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## THE RELATIONSHIP BETWEEN THE EEG INDICES AND LEVELS OF DEVELOPMENT OF VOLUNTARY ATTENTION IN THE CHILDREN AGED 5-9

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The study involved 27 practically healthy children aged 5–9 years. The EEG (16 channels) was recorded during the eyes-closed and eyes-open resting conditions. The level of voluntary attention development was evaluated with the Bourdon-Anfimova “proofreading test” and go/no-go test. The obtained results suggest that the level of voluntary attention development in the children of the studied age is objectively reflected in the spectral characteristics of their EEG. The voluntary attention scores most closely correlated with the amplitude values of alpha rhythm and its sub-bands and also with the amplitude ratios of alpha sub-bands to theta rhythms. The higher values of alpha rhythm amplitude were accompanied by the higher scores in attention accuracy measured by the Bourdon-Anfimova “proofreading test”. The fewer accidental pressing occasions during the go/no-go test were characteristic for the children showing higher amplitudes of alpha1- and alpha2-rhythms. The alpha3 amplitude was negatively correlated with the number of missed ‘go’ responses during go/no-go test.

The number of the “false alarm” errors negatively correlated with the amplitude ratios of alpha1 to theta and alpha2 to theta rhythms. The amplitude ratios of alpha3- to theta rhythms positively correlated with the overall attention performance. In addition, there was found that the lower values of delta-rhythm amplitude and alpha3 band modal frequency matched the more developed attention.

**Keywords:** voluntary attention, EEG, alpha rhythm, children.

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