**Corona Virus, Vitamin D and Immunity**

There are two immune responses in humans: the rapid innate immunity and latent adaptive immunity.  The innate immune response is considered the “[key regulator in the virulence of coronavirus infections](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2292640/).”

The earliest arriving white blood cells at the site of infection are neutrophils and are part of the innate immune system. [Neutrophils comprise ~60% of the white blood cells](https://www.ncbi.nlm.nih.gov/pubmed/28553293) in circulation.

Vitamin D is the governor of innate immunity.  The protective benefits of vitamin D are said to “[lie in its ability to stimulate innate immunity and reduce inflammation](https://www.ncbi.nlm.nih.gov/pubmed/28241127).”

Vitamin D suppresses NF-kappa B signaling, [dampens excessive inflammation while enhancing killing of viruses by neutrophils](https://www.ncbi.nlm.nih.gov/pubmed/28241127)

Senior adults have been found to have [2.6 times greater risk for pneumonia between highest and lowest blood levels of vitamin D](https://www.ncbi.nlm.nih.gov/pubmed/?term=serum+25-hydroxyvitamin+d3+and+the+risk+of+pneumonia+in+an+aging+general+population).

**How much vitamin D?**

Particularly in winter months, or among people who don’t get much sunshine that produces natural vitamin D, children and adults need far more vitamin D than is recommended.  [Due to a miscalculation](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5541280/), the need for supplemental vitamin D is underestimated; adults need ~8000 units/day; infants 1000 units; children over age 1 year, 3000 units/day.

The Daily Value published on the back of bottles of vitamin D is 400-800 units, which doesn’t even raise blood levels.  This locks in a certain amount of otherwise preventable disease in the population at large.  This is akin to allowing some pyromaniac to start fires just to show off how fast fire departments respond.

In sunshine equivalents, 400-800 units of vitamin D = ~5 minutes of midday sun/skin exposure; 8000 units = ~1 hour of midday sun/skin exposure.  If you are not getting 30-60 minutes of midday sunshine, you do not have optimal blood levels of vitamin D.

1 Pump of **Vitamin D Crème** has 2,000 units. Take 2 pumps 2x per day.

Around [42% of the adult U.S. population has low blood levels of vitamin D](https://www.healthline.com/nutrition/how-much-vitamin-d-to-take).   That figure rises in northern latitudes to almost everybody in winter months.

Forget blood tests, presume you are D-deficient in winter.  Don’t wait for cold and flu symptoms.

Take 20,000 units of vitamin D on the first hint of cold or flu symptoms for a day or two.  Otherwise you will endure ~7-8 days of misery until your adaptive immune system kicks in and produces B in bone marrow and T cells the thymus gland to produce tailor-made antibodies against the particular strain of coronavirus in circulation.

Vitamin D delivered in Crème form like my **Vitamin D Crème** works better than a pill form because it is liposomal/transdermal and goes directly into the blood stream.

Dr. Steven R. Sorbera, D.C., 1962 Plank Rd. Duncansville, PA 16635

**814-693-3730**

\* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.