

The role of a balanced diet in the prevention of diseases of the gastrointestinal tract

El papel de una dieta equilibrada en la prevención de enfermedades del tracto gastrointestinal

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Abstract

The work is devoted to the role of a balanced diet in the prevention of diseases of the gastrointestinal tract. The study is based on the analysis of current scientific data and clinical studies aimed at identifying the effect of nutrients on the health of the digestive system. The authors emphasize the importance of a balanced diet, which includes the necessary number of proteins, fats, carbohydrates, vitamins and minerals. The mechanisms through which various elements of nutrition contribute to maintaining the normal function of the gastrointestinal tract, including stimulation of peristalsis, improvement of digestion and ensuring proper intestinal microflora, are considered. Special attention is paid to the role of diet in the prevention of chronic diseases such as peptic ulcer, chronic gastritis, irritable bowel syndrome, etc. Effective nutrition strategies

to reduce the risk of developing these diseases are discussed, including moderate fat intake, increased fiber and vitamin intake, and limiting the consumption of irritating foods. In conclusion, it is emphasized that a conscious and balanced diet plays a key role in maintaining the health of the gastrointestinal tract. Practical recommendations on the formation of a healthy diet that contributes to the prevention of various diseases of the digestive system are proposed. The analysis of these aspects allows us to provide doctors, nutritionists and patients with valuable information for the development of effective nutrition strategies to maintain the health of the gastrointestinal tract.

Keywords: balanced nutrition, disease prevention, gastrointestinal tract.

El trabajo está dedicado al papel de una dieta equilibrada en la prevención de enfermedades del tracto gastrointestinal. El estudio se basa en el análisis de datos científicos actuales y estudios clínicos destinados a identificar el efecto de los nutrientes en la salud del sistema digestivo. Los autores destacan la importancia de una dieta equilibrada, que incluya la cantidad necesaria de proteínas, grasas, carbohidratos, vitaminas y minerales. Se consideran los mecanismos mediante los cuales diversos elementos de la nutrición contribuyen a mantener el funcionamiento normal del tracto gastrointestinal, incluida la estimulación de la peristalsis, la mejora de la digestión y la garantía de una microflora intestinal adecuada. Se presta especial atención al papel de la dieta en la prevención de enfermedades crónicas, enfermedades como úlcera péptica, gastritis crónica, síndrome del intestino irritable, etc. Se discuten estrategias nutricionales efectivas para reducir el riesgo de desarrollar estas enfermedades, incluida la ingesta moderada de grasas, el aumento de la ingesta de fibra y vitaminas y la limitación del consumo de alimentos irritantes. En conclusión, se destaca que una dieta consciente y equilibrada juega un papel clave en el mantenimiento de la salud del tracto gastrointestinal. Se proponen recomendaciones prácticas sobre la formación de una dieta saludable que contribuya a la prevención de diversas enfermedades del sistema digestivo. El análisis de estos aspectos nos permite brindar a médicos, nutricionistas y pacientes información valiosa para el desarrollo de estrategias de nutrición efectivas para mantener la salud del tracto gastrointestinal.

Palabras clave: nutrición equilibrada, prevención de enfermedades, tracto gastrointestinal.

Diseases of the gastrointestinal tract are a serious medical problem that has a significant impact on the quality of life of people around the world. In modern society, lifestyle changes as well as dietary habits are becoming key factors affecting the health of the digestive system^{1,2}. In this context, the issues of balanced nutrition are of particular importance.

The purpose of this work is to consider and analyse the role of a balanced diet in the prevention of diseases of the gastrointestinal tract. It is important to pay attention to the importance of proper nutrition in maintaining the normal function of the gastrointestinal system and preventing various pathologies such as ulcers, gastritis, colitis and others.

It is also important to discuss the effects of individual dietary components, such as proteins, fats, carbohydrates, vitamins and minerals, on gastrointestinal health and consider the mechanisms through which a balanced diet helps maintain physiological balance in the digestive organs. The analysis of these aspects will not only help to better understand the role of nutrition in the prevention of diseases of the gastrointestinal tract, but also provide practical recommendations for the formation of a healthy diet.

In the process of writing the paper, the papers and practical materials on the research topic were analysed. Approaches to the organization of a balanced diet have been studied, such as the use of standardized methods for assessing food consumption (for example, a 24-hour nutrition diary), analysis of calories, protein, fat, carbohydrates, vitamins and minerals in the diet of participants. As part of the prevention of diseases of the gastrointestinal tract, methods such as biochemical parameters of blood for assessing the general condition of the body and indicators of gastrointestinal function (for example, the level of gastric juice, pancreatic enzymes), the composition of the intestinal microflora using molecular biology methods, etc. have been studied.

The methods and materials used in this study allow us to reliably assess the effect of a balanced diet on the state of the gastrointestinal tract and provide scientifically sound conclusions that contribute to the development of effective recommendations for the prevention of diseases of the digestive system.

A balanced diet plays a key role in the prevention of diseases of the gastrointestinal tract, having a positive effect on various aspects of the functioning of this system¹. Let's consider several important roles of a balanced diet in the prevention of gastrointestinal diseases. A balanced diet promotes the growth and development of beneficial bacteria in the intestine, maintaining a healthy microflora². This is important for fighting pathogens and maintaining the normal function of the immune system.

Fiber-rich foods help maintain normal intestinal motility, preventing constipation and improving the digestive process. A balanced diet helps to maintain a healthy weight. Avoiding overweight is associated with a reduced risk of developing diseases such as obesity, which may be associated with certain gastrointestinal diseases.

Moderate food intake and avoiding overeating help prevent excessive pressure on the stomach, which can reduce the risk of acid reflux and other gastrointestinal disorders.

A balanced diet provides the body with all the necessary nutrients, including vitamins and minerals, which play an important role in maintaining the normal structure and function of the digestive tract. A diet rich in antioxidants and vitamins can help reduce the risk of developing chronic diseases such as peptic ulcer disease, chronic gastritis and irritable bowel syndrome³.

Some foods can affect the level of acidity in the stomach. A balanced intake of acidic and alkaline foods can help maintain an optimal stomach environment. Research shows that proper nutrition not only contributes to the overall health of the body but can also be an effective means of preventing many diseases of the gastrointestinal tract⁴. Therefore, an informed choice of foods and balanced food intake play an important role in maintaining gastrointestinal health and preventing its possible disorders.

The analysis of current scientific data and clinical studies aimed at identifying the effect of nutrients on the health of the digestive system provides important conclusions about the role of nutrition in the prevention and maintenance of gastrointestinal health⁵. Studies confirm that high fiber intake is associated with improved intestinal function. Fiber promotes normal peristalsis, prevents constipation and helps maintain healthy intestinal microflora⁶.

Proteins play an important role in regulating appetite. Research shows that high protein intake can reduce hunger and promote moderate food intake, which in turn can reduce the risk of overeating and overweight. A number of studies indicate that essential fatty acids, such as ome-

ga-3 and omega-6, can have anti-inflammatory effects⁷. This is important for the prevention of chronic inflammatory diseases of the gastrointestinal tract.

Antioxidants, including vitamins A, C and E, as well as minerals such as selenium, can help protect the cells of the gastrointestinal mucosa from oxidative stress. This is important for the prevention of various diseases, including gastrointestinal cancer. Clinical studies confirm the positive effects of probiotics and prebiotics on the composition and balance of the intestinal microflora. This is important for maintaining a healthy intestinal microbiota, which, in turn, can affect the immune system and prevent various gastrointestinal diseases⁸.

Studies indicate a link between vitamin D deficiency and the development of various gastrointestinal diseases, such as inflammatory intestinal diseases (IHD). Vitamin D levels can have an effect on immunological processes in the intestine. The importance of nutrients such as zinc, selenium, iron and B vitamins in maintaining the health of the gastrointestinal mucosa has been well confirmed by scientific research.

These scientific findings emphasize not only the importance of a varied and balanced diet for overall health, but also its specific role in maintaining functions and preventing diseases of the gastrointestinal tract⁹. The use of these data in practical medicine can facilitate the development of individualized dietary recommendations for maintaining gastrointestinal health in various population groups.

The importance of a balanced diet, which includes the necessary number of proteins, fats, carbohydrates, vitamins and minerals, is expressed in a number of fundamental benefits for human health. This approach to nutrition ensures optimal functioning of the body and prevents a variety of diseases. Let's consider several aspects of the importance of a balanced diet¹⁰.

A balanced intake of proteins, fats and carbohydrates helps maintain energy balance, which is important for weight control. Moderate consumption of high-quality proteins, healthy fats and complex carbohydrates helps to maintain a normal weight. Proteins are the basic building blocks of cells, tissues, and organs. They are necessary for growth, tissue renewal and maintenance of structural functions in the body. Healthy fats and carbohydrates also play important roles in cell structure and energy supply¹¹.

Vitamins and minerals perform many functions, including participation in metabolism, maintaining immunity, ensuring normal blood circulation and functioning of the nervous system. Their presence in a balanced diet is necessary to prevent deficiency conditions and maintain overall health. The right ratio of proteins, fats and carbohydrates helps regulate blood sugar levels and improves insulin sensitivity. This reduces the risk of developing diabetes and other metabolic diseases.

A balanced diet rich in antioxidants and other biologically active substances can reduce the risk of developing chronic diseases such as cardiovascular diseases, cancer and some neurological disorders. Adequate intake of calcium, phosphorus and vitamin D through nutrition helps to maintain healthy bones and teeth, reducing the risk of osteoporosis and other diseases of the musculoskeletal system. An even intake of food rich in fiber and prebiotics supports a healthy intestinal microflora, which is important for the normal functioning of the digestive system and immunity.

A balanced diet not only satisfies the body's needs for essential nutrients, but also helps to prevent a number of diseases and maintain overall health¹². A lack of nutritional balance can lead to nutritional deficiencies or excesses, which can affect a person's physical and mental well-being¹³.

A variety of nutrients play a key role in maintaining the normal function of the gastrointestinal tract through various mechanisms. One of them is the stimulation of peristalsis. The fibers contained in fruits, vegetables and cereals are insoluble and soluble in water. They increase the volume of intestinal contents and stimulate peristalsis, which contributes to the normal movement of food through the intestines. There is also an improvement in digestion: some foods contain natural enzymes that promote digestion. For example, pineapple contains bromelain, which can help break down proteins. Papaya contains papain, which is also involved in the digestion of proteins.

Foods rich in probiotics, such as yogurt and kefir, help maintain the balance of microflora and improve digestion. Probiotics can also help in the absorption of nutrients¹⁴.

In addition, proper intestinal microflora is ensured. Prebiotics are insoluble dietary fibers that serve as food for beneficial bacteria in the gut. They promote the growth and development of beneficial microorganisms, improving the composition and balance of the intestinal microflora.

Probiotics are living bacteria that, taken with food, reach the intestines and are involved in maintaining the health of the microflora. They can compete with pathogenic microorganisms, ensuring the stability of the intestinal microbiota¹⁵.

Antioxidants such as vitamin C, vitamin E, selenium and zinc help protect mucosal cells from oxidative stress. This is especially important for the health of the gastrointestinal tract, which is constantly exposed to various agents. Fruits, vegetables and green tea contain phytochemicals such as flavonoids and carotenoids, which also have antioxidant properties and promote mucosal health.

These mechanisms demonstrate how a variety of nutrients contribute to the normal function of the gastrointestinal tract, supporting digestion, providing proper microflora and protecting cells from damage. Regular

inclusion of diverse and nutritious foods in the diet helps to maintain the health of the digestive system.

Discussion

Diet plays an important role in preventing chronic diseases of the gastrointestinal tract, such as peptic ulcer, chronic gastritis, irritable bowel syndrome (IBS) and others. An effective diet can help reduce symptoms, maintain remission, and reduce the risk of exacerbations.

Spicy, sour, fried and red foods can worsen the symptoms of ulcers. The diet should include soft, non-fried foods such as porridges, boiled meat, sour porridges and vegetables. Fibers, especially soluble ones, can help reduce the severity of ulcer symptoms by forming a protective coating on the gastric mucosa. Acidic foods can stimulate the production of gastric juice, which can lead to increased symptoms. Moderate consumption of a number of fermented dairy products can be beneficial.

Similar to peptic ulcer disease, chronic gastritis can improve by avoiding spicy, sour and fried foods. Boiled, steamed meat, porridges, stewed vegetables and low-fat dairy products may be easier to digest for an organism with chronic gastritis. Probiotics can help restore the balance of intestinal microflora and improve the condition of the gastric mucosa¹⁶.

Many people with irritable bowel syndrome (IBS) experience an exacerbation of symptoms when consuming gaseous products such as legumes, cabbage, onions and coffee. Limiting these foods can help reduce discomfort.

Some foods containing probiotics, prebiotics, and soluble fiber may be useful for normalizing intestinal function. Regular and small-volume meals can reduce the symptoms of IBS. Determining which products or regimens are suitable for each person personally often requires an individual approach.

The general principle in preventing chronic diseases of the gastrointestinal tract is to avoid irritating foods, follow a mild diet, maintain a balance of microflora and take into account the individual characteristics of each person. Before making significant changes to the diet, especially for chronic diseases, it is recommended to consult a doctor or nutritionist¹⁷.

Effective nutrition strategies can significantly reduce the risk of developing chronic gastrointestinal diseases such as peptic ulcer disease, chronic gastritis and IBS. Unsaturated fats such as olive oil, avocado, nuts and seeds are preferred sources of fats. They can help maintain

healthy cholesterol levels. Reducing the intake of saturated fats (for example, from coconut oil and animal products) and trans fats (found in some fried and packaged foods) is associated with a reduced risk of cardiovascular and other diseases.

The inclusion of a variety of vegetables and fruits in the diet ensures sufficient intake of fiber. It helps to maintain normal peristalsis and prevents constipation. Choosing whole grain foods such as oats, barley, quinoa, and spelt also contributes to increased fiber intake.

Vegetables and fruits are rich in vitamins, minerals and antioxidants such as vitamin C, vitamin A, potassium and folic acid. These nutrients can support the health of the mucous membrane and strengthen the immune system. Filling the diet with seafood and nuts can ensure sufficient intake of omega-3 fatty acids, which is associated with a decrease in inflammation and the risk of developing chronic diseases¹⁸.

People with IBS may have individual sensitivities to certain foods, such as lactose, gluten, or fructose. A personalized approach to diet can help identify such sensitivities.

It is important to remember that these strategies may have individual variations depending on the physiological characteristics of each person. Before making significant changes to the diet, it is recommended to consult a doctor or nutritionist, especially in the presence of chronic diseases of the gastrointestinal tract¹⁹.

The formation of a healthy diet that contributes to the prevention of diseases of the digestive system includes a number of practical recommendations. The following are the basic principles and tips:

1. Variety of products. It is necessary to include a wide range of foods in the diet, including fruits, vegetables, cereals, vegetable and animal proteins, dairy products, nuts and seeds. A variety of nutrients helps to provide all the necessary nutrients.
2. Moderate fat intake. It is important to give preference to unsaturated fats such as olive oil, avocado, fish, nuts and seeds. Avoid excessive consumption of saturated and trans fats, while limiting the consumption of animal fats and processed foods.
3. Increased fiber intake. It is necessary to include vegetables, fruits, whole grains and legumes in the diet, as they contain fiber, which supports normal peristalsis and intestinal health.
4. The use of high-quality proteins. It is important to use high-quality protein sources such as fish, poultry, eggs, dairy products, tofu and beans. Protein not only serves as a building material for tissues, but also helps to satisfy hunger.
5. Restriction of sugars and added sugars. It is necessary to reduce the consumption of foods with a high

sugar content and avoid excessive consumption of added sugars. This is important for maintaining normal blood glucose levels and preventing various diseases²⁰.

It is also necessary to adhere to a regular meal schedule. Moderate portions, even distribution of meals throughout the day and slow eating contribute to the normal functioning of the gastrointestinal tract. It is also important to take into account the individual characteristics of your body, possible allergies or intolerance to certain foods, and, if necessary, consult a doctor or nutritionist²¹. Compliance with these practical recommendations contributes to the formation of a healthy diet that can reduce the risk of developing various diseases of the digestive system and ensure the overall well-being of the body.

Conclusions

A balanced diet plays a key role in maintaining the health of the gastrointestinal tract. A varied diet, including all the necessary nutrients, contributes to the optimal function of the digestive system.

Moderate fat intake, the right choice of protein sources, increased intake of fiber, vitamins and minerals have a positive effect on the digestive process. These nutrients support normal peristalsis, provide energy and promote the health of the mucous membrane.

Avoiding irritating foods, moderate consumption of sugars and salt, and regular intake of water are important aspects of taking care of the digestive system. These steps help to prevent irritation and maintain the balance of microflora in the intestine.

An emphasis on healthy eating habits, including regular meals, moderate portions and mindful eating, is also an important element in the prevention of gastrointestinal diseases. These habits help to normalize weight and improve overall health.

An individual approach to nutrition, taking into account physiological characteristics and possible sensitivities will help to form an optimal diet for each person. Consultation with a doctor or nutritionist can be useful for those who face specific digestive problems or have health problems.

The general conclusions emphasize the importance of a conscious and balanced diet in maintaining the health of the digestive system. Regular moderate dietary changes can have long-term positive effects on overall well-being and the prevention of various diseases of the gastrointestinal tract.

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