Importance of Immunity Nutrition

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Introduction

According to WHO (2016) "Nutrition is the intake of food, considered in relation to the body's dietary needs. Good nutrition is an adequate, well-balanced diet combined with regular physical activity is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development and reduced productivity."

Immunity Nutrition and its importance

Nutrition is regarded as important determinant of immunity. Feeding our body with different foods may help keep our immune system strong. Thus, the concept of Immunity Nutrition deals with nutrients required for the body functions and to keep away from the diseases.

During the times of illness or flu season, people frequently look for specialized foods or vitamin supplements that are supposed to strengthen immunity. Popular examples include vitamin C and foods like citrus fruits, chicken soup and tea with honey. However, the design of our immune system is complex and is influenced by several factors that should be in ideal balance, not just our diet, and especially not by any one food or nutrient. A balanced diet with a variety of vitamins and minerals, together with healthy lifestyle choices like getting enough sleep, exercising regularly and reducing stress, however, prepares the body to fight infection and disease. Childs *et.al* (2019) believed that a healthy immune system was essential for survival. The immune system must be on high alert all the time, looking out for any indications of invasion or danger. Immune system cells must be able to distinguish between molecules that are self and those that are not, as well as between harmless and hazardous non-self-molecules (such as those from infections and food). All cells, including those in the immune system, require adequate and proper nutrients to function at maximum possible level.

Role of specific nutrients in maintaining optimal immune function

The three fat-soluble vitamins - vitamins A, E and D - as well as the B and C vitamins, as well as minerals like zinc, selenium, iron and copper, as well as phytonutrients, amino acids and fatty acids are essential for healthy immune function, which helps the body fight off viral infections and immune regulation, which prevents immune cells from proliferating out of control and doing more harm than good. The function of T cells, B cells, killer cells, macrophages and neutrophils/granulocytes, which are involved in the killing and removal of pathogenic germs, depends on these nutrients.

Additionally, these nutrients and phytonutrients perform a variety of other immune-related tasks. For instance, vitamin A keeps the respiratory tract's mucosal epithelial cells in good shape and function while enhancing mucosal immunity (important for preventing respiratory infections). Vitamin E, beta-carotene, vitamins C and B, zinc and selenium also act as strong antioxidants and lessen the body's oxidative stress.

Noor *et al.* (2021) studied the "Nutrients Interaction with the Immune System". The study highlighted the impact of different vitamins, trace elements or metals, amino acids and fatty acids on different immune system components. It was found that vitamins, such as vitamin A, D and C tend to help immune cell differentiation and enhance the expression of different cytokines. Vitamins also contribute to the proliferation of T and B cells, impact the production of white blood cells.

Locally available foods that are rich sources of nutrients

Fruits like papaya, guava, apple, grapes, mango and many others are rich in nutrients like beta-carotene, vitamin C, potassium and B vitamins that support immunity and general health maintenance. Oranges, tangerines, lemons, gooseberries and red bell pepper are examples of citrus fruits that are good sources of vitamin C.

Including Beta carotene in the diet, which is a precursor to vitamin A, as well as vitamins C and E, antioxidants and fiber are abundant in green leafy vegetables. All seasonal vegetables are a great source of numerous micronutrients and antioxidants that boost gut microbiota, lower inflammation and support the immune system. Condiments, spices and herbs like turmeric, cinnamon, ginger, dry pepper, mint, coriander, basil leaves, drumstick (moringa) leaves, etc., should be incorporated into regular diets as they are good sources of bioactive substances that support the development of a strong immune system. Curd is a rich source of nutrients, promotes the growth of healthy gut flora, boosts immune system performance and lessens inflammation. Millets are excellent providers of numerous micronutrients and fibre. Legumes (chickpea, green gram, black gram, lentils and beans) supply many minerals, including iron and zinc. Foods made of flesh offer minerals including iron, zinc and important amino acids. Fish is a great source of vital fatty acids, protein, vitamin A and vitamin E.

Conclusion

Even though there isn't any concrete proof that a particular diet might prevent COVID-19 and some infections, for improving one's own immunity some dietary recommendations may be helpful. A sufficient intake of fruits, vegetables and high-quality meals like milk, almonds, eggs, lentils and fatty fish are essential.

References

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