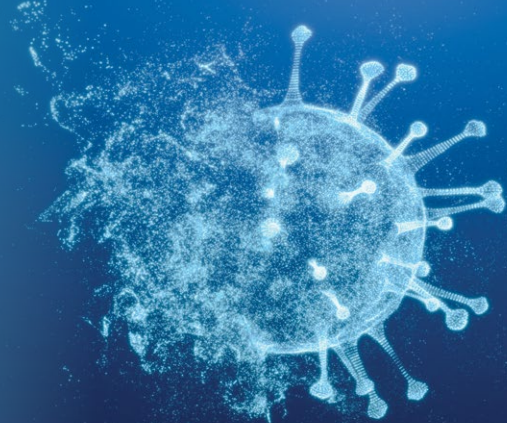


Nutrition's Role in COVID-19

PhysiciansCommittee
for Responsible Medicine



Good nutrition plays an important role in building a healthy immune system and treating conditions such as obesity, heart disease, and type 2 diabetes, which can make COVID-19 more severe and deadly.¹

Plant-Based Eating to Prevent and Treat Comorbidities

Eating a plant-based diet can improve these conditions by lowering body weight, blood pressure, blood sugar, and cholesterol and improving overall quality of life.²⁻⁶ A plant-based diet is also associated with reduced risk of severe COVID-19.

Plant-Based Eating and Reduced COVID-19 Severity

A study of nearly 600,000 participants found that dietary patterns that were highest in fruits, vegetables, and plant-based foods in general were associated with a 41% lower risk of severe COVID-19 and a 9% reduction of COVID-19 infection of any severity, compared with diets lowest in these foods.⁷

Specifically, increasing the frequency of consumption of legumes and grains decreased the overall symptom severity of people with COVID-19, according to a study published in late 2021. Other studies have shown high consumption of fiber and carbohydrate can decrease the risk for and duration of respiratory infections, likely by supporting the immune system, reducing oxidative stress, and improving the gut microbiome.⁸

A survey of health care workers with high exposure to COVID-19 patients across six countries found that those who followed plant-based diets had a 73% lower chance of moderate to severe COVID-19 illness.⁹ In contrast, those who followed low-carbohydrate, high-protein diets were 48% more likely to have moderate to severe COVID-19 illness.

Plant-Based Diet and Improved Immunity

Eating a low-fat, plant-based diet may help give the immune system a boost. The immune system relies on white blood cells that produce antibodies to combat bacteria, viruses, and other invaders. Vegetarians have been shown to have more-effective white blood cells when compared with nonvegetarians, presumably due to a high intake of vitamins and low intake of fat.^{10,11}

Eating a low-fat diet may also be protective. Studies have shown that limiting dietary fat helps strengthen immune defenses. Research also shows that oil may impair white blood cell function and that high-fat diets may alter the gut microbiota that aid in immunity.¹²⁻¹⁵

Maintaining a healthy weight can also benefit the immune system. Obesity has been linked to increased risk for influenza and other infections such as pneumonia.¹⁶ Plant-based diets are effective for weight loss because they are rich in fiber, which helps fill you up, without adding extra calories. Fiber can also lower body mass index, which is linked to improved immunity.¹⁷ A plant-based diet has also been shown to reduce inflammatory biomarkers.¹⁸

Vitamins, Minerals, and Antioxidants

Studies have shown that fruits and vegetables provide nutrients—like beta-carotene, vitamin C, and vitamin E—that can boost immune function. Because many vegetables, fruits, and other plant-based foods are also rich in antioxidants, they help reduce oxidative stress.¹⁹

Beta-Carotene: Beta-carotene is a powerful antioxidant that can reduce inflammation and boost immune function by increasing disease-fighting cells in the body. Excellent sources include sweet potatoes, carrots, and green leafy vegetables.

Those who followed **plant-based diets** had a **73% lower chance** of moderate to severe COVID-19 illness.⁹

Vitamins C and E: Vitamins C and E are antioxidants that help to neutralize free radicals and support the body's natural immune response. Sources of vitamin C include red peppers, oranges, strawberries, broccoli, mangoes, lemons, and other fruits and vegetables. Vitamin E sources include nuts, seeds, spinach, and broccoli.

Vitamin D: Research shows vitamin D supplementation may reduce the risk for viral infections, including respiratory tract infections, by reducing production of proinflammatory compounds



in the body. Increased vitamin D in the blood has been linked to prevention of other chronic diseases including tuberculosis, hepatitis, and cardiovascular disease. Food sources of vitamin D include fortified cereals and plant-based milks and supplements.^{20,21}

Zinc: Zinc is a mineral that can help boost white blood cells, which defend against invaders. Sources include nuts, pumpkin seeds, sesame seeds, beans, and lentils.

Because plant-based dietary patterns are associated with reduced risk for common chronic diseases, moving to a more plant-based diet may offer protection from the worst outcomes of COVID-19. Additionally, these eating patterns seem to offer direct, significant boosts to immunity. ◀

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