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MEDICAL-BIOLOGICAL RESEARCH FOR MANNED SPACE FLIGHTS

Abstract

Flight of a human being into space required scientific validation of its life support and safety system. The solution of this problem was the key objective of medical and biological research conducted at Moscow Institute of Aviation Medicine in 1950-1961 under the guidance of Vladimir I. Yazdovskiy. In Russia he is considered to be the patriarch of space biology and medicine. June 24, 2013 will mark the centenary of his birth. In this connection the report is dedicated to V. I. Yazdovskiy's contribution to the preparation and fulfillment of the first manned space flights. In 1950, the first medical-biological research on the possibility of high-altitude flights was conducted in the Institute. The influence of various factors on animal organisms was studied and their safe landing was ensured. This study marked the beginning of a special biological research programme of the acceleration and weightlessness effects on the animal organisms during high-altitude rocket flights. In 1959, a science discipline Space biology and medicine is introduced and its goals and objectives are formulated: examination of the influencing factors of space flight and protection from their adverse effects, development of life support system requirements and methods of crew training, validation of clinical and psycho-physiological methods of cosmonaut selection. In 1959, V.I. Yazdovskiy received the academic degree of Doctor of Medicine for the research and developments in the field of space biology and medicine. The training program for the first space flights included theoretical training on the issues of aviation and space medicine and a complex of special tests and training. For the accelerated training to accomplish a space flight V.S. Varlamov, Yu.A. Gagarin, A.Ya. Kartashov, A.G. Nikolaev, P.R. Popovich and G.S. Titov were selected. In February 1961, V.I. Yazdovskiy was appointed Head of the Space Medicine Department of the Institute of Aviation and Space Medicine and engaged in the preparation of the first manned space flight. Yury Gagarin's flight lasted for only 108 minutes, but showed the possibility of fulfilling space flights of a longer duration. For the great contribution to the preparation and implementation of Yury Gagarin's space flight many specialists of the Institute of Aviation and Space Medicine received governmental awards. For his scientific contribution to the preparation and fulfillment of manned space flights V.I. Yazdovskiy deserves to remain in the memory of mankind forever.