

# Cognitive functions and lifestyle of Russian schoolchildren in large cities

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**Objective.** To determine the relationship between the parameters of cognitive functions, school performance and extracurricular lifestyle.

**Method.** 1036 children aged 10–12 years who studied in 5-th classes of 40 Russian schools in 8 different major cities were surveyed. All of them underwent cognitive testing, which included a set of six tests. They defined: arbitrary attention, visual-spatial perception, verbal memory, visual-imaginative thinking, constructive praxis, and verbal-logical thinking. Parents of 598 participants filled out questionnaires about their lifestyle. Using machine learning methods, children were divided into clusters based on the success of cognitive tests. Next, we analyzed the links between cognitively successful children, school performance, and lifestyle.

**Results.** It was found that children are divided into two clusters: those who performed cognitive tasks more successfully and less successfully. A strong direct link was established between the success of cognitive tests and

school performance in three main subjects (mathematics ( $r = 0.875$ ), literature ( $r = 0.853$ ), and Russian ( $r = 0.797$ )). Those who spent more time using the Internet and were more interested in computer games did not differ in cognitive parameters from those who used less and played less. But those who didn't play computer games at all during school days were worse at cognitive functions. Also worse in cognitive functions were those who were interested in unorganized sports (outside of sports clubs), hockey, mountain skiing, lawn tennis, a combination of a passion for music and education with Tutors. High cognitive functions are associated with music, non-sports Hobbies, basketball, football, dancing, and summer recreation in camps. Many lifestyle manifestations were not related to the level of cognitive function.

**Conclusion.** Cognitive functions are strongly associated not only with school performance, but also with certain Hobbies and lifestyles of children. Such data may be interesting for social policy in the field of childhood.