

# ФИЗИКАЛНА МЕДИЦИНА РЕХАБИЛИТАЦИЯ

ГОДИНА XIV  
ISSN – 1312-0417

## ЗДРАВЕ

БРОЙ 4/2015

PHYSICAL MEDICINE REHABILITATION HEALTH Vol 13 №4/2015

*OFFICIAL JOURNAL OF*

**ASSOCIATION OF PHYSICAL  
MEDICINE & REHABILITATION**

*MEMBER OF*



**ESPRM**

European Society of  
Physical & Rehabilitation Medicine

*PRM SECTION AND BOARD OF*

**EUROPEAN UNION OF  
MEDICAL SPECIALISTS**



**ОФИЦИАЛНО ИЗДАНИЕ НА  
АСОЦИАЦИЯ ПО ФИЗИКАЛНА МЕДИЦИНА И РЕХАБИЛИТАЦИЯ**

# ФИЗИКАЛНА МЕДИЦИНА РЕХАБИЛИТАЦИЯ ЗДРАВЕ

ГОДИНА XIV  
ISSN – 1312-0417

БРОЙ 4/2015

## **PHYSICAL MEDICINE REHABILITATION HEALTH**

**ГЛАВЕН РЕДАКТОР:** доц. д-р Марин МАРИНКЕВ  
**EDITOR in CHIEF:** Assoc. Prof. Marin MARINKEV

**ЗАМ. ГЛАВЕН РЕДАКТОР:** проф. д-р Елена ИЛИЕВА  
**ASSOC. EDITOR:** Prof. Elena ILIEVA

**РЕДАКЦИОНЕН СЪВЕТ / EDITORIAL COUNCIL:**  
доц. д-р Асен АЛЕКСИЕВ, доц. д-р Иван ЧАВДАРОВ, д-р Любина ВЕСЕЛИНОВА /секретар/  
Assoc. Prof. Assen ALEKSIEV, Assoc. Prof. Ivan CHAVDAROV, Dr. Lyubina VESSELINOVA /secretary/

**РЕДАКЦИОННА КОЛЕГИЯ / EDITORIAL BOARD:**  
**Почетни членове:** проф. д-р Димитър КОСТАДИНОВ, проф. Васил МАРИНОВ,  
д-р, проф. Костадин ЩЕРЕВ, д-р  
**Emeritus Members:** Prof. Dimitar KOSTADINOV, Prof. Vasil MARINOV,  
Prof. Kostadin SHTEREV

### **Редовни членове / Members:**

д-р Татяна АНГЕЛОВА  
доц. д-р Георги ГЕОРГИЕВ  
проф. д-р Младен ГРИГОРОВ  
доц. д-р Марина ДИКОВА  
проф. д-р Андрей ЙОТОВ  
доц. д-р Коста КОСТОВ  
проф. д-р Иван МИЛАНОВ  
доц. д-р Яна ПЕТРОВСКА  
проф. д-р Рашо РАШЕВ  
доц. д-р Майя РЯЗКОВА  
доц. д-р Тодор ТОДОРОВ  
доц. д-р Владимир ХРИСТОВ

Dr. Tatyana ANGELOVA  
Assoc. Prof. Georgi GEORGIEV  
Prof. Mladen GRIGOROV  
Assoc. Prof. Marina DIKOVA  
Prof. Andrey IOTOV  
Assoc. Prof. Kosta KOSTOV  
Prof. Ivan MILANOV  
Assoc. Prof. Yana PETROVSKA  
Prof. Rasho RASHEV  
Assoc. Prof. Maiya RYAZKOVA  
Assoc. Prof. Todor TODOROV  
Assoc. Prof. Vladimir CHRISTOV

Prof. Alain DELARQUE, Prof. Calogero FOTI, Prof. Franco FRANCHIGNONI,  
Prof. Alessandro GIUSTINI, Prof. Christoph GUTENBRUNNER, Prof. Marta IMAMURA,  
Prof. Zeki KARAGULLE, Prof. Crt MARINCEK, Prof. Xanthi MIHAIL,  
Prof. Guy VANDERSTRAETEN

АДРЕС: София, 1618 бул. „Овча купел” 2-в, тел.: +35929555273, факс: +35928553023  
Банкова сметка – ЮРОБАНК И ЕФДЖИ, клон-1 София, IBAN: BG85BPBI79401046711201; BIC: BPBIBGSF  
www.bgsprm.com; e-mail: office@bgsprm.com  
Печат: ПРИМА ПРИНТ ЕООД, СОФИЯ

СЪДЪРЖАНИЕ

Година XIV, Брой 4 / 2015 г.

**Обзори**

МЕХАНИЗМИ НА АУРИКУЛАРНАТА ТЕРАПИЯ  
ПРИ ЛЕЧЕНИЕТО НА НАДНОРМЕНО ТЕГЛО И  
ЗАТЛЪСТЯВАНЕ - Г. Георгиев 3

**За практиката**

КЛИНИЧНО ПРОУЧВАНЕ ОТНОСНО ЕФЕКТИВНОСТТА  
НА ВИСОКОИНТЕНЗИВНОТО ЛАЗЕРНО ЛЪЧЕНИЕ  
КАТО НЕИНВАЗИВНА ЛАЗЕРТЕРАПИЯ ПРИ  
ГОНАРТРОЗА – А. Ангелова, Е. Илиева 10

АКУПУНКТУРАТА КАТО НАДГРАЖДАЩО ЛЕЧЕНИЕ  
ПРИ ПАЦИЕНТИ С ПОДОСТРА БОЛКА ПРИ ЛУМБО-  
САКРАЛЕН СИНДРОМ – С. Радева, М. Дикова, В.  
Мацанова, Т. Илиева 16

ФИЗИКАЛНАТА ТЕРАПИЯ ПРИ ПАЦИЕНТИ СЛЕД  
ОПЕРАТИВНО ЛЕЧЕНИЕ НА СИНДРОМ НА  
КАРПАЛНИЯ КАНАЛ – Е. Владева, В. Несторова,  
И. Тодоров, И. Мирчева 20

ФИЗИКАЛНАТА ТЕРАПИЯ – ЗАДЪЛЖИТЕЛЕН ЕТАП  
ОТ КОМПЛЕКСНОТО ЛЕЧЕНИЕ НА БОЛНИ С  
ДЕГЕНЕРАТИВНИ СТАВНИ ЗАБОЛЯВАНИЯ –  
Т. Ангелова, М. Стойчева 26

**Информационен дневник**

IN MEMFORIAM - доц. Цанко Пеевски 31

**Редакционни**

ИЗИСКВАНИЯ КЪМ АВТОРИТЕ ЗА ПРЕДСТАВЯНЕ НА  
МАТЕРИАЛИ ЗА ОТПЕЧАТВАНЕ 32

CONTENT

2015, Volume 14, Issue 4

**Reviews**

AURICULAR THERAPY MECHANISMS IN THE  
TREATMENT OF OVERWEIGHT AND OBESITY – G.  
Georgiev 3

**In terms of practice**

CLINICAL STUDY ON THE EFFECT OF HIGH INTENSIVE  
LASER THERAPY (HILT) AS A NON-INVASIVE METHOD  
OF TREATMENT IN GONARTHROSIS – A. Angelova,  
E. Ilieva 10

ACUPUNCTURE FOR UPGRADING TREATMENT OF  
PATIENTS WITH LUMBOSACRAL SYNDROME AND  
SUBACUTE PAIN – S. Radeva, M. Dikova, V. Macanova,  
T. Ilieva 16

PHYSICAL THERAPY OF PATIENTS AFTER POST  
OPERATIVE TREATMENT OF THE CARPAL-TUNNEL  
SYNDROME – E. Vladeva, V. Nestorova, I. Todorov,  
I. Mircheva 20

PHYSICAL THERAPY: AN OBLIGATORY STAGE OF THE  
COMPREHENSIVE TREATMENT OF PATIENTS WITH  
DEGENERATIVE JOINT DISEASE – T. Anguelova,  
M. Stoycheva 26

**Information journal**

IN MEMORIAM – Assoc. Prof. Tsanko Peevski 31

**Editorials**

REQUIREMENTS TO THE AUTORS FOR SUBMITTING  
MATERIALS FOR PUBLISHING 32

## AURICULAR THERAPY MECHANISMS IN THE TREATMENT OF OVERWEIGHT AND OBESITY

**G. Georgiev**

*Department of Physical Medicine and Rehabilitation, Military Medical Academy, Sofia*

### ABSTRACT

*There is phylogenetic and embriogenetic evidence showing that the brain stem is a complex network of neurons that have a predominant effect on the neuronal activity of a number of stem and subcortical nuclei associated with the metabolism, motivation and appetite suppression of patients with alimentary obesity. Ear acupuncture involves a number of neuromodulator mechanisms that are well conserved phylogenetically.*

*In fact, N.trigemini, N.vagus and C<sub>2</sub> – C<sub>4</sub> cervical roots play a main role in transmitting the effects of auriculopuncture. Branches of these nerves are abundant in the outer ear and are susceptible to mechanical stimulation. The neurophysiological data available allows us to formulate some of these corrective effects of the sensory systems in the brainstem on the upcoming data flow after auriculopuncture: reactions of the autonomous centers located in the reticular formation; reactions of the hypothalamic centers connected with thermoregulation, hunger, satiation, thirst, water-salt exchange; reactions of the hypothalamic-pituitary system on neuroendocrine regulation; effect or response of the hypothalamic centers of SNS and PNS through the reticulospinal connections of the segment apparatus of the spinal cord as well as by means of the peripheral nerves of the relevant organs. Based on all these, a conceptual model has been established for the effect of auricular reflexotherapy on obese patients.*

**Key words:** *auricular therapy, mechanisms of hunger, brain stem and nuclei, thalamus, hypothalamus*

---

## CLINICAL STUDY ON THE EFFECT OF HIGH INTENSIVE LASER THERAPY (HILT) AS A NON-INVASIVE METHOD OF TREATMENT IN GONARTHROSIS

**A. Angelova, E. Ilieva**

*St. George University Hospital, Plovdiv, Bulgaria*

### ABSTRACT

**Introduction:** *High Intensive Laser Therapy (HILT) is a method of treatment mostly applied in surgery. There are only few articles about clinical studies in this area. The results have provoked interest in the possibilities for non-invasive treatment of pathologic processes in the human body by using lasers of type IV.*

**Objective:** *This is a pilot, randomised clinical study about the effect of high intensive laser therapy in knee osteoarthritis (OA of the knee).*

**Material and Methods:** *60 patients (aged between 39 and 83 years) with (clinically and radiographically proved gonarthrosis) OA of the knee were included in the study. They were randomised in two groups: a therapeutic (test) one (n=30, 65,70±9,23), where the patients were treated with HILT; and a control group (n=30, 64,70±12,66), where Sham-laser was applied. Both groups had seven sessions of treatment. VAS was used to assess the pain before and after the therapy; the functional mobility of the knee was assessed via routine measurement methods (goniometry, centimetry).*

**Results:** *The pain levels measured by VAS decreased significantly in both groups after seven days of treatment, but the results were better in the test one (p<0,001). Functional measurement of the knee showed significant improvement in both groups, more noticeable in the therapeutic one.*

**Conclusion:** *The results after seven days of treatment show more intensive and cumulative*

*effect after the application of high intensive laser therapy in comparison to Sham-laser. This is the reason why HILT can be applied as a method of choice in the treatment of gonarthrosis.*

**Key words:** *osteoarthritis of the knee, physical therapy, physical modalities, high intensive laser therapy, analgesia*

---

## **ACUPUNCTURE FOR UPGRADING TREATMENT OF PATIENTS WITH LUMBOSACRAL SYNDROME AND SUBACUTE PAIN**

**S. Radeva, M. Dikova, V. Macanova, T.Ilieva**

*Physiotherapy and Rehabilitation Clinic, Tsaritsa Yoanna University Hospital – ISUL, Sofia*

### **ABSTRACT**

#### ***Purpose of the Research***

*To study the effect of acupuncture completed after conventional physiotherapy for prolonging the anti-pain effect on patients with lumbosacral syndrome and subacute pain.*

#### ***Material and Methodology***

*For a two-year period, 30 patients were studied: 16 male and 14 female aged 32 – 60. Group A comprised 15 patients with implemented physiotherapy at the lumbosacral area (lidocaine electrophoresis and lowintensive magnetic field) and subsequent acupuncture at the biological active points of the meridians of bladder, governing vessel and gall-bladder in the course of 10 working days. Group B included 15 patients who had the same sort of physiotherapy but with no subsequent acupuncture. At the beginning of the acupuncture course, upon its completion and three months later, the following were measured: pain intensity (by VAS, 100 mm VAS) and the variation (in cm) of lumbal flexibility upon bending down at the maximum. Also, a modified Schober test was completed.*

#### ***Outcomes***

*Significant improvement was noticed in the studied indices of Group A, especially during the third month after the acupuncture course, in contrast to Group B, where no acupuncture had been applied.*

#### ***Conclusion***

*Based on the reported results, the authors recommend the implementation of an acupuncture course after physiotherapy for prolonging the anti-pain effect of patients suffering from lumbosacral syndrome with subacute pain.*

---

## **PHYSICAL THERAPY OF PATIENTS AFTER POST OPERATIVE TREATMENT OF THE CARPAL-TUNNEL SYNDROME**

**E. Vladeva<sup>1</sup>, V. Nestorova<sup>1</sup>, I. Todorov<sup>1</sup>, I. Mircheva<sup>2</sup>**

<sup>1</sup>*Department of Physiotherapy, Rehabilitation, Sea Treatment and Occupational Diseases, Professor Dr. Paraskev Stoyanov Medical University, Varna*

<sup>2</sup>*Department of Social Medicine and Health Organisation, Professor Dr. Paraskev Stoyanov Medical University, Varna*

### **ABSTRACT**

*Carpal-tunnel syndrome (CTS) is a frequent pathology that can lead to functional disability in employees. The right approach to the treatment of this disease is of great importance for the hand function recovery, as physical therapy plays a significant role both in conservative and surgical treatment.*

*The purpose of this research is to study the impact of a complex of physical factors on the recovery of patients who have undergone surgical treatment for CTS.*

*The study is conducted among 27 patients, women aged between 28 and 71 years /47,9/, divided into two groups – an experimental group (EG) and a control group (CG). EG patients received 12 days of physical therapy, including wax therapy, ultrasound treatment and traditional exercise program. On the other hand, CG patients did not receive a physical therapy treatment. Both groups were tracked in three stages – on the 3rd-5th day (for EG), after removing the stitches and on the 12th (for CG) and 30th days (for CG and EG) after removing the stitches.*

*The analysis of the results shows that the studied EG patients recover much more efficiently and faster. The positive effects of the physical therapy methods are also discussed.*

*Applying physical therapy is of great importance for the fast recovery of the hand functions in the postoperative period for patients with CTS. It also improves their quality of life and working capacity, thus leading to a significant socio-economic impact.*

**Key words:** *Carpal tunnel syndrome (CTS), physical therapy, Boston Carpal Tunnel Questionnaire, socio-economic impact*

---

## PHYSICAL THERAPY: AN OBLIGATORY STAGE OF THE COMPREHENSIVE TREATMENT OF PATIENTS WITH DEGENERATIVE JOINT DISEASE

*T. Anguelova, M. Stoycheva*

*National Specialised Hospital for Physical Therapy and Rehabilitation, EAD, Sofia*

### ABSTRACT

**Objective:** *To present the opportunities of the comprehensive physical therapy concerning the treatment of degenerative joint disease (DJD) in subacute or chronic stage. 80 patients with degenerative joint conditions were studied: 59 women and 21 men at the average age of  $62 \pm 5,3$  years, divided in two groups: the first group comprising 35 patients with clinical and radiographic knee and hip osteoarthritis, and the second group consisting of 45 patients suffering from lumbar and cervical spondylosis.*

**Methodology:** *Electrotherapy – a procedure conducted by means of electric current (TENS) at the most painful sites (trigger points) for 15 minutes per day, 12 procedures a course; Thermotherapy - application of Pomorian lye of  $37-38^{\circ}\text{C}$  for 20 minutes a day, 12 procedures; Kinesitherapy – an individual complex of exercises including post isometric relaxation to reduce pain and increase the range of motion, suspension and pulley therapies – 2 times a day (in the morning and in the afternoon), 20 minutes per day.*

**Outcomes:** *The conducted treatment of patients suffering from spondylosis can lead to improvement in the cervical spine flexion and the cervical spine lateral flexion as well as in the cervical rotation. The Forestier's disease 2 indices are normalised with 50% of patients with cervical osteoarthritis. With the patients suffering from lumbar osteoarthritis, the Thomayer's symptom indices were increased with an average of  $8,0 \pm 2,0$  cm; with 80 % of the patients in this group, the indices of Thomayer's symptom were normalised and lateral flexion was improved with an average of  $4,0 \pm 1,0$  cm.*

**Conclusions:** *The applied therapeutic comprehensive treatment has led to a positive clinical and functional impact on patients from both studied groups with degenerative joint disease in subacute and chronic stage. The positive effect of the rehabilitation program is due to the impact on the pathogenetic pain mechanism. The early start of regular rehabilitation in specialised hospitals could result in establishing durable motor skills leading to muscle mass preservation, functionality of the joint-ligament apparatus and delay in terms of disease evolution.*

**Key words:** *osteoarthritis, electrotherapy, kinesitherapy, rehabilitation*

