



Strong Immunity: What Role Does Vitamin D Play?

It is well-known that having a strong immune system makes it easier for the body to ward off harmful organisms like bacteria and viruses. Since the arrival of the coronavirus pandemic, there has been a lot of focus on how to strengthen immune function.

A 2021 systematic review and meta-analysis identified vitamin D as being associated with improved clinical outcomes in patients with COVID-19. Conversely, people who were deficient in vitamin D saw a heightened immune response and poorer recovery rates.¹

Vitamin D is a fat-soluble vitamin that is mostly known for its role in bone health and calcium metabolism, but it has other functions as well.

A deficiency of vitamin D (a blood level of less than 20 nanograms/milliliter) has been linked to a higher incidence of autoimmunity as well as a higher susceptibility to infection. Similarly, there appears to be an inverse relationship between vitamin D and the rate of infections. What this means is, maintaining adequate levels of vitamin D may offer some additional protection.²

Some of the most common symptoms associated with low vitamin D levels include fatigue, muscle weakness, and mood changes.³

The biggest source of vitamin D is through sun exposure. Sunlight triggers a series of chemical reactions in your skin that lead to the production of vitamin D. Spending as little as 10 to 15 minutes in the sun a few times a week is enough to saturate blood levels.⁴

While there are very few natural food sources for vitamin D, one exception is mushrooms. Certain mushroom varieties, such as oyster and shiitake, are also able to synthesize vitamin D when exposed to sun.⁵



If you have concerns that your vitamin D levels may be low, spend more time outdoors, include mushrooms on your menu regularly, and make an appointment with your doctor to share your concerns.

1. <https://doi.org/10.1007/s40618-021-01614-4>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3166406/>
3. <https://www.health.harvard.edu/staying-healthy/time-for-more-vitamin-d>

4. <https://doi.org/10.3390/nu10101498>
5. <https://my.clevelandclinic.org/health/articles/15050-vitamin-d--vitamin-d-deficiency>



Phytonutrients That Boost Wellbeing

Phytonutrients are chemicals produced by plants to help them ward off harmful bacteria, fungi, and viruses. Researchers have studied these bioactive compounds extensively, and we now know they have many beneficial effects on human health as well.

These compounds are known to possess anti-inflammatory properties that offer protection against oxidative stressors related to environmental exposures, such as diets that are high in sugar, fat, and processed foods. As a result, phytonutrients are also protective against chronic diseases like cancer, heart disease, cataracts, and Alzheimer's disease.

A 2013 study noted that while more than 5,000 phytonutrients are currently known, it is believed that there are many more yet to be discovered. Because we still have a lot to learn about how these beneficial nutrients work in the body, many health experts suggest focusing on food sources of phytonutrients rather than supplement forms.⁶

Here are a few foods to help you increase the phytonutrients in your diet:

Green Tea. Include an occasional cup of green tea to increase the number of beneficial catechins and polyphenols. (Note: Compounds in green tea can interact with certain medications, so be sure to consult your doctor or pharmacist before changing your usual intake.)

Cocoa. Cocoa, like that found in dark chocolate, contains beneficial procyanidins, theobromine, and catechins.

Spinach. Add some fresh spinach greens to your salad for a boost of polyphenols and lutein.

Red Wine. Drinking red wine (in moderation) can provide beneficial resveratrol. You can also find this compound in red fruits and vegetables.

Phytonutrients, while still somewhat elusive from a scientific standpoint, have been shown to offer a wide range of health benefits for human health. The easiest way to increase the number of phytonutrients in your diet is to include a wide variety of brightly colored fruits and vegetables.⁷



Apples. Fresh fruits like apples, pears, and peaches contain quercetin, a flavonoid that is linked to reduced inflammation.

Blueberries. To increase the amount of lycopene and anthocyanidins in your diet, try adding blueberries to yogurt or oatmeal.

6. <https://www.nal.usda.gov/fnic/phytonutrients>

7. <https://www.nutrition.gov/topics/whats-food/phytonutrients>



Oral Health & Your Immune System

Your oral health can either help or hinder your immune system. Bacteria (both beneficial and harmful ones) thrive in your mouth. Gingivitis is a milder form of bacterial overgrowth that can advance into periodontal disease, which poses more serious risks.

Gum disease has been linked to a number of other conditions, such as diabetes, cardiovascular disease, and even low birth weight. Some experts believe dysfunctions of the oral immune system play a role in the development of autoimmune diseases as well.⁸

Your mucosal immune system, which appears to operate independently from your more centralized immune system, serves as an additional protective barrier from bacteria, helping to prevent foreign organisms from making their way into your bloodstream.⁹

Here are some things you can do to support good oral health:

Brush and floss your teeth daily. Practicing good oral hygiene by brushing and flossing your teeth daily can help reduce levels of harmful bacteria in your mouth.

Avoid smoking. Smoking cessation has been shown to reduce the risk of tooth loss as well as the risk of development of periodontitis. (According to the American Dental Association, vaping may be just as risky as cigarette smoking.)¹⁰

Eat a wide variety of plants. Plant-based foods offer a wide variety of phytonutrients that support healthy immune function. There also appears to be a relationship between the bacteria in your mouth and the bacteria in your gut, so eating a plant-based diet may support your immune system in several ways.



Drink plenty of water. Water dilutes and neutralizes substances that accumulate in your mouth, reducing the number of harmful bacteria that linger.

Schedule routine cleanings and check-ups. Be sure to see your dentist regularly, so you can identify issues early and address them before they become a bigger problem.

Practicing good oral hygiene is a simple way that you can help support your immune system.

8. <https://doi.org/10.1038/ijos.2014.48>

9. <https://doi.org/10.3390/biology9060131>

10. <https://www.ada.org/en/press-room/news-releases/2019-archives/october/american-dental-association-statement-on-vaping>

Peachy Mint Iced Green Tea

Ingredients

- 6 green tea bags
- 6 cups water
- 2 peaches, sliced
- 2 tablespoons honey
- 6 sprigs fresh mint

Instructions

1. Bring water to a boil in a sauce pan. When boiling, remove from heat.
2. After water has been removed from heat for 1-2 minutes, carefully add sliced peaches and tea bags. Let the tea bags steep for 2 minutes then remove. Allow the peach slices to steep an additional 3 minutes, then remove to a separate container.
3. Add honey to tea and finish cooling. Once cool, transfer to a pitcher or some other container, and refrigerate for a couple hours or until chilled.
4. Place ice, a few peach slices, and fresh mint in a tall glass. Pour tea into glasses and enjoy a refreshing, chilled beverage!
5. You can also leave mint sprigs and peach slices in with the tea while refrigerating, but it will continue to flavor the tea!

Notes: Nutrition information is calculated with peach slices consumed - nutrition information will vary if steeped peach slices are discarded. Substitute agave for honey to make vegan.

Prep Time	Chill Time	Servings
15 minutes	2 hrs	6



Nutrition Facts

Calories	41
Carbohydrates	10g
Protein	0g
Fat	0g
Sodium	13mg
Potassium	95mg
Sugar	9g
Calcium	13mg
Iron	0.2mg



Phytonutrient Boost

Give yourself a phytonutrient boost by including at least 5 phytonutrient-rich foods in your diet this week. Here are a few ideas:

- Green Tea
- Cherries
- Broccoli
- Tomatoes
- Figs
- Pears
- Blueberries
- Cocoa
- Apples

Employer Completion Form

I successfully completed the Phytonutrient Boost Wellbeing Activity by:

Signed: _____ Date: _____



Build a Strong Immune System

Your Wellbeing Activity

Give yourself a phytonutrient boost

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Phytonutrients that boost your wellbeing:

GREEN TEA

Include an occasional cup of green tea to increase the number of beneficial catechins and polyphenols.

COCOA

Cocoa, like that in dark chocolate, contains beneficial procyanidins, theobromine, and catechins.

APPLES

Choose fresh fruits like apples, pears, and peaches to increase quercetin.

BLUEBERRIES

Add blueberries to yogurt or oatmeal to increase lycopene and anthocyanidins.

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