

erage values of length and body weight are significantly higher in Belarusian children, and chest circumference in Asian children. It is proved that the periods of intensification and deceleration of the growth of the studied indicators in the examined two groups are revealed in different age ranges, which indicates the influence of climatic conditions of residence, socio-economic factors and nutrition on the growth processes of children and adolescents.

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### **RESEARCHING OF THE INTERHEMISPHERIC ASYMMETRY IN FOREIGN STUDENTS**

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#### **Introduction**

Constitutional and genetic factors characterize and determine the neurophysiological organization of functional interhemispheric asymmetry of the brain [1]. Both hemispheres interact with each other, ensuring the functioning of the brain as a whole. The complexity of the assignment determines the role and nature of the interhemispheric interactions [2]. An electroencephalograph recorded an increase in statistical fluctuations in the biopotentials of the posterior cortex of the left hemisphere and the anterior departments of the right hemisphere when performing verbal-mnemonic tasks [3]. The use of somatotypological approach allows you to supplement the information and methodological base for assessing the functional state and adaptive student opportunities.

#### **Aim**

The goal is to study the functional state of students with different interhemispheric asymmetries of the brain before and after intellectual load.

#### **Material and methods of research**

The study involved 25 students at the aged of 18 to 19 years, which, depending on the hemisphere asymmetry of the brain (test for hemispheric dominance according to N. M. Timchenko) were divided into three groups: 1 — left hemisphere («LH», 13 people), 2 — mixed («MH», 9 people), 3 — right-hemispheric («RH», 4 people).

Statistical processing of the research results was carried out using the statistical software package STATISTICA 10. The distribution was checked for normality by the Shapiro — Wilk test. In the case of a normal distribution of variables, parametric methods were used to independent samples (t-student), with abnormal — non-parametric method (Mann — Whitney). The results of parametric data processing methods were presented in the form of mean (M) and average error (m), non-parametric — median (Md), first (Q1) and third (Q3) quartiles. For all the results, the differences were considered significant at a level of  $p < 0.05$ .

### **The results of the research and their discussion**

Intergroup comparison before the load revealed a higher level of stress resistance in the students of the group «LH» (17 %,  $p < 0.05$ ) than in the group «MH». After mental work in the group «LH» is observed lower value of the excitation process — by 21 % ( $p < 0.05$ ) and a higher level of stress tolerance — by 14 % ( $p < 0.05$ ) in comparison with the group «MH». In the «LH» was lower lability by 12 % than in «RH». For group students «MH» to a greater extent prevailed the process of excitation ( $p < 0.01$ ) than for «RH». Impact on the following indicators in the «LH» group: attention reduction by 2 % ( $p < 0.05$ ;  $p = 0.45$ ) and attention asymmetry coefficient ( $p < 0.05$ ;  $r = 0.42$ ), an increase in the fatigue index by 3 % ( $p < 0.01$ ;  $r = 0.67$ ). In the group «MH» decreased attention by 4 % ( $p < 0.05$ ;  $p = 0.7$ ) and the coefficient of asymmetry of attention ( $P < 0.01$ ).

### **Conclusion**

Thus, the group «LH» has the decreasing of concentration, increasing the fatigue at the effect of intellectual stress in conditions desynchronosis. For these students the determining factors are a higher level of stress resistance, a decrease process of excitement. In the «MH» group, the process of excitation dominates, the interaction of lability and endurance. The RH group has the interaction between the asymmetry of attention and braking process.

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