

THE SIGNIFICANCE OF DIETARY FIBER IN IMPROVING THE FUNCTIONAL PROPERTIES OF FOOD PRODUCTS

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Abstract. *Topical issues of healthy nutrition and the importance of dietary fibers (cellulose, hemicellulose, pectins and lignin) in the organization of a healthy diet are discussed. The specific properties of dietary fibers and their role in digestion and prevention of certain diseases are explained. Provides information on the mechanism of action, instructions for inclusion in the diet, daily allowances.*

Keywords: *healthy diet, dietary fiber, pectin, intestinal microflora, atherosclerosis, constipation, vegetables, fruits.*

Nutrition is considered one of the most important physiological needs of a person, it is necessary for the construction and constant renewal of cells and tissues, to replenish the energy spent in the course of enzymes, hormones and metabolic processes.

It is known that the metabolism, structure and activity of all cells, tissues and organs directly depend on the nature of food. In order to maintain health and performance over the years, a person needs to get enough nutrients and in the right proportions for the body.

Nutrition is the entry of food substances into the body, their grinding, digestion (hydrolysis), absorption in the gastrointestinal tract, delivery of food components to organs and tissues, their assimilation, as well as a complex and interdependent process of eliminating final products of metabolism from the body.

Modern ideas about the qualitative and quantitative needs of a person for nutrients are reflected in the concept of healthy nutrition. According to this concept, for the normal functioning of the body, a person needs energy and a certain amount of nutrients, not specific food products, to build and renew the tissues of the human body.

Human nutrients include two main groups. The first group includes proteins, fats, carbohydrates (energy-generating components), minerals and vitamins. Given their priority role in nutrition, these nutrients are classified as essential nutrients (English nutrient - nutritious). They are divided into macroelements (proteins, fats, carbohydrates) and microelements (vitamins, minerals). The second group includes dietary fiber and water. Dietary fibers are almost not absorbed in the gastrointestinal tract, but they play an important role in human life. Water is not usually listed as a nutrient, but it is an absolutely essential part of nutrition.

Dietary fibers and their properties.

Dietary fiber (cellulose) is a type of complex carbohydrates (except lignin) that is insoluble and does not break down under the action of acids, alkalis and enzymes of the human digestive tract (depending on the type of dietary fiber). Dietary fibers are only partially broken down in the large intestine under the influence of intestinal microflora.

Several synonyms can be found in the nomenclature of dietary fibers - "ballast substances", "indigestible carbohydrates", "fiber", "vegetable fibers" and other names. These names of dietary fibers can still be found today. From the point of view of science, in terms of the chemical structure of these substances, the most correct term is "Dietary fibers".

Dietary fiber is a complex set of carbohydrates, which includes fiber (cellulose), hemicellulose, pectins, mucilage and non-carbohydrate lignin (a polymer of aromatic alcohols). Cellulose is a polymer of glucose. Microscopic fiber is a dietary supplement for obesity, type 2 diabetes and other diseases. Cellulose is one of the important elements in human nutrition, it reduces the time that food stays in the gastrointestinal tract, and at the same time helps to remove toxins. Eating enough fiber normalizes bowel function.

Dietary fibers and their role in nutrition

15% in beans and peas from food ingredients and products rich in dietary fiber; 8% in refined rice and wheat; 8-10% in sorghum and barley; 10-15% in walnuts, almonds, olives; in barra vegetables - 2-5%. Among the vegetables with the most dietary fiber, green peas, brussels sprouts, broccoli, asparagus, carrots, berries (3-7%) can be chosen.

Available dietary fibers are soluble and insoluble in the composition of the product, and therefore soluble dietary fibers are not digestible in the body, but are easily soluble in water. Therefore, in the gastrointestinal tract, it softens and turns into a jelly-like substance, which is, in turn, transformed into an organic prebiotic that helps the growth of beneficial microorganisms in the large intestine. It is mainly found in vegetables, fruits, legumes, potatoes, and seaweed.

Insoluble dietary fiber does not dissolve in water and cannot be digested. It passes through the intestinal tract and remains in its original state. It is removed by combining excess fat and intestinal wastes while absorbing liquid and digesting food. Insoluble dietary fiber is found in cereals and grains derived from them, as well as in citrus fruits.

All types of dietary fibers help to remove toxins and other harmful substances from the body:

- slow down the absorption of fats and carbohydrates, help reduce blood sugar and cholesterol levels;
- improve intestinal microflora;
- gives a feeling of satiety, prevent overeating;
- help improve insulin sensitivity;
- help to clean the intestines and prevents constipation;
- prevent diverticulitis (bends in the intestines - pits where food gets stuck).

Constipation and flatulence can also be caused by eating foods rich in fiber or not drinking enough fluids. An excess amount of dietary fiber in the body can wash out useful trace elements and vitamins together with toxins.

The recommended daily intake for healthy eating is 30 g for women under 50, 25 g for over 50, and 38 g for men under 50 and 30 g for over 50.

Foods rich in fiber and protein are well absorbed by the body, while grain and meat products are difficult to absorb. Legumes are suitable for almost all products.

Dietary fibers have a beneficial effect not only on the digestive system, but also on the whole body. Therefore, it is prescribed to those who have certain problems in the gastrointestinal tract or on the basis of a special recommendation. Dietary fiber does not directly reduce body weight. But it plays an important role in this process. Dietary fibers entering the gastrointestinal tract saturate (swell) due to excess moisture - fats, food residues and other foreign substances, creating a feeling of long-term satiety due to volume. It also helps improve insulin sensitivity. This reduces the risk of precipitation. Foods rich in dietary fibers have a low glycemic index, which helps to maintain the optimal level of sugar in the blood.

Small particles of water-insoluble dietary fiber activate receptors in the intestinal mucosa, thereby increasing its motility. In addition, dietary fiber regulates the intestinal microflora, prevents the development of dysbacteriosis, and regulates the excretory function of the intestine.

Conclusion

Consuming adequate amounts of dietary fiber is very important for good health. At the same time, dietary fibers help not only to improve the functioning of the digestive tract, but also to remove toxins and other harmful substances from the body.

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