

# Stock Your Pantry and Protect Yourself

The immune system is your body's network of organs, tissues, and cells that work together to keep you healthy by fighting off harmful bacteria, viruses, parasites, and fungi. It acts as a barrier between your body and the things that can make you sick. Your immune system can become compromised by dietary, environmental, and lifestyle insults. A compromised immune system can lead to frequent illness, such as the common cold and flu, as well as more serious infections and diseases, even including cancer.

Your complex and amazing defense system is made up of two main parts. First, you have mucous membranes found in places like your nose, eyes, and mouth — which use white blood cells to fight infections before they can get inside you. Second, you have T cells and B cells, which work together to create antibodies that fight off invaders and then destroy infected cells throughout your body. Your bone marrow and spleen also play key roles, making white blood cells which fight infections. And your lymphatic system transports lymph (a fluid containing white blood cells) throughout your body.

Altogether, your immune system functions as an amazing team, working to keep you healthy, safe, and alive.

It's difficult to overstate how important nutrition is in promoting a healthy immune system. You need a diverse group of phytochemicals (the bioactive chemical compounds in plants) to create a strong barrier against pathogens that would otherwise make you ill.

Because immunity typically declines as you age, it becomes especially important to eat a diet for immunity and immune-supporting foods as you get older. Many studies have shown that nutrient deficiencies cause impaired immune function in the elderly. Even in people as young as 35 years old, poor nutrition wreaks havoc on the immune response. But there's good news, too! When elderly people eat at least five servings per day of fruits and vegetables, they have improved antibody response to stress.

For many reasons, the more fruits and vegetables you eat, the better off you are. And you need specific nutrients for optimal immunity. Some of the most immune-optimizing vitamins and minerals include folate, zinc, iron, beta-carotene, Vitamins B6, B12, C, D, and E. So, what foods should you be eating to get them?

**Kiwi** is high in vitamin C, folate, potassium, and antioxidants, such as alpha-Tocopherol and lutein. It has been shown to have positive effects on the immune response — making it potentially helpful in preventing a wide range of ailments. Kiwi makes a great snack for all ages. It's easy to throw into a lunch bag or serve sliced alongside a hearty breakfast. Most people peel it, but when you include the peel, you triple the amount of fiber you get from this tasty fruit. The skin also has a unique prebiotic potency that makes it marvelous for your microbiome.

**Garlic** has been used in medicine for centuries. One of the reasons is that whole garlic contains a compound called alliin, which turns into the active compound allicin when crushed and is known to enhance immune function. Crushed garlic also offers additional sulfur-containing compounds with healing properties.

**Onions** contain two major compounds for immunity support: the antioxidant flavonoids anthocyanin and quercetin—and alliin. Red and yellow varieties are particularly high in quercetin, which is known to have anticancer, anti-inflammatory, and anti-viral properties. The highest concentration is in the outer rings.

**Ginger** has many medicinal and health uses and is known to be a powerful anti-inflammatory and antioxidant. It also has antimicrobial effects and can help to protect against infectious disease. Gingerol is the compound found in fresh ginger that is most responsible for its anticancer properties. It's also closely related to capsaicin and piperine, the active compounds in peppers that give them their spiciness and unique medicinal traits, as well as the curcuminoids found in turmeric.

**Green Tea** is about 40% polyphenols by weight — and may be the most powerful of all the teas. It contains compounds called catechins, as well the antioxidant quercetin and the amino acid L-theanine, all of which support a strong immune system. These compounds are effective agents in helping the body fight viruses, such as influenza and many forms of gastrointestinal infections. Green tea is an immunity warrior. One study showed that women under 50 who drank green tea at least three times per day reduced their risk of breast cancer by 37%.

**Cruciferous Vegetables:** A 2011 study published in the journal *Cell* found that cruciferous vegetables, including kale, collard greens, mustard greens, Chinese cabbage, bok choy, kohlrabi, broccoli, and Brussels sprouts, are a source of a chemical signal necessary for the immune system to function at its best. Cruciferous vegetables contain beta-carotene, lutein, zeaxanthin, folate, and vitamins C, E, and K. They are also rich in sulfur-containing substances called glucosinolates, which make sulforaphane — a phytochemical known for its immune-optimizing and anticancer effects. When chewed and chopped, these vegetables also release other cancer-fighting compounds called isothiocyanates. Of all the cruciferous veggies, kale appears to offer the most anti-inflammatory polyphenols, which enhance the body's defense against pathogens, especially when cooked.

**Prebiotics, Probiotics, and Fermented Foods:** Digestive health has a huge impact on nearly every important function in your body — including your immune system. Some of the most important players in gut health include probiotics (the good bacteria in your gut) and prebiotics (which feed the probiotics). **Probiotics** can be found in supplement form and are also abundant in fermented foods, such as kimchi, sauerkraut, tempeh, miso, yogurt, kefir, and natto. They appear to reduce the risk for upper respiratory infections. **Prebiotics** are abundant in whole plant foods — especially jicama, chicory root, garlic, Jerusalem artichoke, onions, leeks, leafy greens, bananas, and the peel of kiwi fruit.

**Nutritional Yeast:** Nutritional yeast contains beta glucans, which are known to have powerful infection-preventing and immunity-supporting properties by enhancing natural killer cell (anti-cancer and anti-infection) activity. Nutritional yeast offers a nutty or cheesy taste. You can sprinkle it onto pasta, soups, and salads. You can also use it in baking or mixed into homemade sauces.

**Berries** get their dark purple, pink, red, and blue hues from chemicals known as anthocyanins. These flavonoids help treat many conditions, including high blood pressure, colds, and urinary tract infections. Berries are also high in antioxidants, like vitamin C, which help prevent cell damage and inflammation. One of the antioxidants found abundantly in berries is ellagic acid, which is known to prevent tumor growth and protect immunity of the oral mucous membrane. A 2018 review of the health effects of berries and their phytochemicals on the digestive and immune systems found that whole berries had potent, immune-optimizing properties.

**Citrus Fruits** are rich in protective antioxidants like vitamin C, which can help to support your immune system and make you less susceptible to illness. Remember, eating citrus fruits in their whole form is more effective than drinking the juice made from the fruit.

**Mushrooms:** There are hundreds of mushroom species, and virtually all of them offer unique protective health benefits. Mushrooms have been used medicinally for thousands of years. And today,

modern science is beginning to understand how potent these fungi really are. Regularly eating blanched white button mushrooms, found in most grocery stores, has been shown to optimize immunity support in the mouth and respiratory tract. Less common varieties, including Reishi, Turkey Tail, and Shiitake, appear to attack viruses and cancer cells.

**Apples:** An apple a day... provides a great source of soluble fiber, which can strengthen your immune system. A 2010 study published in *Brain, Behavior, and Immunity* fed mice diets of either soluble fiber or insoluble fiber. Those who were fed soluble fiber showed “profound, positive changes in their immune system,” increasing production of anti-inflammatory protein interleukin-4 and recovering much quicker from induced bacterial illness. Other studies have shown apples to have robust antioxidant activity. This is important because antioxidants help protect your cells from damage and can lower your risk for infections and disease.

**Sunflower Seeds** are full of vitamin E, containing 82% of the daily value in just one-quarter cup. Vitamin E is a powerful antioxidant known to reduce the risk of inflammation-related diseases, protect your body from cell damage, and fight oxidative stress that can lead to illness. Sunflower seeds also create antibodies that can help fight infections.

**Red Peppers** have twice as much vitamin C as citrus fruits. They also contain vitamin E and beta-carotene, which may give you extra immunity support. A 2010 study published in the *Journal of Pharmacy and Pharmacology* found that capsaicin in red peppers induced an anti-inflammatory effect, possibly through inhibiting inflammatory cytokine production.

In addition to a healthful diet, a few single nutrients appear to help immunity and may be worth adding to your routine in supplement form.

**Vitamin D** deficiency is linked to an increased susceptibility to illness. Levels of vitamin D may even be directly linked to T-cell function, which is an important part of your body’s defense mechanisms. Studies have shown that vitamin D supplementation can be protective against acute respiratory infections.

**Zinc** is an essential nutrient for everyone. It’s also a powerful antioxidant known to support immunity. It *has even been described as the “gatekeeper of immune function.”*

**Diet** is one of the most powerful tools for developing a strong immune system. **And**, as it turns out the best immune supporters are found in the produce aisle. So, stock up and enjoy!

*Psalm 139:13-14 For it was You Who formed my inward parts, You knit me together in my mother’s womb, I praise You for I am fearfully and wonderfully made. Wonderful are Your works.*

Caring for you and your health,

*Linda Convertine* Parish Nurse