

Division 8

SPACE MEDICINE («Biomedcontrol» Project)

Korkushko O. V.

*Institute of Gerontology of the AMS of Ukraine
67 Vyshgorodska St., Kyiv 04114 Ukraine
tel: (380) +44 +4304068, fax: (380) +44 +4329956*

Introduction. The long-term flights in outer space and the further interplanetary missions pose the problems of space medicine as the principal issues. Some of these problems are:

- to elaborate telemetric methods allowing evaluation of the organism functional state and its adaptation to the influence of space flight factors;
- to study the peculiarities of development of regulatory deviations and pathological states in microgravity using test models and members of a crew;
- to study the peculiarities of pharmacological drugs under space flight conditions;
- to work out prophylactic countermeasures and treatment of a pathological state caused by long-term stay in space;
- to perform long-term research for evaluation of the biological age and dynamics of health state of

space mission participants.

— to study the influence of space flight on aging tempos and development of age pathology;

— to provide the psycho-physiological monitoring of the astronauts' working capacity and to create an onboard system for performance of such a monitoring in a space flight. Special attention will be given to study of the influence of micro- and hypergravity, as well as hypodynamism on the state of microcirculatory system and rheological properties of astronauts' blood, regulation of thrombus formation and thrombolysis, as well as to elaboration of measures to correct the possible disturbances in the studied systems, which cause the pathological processes and, as a result, a faster ageing of the astronauts.

The current system includes individual adaptive models of astronaut's working capacity and evaluation of astronaut's pre-flight state.

«Biominerals» Experiment

MECHANISMS OF PROPERTY CHANGES OF BIOMINERALS IN MICROGRAVITY AND METHODS FOR REDUCTION OF BONE DEMINERALISATION IN A SPACE FLIGHT

Vozianov A. F.

*Institute of Urology and Nephrology of the AMS of Ukraine
9A Kotzubytsky St., Kyiv 04053 Ukraine
tel: (380) +44 +2166731*

Brik A. B.

*Institute of Geochemistry, Mineralogy and Ore Formation, NAS of Ukraine
34 Palladin Ave., Kyiv-142, 03680 Ukraine
tel: (380) +44 +4441570, fax: (380) +44 + 4441270*

Solution of bone demineralization problem is impossible without development of new methods and emergence of new scientific ideas.

We propose new methods for reduction of bone demineralization processes and decrease of bone mass loss in a space flight. To study biominerals, we