

Can you help your immune system ward off coronavirus?

March 20 2020, by Stacey Burling



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By now, you've probably seen advertisements for supplements or other products that promise to prevent the new coronavirus. Maybe your friends have talked up the wonders of high doses of vitamin C or told you that drinking water can wash away the virus.

The [federal government](#) recently warned marketers of essential oils, teas and colloidal silver to stop claiming these products can prevent the

disease caused by the new [coronavirus](#), COVID-19. The Food and Drug Administration said there are no approved vaccines, drugs, or investigational products currently available to treat or prevent the virus.

Don't get your hopes up that there's any over-the-counter fix that will leave you unscathed by the new pandemic. Three immunologists—Timothy Craig, a professor of medicine and pediatrics in allergy and immunology at Penn State Health Milton S. Hershey Medical Center; Cathryn Nagler, a mucosal immunologist at the University of Chicago and distinguished fellow of the American Association of Immunologists, and John Wherry, director of the Institute of Immunology at Penn Medicine—said there's no strong evidence that any herb or supplement, including vitamin C, will prevent coronavirus. Like drinking water, taking most of them probably won't hurt you, but also won't help. Probiotics also won't save you. Colloidal silver can be harmful.

"I personally don't take any vitamins," Nagler said.

These efforts to prey on our fears do raise an interesting question, though. Since our [immune system](#) is all we've got between us and the ICU as this virus spreads, are there ways we can make it work better?

The immunologists agreed that your best bet is to try to prevent exposure. So, do what all the public health experts have been telling you. Wash your hands thoroughly and often. If you can't access soap and water, use a hand gel that's 60% alcohol or more. Avoid crowds and close contact with other people. If you are over age 60 or have underlying health conditions like heart or [lung disease](#) or diabetes, take these prevention steps very seriously. The new disease is much harder on older people and those in already weakened health.

If you get a cough, fever or feel short of breath, protect others by staying

home.

Do your best not to touch your face, especially your eyes, nose and mouth. These are the home of the mucosa that Nagler studies and they are where all viruses enter our bodies. Your skin itself is a good barrier, she said.

The viruses will invade in two ways. Someone coughs or sneezes on something like a counter. You touch it and then touch a mucosal tissue. Or they cough near you and droplets laden with virus fly into your eyes or nose. This is why it's a good idea to stay six feet away from others.

Nagler said it's also wise to get vaccinated for other deadly viruses, like the flu. The pandemic, she said, will be a lesson for people who don't remember what the pre-vaccine world was like.

"Fifty years ago, we had epidemics like this all the time, because we had no vaccines for diseases like measles, mumps and rubella," she said. "Polio was a scourge like this."

Wherry said there's no single measure of how well your immune system is working, which makes it hard to know if anything is making it better, kind of like asking whether the economy is healthy. Are you asking about the stock market? The job market?

Something could help fight bacterial infection but do nothing for viral infection, Wherry said. It might work against one virus but not another. It is a safe bet, he said, that no supplements have been tested against the newly identified virus that causes COVID-19.

You also don't want your immune system to be too revved up. That's what happens when you have [chronic inflammation](#) from stress, poor diet or sickness. It weakens response to new invaders. A truly over-active

immune system can be deadly and was associated with pneumonia from two earlier coronaviruses, MERS and SARS.

The best route to a well-functioning immune system is to do what doctors always tell you to do:

Eat a healthy diet rich in vegetables, fiber and whole grains. Get seven to nine [hours of sleep](#). Maintain a healthy weight. Try to manage your stress. Stop smoking. Don't drink excessively.

Craig said sleep is especially important for the immune system. "Sleep deprivation is bad," he said. "It increases inflammatory factors."

It's also a relatively easy thing to improve. "Correcting poor sleep patterns may have a quicker effect than having to lose 30% of your body weight," Wherry said.

Craig said [aerobic exercise](#) is likely the most beneficial kind of physical activity. Right now, he said, "you may not want to do that in a crowded gym. ... This is a good time to get out there in nature and walk where you're not in crowded spaces." It might also be good for your mental health during a stressful time.

"While the mechanisms are not understood, exercise and some of the chemicals released during exercise do seem to have immune boosting or at least immune resetting capabilities," Wherry said. Obviously, though, this is not a good time to exhaust yourself with too much exercise.

As for your bad habits, smoking damages the lungs and causes inflammation that lessens their ability to fight infection, Nagler said.

Craig said it suppresses the immune system and makes it harder for lungs to free themselves of fluid and viruses. Smokers are also more

prone to bacterial pneumonia, which can find a foothold in lungs weakened by viruses.

Obesity is also hard on the immune system and it is strongly associated with the chronic diseases that raise risk of death from COVID-19.

Craig said it increases inflammation and contributes to immune system factors that leave people less able to fight viral infection.

"We need our immune system to be sitting in a resting, really fit state, and being obese strains it," Wherry said.

If you haven't been paying attention to the doctors for the last few decades, you're probably not going to fix your immune system overnight. Getting healthier will take longer than that.

You'll probably get the fastest results from sleeping better and stopping smoking. Craig said lungs might start functioning better in weeks.

Other lifestyle changes could also lead to "short-term benefits," Craig said, "but that's short-term benefits after months, not days."

But, hey, COVID-19 is going to be around for a while.

While Wherry thinks we're in for a "bumpy ride" as the [virus](#) spreads, he says it's important to remember that many people in the U.S. have access to "some of the best health care in the world." And, "for most people, managing symptoms at home the way you would if you had the flu or another respiratory infections will be fine."

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Citation: Can you help your immune system ward off coronavirus? (2020, March 20) retrieved 16 August 2024 from <https://medicalxpress.com/news/2020-03-immune-ward-coronavirus.html>

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