16. Recent advances in nutrition science

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Introduction. In today's rapid pace of life the issue of daily nutrition is very relevant. Healthy diet is essential to prevent such diseases as type 1 or 2 diabetes, cardiovascular diseases, osteoporosis and bone fractures, dental diseases, cancer, obesity, etc. It is also number one requirement in complex treatment. This study provides the analysis of the recent advances in nutrition science developed by foreign scientists for people with diseases.

Materials and methods. Native and foreign scientist all over the world studied the problems of healthy nutrition. S.T. Bykova, E. Gubanov, G.A. Kupin, E.G. Naimushina, G.M. Zayko contributed greatly to the nutrition science. Their scientific developments were the basis for our study.

Results. Researchers from the Kuban State Technological University G.A. Kupin, E.G. Naimushina, G.M. Zayko developed fruit and vegetable puree for patients with type 1 or 2 diabetes. It contains Jerusalem artichoke puree, apple puree, mountain ash puree, walnuts, hydrated wheat bran and pectin. In addition, this product is enriched with fructose and has a balanced mineral content. The invention expands the range of products for patients with diabetes, and encourages manufacturers to create new products for therapeutic nutrition.

Diseases of stomach, such as chronic gastritis and gastric ulcer, require food products that contribute to the restoration of gastric mucosa. A number of scientists under the leadership of E. Gubanov from the St. Petersburg State Academy of Refrigeration and Food Technologies, developed a starter culture to produce fermented dairy products with medical properties. The basis of the starter culture is the microflora of Medusomyces Gisevii (Kombucha). It is added to pasteurized milk at a ratio of 1:30, and then fermented at a temperature of 22-24°C. This temperature condition contributes to the development of microflora, enriches fermented dairy products with healthy elements, providing the product with medical and dietary properties. In addition, the proposed sourdough is easy to make.

Many different diseases are not spread. Therefore, the range of products for people with rare disease is rather scarce. For its expansion, scientists from All-Russian Research Institute of Starch Products of the Russian Academy of Agricultural Sciences, under the guidance of S.T. Bykova, created a food menu for children with phenylketonuria. This disease is associated with violation of the metabolism of amino acids. An important component of the treatment of phenylketonuria is adherence to a low protein diet. Due to malnutrition, the body accumulates phenylalanine and its toxic products, which can lead to severe central lesion nervous system. Invented food menu allows dosing phenyalanine in children's nutrition, increases nutritional value, and has immunostimulating effect. It consists of dry chicken melange in combination with corn swelling starch, with a certain ratio of these ingredients, which keeps the balance of vitamins, minerals and lipids components.

Conclusions. Technological progress in the food industry is associated with the achievements of science, especially in nutrition science. One of the important development factors are the deterioration of the environmental situation and fierce competition in the food market. All this leads not only to the improvement of the technology for producing traditional products, but also to the creation of a new generation of products: low-calorie, healthy, with a balanced content and functional properties, with the possibility of quick cooking and long-term storage.