

How to Boost the Immune System Naturally



Most people hear the words “immune system” and think protection from illnesses like the cold or the flu. But the immune system is so much more than that. This integrated network not only protects the body from external threats, but maintains the healthy function of its internal systems.¹

There are distinct layers to the immune system. The physical layer includes the skin and the epithelial cell lining of the gastrointestinal and respiratory tracts, secretions, mucus, and gastric acid. And the cellular layer includes different types of immune cells and antibodies.²

Innate immunity is the first line of defense, combining physical and biochemical barriers with a cellular response to defend against pathogens. If the pathogen manages to thwart the innate immune system, the adaptive immune response kicks in, with T and B lymphocytes producing antibodies to seek out and

eradicate the pathogen. Both systems also work together to protect against native cells that have turned harmful, such as cancer cells.^{1,2}

In its battle to protect the body, the immune system needs to strike a balance between defending against harmful organisms and tolerating antigens and allergens that don't cause disease.³ There are a number of things you can do to help support the immune system in this constant battle.

Toss those cigarettes

When the immune system reacts to harmful compounds, it triggers inflammation, which removes the stimuli and begins the healing process. This inflammatory response usually lasts a short time until healing is well under way. However, in some cases inflammation runs out of control and becomes chronic, which can contribute to a number of inflammatory diseases.⁴

Besides its link with cancer and heart disease, cigarette smoking can exacerbate some immune responses while weakening defensive immunity. Because of its impact on the immune system, smoking also impacts chronic inflammation and autoimmune disorders such as rheumatoid arthritis, psoriasis, chronic obstructive pulmonary disease, and lupus.⁵

Once you quit smoking, your body starts to slowly repair the damage caused by smoking.⁶ This extends to the inflammatory response, which is reduced once smoking ceases.⁷ Without the constant influx of cigarette smoke, your immune system no longer has any need to defend against it.

Put down the wine glass

The conventional wisdom is that moderate alcohol consumption is fine. However, excessive drinking can lead to all sorts of health problems, including chronic inflammation.

Drinking large amounts of alcohol can raise the risk of several serious medical conditions related to immune system dysfunction, including acute respiratory distress syndrome, liver cancer, and alcoholic liver disease. Chronic and binge drinking also makes people more susceptible to catching infectious diseases by weakening both innate and adaptive immunity.⁸

Add probiotics

It's well-known that probiotics are beneficial to the gut microbiota. But probiotics also induce an immune response by increasing immunoglobulin A-secreting cells in the mucosal lining of the respiratory and gastrointestinal systems. There is increasing interest in utilizing probiotics to help prevent or treat asthma, eczema, and food allergies.³

In studies of daycare centers, when healthy children were given a daily probiotic it reduced the number of days of school missed by 25%.⁹ Other reviews of probiotics have shown a shortening of the duration of respiratory tract infection by about one day, as well as a reduction in the severity of symptoms.¹⁰

Take these vitamins

Vitamin C

Most people are familiar with the use of vitamin C for immune system support, especially during cold and flu season. A powerful antioxidant, vitamin C protects important proteins and other biomolecules from damage caused by normal cell metabolism as well as from exposure to toxins and pollutants like cigarette smoke. It also supports the skin's epithelial layer in defending against pathogens and stimulates neutrophil migration to infection sites, enhancing the killing of microbes while protecting the host tissue from excessive damage.¹¹

Vitamin C supplementation has shown an ability to prevent and treat respiratory and systemic infections by enhancing various immune cell functions. A dose of 100-200 milligrams a day is recommended to prevent infection, with treatment of existing infections requiring a higher dose to make up for increased metabolic demand.¹¹

Vitamin D3

Vitamin D3 has been proven to have a modulating effect on the immune system.¹² It has been shown to protect against pathogen-caused infections by regulating two important antimicrobial proteins and stimulate immune cell proliferation and cytokine production.^{13,14}

In addition, vitamin D3 has been found to suppress antibody production by B cells and inhibit proliferation of T cells.^{15,16} Since T cells are important regulators in autoimmune disease and graft rejections, this nutrient may be able to prevent and treat such conditions.¹⁷

Vitamin E

A fat-soluble antioxidant, vitamin E protects cells from the damage caused by free radicals. Taking vitamin E has been shown to enhance immunity and bolster resistance to certain infections, especially in the elderly.¹⁸

B vitamins (B6, B12, Folate)

Vitamin B6 is needed to synthesize and metabolize amino acids, which are the building blocks of proteins like cytokines and antibodies. Studies show that deficiency in this B vitamin impairs adaptive immunity.¹⁹

Folate is a B vitamin that plays a role in the synthesis and metabolism of nucleic acids and amino acids.²⁰ A few observational studies in humans indicate that folate deficiency is connected with higher susceptibility to infection.^{2,21}

Vitamin B12 appears to be an immunomodulator, functioning as a coenzyme involved in the synthesis of the amino acid methionine from homocysteine. In

one study, patients deficient in vitamin B12 were reported to have suppressed natural killer cell activity and lower numbers of circulating lymphocytes.^{22,23}

Vitamin A

Vitamin A is key to both innate and adaptive immunity. It helps to maintain the integrity of the skin and mucosal cells of the eye and respiratory, gastrointestinal, and genitourinary tracts, all of which function as barriers against infection. Also, vitamin A is necessary for the proper function of T and B lymphocytes, which mediate adaptive immunity. Thus, vitamin A is necessary for the generation of antibodies.²⁴

Try these supplements

Elderberry

The berries of *Sambucus nigra* have been traditionally used to address cold and flu symptoms. The berries have demonstrated antiviral activity against certain viruses, including the common cold and influenza. As a result, elderberry supplementation has become a popular home remedy for upper respiratory symptoms.²⁵

Elderberries contain a lot of powerful antioxidants, including anthocyanins, which have been shown to boost immune function and exhibit antiviral effects. Several studies have found that elderberry inhibits viral proliferation and prevents the adhesion of the virus to the host cell. In addition, elderberry has been reported to stimulate the immune system by enhancing the production of cytokines.²⁶

A comprehensive review of clinical studies provides evidence that elderberry supplementation is significantly effective at reducing the total duration and severity of upper respiratory symptoms as compared to a placebo group.

Supplementation helps to successfully reduce flu-like symptoms regardless of underlying cause.²⁵

Echinacea

Echinacea, commonly called coneflowers, are a group of flowering plants in the daisy family originating in North America. Some species of echinacea have been used in Native American medicine for centuries to treat conditions like respiratory tract infections, colds, coughs, and bronchitis.¹

A series of studies support the use of echinacea as an immunostimulant and anti-inflammatory.¹ It also has shown promise in some studies to prevent and relieve symptoms of the common cold.²⁷

Turmeric

The spice turmeric is a member of the ginger family and native to the Indian subcontinent and Southeast Asia. India is the world's main producer of turmeric, which has been used in Ayurvedic medicine for thousands of years.¹

Studies of curcumin, the active ingredient in turmeric, have found it to have anti-inflammatory properties that could be useful in treating a number of inflammatory diseases. Curcumin also has shown the ability to interact with various immunomodulators such as dendritic cells, macrophages, and B and T lymphocytes.¹

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