

## **Generalized modeling in the neuro-interstitial and neuromuscular interaction research problem**

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The research of the features of intercellular and interstitial interactions is an actual direction of modern scientific research. The modeling of even individual metabolic, physiological or pathophysiological changes in a living cell requires the consideration of a large number of parameters of biological processes, many of which have not been fully studied. Therefore, the development of models that adequately describe biological processes in the cells and tissues of living organisms is a complex task. The solution of this problem requires an integrated approach that allows describing the features of chemical and physical changes taking into account their probabilistic nature.

In this paper we consider the problem of modeling the interactions of visceral neurons, Cajal cells and smooth muscle cells in the intestinal wall. The complexity and ambiguity of regulatory influences within the intestinal wall creates a variety of effector reactions, and the lability of the contribution of each of the regulatory components is the uncertainty of the expected results in the development of individual pathological changes in the digestive system. Therefore, the modeling of these processes is clinically justified and important for practical medicine.