

8 Foods to Strengthen Your Immune System during the Flu Season

During the flu season, those who exercise vigorously on a regular basis should take extra steps to ensure their immune system remains strong. Many do not realize that an intense training regimen can suppress immune function; especially when combined with inadequate recovery and nutritional support.

Specifically, research indicates that heavy, prolonged exertion can:

- Reduce the quantity of white blood cells and glutamine in circulation
- Increase stress hormone production (e.g., cortisol, adrenaline)
- Dramatically increase free radical production and systemic oxidative damage
- Promote inflammatory dynamics that increase the workload of various immune cells (e.g., natural killer cells, lymphocytes, cytokines)

In addition to adequate sleep and hydration, an easy way to help give one's immune system the "boost" it needs to fight off infections or any pathogenic invaders is to include various immune-boosting nutrients in the diet. The following selections have been shown to have a positive impact on immune function, and may be useful recommendations for clients who engage in high-intensity, high-frequency training on a weekly basis. The information given is not an exhaustive listing for these products as the goal of this article is to focus on some of the beneficial properties associated with immune support.

Sample Immunostimulant Foods

Tea – Green or black tea is rich in healthful antioxidant compounds, such as polyphenols and flavonoids, which may limit the damage free radicals can impose on most tissues. One type of polyphenol, known as catechins has even been shown to kill certain viruses. A Harvard study showed that people who drank five cups a day for a total of two weeks had 10x more pathogen-combatting interferon in circulation compared to others that consumed a hot placebo drink. Selecting a tea with Echinacea may be even more helpful. Echinacea has been shown to increase macrophage (consume microorganisms) activation and potentially reduce the risk for upper respiratory tract infections among endurance athletes, when compared to a placebo. A caution with Echinacea is that it has been proposed that too much consumption in supplement form may have negative effects on healthy gut bacteria.

Sardines/fatty fish – Sardines and fatty, cold-water fish are rich in omega-3 fatty acids, which research indicates can reduce the risk for heart disease and inflammation throughout the body. A recent study in the Journal of Leukocyte Biology showed that omega-3 fatty acids may also help enhance the function of specific immune cells. Sardines are recommended specifically as they are known to be low in harmful contaminants such as mercury.

Yogurt – Most people know the mechanism of health promotion here, namely probiotics. These helpful bacteria improve the health of the gastrointestinal tract while reducing the quantity of harmful bacteria. So how does this really improve immune function? Considering the fact that 85% of the body's lymph nodes (key to immune function) are located in the gut, the potential benefit becomes clearer. Studies have shown that probiotics can improve recovery from rotavirus diarrhea, increase resistance to

pathogens, promote antitumor activity, and even reduce stress-induced damage to the gut. Yogurt is also high in other healthful micronutrients such as calcium and vitamin D.

Broccoli – Broccoli is packed with immune-boosting nutrients such as vitamin A, vitamin C and antioxidants such as glutathione. As with any vegetables or fruits it is recommended to consume the product raw to retain a greater quantity of its natural, healthful compounds. Broccoli has been examined in research for its role in immune function more than other vegetables, but most dark green varieties of plants are rich in phytonutrients, vitamins and minerals. The same stands for numerous other bright-colored fruits and vegetables (e.g., berries, carrots, grapes, tomatoes, etc). One should try to get a variety of colors on their plate for phytonutrient diversity in the diet.

Chicken soup – It seems that mom may have known best. Chicken soup can soothe a sore throat, reduce congestion, and even help maintain hydration when sick. One study by researchers at the University of Nebraska found that chicken soup deters movement of inflammatory white cells in the bronchial tubes that help block the accumulation of pathogenic cells in the respiratory system. The team also proposed that chicken soup has anti-inflammatory properties. One could further improve the immune-boosting impact of chicken soup by addition healthful vegetables and herbs such as oregano, garlic or cilantro.

Mushrooms – Mushrooms are rich in selenium, various B vitamins and antioxidant compounds. They also contain carbohydrate-based components known as beta glucans that can directly activate white blood cells or modify the response of other immune cells. Maitake, reishi and shiitake mushrooms seem to provide some of the greatest benefits to the immune system. These varieties can be used on salads or pizza, in sautés, or even as a meat substitute for those trying to lose weight.

Caffeine – Caffeine seems to possess various health benefits when consumed in appropriate quantities. As an adenosine receptor antagonist, it can exert responses in many immune cells that have adenosine receptors (e.g., cytokines). Ingestion has been shown to result in indirect effects on immune cell function through adrenoceptor stimulation. Other studies have shown increased lymphocyte responses following ingestion. Essentially, it seems to prime certain components of the immune system, which may improve their effectiveness in thwarting pathogenic invasion.

Curcumin – Fan of curry chicken over a bed of seasoned rice? You may be in luck as research demonstrates that curcumin (orange-yellow component of turmeric, a spice used in curry powder) has anti-inflammatory effects and may positively modify the activation of T-cells, B-cells, natural killer cells, neutrophils, macrophages and dendritic cells that function as immune system messengers. This activation response, in conjunction with its potential for reducing the expression of various pro-inflammatory cytokines, makes it a good choice as an immune-boosting nutrient to add to the diet.