

How to strengthen your immunity during the coronavirus pandemic. Part 1: Diet

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By Lisa Drayer, CNN

(CNN) -- As the coronavirus situation intensifies, you might be wondering: how can I keep myself healthy? And will swallowing a pill protect me from getting sick?

First, there's the not-so-great news. Despite claims you may have seen on the Internet, there's no magic food or pill that is guaranteed to boost your immune system and protect you against coronavirus.

"There are no specific supplements that will help protect against coronavirus and anyone claiming that is being investigated by the FTC [Federal Trade Commission] and the FDA [Food and Drug Administration]," said Melissa Majumdar, a registered dietitian and spokesperson for the Academy of Nutrition and Dietetics.

But there's uplifting news, too: There are ways to keep your immune system functioning optimally, which can help to keep you healthy and give you a sense of control in an uncertain time.

These include proper handwashing, maintaining good nutrition, being physically active, meditating and managing stress and getting adequate sleep.

We're going to tackle immunity boosting in two parts. Here we'll focus on your diet, and in a second part publishing on Thursday we'll discuss other ways to help yourself.

Begin by filling your plate with immune-boosting nutrients. One of the best ways to stay healthy is to eat a nutritious diet. That's because our immune system relies on a steady supply of nutrients to do its job.

For a starter dose of immune-boosting vitamins, minerals and antioxidants, fill half of your plate with vegetables and fruits.

Here are some key nutrients that play a role in immunity, and food sources of them:

Carrots, kale and apricots for beta carotene

Beta carotene gets converted to vitamin A, which is essential for a strong immune system. It works by helping antibodies respond to toxins and foreign substances, Majumdar said.

Good sources of beta carotene include sweet potatoes, carrots, mangoes, apricots, spinach, kale, broccoli, squash and cantaloupe.

Oranges, strawberries and broccoli for Vitamin C

Vitamin C increases blood levels of antibodies and helps to differentiate lymphocytes (white blood cells), which helps the body determine what kind of protection is needed, Majumdar explained.

Some research has suggested that higher levels of vitamin C (at least 200 milligrams) may slightly reduce the duration of cold symptoms.

You can easily consume 200 milligrams of vitamin C from a combination of foods such as oranges, grapefruit, kiwi, strawberries, Brussels sprouts, red and green peppers, broccoli, cooked cabbage and cauliflower.

Eggs, cheese, tofu and mushrooms for Vitamin D

Vitamin D regulates the production of a protein that "selectively kills infectious agents, including bacteria and viruses," explained Dr. Michael Holick, an expert on Vitamin D research from Boston University who has published more than 500 papers and 18 books on Vitamin D.

Vitamin D also alters the activity and number of white blood cells, known as T 2 killer lymphocytes, which can reduce the spread of bacteria and viruses, Holick added.

Winter-associated vitamin D deficiency -- from a lack of sun-induced vitamin D production -- can weaken the immune system, increasing the risk of developing viral infections that cause upper respiratory tract infections, said Holick.

Inversely, research suggests that vitamin D supplements may help to protect against acute respiratory tract infections.

Good food sources of vitamin D include fatty fish, including canned fish like salmon and sardines; eggs, fortified milk and plant milk products; cheese, fortified juice, tofu and mushrooms.

And while there is no evidence to prove that vitamin D supplements will protect you from coronavirus, it's wise to consider a D supplement if you feel you are not getting enough of this important vitamin, which can be measured by a blood test.

Beans, nuts, cereal and seafood for zinc

Zinc helps cells in your immune system grow and differentiate, Majumdar explained.

One meta-analysis revealed that zinc supplements may shorten the duration of symptoms of the common cold. However, it concluded that "large high-quality trials are needed" before definitive recommendations can be made.

Sources of zinc include beans, chickpeas, lentils, tofu, fortified cereals, nuts, seeds, wheat germ, oysters (including canned), crab, lobster, beef, pork chop, dark meat poultry and yogurt.

Milk, eggs, nuts and more for protein

Protein is a key building block for immune cells and antibodies and plays a crucial role in helping our immune system do its job.

Protein comes from both animal and plant-based sources and includes fish, poultry, beef, milk, yogurt, eggs and cottage cheese, as well as nuts, seeds, beans and lentils.

Majumdar recommends protein-rich snacks, such as roasted chickpeas, which can be eaten in place of snacks devoid of protein, such as animal crackers, for example.

Bananas, beans and more for prebiotics

Probiotics and prebiotics help boost the health of the microbiome, which in turn supports our immune system, explained Majumdar.

Sources of probiotics include fermented dairy foods such as yogurt and kefir, and aged cheeses, as well as fermented foods such as kimchi, sauerkraut, miso, tempeh and sourdough bread. Sources of prebiotics include whole grains, bananas, onions, garlic, leeks, asparagus, artichokes and beans.

Though not dietary staples, some herbs may be helpful when looking for natural alternatives for viral symptoms. One of the more convincing studies found that supplementation with elderberry substantially reduced upper respiratory symptoms when taken for the cold and flu.

"While it hasn't been studied specifically with coronavirus, it may be good for general immune health," Majumdar said. If you are interested in taking any herbs, check with your doctor first.

Water, fruit, soup and more for hydration

Finally, stay hydrated.

"Mild dehydration can be a physical stressor to the body," Majumdar said. Women should aim to consume 2.7 liters or 91 ounces of fluids daily, and men, 3.7 liters or 125 ounces; an amount that includes all fluids and water-rich foods, such as fruits, vegetables and soups.