

# Role of Holistic Nutrition and Wellness in Boosting Immunity

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## Abstract

The novel coronavirus has spread rapidly to multiple countries and has been declared a pandemic by the WHO. COVID-19 is observed to probably affect people with low immunity. Plant-based foods increase the intestinal beneficial bacteria. This improves overall gut microbiome health which makes up to 85% of the body's immune system thereby boosting immunity. Proper hydration helps our cells to oxygenate that helps them protect the body from any infectious agents. Regular exercise increases the levels of WBCs and antibodies. It also prevents formation of blood clots, which have been a symptom for some COVID-19 patients. Stress releases hormones like cortisol that suppresses the action of white blood cells and increases inflammation.

## Keywords

Good sleep helps in releasing cytokines that fight off any infection

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## INTRODUCTION

Human immune system is complex, intelligent, and powerful, but some simple and common nutritional deficiencies can weaken immunity.

The novel coronavirus has spread rapidly to multiple countries and has been declared a pandemic by WHO.

COVID-19 is observed to probably affect people with low immunity response.

An effective immune system must have the ability to interpret changes in the world around it and respond properly.

It should have the ability to adapt to strange environmental changes and fight against infections. When pathogens enter the body, they attempt to use it as a host, and the immune system poses many threats. A different door is used for every infection to enter a cell and blocking these routes of entry can stop an infection before it begins. The immune system neutralizes an infection by producing antibodies.

Keeping our immune system healthy is the key to prevent diseases.

Making healthy lifestyle choices by consuming nutritious foods and getting enough sleep and exercise are the most important ways to bolster our immune system.

In addition, research has shown that supplementing with certain vitamins, minerals, herbs, and other substances can help improve immune response.

### Role of Macronutrients in boosting Immunity

Whole grains increase the variety of gut microbiota and increase production of short-chain fatty acids. Both gut microbiota and short-chain fatty acids are considered vital contributors to healthy immune and inflammatory functions.

Eating whole grains results in an increase in levels of memory T cells.

Proteins help form immunoglobulins, or antibodies, to fight infection.

Antibodies are proteins in our blood that protect our body from harmful invaders like bacteria and viruses. When these foreign invaders enter our cells, our body produces antibodies that tag them for elimination.

Glutamine is a nonessential amino acid that provides an important energy source for many cell types including those involved in immune responses.

Both the total fat intake and the ratios between fatty acids of different classes influence the activity of immune cells. Studies showed that Essential fatty acids are required for the growth and maintenance of the immune cells.

Omega-3 fatty acids, in flaxseeds, chia seeds, and walnuts fight inflammation as well.

Since chronic inflammation can suppress your immune system, these fats naturally combat illnesses.

### Role of Micronutrients in boosting Immunity

Vitamin C has antioxidant activity that can decrease inflammation, which helps improve our immune function. It also boosts the activity of phagocytes, a type of immune cells that can "swallow" harmful bacteria and other particles. It also promotes the growth and spread of lymphocytes, a type of immune cell that increases circulating antibodies, that can attack foreign or harmful substances in your blood.

People deficient in vitamin C are susceptible to severe respiratory infections such as pneumonia.

Mild zinc deficiency, commonly seen with ageing, leads to dysregulation of the adaptive immune system decreasing the specific immune response. Zn is critical for efficient functioning of the innate immune system.

In COVID-19, there are strong indications for downregulation of the innate immune response along with a high inflammatory condition.

This explains why elderly are more at risk of COVID-19 in contrast to young children.

Zn is essential for immune cell development, communication and plays an important role in inflammatory response. Zinc also specifically protects tissue barriers in the body and helps prevent foreign pathogens from entering the body.

According to research, 16% of all deep respiratory infections worldwide have been found to be due to zinc deficiency.

Numerous studies reveal that Zn supplementation may protect against respiratory tract infections.

Magnesium improves the white blood cells' ability to destroy germs. Low magnesium can lead to a cytokine storm, during which the body attacks its own cells and tissues instead of fighting off infection. This creates inflammation, cell and tissue damage, narrowed blood vessels, and blood clots.

During this COVID-19 pandemic, vitamin D insufficiency has been seen in over 80 percent of patients with severe cases of the coronavirus.

Vitamin D is a fat-soluble nutrient that enhances the functioning of our immune system.

It increases the pathogen-fighting effects of monocytes and macrophages — white blood cells that are important parts of our immune defense and promotes immune responses.

In fact, low vitamin D levels are associated with an increased risk of upper respiratory tract infections, including influenza and allergic asthma.

Some studies show that supplementing with vitamin D may improve immune response. Research suggests that taking this vitamin may protect against respiratory tract infections.

Vitamin D has been highly researched in connection with COVID-19 because of its effect on the immune system.

For many, a simple strategy to bolster immunity is to get magnesium and vitamin D levels back into the optimal range.

Magnesium activates vitamin D in the body, and vitamin D helps strengthen the immune system.

Just by increasing levels of magnesium and vitamin D may help COVID-19 patients successfully fight off the virus.

### **Plant based diet and gut health**

People following plant-based diets had lower odds of severe COVID-19-like illness. A healthy diet rich in nutrient-dense foods may be considered for protection against severe COVID-19.

Studies found that people having plant-based diet had lower odds of developing serious illness from COVID

Plant based foods contain phytochemicals (polyphenols, carotenoids) that are important to maintain a healthy immune system.

Severe cases of COVID-19 often include GI symptoms and are also associated with altered gut microbiota.

Studies demonstrate a connection between the gut microbiota and COVID-19 severity.

According to research, Plant-based foods increase and help the intestinal beneficial bacteria, and the overall gut

microbiome health which makes up to 85% of the body's immune system thereby increasing immunity to fight against any disease.

### **Role of Holistic Wellness in boosting Immunity**

Proper hydration helps our cells to oxygenate. Cells can compete at their best if they get enough oxygen that helps them protect the body from any infectious agents.

According to the Centre for Disease Control hydration plays a major role in monitoring body temperature.

Staying hydrated also enables us to transmit nutrients to all parts of the body and helps to maintain all body functions potentially to decrease body infection.

Research shows that being physically active helps us feel better and increases longevity.

The American Heart Association recommends at least 150 minutes of moderate physical activity weekly. Studies suggest that routine activity may help protect people who get COVID-19 from becoming seriously ill.

Examples of moderate exercise include brisk walking, steady bicycling, jogging, yoga. This reduces inflammation and promotes the healthy turnover of immune cells.

Exercising helps increase the levels of white blood cells and antibodies that fight off infections.

Exercise can also help with the prevention of blood clots, which have been a symptom for some people who contracted COVID-19.

Stress hormones like Cortisol suppress the action of white blood cells.

Stress negatively alters the immune system responses within the body.

Gain control over stress.

Try new activities and hobbies painting, writing, photography helps. Find ways to stay connected with friends and family through technology. Consider therapy if the stress feels unmanageable.

### **MATERIALS AND METHOD**

This topic isn't any lab analysis. This paper has been formulated based on my personal observations in my patients during Covid 19.

### **CONCLUSION**

In the present review I conclude that, for our immune system to perform optimally and fight against any infection or disease including Covid 19, a holistic wellness approach along with balanced nutrition is necessary.

Eating right, proper hydration, right exercise, good sleep and stress management helped my clients to deal better with Covid 19.

### **REFERENCES**

- [1] The American Journal of Clinical Nutrition, Volume 105, Issue 3, (March 2017) Substituting whole grains for refined grains in a 6-wk randomized trial has a modest effect on gut

- microbiota and immune and inflammatory markers of healthy adults
- [2] Journal of Infection and Public Health Volume 13, Issue 11 (November 2020) Immune response in COVID-19: A review
  - [3] Ali Mujtaba Shah, Zhisheng Wang, and Jian Ma (2020) Glutamine Metabolism and Its Role in Immunity, a Comprehensive Review
  - [4] Urszula Radzikowska, Arturo O. Rinaldi, [...], and Milena Sokolowska ( 2019 ) The Influence of Dietary Fatty Acids on Immune Responses
  - [5] Adrian F. Gombart, Adeline Pierre, and Silvia Maggini (2020) A Review of Micronutrients and the Immune System– Working in Harmony to Reduce the Risk of Infection
  - [6] Hyunju Kim,1,2 Casey M Rebbholz,1,2 Sheila Hegde,3 Christine LaFiura,4 Madhunika Raghavan,4 John F Lloyd,5 Susan Cheng,5 Sara B Seidelmann6 ( 2021) Plant-based diets, pescatarian diets and COVID-19 severity: a population-based case–control study in six countries
  - [7] Jodi D. StookeyPrasanna K.R. AlluDorothee ChabasDavid PearceFlorian Lang ( Nov,2020) Hypotheses about sub-optimal hydration in the weeks before coronavirus disease (COVID-19) as a risk factor for dying from COVID-19
  - [8] Robert Sallis ,1 Deborah Rohm Young,2 Sara Y Tartof,2 James F Sallis,3 Jeevan Sall,1 Qiaowu Li,2 Gary N Smith,4 Deborah A Cohen (2021) Physical inactivity is associated with a higher risk for severe COVID-19 outcomes: a study in 48 440 adult patients
  - [9] Annina SeilerEmail authorChristopher P. FagundesLisa M. Christian (Nov,2019)
  - [10] The Impact of Everyday Stressors on the Immune System and Health.