IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM (A1)
Medicine in Space and Extreme Environments (4)

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THE WORLD-LASS RESEARCH CENTER "THE PAVLOV CENTER" - A COOPERATIVE PLATFORM FOR VERIFICATION OF HEALTHCARE TECHNOLOGIES ON THE BASIS OF SPACE MEDICINE ACHIEVEMENTS

Abstract

Human space missions have brought us to lots of scientific and applied research, large volumes of data and unique results. Obviously, the main application for those results is the improvement of medical support for the cosmonauts' health and performance in-flight and after returning to Earth. However, many of them can be used more widely and, possibly, implemented into public healthcare. The existing mechanisms for creating new healthcare tech from space developments allow testing, modifying and finding applications for them on Earth. There are successful examples of such practical application both in Russian and foreign medicine (the axial loading suit, the support load simulator, the immersion bath, etc.). The World-Class Research Center (WCRC) - "The Pavlov Center for Integrative Physiology to Medicine, High-Tech Healthcare and Stress Tolerance Technologies" can be a good platform for translating space medicine technologies into clinical practice. The WCRCs are consortia created within the framework of the

Science national project, based on an open competitive selection. For the purposes of the Pavlov Center WCRC, the IBMP RAS has created the Center for Study and Prevention of Long-term Isolation Effects. The Center develops and tests new technologies, methods and procedures to counter the negative effects of isolation on the human body, while simulating various space effects with unique scientific facilities. Currently the Center develops a new technique for electromyostimulation and a device for it, VR psychological support technologies, possibilities of using gravity therapy for orthostatic instability prevention (short-arm centrifuge), etc. These technologies can be used in clinical medicine (cardiology, neurology, rehabilitation medicine) for treatment and rehabilitation, as well as for professionals of people who have to stay in the conditions isolation and motor unloading for a long time. Further expansion of the Center will make it possible to take full advantage from the achievements of space medicine not only in biomedical support of space missions, but also in terrestrial medicine. The works were supported by the RF Ministry of Science and Higher Education of the Russian Federation in the frame of Agreement No. $_0 75-15-2022-298 dated 04/18/2022 on the provision of a grant in the form of subsidies from the federal budget for the implementation of state class research center - "The Pavlov Center for Integrative Physiology - to medicine, high - tech healthcare and stress toleran$