

SPACE LIFE SCIENCES SYMPOSIUM (A1)  
Multidisciplinary Space Life Sciences Research (8)

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THE PROSPECTS FOR THE INTRODUCTION OF TECHNOLOGY IN SPACE CARDIOLOGY TO  
MEDICAL PRACTICE**Abstract**

**Introduction.** The development of new space technologies has always been a stimulus for the improvement and development of new methods and instruments in the world, including in the field of medicine and health. Years of research by Russian specialists at the orbital station "Salyut" and "MIR" and the International Space Station led to a series of new technologies in space medicine and particularly in space cardiology. This report will present a number of innovations, developed in the last decade. **Method.** The main directions of development of space technology in cardiology are: A). Creation of on-board instruments for cardiac studies in space using principles prenosological diagnostics ("Pulse", "Pnevmokard"), analogue - complex "Ecosan-2007"; B) The development of non-contact methods for studying astronauts during sleep ("Sonokard"), ground analog device "Cardioson"; C) The development of telemedicine systems prenosological individual control - device Heart Wizard-Mars 500", used in laboratory experiments to model the flight to Mars. **Results.** Currently end operational testing of new hardware and software developed on the basis of summarizing the experience of space and ground-based experiments, modeling studies: 1) A set of "Ecosan TM" is intended for pre-medical assessment of the risk of cardiovascular disease. Consists of two units, respectively: a) for the rapid identification of persons at risk for mass screening of the population, and b) for in-depth study of adaptation of an organism to appoint adequate preventive recommendations. 2) The device "Cosmocard" for evaluation and monitoring of energy metabolism in cardiomyocytes for early detection of risk for heart disease. 3) "Delta 2012" - a system for individual prenosological control using Internet technologies. 4) The "Traffic light of Health" - a system for individual prenosological control using mobile communication. The latter two systems are as promising products for sale in the growing market of "personal" or "home" telemedicine services and are the result of cooperation with the U.S. and Canadian experts. **Conclusion.** To implement the future development of space technology in relation to the tasks of Health and Applied Physiology at the SSC RF - IBMP RAS created "Innovation Center for Space Medicine." Center is developing new instruments and methods and their implementation in practice based on the Russian and international cooperation.