April , 2020

Dear Patients,

 So much has happened in the past few weeks. In a short span of time, we have collectively witnessed and experienced momentous changes within our shared communities and daily lives. As your healthcare provider, I want to take a moment to offer some background information on the virus, measures you can take to boost your immune system, and some treatment options should you acquire the illness.

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**Background on COVID-19** (from cdc.gov)

The World Health Organization officially announced a pandemic in response to the outbreak of a respiratory disease caused by a novel (new) coronavirus that was first detected in China and which has now been detected in more than 100 locations internationally, including in the United States. The virus has been named “SARS-CoV-2” and the disease it causes has been named “coronavirus disease 2019” (abbreviated “COVID-19”).

Coronaviruses are a large family of viruses that are common in people and many different species of animals, including camels, cattle, cats, and bats. Rarely, animal coronaviruses can infect people and then spread between people such as with MERS-CoV, and now with this new virus (named SARS-CoV-2).

The complete clinical picture with regard to COVID-19 is not fully known. Reported illnesses have ranged from very mild (including some with no reported symptoms) to severe, including illness resulting in death. While information so far suggests that most COVID-19 illness is mild, an external report out of China suggests serious illness occurs in 16% of cases. Older people and people of all ages with severe underlying health conditions — like heart disease, lung disease and diabetes, for example — seem to be at higher risk of developing serious COVID-19 illness.

The first case of COVID19 in the United States was reported on January 20, 2020 **and as of today our country has the largest prevalence** of infected individuals in the world. There are currently over 1.2 million cases globally, and 337,000 cases and 9600 deaths in the US, respectively. We are still waiting for the peak of cases to appear in many of our cities, and it is crucial to continue to remain educated, vigilant and behave cautiously to reduce your risk of infection and slow the spread of the virus.

**COMMON COVID-19 QUESTIONS & TIPS:**

The virus causes respiratory illness (flu-like) with symptoms such as:

* Cough
* Fever
* Malaise – lack of energy – feeling “bad”
* Difficulty breathing
* Pneumonia in severe cases
* Heart palpitations

The reported infection rates are dramatically increasing due to better access to testing and the infectious nature of this virus. Doctors are trying to treat the COVID-19 symptomatically – treating cough, lung issues, infections with anti-viral medications and anti-malarial medications such as hydroxychloroquine. – Currently, none of the treatments you may hear about have been approved by the FDA for COVID19, and no vaccine to prevent coronavirus disease, but development of one is being expedited.

**Who’s at risk?**

All of us are at risk of catching this virus if we’re exposed to a carrier – someone that we come into close contact with or through touching a surface that has oral saliva droplets or nasal discharge on it from an infected person who has touched it. This virus can live on certain surfaces for several days, so please always practice good hand washing technique and disinfect surfaces regularly. However, those at highest risk are:

1. The Elderly
2. Those with long-term health conditions like heart disease, diabetes, liver/kidney conditions
3. Those who are actively sick with a condition are at most risk of catching this virus, especially if the condition compromised their immunity.
4. Those who are working or living around large populations – such as healthcare workers, nursing home residents, rescue centers, large population meetings/events/gatherings

**Steps To Prevent Illness**

The best way to prevent illness is to avoid being exposed to this virus.

* The virus is thought to spread mainly from person-to-person.
* Between people who are in close contact with one another (within about 6 feet).
* Through respiratory droplets produced when an infected person coughs or sneezes as it has been shown to remain in the air in an aerosol form.
* These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.

**Clean your hands often**

* Wash your hands often with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.
* If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.
* Avoid touching your eyes, nose, and mouth with unwashed hands.

**Avoid close contact**

* Avoid close contact with people who are sick
* Put distance between yourself and other people if COVID-19 is spreading in your community. This is especially important for people who are at higher risk of getting very sick.
* FOLLOW LOCAL RULES FOR SOCIAL DISTANCING AND STAY HOME

**Stay home if you’re sick**

* Stay home if you are sick or have been exposed to someone who tested positive for the virus, except to get medical care.
* Learn what to do if you are sick.

**Cover coughs and sneezes**

* Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
* Throw used tissues in the trash.
* Immediately wash your hands with soap and water for at least 20 seconds. If soap and water are not readily available, clean your hands with a hand sanitizer that contains at least 60% alcohol.

**Wear a facemask if you are sick**

* If you are sick: You should wear a facemask when you are around other people (e.g., sharing a room or vehicle) and before you enter a healthcare provider’s office. If you are not able to wear a facemask (for example, because it causes trouble breathing), then you should do your best to cover your coughs and sneezes, and people who are caring for you should wear a facemask if they enter your room.
* If you are NOT sick: The latest CDC recommendations are to wear cloth face coverings in public settings where other social distancing measures are difficult to maintain (e.g., grocery stores and pharmacies) especially in areas of significant community-based transmission.

**Clean and disinfect**

* Clean AND disinfect frequently touched surfaces daily. This includes tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, and sinks.
* If surfaces are dirty, clean them: Use detergent or soap and water prior to disinfection.
* The virus can live on some surfaces for days so disinfect surfaces frequently to lower risk of transmission.

**To disinfect:**
Most common EPA-registered household disinfectants will work. Use disinfectants appropriate for the surface.

Options include:

* Diluting your household bleach.
To make a bleach solution, mix:
	+ 5 tablespoons (1/3rd cup) bleach per gallon of water
	OR
	+ 4 teaspoons bleach per quart of water

Follow manufacturer’s instructions for application and proper ventilation. Check to ensure the product is not past its expiration date. Never mix household bleach with ammonia or any other cleanser. Unexpired household bleach will be effective against coronaviruses when properly diluted.

* **Alcohol solutions.**Ensure solution has at least 60% alcohol.

**What can I do to strengthen my immune system?**

* Stay hydrated. Drinking plenty of water helps to keep your protective mucous barrier in your nasal passage from drying out.
* Make sure you are getting good sleep. Studies have shown that getting 5 hours of sleep a night can make you as much as 9 times more likely to get a flu. So, a good night’s sleep means better immunity. Strive for 7 – 9 hours.
* Manage stress, getting nervous and “freaked out” does not help your immune system. It literally shifts you into “fight or flight” and that weakens your host defense. If you are under chronic stress from work or family situations, take steps to reduce the stress response with meditation or doing deep breathing techniques a few times a day, like box breathing. (Inhale 4 seconds -hold 4 seconds-exhale 4 seconds-hold 4 seconds.) Even relaxing baths and a little aromatherapy can help.
* Eat healthy better beverage alternatives! – increase fresh veggies, if eating meat try to get organic or free range; eat 1 or 2 fruits servings per day; decrease drastically your consumption of sugar and refined carbs, like baked goods, deserts, soft drinks; and fruit juices. Better beverage alternatives to consider are sparkling waters, healthy milk alternatives such as flax milk, and coconut water (high in electrolytes).
* Get moderate exercise - it reduces stress and actually stimulates immune function.

**Daily Preventive Measures: Oral Natural Compounds**

There are a number of natural compounds that possess promising anti-viral properties and improve immune response. Please note, *none* of these agents have been studied in coronavirus specifically or are approved by the FDA.

We offer these suggestions based upon published clinical research performed on these compounds in other viruses, their low risk of harm, and a potential for benefit. It is up to each of you to make personal treatment choices with these cautions in mind.

1) N-Acetyl Cysteine - 1000 mg twice per day has been shown to reduce symptoms and improve immunity in viral infections.

2) Wellmune WGP – 1 capsule daily. Wellmune WGP®- a natural beta 1,3/1,6 glucan derived from the cell wall of a proprietary strain of baker’s yeast (*Saccharomyces cerevisiae*). Wellmune has become the subject of over 800 scientific studies and shown in clinical trials to have a potent effect on immune responsiveness and to defend the system from the effects of recurring stress.

3) Thymus Protein Extract – 2 caps twice per day. Thymus extract is a chemical that can be man-made or produced from the glands of cows. Thymus extract is used for infectious diseases including recurrent respiratory infections, colds, flu, H1N1 “swine” flu, hepatitis B, hepatitis C, Epstein-Barr virus (EBV), mononucleosis, herpes and shingles, sinusitis, and AIDS/HIV. It is also used for asthma, hay fever, food allergies, cancer, rheumatoid arthritis (RA), chronic fatigue syndrome (CFS), and systemic lupus erythematosus (SLE). Other uses include maintaining white cell production in cancer patients treated with radiation or chemotherapy, and preventing the effects of aging.

4) Plant Sterolins – 2 caps morning, 1 cap evening. Plant sterolins are a natural immune modulator which has demonstrated promising results in a number of clinical trials. These important plant constituents seem to specifically target T-helper cells, and may help to restore balance between TH1 and TH2 cells. The end result of this immune modulation is an increase in TH1-related cytokines, a decrease in TH2-related cytokines, increased lymphocyte proliferation, and greater NK cell activity.

Plant sterolins have also been shown to help normalize the DHEA:cortisol ratio, which can have profound positive results on the immune system. The re-establishment of these immune parameters may be of help in numerous disease processes relating to chronic immune-mediated abnormalities, including chronic viral infections, tuberculosis, rheumatoid arthritis, allergies, cancer, and autoimmune diseases.

5) Zinc - Coronavirus appears to be susceptible to the viral inhibitory actions of zinc. Zinc may prevent coronavirus entry into cells and appears to reduce coronavirus virulence. Typical daily dosing of zinc is 15mg – 30mg daily with lozenges potentially providing direct protective effects in the upper respiratory tract.

6) Vitamin C - Like flavonoids, ascorbic acid inhibits NLRP3 inflammasome activation. Clinical trials have found that vitamin C shortens the frequency, duration and severity of the common cold and the incidence of pneumonia. Typical daily dosing of vitamin C ranges from 500mg to 3000mg daily with even higher doses utilized during times of acute infection.

7) Melatonin - Melatonin has been shown to inhibit NFkB activation and NLRP3

inflammasome activation. In fact, the age-related decline in melatonin production is one proposed mechanism to explain why children do not appear to have severe

symptoms and older adults do. Melatonin also reduces oxidative lung injury and

inflammatory cell recruitment during viral infections. Typical dosing of melatonin

varies widely from 0.3mg to 20mg (the latter used in the oncological setting).

8) Vitamin D **-** In certain conditions, vitamin D has been found to decrease NLRP3

inflamasome activation and vitamin D receptor activation reduces IL-1b secretion.

However, 1,25(OH)vitamin D has also been found to **increase** IL-1b levels (inflammation), and should, therefore, be used **with caution** and perhaps discontinued with symptoms of infection.

**To Avoid Increasing Your Levels of Inflammation**: Given the integral role of inflammatory cytokines (namely IL-1B and IL-18) in the pathogenicity of COVID-19, as well as the impossibility of predicting which individuals are susceptible to the “cytokine storm”, technically called secondary hemophagocytic lymphohistiocytosis, or sHLH, it appears to be prudent to avoid high and regular use of immunostimulatory agents which increase these cytokines.

Again, in the absence of human clinical data, **caution is warranted with the following immune activating agents** due to preclinical evidence of increased IL-1B and/or IL-18 production in infected immune cells:

* Sambucus nigra (Elderberry)
* Polysaccharide extracts from medicinal mushrooms
* Echinacea angustifolia and E. purpurea
* Larch arabinogalactan
* Vitamin D

**Intravenous Treatment as Preventive and for Acute Infection**

1) IV Vitamin C 30 grams has been shown to have potent antiviral properties in high doses, and functions differently in this regard compared to oral forms of Vitamin C. There are reports of Chinese and New York hospitals using IVC to treat coronavirus symptoms.

For prevention – weekly IV Vitamin C 10 grams or higher

For Acute Infections– daily IV Vitamin C 50 grams until resolution of symptoms

**Injectable Therapy**

1) Thymosin Alpha 1 – A very powerful prescription immune booster produced at a specialized pharmacy.

Thymosin alpha-1 is a synthetic thymic peptide used to improve immune responses in times of need. The thymus is a gland located behind your sternum and between the lungs. It produces the protein hormone thymosin which stimulates the immune system to develop disease fighting T-cells. Studies report thymosin alpha-1: Thymosin alpha-1 has been used to support immunity in over 3,000 patients and in over 70 clinical studies, either alone or in combination with other medications.

**Acute Infections**

1) Glutathione (GSH) cyclodextrin spray – a prescription topical spray that eliminates viral infections in several days of treatment. 4 sprays topically every four hours. Please contact clinic if you would like a prescription.

GSH is the most powerful intracellular antioxidant and directs the detoxification of a variety of electrophilic compounds and peroxides via catalysis by glutathione-S- transferases (GST) and glutathione peroxidases (GPx). An imbalance in GSH is observed in a wide range of pathologies, such as cancer, neurodegenerative diseases, cystic fibrosis (CF), several viral infections including HIV-1, as well as in aging6.

Viral infection is often associated with the redox modifications characteristic of oxidative stress. Alteration of the endogenous levels of GSH has been found in experimental infections in vitro with herpes simplex virus type 1 (HSV-1) , Sendai virus, HIV and in vivo with influenza A virus and HSV-1. GSH levels are decreased in plasma, peripheral blood mononuclear cells and monocytes in asymptomatic HIV infected individuals and in AIDS patients.

Cyclodextrins have been shown to play a key role in the treatment and prevention of coronavirus. Infection by enveloped viruses including coronavirus and influenza virus is mediated by viral binding to cellular receptors and fusion of the viral envelope with the host cell membrane. Evidence suggests that cholesterol present in microdomains in the viral envelope and cell membrane are required for successful entry of enveloped viruses into the host cell.

2) Andrographis  – (*Andrographis paniculata*) is a potent antiviral botanical; Andrographis was found effective in upper respiratory infection treatment in a 2010 human study of 223 virally-infected patients ; take 300mg twice daily standardized to at least 10-50% andrographolides

3) English Ivy syrup – 1 teaspoonful 3-4 times daily; this is useful for cough and phlegm production in the lungs; it has been used in Europe for decades as #1 lung product

4) Monolaurin  – 600mg monolaurin, three times daily; monolaurin is glycerol monolaurate, a medium-chain fatty acid derived from coconut oil and also found in human breast milk; it possesses potent antibiotic, antiviral activity and is effective for immune support.

**Summary**

What are my treatment options?

For prevention

1. NAC
2. Wellmune WGP
3. Thymus protein extract
4. Plant Sterolins
5. Zinc
6. Vitamin C
7. Melatonin
8. Vitamin D
9. Thymosin Alpha 1 (rx)
10. IV Vitamin C weekly

For Acute Symptoms

1. Glutathione cyclodextrin spray (rx)
2. IV Vitamin C
3. Andrographis
4. English Ivy Syrup
5. Monolaurin

During this uncertain time, it is more important than ever that you prioritize your health and well-being— and as always, I am here as a resource and guide to help you do so. If you have any questions or concerns, please do not hesitate to reach out.

Thank you,