, Bischoff-Ferrari HA, Gordon CM, Hanley DA, Heaney RP, Murad MH, Weaver CM, Endocrine Society. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2011 Jul; 96(7):1911-30