— to examine the efficiency of such a system;
— to modify the system by the results of examination.

We will apply the following methods: measurement of psychophysiological indices of the capacity of an operator for work; mathematical simulation of psychophysiological reliability of the operator capacity for work; psychophysiological analysis of the system reliability; analysis of biorhythms; development of the recursive algorithms and predictive models; software development. Computer recording of an electrocardiogram and sphigmogram is envisaged in the experiment.

«Microflora» Experiment

INFLUENCE OF SPACE FLIGHT FACTORS ON BIOLOGICAL PROPERTIES OF HUMAN RESIDENT MICROFLORA: EXPERIMENTS INVIVO AND INVITRO

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The purpose of experiment is to study the influence of space flight conditions on the biological properties of representatives of the normal (resident) human microflora and to evaluate their ability to manifest the potential pathogenic properties under extreme conditions.

The main objectives are as follows:
— to develop and apply the method of integral evaluation of vitality and functional state of microorganisms belonging to the resident human microflora;
— to study the vitality of bacteria, their functional state and features of interaction with eukaryotic cells in a space flight;
— to study the virulence of some microorganisms (in control before and after the microgravity influence) in ground-based experiments.

The test objects will be the representatives of resident human microflora (*Proteus mirabilis, Mycoplasma hominis*) and the test animals (mice of Balb line and mongrel white mice). The microbiological, serological, immunological, histological, morphological, biophysical, genetic and electronic microscopy methods will be used.

Experiments carried out *in vitro* and *in vivo* will facilitate studying the structural and functional state of bacteria under the influence of space flight factors. Results obtained will promote substantiation of biological protection of astronauts from the aggressive effect of resident microflora.