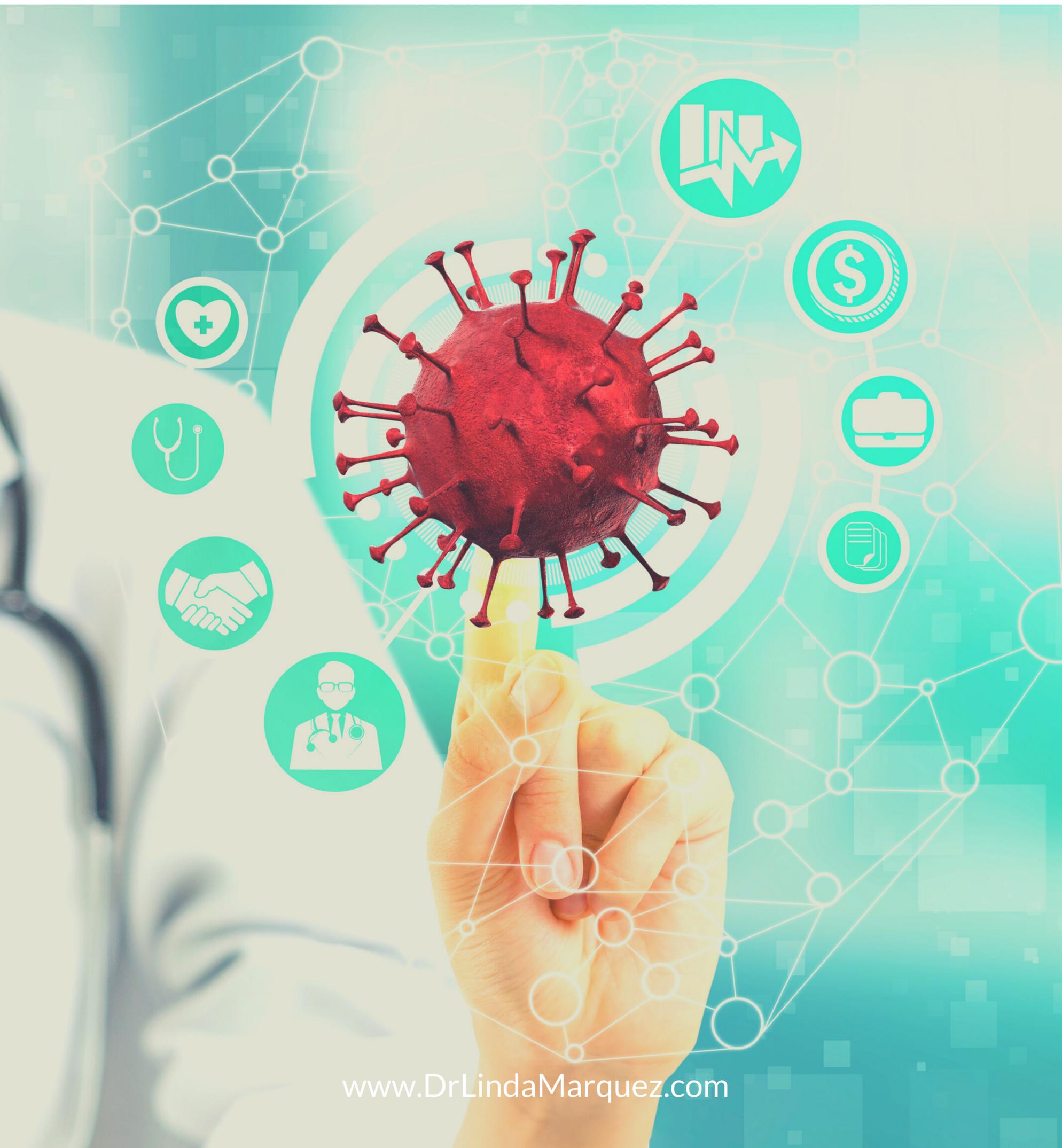


BULLETPROOF YOUR IMMUNE SYSTEM: A NATURAL SUPPLEMENT GUIDE

Vitamins, Minerals, & Supplements
That Help Your Immune System



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Vitamins, Minerals, and Supplements That Help Your Immune System

Disclaimer :

*No supplement will cure a disease. The research is limited for COVID-19, and is changing daily.
With the 2020 Coronavirus (COVID-19) pandemic there is nothing that can protect you from Covid-19.
However, proper hygiene, social distancing, diet and lifestyle are vital in overall health.
Always discuss the use of supplements with your healthcare provider first.*

Zinc

Zinc is a trace mineral that is essential to the body and must come from diet or supplements.

"Zinc supplementation was effective in decreasing oxidative stress and generation of inflammatory cytokines such as TNF-alpha and IL-1beta in elderly individuals and patients with SCD" (Prasad, 2009).

Zinc supplementation has been successfully used as a therapeutic and preventive agent for many conditions due to its function as an intracellular signal molecule for immune cells.

- A laboratory study in 2010 showed that zinc inhibited the activity and replication of another coronavirus, SARS-CoV which caused an outbreak in 2002.
- Theoretically, sucking zinc lozenges during the early stages of COVID-19 may reduce symptom severity and the duration of the illness, but this has not been proven yet.
- Zinc has been shown to reduce the duration of the common cold.
- Zinc deficiency is uncommon in North America; however, certain groups are more at risk .
- Zinc supplements should not be taken at too high a dose or for long periods as they can cause toxicity.

Zinc food sources include: shellfish, meat, poultry, fish, seeds, veggies (such as mushrooms, kale, asparagus, beet greens, peas)

Dosage: 8-11mg/day; up to 40 mg for therapeutic doses, also found in lozenges

Caution: high doses can interfere with antibiotics, copper, and iron absorption; don't take for more than 2 months

Vitamin C

Vitamin C is a water soluble vitamin with strong antioxidant benefits.

Antioxidants are needed to maintain a healthy balance in the body. Molecules called free radicals, are constantly produced by the body usually as a by-product of day-to-day body functions. These free radicals need to be neutralized or they can damage your DNA and other important molecules in your body.

Viral infections can increase the number of free radicals your body produces, and antioxidants such as vitamin C are vital for this neutralization. This careful balance between antioxidants and free radicals is vital for a healthy immune system.



Vitamin C, therefore, can reduce the length of viral infections such as colds if taken before the infection takes place. However, it has not been proven to prevent or cure colds.

Studies have shown that high-dose vitamin C can reduce the length of intensive care stays for patients with a variety of illnesses, including pneumonia.

The theory is that the antioxidant effect of vitamin C can reduce the inflammation that cytokines cause in the lungs.

Cytokines are small proteins released as part of the body's immune response to the coronavirus. If the body overreacts to the virus, as has been seen in some younger people who have ended up in hospital, they produce too many cytokines, leading to a "cytokine storm."

This over-production of cytokines causes excessive inflammation in the lungs, leading to breathing difficulties and even death.

Vitamin C food sources include: citrus fruits such as oranges and lemons, dark green vegetables

Dosage: 75-90 mg/day and higher for smokers (110 -125 mg/day); up to 1-3 g/day for therapeutic doses and/or to tolerance; too much can cause loose stools

Quercetin

Quercetin is a plant pigment (flavonoid). It inhibits virus-stimulated cytokine expression. Quercetin also inhibits viral replication and decreases lung inflammation in vivo.

One of the proposed therapeutics for treatment of COVID 19 is quercetin for its significant senolytic activity. What this means is that it selectively induces death of senescent cells and can improve health in humans.

Therefore, we wish to speculate that the fight against COVID-19 disease should involve testing the hypothesis that senolytics and other anti-aging drugs may have a prominent role in preventing the transmission of the virus, as well as aid in its treatment.

Quercetin food sources include: onions, green tea, berries, green apples

Other sources: Ginko Biloba, St. John's Wort, American Elder



Vitamin D

Vitamin D can modulate the innate and adaptive immune responses. Deficiency in vitamin D is associated with increased autoimmunity as well as an increased susceptibility to infection. The immune system defends the body from foreign, invading organisms, promoting protective immunity while maintaining tolerance to self.

Evidence from several clinical trials and pooled studies show that Vitamin D supplementation lowers the odds of developing acute respiratory tract infections (most of which are assumed to be due to viruses) by 12% to 75%. These studies included both the seasonal and pandemic flu caused by H1N1 virus in 2009. The beneficial effect of supplementation was seen in patients across all ages, and individuals with pre-existing chronic illnesses. Among those who were infected, flu symptoms were fewer and recovery was earlier if they had received doses of vitamin D greater than 1000 IU. The benefits were relatively greater in individuals with vitamin D deficiency than in those who had adequate levels of vitamin D.

Vitamin D food sources include: oily fish, beef liver, and egg yolks

Dosage: RDA is 600 IU's/day; therapeutic doses 5,000

IU's to 10,000 IU's/day, proceed with caution as some research encourages to discontinue high doses if experiencing COVID-19 infection and symptoms



N-acetyl cysteine (NAC)

N-acetyl cysteine (NAC) is a specially modified form of the dietary amino acid cysteine. When taken orally, NAC is thought to help the body make the important antioxidant enzyme glutathione. It has shown promise for a number of conditions, especially chronic bronchitis.

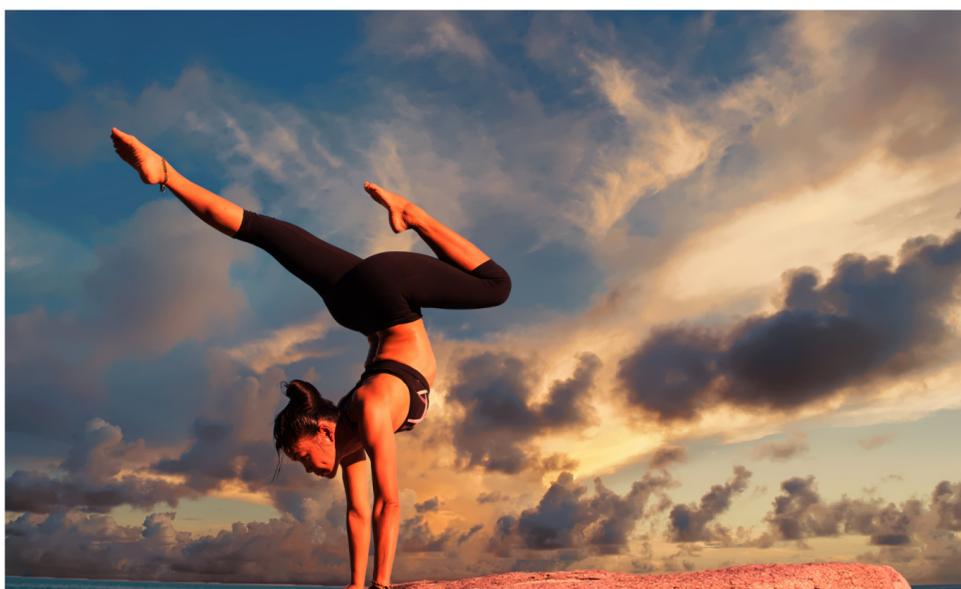
NAC may be helpful in a life-threatening condition called acute respiratory distress syndrome.

Regular use of NAC may help prevent influenza, possibly by stimulating immunity.

N-acetyl cysteine helps break down mucus and supplies antioxidant protection to lung tissue. Inhaled NAC is used in hospitals to treat bronchitis. NAC may also protect lung tissue through its antioxidant activity.

NAC food sources include: *It is not found in food*

Dosage: *There is no daily requirement. Optimal levels of NAC have not been determined. The amount used in studies has varied from 250 to 1,500 mg daily.*



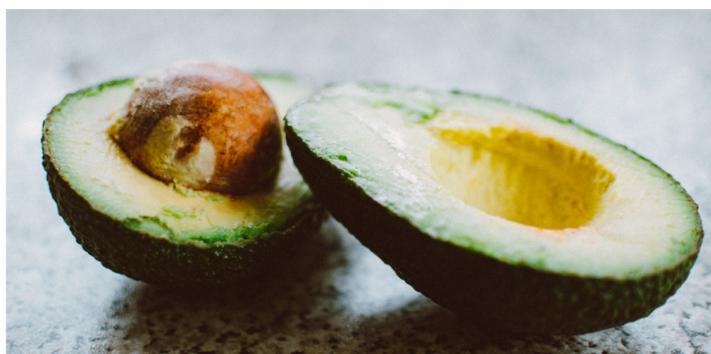
Glutathione

Glutathione is one of the body's most powerful detoxifiers. It can support healthy immune function and neutralize a broad spectrum of harmful substances and compounds. As a master detoxifier and the body's main endogenous antioxidant, glutathione can bind to many unwanted compounds and help remove them from the body. Consequently, glutathione can protect our cells from damage caused by peroxides, pollutants, metals, and more, and can improve metabolic energy. Glutathione can also support a healthy immune system.

Glutathione (GSH) is recognized as the most important antioxidant produced in the human body. Glutathione is present in every cell of the body, and the depletion of glutathione is noted in a wide range of medical conditions. Low concentrations of glutathione have been noted in individuals with asthma and viral infections. Glutathione is particularly known for its ability to recycle other antioxidants such as vitamin C and vitamin E. It can inhibit Coronavirus by blocking Viral RNA synthesis, according to research.

Glutathione food sources include: asparagus, avocado, cabbage, Brussels sprouts, spinach, broccoli, garlic, chives, tomatoes, cucumber, almonds, and walnuts.

Dosage: There are no daily requirements, however, general recommendations range from 400-500 mg/day



Elderberry (sambucol)

There is a division in agreement of elderberry for immune function. Elderberry extracts may help to prevent the early stage of Coronavirus infections, which includes COVID-19.

Elderberry contains compounds which decrease the ability of viruses to infect cells. Elderberry is considered generally safe and in influenza B (cause of common cold), the use of elderberry shortens the duration of symptoms. One proposed caution is that as a part of its immune supportive actions, elderberry increases immune cell release of tiny chemicals called cytokines. Specifically it increases the release of a cytokine called IL-1B which is a part of the inflammatory reaction to COVID-19 that can result in acute respiratory distress.

For this reason, to minimize the possibility that elderberry could aggravate the inflammatory “cytokine storm” associated with the more severe COVID-19 infections, it is recommended to stop elderberry at the first signs of infection (fever, cough, sore throat) and/or if you test positive for the virus.

Elderberry food sources include: elderberry

Dosage: There are no daily requirements, however, general recommendations range for prevention at 15 ml 4 times a day for 5 consecutive days, which has been used in clinical trials; proceed with caution as some research encourages to discontinue high doses if experiencing COVID-19 infection and symptoms

Astragalus

Astragalus is an herb that has been used in traditional Chinese medicine for centuries. It has many purported health benefits, including immune-boosting, anti-aging and anti-inflammatory effects.

Astragalus is believed to prolong life and used to treat a wide variety of ailments, such as fatigue, allergies, and the common cold. Its active compounds may help strengthen the immune system and reduce inflammation.

Traditional herbal medicine provides several remedies for strengthening the body's resistance to illness through effects on immune system components.

Astragalus food sources include: *astragalus is an herb*

Dosage: *Although there's no official consensus on the most effective form or dosage of astragalus, 9–30 grams per day is typical and can be taken up to 4 months. See product label recommendations.*

Caution: *astragalus may reduce the effectiveness of immunosuppressive drugs*

Lysine

Lysine is an amino acid that plays a vital role in immune system support, collagen production, and muscle health support.

Lysine therapy interrupts the replication of viruses, including COVID-19 coronavirus, by countering arginine, an amino acid that fosters the eruption of dormant viruses.

Food Source: *Meat, seafood dairy*

Therapeutic Dosage: *1-2 grams/day*

OTHER - Digestive Support

Digestive Enzymes

Digestive enzymes are proteins that regulate the chemical reactions the body uses to digest food; the enzymes break down the food into nutrient pieces until they are small enough to be absorbed into the bloodstream and carried throughout the body.

Because digestive enzymes help the body break down fats, carbohydrates, and proteins, the theory is that supplementing the body's supply of these enzymes will promote healthy digestion, therefore, provide optimal nutrient absorption.

Dosage: 1-2 caps before each meal

Betaine Hydrochloric Acid

Betaine is a source of hydrochloric acid, or stomach acid. Betaine HCl supplements are typically used to increase levels of hydrochloric acid in the stomach.

It assists protein digestion by activating pepsinogen to pepsin, renders the stomach sterile against ingested pathogens, inhibits undesirable overgrowth in the small intestine, and encourages the flow of bile and pancreatic enzymes.

Dosage: 1-3 caps before or mid meal

Probiotics

Probiotics are often referred to as the good bacteria because they help keep your gut healthy. Probiotics are live bacteria and yeast that help keep your gut healthy and help optimize your immune system.

There are a variety of probiotics, therefore, pharmaceutical grade is important.

Dosage: 1-2 capsules at night



Please check our online dispensary for the products referenced here:

<https://us.fullscript.com/welcome/lgoodine>

Category: COVID 19 & Immune Wellness

Preventative Management of Coronavirus Infection

Lifestyle

- Proper hygiene habits: frequent hand washing with soap and water.
- Cover your mouth and nose when coughing and sneezing.
- Practice social distance (6 feet) and avoid close contact with anyone exhibiting symptoms of cold or influenza.
- Diet: eat real ingredients, whole foods; avoid sugar, grains, dairy, alcohol. and processed food; check out our website for the anti-inflammatory & immune diets.
- Stress management: practice gratitude, yoga, prayer, and/or meditation.
- Sleep: quality sleep before midnight with 7-9 hours; get to bed by 10 p.m.



Resources:

<https://www.ncbi.nlm.nih.gov/pubmed/19710611>
<https://www.drugs.com/medical-answers/zinc-protect-you-covid-19-boost-immune-system-3535446/>
<https://www.ncbi.nlm.nih.gov/pubmed/19528881>
<https://www.ncbi.nlm.nih.gov/pubmed/16373990>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6521194/>
<https://ods.od.nih.gov/factsheets/VitaminC-HealthProfessional/>
<https://www.aljazeera.com/indepth/features/doctor-note-ward-coronavirus-200407063551241.html>
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<https://wa.kaiserpermanente.org/kbase/topic.jhtml?docId=hn-2888006>
<https://www.ncbi.nlm.nih.gov/pubmed/29337529>
<https://pubchem.ncbi.nlm.nih.gov/compound/glutathione#section=Top>
<https://www.ncbi.nlm.nih.gov/pubmed/11399518>
<https://www.drugs.com/npp/elderberry.html>
<https://www.ncbi.nlm.nih.gov/pubmed/24325861>
<https://www.ncbi.nlm.nih.gov/pubmed/15035888>
<https://www.drweil.com/vitamins-supplements-herbs/herbs/astragalus/>

About Dr. Linda Marquez Goodine

Linda Marquez Goodine is an author, speaker, holistic nutritionist and holds a doctorate degree in Chiropractic Medicine. Dr. Linda provides a holistic, drugless, and whole body approach to wellness helping her patients live life to the fullest. She graduated in 1992 from Southern California University of Health Sciences (former Los Angeles College of Chiropractic). Her post graduate studies have extended in Functional Medicine, Obesity Related Issues, Digestive Health, Brain Health, Thyroid Health, Chronic Fatigue, Chronic Pain and Women's Wellness. Dr. Linda has been interviewed on television, radio, and has contributed to a national health column, in addition to workshops at churches, Fortune 100 companies, and women's organizations and associations. She currently in private practice at Premier Health & Wellness Lake Havasu City, AZ.

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