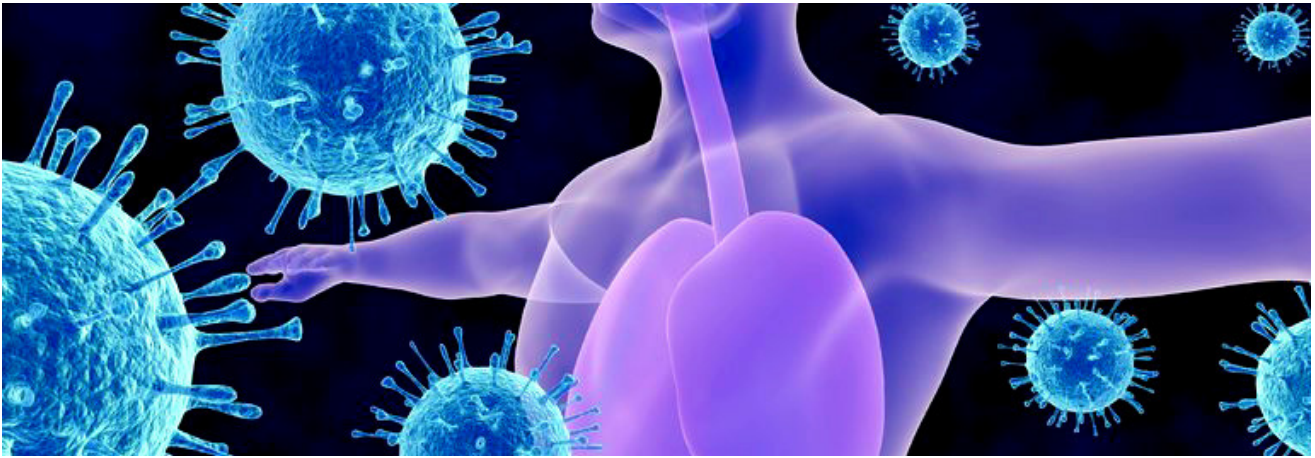


IMMUNE SUPPORT

ANTIVIRAL STRATEGIES TO COMBAT FLU SEASON



YOUR BEST DEFENSES....

Nutrients in the form of vitamins, minerals, herbs and whole foods can have a tremendous impact on the body's natural defenses.

"LET FOOD BE THY
MEDICINE AND
MEDICINE BE THY
FOOD."-HIPPOCRATES

Father of modern
medicine (400bc)

The immune system is highly responsive to nutritional supplementation, as are the mitochondria, "the powerhouse of the cell". These nutrients can be used to strengthen the immune defenses, protect the cells from virus entry, reduce the rate of viral mutation and play a vital role in modulating viral replication.

First, lets break it down...

Our **body is made of trillions of cells**, and the mitochondria of each cell acts like a digestive system- taking in nutrients, breaking them down and creating energy rich molecules for the cells to properly function. When the cells properly function, YOU properly function. Mitochondria have several functions and are not only vital because they regulate cell survival and death but also are the frontline defense in a viral invasion and work intimately with the immune system. They play a key role in modulating viral replication and can be supported by nutritional supplementation and proper diet.

So, what do mitochondria feed on?

They turn the sugars, fats, and proteins that we eat into forms of chemical energy that the body can use to carry on living. This is a simplified version of this process, but the point is- *don't eat crap!* Particularly the stuff that spikes blood sugar like processed foods and refined sugars: cookies, cakes, crackers, cereal, chips, breads, muffins etc. When you eat too much sugar the cell can't burn it fast enough for energy, so it gets stored as fat. This excess sugar (glucose) in the system produces damaging free radicals, which are unstable molecules that damage our DNA. Excess processed sugar not only impacts us on a cellular level, but also impacts hormones which suppress the immune system, leaving us open to an invader!

Now, I'm not saying never enjoy a cookie or ice cream again, but what I am saying is try to look at your **food as fuel**.

Every cell that makes up every tissue that creates every organ and system in the body relies on the nutrients it gets from the foods it consumes.

You are fueling every cell in your body when you eat, so choose wisely and consider swapping some of your processed foods for whole food substitutes.

During this flu season it's vital to keep your diet clean, your immune system strong, your mitochondria in tip-top shape and de-stress!

Note: this is not an exhaustive list but a good place to start, as always this is not medical advice and you should consult your physician prior. If pregnant or Brest feeding please contact your midwife or doctor for contraindications.

MEET YOUR IMMUNE SUPPORT SQUAD

Please note this is **not** an exhaustive list, but a comprehensive team of what I consider the best Immune support. Many of these nutrients have extensive benefits and functions in the body, however I am highlighting their antiviral support.



VITAMIN D3

INVOLVED IN OVER 100,000 IMMUNE FUNCTIONS

- Improves barrier defense cells and inhibits virus's ability to replicate
- Enhances innate immunity = improved defense against infection
- Reduces systemic inflammation and neuro-inflammation
- Improves mitochondrial function (the powerhouse of our cells)
- Improves moods; alleviates depression
- Improves gut microbiota
- Enhances Vitamin A
- Safe and effective in protecting against acute respiratory tract infections according to systemic review and meta-analysis published in the British Medical Journal, 2017
- Best way to get it is through the SUN! Spend at least 15 minutes a day outside.

Suggested use: Adults (4000IU) Children (2000IU) Infants (1000IU)
In winter months, during flu season I'd suggest a higher dose for adults
5000+ IU/day

Supplementation with a liquid form is best for bioavailability as it's fat-soluble.

VITAMIN A



- Improves immune defense & mucous barriers in your eyes, lungs, gut and genitals.
- Efficacy among a wide range of human viruses & viral respiratory infections
- Vitamin D & A work together synergistically to support immunity
- Involved in production and function of white blood cells, which help capture and clear pathogens from your bloodstream
- Deficiency in Vitamin A can increase susceptibility to infections and delay recovery when you get sick. Countries where infections like measles and malaria are common, correcting vitamin A deficiency in children has shown to decrease the risk of dying from the disease (NIH, 2004)
- Essential nutrient involved in vision, normal growth and development, gastrointestinal barrier protection and the health of skin and mucous membranes.

Suggested use: Adults 3000mcg/day (10,000 IU). Active infection 100,000 IU/day for 10 days. I prefer emulsified Vitamin A (liquid drops).

Food sources: Beef liver, Cod liver oil, sweet potatoes, carrots, black-eyed peas, spinach, broccoli, red peppers.



ZINC

ESSENTIAL MINERAL

DESTROYS VIRUSES ON CONTACT

- Zinc ions are directly virucidal- meaning they deactivate viruses on contact
- Inhibits the pathway commonly hijacked to promote viral replication
- Necessary for barrier defense, conversely zinc deficiency increases risk for infectious disease via immunosuppression
- Provides antioxidant benefits to assist in neutralizing free radicals
- Necessary for 100 enzymes to carry out vital chemical reactions in the body
- Necessary for the production of thymus hormone thymulin, which is vital for various immune functions; deficiency increases risk of viral infection
- Inhibits coronavirus activity in vitro by impairing replication of a number of RNA viruses (Pathog. 2010)
- Deficiency common in the global population and contributes directly to increased mortality/death from a wide range of infectious diseases.

Suggested use: Preventative dose 15-30mg/day. Active infection 50mg/day and higher for an adult. Extended supplementation with zinc should be accompanied by supplementation with copper (2-4mg) or eat copper rich foods like oysters, shellfish, organ meats.

Quercetin is excellent to help get Zinc into the cells!

Food Sources: High quality meats, shellfish, chickpeas, lentils, beans, nuts & seeds, quinoa, rice and oats. Note: Nuts, beans & grains contain phytates which bind to zinc and reduce absorption, so it's best to soak them overnight to reduce phytates.

SELENIUM

ESSENTIAL MINERAL

LIKE BIRTH CONTROL FOR VIRUSES



- Antioxidant support- during infectious events excessive free radical production and damage contributes to unnecessary inflammation
- Anti-inflammatory-Inhibits pro-inflammatory pathways that are commonly hijacked by viruses
- Anti-replication-selenium functions to reduce viral replication
- Helps to regulate genes and signaling between cells
- Promotes lymphatic flow and reduces secondary infection
- Clinically used to treat autoimmune thyroiditis (Hashimotos), anxiety, depression and fatigue
- Terrain in China is famously deficient in Selenium. Many researchers and clinicians connect this deficiency in animals and humans in many regions in China to creating a “incubator” or “perfect storm” for the generation of these novel virus strands, which are mutations of previous, mild infections

Suggested use: 200mcg/day is the safe and widely used dosage in clinical trials. Reasonable dosage during viral infection 600mcg/day.

Food Sources: Brazil nuts are a very good source of selenium. Fish, shellfish, red meat, grains, eggs, chicken, liver, and garlic are other sources (dependent on the selenium content of the soil)



VITAMIN C

- One of the most well known immune supports, needed for growth, development and repair of all body tissues
- Used as an antiviral agent- especially in influenza cases
- Supports healthy & robust immune system
- Antioxidant that protects cells & fights free radicals in the body
- Reduces the inflammatory response
- Prevents & shortens duration of common cold
- Helps detox pathways and rid the body of toxins stored in the liver
- Lowers histamine levels- histamines suppress the immune systems via activation of h2 receptors that are triggered by viral infections. Breakdown of histamines is accelerated by vitamin C and B6

Suggested use: 1-2g 3x/day, more during active infection. Most vitamin C brands on the supermarket shelf are in the form of Ascorbic acid, which is synthetic vitamin C and usually derived from GMO corn. Best to get ascorbate vitamin C, a trusted brand or even try Liposomal vitamin C.

Food Sources: Organic Citrus fruits- oranges, kiwi, lemon, guava, grapefruit, and vegetables such as broccoli, cauliflower, brussel sprouts, peppers.

AMINO ACID **NAC**
N-ACETYL-L-CYSTEINE



- Antioxidant- direct & indirect antioxidant as a precursor to glutathione- most powerful antioxidant in the body.
- Amino acid for health, repair, maintenance, immunity & exercise recovery
- Studied and effective in clinical practice with H1N1 influenza pneumonia (Annals of Internal Medicine 2010)
- Mucolytic- thins/dissolves mucus which helps to clear from the respiratory system and used in treatment of respiratory obstruction due to mucus ie: asthma, pneumonia, bronchitis.
- Dissolves biofilms helps to be effective against bacteria like H. pylori.
- Anti-inflammatory and supports immune function and defenses.
- Antiviral-blocks the pathway viruses use to replicate
- Conjugating agent to help neutralize toxins in the body, supports detox pathways
- Provides mitochondria protection (cell protection) via antiviral properties in cells
- Helps to enhance dopamine (happy mood molecule) & lower glutamate
- Helps to suppress appetite, and support fat loss while maintaining muscle mass
- Chelator of toxic metals like mercury- helping to bind and rid them from the body

Suggested use: Preventative dose 600mg 2x per day.

For active infection 4-6g per day. Most effective taken on an empty stomach. Synergistic factors to go along with NAC are selenium, zinc, vitamin A, D, lipoic acid & melatonin.



GLYCYRRHIZIN

AKA LICORICE ROOT

- Used medicinally for 1000's of years.
- Directly inhibits many different DNA and RNA viruses while also stimulating nonspecific immune defenses
- Inhibits entry and replication of SARS- associated coronavirus in vitro (Lancet 2003): “Of all the compounds, glycyrrhizin was the most active in inhibiting replication of the SARS-associated virus.
- Inhibits absorption/binding and penetration of the virus, which are early and essential steps in any viral infection.

Suggested use: Licorice tea (hot water infusion of licorice root) has sufficient glycyrrhizin for medicinal properties. Excessive consumption of high concentrations can result in low potassium.

BONUS SUPPORT

COLLOIDAL SILVER OR NANO SILVER

Used since ancient times to treat various ailments, now used to dramatically reduce the activity of the HIV virus in AIDS patients, slow down the ravages of hepatitis C virus & combat other viruses. It interferes with the enzymes that allow a virus to utilize oxygen, thus “suffocating” it so it can't do damage in the body.

Most brands are on backorder right now due to demand.

My Preferred brand: St George Nano Silver call to order (435) 652-9012

Safe to spray in your mouth, nose, eyes, skin & surfaces that may be contaminated.



CONTACT ME

If you are curious about working with me 1:1 or simply have questions, please don't hesitate to reach out.

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