

## **MODERN ISSUES OF BIOMEDICINE © 2019**

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### **SPORTS MEDICINE**

#### **AQUAEROBICS OF PREGNANT WOMEN AS A METHOD OF IN-UTERINE FETAL PROTECTION**

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**Key words:** water aerobics, pregnancy, fetal asphyxiation, newborns.

**Abstract.** Aqua-aerobics of pregnant women is a form of physical therapy that uses combinations of various exercises in water to music with elements of swimming, gymnastics, acrobatics, choreography, yoga and athleticism, performed in an aerobic exercise mode, with the aim of prenatal preparation and prevention of fetal asphyxiation. A prospective study was conducted, the purpose of which was to study the aqua aerobics of pregnant women as a method of intrauterine protection of the fetus. In the course of the study, it was found that aqua aerobics of pregnant women is the most effective form of therapeutic physical culture for prenatal preparation of women and intrauterine protection of the fetus.

#### **GENDER DIFFERENCES IN HEART RATE VARIABILITY AND PSYCHOMETRIC TESTING IN HEALTHY STUDENTS**

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**Key words:** heart rate variability, psychometric testing, simple visual-motor reaction time, moving visual object, critical fusion frequency, gender differences.

**Annotation.** The purpose of the study was to evaluate if autonomic status could influence some psychometric variables as simple and different complicated sensorimotor reaction times in young healthy participants. 60 females and 40 males 6<sup>th</sup> year students were studied in spring 2018. Autonomic status was assessed using heart rate variability (HRV) in time and frequency domains.

In females moderate elevated sympathetic tone was positively related to good reactivity in the first third of trial, while in males – to variability of responses in the majority of tests done. Moderate parasympathetic predominance was positively related to response stability. Elevated power of VLF band has negatively influenced

on simple sensorimotor reaction time both in females and males. HRV parameters in orthostasis were correlated to a moving visual object reaction time.

### **INFLUENCE OF TRANSCRANIAL ELECTRICAL STIMULATION ON PSYCHOLOGICAL AND NEUROPHYSIOLOGICAL INDICATORS OF KARATISTS**

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**Key words.** sports psychophysiology, EEG rhythms, transcranial electrical stimulation, recovery, athletes, karate.

**Annotation.** The aim of the work was to identify the effect of transcranial electrical stimulation on the psycho- and neurophysiological parameters of karatekas.

The study involved 22 karate. The influence of the course of 8 TES procedures was evaluated according to EEG and psychophysiological indicators. The results show a positive effect: under the influence of the TES course, karate men have a decrease in the average and maximum amplitudes of fast and slow-wave activity, which indicates a restorative effect. An improvement in psychophysiological indicators was also noted: a decrease in time and increased stability in the test of a simple sensorimotor reaction.

### **EFFECTS OF APPLICATION OF COMPLEXES OF BIOLOGICALLY ACTIVE SUBSTANCES ON THE PSYCHOPHYSIOLOGICAL STATUS OF ATHLETES**

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**Key words:** athletes, biologically active substances, psychophysiological status, mental performance.

**Annotation.** The article presents the results of a study of the urgent and delayed effects of 5 complexes of biologically active substances (BAS) preparations on the psychophysiological status and indicators of the mental performance of athletes, athletes, and martial artists. The athletes determined the speed of a simple and complex sensorimotor reaction, investigated cognitive abilities and mental performance when doing work that requires attention. Testing

was carried out before and after the course of taking biologically active substances (urgent effect), 7 and 14 days after the end of the course (delayed effects). An analysis of the results showed that the use of the studied complex biologically active substances in athletes has a positive effect on their psychophysiological indicators and mental performance. The greatest efficiency was revealed with the combined intake of biologically active substances containing peptides, amino acids, B vitamins, magnesium (2, 3, and 5 intake regimens).

### **COMPARATIVE ANALYSIS OF PERFORMANCE CARDIORESPIRATORY LOAD TESTING OF ATHLETES OF DIFFERENT AGE GROUPS**

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**Key words:** sports medicine, stress testing, aerobic performance, ergospirometry, athletics, athletes.

**Annotation.** Cardiorespiratory stress testing is a method that allows you to identify the athlete's aerobic capabilities, his performance and exercise tolerance, which is necessary for the correct construction of training and recovery processes. The aim of the study was to analyze the indicators of cardiorespiratory stress testing of athletes of different age groups. When conducting stress testing with ergospirometry, the following results were obtained: a higher relative maximum oxygen consumption in younger athletes; Heart rate when reaching the anaerobic threshold is higher in older athletes; exercise tolerance values are higher for younger athletes. The data obtained indicate high aerobic capabilities and low physiological cost of work of younger athletes.

### **THEORETICAL AND EXPERIMENTAL SUBSTANTIATION OF APPLICATION OF THE MODIFIED SELENIUM MINERAL WATER ESSENTUKI TYPE IN METABOLIC SYNDROME**

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**Key words.** Metabolic syndrome, mineral water, selenium, rats, experiment.

**Annotation.** The aim of the work was to study the effect of course drinking of selenium-enriched mineral water Essentuki № 4 in rats with diet-induced metabolic disorders. Biochemical criteria for lipid metabolism disorders were a

decrease in high-density cholesterol fraction, an increase in leptin and triiodothyronine levels. Under the influence of the course of internal administration of native and selenium modified mineral water Essentuki №4 lipid content, glucose and hormones in the blood was restored and corresponded to the control values. Differences between courses were determined by the formation of functional links between biochemical and hormonal markers of carbohydrate-fat metabolism. A direct link between insulin and leptin ( $r=+ 0.8$ ;  $p=0.01$ ) indicates a change in regulation and restoration of the signaling pathways of carbohydrate metabolism after the course of native MW. After a course of the modified selenium MW is determined by the direct correlation between triiodotironina and dehydroepiandrosterone ( $r=+ 0,6$ ;  $p=0.04$ ), indicating that activation of the processes of anabolism in tissues and organs exposed to dystrophic changes as a result of prolonged pathological dieting.

#### **HISTORICAL ASPECTS OF MODELING OF EFFECTS OF PHYSICAL AND NATURAL MEDICAL FACTORS AT RESORT PROFILED PATHOLOGY IN THE CRIMEAN SCIENTIFIC SCHOOL**

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**Keywords:** balneology, concept, modeling, Crimea, history.

**Abstract.** The history of the development of the methodology of conceptual and mathematical modeling of the effects of physical and natural healing factors in the Crimean balneology scientific school from the 19th to the 21st century is presented.

#### **NATURAL FACTORS IN THE TREATMENT OF CHILDREN FROM ENVIRONMENTALLY ADVERSABLE REGIONS IN THE ZHELEZNOVODSKY RESORT**

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**Key words:** children, ecology, spa treatment.

**Annotation.** The article is devoted to a comprehensive study of the methods of sanatorium-resort treatment using non-drug therapy for children from

environmentally unfavorable regions in the N.K. Krupskaya FMBA of Russia, Zheleznovodsk.

The author analyzes the clinical indicators of children after receiving mud applications from Tambukan mud according to the traditional method for the abdomen. A comparative analysis of the treatment results confirmed the advantage of peloid therapy, which indicates the effectiveness of the use of natural physical factors in the spa treatment system for children with an ecologically burdened history. The article will be useful to specialists in the field of spa treatment of children.

### **ULTRASOUND PATHOLOGY OF THE BILIARY SYSTEM IN CHILDREN**

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**Key words:** ultrasound, biliary system, children.

**Abstract:** repeated ultrasonography of biliary tract was carried out in 253 healthy children age from 1 month to 15 years old (control group), 132 children with biliary tract dyskinesia 130 children with inflammatory diseases of biliary tract (12 - with noncalculous cholecystitis 2 - with calculous cholecystitis, 10 - with cholangitis and 106 - with cholecystocholangitis) Constitutional typification of the shape of gallbladder (normosthenic, hypersthenic am hyposthenic) was established in healthy children, particularly from the age of 10-12 years old Echography didn't show hepatomegalia in different deformities of the gallbladder, 70% q patients were revealed gallbladder hyperkinesia, in 25% of children evacuation capacity o gallbladder obtained by means of yolk, test was normal or increased and only in 5% of patien it was decreased. Echography with the use of yolk test revealed gallbladder hypokinesia at the period of exacerbation in 86,2% of children with inflammatory diseases of the biliary tract. Hyperkinetic form of dyskinesia of the bile ducts were predominant in the examined children.

### **FEATURES OF DEVELOPMENT OF SKILL OF PERSONAL POSITIONING OF TEACHERS OF HIGHER EDUCATION INSTITUTION**

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**Keyword:** personal positioning, competence approach, verbal side of communication, leading activity.

**Abstract.** The article is devoted to the peculiarities of personal positioning skills of University teachers. The author analyzes the development of verbal and nonverbal components on the basis of the activity approach of A. N. Leontiev, S. L. Rubinstein and A. G. Asmolov. The article will be useful for young teachers, specialists in the field of self-presentation.