

ALPHA-THETA TRAINING: SELF-REGULATION OF PSYCHOPHYSIOLOGICAL STATE WITH THE HELP OF THE FEEDBACK SESSIONS ON THE EEG

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Changes of specters of the EEG was studied in set the experiments with biofeedback, which consists of three tries and based on EEG characteristics, which were oriented on increasing ration between power of alpha- and theta rhythms analyzes was done. The feedback signal is a volume of white noise, combined with the background music, in the control of the sound impact remained unchanged. EEG-potentials were recorded in C3 and C4 locus. During the sessions running EEG power ratio alpha and theta rhythms is reduced in subjects as a control, since the experimental groups. However, experimental test group decrease significantly less than this ratio and the end of the third session in the right hemisphere significantly exceeds the rate of the control group. To determine the EEG power in the sub-bands of EEG alpha rhythm of each test subject to individual analysis. After neurofeedback sessions also revealed a significant increase in the availability of early-building component amplitudes in both hemispheres, and contingent negative wave in the right hemisphere. It is obvious that the identified differences in the ratio of alpha and theta rhythms merely subjects the activity of the experimental group can be explained by the subjects of the two groups which, by relying on the feedback signal, allow purposefully to reduce mental and emotional stress, to reach the motor and mental relaxation. It is also possible to conclude that the minimum effective series of alpha-theta training, leading to a change in the pattern of EEG potentials for most healthy subjects may consist of three sessions. It is obvious that the reduction of situational anxiety as a result of the EEG-running series of sessions decreases the severity of the feeling of tension, fear, anxiety. Statistically significant changes in the expression of emotion revealed only in the subjects of the experimental group. It turned out that the subjects using certain relaxation strategy is characterized as certain dynamics of the pattern of EEG rhythms. Those participants in the experimental group who reached not only relaxation, but also a high ratio of alpha and theta rhythms better make the task of the metering of the time intervals less lagging with the push of a button relative to other members of their group. It is logical to assume that as a result of the neurofeedback sessions increased functionality of any mental relaxation. We also assume that since power-3-alpha rhythm reflects the degree of physical relaxation during the session occurs primarily emotional than muscle relaxation.

Keywords: biological feedback based on EEG characteristics, neurofeedback, neurotherapy.

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