

Importance of Nutrition in Building Immunity: Facing COVID-19's New Normal

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Across the globe, biotechnology and pharmaceutical sectors as well as research institutes are testing potential vaccines for human use to combat the current COVID-19 pandemic. Mass production and distribution of an FDA approved vaccine to masses is still miles away. There is also a theory of herd immunity; however, the current statistics indicates the current population is not even close to the threshold of minimum number of people with immunity to slow the spread of this virus. Depending on various risk factors such as age, ethnicity, socioeconomic status, prevalent medical conditions, medications, crowding, length of exposure to virus, occupations and pregnancy, if a person acquires the coronavirus, the severity of its infection and symptoms will vary based on these risk factors. Currently, doctors are giving symptomatic treatment to coronavirus patients. As the states and businesses reopen, these are some ways to protect yourself and others. Social distancing, wearing gloves and facemasks or covers, washing hands thoroughly and frequently, cleaning and disinfecting our home and monitoring your health. Our immune system is an integral part of our health and wellbeing. Several different factors such as lifestyle, exercise, age and nutrition play important role in strengthening our immune response.

It is important to watch what we eat. A balanced nutritious diet is one of the ways to improve immune health. **Good nutrition**

and safe food handling practices will play an important role in recovery from COVID-19 pandemic. Strengthening our immune system is one way to protect ourselves from the severity of this illness. Proper nutrition will help us build strong immunity and fight against virus infection.

YOU ARE WHAT YOU EAT! Therefore, you should choose your food with nutrients that will help improve immunity and help fight infection. When we eat fruits, vegetables or whole grains, our body absorbs its nutrients and uses them in production of cells and antibodies, which construct our immune system. Following are some nutrients and foods that help improve immunity.

1. **Vitamin C:** It has excellent antioxidant properties, helpful in protecting against infections. This vitamin helps in White Blood Cell production that act as fighting mechanism in our body. Fruits and vegetables such as broccoli, red bell pepper, kale, oranges, strawberries, kiwi and variety of tangerines, lime and lemons are good sources of vitamin C.
2. **Zinc:** This mineral plays a central role in the functioning of immune system in our body. Deficiency of zinc makes us more susceptible to infections. Oyster is a very rich source of zinc. In addition, crab, lobster, chicken, turkey, red meat, fortified cereals, breads, and beans are good sources of zinc.

3. **Vitamin B6:** This vitamin is important for healthy immune system, normal brain and nervous system development. It also helps in forming new Red Blood Cells. Foods like Chickpeas, bananas, chicken, and fishes like salmon, tuna are good sources of this vitamin.
 4. **Vitamin A:** Beta-carotene in food is converted to vitamin A. This is anti-inflammatory and helps antibodies to respond to toxins such as a virus. Most yellow and orange fruits and vegetables are good sources of vitamin A. Good sources of vitamin A include carrots, squash, cantaloupe, papaya, apricots, sweet potato, spinach, kale etc.
 5. **Vitamin D:** This vitamin is essential for immune function and regulating body's immune response. Vitamin D is also required for strong bones, joints, and working of muscles. The human body can synthesize enough vitamin D from 15 minutes of sun exposure, three times a week. In addition, sun-dried mushrooms, tomatoes, eggs, dairy, fishes like salmon, and tuna are good sources of vitamin D.
 6. **Green Tea:** This is a good source of antioxidants and it helps fight infections, reduces inflammation, and strengthens our immune system. It is a healthy low calorie drink and available in various flavors. It is beneficial to add 3 to 5 cups green tea in daily diet.
 7. **Water:** Water helps to eliminate toxins from our body. It is a major constituent of blood and lymph and plays an important role in transporting nutrients, white blood cells, and other immune system cells in the body. It is important to drink 2 to 3 liters of water every day to keep our body well hydrated. Many fruits and vegetables like watermelon, cucumber, and oranges are high in water content. Infused water with slices of fruits and vegetables is a refreshing and flavorful way of staying healthy.
- Avoid consumption of raw and under cooked eggs and meat.
 - Always use a food thermometer to check the internal temperature of meat and determine if the meat is fully cooked. (Click [here](#) for more information on internal temperatures)
 - Never taste meat before checking the temperature of meat.
 - Never wash raw meat under running water in the kitchen sink. Cooking meat thoroughly kills most pathogens present in it.
 - Clean the food package with soap and water or disinfectant wipes.
 - Refrigerate leftovers and perishable foods such as dairy, eggs, meat, fruits and vegetables immediately after cleaning.
 - Do **not** consume food exposed to disinfectants or cleaning products. Do not use disinfectants and other cleaning products to disinfect raw produce or any food.

It is important to note COVID-19 has not been reported to spread via food, produce or meat. However, food safety is crucial to maintain good health and well-being and avoid infections especially during a pandemic.



Most sources of vitamins and minerals are fruits and vegetables and are many a time consumed raw. Unwashed, raw fruits, vegetables, and meat are also common sources of pathogens that cause mild to severe foodborne illnesses.

Remember to adopt good food safety practices while consuming raw fruits, vegetables, and ready-to-eat foods as well as cooking or ordering meat from restaurants.

- Wash your hands thoroughly with warm water and soap for 20 seconds.
- Always wash your produce thoroughly under running water before consumption. For more details on tips for cleaning your produce see: ([7 Tips for Cleaning Fruits, Vegetables](#))
- Store and handle raw produce and meats separately while shopping and cooking. Use a different chopping board and knife for meat and produce or wash the chopping board and knife thoroughly with water and soap before using it to chop raw fruits and vegetables.

References

1. <https://www.health.harvard.edu/staying-healthy/how-to-boost-your-immune-system>
2. <https://www.nal.usda.gov/fnic/vitamins-and-minerals>
3. <https://pubmed.ncbi.nlm.nih.gov/9701160/>
4. <https://www.uhealth.com/en/media-room/covid-19/boost-immunity-with-food>
5. www.foodsafety.gov
6. https://kysu.edu/wp-content/uploads/2020/05/Nutrition_GroceryShoppingTips_FS20.pdf
7. https://kysu.edu/wp-content/uploads/2020/04/Nutrition_FoodSafetyCrises_FS20-2.pdf
8. <https://www.fda.gov/consumers/consumer-updates/7-tips-cleaning-fruits-vegetables>