

# 20<sup>TH</sup> GLOBAL OBESITY MEETING

August 24-25, 2018 Singapore

## Obesity and protein exchange

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**Objective:** The body has a number of idle energy-dependent metabolic cycles that contribute to the conservation of energy balance. The protein turnover increases with excess intake of calories and decreases with their deficiency, so it can contribute to maintaining the energy balance.

**Methods:** The approach was to develop a model for establishing the key role of protein metabolism in coordinating the metabolism of carbohydrates and fats.

**Results:** A model was developed for the relationship between proteins, fats and carbohydrates exchange. In the absorptive period, a decrease in protein synthesis with a protein deficit (low protein diet) leads to a reduction in glucose utilization, which is manifested by its increase in blood and an increase in the discharge of its carbon skeleton into lipids. On the contrary, on the high-protein diet the negative manifestations of the restriction of physical activity on the exchange of glucose and fats are smoothed out. In the post-absorptive period, proteins are the main supplier of the substrate for the process of gluconeogenesis, which is provided by the energy of fat oxidation, so fat oxidation increases on the high protein nutrition. This allowed us to offer a product for obesity diet therapy.

**Conclusion:** Thus, protein metabolism plays a coordinating role in the mechanism of carbohydrate and fat metabolism, and in order to increase the effectiveness of technology in the prevention and treatment of obesity, adequate substrate support of the protein synthesis process (quantity and quality).

### Biography

Mukhamejanov E K has worked for 20 years at the Institute of Nutrition in Almaty. In 1981, he travelled as an expert on nutrition to WHO obesity centres in the Netherlands, Britain, Sweden and Denmark. He has developed metabolic model of the relationship between the exchange of proteins, fats and carbohydrates. He has participated in the development of dietary products for obesity.

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