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## CHANGING OF GLUCOSE ABSORPTION IN THE SMALL INTESTINE AFTER VARIOUS BARIATRIC PROCEDURES

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**Statement of the Problem:** Diabetes mellitus type 2 is one of the most common diseases in the world. Bariatric surgery is widely used to reduce the adverse effects of type 2 diabetes. However, the effectiveness of bariatric surgery in patients with type 2 diabetes without the expressed obesity remains in question. To solve this problem, research is needed on animals to evaluate the effect of various bariatric procedures on carbohydrate metabolism in normal conditions and in experimental diabetes type 2. The aim of this study is to compare in the experiments on rats the influence of various bariatric procedures on body weight and glucose absorption in the small intestine, with estimation of different mechanisms of this process.

**Methodology & Theoretical Orientation:** The rats were subjected to the surgeries for resection of the stomach, bypass of the foregut, ileal interposition and sham operation (laparotomy). Animal body weights and glucose absorption were measured 4 months after surgeries. Glucose absorption was assessed using a test, based on measurements of the rate of free consumption of concentrated glucose solution by fasted rats. Active transport of glucose in the small intestine was assessed using the everted intestinal sacs.

**Findings:** In the case of the ileal transposition, the highest absorption of glucose was observed, along with reduced body weight of the animals. Active transport of glucose was increased in the enterocytes of the lower parts of the small intestine after the bypass of the foregut and the ileal transposition.

**Conclusion & Significance:** The changing of body weight and glucose absorption in the small intestine has specific features for different bariatric procedures. The data obtained are important to assess the impact of different bariatric procedures on carbohydrate metabolism and to develop the effective surgical approaches for the treatment of Type II diabetes in patients without the expressed obesity.

### Biography

Galina Semikova graduated in 2015 from the First Pavlov State Medical University of Saint Petersburg, Russia, with the specialization in endocrinology. Area of interests is metabolic syndrome, obesity, cardiovascular diseases, cardioprotection, system of incretins, bariatric surgery. She actively uses as pathological conditions experimental approaches to ischemia and reperfusion on *in vivo* and *ex vivo* models, on the isolated heart and has experience in the evaluation of cardioprotective effects of gastrointestinal peptides. In addition, in the course of training in the Laboratory of Nutrition Physiology in Pavlov Institute of Physiology, RAS, she got experience in the use of the method for assessing intestinal glucose absorption ability *in vivo* (in the absence of anesthesia and surgical trauma).

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