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Life Support, habitats and EVA Systems (7)

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STUDIES ON MONITORING THE USE OF CLOTHES, UNDERWEAR AND PERSONAL HYGIENE  
MEANS IN 17-DAYS, 120-DAYS AND 240-DAYS ISOLATION EXPERIMENTS UNDER THE SIRIUS  
PROJECT

**Abstract**

During the experiments under the SIRIUS project (Scientific International Research In Unique terrestrial Station - an international scientific study in a unique ground-based experimental complex) on the basis of the State Scientific Center of the Russian Federation - IBMP RAS, the use of clothes, underwear and Personal Hygiene Means were monitored in conditions of 17-days, 120-days and 240-days isolation. Currently, under the conditions of space flights, clothes, underwear are not washed. New clothes, underwear, Personal Hygiene Means are delivered to space ships and orbital stations from the Earth, and then, after a short period of use, they are removed to waste collectors, where they accumulate in significant quantities. The possibility of long-distance and long-term space expeditions can be problematic due to the large weight of the necessary supplies. Monitoring of the use of clothes, underwear and Personal Hygiene Means, their change and sanitary and hygienic processing measures allows you to get real initial data on volumes, weights, requirements and comments of operators for clothes and underwear to create Life Support Systems for manned space flights to the Moon, Mars, etc. Two types of questionnaires were used for the survey. Questionnaire No. 1 concerned monitoring the use of clothing and underwear. Questionnaire No. 2 concerned the evaluation of Personal Hygiene Means. Studies have shown that with an increase in the duration of space flights and mixed crews, it is necessary to develop clothing for specific conditions of space flight with clear modes of wearing and replacing clothes with new ones and developing methods for hygienic processing of clothes and underwear. For the conditions of long-term space flights and for stations on the Moon, Mars, etc., it is required to develop devices for cleaning / washing of clothes and underwear, taking a shower, washing hands, combined with regeneration Life Support Systems, for carrying out sanitary and hygienic procedures. Comparison of the results obtained for monitoring the use of clothes, underwear and Personal Hygiene Means, their change and sanitary and hygienic measures under the conditions of 17-days and 120-days and 240-days isolation allows to obtain data that contribute to the creation of optimal sanitary and hygienic conditions for isolation in hermetically closed objects, manned spacecraft, to maintain the health and efficiency of crews.