

# Helpful Supplements

**The following nutrients will improve immune function and decrease the likelihood of serious problems if at risk of the flu or other viral infections.**

## **Super C: 1,000 mg/day in divided doses (or more as needed)**

Vitamin C has been used effectively against a wide variety of viral infections since the 1940's. Should be taken in the form of slow release for prevention and in divided doses since the half-life at higher doses is only 30 minutes. See my paper on the "Science of Vitamin C" for more details.

**Vitamin C with Serious Infection:** Vitamin C to bowel tolerance or intravenous drip of the vitamin. Any oral intake above 3,000 mg a day in divided doses will tend to reduce risk of the more serious consequences of viral infections. Bowel tolerance or IV drip doses done by professionals can be 50-fold or greater.

### **References:**

Video: Living Proof by 60 minutes of New Zealand

Cathcart, Robert F. III, Vitamin C, titrating to bowel tolerance, anascorbemia, and acute induced scurvy, *Medical Hypotheses*, November 1981; 7(11):1359-1376.

## **Tre**

Flavonoids from grapes, wine, tea, and pomegranates have all been shown to inhibit flu viruses. These phytonutrients are produced by plants to protect them from viruses, bacteria, and fungi. The work in a dose related manner—the greater the intake the better the protection tends to be.

### **References:**

Palamara, Anna T., Inhibition of Influenza A Virus Replication by Resveratrol, *The Journal of Infectious Diseases*, Volume 191, Issue 10, 15 May 2005, Pages 1719–1729,

Kim, Yunjeong, et al., Inhibition of influenza virus replication by plant-derived isoquercetin, *Antiviral Research*, November 2010, 88(2), 227-23.

Haidari, Mehran, et al., Pomegranate (*Punica granatum*) purified polyphenol extract inhibits influenza virus and has a synergistic effect with oseltamivir, *Phytomedicine*, December 2009; 16(12): 1127-1136.

## **Chelated Cal-Mag Tablets & Magnesium Complex (Vitamin D3): 1,000-2,000 International Units daily or more as needed. Magnesium: total of 300-500 mg.**

The maintenance dose varies with body weight, 400-1000 IU/day for children and 1000-5000 IU/day for adults. Most colds and flu infections occur late in the wintertime when blood levels of the sunshine vitamin fall below the level required for immune competence. It has been known since 2005 that vitamin D is the stimulus to production of cathelicidin, an antimicrobial peptide, which enables us to resist cold and flu viruses.

Vitamin D requires magnesium in order to be transformed into its active form. High levels of vitamin D can deplete magnesium levels. It is best to supplement with abundant magnesium before supplementing with high levels of vitamin D. Most doctors now recognize the importance of vitamin D supplementation, but few know about the association of the vitamin with magnesium. Magnesium is essential for energy production in the body and can provide a direct immune boost on its own.

### **References:**

Gombart, Adrian, Borregaard, Niels, and Koeffler, H. Phillip, Human cathelicidin antimicrobial peptide (CAMP) gene is a direct target of the vitamin D receptor and is strongly up-regulated in myeloid cells by 1,25-dihydroxyvitamin D3, *The FASEB Journal*, 2005;19:1067-1077.

Raloff, Janet, The antibiotic vitamin, *Science News*, November 11, 2006, Vol. 170, 312, 317.

Vasquez, Alex, et al, The clinical importance of vitamin D (cholecalciferol): A paradigm shift with

implications for all healthcare providers, *Alternative Therapies*, Sept/Oct 2004, Vol. 10, No. 5, 32  
Barlow P.G., et al. Antiviral activity and increased host defense against influenza infection elicited by the human cathelicidin LL-37. *PLoS One*, 2011;6(10):e25333. doi:10.1371/journal.pone.0025333

### **Full Motion (Glucosamine): 3,000 mg**

Glucosamine promotes the production of an antiviral signaling protein by the mitochondria.

#### **Reference:**

McCarty, Mark F., Nutraceuticals have potential for boosting the type 1 interferon response to RNA viruses including influenza and coronavirus, *Progress in Cardiovascular Diseases*, Available online 12 February 2020. <https://doi.org/10.1016/j.pcad.2020.02.007>

### **Zinc: 15-60 mg/day**

Zinc has been shown to be effective in helping the body fight colds and flu viruses.

#### **References:**

Fraker P.J., et al., The dynamic link between the integrity of the immune system and zinc status. *J Nutr.* 2000;130:1399S-1406S. <https://www.ncbi.nlm.nih.gov/pubmed/10801951>.

Shankar A.H., Prasad A.S., Zinc and immune function: the biological basis of altered resistance to infection. *Am J Clin Nutr.*, 1998;68:447S-463S.

Sandstead, Harold H., et al., Zinc intake and resistance to H1N1 influenza, *Am J Public Health.* June 2010; 100(6): 970–971.

### **Selenium: 100-200 mcg (micrograms) daily. (In**

Selenium not only enhances immune competence and reduces oxidative stress, but also slows viral mutations, decreasing the risk that a virus can mutate to a more dangerous form. Serious viral diseases affecting humans tend to originate in areas like China and Africa where selenium levels are low in the soil.

#### **References:**

Harthill M., Review: micronutrient selenium deficiency influences evolution of some viral infectious diseases. *Biol Trace Elem Res.*, 2011; 143:1325-1336. <https://www.ncbi.nlm.nih.gov/pubmed/21318622>.

Beck, Melinda A., et al., Selenium deficiency increases the pathology of an influenza virus infection, *The FASEB Journal* express article 10.1096/fj.00-0721fje. Published online April 27, 2001.

### **Vitamin E: 100-1,000 I.U./day**

Many viral infections target the lung tissue, often leading to damage and scarring. Vitamin E is a key antioxidant for the lungs and also helps prevent scarring. Vitamin E also optimizes the effectiveness of selenium.

#### **References:**

Repine, J.E., Interleukin-1-mediated acute lung injury and tolerance to oxidative injury, *Environmental Health Perspectives*, December 1994; 75-78. <https://doi.org/10.1289/ehp.94102s1075>

Hayek, Michael G., Vitamin E supplementation decreases lung virus titers in mice infected with influenza, *The Journal of Infectious Diseases* 1997;176:273–6.

Han, Sung Nim, Antioxidants, Cytokines, and Influenza Infection in Aged Mice and Elderly Humans, *The Journal of Infectious Diseases*, Volume 182, Issue Supplement\_1, September 2000, Pages S74–S80, <https://doi.org/10.1086/315915>

### **ProVitality Plus & Salmon Oil Plus: Omega-3 Fatty Acids:**

B-complex vitamins and vitamin A are essential for a properly functioning immune system. Phospholipids and omega-3 fatty acids improve cell membrane fluidity which promotes better immune responses and tends to reduce inflammation.

#### **Reference:**

Morita, Masayuki, et al., The lipid mediator protectin D1 inhibits influenza virus replication and improves severe influenza, *Cell*, July 2013; 154(1, 3):22-2