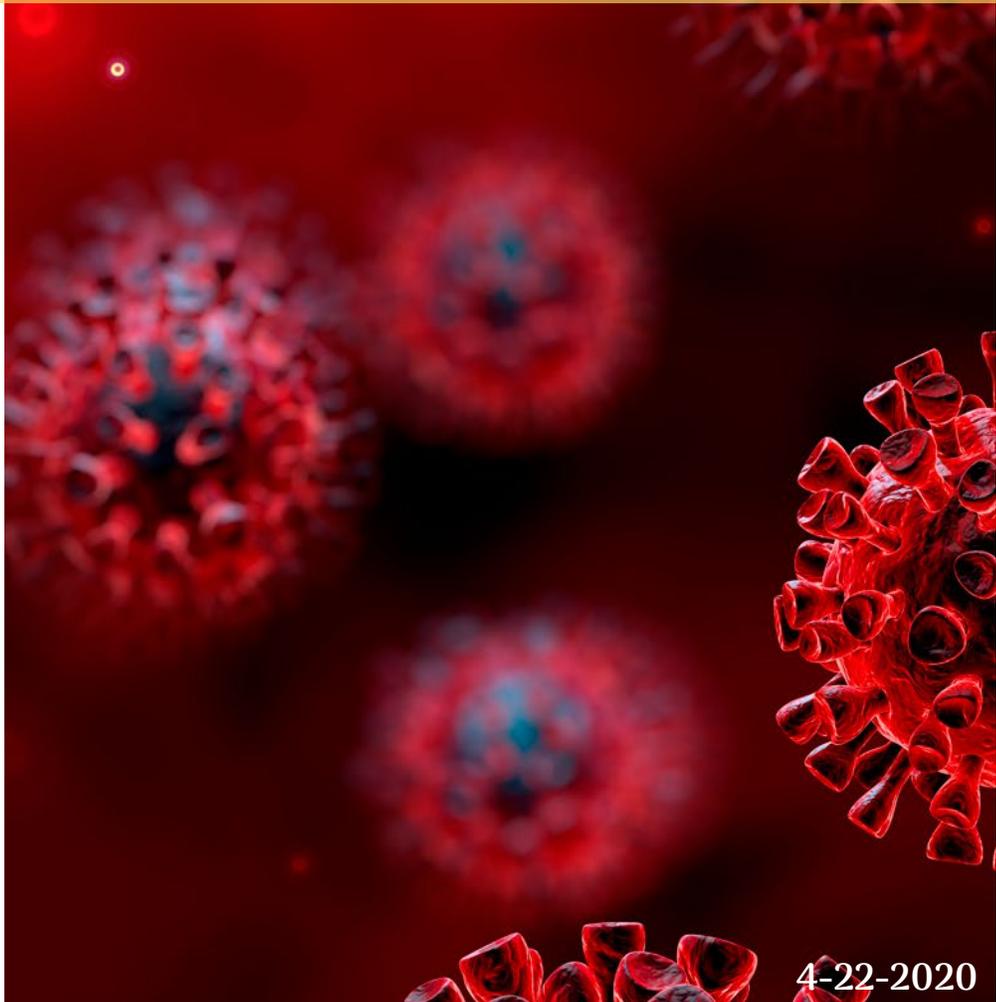


COVID-19: Preventatives and Potential Cures

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This document offers suggestions condensed from many sources about best ways to prevent, mitigate and potentially cure SARS-CoV-2, which stands for severe acute respiratory syndrome, coronavirus 2. SARS-CoV-2 is the cause of COVID-19, meaning coronavirus disease of 2019. Symptoms of COVID-19 can include fever, cough and breathing trouble. Most develop only mild symptoms. But some people, usually those with other medical complications, develop more severe symptoms, including pneumonia, which can be fatal.

Preventative Measures to Reduce the Severity of Infection

Any factor that boosts immunity may mitigate the severity, duration, or potential complications of an infection. The greatest focus is lowering virulence of infection, minimizing symptoms, and shortening the time an infected person may spread the microbe. General factors in reducing the severity of infection include adequate sleep, exercising regularly, avoid smoking and polluted air, eating well, and lowering stress as much as possible.

Nutritional Support	What it Does	Dosage	Frequency
N-acetyl-cysteine (NAC)	Most potent specific factor for respiratory viral infections is supplementing with N-acetyl-cysteine (NAC). This nutrient builds the levels of glutathione in the cell – a powerful sulfur based anti-aging anti-tumor antioxidant present at fairly high concentrations in health. Clinical study of NAC at 600 mg twice a day during flu season was found to reduce symptomatic infection from 79% all the way to 25%. While the rate of infection was not decreased the likelihood of symptoms was reduced by 70%, along with shorter duration of symptoms and less intensity of symptoms when any were present.	600 mg	Twice daily
Selenium	Selenium is a trace element associated with antiviral and anti-tumor immunity. Its probable main mechanism of action is as a necessary cofactor in the enzyme required to make glutathione an effective antioxidant (glutathione peroxidase). Epidemiologic studies for HIV infection showed that regions with high levels of selenium in the soil and hence greater amounts in the diet had reduced incidence of infection in the adult population to as low as .5-1% compared to areas where selenium was poor and prevalence reached as high as 20-25% of the population. The greater the presence of glutathione, in general, the less the virulence of a viral infection. With the selenium RDA 55 micrograms (mcg) per day, the optimal intake is approximately 140-200 mcg per day. The most ideal form for absorption and biological activity appears to be selenium in a complex with the sulfur amino acid methionine called seleno-methionine.	140-200 mcg	Once daily
Zinc	Zinc has abundant evidence that its presence in adequate amounts inhibits the action of viruses, particularly respiratory viruses. The putative action of hydroxychloroquine to decrease viral production appears as a delivery method to increase transport of zinc into the cell. The most efficient form for cell delivery is zinc surrounded by a coordination complex of amino acids called an amino acid chelate. In this form the RDA level of 15 mg per day is probably sufficient. Inorganic forms such as zinc sulfate and gluconate probably require 2-3 times the amount to achieve similar absorption and cellular delivery.	15 mg	Once daily
Vitamin C	Vitamin C has over 60,000 published scientific articles to support its use. Suggested intake is 1-2 grams twice a day for basic immune enhancement. Solaray 1000 mg with bioflavonoids is a brand I like and use personally. Higher dosages IV are being used effectively as a treatment for more severe cases with life threatening respiratory involvement.	1000 mg (1 gram)	Twice daily
Vitamin D	Vitamin D levels are generally reduced in winter which is felt to be a predisposing factor for seasonal respiratory illnesses. For a short term use over the vitally important next 6-8 weeks, 5000 IU per day is a reasonable intake to aim for optimal vitamin D levels. >> After this time, as vitamin D can be toxic with excess ingestion, it's most ideal to check blood levels and adjust use to aim for optimum levels of 40-80 nanograms per ml, most ideally 60-80 nanograms per ml.	5000 IU	Once daily

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Nutritional Support	What it Does	Dosage	Frequency
Vitamin A	Vitamin A at the RDA of 900 mcg RAE (retinol activity equivalents) or 3000 IU is also immune enhancing and supports the health of respiratory tissues. The equivalent value of beta carotene, which is converted into Vitamin A, is 6 times this amount, or 18,000 IU to meet the RDA. Unlike Vitamin A, which can become toxic if taken in excessive amounts (>10,000 IU per day), the body only converts as much beta carotene into Vitamin A as needed, so toxicity is unlikely even at high levels of ingestion.	3000 IU of Vitamin A or 18,000 IU of Beta Carotene	Once daily
AIR (Accelerated Immune recovery) Capsules	One simple regimen is the AIR (Accelerated Immune Recovery) Capsules formula from Gematria (contact: www.gematria.com, info@gematria.com or call 888-838-8878) taken 2 capsules twice a day. This provides 600 mg of NAC twice a day along with 140 mcg of seleno-methionine and 15 mg of amino acid chelated zinc. The formula is treated with a high frequency laser-based resonance technology found to increase nutrient delivery as much as 2-5 fold in agricultural studies. As part of a protocol for HIV in Africa, this formula was safely used and was associated with more than double the rate of immune recovery than with antiretroviral drug therapy alone. This would be ideally taken with 1-2 grams of vitamin C twice a day and 5000 IU of vitamin D once a day.	2 capsules	Twice daily

Other measures to reduce the severity of infection are:

- **Infrared sauna** which boosts immune function through the release of heat shock proteins rather than the heat having a direct antiviral effect as some have speculated
- **Cryotherapy**, being cooled to temperatures as low as minus 220 degrees Fahrenheit (minus 140 degrees Celsius) releases feel good endorphins and boosts immune function.
- **Medicinal mushrooms** such as shiitake, reishi, and maitake can be considered
- **Adaptogens** such as ginseng, ashwagandha, and rhodiola enhance our ability to adapt to stresses, may be mood elevating, and generally enhance immune function.

>>> *Caution with the use of elderberry has been raised as it appears to increase the release of interleukin-6 (IL-6), a cell chemical or cytokine that promotes inflammation and has been implicated in cytokine storm that damages the lung and results in severe respiratory distress. Until this controversy is clarified it may be best to avoid this otherwise recommended pulmonary support botanical.*



Interventions for Higher Risk Disease

The danger for persons with SARS-CoV-2 has been heavily weighted to those of older age or with one or more underlying medical conditions or both. Smoking and obesity have also been associated with higher risks of developing the severe respiratory syndrome. Those at higher risk, and advised to use earlier intervention protocols are persons with shortness of breath at any age, or older persons with at risk health conditions, with milder symptoms.

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Earlier Stage Intervention

A landmark French study reported the benefit of using hydroxychloroquine, at a dosage of 200 mg 3 times per day for 10 days. This was used alone or combined with azithromycin, at a dosage of 500 mg on day 1 and then 250 mg per day on days 2 – 5, and both were compared to placebo.

At day 6 after starting therapy with the combination of both medications, 100% of persons were cured with no detectable shedding of virus, compared to only 57% on hydroxychloroquine alone, and a mere 13% of persons taking placebo. The benefit of using both medications compared to placebo was found to be statistically significant.

Medication	Dosage	Frequency	Duration
Hydroxychloroquine	200 mg	3 times daily	10 days
Azithromycin	500 mg day 1/ then 250 mg thereafter	Once daily	5 days

Another study was done by Dr. Vladimir Zelenko using the following protocol for high risk persons: Hydroxychloroquine 200 mg twice daily, azithromycin 500 mg once daily, and zinc sulfate 220 mg once daily (delivering 89 mg of elemental zinc) all 3 of these together for 5 days. His inclusion criteria for treatment were persons of any age with a shortness of breath or older persons with other at-risk health conditions with mild symptoms.

Based on early results of epidemic evolution, of his 699 high risk patients treated there would have been expected 140 hospitalizations and 35 deaths. With his program, there were only 4 hospitalizations, none with intensive care requirement, and 100% survival. His successful experience for a relatively large cohort sets a standard for comparison of competing protocols.

A recent Veterans Administration hospital study raised a question of safety for the use of hydroxychloroquine alone. The combination with azithromycin was not found to have the same safety issue. The utility of the combination with azithromycin appears to be in earlier stage evolution to reduce severity of progression. The relative merit or risk after disease is severe and hospitalization has occurred is uncertain. For a detailed review and discussion of this study and related concerns and considerations a separate report is being prepared and will be available at the link at the end of this report. Larger scale randomized clinical trials are awaited for definitive answers for safety and efficacy.

Advanced Life Threatening Respiratory Syndrome

Intravenous Vitamin C

Dr. Mao of the Shanghai Public Health Center was experienced in the use of high dose IV vitamin C for critically ill patients. In a series of 50 cases of moderate to severe COVID-19 infection, he used 10 grams per day IV for moderately severe cases and 20 grams per day IV for severe cases (severity determined mainly by the pulmonary oxygenation index and the patient's coagulation status). These patients probably had a 30-70% mortality risk without any added treatment. With the IV vitamin C protocol given daily for 7-10 days, there was 100% survival and no significant side effects.

Before being given high dose IV vitamin C, screening for a condition known as G6PD (glucose-6-phosphate dehydrogenase) deficiency is done routinely. Persons with this condition may have breakdown of their red blood cells if high doses of vitamin C are given. While a fairly rare condition this screening is important for assuring that the treatment can be done safely. Persons with G6PD deficiency should also not use hydroxychloroquine.

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Stem Cells

Researchers collaborating at Beijing You'an Hospital treated 7 critically ill patients with allogeneic mesenchymal stem cells. Allogeneic means that the stem cells came from another person. Mesenchymal stem cells are those usually harvested from fat or bone marrow, or also from cord blood. These very ill patients were all significantly better in 2 days and all recovered well. Despite the small study, the 100% survival rate for these especially ill patients was considered very promising.

Potential Cures in Active Development

Vitamin B2 & Ultraviolet Light: Photodynamic Therapy (PDT)

The combination of riboflavin, or vitamin B2, as a compound that binds to and sensitizes pathogens to ultraviolet (UV) light has been used in vitro for multiple viral pathogens with inhibition of 99.99% or greater. The pathogens for which this effect have been observed include hepatitis B virus, HIV, and the coronavirus that causes MERS (Middle Eastern Respiratory Syndrome). For the latter, 9 of 9 samples of plasma with high level MERS viral contamination were tested, and the combination of UV light plus riboflavin resulted in complete inhibition of this coronavirus below detectability in 100% of the samples.

Human application of this photodynamic therapy is through delivering 200 mg IV riboflavin followed by 30 minutes of IV blood illumination via a fiber-optic light channel placed into a vein directing a UV laser output for 30 minutes. The Weber Endolaser System has been elegantly engineered for this purpose. The UV light is followed by 30 minutes of blue laser light as riboflavin also has high absorption in this wavelength range. Riboflavin binds to the pathogen, and the light wavelengths induce an oxidation effect that selectively eliminates them. Dr. Weber's group reports they will soon apply this directly for SARS-CoV-2 to observe what results may be achieved.

Ivermectin plus Others

Ivermectin is an antiparasitic pharmaceutical that shows complete inhibition of the COVID-19 agent at the test tube level. Remdesivir is an antiviral that has shown promise for MERS and is being tested clinically for SARS-CoV-2. Multiple other candidates are being evaluated from the test tube level to clinical studies. Many promising compounds and strategies are being pursued around the world.

Vaccines

Vaccine candidates are being developed, and whether this coronavirus which seems to mutate rapidly will have a proven vaccine that is safe and effective, remains to be seen. Typical development time for a new vaccine is 12-18 months. Until then the above measures, already shown to have promise, shall be developed, enhanced and validated further.

To receive periodic updates as our knowledge evolves please go to
<https://www.gematria.com/general-health/coronavirus>

For inquiries: (888) 838-8877

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How Pathogens Travel

As a respiratory viral pathogen SARS-CoV-2 has the usual main method of spread which is the expulsion of virus-laden respiratory droplets from an infected person into the air. These can then be inhaled to spread the infection to people in the vicinity. Less commonly, virus that deposits on a person's hands or on nearby objects can be inoculated into nasal passages, mouth or eyes by direct transfer.

Action Taken	Velocity	Droplets Ejected	Distance Traveled
Coughing	50 miles per hour	3,000*	18 feet (6 meters)
Sneezing	100 miles per hour	100,000*	24 feet (8 meters)

* These droplets can linger in the air for 10 minutes, possibly longer in enclosed spaces.

If a sneeze can travel 24 feet, so should you – away from the person sneezing! And stay away for at least 10 minutes. 6 feet may be adequate for ordinary breathing and speaking, but logically does not suffice when a possibly infected person is coughing or sneezing. Coughing into your elbow is a curious recommendation. A saliva soaked sleeve is neither sanitary nor dignified, and needs to be washed to clear particles. Better to cough into a tissue and discard it, and wash your hands.

The merits of a mask are for scenarios where you are in an area that people may have concentrated such as in a store or pharmacy, and someone could have been coughing in the last 10 minutes. Under these circumstances mask wearing offers a degree of protection.

Hand Washing	soap and water	at least 20 seconds
Hand Sanitizing	alcohol-based	at least 65% alcohol or 130 proof

If your hands may be contaminated, avoid touching nose or mouth or eyes until you have had a chance to wash them.

Prevention: Social Distancing and Quarantine

Social distancing matters: quickly applying social distancing, testing, and quarantine of positive cases and contacts can result in 10 times the survival rate or even more. Delaying these measures as happened in Italy resulted in mortality rates as high as 5% compared to South Korea which was reduced to .5% by aggressive prompt use of these practices.

- Adopting social distancing and lockdown just one day earlier can reduce the number of cases by 40%.
- The purpose of social distancing is to reduce the rate of spread of 2.5 people per infected person which can cause doubling rates every 6-7 days to as close as possible to 1, when spread stops.
- The rate of new cases of infection can drop as quickly as 2 weeks after starting lockdown practices.
- Flattening the curve refers to slowing the rate of new cases enough through social distancing and related measures to prevent overwhelm of health care systems and to accelerate control of the epidemic.



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Dr. Todd Ovokaitys did his undergraduate studies at Northwestern University in Evanston, Illinois. After 2 years he was at the top of his class with a 4.0 GPA (out of 4.0). He was one of 26 students in America accepted to an accelerated medical training program at the prestigious Johns Hopkins University Medical School in Baltimore, Maryland. In the course of this work, he was elected to Phi Beta Kappa at this institution. During this time Dr. Todd also studied voice and classical guitar at the Peabody Institute. He received both BA and MD degrees from Johns Hopkins University.

Dr. Todd's subsequent training included an Internship and Residency at Georgetown University Hospital in Washington, DC. He was invited to be a Chief Medical Resident in the Georgetown University system, responsible for the teaching program of medical students, interns, and residents. This honorary position was followed by the completion of a two-year Fellowship in Pulmonary and Intensive Care Medicine, also at Georgetown University Hospital.

While at Georgetown, Dr. Todd experienced a deep insight into an elegant method for matching the vibrational states of biological molecules to neutralize toxins and enhance human biochemical functions.

Pursuing this insight, he moved to Southern California and constructed a platform with the assistance of Scottish physicist Scott Strachan. This colleague had won the Enterprise Scotland Award from Prince Charles for laser measurement devices. Scott Strachan also contributed to the creation of real time ultrasound, the technology that uses sound waves to view internal organs with precision.

The technology created employs the art of laser-based photoacoustic resonance. A novel wave form is produced that generates very rapid impulses as fast as molecules vibrate and rotate. This allows a matching of frequencies with modes of molecular vibration to produce resonance and thereby enhance shape, structure or function of molecules. Using this method US and international patents have been granted in nutraceuticals, pharmaceuticals, general agriculture, cannabis, and in activating and directing stem cell functions.

Dr. Ovokaitys founded Gematria Products, a nutraceutical company that has conducted clinical trials on a dozen different formulations showing statistically significant benefits. This includes a composition that regenerates active myocardial tissue and improves cardiac function. Dr. Ovokaitys is also a consultant for advanced protocols in anti-aging and regenerative medicine. His realm of expertise includes the best of conventional and complementary, metabolic and nutritional medicine.

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