

The influence of emotional valence of target information on cognitive control in children aged 7-8 years: an event related potentials analysis

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ABSTRACT. The aim of the study was to investigate the influence of emotional regulation on the brain systems of voluntary control in primary school children. Participants were 16 children (10 female) aged 7.90 ± 0.4 years. They performed a modified version of the Dots task, which is used to assess the ability to switch between actions and to inhibit habitual reactions. Facial patterns with neutral, positive and negative emotional valence were used as target stimuli in the test. The analysis of ERPs showed that the reactivity of the frontal and parietal cortical areas in response to the stimuli with a positive emotional valence was more pronounced than the reactivity of these areas to the stimuli with a negative emotional valence. This suggests the influence of emotional-motivational regulation on the brain mechanisms of cognitive control in children aged 7-8 years.

Key words: emotional regulation, executive functions, cognitive processes, children aged 7-8 years, EEG, event-related potentials

Sensory-specific tuning of the brain for selective responses and selective inhibition of responses to relevant stimuli: testing a new experimental model «Go/NoGo» Talalay I.V., Machinskaya R.I.

ABSTRACT. The paper presents a new experimental model for studying sensory-specific preparation of brain systems for selective responses and selective inhibition of responses to relevant stimuli. The model is based on the Go/NoGo task, it includes grapheme pairs as visual stimuli and corresponding phoneme pairs as auditory stimuli. The block design is used to create conditions for the deployment of sensory-specific anticipatory attention. The instruction at the beginning of each block specifies the sensory modality of rare stimuli to respond to (Go stimuli) or rare stimuli to ignore (NoGo stimuli). Thus, the model includes 4 experimental conditions: (1) the visual Go condition; (2) the auditory Go condition; (3) the visual NoGo condition; (4) the auditory NoGo condition. Using the new model, we conducted a pilot ERP study with 20 healthy right-handed adolescents (10 females) aged 14.2 ± 1.1 years. In this study, we analyzed brain activity in response to non-target stimuli in the Go conditions. The results showed the effect of the anticipated Go stimulus modality. ERP amplitude at 208 ms in response to visual non-target stimuli was higher in the visual GO condition than in the auditory Go condition. The difference was observed in visual sensory-specific areas (electrodes O1/O2 and T5/T6). For auditory stimuli, a similar difference was found at 292 and 384 ms in

the areas associated with the maximum response to auditory stimuli (electrodes Pz and Fz).

Key words: visual and auditory anticipatory attention, adolescents aged 13-15 years, EEG, event-related potentials, Go/NoGo task

The effect of aerobic exercise on cognitive abilities of human

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ABSTRACT. The scientific article is devoted to the study of the effect of aerobic physical activity on human cognitive abilities. Key physiological mechanisms are considered, such as improved blood supply to the brain, stimulation of neuroplasticity, increased levels of neurotrophic factors (for example, BDNF), as well as reducing stress levels. Particular attention is paid to practical aspects: the types and volumes of aerobic activity that are most effective for improving memory, attention and other cognitive functions are specified.

KEYWORDS: aerobic exercise, cognitive functions, physical exercises, health, intellectual abilities.

The relationship of regular yoga classes with morphometric indicators of various brain structures in the elderly

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ABSTRACT. Regular yoga classes' help to protect the brain from age-related changes, improve its functions, cognitive abilities, and emotional background. At the same time, among Russian studies we found only works covering the impact of yoga on the physical and psychological state of a person, and studies by biologists and doctors that make it possible to assess the processes occurring in the brain are presented only in foreign journals. The article presents a review of foreign research on the impact of yoga classes on the human brain.

Keywords: yoga, brain, hippocampus, age-related changes, dementia.

Potential of Pilates in correcting posture in teenagers

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ABSTRACT. The article discusses the main features of the Pilates system and examines its possibilities in correcting changes occurring in the musculoskeletal system. The authors pay special attention to teenagers, since it is at this time that

posture is formed, as a result of which performing special exercises aimed at strengthening it becomes especially important. Examples of studies on the effectiveness of the Pilates system in correcting the spine in teenagers are given.
Keywords: Pilates, posture correction, teenagers

Thomas Hann's system of somatic exercises

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ABSTRACT. The article describes the essence of Thomas Hanna's method, presents its criticism, and also analyzes the system of somatic exercises and considers its functional aspect. The authors conclude that this system combines elements of physical therapy, psychology and conscious movement and is aimed not only at improving physical condition, but also at becoming aware of movements and postures that can cause discomfort and pain, developing the ability to listen the body and notice signs of imbalance.

Keywords: somatics, awareness, self-control, sensorimotor amnesia, pandiculation, stress, set of exercises.

Features of mechanisms for forming healthy lifestyle values

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ABSTRACT. The article considers the key aspects of formation of ideas about healthy lifestyle and its importance in modern society. It is pointed out what social, cultural and psychological factors influence the perception of healthy lifestyle, as well as the role of educational and information campaigns in popularization of healthy habits. Special attention is paid to motivational mechanisms and individual approaches that promote behavioral change and the perception of health as an important value. The article offers practical recommendations for the introduction of healthy lifestyle principles into everyday practice, emphasizing the importance of an integrated approach to the formation of sustainable habits and positive attitudes towards one's own health.

Keywords: healthy lifestyle, values, motivation, physical activity, psychological mechanisms.

Assessment of knowledge in the field of anatomy and physiology as a component of professional competencies of primary class teachers

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ABSTRACT. This research substantiates the need for human anatomy and physiology knowledge for primary school teachers. The results of a complex survey of primary school teachers on knowledge of the anatomical and physiological patterns of development of the child's body, sanitary and hygienic standards of the educational process, and the specifics of implementing health-saving technologies are presented. The results of the study showed the presence of knowledge deficits related to the topic of "Higher nervous activity" and sanitary and hygienic standards. In addition, the survey revealed that teachers have difficulties in choosing the means and methods of teaching children with health problems.

Key words: professional competencies of primary school teachers, health-preserving technologies, students with disabilities

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The role of the principal's guidance counselor in forming an effective partnership between parents and the school

ABSTRACT. The article is devoted to the analysis of the job position school director's adviser on upbringing from the teachers' point of view. The data of an unstructured interview of teachers – students of advanced training courses – demonstrates their interest, understanding of the importance of this position for the educational process and parents -school interaction. At the same time, most respondents note the lack of particular official instructions about official duties of the director's advisor and the necessary methodological tools for practical work.

Keywords. School director's advisor, job functions, parent-school partnership, school education.