



More on COVID-19: Vitamin D, Rapid Tests, Chronic COVID and HCQ



Dr. Kate Thomsen and Silky

Will Vitamin D Deficiency Put You at Risk Of COVID-19?

There is mounting evidence that having a sufficient Vitamin D blood level can offer some protection from COVID-19. While there is no consensus from the researchers yet, there are many observations:

- Black and obese individuals (populations that typically have low Vitamin D levels) are populations at risk of increased severity and mortality from COVID-19.
- Vitamin D deficiency is also associated with elderly age, hypertension, diabetes, cardiovascular disease, and metabolic syndrome. These are the major risk factors for COVID-19.
- Seasonal outbreaks of viral infections occur in the fall and winter months when people have the lowest blood levels of vitamin D.
- A study of healthy adults in New England showed a two-fold reduction in the risk of developing acute respiratory tract infection with adequate blood levels of Vitamin D (38ng/mL or more).
- A study of children with acute respiratory infections showed an almost 2 times increased risk of hospitalizations if their Vitamin D level was deficient.
- A 2017 study in the British Medical Journal reviewed 25 clinical trials and found that Vitamin D offers more protection from acute respiratory tract infections than placebo.

What we know about SARS-CoV-2 Infection. Mainly, it does 3 things:

- The virus invades the respiratory system and infects and destroys lung cells.
- The infected person's immune cells attack the virus but may over-react causing an inflammatory response called cytokine storm.
- The virus also invades blood vessel walls causing vessel constriction and exposing clotting factors which allow an accumulation of blood clots to occur in different organs in the body.

How can Vitamin D prevent COVID-19? We know that Vitamin D is:

- Antiviral – it stimulates innate immunity by stimulating the body to produce cathelicidins, small proteins which attack the outside layer of viruses and other microorganisms.
- Anti-inflammatory – it manages the adaptive immune system (T cells, B cells and antibodies); it suppresses overexpression of proinflammatory cytokines.
- Anti-clotting – it protects against blood vessel injury by stabilizing the lining and stimulating nitric oxide production (nitric oxide dilates the blood vessels and is being researched as a treatment for COVID-19).

The new evidence for using Vitamin D to prevent COVID-19:

- A University Chicago Medicine study looked at blood levels of Vitamin D taken in 500 people almost 1 year ago and showed that Vitamin D deficient (<20ng/mL) individuals were almost twice as likely to test positive for COVID-19 than were people who had sufficient levels.
- An Israeli study published July 23, 2020 looked at Vitamin D levels of 14,000 people from February through April 2020. The 10% who were positive for SARS-CoV-2 had a significantly lower Vitamin D level than those who tested

negative. They found that low Vitamin D is an independent risk factor for COVID-19 infection and hospitalization.

- July 4, 2020 study of almost 400,00 people showed a decrease in all-cause mortality with Vitamin D levels above 24ng/mL (60 nmol/L).

Where do we get Vitamin D:

- There are few dietary sources: cod liver oil, fatty fish, sun dried mushrooms, fortified foods, UVB exposure from sunlight.
- Groups at risk of Vitamin D deficiency: pregnant women, children under 5, elderly over 65yo, obese individuals, those with little sun exposure, people with dark skin who live in USA and Europe

On Your "To Do" List:

- Take Vitamin D (capsule or liquid). I am recommending 5,000 IU/day to get the 25 (OH) Vitamin D blood level around 40 - 60ng/mL. The normal Vitamin D reference range is considered 30 - 100ng/mL. Excessive doses of Vitamin D can be toxic so check your blood levels with your doctor at least once per year or after you have made a significant change in your dose or sun exposure.
- Get outside – avoid the peak hours of harsh sun (10am - 3pm) but get some sun on your skin (unless you are at high risk of skin cancer). Lockdown measures used to control the pandemic will reduce opportunities for sun exposure and will risk lowering your Vitamin D levels.

Are Rapid Tests the solution?

I was glad to hear Joe Biden mention rapid tests as he quickly outlined his anti-COVID-19 strategy. Rapid tests (also called "paper tests") are not commercially available but the technology has been developed by several companies. These tests would be very inexpensive (~ \$1.00 per test vs the PCR swab which is \$100 - \$200 per test) and the results are available immediately (not 3

- 9 days later!) The test is a lateral flow assay (like an at-home pregnancy test). A saliva sample with coronavirus present will turn the test positive in less than 15 minutes. If we all used these tests every morning, we could decide whether to go to work or school on a daily basis. "Contagiousness tests" would allow individuals to isolate for 14 days when testing positive. Statistical models have shown that these tests, done frequently with almost instant results, would drop the prevalence of the virus very quickly. Our current testing strategy is an expensive PCR test, not widely available, with results delayed for days. PCR is a very sensitive test, which we originally thought was needed, but it may be too sensitive. We don't need a test that finds old viral RNA particles still circulating in the blood after a person has recovered. A less sensitive test that is cheap, quick and done frequently is a better public health strategy. The FDA is still requiring a more sensitive test and has not embraced this rapid test idea yet. Please visit [rapidtests.org](https://www.rapidtests.org) and review the materials. Listen to Dr Michael Mina of Harvard speak, sign the petition, and tell everyone you know about it. Without a strategy, a public health strategy, this pandemic could go on a very long time.

"Chronic COVID" ?

Some people take many months to recover after a COVID-19 infection. And we don't know if some will ever completely recover. That's not the way an infection is supposed to be. It should have a beginning and an end. I wonder if there will be people who will have just mild symptoms (fatigue mostly) but will continue to have fatigue long after they should have recovered? I'm thinking that COVID-19 may legitimize the immune dysregulation phenomenon that has gone unrecognized for years. Infections cause appropriate upregulation of the immune system, but in some people, the immune system does not turn

off completely. Researchers have called it the Cell Danger Response and it is what many integrative providers have seen for years: chronic Lyme and other tick-borne disease, chronic EBV, CMV viral infection, chronic mold illness.... Some providers blame the patient, secretly believing they are attention seeking, faking symptoms or have a primary mental or emotional condition. Maybe there will be "chronic COVID" and interest will be sparked in learning more about chronic infection, immune dysregulation and Cell Danger Response. I believe environmental toxicity combined with some common genetic variations and vulnerabilities play a role.

HCQ

Lastly, a study posted on August 17, 2020 from the Saudi Arabian Ministry of Health evaluated the use of hydroxychloroquine (HCQ) in 2733 patients with mild to moderate cases of COVID-19 in the outpatient setting. The study excluded morbidly obese patients, pregnant and lactating females, people with G6PD deficiency and patients with known cardiac related issues. No ICU admissions or deaths were reported and the conclusion was that early use of hydroxychloroquine for COVID-19 is safe, highly tolerable and has minimal side effects. Hmmm..... Google it on [medrxiv.org](https://www.medrxiv.org).

Dr. Kate Thomsen's office for holistic health care is located in Pennington, NJ.

She is trained in Family Medicine, and Board Certified in Integrative Medicine, and is an Institute for Functional Medicine Certified Practitioner. She has been practicing Functional Medicine for 20 years. For more information see www.drkatethomsen.com or call the office at 609-818-9700.