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## The analysis of the polymorphic variant *rs10494561* of the gene *NMNAT2* in the development of spatial cognition of the individual

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Spatial abilities - evolutionarily adaptive cognitive skills, which act as a reliable predictor of an individual's academic achievement in scientific fields related to STEM. Genetically informative studies have shown that spatial abilities are moderately inherited (30-50%). In the present study, we undertook the analysis of the polymorphic variant *rs10494561* in the gene *NMNAT2* with the development of spatial intelligence in 312 students aged 17-34 years of different sex and professional direction by using KASP technology (LGC, Biosearch Technologies). The gene *NMNAT2* is involved in key processes in maintaining neuronal activity, protecting the nervous system from stress (Ali et al., 2016). Analysis of the association of the polymorphic locus was carried out in correlation with: sex, professional sphere and psychological correlates (4 tests for space: mechanical reasoning; paper folding; pattern assembly; share rotation, academic performance, test of Raven). Preliminary statistical evaluation with the introduction of the distance of Mahalonobis (>95%) revealed 16 respondents with deviations at data of testing, and therefore they were removed from the study. So that, the group included 296 people (60 men, 236 women). The results of genotyping of the polymorphic variant were evaluated by using the software PLINK 1.9 package. However, we not observed statistically significant results ( $p > 0.05$ ), which allows us to conclude that the *rs10494561* in the gene *NMNAT2* is not associated with the development of spatial intelligence in our cohort. Perhaps this is due to the small sample size.

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