The Immune System

What is the immune system? In simple terms, the immune system is a group of cells, bio-chemicals, tissues and organs strategically located throughout the body to help protect against bacteria, viruses, fungi, yeast, & parasites. The immune system is one of our keys to optimal health! It’s an important first line of defense against everything from the common cold to life-threatening diseases such as cancer.

The immune system can be categorized into 2 major divisions: innate and adaptive immunity. Innate immunity refers to the physical and chemical barriers that prevent pathogenic microorganisms from entering body. The skin, for example, provides a barrier of acidic pH, salty sweat, and fatty acid secretions of the sebaceous glands to prevent microbial invasion. Innate immunity also includes the mucous linings of the digestive and respiratory tract, the tonsils and adenoids, the enzymes & flora in our intestines, the acidic pH of the stomach, and more.

Acquired or Adaptive Immunity includes our B and T lymphocytes, which are types of white blood cells. B cells produce antibodies (immunoglobulins) directly in response to contact with pathogens (pathogen = disease-causing organism). T cells are associated with cell-mediated immunity and work in close conjunction with B cells.

5 Organs of Elimination

The 5 organs of elimination also play an important role in the functioning of a healthy immune system and overall optimal health. The skin, lungs, kidneys, GI Tract, and liver comprise the organs of elimination, which assist in the removal of toxins from the body. The skin excretes toxins through sweat and pores; the lungs excrete toxins through respiration; the kidneys through urination; the GI tract through bowel movements; and the liver neutralizes and eliminates toxic compounds as part of the digestive tract and ALSO helps metabolize and neutralize toxins and other substances through phase I and phase II detoxification. Over time, with continued exposure to stressors, pollutants, chemicals, processed foods, & poor air and water, these organs become overworked and subject to oxidative stress. As part of having a healthy immune system, we need to ensure that the organs of elimination are functioning at their best.

Origin of Acute Illness?

What is the etiology of acute infection with colds and flu? One lens through which to view acute illness is as a ‘cleansing process.’ Over time, a typical person becomes “toxic”- in other words, the burden of dealing with a variety of physical, chemical, and emotional stressors results in the body becoming less efficient at handling infection. This is caused by a number of contributing factors, for example:
• Poor diet - with nutrient deficiencies & damage due to food that is processed and contains chemical additives, preservatives, and pesticides
• Overexposure (both frequency/quantity) to environmental contaminants
• Lack of sleep
• Disharmonious responses to life circumstances (“stress”)
• Lack of fresh air, sun, and exercise

This toxic load begins to interfere with proper functioning of the body which weakens the immune system and other body systems. A microorganism conveniently settles into the toxemia, creating an immune reaction, stimulating the vital force (our “innate healing ability”). The microbial infection triggers what we could think of as a cleansing. The body “discharges”, producing symptoms such as cough, runny nose, vomiting, diarrhea, etc. In this way, the body is “cleaned out.”

Suppressive Treatments

Unfortunately, we typically interfere with the cleansing/healing process. People are tempted to take over-the-counter (OTC) meds to stop the cleansing: Antitussives to stop coughs, decongestants to stop mucus production, anti-diarrheals to stop cleansing of the GI tract, NSAIDs to lower the fever (decreasing the immune response), and so on. In all the ways the body wishes to excrete the toxins, people stop that from happening so we can move on with our regular lives!

Ideally we would honor the reactions of the vital force to the infection: the lack of appetite, fatigue and achiness serve the purpose of making the body rest so that all of our energy can be directed to the cleansing and healing process. Instead we continue eating the Standard American Diet, keep working, keep cleaning the house - keep expending energy the body needs to detoxify and heal. We have this mentality that we need to fight the bug. It is more productive & accurate to think of the bug as a stimulating agent of health.

Prevention

A healthy diet and lifestyle is the best way to maintain a strong, vibrant immune system. This includes getting enough rest - 8 hours a night is best, on average. Regular moderate physical activity has beneficial effects on the immune system, such as reducing the risk of upper respiratory infection. Stress management is key, as stress is a highly modifiable risk factor that impacts the immune system. Yoga, tai chi, meditation, biofeedback, hobbies, cultivating a rich spiritual and social life, breathing exercises, and other relaxation techniques are examples of ways to modulate the stress response. Dietary modifications can improve general immune function, such as drinking 6-8 glasses of filtered water and eating 5-9 servings of produce per day. The most important diet change you can make to support the immune system is to reduce sugar intake! Sugar interferes with white blood cells’ ability to destroy bacteria.

During acute illness, it’s best to eat lightly and to minimize intake of heavy, fried, and junk foods along with increasing intake of homemade soups (veggie and/or chicken), herbal teas, and water. Garlic, onion, horseradish, ginger, shiitake and wild mushrooms, and cayenne pepper are especially helpful to eat ingest during a cold or flu.
Interventions from Nutritional Frontiers

Nutritional Frontiers offers several nutritional supplements whose ingredients may provide immune system support either for prevention or during acute illness to help shorten the duration and intensity of symptoms.*

Immunomax Chewables or Capsules

Immunomax Chewable Tablets combine herbs and nutrients to boost immune function during acute illness.* Immunomax contains DMG which, according to research, can help stimulate the immune response by enhancing antibody and lymphocyte production. ImmuneEnhancer™ AG in Immunomax tablets is a source of larch tree-derived arabinogalactans, which support the immune system by increasing the number of immune cells, antibody response, and limiting unhealthy cell replication. Larch arabinogalactans are also known to reduce incidence of upper respiratory infections. Immunomax also contains Maitake D-Fraction® which has been extensively researched as a comprehensive immune support as well as specifically immune-stimulating against cancer cells. Beta-1, 3-Glucans are shown to increase host immune defense by activating complement system, enhancing macrophages and natural killer cell function, as well as induce cellular responses. Although derived from yeast there are no yeast proteins in it. The Beta Glucans are made from the cell walls of baker’s yeast, which is then purified, and free of allergenic material.

D3 Capsules or Liquid

Vitamin D is an immune system modulator to support healthy T Cell and macrophage responses and can be taken in doses recommended by your healthcare practitioner to achieve optimal serum levels of this vitamin. Nutritional Frontiers offers vitamin D products in liquid or pills in 1000 or 5000 IU doses to meet your needs.

Vitamin C Chewables or Capsules

Vitamin C may help reduce the duration of the common cold, especially in children. Vitamin C is most effective when taken before cold symptoms start. Nutritional Frontiers’ Ester C Plus and Cherry Chews provide 2 options for vitamin C supplementation to meet your needs.

Immune Tincture

Immune Tincture by Nutritional Frontiers is a comprehensive herbal blend with a combination of herbs traditionally considered to be immune-stimulating and immune-modulating. Echinacea angustifolia, a wildflower native to North America, is traditionally by herbalists as an immune stimulant. It activates white blood cells and may increase interferon production, which is important in fighting viral infections. Recent research indicates that Echinacea may help reduce the risk of recurrent upper respiratory infection. Traditionally Echinacea is thought to be most helpful at the onset of acute infections rather than for prevention of colds and flu. Astragalus membranaceus is used extensively in Traditional Chinese Medicine as a Qi (chi) tonic. Herbalists also use astragalus as an immune adaptogen. Pau d’arco is a Latin American herb with possible applications for both acute and chronic illnesses including infections and inflammation. Some in vitro studies have shown it to be anti-bacterial, anti-viral, and anti-fungal. Indigenous people in Central and South America as well as Caribbean healers use pau d’arco for infectious diseases, wounds, and other health conditions. Maitake, reishi, and shiitake mushrooms con-
tain complex polysaccharides that enhance immune function. These mushrooms are traditionally classified as immune modulators. Eleutherococcus senticosus, also known as Siberian ginseng, has a long history in Asia of being used to prevent respiratory infections, cold, and flu. Schisandra is used as an adaptogen, helping the body respond to stress. Recent research suggests that some of the lignans present in schisandra have an immunomodulating effect.

AirMaxx Chewables or Tablets

AirMaxx was designed to support proper respiratory and immune function and contains ingredients to maintain histamine levels within normal ranges.* AirMaxx contains quercetin which is a water-soluble bioflavonoid that helps strengthen cell membranes making them less reactive to irritants.* Quercetin may reduce the intensity of allergic reactions.* Perilla seed extract (yielding polyphenols, rosmarinic acid and luteolin) may help reduce discomfort associated with the aspects of histamine release including skin irritation, redness, sneezing, stuffy nose, overproduction of phlegm, skin and eye irritation, and runny nose. The chewable form of AirMaxx also contains DMG, vitamin C, and bromelain, and the encapsulated form of AirMaxx has the additional benefits of N-acetylcysteine and grape seed extract.

*These statements have not been evaluated by the FDA. The products referred to are not intended to treat, cure, or prevent any disease.

-http://lpi.oregonstate.edu/mic/vitamins/vitamin-D#immunity
-http://lpi.oregonstate.edu/mic/vitamins/vitamin-C
-Vetrivka, 2014.