

# Boosting Your Immune System with Phytonutrients

To reduce your susceptibility to the cold or the flu, you might consider boosting your immune health with phytonutrients. Nutrition plays a key role in strengthening your immune system. In fact, there is growing evidence that phytonutrients may positively impact our immune health.



## So what are phytonutrients?

- Phytonutrients (also known as phytochemicals) are chemical molecules found in plant foods: fruits, vegetables, whole grains and legumes.
- They are different from macronutrients and micronutrients. Macronutrients are carbohydrates, proteins, fats, and fiber, while micronutrients are the vitamins and minerals found in food.
- These compounds work together to protect the plant from disease and harmful conditions.
- They are not essential for our bodily functions, nor will their deficiency cause diseases, but these compounds work together to protect us just like they protect plants.
- There are thousands of phytonutrients in plant foods providing powerful, protective benefits with varying chemical structures. We are most familiar with antioxidants, flavonoids, carotenes and isoflavones.

## How do they protect our immune system?

- Phytonutrients protect the plant from hazardous environmental elements such as ultra-violet light, pollution, bacteria, viruses and pests. These harmful elements attack the plant's cell membrane, protein, and DNA causing damage, forming [free radicals](#) which are unstable, damaging molecules, and weaken the immune system in plants.
- Phytonutrients reduce the damage of free radicals formed during stressful conditions in plants and humans. They are stable molecules that donate their electrons to the unstable free radicals to stabilize molecular and immune health.
- Pollution, smoking, inflammation, aging are a few examples of stressful conditions that cause free radicals to form within the human body, which weaken our immune system and cause damage to our DNA, cell membranes, bloodstream and much more. These damages can lead to cancer, chronic disease and cardiovascular disease.
- Just as in plants, we benefit from the protective characteristics of the phytonutrients when we consume a variety of plant-based foods. Evidence indicates that they may prevent cell mutation, inflammation and boost our immune system.



### Where do we find them?

- Many phytonutrients are concentrated in the skin of the plant, giving the plant its color, flavor, and scent. Some are colorless.
- Examples of common foods rich in phytonutrients: avocado, carrots, broccoli, blueberries, garlic, herbs, onions, tomato, spinach, wine and etc..
- Phytonutrients are not damaged during cooking preparations such as chopping, cooking, or extracting. In fact

the lycopene in tomatoes are more concentrated when made into sauces. Onions and garlic release their phytonutrients when they are cut.

### What's the recommended amount?

- It is recommended to have at least five servings of a variety of fruits and vegetables and several servings of grains every day to receive the protective benefits of phytonutrients and to boost immune function.
- To incorporate phytonutrients into your meals consider adding a wide variety of color plant foods to each meal. Try cooking with herbs to enhance the phytonutrient benefits.

Information for this article obtain from: [whfood.org](http://whfood.org) and <http://fnic.nal.usda.gov>

**For the next few months, we will individually cover the phytonutrients we are most familiar with: antioxidants, isoflavanoids, flavanoids, and carotenoids. Learn what they are and which plant foods provide what health benefits.**

If you have questions or concerns in regards to your child's nutrition, or want more information about our services, please contact us to schedule an appointment with one of PEDS, Inc.'s dietitians.

PEDS, Inc. 16216 Baxter Road, Suite #230, Chesterfield, Missouri 63017 636-227-7337