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ASSESSMENT OF THE FUNCTIONAL STATE OF THE CENTRAL NERVOUS SYSTEM IN  
 VOLUNTEERS UNDER NOISE EXPOSURE

**Abstract**

The noise generated by life support systems is a factor that continuously affects the auditory system of astronauts. In addition to the damaging effect on the organ of hearing, noise also has a number of nonspecific effects, expressed in a symptom complex characteristic of asthenization of the body (M. Basner, 2014). Experimental exposure to broadband noise for 2 hours demonstrated a significant negative effect of noise on the functional state of the central nervous system in volunteers. Purpose of the study: to experimentally assess the functional state of the central nervous system in acoustically healthy volunteers after exposure to "white" noise. Materials and methods. The study involved 10 acoustically healthy male volunteers aged 26 - 43 years. Broadband "white" noise with an intensity of 85 dB and duration of 2 hours was chosen as an influencing factor. Assessment of the functional state of the central nervous system was carried out using registration of the electrical activity of the brain, registration of cognitive evoked potentials. The volume of random access memory (RAM) was assessed by the Luria method, which consists of 5-fold repetition at regular intervals of various sets of 10 unrelated words. The assessment of the functional state of the central nervous system was carried out before and immediately after the application of the noise of these characteristics. Results. When analyzing the dynamics, the indices of the absolute power of the EEG rhythms before exposure were (Mm, V<sup>2</sup>) : *theta1rhythm*11.10.7; *theta2rhythm*12.90.7; *alpharhythm*26.41.9; *beta1rhythm*10.20.4; *beta2rhythm*3.40.1. *After exposure* *theta1rhythm*9.90.6; *theta2rhythm*11.30.6; *alpharhythm*30.31.9; *beta1rhythm*11.60.4; *beta2rhythm*5.10.3. *According to the P3 component was noted. The latency indices (msec) were* 161.78.3 *in the background; after noise exposure* 168.02.9. *When analyzing* 5.50.4; 70.3; 8.50.3; 90.3; 100.4. *After exposure to noise, the following results were obtained, respectively* : 60.5; 6.50.3; 7.50.2; *wave activity after exposure to the specified noise indicates the predominance of the influence of the sympathetic division of the*