

Coronavirus Strategies Continued

As the pandemic sweeps across the world, one of the ways to cope is with knowledge. Knowledge is power. Science and the health care industry are working nonstop to reclaim power over the Coronavirus. I've put together an arsenal of information that I hope will create a sense of empowerment as you go through these days of uncertainty and shelter-in-place.

Immune System Basics

The function of the immune system is to recognize “other” (ie. viruses) and respond appropriately. The level of response is as important as the recognition. Under- or overreactions to a virus can cause problems and be incompatible with life.

The immune system is thought of as having 2 branches – Innate and Humoral. The Innate branch is like a system of first responders and consists of cells known as T, B, Natural Killer, White Blood Cells, and Cytokines. Cytokines are like the lookouts of the immune system. They are messenger molecules stored throughout the body that initiate a response from other cells when infections enter the body. They are designed to promote an appropriate level of inflammation to destroy the infecting microbe.

The Humoral immune system consists of antibodies which form after an initial exposure to the foreign invader. These antibodies can protect the body when exposed to the same invader a second time. Together, the Innate and Humoral immune system are an exquisite choreography of the body's intelligent attempts to live in harmony with the environment.

About Coronavirus (Covid-19)

Information about this strain of Coronavirus is constantly evolving. I will stick to the basics. In Latin, corona means “crown”, referring to its unique shape. Coronaviruses have circulated through the human population for years. The current trouble began in late 2019 when a Coronavirus jumped from another species into humans, presenting a new challenge to the human immune system. This Coronavirus strain (Covid-19) is highly contagious and has a strong affinity for infecting human airway cells.

The spikes of the Covid-19 crown bind to human receptor cells, leading to the release of cytokines such as NF-kappa-B, IL-6, IL-8, and TNF-alpha. A dysregulated response of these cytokines can lead to a serious, hyperinflammatory condition known as a cytokine storm, or Acute Respiratory Distress Syndrome (ARDS), in susceptible people.

Fortunately, the virus is destroyed via adequate washing with soap and water or 70% alcohol. The CDC has detailed explanations for disinfection at:

<https://www.cdc.gov/coronavirus/2019-ncov/prepare/disinfecting-your-home.html>

For additional information on protection, the World Health Organization website can be reached at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>

Researchers are intensely investigating novel therapeutics for prevention and treatment of ARDs and cytokine storm, including prevention of viral entry into human cells, disruption of viral replication, suppression of immune over-reactivity, and vaccines. It's encouraging that more than 10 potential vaccines for Covid-19 are in development.

While we wait for these medical breakthroughs, here's a list of supplements, herbs, foods, and practices to improve immune system health. Choose the items that appeal to you. If you have chronic health issues or questions about taking any of the following, please consult with your specialist. These are not designed to be substitutes for appropriate medical treatment.

For Prevention

Multivitamins: Vitamins provide the basic molecules humans can't produce but need for good health. Avoid synthetic once-dailies, but if that's all you have handy, go for it.

Vitamin A: This vitamin helps airway integrity, works as a first line of defense, and is shown to be effective against viruses. 10,000 IU daily of pre-formed Vit. A is considered appropriate short-term, unless you're pregnant or nursing (consult with your doctor).

Vitamin C: Vitamin C protects cells from damage generated by an immune system fighting microbes. A divided dose of 1,000 – 3,000 mg. daily can shorten the duration of viral illnesses. All forms of Vit. C work but C with Bioflavonoids occur together in nature. Take less than 1,000 mg. Vit. C if there's a history of kidney stones.

Vitamin D₃: A powerful modulator of the immune system, D₃ (Cholecalciferol) is effective against respiratory viral infections. Studies show the lower the Vit. D level, the greater the risk of acute respiratory involvement. Approximately 2,000 - 4,000 iu daily is appropriate. Speak to your doctor if you have kidney disease.

Magnesium: This mineral is needed for more than 300 enzymatic reactions in the human body. Hospital admission studies show the lower the magnesium level, the longer the ICU stay, greater the need for mechanical ventilation, and higher the mortality. Magnesium promotes bronchodilation in asthmatics. A tolerable dose is 400 mg. magnesium glycinate in divided doses daily, but you may require more if you're deficient, have malabsorption, exercise a lot, or are under great stress (like right now).

Zinc: This mineral is like an emergency response system against infections. Zinc is seen as effective in blocking Coronaviruses from multiplying in the throat and nasopharynx. High intake (50-180 mg. daily for 2 weeks) has been seen to reduce the duration of viral illnesses, but some resources advise not to take more than 30 mg. on a daily basis. Zinc competes with copper and iron absorption.

Probiotics: Zhejiang Medical University just released a study of Covid-19 that describes a "Four-Anti- and Two-Balance strategy" where the use of probiotics is one of the balance strategies. Stool specimens were found to contain Coronavirus particles. Probiotics were given to balance the microbiome and reduce the risk of secondary gut bacterial infections. Some probiotics I recommend are: MegaSpore by Microbiome Labs,

Ther-Biotic Complete by Klaire, UltraFlora Spectrum by Metagenics, and Lactobacillus plantarum/rhamnosus/salivarius by Allergy Research.

Moducare: This product is a precursor of pycnogenol, made from pine bark, and contains sterols that modulate the immune system. Sterols have been shown to reduce the infectivity of many viruses, including Coronaviruses. Take between meals.

Melatonin: This hormone is a well-known sleep aid, but it has far more benefits to the human body. Melatonin has been shown to decrease NLRP3, an inflammatory lung cytokine implicated in serious breathing issues. If you're having trouble sleeping lately, 3 - 5 mg. 1 hour before bedtime can prove beneficial.

Herbs

Stephen Buhner, a master herbalist, recommends a core tincture formulation of Baikal skullcap, Japanese knotweed root, kudzu, licorice, and elder leaf. He recommends Cordyceps, Dong quai, Rhodiola, and Astragalus to protect cells and interrupt the "cytokine storm" that can damage lungs. For spleen and lymph protection he recommends Dan shen, Red root, and Cinnamon. For active infection, he recommends very strong boneset tea.

Angiotensin-Receptor Blockers (ARBs): Lung cells are lined with ACE-2 receptors, which have been found to be a critical entry point for the Coronavirus. ARBs are medications which block ACE-2 receptors, and research is being done to find out if they can reduce lung damage in Coronavirus. Mark Houston, a cardiologist, lists foods and supplements which act like ARBs: Taurine, Resveratrol (Japanese knotweed), Fiber, Garlic, Vitamin C, Vitamin B6, Coenzyme Q10, Gamma-linoleic acid, and Celery.

Foods for Prevention

- See Angiotensin-Receptor Blockers, above
- Eat organic whenever possible
- Proteins: lean meat, fish, chicken, eggs, soy, beans, peas, lentils, nuts, seeds
- Healthy Fats: avocados, olives (very antimicrobial), coconut
- Unrefined carbohydrates: carrots, greens, broccoli, sweet potatoes, squash, beets, berries, apples
- Foods shown to lower inflammation: a low-glycemic Mediterranean diet, omega-3 oils, turmeric (curcumin)
- Mushrooms: Cordyceps, Turkey tail, Shiitake
- Ginger tea made from fresh ginger, with honey and lemon, 2x daily
- Kefir, Sauerkraut, Kombucha, organic pickles, Kim chee, other fermented foods
- Alkalize the body with lots of green leafy vegetables and lemon water or vinegar water (1 Tb. of either in a glass of water taken before meals).
- Spicy foods: cayenne and other spices can loosen phlegm in the lungs.
- Hydrate throughout the day. Dehydration weakens the immune system. Here's a recipe for homemade healthy "gatorade": (1) 4" piece ginger, peeled + 1/4 c. fresh lemon juice + 2 Tb fresh lime juice + 2 tsp. honey + 1/8 tsp, fine sea salt + 2 3/4 cups coconut water or mineral water. Finely grate ginger and press the juice

through a fine mesh sieve over a small bowl, discard pulp. In a large measuring cup, combine the ginger, lemon, and lime juices, honey, salt, and coconut or mineral water. Pour over ice into 2 glasses.

- **Garlic:** 1 clove raw garlic twice daily will keep not only other people away, but also kills viruses, bacteria, fungi, and yeast. Chop or crush the clove and let it rest for 15” before eating to release allicin (the active compound). You can take garlic capsules with allicin. Follow with fresh parsley or peppermint.
- **Onion Syrup:** Cook diced onions, water and lots of honey on low heat until onions dissolve. 1 tsp. 3x daily if a dry cough begins.
- **Four Thieves Vinegar:** Place into a container 4 cups apple cider vinegar, 5 cloves garlic, and a handful of a combination of these: rosemary, lavender, thyme, peppermint, marjoram, sage. Let it rest in a glass container for a week in a sunny window, then strain and decant. 1 tsp. twice daily as a preventive or 4 tsp. daily as a treatment.
- Avoid sugar - microbes feast on it (except honey, which is antimicrobial).
- Avoid processed foods. They burden the liver and immune system.
- Avoid alcohol (although tempting right now, it challenges liver function. The liver helps detox and eliminate infection byproducts).

Preventive Lifestyle Strategies

- **Sleep:** The power of sleep cannot be underestimated, since that is when we repair and refresh the brain and immune system. Nine hours sleep is optimal at this time! Proper sleep hygiene includes a media fast after dinner, elimination of LED/blue lights in the bedroom, use of light-blocking curtains, Sleepy Time or chamomile tea, a warm Epsom salt bath, and for those with electromagnetic field sensitivity, disconnection of routers, phones on airplane mode and 6’ away from your body.
- **Activity:** A daily walk or two, a resistance workout with either bands or free weights, plus a stretching program (try a foam roller) can go a long way to help reset and cope with the anxieties of today’s situation. Exercise increases lung elasticity and efficiency. It increases endorphins which help anxiety and mood. Try Tai chi or Qi gong, which balance energy meridians for improved organ function and resilience. Deep breathing and meditation soothe the limbic system (emotion and trauma areas of the brain) and vagus nerve, bring balance to all bodily functions, and also lower cortisol (the stress hormone).
- **Hydration:** An immunologist I know describes Covid-19 as a “sticky virus,” and related that on a stickiness scale of 1 - 5, most viruses are a 1, while Covid-19 is a 5. Staying hydrated helps the immune system produce mucus, which can decrease viral entry points and also clear dead viral debris. Keep the mucus membranes of the nose and lungs hydrated so they can do their job. Drink plenty of fluids and use a nasal saline spray 1-2 x daily, more often if you’re ill.
- **Don’t Smoke— cigarettes or marijuana:** Smoking history is associated with poor prognosis in a Coronavirus infection.
- **Protect Your Lungs:** Avoid using and inhaling the chemicals found in scented items - air fresheners, detergents, dryer cloths, perfumes, and hair products.

- **Normalize Hormone Levels:** Adequate estrogen, testosterone, and DHEA levels are associated with lower IL-6.
- **Outside Activities - important:** It's wonderful to spend time in the yard or walking the dog. Be aware that it is prime tick season. I recommend spraying a pair of pants, shoes, socks, and a shirt with permethrin. You can wear leggings and a thin pair of socks under the sprayed clothes to avoid contact with the chemicals. A source for the spray is <https://www.rei.com/search?q=permethrin>

Coronavirus Infection Treatment

The Buhner antiviral herbs (See "Herbs") can be taken along with medical treatment.

Ginger Tea (2-4 cups made from dried sifted ginger root) **or Tincture** (1-4 dropperfuls daily): Ginger has warming qualities.

Natural Decongestants:

Marshmallow root or Slippery Elm: 1/2 TB. of either one, plus 1/2 TB. dried ginger root. Simmer in 3 cups hot water over the stove for 20 minutes. Drink until mucus can be coughed up.

Nasal Irrigation: Use a nasal saline spray (available at pharmacies) and inhale 2x in each nostril, as needed to prevent dryness of nasal passages. Better might be a nasal flush with homemade saline (1/2 tsp. salt to 8 oz. warm filtered water) and an antimicrobial herbal formula like Biocidin, 1-2x daily. You'll need a nasal bulb or Neti-pot. Pinch 1 nostril and squirt the solution into the other nostril while breathing in, hold for 10 seconds, then blow your nose. Repeat on other side.

Diaphoretics (sweating agents): 6 cups Epsom salts in a hot bath, with ginger powder or a few drops of essential oils: lavender, lemon, oregano, thyme, sage, tea tree.

Essential Oil Inhalations: Any of the above essential oils can be rubbed onto the palm, a mask, or tissue, and inhaled. Use sparingly.

Manuka Honey: (MGO 250-400) – 1 tsp, 2-3x daily (honey is very antimicrobial)

Nicotinamide: It's proposed to cause an oxidative burst of viral particles before they can enter cells. A colleague states this is the one supplement she'd choose. It can cause a "niacin flush" and if so, you can take Vitamin C to calm it down. With active infection, a 150-lb. adult can take a loading dose of 4 g. nicotinamide, then 1 g. every 4 hours up to 3 days. Do not exceed 10 g. daily. Use caution if diabetic, or on cholesterol-lowering statins, cholestyramine, or colesvelam. Foods that contain niacin include meat, poultry, red fish, green leafy vegetables, legumes, peanuts, seeds, coffee, and tea.

Boneset Tea: 2 - 4 cups daily during infection. Make a tea of 1 heaping teaspoon boneset and steep. It's very bitter but also very antimicrobial and will heat the body.

Remember, if you have a fever, cough or difficulty breathing, seek medical advice promptly. Most medical facilities have providers who can advise you over the phone.

These are challenging times which call for all of us to be aware, informed, considerate, and careful, for ourselves and others. My background of 30 years in health care leads me to think that evidence-based nutrients shown to support immune function can help us to stay stronger during our pandemic crisis. I hope this gets you started on a path to better health. Please continue to practice strict social avoidance to protect yourself, your family, and the health care and service industry workers who are valiantly at the front lines getting us through this challenging time.

Be well,

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