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## Obesity and protein metabolism

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A conceptual model of the interdependence between the metabolism of proteins, fats and carbohydrates taking into account the transport of the carbon skeleton and the stages of the relationship between the processes of formation and utilization of ATP (Adenosine Triphosphate) energy, which demonstrates the key role of protein metabolism and the maintenance of glucose homeostasis with different organism availability in energy was proposed. In supporting the processes of vital activity of the body, two periods should be analyzed. The first one is absorptive period, which is for providing rehabilitation processes, the expression of which is the "food pyramid" and the second one is post absorptive period, which is for the energetic provision of physical and mental work, the expression of which is the "energy pyramid". These pyramids differ in the ratio of macronutrients and in their composition, which must be taken into account when developing the principles of human nutrition. Although obesity is seen as a simple discrepancy between the amount of intake of food calories and their utilization for physical activity, however, do not take into account the large energy expenditure on volatile processes, in particular, the process of protein synthesis. The process of protein synthesis depends on the availability in the substrate (amino acids), the intensity of mRNA expression (transcription) and the speed of reproduction (translation), so the violation at each of these stages will affect the energy balance and promote the development of obesity. Half of the protein mass is muscle, so it largely determines the homeostasis of glucose and the development of energy balance, which is presented in the form of an interdisciplinary model for the development of diabetes, obesity and cardiovascular diseases. In conclusion, technologies were proposed to support the process of protein synthesis and ways of preventing and treating obesity.

### Biography

Emil K Mukhamejanov is a doctor of medical sciences, professor. In 1964-1972, I worked in the Institute of Physiology, responsible for the regulation of muscle contraction. In 1974-1991, I worked in the Institute of nutrition, responsible for the regulation of energy metabolism and metabolic diseases. Developed metabolic model of balanced diet coupled with effects of toxic compounds, physical activity and dietary factors. Has developed specialized nutrition products for athletes and for the prevention and treatment of metabolic diseases. Currently working in the Scientific Center of anti-infective disorders, develop approaches of reducing the negative impact of drugs. I participate in a grant (JSC National Medical University named after S.Asfendiarov) for the study of polymorphism in diabetes mellitus. I am a scientific consultant at Fucoidan-World.

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