Aiming for Asymptomatic COVID

There is growing evidence that many people get asymptomatic or very mild cases of COVID-19. If you have to get this disease, asymptomatic or very mild disease is a lot better than the alternatives. While persons with asymptomatic or very mild disease may not know they even have it, they can spread it. Thus we all need to do our part to avoid disease transmission.

Many people have mild COVID disease, with mild fever, a bit of a cough, or the temporary loss of the sense of smell so that food tastes bland. Even if you are fortunate enough to get a mild case, it is still important to self isolate, as you are still infectious for about a week and sometimes more, and can spread the virus to others who may get severe COVID disease.

How can you be one of the lucky ones to have minimal COVID-19 if infected? It greatly helps to begin with health, but here are some things everyone can do to have their immune system work effectively and hopefully, develop immunity without significant disease.

- *Don't be sleep deprived.*
- *Don't be vitamin D or zinc deficient.*
- *Get plenty of natural folate and other B vitamins.*
- *Eat cruciferous vegetables.*
- *Don't' be a couch potato.*
- *Avoid a high fat diet.*
- *Probiotics may help.*
- *Avoid unnecessary medications, alcohol, and marijuana.*
- *Apigenin may help*
- *N-acetylcysteine for high risk individuals*
- *Avoid Negativity*

The COVID-19 virus, SARS-CoV-2, attacks the endothelial cells of the blood vessels, including the endothelial cells of lung. Individuals with severe endothelial dysfunction are those at highest risk of severe COVID. Hypertension, type 2 diabetes, obesity and heart disease are all risk factors for severe COVID, and all involve endothelial dysfunction.

Zinc, vitamin D3; vitamins B6, B9, and B12, and exercise help protect the endothelium from injury. High blood sugar, alcohol, nicotine, and high fat diets, promote endothelial dysfunction and increase risk of severe COVID.[1]

1. Get plenty of sleep – eight hours in bed each night with a regular sleep schedule. I suggest turning off all screens by 9:30, and that adults be in bed by 10:00. If you are sleepy during the day – you are almost certainly sleep deprived. Adults may feel fine with less sleep, but it takes 7½ hours a night of sleep to have the immune system work at its best, and that takes 8 hours in bed. Children and teenagers need even more sleep.[2]

2. Vitamin D: 400 to 600 IU per day. A low dose helps *prevent* viral infections, but higher doses do not; they actually appear to increase risk.[3] [4] [5] Getting 15 minutes in the sun each day may also help. We make new immune cells each day – they need fresh vitamin D each day. Our bodies turn vitamin D into 25-OHD3 and then store vitamin D as 1, 25-OHD3, but the new immune cells need 25-OHD3. Thus, they need fresh vitamin D each day. Vitamin D3 works especially

well in children for the prevention of respiratory infections. In studies of influenza, large doses of vitamin D do not help, and appear to lengthen the course of the disease.

3. Don't be zinc deficient. It does not take much zinc, but it takes the right kind. I recommend 8 to 10 mg of elemental zinc in the form of zinc acetate or zinc citrate,[6] per day. It does not take a high dose to prevent zinc deficiency. If you get the virus, double the dose of zinc. Chronic use of more than 100 mg of zinc per day may suppress some aspects of T-Cell and Natural Killer cell function. [7]

4. B vitamins for endothelial health:

> Take a 5-MTHF (i.e.; Metafolin, L-methylfolate) supplement, 800 mcg/day. This is the natural form of folate in fruit and leafy vegetables.
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> Persons with chronic inflammatory conditions are likely to benefit from taking vitamin B6 in the form of pyridoxal-5-phospate (P5P), 15 to 50 mg/day.
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> Older persons should consider taking a vitamin B12 supplement, in the form of methylcobalamin. I suggest those 50 to 65 years old take 500 mcg/day and those over 65 take 1000 mcg/day as vitamin B12 absorption tends to declines with age. [8] I recommend using methylcobalamin lozenges as they may improve absorption.

5. Veggies: For similar reasons that the consumption of Brassica (Cruciferous) vegetables (broccoli, cauliflower, and others) and garlic lower the risk of heart disease and cancer, they can improve endothelial function and thus should help lower the risk of severe COVID. Broccoli and cauliflower are most potent eaten raw or lightly steamed and consumed immediately, as cooking temperatures destroy the active compound, sulforaphane. A three to four ounce serving twice a week or half an ounce eaten raw, daily, is sufficient to provide benefit,. Similarly, garlic only helps when the compound allicin is activated by crushing raw garlic and putting it in food without exposing it to cooking temperatures. A clove is enough – but takes some grit. Broccoli is likely the most potent of these, but cauliflower may be more practical as more people are accustomed to eat if raw. Chewing it activates the sulforaphane.[9]

6. Probiotics have been shown to increase seroprotection (a 40-times increase in protective antibodies against the virus) following influenza immunization. In review of two metaanalyses, probiotics clearly work and prebiotics did not.[10, 11] The difference between success and failure in these studies mostly likely depended upon the probiotic strains used. For example, *Lactobacillus GG* did not help while other *Lactobacilli* did. There are dozens of strains and species and a few genera of bacterial used in probiotics, and they come in numerous combinations, thus figuring out which ones boost immunity is not a simple task. Additionally, there is great variation in the number of live bacteria that actually are in the supplement (they can die) and variation in how many survive to make it to the intestine alive. If the supplement is not in an enteric capsule, the stomach acid and pancreatic enzymes may kill the majority of the beneficial bacteria. I recommend a high dose probiotic that has a blend of both *Lactobacilli* and *Bifidobacterium*, or at least a high quality yogurt as a source of probiotic bacteria. I suggest continuing prebiotic and probiotics throughout the course of the infection as this virus affects

the GI tract. If nothing else, yogurt may help. Thus, probiotics may help immune competence if taken just before or at the onset of SARS-CoV-2 infection.

7. Get regular exercise. Brief bouts of intense exercise that gets one out of breath, cause short-term stress that helps keep the immune system on its toes. If you are not well enough to exercise, (or just too lazy) hot baths a few times a week may have a similar effect.

8. Avoid Alcohol. Drinking red wine, up to 30 ml (@ one ounce) per 30 pounds of ideal body weight per day is fine, as dark red wines such as zinfandel and merlot contains compounds that benefit health. More alcohol than this impairs endothelial function. If you can feel the effect of the alcohol, you have had too much as far as your endothelial cells are concerned.

9. Move to a low-fat diet, and try eating cold water fish a couple of times a week. Lowering dietary fat, and switching to more healthy fats (such as those in cold water fish) takes months to significantly lower risk, but the sooner it's done the more it will help.

10. *High risk individuals*: Persons with hypertension, coronary heart disease, vascular disease, diabetes or are obese, generally have significant endothelial dysfunction and are at significant risk of severe COVID. For these persons I suggest a daily supplement with apigenin, a natural, anti-inflammatory phenolic compound, using 50mg, twice a day,[12] along with the nutritional supplement N-acetylcysteine (NAC). NAC has antioxidant and anti-thrombotic properties, and may help prevent severe COVID. I suggest one 600 mg capsules of NAC twice daily for high risk individuals to improve endothelial function and lower the risk of developing severe COVID. For active COVID, I estimate a that the therapeutic dose will be 50 mg of apigenin and 600 mg of NAC each, five times daily.

11. Vitamin C: The body is limited in how much vitamin C can be absorbed, and a healthy diet should provide sufficient amounts. If you want to take a vitamin C supplement, take a small amount with each meal. Sixty milligrams per meal is about the most a person can absorb. In high doses, the unabsorbed vitamin C ferments in the gut, and causes flatulence and very high doses can cause diarrhea.

Dozens of clinical trials have evaluated the value of vitamin C in the treatment of upper respiratory infections. *Large oral doses* of vitamin C have not been found to prevent or reduce the duration of the common cold,[13] some of which are corona viruses. Intravenous vitamin C is a different matter. I recommend not being vitamin C deficient, but doubt there is any advantage in using large doses of vitamin C. Rather, I encourage a healthy diet, with fruits and vegetables.

12. If you use canned entertainment to pass the extra time you are sequestered at home – watch comedies that make you laugh, or a tear-jerkers that makes you cry, but only watch media that leaves you feeling relaxed and better at the end. Avoid negativity, politics that makes you angry, social media that is toxic, or things that just make you worry. Use this time to relax and learn.

If something is outside of your ability to intervene, it is not your responsibility, so don't fret it. Be proactive in choosing things that you can have a positive effect on. Engage in activities and recreation that you feel better about life.

And of course, diabetics should control blood sugars and avoid sweet and guilty pleasures. Those with hypertension should avoid missing the medications they have been prescribed to keep it under control. It is a good time to take care of one's self.

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[1] https://www.drcharleslewis.com/ See "Endothelial Dysfunction and COVID-19"

[2] https://www.drcharleslewis.com/ See: The tremendous impact that sleep can have on your resilience

[3] Vitamin D supplementation to prevent acute respiratory infections: individual participant data meta-analysis. Martineau AR, et al. Health Technol Assess. 2019 Jan;23(2):1-44. doi: 10.3310/hta23020.PMID:30675873

[4] Double-blind randomised controlled trial of vitamin D3 supplementation for the prevention of acute respiratory infection in older adults and their carers (ViDiFlu). Martineau AR, et al. Thorax. 2015 Oct;70(10):953-60. doi: 10.1136/thoraxjnl-2015-206996. PMID:26063508

[5] Vitamin D supplementation and upper respiratory tract infections in adolescent swimmers: a randomized controlled trial. Dubnov-Raz G, Rinat B, Hemilä H, Choleva L, Cohen AH, Constantini NW. Pediatr Exerc Sci. 2015 Feb;27(1):113-9. doi: 10.1123/pes.2014-0030. Epub 2014 Jul 15. PMID:25050610

[6] Zinc ion availability--the determinant of efficacy in zinc lozenge treatment of common colds. Eby GA. J Antimicrob Chemother. 1997 Oct;40(4):483-93. PMID:9372416

[7] From the label of LifeExtension Enhanced Zinc (acetate) Lozenges.

[8] https://www.drcharleslewis.com/ See "Endothelial Dysfunction and COVID-19"

[9] Unraveling Cancer, Chapters 23 and 24. Charles A. Lewis

[10] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5707647/

[11] https://www.ncbi.nlm.nih.gov/pubmed/29416317

[12] https://www.drcharleslewis.com/ See "Endothelial Dysfunction and COVID-19"

[13] Vitamin C for preventing and treating the common cold. Hemilä H, Chalker E. Cochrane Database Syst Rev. 2013 Jan 31;(1):CD000980. doi: 10.1002/14651858.CD000980.pub4. PMID:23440782