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Introduction

Human beings are in close relation with the microorganisms that were common in nature. Immune system is a means of protection against the damaging e ects of noxas, which cause infection in our bodies. Immune system is a form of protection consisting of, thymus, spleen, lymph nodes and some speci c immunity cells [1].

Immunity, on resistance against microorganisms acts both naturally and acquired in a complex mechanism, but they are mostly in collaboration. One of the factors that a ect natural resistance is nutrition. Malnutrition breaks down the immune functions by suppressing the immune system [1].

e dietary factors that cause harm to immunity functions are either de cient intake of macro-nutrient elements (fat, carbohydrate, protein) or de ciency in some speci c micronutrient elements (vitamin, mineral, water). Balanced nutrition, especially in terms of adequate vitamin, mineral and protein intake, enhances the resistance against infections. Research's show that balanced nutrition subsidizes the immune system and Cary out vital importance on the system [2].

Nutrition has an impact on body resistance and microbes. Excessive strain, Traumas, Ambustions, etc., could cause protein destruction consequently body resistance decreases. Malnutrition, especially in childhood play vital role in catching illness and mortality. Malnutrition paves the way for infections and their complications. is composed infection distorts the nutrition and abates the immunity [2,3].

e e ects of nutritional elements on immune system has been a study case for many research's because there is signi cant in uence on supporting immune system and in de ciency it causes malfunction in immune system [2,3].

Immune system

Immune system is a common name for structures within our bodies that protects living organisms against harmful substances. Human body possesses many elements in self defence. One of the simplest of those is outer creatine layer on the skin. Another element is

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Immune system is a moliminous mechanism in ghting against diseases and sanitation. e possible response of immune system against body cells is called autoimmune reactions and consequently autoimmune disorders occur [7-13] (Figures 1 and 2).

E ects of nutrition on immune system

It is known that each year in the world 6 million children die because of infections caused by malnutrition due to breakdown in immune system. erefore we must make sure we consume adequate protein, especially milk dairy products, eggs which are biologically valuable proteins in order to keep our immune system strong [3].

In addition; we must also regularly consume foods which are thought to be our rst defence line against free radicals such as Vitamin C, E and foods consisting of beta-carotene. Despite the fact that infamous reputation of free radicals, they are highly needed in our lives and they only become dangerous when they are excessive.

Micronutrients called antioxidants can provide protection against free radicals. Antioxidant is a substance that prevents foods especially fats from oxidation and spoilage. As the name suggests, it prevent chain reactions by counteracting combination of oxygen with other substances, so those substances want be oxidized [14].

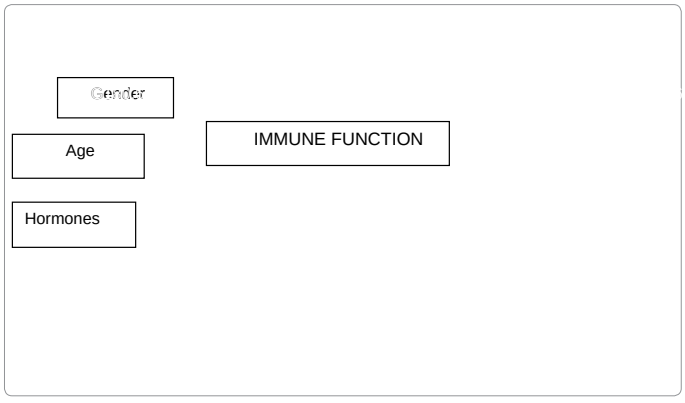
Malnutrition breaks down the immunity functions by repressing immune system. Repressive immune systems cases have been increasing recently [13]. e dietary factors that cause malfunction in immune system could be insu cient intake of energy and macronutrients (CHO, protein, fats) or de ciency of speci c micronutrients [8].

e nutriments which support and stimulate the immune system are called “Immuno nutritional elements” and some e ective vitamins are included in this group [15] (Figure 3).

E ective nutritional elements on immune system

e nutriment which bene ts our body physiologically or reduce the risks of getting illnesses rather than nutritious features, are called functional nutriments.

e functional nutriments term indicate the correlation between nutriments and health. e functional nutriments maybe the nutriments that are consumed naturally in daily feeding habits or those genetically modi ed, or enriched nutriments (eggs containing omega-3, phytosterol added margarines) For instance, canola oil with improved fatty acid, cranberry juice for urinogenital cases, we can also exemplify omega-3-fatty acid derived from sh and axseed. Iso - avones derived from soy beans caratenoids (beta-carotene and lycopene) derived from carrots, tomatoes and other citrus fruits, sulforafan derived from broccoli polyphenols from tea and wine, solvable ber delivered from barley and oat in those group of foods [11].



Carbohydrates (CHO):Carbohydrate is an important fuel cell for immune system. at anaerobic glycolysis showing an increase on lymphocytes, stimulated in mitogens, indicates the increase of glucose as a fuel. However during the lymphocyte proliferation, usage of carbohydrates for energy decreases. In this case, glycol tic mid products are directed to purine and pyrimidine nucleotide synthesis for cell growth [2,3,8].

Carbohydrates are nutriments largely found in vegetative foods containing carbon, hydrogen and oxygen molecules [8,16]. ey are classi ed as simplistic (sugar) and complicated (starch) Glue ides are found in sugar , fruits and fruit juice. On the other hand complicated starch is found in vegetables, legumes and cereals. Carbohydrates ar situated in human body as glycogen in a small amount. Glycogen is mostly in liver. In other organs and muscles a little amount of glycogen exists.

at being present in blood in the form of glucose in certain amount, is very important in respect for provision of continuous energy for tissues [8,17]. It is emphasised that on high CHO diet, consignation of raw CHO sources a ection of immune system negatively. e key point that makes CHO an important gure in immune system is that, it is the most important fuel and its ability of prevention the decrease of number of cells conjoint to apoptosis [18].

Fats: Fats are among the most important nutrition sources for our lives. Fats take an active pole in some biological functions such as absorption of vitamins A, D, E and K needed for human and animal

nutrition, being a source of omega 3 and omega 6 oil acid, being functional at neuritis functions, provision of permeability and stability for cell membranes [18].

Fats are important energy sources 1 gram fat provides twice the energy as protein and carbohydrate does [16]. Fat acids are powerful modulators of immune response. Studies on animals verify that conjugated linoleic acid available in meat and dairy products stimulates the immune system and prevent breast cancer.

Linoleic acid also decreases allergic sensitization. Diets, containing high amount of fats can also decrease cellular in ammatory activity

Glutathione peroxidise which formed during daily metabolism and which is catalyzing hydrogen peroxide and organic peroxidises is determined to selenium. It ensures the integrity of cell membrane and prevents DNA damage. It reduces the fatality rate in sepsis treatment, infections rate in ambitions; consequently it reduces the antibiotic usage. In default of it, antibody formation decreases, transportation of white blood cells slows down and injuriousness of some viruses' increases, Selenium support enhances the antibody level in blood.

ere are far more traits to be discovered about selenium [19]. Selenium possesses important immunity functions in protection of cells against oxidative damage. Selenium is mostly found in aquatic products, kidney, heart and liver and also in whole wheat [41-43].

- Zinc (Zn): Zinc has features stimulating the immune system. Zink helps prevention of infections in the long term. Beside this, it has been seen that, zinc pastilles speed up the viral diseases and are very e ective in relieving the symptoms.

It is needed for many enzyme activation including DNA and RNA synthesis. It has also antioxidant e ect. In de ciency, malfunction in cellular immunity, deterioration in acrodermatitis and enteropatica, increase, in fungus, virus, bacterial infections; decrease in thymus gland and lymphocytes and changes in rations, diarrheal, malabsorption and slowdown in growth occurs.

e e ects of zinc on immune system functions take place with immunity support. Adequately zinc intake improves the anticancer e ect of vitamin A and helps newly developed cancer cells by strengthening defence system. e best zinc sources are giblets like liver, [illegible] functions take p39ts like-92(also)-9livymBDC T* ymBDGBdaaM