

Fueling your Immune System

Written by Amelia Heimerman and Maddie Jacobs, MS, RD, LD

As the holidays are near, final exams are nearer! It's that part of the semester when students are non-stop studying and oftentimes trading hours of sleep for hours at the library. As we put our bodies under stress to prepare for our exams, our likelihood of becoming sick increases. November and December are the common cold's favorite months to nestle into our warm bodies and leave us with a cough and a sore throat. The good news is many of the foods we eat have immune-boosting properties that can help prevent us from falling ill or alleviate cold symptoms so we can get back to our academic grind. Our immune system defends us from microorganisms that make us sick, but sometimes they still pass through the many barriers our immune system has. By consciously eating immune-boosting foods, we can help our immune system become stronger and prevent us from catching a sniffly cold.

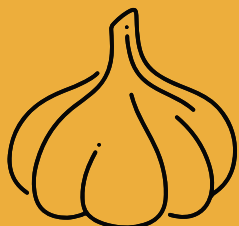
Spices are great for both enhancing the taste of a meal and strengthening our immune systems. **Ginger** is a root vegetable that can be found in ground spice form or enjoyed raw alongside meals like sushi. Ginger has many immune-boosting properties like preventing the development of ulcers and attacking harmful free-radical compounds in the body. This food is also anti-inflammatory and is linked to managing pain with rheumatoid and osteoarthritis. Oftentimes we feel headaches and nausea when we're under the weather and ginger is used to subside these symptoms. Microorganisms are to blame for the common cold or more serious illnesses, but ginger can save the day. Ginger is shown to have antimicrobial effects by controlling certain viral, bacterial, fungal, and parasitic diseases. This effect is sadly reduced with heat, so it is best exemplified in raw ginger. Ginger can provide a yummy and fresh flavor to many foods like vegetable dishes, marinades, and salad dressings.



Garlic is a fan favorite for its pungent taste and immunity-promoting compounds. Garlic contains sulfur-containing amino acids which are shown to initiate immune system activity by activating killer cells to attack infected cells. Stressors like injury, smoking, mental tension, and chemical pollution can suppress our immune system, but supplemental garlic is shown to alleviate our immune system of these pressures and increase its function. Garlic is great for the common cold since it is shown to reduce its occurrence and can alleviate symptoms and speed up the recovery process. Like ginger, this tasty spice is known for its antiviral, antifungal, and antibacterial properties. Garlic is a great additive in either its whole form, spice form, or oil form to any dish like vegetables, meats, or salad dressings and brings a great smell and flavor!

Turmeric is a beautiful orange spice that contains a bioactive component with antimicrobial properties: curcumin. Curcumin is associated with decreasing inflammation and is known to enhance the actions of our innate immune system against tumor cells, cardiovascular disease, and pathogens. Outside of strengthening the immune system's attacks, Turmeric can decrease the intracellular activities of harmful microorganisms. Turmeric can also help ward off the common cold and COVID-19 and alleviate their symptoms. Turmeric is commonly seen in its spice form and can add color and flavor to dishes and drinks.

A popular belief is that **vitamin C** prevents us from getting sick. Research suggests vitamin C does not make us immune from the common cold, however, it does have many beneficial properties. Vitamin C can assist in shortening the illness recovery process through its anti-inflammatory properties. Fruits like limes, lemons, grapefruit, oranges, and berries are all sources of vitamin C that can be a part of meals or snacks throughout the day. Vegetables like broccoli, spinach, bell peppers, and tomatoes are additional sources of this vitamin that can be consumed to boost our immune systems. **Citrus juice** is a great source of vitamin C, especially homemade. There are plenty of great plant compounds like polyphenolic flavonoids, micronutrients, and bioactives in citrus juice that support the immune system by controlling inflammation and oxidative stress that can negatively impact our immune response.



Research shows that individuals who eat five or more portions of **fruits and vegetables** per day respond better to the pneumococcal vaccine. This illustrates the symptom-management and immune-boosting properties of consuming colorful fruits and vegetables every day, especially now that the pesky cold is among us. Fruits and vegetables containing beta-carotene, a form of **vitamin A**, are great sources of healthful vitamins and immune-boosting compounds. Vitamin A is associated with increased immune function, preservation of eye health, and prevention of heart disease and some cancers. Examples of these vitamin A foods are mangoes, carrots, broccoli, spinach, sweet potatoes, and tomatoes.

Outside of fruits, vegetables, and spices, what other foods have immune-boosting properties? Hint, a lot of these foods are already in our diets! Poultry like chicken and turkey are rich in **vitamin B-6** which is associated with reduced inflammation and assists in red blood cell production. Poultry, beef, and seafood are rich in **zinc**, which is key in white blood cell and antibody production. Besides warming your soul, the chicken noodle soup you crave when you're feeling unwell also assists your immune system in overcoming illness! **Omega-3 fatty acids** are a common anti-inflammatory food and can be found in canola oil, avocado oil, and cold water fish like salmon, herring, and mackerel. Another great source of anti-inflammatory fat can be found in nuts and seeds. Imagine having a yummy, fresh salad with ginger, salmon, nuts, seeds, berries, and a ginger vinaigrette. You're hitting all of the key immune boosting foods in just that one colorful meal!

Whether you're feeling sick now or are worried you'll feel sick later as the temperature drops and the common cold rises, this article has you set with all kinds of great immune-boosting foods to either ward off pesky coughs or assist in your recovery. There are so many different foods with health-promoting and immune-boosting compounds, many of which we already enjoy and love! All of the listed foods are great to power you through your study sessions and keep you feeling your best during your exams. Happy studying and stay healthy!



Additional Resources:

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5. Higdon J. Alpha-carotene, beta-carotene, beta-cryptoxanthin, lycopene, lutein, and zeaxanthin. Oregon State University. Published 2004. Updated Oct 2023. <https://lpi.oregonstate.edu/mic/dietary-factors/phytochemicals/carotenoids>. Accessed Dec 2023.
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