

This letter was written by Col. Alekseev regarding the use of adaptogens in astronaut training. It was brought back from the trip to Russia in September, 1992 and translated by Victoria on 10.27.92.

### The Use of Adaptogens in Astronaut Training.

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In the opinion of many native and foreign authors, one of the perspective methods for prophylaxis of man's unfavorable state during space flight appearing as the result of weightlessness, (for example, space motion sickness) is the use of pharmacological remedies (V.S. Shashkov, I.I. Bryanov, P.V. Vasilyev, G.D. Glod, V.N. Alekseev, Wood C., Benzon A, Graybiel A, Homick J. and others).

However, for particular operators not all medical remedies are suitable, but only those which do not cause side effects and do not decrease professional work ability. Among such preparations, biologically active substances called adaptogens are known at the present time.

Research on the use of adaptogens in astronaut training has been conducted since 1970 in cooperation with Dr. Brekhman who is a founder of the given direction and practical application of adaptogens in our country for people of different specialities.

Under conditions during astronaut training, eleutherococcus senticosus extract was used as an adaptogen. The eleutherococcus senticosus extract was used in combination with passive vestibular training for increasing the level of vestibular stability and also during the readapting period after finishing the space flight.

Some astronauts, based on their personal initiative, took eleutherococcus extract in the orbital station during space flight. In this process they noted a positive influence. The obtained results of the research are written primarily for official use and only some materials are in open publications. They give evidence that the use of biologically active substances of the eleutherococcus type, in combination with the training influence of complex accelerations, allow an increase in the vestibular stability in people with a decreased level and contributes to favorable adaptation to weightlessness. The time of training was 2-3 times less and the positive influence

reliably remained much longer ( in 5-6 times) as opposed to traditional methods of training.

In our opinion adaptogens can advisably be used by all members of the crew not only during training for flight and after returning to Earth, but during their stay on the orbital station for the purpose of preparation of the organism for more rapid and qualitative recovery in the readapting period, especially during prolonged space flights, regardless of the preparedness level of members of the crew at the pre-start period.

Moreover, it is perspective to use adaptogens not just for training astronauts but for training people of other professions in different stress situations connected with extreme factors (flight professions, sailors, drivers, athletes, etc) with strong psychotraumatic influence on the organism, since the adaptogens possess a wide spectrum of action, increase non-specific resistance of the organism, and are good "recoverers" of the functional state of the organism.

Considering the circumstance that specialists of different countries with a great deal of experience and the volume of performed research, as well as the results of their practical use, I consider much wider cooperation of people interested in the study of adaptogens necessary and helpful. This could give a noticeably positive effect during solution of tasks in scientific, economic and other aspects.

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