

SPORTS MEDICINE

**INFLUENCE OF THE USE OF TRANSSCRANIAL
ELECTROSTEMULATION ON THE PSYCHOPHYSIOLOGICAL
STATUS AND ATHLETES PHYSICAL PERFORMANCE**

L.G. Roguleva, Yu.V. Koryagina, G.N. Ter-Akopov, S.V. Nopin
Federal State Budgetary Institution «North-Caucasian Federal Scientific and
Clinical Center of the Federal Medical and Biological Agency», Yessentuki,
Russia

Key words: transcranial electrostimulation, psychophysiological state, electroencephalography, sensorimotor reaction, stress testing, athletes.

Annotation. The article presents the results of the study of the influence of transcranial electrostimulation (TES) - the physiotherapeutic method of stimulating the production of endogenous opioid peptides on the functional state of the nervous system, the psychophysiological state, the mental and physical performance of highly skilled athletes.

The analysis of the obtained results made it possible to reveal that the use of TES in elite athletes leads to optimization of the functional state of the brain, which consists in reducing background slow and fast wave activity and increasing alpha activity. The TES session contributes to the improvement of the psychophysiological parameters of athletes, which is expressed in the increase in the speed of sensorimotor reactions and in the increase of mental performance. The TES session, which anticipates physical activity, contributes to an increase in the athletes physical performance.

**EVALUATION OF ACTUAL NUTRITION OF CYCLIC SPORTS
ATHLETES FROM THE POSITIONS OF HEALTHY FOOD PRINCIPLES**

A.N. Martinchik, E.E. Keshabyants A.V., Pogozeva, N.N. Denisova
Federal Research Centre of Nutrition, Biotechnology and Food Safety, Moscow

Key words: cyclic kinds of sports, nutrition for athletes, energy and nutrients intake, food item consumption.

Annotation. Modern nutrition of sportsmen is based on the principles of rational nutrition and peculiarities of muscular activity during the training process. Objective: to analyze the actual nutrition of athletes of cyclic sports. In the course

of work peculiarities of consumption of basic foodstuffs by athletes engaged in cyclic sports are formulated, violations in consumption of fat, saturated fatty acids and cholesterol, and also added sugar and salt (above recommended norms) are revealed, thus the total quantity of carbohydrates in a diet is lower than the recommended level for athletes of cyclic sports. There was a low level of consumption of vegetables and fruits and high - sugar and confectionery products.

INFLUENCE OF BIOLOGICALLY ACTIVE ADDITIVE ON THE BASIS OF THE PLANT THE RUSCUS PONTICUS EXTRACT ON THE PHYSICAL PERFORMANCE OF RATS IN THE EXPERIMENT

I.O. Naslednikova, A.F. Hechumyan, L.S. Khodasevich
Scientific-research centre of balneology and rehabilitation — a branch of FSBI
«North Caucasian federal scientific-clinical centre of Federal Medical Biological Agency», Sochi

Key words: *Ruscus ponticus*, biologically active additive, experiment, physical efficiency.

Abstract. The article is devoted to estimation of the influence of a biologically active additive based on the *Ruscus ponticus* extract on the physical performance of laboratory animals. It is shown that course usage of the extract during 21 days has a stimulating effect on the physical performance of white rats in the tests of «forced swimming», «hanging by the tail» and «treadmill run».

EVALUATION OF ACTUAL NUTRITION OF SPORTSMEN-UNIFORMS WITH THE POSITIONS OF HEALTHY FOOD PRINCIPLES

A.N. Martinchik, E.E. Keshabyants, N.N. Denisova
Federal Research Centre of Nutrition, Biotechnology and Food Safety, Moscow

Key words: martial arts, dietary intake of athletes, energy and nutrients intake, food item consumption.

Annotation. Martial arts is a special sport in which you need a combination of quickness, strength and endurance. A characteristic feature of combat sports is the energy expenditure when volatile level of physical activity, dependent on specific conditions rivalry. Goal of research: analysis of the actual nutritional situation of athletes-martial artists in the training period. Established violations in

consumption of fat, saturated fatty acids and cholesterol, as well as the added sugar (men) and salt (above the recommended standards), while the total number of carbohydrates in the diet are below the recommended level for these kinds of athletes Sport. Peculiarities of consumption of basic foods, athletes, marked by low intake of fruits and vegetables and high-sugar and confectionery products.

**METHODOLOGY APPLICATION OF THE CONTREX MJ COMPLEX
FOR THE OPTIMIZATION OF THE BALANCE OF THE SHADOW
MUSCLES AT THE ELITE ATHLETES AT CHRONIC
ACHILLOTENDOPATHY**

E.V. Kostyuk

Federal State Budgetary Institution «North-Caucasian Federal Scientific and Clinical Center of the Federal Medical and Biological Agency», Essentuki

Key words: muscle strength, biological feedback, muscle balance, athletics, athletes, achillotenopathy, achilles tendon, therapeutic physical culture, kinetic chain.

Annotation. The article presents the results of Con-trex MJ complex application for optimization and correction of muscular balance of flexor / extensor muscles of elite track and field athletes. The analysis of the obtained results made it possible to reveal the features of the development of the muscular group of the lower leg and the imbalance of the leg muscular groups in the leading and non-leading lower extremities, as a result of the long-term adaptation of athletes to a specific physical load. The use of the Contrex MJ system in the rehabilitation of elite athletes makes it possible to identify the «risk zones» associated with their imbalance, as well as to reveal the phenomena of achillotendopathy at the preclinical stage.

BALNEOLOGY AND REHABILITATION

**THE PROSPECTS OF EXPANSION OF THE SANATORIUM HELP TO
THE POPULATION ON THE BASIS OF RATIONAL USE OF NATURAL
MEDICAL RESOURCES OF THE REPUBLIC OF BURYATIA**

N. K. Dzhabarova, I. N. Smirnova, N. G. Sidorina, A. A. Kokhanenko
Siberian Federal Scientific Clinical Center of Federal Medicobiological
Agency, Seversk, Russia

Key words: Republic of Buryatia, natural medical factors, resort, medical and improving area, register.

Annotation: The prospects of development of resorts and medical and improving areas of the Republic of Buryatia are shown. Auditing examination of medical resource base of resorts is conducted and bioclimatic passports of their territories are prepared. An assessment of resort and recreational capacity of territories of new medical and improving areas is given. The developed database is used for formation of the register of resorts and medical and improving areas of the Siberian Federal District.

EFFICIENCY OF MUDY APPLICATIONS IN THE COMPLEX OF SPA TREATMENT OF CHILDREN WITH THE SYNDROME OF ENVIRONMENTAL DECODAPTATIZATION

T.V. Khodova

Children's Sanatorium named after NK Krupskaya branch of The Federal State-Financed Institution «North Caucasian Research and Clinical Center» under the Federal Medical Biological Agency, Zheleznovodsk

Key words: children, spa treatment, ecology, therapeutic mud.

Annotation: The purpose of the study was to determine the feasibility and effectiveness of peloids in the spa treatment complex in children with environmental disadaptation syndrome. Under supervision were 100 children with the syndrome of environmental maladaptation. In all recipients, under the influence of mud applications, traditional methods were used to study clinical and paraclinical indices. As a result of the treatment, a favorable effect on children of peloids was established.

MEDICAL REHABILITATION IN ACUTE POISONING

V.D. Gladkikh

Federal state unitary enterprise Research Production Center «Pharmzashita»
Federal Medical and Biological Agency of Russian

Annotation. The lecture deals with the issues of medical rehabilitation of victims of acute poisoning. Summarizes the results of our own and literature data about perspectives of use of cytoprotectors in the system of medical rehabilitation of acute chemical poisoning. Deals with the classification of cytoprotection, discusses unresolved problems of cytoprotection in acute poisoning and possible ways of their solution.

Keywords: medical rehabilitation, acute chemical poisoning, the cytoprotectors.

MODERN APPROACHES TO PHYSICAL REHABILITATION

OF PATIENTS AFTER ENDOPROSTHETICS OF THE HIP JOINT

K.S. Zaitsev

BHE of Omsk region «Clinical medical-surgical center of Ministry of health of Omsk region», Omsk

Key words: medical rehabilitation, endoprosthetics, restorative treatment.

Annotation. The article is devoted to the issues of physical rehabilitation after hip arthroplasty. The purpose of this study was to analyze the effectiveness of restorative measures after total hip replacement in the late postoperative rehabilitation period. The study involved 35 patients after hip arthroplasty in the late postoperative period, which were divided into two groups. In the course of the study, the practical importance of the physical rehabilitation method proposed by us in the late postoperative period was revealed.

EFFICIENCY OF IODINE-BROMINE BATHS IN COMPLEX SANATORIUM-RESORT TREATMENT OF PATIENTS WITH SUBCLINICAL HYPOTHYROIDISM

V.M. Drozdova, A.V. Chernyshev.

¹Federal State Budget Educational Institution of Higher Education «Kuban State Medical University», Krasnodar

Keywords: subclinical hypothyroidism, sanatorium-and-spa treatment, iodide-bromine baths.

Annotation. 139 patients of the Sochi sanatorium with subclinical hypothyroidism were examined. All patients received climatotherapy, diet therapy, exercise therapy according to generally accepted methods. Patients of the main group were treated with common iodine-bromine baths for treatment. The mean daily arterial pressure, lipid profile, anthropometric parameters, thyroid-stimulating hormone level were studied. The obtained data demonstrated an increase in the effectiveness of sanatorium treatment in patients with subclinical hypothyroidism when iodide-bromine baths were incorporated into it.

INHALATION OF MINERAL WATER «PLASTUNSKAYA» IN INTEGRATED TREATMENT OF ACUTE PURULOUS RINOSINUSITE

N.M. Zinchuk¹, L.S. Khodasevich^{2,3}

ENT clinic in the resort of Sochi¹

Research Center of balneology and rehabilitation – a branch in Sochi FGBI «North
Caucasian Federal Scientific Clinical Center» FMBA, Sochi²
State University of Sochi, Sochi³

Annotation. With inhalational use of mineral waters on the mucosa of the nasal cavity, the regenerative capacity of the ciliated epithelium increases with the restoration of the previously lost motor and secretory function of the mucous membrane. The article presents the experience of using for the treatment of acute purulent rhinosinusitis in the resort of Sochi mineral water «Plastunskaya». The authors gave a substantiation of inhalation therapy and showed its effectiveness in the conditions of the resort.

Key words: acute purulent rhinosinusitis, inhalation of mineral water.

PROSPECTS FOR THE TREATMENT OF ALLERGIC RHINITIS BASED ON HIGH TECHNOLOGICAL DEVELOPMENTS

M.V. Filatov¹, A.M. Melnik², V.V. Dvorianchikov³

Petersburg Nuclear Physics Institute. B.P. Konstantinova Russian Academy of
Sciences, St. Petersburg¹

Research Center of balneology and rehabilitation – a branch in Sochi FGBI «North
Caucasian Federal Scientific Clinical Center FMBA», Sochi²
Military Medical Academy C.M. Kirova, St. Petersburg³

Abstract. In the course of scientific research, a concept was developed on the medical technology of using dendritic cells to treat allergies. Dendritic cells, obtained from the patient's blood cells, were loaded with allergens, leading to allergic reactions. The cells of the given person thus obtained were returned to him by intradermal injection. In essence, the proposed procedure is an enhanced version of the widely used method of hyposensitization. However, the use of dendritic cells in combination with activated lymphocytes led to a radical increase in the effectiveness of the proposed approach.

Key words: allergic rhinitis, dendritic cells.

INFLUENCE OF ISOMETRIC EXERCISES ON PSYCHOVEGETATIVE STATUS IN CHRONIC SKELETAL-MUSCULAR PAIN IN NEC

E.Yu. Melnikov, L.S. Khodasevich

MBUZ City of Sochi City Hospital No. 9
Scientific-research centre of balneology and rehabilitation — a branch of
FSBI «North Caucasian federal scientific-clinical centre of Federal Medical
Biological Agency», Sochi

Key words: cervical myofascial pain syndrome, psycho vegetative status, therapeutic exercise.

Annotation. The article is devoted to the study of the influence of isometric exercises on the psycho vegetative status of patients with cervical myofascial pain syndrome. The authors showed a positive effect of symmetric moderate-intensity isometric exercises in this pain syndrome on psycho-vegetative status compared with traditional physical therapy. The latter is effective in the lungs, but is ineffective in moderate depressive states.

ANTIISCHEMIC MYOCARDIAL PROTECTION WITH THE USE OF MODERN METHODS OF ORGANOTHERAPY

E.S. Petrova

Scientific-research centre of balneology and rehabilitation — a branch of
FSBI «North Caucasian federal scientific-clinical centre of Federal Medical
Biological Agency», Sochi

Keywords: cardiology, organotherapy, antiischemic protection.

Annotation. In recent decades, intensively began to develop innovative biomedical technologies, they are the widespread techniques of cell, tissue and organ regenerative therapy, showing its efficacy in the treatment of heart disease. One of the directions of these technologies is the application of biologically active substances (BAS) of xenogenic origin of young laboratory or farm animals, obtained during isolated in vitro extracorporeal perfusion with physiological solution. In experiments on small laboratory animals (rats of CD line) preliminary introduction of BAS increased myocardial antiischemic resistance by ~2 times, and in drug poisoning causing all signs of acute myocardial injury in primates, cardioprotective effect of BAS provided the pronounced dynamics of the area and depth of ischemic lesions reduction.

OPPORTUNITIES FOR USING CARBON DIOXIDE IN RESTORATIVE AND SPORTS MEDICINE

L.E. Starokozhko

Key words: carbon dioxide, dry carbon dioxide baths, immunity, immunomodulation, restorative medicine, sports medicine.

Annotation. The aim of the work was to search for and analyze the possibilities of using carbon dioxide in order to improve the functional state of the human body. For this purpose, an experimental study was carried out on Wistar rats with a model of radiation immunodeficiency. Immunomodulating effect of carbon intragastric cocktails was established mainly on the humoral link of immunity. The results are confirmed in clinical conditions. The data on application of dry carbonic baths of firm «REABOX» (SUV) are given in persons with increased physical loads. A hypothesis is advanced about the possible positive effect of the application of recovery techniques using carbon dioxide in the sport of higher achievements.

INNOVATIVE TECHNOLOGIES OF DIAGNOSTICS OF EARLY FUNCTIONAL VIOLATIONS

M.I. Zhilina, A.A. Lebedev

Research Center of balneology and rehabilitation – a branch in Sochi FGBI «North Caucasian Federal Scientific Clinical Center» FMBA, Sochi, Russia

Key words: functional diagnostics, adaptation, functional reserves.

Annotation. The accumulated experience in development and deployment of the innovative diagnostic technologies allowing at the evidential level in the express mode to reveal early functional violations in work the organs and systems, to estimate adaptive opportunities of an organism, its functional reserve can useful in the decision be wide a range of the tasks facing the doctor.

APPLICATION OF STABILOMETRICAL TRAINING BASED ON BIOFEEDBACK AS A METHOD OF COORDINATION SKILLS DEVELOPMENT IN STUDENTS WITH DISABILITIES

E.V. Medvedeva, E.A. Baranova, Yu.P. Bredikhina, I.A. Karpova
National Research Tomsk Polytechnic University, Tomsk

Key words: biofeedback, stabilometry, rehabilitation, postural stability, students, disabilities.

Annotation: The influence of the biofeedback on the correction of postural stability in students with disabilities has been studied. The aim of the study was to determine the effect of stabilometric training on the development of coordination and the skills of maintaining the vertical posture. The study was carried out on the stability analyzer «Stabilan-01». The positive dynamics of equilibrium indices is revealed, and it is determined that training based on biofeedback promotes the shift of the stabilometric indicators towards the values accepted as the norm, and has a significant influence on the development of skills of voluntary control of dynamic equilibrium.

MODERN ASPECTS OF POSTOPERATIVE CLINICAL REHABILITATION OF GYNECOLOGICAL PATIENTS WITH HORMONOSEAL DISEASES ON THE RESORTS OF THE KRASNODAR TERRITORY

V.A. Krutova, K.V. Gordon, E.N. Shamanskaya, A.K. Gordon
FGBOU VO «Kuban State Medical University» of the Ministry of Health of
Russia, Krasnodar

Key words: clinical rehabilitation, hormone-inhibiting gynecological diseases, resorts of Krasnodar Region, balneotherapy, mineral waters, telemedicine technologies.

Annotation. Krasnodar Territory is unique in the variety of natural physical healing factors in the recreational zone of Russia. In its territory are concentrated numerous therapeutic areas, which have a variety of climate and balneofactors. The purpose of the study is to scientifically substantiate the inclusion of selected natural and pre-reformed physical therapeutic factors in the clinical rehabilitation of gynecological patients with hormone-dependent diseases.

PSYCHOLOGICAL PRACTICE

PSYCHOLOGICAL ASPECTS OF EMOTIONAL COMBUSTION OF ELITE ATHLETES AS A SUBJECT OF THEIR PROFESSIONAL ACTIVITY

O.N. Borovik

Federal state budgetary institution professional educational organization
Kislovodsk State College (Technical School) of the Olympic Reserve, Kislovodsk

Keywords: elite athletes, professional deformities, sports activities, emotional burnout, stress.

Annotation. The purpose of this study is to identify and analyze the manifestations of emotional burnout and behavior of type A, as professional deformations in highly qualified athletes as subjects of their professional activity. The results of the research show that the signs of emotional burnout and behavior of type A in elite athletes are a reflection of the negative consequences of stressful reactions in professional sports activity, which causes changes in the personality and behavioral areas of the athlete as its subject. The developed individual system of psychological preparation and support will help to correct these negative effects and manifestations.

YOUNG SCIENTIST

PSYCHOPHYSIOLOGICAL CONDITION OF BICYCLES IN COMPETITIONS AND PERIOD OF TRAINING

P.A. Vorzhev

FSBEI HE «Siberian State University of Physical Culture and Sports»,
Omsk, Russia

Key words: athletes, cycling track, sports psychophysiology, pre-start status, mental states.

Annotation. The purpose of the study was to identify the characteristics of psychophysiological conditions of cyclists in the preparation for the competition. The results of the work show that elite cycling trails are characterized by low level of anxiety and frustration, high level of self-esteem, resistance to failures, absence of fear of difficulties, medium and low levels of aggression and rigidity, ability to switch to different activities. Early pre-start and proper start-up status in elite cycling trails is manifested by a slight increase in anxiety, frustration and aggressiveness, as well as by improved switchability, dynamics of nervous processes and work efficiency.