

Department of Family and Consumer Sciences

NUTRITION AND IMMUNITY

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Kristen Johnson PhD, RDN, Assistant Professor and Nutrition Specialist
Janie Burney, PhD RDN Professor and Nutrition and Food Safety Specialist
Lisa Fuller, MS, RDN, Nutrition Specialist

You might be seeing a lot of information about how to boost immunity through diet or supplements. This fact sheet provides information about the immune system and how diet plays a role in keeping the immune system functioning properly.

The Immune System

Our immune system is a complex system that includes our skin, immune cells, bone marrow, the lymph system and multiple organs like the spleen and thymus. The role of the immune systems is to prevent and limit infection. When the immune system senses unhealthy cells, due to damage or infection, the immune system responds to keep our body healthy.

Nutrition and the Immune System

While there is no single nutrient or food that can keep us from catching an illness, a healthy diet, along with other important activities like staying physically active and getting enough sleep, are important for keeping our body healthy and functioning properly. A healthy diet plays a role in keeping all of our body's systems functioning. Some nutrients that support a healthy immune system are protein, zinc, selenium, iron, vitamins A, C, and D, and omega 3 fatty acids. Plants also have compounds called phytonutrients that protect plants against bacteria, viruses and insects. Phytonutrients are neither vitamins nor minerals, but they can help keep your immune system healthy. These phytonutrients are another good reason to get your nutrition from food rather than supplements.



The most important way to get all the nutrients your body needs is to eat a variety of healthy foods from all the food groups. For a healthy meal, keep these tips in mind:

- Fill half of your plate with fruits and vegetables. Fruits and vegetables provide vitamins and minerals like vitamins A and C along with fiber, potassium and phytochemicals that help protect our body.
- Fill one quarter of your plate with whole grains. Whole grains provide fiber and other nutrients like B vitamins.
- Fill the remaining quarter of your plate with either an animal or a plant protein food. Choose lean poultry, beef, pork or other types of meat. Try to include fish and seafood a couple times a week. Plant proteins such as nuts, seeds, beans, peas or soy products are also good choices. These foods provide our body with important nutrients like protein, vitamins B12 and B6, zinc and iron.
- Add a serving of dairy. Dairy products are good sources of calcium, vitamin D and zinc.
- Use a little bit of oil to cook your foods and add flavor. Oils are sources of healthy fats and provide nutrients like vitamin E.

Dietary Supplements

The 2015-2020 Dietary Guidelines for Americans advise that we meet our nutrient needs by consuming a healthy diet. Some people, such as older adults, pregnant women or people with a nutrient deficiency, may be advised by their health care provider to take a dietary supplement. Talk with your health care provider before taking a dietary supplement as some dietary supplements may interact with medications.

Dietary supplements are intended to supplement the diet, and are not intended to prevent, treat or cure disease. Although some nutrients are believed to protect or treat against illness, like the common cold, there is usually little evidence for these claims. In addition, large doses of single nutrients can be dangerous. They can cause kidney stones, liver damage and birth defects. Large doses of one nutrient can also interfere with the absorption of other nutrients.

Vitamin C

- Vitamin C is believed by many to prevent or cure the common cold, but research suggests that vitamin C is not effective for preventing the common cold for the general population. Vitamin C may play a role in reducing the length of the common cold or reducing symptoms, but is not effective if taken after cold symptoms are present.
- Consuming too much vitamin C from foods and supplements may cause symptoms such as diarrhea, nausea or vomiting.
- People receiving high doses of vitamin C as a form of medical treatment should be monitored by a physician or another health care provider.

Zinc

- Although zinc has been believed to treat or prevent the common cold, research on the use of zinc lozenges or syrups to treat the common cold has had mixed results. Some research suggests that zinc lozenges or syrups may help with cold duration, but more research is needed.

- Intranasal zinc, in nasal gels, swabs or sprays, can cause loss of sense of smell and should not be used.
- Consuming too much zinc can be dangerous and may cause nausea, vomiting, loss of appetite, abdominal cramps, diarrhea or headaches. Too much zinc can actually impair immunity. Zinc can also interact with some medications, like antibiotics.

Botanical Supplements

- **Garlic:** Fresh garlic, garlic powder and garlic oil are used to flavor foods. Garlic also exists in the form of dietary supplements. According to the National Institutes of Health National Center for Complementary and Integrative Health (NCCIH), there is not enough evidence to know if garlic is helpful for preventing or treating the common cold. Garlic is usually safe when consumed in the amounts normally used to flavor foods. Garlic supplements may increase risk for bleeding and may interact with some medications.
- **Echinacea:** According to the NCCIH, evidence does not support that echinacea will shorten the length of a cold if it is taken after you get sick. Evidence is unclear if taking echinacea will reduce the chances of getting the common cold. Long-term effects of echinacea are unknown, and some allergic reactions have been reported.
- **European Elder (Black Elder, Elderberry, Elder Flower, Sambucus):** According to the NCCIH, some evidence from preliminary research suggests that elderberry may relieve flu symptoms, but the evidence is not strong enough to support using elderberry products for the relief of flu symptoms. The NCCIH advises that the leaves, stems and raw, unripe berries of the European elder tree contain a toxic substance. When European elder products are not properly prepared, they may cause nausea, vomiting or diarrhea.

The NCCIH advise that flu vaccination is the best protection against getting the flu and that complementary health approaches, including botanical supplements, should not be considered a substitute for a flu vaccination.

Dietary Supplements and COVID-19

The U.S. Food and Drug Administration (FDA) advises that at this time there is no known products currently available to prevent or treat the coronavirus. In fact, the FDA and U.S. Federal Trade Commission (FTC) have already sent warning letters to companies who have made misleading claims about their products' ability to prevent or treat coronavirus. The FDA considers the sale of products that make misleading claims about COVID-19 to be a threat to public health. In fact, some of these products may have harmful side effects. According to the National Institutes of Health National Center for Complementary and Integrative Health, there is no scientific evidence that products like colloidal silver are effective for treating any disease or condition and can have dangerous side effects.

If you feel you are not able to eat enough foods that support your immune system and you need a supplement, it is much safer to use a multivitamin and mineral supplement that has individual nutrients in the recommended amounts, also known as % Daily Value. Look for nutrients that do

not go above 100% of the Daily Value and always consult your healthcare provider when using nutrition supplements, including herbs and botanicals.

The Centers for Disease Control and Prevention (CDC) advise that the best ways to protect yourself and others are to:

- Wash your hands often with soap and water for at least 20 seconds, especially after being in public places and after sneezing, blowing your nose and coughing.
- Use hand sanitizer that has at least 60% alcohol when soap and water are not available.
- Stay home as much as possible, especially for older adults and vulnerable populations.
- When out in public, wear a cloth face mask (for anyone two years of age and older) and keep a distance of at least 6 feet between yourself and others.
- Clean and disinfect surfaces that are frequently touched like tables, door knobs, light switches, counter tops, handles, desks, phones, keyboards, toilets, faucets and sinks.

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