

Nutrition and Immunity: A Basic Need for Human Being!

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ABSTRACT

Our permanent address is our body, so we have to take care of it. Who is your life partner? Our body works as a companion for us while we perform any activity in our daily life, whether it is a physical or a mental task. Considering the needs of body will help you to stay healthy and fit. Millions of people all over the world take vitamins and mineral supplements every day. It is taken to safeguard against nutrient deficiencies and health problems. The human body required an array of micronutrients vitamin A to zinc to maintain normal health. Developing nations are still suffering from high infant mortality, poor sanitation, contaminated food and water, a low literacy rate, and short life expectancy due to a very low immunity level in the human body.

Key Words : Nutrients supplements, Nutrient deficiencies, Micronutrients, Sanitation

INTRODUCTION

Nutritional or dietary supplements are a group of products which are taken along with the diet to Improve health and which contain at least one ingredient that is a vitamin, mineral, amino acid or helps or phytochemical or in combinations. Healthy people do not need to take supplements one needs to eat a regular, home-cooked balanced meal to be healthful. The diet should focus on whole grains, fruits and vegetables low-immunity nuts and seeds containing micronutrients, phytochemicals and fibre that Appear to work together to protect against chronic diseases in a complex procedure.

The human the body can resist almost all types of Organisms or toxins that tend to damage their tissue and organs, this capacity is called Immunity Nutrients help to build immunity in the body. Our inner immunity helps us to stay protected against any kind of infection which our body can catch through contagious or Non- contagious substances from which we can come in contact through food, water, bacteria or viruses etc. A low-immunity body tends to get sick easily as its body doesn't have enough antibodies which help in the fight against infections.

Nutrients included and diet help to build powerful

immunity in the human body. Some are influenced by advertisements which claim certain advantages. Some take supplements because they believe that their diet lacks vitamins and minerals though there were no symptoms of nutrient deficiencies. Sometimes vitamins and minerals supplements can be used as an effective means of treating and preventing health problems and conditions in humans. Supplements are used for gut health, heart and anti-cancer. Specific supplements are taken for diabetes, digestion energy, immune support, joint health, menopause osteoporosis, sleeplessness and for vision. Supplements are also taken for arthritis, high cholesterol, hypertension, to enhance memory, for Adaptive for lessening stress.

Innate and Adaptive Immunity System:

There are two subsystems within the Non-specific known as the innate or natural(non-non-specific immune system and the adaptive (specific) immune system. The innate immune system provides a general defence against harmful germs and substances, so it is also called the non-specific immune system.

The innate immunity system provides natural or In-built protection against harmful substances or germs and prohibit them from entering the body through the help of

a skin or digestive system. On the other hand, adaptive (specific) immunity system is the one, which we acquire through the help of vaccinations and various kind of foods. which help in the making of antibodies and uses them to fight against certain germs in the body and provide protection from various infections. Because the adaptive immunity system is constantly learning and adapting the body can also fight bacteria or viruses that change over time.

Table 1 : Indicators of weekend immunity system

1. Your stress level is sky-high.
2. You always have a cold.
3. You have lots of tummy troubles.
4. Your wounds are slow to heal.
5. You have frequent infections.
6. You feel tired all the time.

Table 2 : Foods that boost the immune system

Sr. No.	Name of Fruits	Sr. No.	Name of Fruits
1.	Citrus fruits like orange, and grapefruit	6	Ginger
2.	Blueberries	1.	Spinach.
3.	Apples.	2.	Almonds.
4.	Red bell peppers.	3.	Pears.
5.	Broccoli.	4.	Yoghurt.

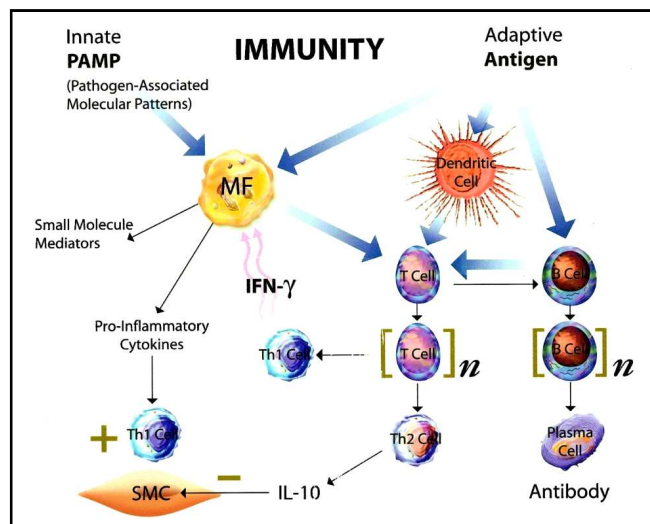


Fig. 1 : A framework that how a immune system worked

Nutritionally Relevant Infections:

The nutritionally relevant infections are the following,

1. **Bacterial** : e.g. tuberculosis, whooping cough and

infective diarrhoea.

2. **Viral** : e.g.: Measles and the common cold.
3. **Parasites** : e.g.: Malaria and intestinal helminths. Bacterial infections increase the requirement for protein and other nutrients. Gastro entities cause high mortality among malnourished infants and preschool children in the troops.

Effect of Infection on Nutritional Status:

- a. One of the earliest and most common effects of infection is loss of appetite and dislike and even intolerance of food. Fever increases the basal metabolic rate and hence the total calorie requirements. Marked reduction in blood glucose levels has been reported to current many infectious diseases.
- b. Infections cause an increase in N excretion in Urine leading to negative N balance. Negative N balance has been reported to occur in common cold, fever, tuberculosis, rheumatoid arthritis, pneumonia, measles, and chickenpox. the increase in urinary N is due to increased catabolism of tissue protein.
- c. An increase in liver fat and the fat content of faeces have been observed in influenza and pneumonia and probably occur in many other infections.
- d. Infections have a deleterious effect on the nutritional status of the host through physiological and anatomic changes. These changes become evident in such systemic reactions as fever, leucocytosis, and stimulation of adrenal cortical activity.
- e. Local reactions include diarrhoea, tissue inflammation and necrosis, increased mucus secretion, fatty liver and change in the skin and hair. Almost all infections produce changes influencing nutritional status.



Fig. 1 : Components of balance diet

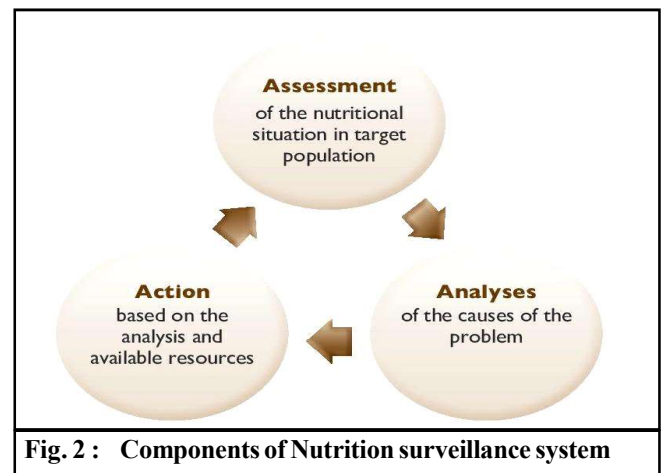
Types of Nutritional Supplements :

1. **Omega 3 fatty acids:** It has been implicated as a critical nutrient in the development of eye and brain functions in infants. Epidemiological studies as well as intervention studies have found a positive relationship between increasing levels of dietary omega-3 fatty acids and decreased risk of coronary heart diseases.
2. **Folic acid and iron:** Pregnant women should take nutritional supplements, particularly folic acid and iron to prevent birth defects and anaemia. Adolescent girls require folic acid for future use. New research suggests that women should enhance the natural intake for micro and macro nutrients for at least one year before they want to plan their family, which can reduce the risk of having a premature baby by one-half.
3. **Antioxidants:** Basic research and observation studies had suggested that antioxidant vitamins such as vitamin C and vitamin E might protect against cancer and cardiovascular disease. Studies have shown neither vitamin C nor vitamin E supplementations reduce the risk of major cardiovascular events.
4. **Glutamine:** There are substantial data to support the use of glutamine supplementation in surgical patient to decrease infectious complications and length of stay. Glutamine suspension can be used to decrease mouth pain and the need for pain medication in cancer patients receiving chemotherapy.
5. **Zinc:** It now appears that individuals with wounds who have zinc deficiency benefit from supplementation. An excess of zinc may impair immunity and contribute to delayed wound healing. The deficiency level of the supplement for zinc is a maximum of 50mg of elemental zinc until the wound is healed.
6. **Fibre:** A diet which contains whole grains, fruits and vegetables has good quality fibre. Refined and processed food contains very little fibre. Fibre supplements are used to prevent or treat Constipation and related problems.

Nutrition surveillance which means watching over nutrition to make decisions will lead to improvement of the Nutritional Status of the population. It includes Nutritional monitoring, which refers to the collection of data, analysis and feedback from a large sample of the

population. Nutritional surveillance and nutritional monitoring are often used as synonymous while we perform nutrition assessments. Nutritional monitoring is an integral part of nutrition surveillance.

Nutritional monitoring refers to the “repeated measurement of the nutritional status, At regular intervals, of a population or an individual over some time. On the other hand, nutritional surveillance is concerned with the data on the current status/activities at the local level for initiating action in response to events occurring in the population.



If a person is studying nutrition surveillance they should familiarise themselves with the term “Triple-A cycle”. A triple-A Means Assessment, Analysis and Action. Nutrition surveillance is measured by adapting the triple A cycle. The triple A cycle is not a one-time activity but a Continuous process.

- **The first step:** Assessment of the nutritional status of an individual or a target population.
- **The second step:** Is followed by the analysis of the cause of the deterioration or problem in the nutritional status of an individual. For e.g.; the reason could be inadequate dietary intake.
- **The third step:** The health worker should carefully analyse their reason at the household level and take suitable action that the action can include educating of mother about complementary feeding by the age of 6 months or frequent feeding.

Nutritional surveillance helps in the analysis and action to promote a better health of an individual by educating them through various ways like health camps, lectures, by the help of diagrams, posters, and videos

etc., to make them aware about the importance of nutrition in daily life.

Conclusion :

Today there is a growing emphasis on looking good, feeling good and living longer, increasingly scientific evidence tells us that one of the keys to achieving these ideals is nutrition, Fitness, Immunity, exercise etc. in our daily routine. We have become a mechanically mobile society relying on machines rather than on muscles to get around everything, which requires a lot of involvement in brainstorming as well as physical work. For which a person should be full of nutrients in the body, which will help them build stronger immunity. Along with this, it is very important to do workout for at least 30 minutes a day. Which can include: running, walking, and playing outdoor games like badminton, volleyball etc. Yoga and swimming.

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