



# Look to the Host

In an uncertain climate, there's one thing you can do: Reinforce your health to the best of your ability to weather any storm. Here's how.

BY JONNY BOWDEN, PHD, CNS

The French microbiologist Louis Pasteur never heard of the coronavirus, but he knew a thing or two about infectious diseases. One of the things he knew was that there are two primary components in any infectious disease: the pathogen and the host. The pathogen (i.e., a virus) is what infects, while the host (you) is what is infected.

Pasteur, who spent his life studying pathogens, was famously quoted as saying: "The bacteria are nothing. The soil is everything." I shorthand this statement to "Look to the host" in grad school and have been referencing it ever since.

**This is good advice for these times, and here's why** Pasteur realized that all the info in the world about the nature of germs and microbes wouldn't do

much good without a greater understanding of how they interact with the host. Because, ultimately, with any virus that comes to mind, more people are infected than ultimately succumb. The question is why. Why do some people who've been exposed to a microbe get sick while others, exposed to the exact same microbe, don't?

Pasteur was telling us where to look for the answer. There's much that's unknown still about COVID-19, and what we do know will probably be out of date in a few months – in fact, the information we have while I'm writing this at time of press will change significantly by the time this issue reaches you, I'm afraid. But we do know a lot about hosts. We know a lot about the immune system, how it works and how to support it with nutrition and lifestyle. We know

what weakens the immune system, and we know what strengthens it.

So let's start there. You can call it your own personal "reinforcement project." Because the more you do to fortify and strengthen your own internal army, the better you'll be able to fight off – or at least minimize damage from – any challenge, coronavirus or otherwise.

## Supporting immunity with nutrition

There are two portals into this reinforcement project – nutritional and non-nutritional. I urge you to take both of them equally seriously, and I hope to convincingly show you why both are so important.

Let's start with nutrition. Although most of us are hunkered down with the boxes of food we've been able to score from dwindling supplies at the



markets, this is not the time to abandon your diet. Recent evidence shows that the high blood sugar spikes typically brought on by sugar and processed carbs actually depress the immune system – and there's a lot of sugar and starch in those boxes of food you're stocking up on. Processed food is practically a recipe for blood sugar spikes, and we're now finding that high blood sugar creates molecules that actually hamper the ability of the body to control infections.

Interestingly, there's one category of food that grocery stores haven't sold out of – fruits and vegetables. The rest of the store may look like Poland during the Soviet occupation, but the fresh-produce section is overflowing. Buy everything you can. Find new ways to make things. Juice them (I do that daily). Grab some of that high-quality cooking oil you have in your pantry and start learning new ways to stir-fry. Even if circumstances demand that you eat more processed food than you'd otherwise choose to, loading up on additional fruits and vegetables is one of the best ways to do damage control.

The other problem with processed foods is how much sodium they have. Sodium drains your cells of potassium and magnesium, which are key nutrients needed to fight inflammation (and in the case of magnesium, to also lower stress and maintain healthy blood sugar levels). Foods in their natural state have about a 4:1 ratio of potassium to sodium, but when foods are processed, that ratio gets turned upside down. And while we're still in the nutrition-related portal, here are four supplements I always make sure to have on hand any time my immune system is likely to be extra-challenged.

### Vitamin D

Nothing in the body works properly, especially the immune system, if your vitamin D levels are low. If your immune system is too stimulated, you can wind up with autoimmune disease, and if it's too sluggish, you wind up sick. Vitamin D is an ultimate immune-system balancer, helping to keep it from over- or underreacting. You can get an inexpensive blood test for vitamin D from your doc, but make sure you get the 25(OH) vitamin D blood test. Most experts consider a result of 50 to 80 nmol/L optimal. When you supplement, make absolutely sure you're taking vitamin D<sub>3</sub> (cholecalciferol), not vitamin D<sub>2</sub>, which is what they usually use to "fortify" foods and is much less absorbable by the body.

### Vitamin C

Vitamin C may be an old standby, but it works. Vitamin C actually accumulates in immune system cells like phagocytes and can ultimately enhance microbial killing. And remember, you can't OD on C; it's not stored in the tissue, and the side effect of taking "too much" is mild diarrhea. So keep your tissues loaded with the stuff. I'd recommend 2,000 milligrams a day during any period when there are likely to be immune-system challenges (such as flu season or outbreaks). If you begin to experience mild diarrhea, which rarely happens at doses under 5,000 to 10,000 milligrams, then your tissues are fully loaded and you can cut back a bit.

### Zinc

Zinc is the uncredited superhero of the immune system. Although the usual daily dose is 15 to



30 milligrams, I'd recommend going to 40 milligrams a day during this period. Lozenges work well, as do capsules or even liquid.

### Olive leaf complex (olive leaf extract)

This is a great all-around tonic for the immune system. Compounds in the olive leaf have been shown to have antimicrobial activity against a wide range of microbes.

### The other way to support immunity

The second portal into self-fortification is at least as important as the one that deals with what you put into your body. And it has less to do with the COVID-19 virus and more to do with how you handle challenges. Including big ones, like coronavirus.

Statistically speaking, the coronavirus will probably not kill you. But the chronic stress and anxiety it's causing may. At the very least, the collective stress, anxiety and disconnection we're all experiencing is taking a huge toll on both our physical and mental health.

So while you are doing everything possible to protect your body from the virus, you shouldn't neglect the potential this stress, anxiety and social isolation has to wreak havoc on your psyche.

See, you really can't take actions that are specific to preventing this virus, but you can take actions that

strengthen your overall immune system and your general resilience, both physically and mentally. We need to “look to the host,” and the host is you. The best protection against a hurricane is to build a strong home, and the best protection against an unknown virus is to build a strong, healthy, resilient body. That means good food, good supplements, good sleep, good exercise and good relationships – with others, and with yourself. Especially during these challenging times.

Stress, anxiety and worry are the enemy of an optimally functioning immune system (think about how easy it is to get sick when you're feeling run down or stressed out). There's a whole science called psychoneuroimmunology that studies how what you think

about influences your immune system. The science of psychoneuroendocrinology studies how your thoughts influence your hormones. These sciences are real, and their collective lessons can be summed up in three words: Your thoughts matter.

All of which is to say, let's keep “worry” in perspective. Chances are very good indeed that a year from now, the effect of the coronavirus on most of us will have faded significantly. But let's consciously take steps to make sure that our reactions to the uncertainty and fear that's in the air right now don't do more damage than the very virus we're afraid of getting. Oh, and meanwhile, you might be tired of hearing it by now, but for goodness sakes, don't forget to wash your hands!



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## Strengthen Immunity

Remember, to strengthen immunity, your body needs nutrients that help reduce inflammation. Here are some of the foods I'm enjoying right now to boost my own immunity:

**Pumpkin seeds:** A rich source of zinc.

**Sunflower seeds:** High in vitamin E and selenium.

**Dried apricots:** Potent source of vitamins E and A.

**Leafy greens (such as kale and spinach):** They're high in vitamins A, K and C as well as zinc and potassium.

**Cayenne pepper:** High in vitamin C.

**Ginger:** Antiviral and anti-inflammatory properties.

**Bananas:** Loaded with potassium. (**HINT:** Buy lots and freeze them for shakes.)

**Grapefruits and sweet potatoes:** Also rich in potassium.

**Avocados:** 700 milligrams of potassium and they last for two weeks in the fridge!

**Almonds, cashews and Brazil nuts:** My pantry is packed with these and other nuts (and seeds). They last a long time in the fridge and have endless uses from snacking to sprinkling. 🌱