

# Utilization Of Vitamin C/ Zinc Supplements, Medicinal Herbs And Immunity Boosters During Covid -19 Pandemic: A Post Study In India

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## Abstract

The Covid-19 pandemic is currently a major challenge around the world. Getting and maintaining proper nutrition is essential to fight viruses. Nutrition is an integral part of the human immune system. Diet has a direct impact on people health, and a healthy diet will give their body the strength to fight the COVID-19 pandemic. But it's hard to believe that a superfood can simply boost immunity. By including foods rich in micronutrients, people can have a healthy and nutritious diet. Certain nutrients such as vitamin C, vitamin D, vitamin E, vitamin B-6, folic acid, zinc, selenium, iron and protein support the vital growth of good bacteria. Optimal nutrition and intake of dietary nutrients affect the immune system, so strengthening the immune system is the only sustainable way to survive in the current situation. A high-fiber, mostly plant-based diet, including fruits, cruciferous vegetables, whole grains, and legumes, is key to promoting a healthy gut. This study examines the importance of nutrition to boost immunity and provides some professional and authoritative dietary guidelines on nutrition and food safety for resistance to COVID-19.

**Keywords:** Immune system, Corona pandemic, Nutrition.

## INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an acute respiratory disease caused by a newly identified beta-coronavirus. It started in December 2019 in Wuhan, Hubei, China and quickly spread around the world. This global epidemic has had a tremendous impact on the health systems and socio-economic stability of countries. It quickly became a global public health emergency. As there is currently no approved treatment for COVID-19, the precautionary principle is used as the best approach to control this infection. Adequate hydration and a healthy diet are important for everyone,

along with pharmacological, environmental, public health, and supportive management considerations. Little is known about the effect of nutrition on this infection (Guan et al., 2020).

More than 2,500 years ago, Hippocrates said, "Let food be medicine and medicine be food." Both nutrient intake and disease incidence commonly affect nutritional status, particularly in developing countries where everyone struggles for food (Bogoch et al., 2020). Poor diet and infections can lead to severe malnutrition. The Covid-19 pandemic is currently the biggest challenge in the world, and scientists and researchers are trying to develop a vaccine specifically for this virus, but so far nothing has been achieved. Even if vaccination methods are found, other drug-resistant infections are likely to spread throughout the community. Nutrition is very important to maintain a strong immune system against viruses (Ksiazek et al., 2003).

During the COVID-19 pandemic, an individual's nutritional status has been used as a measure of resilience to instability. Optimum nutrition and nutrient intake affect the immune system by modulating gene expression, cell activation, and signaling molecules. In addition, different dietary components are determinants of gut microbial composition, which subsequently shape the body's immune response (Aslam et al., 2017). Therefore, the available evidence shows that the only sustainable way to survive in the current conditions is to strengthen the immune system. Adequate intake of zinc, iron and vitamins A, B12, B6, C and E is necessary to maintain the function of the immune system. In the current scenario, Covid-19 poses a new set of challenges for people to maintain a healthy diet (Yousafzai et al., 2013).

Self-isolation, lockdown, and social withdrawal are crucial strategies for slowing the progression of the illness, even when they have negative effects on the person's life. Confinement to one's home has a profound effect on one's health, affecting one's routines for eating, sleeping, and exercising. It would encourage sedentary habits that harm both physical and mental health and raise the risk of obesity (Gleeson et al., 2004). Fear and anxiety may also result in dietary changes that result in poor eating behaviours, a decrease in appetite or a decrease in the enjoyment of eating (Macht, 2008).

A healthy immune system that can fend off any virus attack is ensured by a balanced diet. Except for vitamin C, there is currently no proof that any supplement may "boost" our immune system or treat or prevent viral infections (Anton and Miller, 2005). One of the key components of water soluble vitamins that contribute to a robust immune system is vitamin C (Haug et al., 2007). Men should consume 90 mg of vitamin C per day, while women should get 75 mg. In the current climate, knowledge of the exact foods that can strengthen our immune systems and fend off COVID-19 is essential.

Promoting immunological health is particularly important for increasing people's virus resistance. Immune dysfunction brought on by specific nutritional deficits may increase susceptibility to infectious illnesses. Its vulnerability may also be increased by dietary deficiencies in protein, vitamin C, vitamin E, vitamin A, zinc, selenium, and omega-3 fatty acids, which should be examined in high-risk groups (Field et al., 2002; Anton and Miller, 2005; Wypych et al., 2017).

### **DIETARY GUIDELINES FOR COVID-19**

According to Khayyat-zadeh, (2020), here are some professional and authentic dietary guidelines for COVID-19.

- Consume fruits every day with a serving size of two cups (4 servings) (guava, apple, banana, strawberry, cantaloupe melon, grapefruit, pineapple, papaya, orange, Longman fruit, blackcurrant, pumelo).

- Consume fresh veggies (broccoli, green chilli peppers, kale, lime, garlic, ginger, and green bell peppers). Vegetables: 2.5 cups (5 servings); legumes: beans and lentils.
- Consume 180 g of whole grains (unprocessed maize, oats, wheat, millet, brown rice, or roots like yam, potato, taro, or cassava) and nuts daily.
- Use nuts like pistachios, coconut, and almonds.
- Poultry can be had two to three times each week and red meat once or twice. Use 160 g of meat and beans, as well as meals from animal sources (such as fish, fish, eggs, and milk).
- Fresh fruits and raw vegetables are better choices for snacking than items that are heavy in sugar, salt, or fat. Prevent sporadic munching.
- Vegetables should not be overcooked since this results in the loss of vital components like vitamins and minerals.
- Pick fruits and vegetables that haven't had salt or sugar added when utilising dried or canned produce.
- Ensure that the food is prepared and served at a safe temperature (no more than 72°C for 2 minutes).
- Limit daily salt intake to five grammes..
- Eat less saturated fat (found in butter, fatty meat, coconut and palm oils, cheese, ghee and cream) and more unsaturated fat (found in avocado, fish, nuts, soy, olive oil, canola, maize oil and sunflower).
- Drink 8 to 10 glasses of water daily. It controls body temperature, eliminates waste, and aids in the blood's transfer of nutrients.
- A healthy diet can ensure that the body is in the best condition to fight the illness. To prevent contamination, the food safety management system must supply workers and officials with the appropriate personal protective equipment.
- Scientists have discovered that food packaging or food itself cannot be a source of virus contamination. However, adhering to good food practices is always advised to reduce the possibility of contamination.

### **SIGNIFICANCE OF VITAMIN C SUPPLEMENTS**

Leukocytes contain vitamin C, which is quickly depleted when an infection occurs. As an antioxidant, this water-soluble vitamin significantly boosts immune function and shortens the length and severity of the common cold (Hemilä and Douglas, 1999). Placebo-controlled studies showed that vitamin C intake decreased the frequency of viral respiratory infections and pneumonia. Additionally, vitamin C has a modest antihistamine impact that could help with flu-like symptoms like runny or stuffy nose, swollen sinuses, and sneezing (Field et al., 2002). A increased dietary intake of vitamin C sources, such as citrus fruits and green leafy vegetables, is advised due to the occurrence of lower respiratory tract infection in COVID-19 (Chambial et al., 2013).

### **SIGNIFICANCE OF ZINC SUPPLEMENTS**

Both acquired and innate antiviral responses depend on zinc, a dietary trace element with immunomodulating properties (Read et al., 2019). Lack of zinc affects cell-mediated immunity and the H1N1 virus (Castaño et al., 2006). Zinc administration considerably reduced the intensity and duration of cold symptoms (Prasad et al., 2000). In individuals with viral illnesses, zinc supplementation had positive and therapeutic effects on cell-mediated immunity and infection reduction. According to earlier randomised clinical trials, co-administration of zinc and antiviral medication may help AIDS patients have better clinical results (Baum et al., 2010; Asdamongkol et al., 2013). Vulnerable groups were also advised to consume plenty of rich, typical dietary sources of zinc, such as red meat, chicken, or seafood, in addition to taking zinc supplements (Solomons, 2001).

## **THERE ARE FEW MEDICINAL HERBS THAT CAN INCREASE OJAS PRODUCTION AND INHIBIT COVID-19:**

### **Moringa**

An herb called moringa can prevent a variety of health issues. It should also be your go-to herb for boosting immunity during the COVID-19 epidemic. Moringa has a higher vitamin C concentration than oranges. One of the key nutrients that our bodies require in order to have a robust immune system is vitamin C. Not only that, but moringa also has certain other essential nutrients that support healthy cells, muscles, and tissues and promote wound healing. Eat moringa because it contains a lot of potassium, iron, calcium, and amino acids (Bhattacharjee, 2020; Fajri, 2021).

### **Neem**

Neem has long been revered and used extensively as an immune booster. Because of its antiviral, antibacterial, and antifungal qualities, it is particularly effective at protecting the body from dangerous germs. Additionally, neem can keep your blood pure. By emptying out impurities, it cleanses the blood, which might boost immunity (Roy and Bhattacharyya, 2020; Eze et al., 2022).

### **Tulsi**

Another miraculous herb that is valued by Ayurveda is tulsi. Basil or tulsi is an effective germicide. It can help find and kill germs, viruses, and bacteria as soon as they enter your body because of its phytochemicals and antioxidants. Simply chew a few leaves when you wake up. You can also incorporate a few drops of cooked tulsi leaf water into your food (Goothy et al., 2020; Gautam, et al., 2022).

### **Ashwagandha**

Because ashwagandha is an adaptogen, it might lessen stress. Your immune system responds less to stress, which leaves you more susceptible to viral infections. During this pandemic, consume ashwagandha to help lower your risk of developing a coronavirus infection (Jain and Mathur, 2020; Shree et al., 2022).

### **Triphala**

The antioxidant qualities of three fruits—haritaki, bibhitaki, and amla—are found in triphala. Both vitamin C and vitamin A, which both boost immunity, are abundant in it. Use triphala to begin your day (Ozah, 2020; Rastogi et al., 2022).

### **Ginger**

A traditional treatment for the flu and the common cold has been ginger. Against viruses like COVID-19, it might be useful. It contains gingerol, an antioxidant that strengthens our defences against infection and destroys viruses. Particularly effective at preventing respiratory tract infections is ginger. You can either add ginger to your meals or eat it raw (Jafarzadeh et al., 2021).

### **Garlic**

Garlic, like ginger, may aid in preventing coronavirus by boosting your immune system. Allicin, a plant component that serves as a germicide, is present. But keep in mind that eating raw or slightly cooked garlic will maximise its health advantages (Khubber et al., 2020).

### **Turmeric**

Turmeric should be consumed for health reasons. Curcumin, a phytochemical found in turmeric, can help your body eliminate toxins and boost your immune system so you can fight off viruses and

bacteria. Increase the amount of turmeric you use in your meals or drink it with milk (Gupta et al., 2020).

### **Black cumin**

Black cumin extracts can protect you from a variety of germs and viruses that harm your immune system. Black cumin seeds and oil both function as antioxidants and aid in removing free radicals that impair immunity (Maideen, 2020)..

The Everherb Immunity Boosters are a fantastic additional option for developing a robust immune system! You have access to everything you need to boost your immunity. To combat the coronavirus, consume these and stay at home.

### **CONCLUSION**

A balanced diet can help you maintain a strong immune system that can fend off any virus attacks. A certain nutrient's saturation in cells at a set level guards against any form of nutritional deficit. People who eat balanced diets appear to be healthier, have stronger immune systems, and have fewer illnesses and chronic diseases. The major goal of this essay is to promote wholesome eating habits that support people in maintaining their physical and mental health.

In conclusion, there is no information on the relationship between diet and COVID-19. Additionally, research on the supplementing of nutrients has mostly been conducted on animals, and there is a dearth of human data. We advise everyone to eat a variety of nutritious foods that are high in nutrients that modulate the immune system. When protein-energy malnutrition manifests in a person, it needs to be treated right away. Additionally, some nutrient supplements, like those containing vitamin C, vitamin E, selenium, and zinc, may be helpful for COVID-19 patients.

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