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INTESTINAL IMMUNITY

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Abstract. Modern science is increasingly showing that intestinal health directly affects the state of the immune system. Doctors and researchers are actively studying the role of intestinal microflora in maintaining immunity, since most of the cells of the immune system are located in the intestine. If we talked about the health of the gastrointestinal tract only in the context of digestion, today its importance for overall health, resistance to infections and even emotional state cannot be denied. In this article, we will analyze how the intestinal microflora affects immunity, what factors contribute to the normal functioning of the gastrointestinal tract, and why special attention should be paid to diet and lifestyle.

Keywords. Intestine, immunity, diet, microflora, nutrition, immunoglobulin

Relevance of the topic. The intestine is not only an organ of digestion, but also plays an important role in protecting the body from infections. Bacteria in the intestine play a key role in the formation of immunity, with 70% of human immune cells located here. This means that the intestinal microflora and its health directly affect the overall state of immunity. The intestinal microflora consists of billions of microorganisms, which are very important for the protection and health of the body. These bacteria: Fight pathogenic microorganisms; Maintain the immune system in balance; Produce vitamins and other beneficial substances; Improve the digestive process. The intestinal mucosa is rich in immune cells, which protect the body from harmful bacteria and viruses. These cells regulate the immune response and help effectively fight harmful microorganisms.

When the balance in the gut is disrupted, the immune system can malfunction. This can lead to autoimmune diseases, allergies, and other immunological problems.

The gut microbiota is a collection of billions of microorganisms (bacteria, fungi, viruses, and others) that live in the gut and play an important role in the body's health and immunity. Their main functions are as follows: The health of the gut microbiota is important for overall health and immunity. The gut microbiota is a collection of various microorganisms that live in the human gastrointestinal tract. The majority of them are bacteria in the large intestine, especially bifidobacteria and lactobacilli. The gut also contains opportunistic pathogens, which are usually kept in check by the above-mentioned beneficial bacteria. However, various factors in everyday life, habits, environment, diseases and medications can negatively affect the balance of intestinal microflora. In this case, pathogenic microorganisms become active, leading to impaired intestinal function and decreased immunity, as a result of which the body's ability to fight infections weakens.

To maintain a balance of microflora, it is important to eat a healthy diet, consume foods rich in probiotics and prebiotics, reduce stress and use antibiotics only when necessary. The intestinal

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mucosa acts as a barrier against toxins and microorganisms, and also serves as a site where lymphocytes learn to recognize foreign bodies that pose a threat to the body. The total area of the intestine can reach 250 m², which makes it the largest mucosa. Approximately 70% of the cells of the immune system are formed in the intestines. Thus, the intestines serve as a barrier to the absorption of nutrients and harmful substances and microorganisms. Beneficial bacteria in the intestines, such as Bifidobacterium and Lactobacillus, are involved in regulating the immune system: inhibiting the growth of pathogens, competing for biological substances, supporting the development of immune cells, combating inflammation, producing metabolic products, and regulating immune responses.

The gut microbiome plays an important role in the development and function of the immune system. Dysbiosis (imbalance of microbes) in the microbiome can lead to allergic reactions, various infectious diseases, and even autoimmune diseases. A healthy gut microbiome is essential for the normal functioning of the immune system. The gut microbiome also influences the development and function of immune cells. The microbiome helps activate T-lymphocytes, which are important in protecting the body against pathogens. The microbiome stimulates the production of immunoglobulin A (IgA), which protects the mucous membranes from bacteria and viruses. Thus, maintaining a healthy gut and maintaining a healthy gut microbiome is essential for the normal functioning of the immune system and overall health.

Conclusion. The gut microbiome is formed in newborns and is maintained throughout life. As the body develops, the microbiota participates in shaping the immune system, and the immune system, in turn, influences the composition of the microbiota. A healthy digestive system protects the body from external factors.

The gut and immunity are closely linked. A healthy gut is the key to a strong immune system. Therefore, it is important to pay attention to maintaining gut health through proper nutrition, a healthy lifestyle, and reducing stress.

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