

## 3 simple steps to support your immune health

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Whether it's wiping down our cart at the grocery store, washing one's hands properly for at least 20 seconds, or staying home when at all possible, we are all adjusting to a new normal to limit our exposure to COVID-19.

Now is also a good time to pay attention to our immune system, which can influence how our body responds if we are exposed to disease. And it's profoundly impacted by our daily habits.

"Little things can make a difference," said Barbara Demmig-Adams, professor of distinction in Ecology and Evolutionary Biology and co-director of the department's Honors Program.

Demmig-Adams studies plant antioxidants, an essential part of our diet because the [human body](#) cannot produce many of these nutrients on its own. She also teaches an undergraduate course on lifestyle medicine, in order to translate the importance of plants to our human lives and make her research relevant to students.

Through her own research and teaching, Demmig-Adams has found that the strength of the human immune system is diminished by many aspects of modern life. We sit too much, eat an energy-rich diet deficient in micronutrients, and deal with chronic psychological stress and insufficient sleep.

But there are actions a person can take to improve their immune health, she said. Limiting and managing stress and getting more restful sleep can not only boost immunity, but simultaneously help fight anxiety, depression and a host of other diseases and disorders.

These steps, along with a balanced diet, also support the human microbiome, the beneficial microbes that line our outer and inner surfaces. These microbes not only provide the first line of defense against infectious invaders, but also produce essential cues required to guide our own immune system in fighting infections, said Demmig-Adams.

She shared her top tips with CU Boulder Today for supporting one's

immune health during the COVID-19 epidemic, and beyond.

## Focus on real food

Focus on real food, not processed foods or supplements. Demmig-Adams suggests a diet with plenty of vegetables, fruit, herbs, spices, nuts and seeds, and carbohydrates in the form of whole-grain products. For meat, [fatty fish](#) and lean meats from land animals are good choices.

"But it is not impossible to improve one's diet if you don't have a lot of money or a lot of time or many options," said Demmig-Adams.

If fresh items are out of stock, she suggests frozen fruits and vegetables, which are frozen quickly after harvest, preserving many nutrients. Canned fish, like sardines, are a good alternative to fresh seafood and are a good source of omega-3. Dried herbs and spices will last for years and pack a punch of healthy antioxidants, she said.

She advises against stocking up on pills, including probiotics. Instead, focus on feeding your good bacteria the nutrients they need (prebiotics) that are found in whole-grain foods, berries, nuts, seeds, and vegetables.

Customize your takeout order, by including more vegetables and fewer quick-burning starches. It is possible to support local restaurants and still support your immune system—it just takes a bit of creativity.

When Demmig-Adams orders a burrito, she'll ask for no tortilla and extra beans. With a sandwich, she'll substitute broccoli for fries. When ordering for the whole family, she'll order several vegetarian dishes and just one meat dish.

"You want to treat yourself right, you don't want to feel deprived—so you feel motivated to maintain the diet," she said.

## Different nutrients play different roles in immune response

It turns out that calorie-rich foods stimulate your immune system—which sounds like a good thing at first. But if you over-stimulate your immune system all the time, it's like the story of crying wolf, says Demmig-Adams.

"If it's activated all the time, your immune system actually won't respond when the real killer appears on the scene," she said.

Regular excessive consumption of calorie-rich, over-stimulating nutrients provides an incessant low-level alarm to the immune system, which can also drive the body to attack healthy body tissues.

Nutrients that overstimulate and disrupt the immune system will sound familiar: saturated fats, sugars (especially [high-fructose corn syrup](#)) and quick-burning starches, and vegetable oils like safflower, sunflower, and corn oil. Quick-burning starches are found in white rice, baking potatoes, and all white-flour products.

However, when you're not feeling well, some of these foods may help your body mount an attack against invading disease. So, it's not a bad idea to rest more and consume some of these foods, like white bread and chicken soup, when you're sick.

The rest of the time, she suggests favoring nutrients which keep the [immune system](#) in balance, like Omega-3 oils and antioxidants.

Foods high in omega-3 include fish like salmon, sardines, and canned light tuna, as well as flax seed, chia seed, and walnuts. All vegetables and whole fruit contain antioxidants. Herbs and spices—including dried

products—pack the most punch per gram. Healthier slow-burning starches are found in vegetables, legumes (like beans, lentils, chickpeas), and whole-grain products.

However, excessive consumption of these anti-inflammatory nutrients is not helpful, especially when one is already feeling ill.

## **Balance is the key**

Even small improvements in stress reduction and sleep quality can improve immune health, she said.

Demming-Adams recommends practicing deep breathing, going for a walk just 20 minutes a day—or even watching a nature video.

Also, try to get at least six hours of sleep—if not more—go to bed before midnight, and try to get up around the same time in the morning on a regular basis.

"This puts you in an empowering position, where you can have real, strong benefits that knock your socks off for very modest investments," said Demming-Adams.

Provided by University of Colorado at Boulder

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