Abstracts of

18th Symposium of Polish Rehabilitation Society

12th-14th October 2017, Rzeszow, Poland

New quality and functionality in spastic hand rehabilitation - dynamic orthoses

Jacek Czarnek
Przychodnia Lekarzy Wojskowych w Warszawie

Background. It is estimate that each year in Poland there is approximately 60,000 new incidents
of stroke, which is the third most common cause of disability in people over 40 years. Statistically 55-75% of patients who have suffered from stroke symptoms for more than 6 months still have the paresis of upper limb which significantly reduces or limits its usage.
Objective. To present a new approach to the physiotherapy of patients with upper limb paresis utilizing the function of the hand by using dynamic orthosis.
Method. A review of the literature and critical analysis of knowledge in this field.
Results. The purpose of using dynamic orthoses is functional wrist setting and supporting the extension movement of the fingers. The therapy with dynamic orthosis enables the intensive exercise of the upper extremity with the option of grasping, in both early and chronic phases of the disease. Indeed, exercises performed with chronic patients have statistically increased the range of active motion in the limb and its control. They have equally affected the reduction of muscle tone.
Conclusions. Results show that the intensive training program with dynamic hand orthosis, assuming a large number of repetition, has indeed significantly improved the limb function of patients after barely 1-2 weeks of therapy duration.

Key words: hand, spasticity, upper limb rehabilitation, stroke, paresis, dynamic orthosis

The diagnosis and current therapeutic approach in autoimmune encephalitis in children and young people.

Elżbieta Czyżyk
Klinika Neurologii Dziecięcej, Kliniczny Szpital Wojewódzki Nr 2 im. Św. Jadwigi Królowej w Rzeszowie

BACKGROUND: Advances in diagnostic of autoimmune encephalitis in children and young people in the past 10 years have led to identification of new syndromes and biomarkers, such as antibodies against cell-surface antigens and intracellular antigens.

METHODS: This study presents the clinical cases of autoimmune encephalitis in children treated in Child Neurology Department in Rzeszow. The aim of this study was assessment of usefulness of diagnostic criteria for possible, probable and definite autoimmune encephalitis in a diagnosis and a treatment in children and young people.

CONCLUSIONES: 1. Children with signs and symptoms of autoimmune encephalitis require a complex differential diagnosis. 2. Use of diagnostic criteria for possible, probable and definite autoimmune encephalitis lead to establish an early diagnosis and use prompt immunotherapy. 3. Early immunotherapy and implementation second line therapy if a patient fails first line therapy improve outcomes.

Key words: autoantibodies, autoimmune, encephalitis, children, therapy

(Kinesio)Taping- what say evidence based medicine?

Barbara Dobies-Krześniak [1, 2], Beata Tarnacka [1, 2]
[1]*MCR Stocer, WUM*[2]

Introduction: Taping as a injury-prevention and rehabilitation method is socially widely recognised and accepted. But is it effective? The objective was to gather recent evidence based medicine publications on (kinesio) taping for different purposes.

Methods: A literature review was conducted in databases: PubMed, EMBASE, Cochrane. Descriptors used : kinesiotaping, kinesio taping, kinesio tape, kinesiotape, athletic tape, orthotic tape. All systematic reviews till 2016, randomised control tiles control trials and clinical studies later on focused on the use of kinesio taping in prevention and treatment were included.

Results: 12 reviews and metaanalis on kinesiotaping only were found, 9 review papers including kinesiotaping as a treatment option and 45 papers from 2016 including randomised control trials, control studies and clinical studies.

Conclusions: From reviews and metaanalisies: small number of low quality randomised control trials with relatively small samples sizes have been published, meta-analysis is limited by the great heterogeneity of the employed methods and results in the studies. From recent studies: good as a stabilisation method, good but not better the compression in limfoedema, poor analgesic and muscles activation method.

Key words: kinesiotaping, taping

Differences in social barriers of patients with cervical and thoracic spinal cord injury

Justyna Frasuńska [1,2], Beata Tarnacka [1,2], Krzysztof Wasiak [2]
[1]*Warszawski Uniwersytet Medyczny Klinika Rehabilitacji,* [2]*Mazowieckie Centrum Rehabilitacji STOCER*

Introduction. Early rehabilitation after spinal cord injury(SCI) improves quality of life. After discharge the rehabilitation center, patients experience daily living problems.

Material and method. The study included 65 patients with SCI. Among them 34 were cervical spinal cord injury(SCI-C) and 31 - thoracic spinal cord injury(SCI-Th). Was used medical records, scale SIP68 and proprietary survey.

Results. SCI patients had restricted social participation. Patients after SCI do not used public transport (70% patients with SCI-C, 74% patients with SCI-Th); they have not worked (85% patients with SCI-C, 80% patients with SCI-Th). More of them resides in the village. Financial situation deteriorated after SCI in 3/4 of individuals. More than 60% patients with SCI-C and 50% patients with SCI-Th resided permanently at home. Their disability caused poor social participation. Worse off were patients with SCI-C. 90% patients with SCI-C and 70% patients with SCI-Th participated in social and public life. The cultural life of these patients is similar. Abouth 40% patients with SCI-C and 50% patients with SCI-Th did their hobbies for shorter periods of time. More than 60% patients with SCI-C and 20% patients with SCI-Th have given up taking care of personal business affairs (paying bills, working on budget). Despite the continuous development of the architectural infrastructure, more than 2/3 of individuals noticed the architectural barriers in their environment.

Conclusions
poor participation in social life of patients with SCI-C;
bigger social isolation of patients with SCI-C
poor social participation of patients from the village
small job opportunities for patients with SCI

Key words: social and environmental restrictions (barriers) after SCI

Use of static posturography with head movements for vestibular lesions assessment.

Magdalena Janc [1], Ewa Zamysłowska- Szmytke [1], Mariola Śliwińska- Kowalska [1]
[1]*Instytut Medycyny Pracy im. prof. Jerzego Nofera w Łodzi*

Objective: The head movements added to static posturography activates the vestibular system, allowing to reveal the influence of the vestibular deficit on body posture.

The purpose. To determine the sensitivity of a head shake modification to the static posturography protocol in identifying the patients with unilateral, peripheral vestibular hypofunction and to differentiate people with compensated and non-compensated lesions.

Materials / Methods: Three groups of subjects were included to the study: 1) NS- 42 persons (54.1 years) with dizziness and uncompensated unilateral peripheral vestibular lesions in videonystagmography testing; 2) S- 25 people (52.7 years) with compensated unilateral loss and 3) Z- 40 healthy people (30.5 years).

The neurotological examination and questionnaires were performed. Neurocom static posturography considered 4 trials: 1 eyes open, firm; 2 eyes closed firm; 3 eyes open foam; 4 eyes closed, foam. The study was conducted twice, in the second series the head movements (head velocity 46.5°/s) were added.

RESULTS: No statistically significant differences of mean sway velocities were found between groups in static posturography tests. In HS-posturography statistically significant differences were found between the healthy group and the vestibular groups for 1-4 trials. Moreover, the first test (firm, eyes open) revealed significant ($p < 0.05$) differences of mean sway velocities between the group of patients with compensated (S) and non-compensated (NS) defects.

Conclusions: The HS-posturography study may be useful as more sensitive test for the detection of abnormal vestibular responses as compared to the standard posturography. HS-posturography may be used to differentiate people with compensated and non-compensated lesions.

Key words: Posturography, HS- Posturography, imbalances

THE SIGNIFICANCE OF STRESSORS FOR THE DEVELOPMENT OF BRAIN OF PREMATURY INFANTS IN THE CONTEXT OF EARLY INTERVENTION

Julia Kania
Ośrodek Rehabilitacji Dziennej dla Dzieci, Medicus w Opolu

Introduction. The young developing brain is very plastic, and therefore particularly susceptible to unfavorable factors. Exposure to pain and stress in Neonatal Intensive Care Unit is a daily routine for all babies born prematurely.

The development of neuroimaging brain methods, such as functional magnetic resonance imaging (fMRI), allowed observe stress-induced negative and often irreversible structural and process changes in various areas of the brain.

Exposure to a greater number of stressors is closely associated with decrease frontal and parietal cortex, limbic system and hippocampus.

With excessive stimulation, the central nervous system can not properly organize itself.

Prospective studies on preterm newborns below 32 TC show a correlation between the severity of stress in the early months of life and problems in early childhood and adolescence such as ADHD, mood disorders, cognitive and social deficits, and a number of abnormalities in sensory integration.

The aim of my speech is to show that the quality of the first experiences shapes the development of the child's brain in a decisive way influencing the future development potential of the child.

Summary. Discussing the nature of the changes in the developing newborn's brain, caused by negative stressors, helps to understand the importance of quality and purpose of the therapeutic actions of the whole team of neonatal specialists in Neonatal Intensive Care Unit.

Unnecessary or too intensive therapy can increase the level of stress in the newborn and complete the development of negative changes in the central nervous system.

Detailed neurodevelopmental evaluation, accurate diagnosis and properly programmed physiotherapeutic activities in early intervention will allow for optimal use of the potential of immature, developing brain in the future.

The importance of the interpersonal communication and the specificity of the medical language for the results of rehabilitation in hospitalized patients

Sylwia Krukowska [1], Kamil Koszela [1], Marta Woldańska-Okońska [1]
[1]*Klinika Rehabilitacji i Medycyny Fizykalnej, Uniwersytecki Szpital Kliniczny im. Wojskowej Akademii Medycznej w Łodzi*

"Medical communication remains an underestimated area in Poland." The right way to communicate with patient indicates the professionalism of medical staff and results in success in therapy. The great role of communication between patient and medical staff is evidenced by the fact that in order to deepen the topic and create optimal communication patterns the Polish Medical Communication Association was established.

Discussion on communication skills standards in medical education is offered at medical universities and is a part of the work involved in shaping the competence of medical staff and its professional preparation. How to talk to a patient and how to communicate good and bad news - these are the tasks that should be carried out at every level of medical education. This report is intendedto provide an area of research on language of medical communication in the firld of rehabilitation, that will be undertaken in the coming years. The importance of communication in treatment and rehabilitation process will be discussed, which plays a vital role in motivating and fulfilling the will of patient.

It is planned to conduct research in the Department of Rehabilitation and Physical Medicine of the Medical University of Lodz by questionnaires. They will include questions that will allow you to analyze the medical language as a factor helping or hindering proper communication with patients.

The research is supposed to create communication patterns for medical staff during treatment and rehabilitation, which will improve the quality of life of patients, and satisfaction of therapists

at work.

Key words: język, rehabilitation, communication

The role of Physical and Rehabilitation Medicine specialists in rehabilitation of elderly persons

Jolanta Kujawa
Klinika Rehabilitacji Medycznej, Uniwersytet Medyczny w Łodzi

The role of Physical Medicine and Rehabilitation specialists in realization of rehabilitation needs of ageing persons in various clinical cases was published in series of evidence based medicine papers editored by members of Professional Practice Committee of European Union of Medical Specialists. The aim of the committee is action for development of specialist medical practice, which is in line with biopsychosocial model in a comprehensive rehabilitation program, promotedin Poland since 1950s.

In the period of dynamic changes in organizational standards of medical rehabilitation, barriers to the development of comprehensive rehabilitation in Poland must be considered. PRM specialists should be involved in identifying rehabilitation needs of the elderly and assess their rehabilitation potential and risk of disability. The role of a PRM specialist in the process of comprehensive rehabilitation comprise prevention of disability, including modification of risk factors of falls and fractures resulting therefrom, as well as activities aimed at elevating the level of physical activity of the elderly, their functioning profile and optimizing the quality of life.

From the perspective of the International Classification of Functioning, Disability and Health, the important task of the rehabilitation team, coordinated by a PRM specialist, is to improve the activity and participation in everyday environment, considering the intervention undertaken based of the assessment of contextual factors.

The detailed recommendations also include provision of aids and modern technologies to support function and the use of virtual reality in rehabilitation of elderly people.

Key words: rehabilitation needs, elderly persons, comprehensive rehabilitation

Physical rehabilitation in patients with an implanted cardiac pacemaker

Włodzisław Kuliński [1,2]
[1] *Klinika Rehabilitacji WIM w Warszawie,* [2]*Zakład Medycyny Fizykalnej Uniwersytetu JK w Kielcach*

Background. In Poland, the number of patients with an implanted cardiac pacemaker equals several hundred thousand and many of them undergo physical therapy and rehabilitation due to co-morbidities.

Material and methods. Sample electrocardiograms of each mode of work of pacemakers were presented. A cardiac pacemaker is sensitive to magnetic fields of high strength and electromagnetic fields generated by devices used in physical therapy.

Results. Short-wave diathermy may cause interference if the source of waves is located near the pacemaker site. Procedures using diathermy may inhibit the pacemaker's pulse and cause heat damage to the generator (due to increased temperature). When a pulsed low-frequency magnetic field is used, the metal parts do not overheat, but there is a possibility of disturbances in the pacemaker's function and thus it is recommended not to perform such procedures on the chest. The use of galvanic current, iontophoresis, and low and medium frequency currents is possible outside the area of the chest. There are no contraindications to light therapy and heat therapy. Electrical stimulation in patients with peripheral neuron damage may be used as long as special safety measures are followed. The paper shows sample Holter monitor readings obtained when patients underwent various physical therapy procedures. It also presents difficult cases of patients with an implanted cardiac pacemaker who require physical therapy and rehabilitation.

Conclusions. Most physical therapy procedures may be performed in patients with a pacemaker, but on condition that appropriate safety principles are followed.

Key words: mplanted cardiac pacemaker , physical rehabilitation

Hydrobalneological methods in rehabilitation

Włodzisław Kuliński [1,2]
[1] *Klinika Rehabilitacji WIM w Warszawie,* [2]*Zakład Medycyny Fizykalnej Uniwersytetu JK w Kielcach*

Introduction: Therapeutic methods combining balneology and hydrotherapy have been used in treatment and prevention for along time. Their influence on the skin, based on mechanical, thermal, and hydrostatic stimuli, results in a reaction of the internal organs as well as the whole body. The most important effects of such procedures are changes within the cardiovascular system.

Material: The analysis focused on the influence of water jets at alternating temperatures in the treatment of functional cardiovascular disturbances with the use of non-invasive methods of autonomic nervous system function work-up based on the analysis of heart rate variability (HRV). The effect of the jets on heart rate and blood pressure was observed in 50 patients with first-degree hypertension, which was accompanied by radioelectrocardiographic assessment of the influence of underwater massage and carbonic acid baths on the cardiovascular system in patients undergoing these procedures due to Da Costa's syndrome.

Results: 1. Water jets at alternating temperatures successfully modulate the tension within the autonomic nervous system and stimulate its parasympathetic part. 2. Underwater massage is gentle procedure and does not cause significant changes in heart rate and RECG tracing. 3.Carbonic acid baths decrease autonomic nervous system excitability.

Conclusion: The study results show a possibility of regulating autonomic nervous system function with the use of selected balneological and hydrotherapeutic methods and thus influencing the body's functional level which is most appropriate for the requirements created by the body's internal and external environment

Key words: hydrobalneological methods , treatment, rehabilitation

Returning to work after stroke

Andrzej Kwolek
Wydział Medyczny UR, Instytut Fizjoterapii

Returning to work people with disabilities who are of working age is a real success of rehabilitation and its crowning. It is known that stroke is one of the most common and severe consequences of cardiovascular diseases, and is a major cause of disability and loss of ability to work. At the same time, an incidence of stroke in the working-age population is increasing, and according to current data, 25% of stroke patients is under 60 years old. That is why returning to work after stroke is considered an important issue which should be carefully analysed.
Aim: to present up to date data concerning returning to work after stroke and factors affecting it in Poland and abroad
Methods: A review of national and foreign literature from 2007-2017. The following databases were searched: PubMed, Science Direct, Termedia, Polska Bibliografia Lekarska.
Results: The literature review shows that the return to work of people after stroke is varied and ranges from 14% to 73%. So is the average time of returning to work since the onset of stroke, from 3 months to 3 years. The return to work is determined by the patient's functional status on discharge from the hospital, the ability to move (driving a car, using public transport), a friendly working environment and positive attitude of employers and co-workers. The factors that lower the chances of returning to work are cognitive and speech disorders, rapid fatigue and profession type (hard physical work). In Poland the majority of people who are professionally active before the stroke ceases to work and is retired after the stroke.

Key words: brain vascular diseases, professional activity, work, source of income

Assessment of rehabilitation effectiveness in a child with Down syndrome and decreased manual dexterity – case study

Iwona Maciąg-Tymecka [1,2], Patrycja Lisiecka [1]
[1]*Wyższa Szkoła Fizjoterapii we Wrocławiu,* [2]*Centrum Rehabilitacji Kro Po Kroku w Gdańsku*

Introduction: Apart from characteristic physical appearance children with Down syndrome are also characterized by: muscular hypotonia, excessive ligament system flexibility, slower development of mental features, fine and gross motility. **Objective:** The aim of this work is to present and assess the effectiveness of a 6-week therapy plan, individually adjusted to child's dysfunctions and aimed to strengthening child's muscular tension, teaching correct movement patterns, development of manipulation, visual-motor coordination and correct three-finger writing grip. **Methodology:** Study subject was 11 years old girl with Trisomy 21. Measurement methods used to assess rehabilitation effectiveness were GMFM-88 scale, Gunzburg PAC Inventory in the adaptation of Witkowski and Text Box and Block. Applied therapeutic methods based on a 6-week therapeutic plan, which included: PNF method, massage, exercises intended to improve upper limb dexterity. **Results:** Improvement in all categories of GMFM-88 scale was observed: A: lying and rotations - 4%, B: sitting: - 8.4%, C: crawling and kneeling - 4.7%, D: standing - 7.7%, E: walking, running, jumping - 4.2%. There was a score of 5.8% improvement in general. Gunzburg PAC-1 Inventory showed improvement in 3 out of 4 categories. Box and Block test revealed an improvement in both: dominant and the non-dominant hands. The child improved score by 11 more properly moved blocks with its right hand and 5 more with left hand. **Conclusion:** Individually adjusted therapeutic plan was found to be effective in terms of manual dexterity and motoric stimulation. Improvement was observed in both: fine motor skills and gross motor skills.

Key words: Keywords: manual dexterity, motility, Down syndrome

Analysis of eating habits among people practicing in the gym.

Maria Majcher [1], Bartłomiej Szrajber [2], Agnieszka Zawadzka [1], Ireneusz Pieszyński [1], Tomasz Adamczewski [1], Jolanta Kujawa [1]
[1]Klinika Rehabilitacji Medycznej, Uniwersytet Medyczny w Łodzi, [2]Społeczna Akademia Nauk w Łodzi

Introduction.The positive impact of physical activity on health has been shown. Triggering endorphins under the influence of physical exercise improves the well-being. However, too much load on the body pose a risk of nutritional deficiencies. The study analyzed the dietary preferences, diet and dietary supplementation in conditions of increased physical activity and the assessment of the level of knowledge respondents on basic nutrition recommendations for physically active people.

Material and methods.The study covered 100 persons training at one of gyms (57 men and 43 women). The study was conducted using a proprietary questionnaire survey consisting of 53 questions on physical activity, diet and dietary supplementation. In statistical analysis descriptive statistics, parametric and nonparametric tests and alfa=0.05 were used .

Results.The level of nutritional knowledge of respondents was assessed as good. The vast majority of respondents are nourished according to the recommendations of the Swiss diet pyramid. More than half of the respondents declared dietary supplements, the most popular of which were vitamin and mineral supplements for both sexes. Men often also benefit from BCAA and creatine, which may result from increased body weight training and additional physical activity, the rates of which in men are significantly higher than those of women.

Conclusions. 1. Dietary habits analyzed in both groups are on the same level and do not differ substantially from the principles of nutrition contained in the Swiss pyramid nutrition for athletes. 2. Men pay more attention to the calorific value and content of individual macronutrients in the diet.

Key words: dietary habits, physical activity, gym training

Rehabilitation of a patient with coexistent multiple sclerosis and Guillain- Barré Syndrome: a case report. Short title: Case report GBS MS

Piotr Olszewski [1], Małgorzata Szuber [1], Małgorzata Kusiak-Kaczmarek [1], Jarosław Tomaszewski [2], Joanna Jabłońska-Brudło [2], Dominika Szalewska [2]
[1]Klinika Rehabilitacji Uniwersyteckie Centrum Kliniczne, [2]Klinika Rehabilitacji Gdański Uniwersytet Medyczny

A 28-year old female patient diagnosed with multiple sclerosis 2 years prior, treated with Plegridy, reported to the hospital with pain and weakness of four limbs and numbness of feet and calves. The symptoms aggravated over a couple of days. Last dose of interferon was administered 10 days earlier. The patient was hospitalized in Neurology Clinic UCC, with four limb flaccid paresis (predominantly proximal), hyperesthesia of four limbs and face, bilateral Lasegue sign, weakened stretch reflexes primarily in lower limbs.

The neurophysiological tests showed nerve demyelination. A lumbar puncture showed albuminocytologic dissociation. Immunoglobulin was administered. Later her symptoms aggravated, tetraparesis intensified, stretch reflexes vanished, bilateral facial nerve paresis, strong root pain and tachycardia appeared. Based on the clinical outlook the patient was diagnosed with GBS, interferon was discontinued, gabapentin and beta blockers were administered. A follow-up electroneurogram showed further nerve degradation.

The patient was transferred to the Rehabilitation Clinic for further treatment. Upon admission the patient was bedridden, entirely dependent on others in everyday activities (Barthel Index 2, Rankin Scale 5). She suffered from flaccid tetraparesis (Lovett 2/1), bilateral facial nerve paresis, bilateral Lasegue sign at 45°, absent stretch reflexes, severe face and limb skin hyperesthesia. A 300mg/day dose of Pregabalin was administered.

A comprehensive rehabilitation plan was implemented, which was further evaluated and modified in accordance to the patient's need and abilities.

After 12 weeks of rehabilitation the patient is able to walk using two crutches under supervision. Pain and sensory abnormalities have withdrawn. MS symptoms have not aggravated.

Key words: Guillain- Barré Syndrome, multiple sclerosis, flaccid tetraparesis, rehabilitation

MOTOR ACTIVITY OF PEOPLE DIAGNOSED WITH MULTIPLE SCLEROSIS

Lidia Perenc [1], Adam Perenc [2], Halina Bartosik-Psujek [1,3]
[1]Instytut Fizjoterapii, Uniwersytet Rzeszowski, [2]Klinika Neurologii z Pododdziałem Leczenia Udaru Mózgu, Kliniczny Szpital Wojewódzki Nr 2 im. Św. Jadwigi Królowej, [3]Klinika Neurologii z Pododdziałem Leczenia Udaru Mózgu, Kliniczny Szpital Wojewódzki Nr 2 im. Św. Jadwigi Królowej

Introduction. The aim of the examination is to recognize the factors influencing the motor activity of people with MS, and to identify the reason for avoidance of motor activity by the unassisted patients.

Material and methods. The method used was the CAWI method (Computer – Assisted Web Interview). 335 adults with MS filled in the on-line questionnaire available for 15 days (2017) on the TacyJakJa.pl website, by answering questions referring to age, gender, type of MS, its duration, intensity of the neurological symptoms and undertaken motor activity.

Results. 61% of the patients suffered from RR-MS. 36% had been afflicted by MS for more than 10 years. 73% of the examined were women. 34% of them were aged from 31 to 40. 50% experienced minimal neurological symptoms or had none. 54% of the patients performed exercise in medical facilities. 61% of the participants of the survey declared to perform exercise unattended. The non-active ones explained that they avoid exercise in fear of worsening their state and because of the fatigue. 75% of the patients performed other forms of activity (marches, walks, swimming). The non-active patients stated that they refrain from other activities because of the fatigue. It has been established that there is a relationship between motor activity and intensity of neurological symptoms ($p<0.05$), type of MS ($p=0.05$), and age ($p=0.05$).

Conclusions. The motor activity is influenced by age, type of MS, and intensity of neurological symptoms. Patients with MS avoid unattended activities in fear of worsening their state or the fatigue.

Key words: motor activity, multiple sclerosis

Assessment of the somatic development in preterm children at the beginning of school age

Lidia Perenc [1,2], Katarzyna Zajkiewicz [1,2], Justyna Drzał-Grabiec [1,2], Joanna Majewska [1], Barbara Cyran-Grzebyk [1], Katarzyna Walicka-Cupryś [1,2]
[1]Medical Faculty, Institute of Physiotherapy, University of Rzeszow, [2]Centre for Innovative Research in Medical and Natural Sciences, Medical Faculty of University of Rzeszow

Introduction. The aim of the study was to assess the somatic devolopment in preterm children at the beginning of school age.

Method and material. The study population consisted of 61 children, five to eight years old, who had been preterm born (6.38 years, Me=6 years, s=0.73). The study was conducted in the years 2015-2016. The anthropometric measurements were taken according to international anthropometric methodology. We included the following anthropometric parametres: weight, height, chest circumference, BMI, Rohrer's Index, Marty's Index , thickness of skinfolds in three points: over the triceps brachii muscle, in the umbiculus area, and at the scapula angle, as well as the general adiposity. For each of the children we calculated the z-score in reference to their age and gender. The reference values had been presented earlier.

Results. All the values of anthropometric features were statistically significantly lower in the study population than in the clinical control group ($p<0.05$).

Conclusions. Preterm children who are about to start school have significantly lower values of anthropometric features that characterize their growth process, the process of proportion differentiation and the nourishment state, and their body adiposity.

Key words: preterm children, growth, proportion differentiation, adiposity

EVALUATION OF THE PREVALENCE OF CERVICAL SPINE PAIN AMONG PROFESSIONAL GROUP OF NURSES

TOMASZ RIDAN [1], ANNA WŁOCH [2], ANETA SAJDAK [1]
[1]Zakład Kinezyterapii, Katedra Fizjoterapii, Akademia Wychowania Fizycznego, Kraków, [2]Zakład Rehabilitacji, Świętokrzyskie Centrum Onkologii, Kielce

The aim of the study was to investigate the prevalence of cervical spine among nurses.

Material and research method. The study covered a group of professionally active nurses working in a surgical and trauma ward, and nurses working in a palliative and pulmonary ward (aged between 20-65 years, 1-49 years of working experience). The study was based on a self-designed questionnaire, the McKenzie MDT protocol for the cervical spine, Pain Drawings diagram and the NDI questionnaire. The results were subjected to statistical calculations using MicrosoftExcel 201 and the Statistica 10.0 software (p=0.05).

Results. It was found that 79 nurses under study (87.8%) suffered from pain in the cervical spine. An analysis of the results in terms of the neck disability index showed that 71.7% of the nurses were characterized by a mild and moderate degree of disability in daily life due to the occurrence of cervical spine pain. No significant correlation was found between the level of pain and the nature of work (p=0.1691), or between the prevalence of pain in the cervical spine and the nature of work (p=0.5220). No significant dependence was detected between the degree of disability and the length of work experience in particular groups of community nurses (p=0.6909), trauma nurses (p=0.5108) and palliative care nurses (p=0.1127).

Conclusions. 1.Cervical spine pain is a common problem among professionally active nurses, in all occupational groups. 2.The length of work experience and the nature of nurses' work has no effect on the prevalence and type of cervical spine pain.

Key words: neck pain, nurses, disability

Evaluation of the effectiveness of physical therapy and myofascial release techniques in the treatment of back pain

TOMASZ RIDAN [1], Karolina Kacik [1], Izabela Zbrońska [2], Grzegorz Głąb [3]
[1]Akademia Wychowania Fizycznego w Krakowie, Katedra Fizjoterapii, Zakład Kinezyterapii, [2]Krakowskie Centrum Rehabilitacji i Ortopedii, Kraków, [3]Akademia Wychowania Fizycznego w Krakowie, Katedra Fizjoterapii, Zakład Medycyny Fizykalnej i Odnowy Biologicznej

The aim of the study was to evaluate the effectiveness of physical therapy and myofascial release techniques in the treatment of back pain.

Material and research method. The study was carried out in a group of 100 patients with a mean age of 51.78 years (+/_13.85) who had been diagnosed with lumbar radiculopathy. The patients under study were randomly divided into two groups of 50 people: gruop A - a series of massage and physical therapy treatments, group B - a series of Stecco's Fascial Manipulation procedures. The effectiveness of the procedures used was verified by: a self-designed and the Roland-Morris questionnaires, MDT McKenzie protocol for lumbar spine and Thomayera's test (test PP). The data obtained was subjected to statistical analysis using MS Excel 2010 and teh Statistica software v.10.0 PL (p=0.05).

Results. The patients in group B achieved statistically significantly higher reductions in the VAS pain scores and statistically significantly better disability scores according to the RMI questionnaire. A comparative analysis of the range of motion for spinal flexion revealed that the improvement in group B was greater by 1.58 cm. The difference proved to be statistically significant. The statistical analysis revealed a greater, statistically significant effectiveness of fascial therapy in the reduction amd elimination of pain in thighs and buttocks, and in the complete elimination of local back pain.

Conclusions. Fascial therapy and physical therapy treatments combined with massage are an effective method of reducing back pain. Fascial therapy is more effective in reducing pain and improving spinal mobility.

Key words: back pain, physical therapy, fascial manipulation

Using of modern devices in rehabilitation of the upper limb and weight distribution with biofeedback in patients after stroke – case report

Joanna Roziak [1], Roman Bednorz [1], Alicja Śliwa [1], Agnieszka Chodkowska [2], Elżbieta Zmitrowicz [2], Janusz Filipiak [2]
[1]*P.H.U. Technomex,* [2]*Dolnośląskie Centrum Rehabilitacji*

Background: Stroke is the one of the biggest problems in medicine and rehabilitation. Worldwide, it is the third leading cause of death and one of the leading causes of disability in approximately 80% of patients.

Material and methods: Patient, age 62 after stroke during rehabilitation in Lower Silesian Rehabilitation Center in Kamienna Góra was supplemented by session on the stabilometric platform and system for the rehabilitation of upper limb using biofeedback. Exercises were held one hour a day, 5 days a week for 4 weeks as part of the comprehensive post stroke treatment. Before and after the treatment period were performed Fugl-Meyer (FMA) upper limb function assessment, measurement of force and range of motion of the upper limb on the device and body weight distribution assessment.

Results: Improved of the force and range of motion of the upper limb. In body weight distribution assessment improved of weight distribution of the lower limbs inn static test with eyes open and closed.

Conclusions: Exercises using biofeedback have both improved: the function of the upper limb and symmetry of weight distribution. There is needed to making research on a larger group of patients and a comparison with the control group.

Key words: stroke, biofeedback, stabilometric platform, rehabilitation of upper limb

Search for an objective (prognostic) toll that assesses the risk of falls in the elderly

Dorota Saganowska [1], Janusz Sierdziński [2], Monika Lewandowska [1], Izabela Korabiewska [1], Anna Mosiołek [1], Bartosz Słomka [1], Witold Rongies [1,3]
[1]Zakład Rehabilitacji Oddziału Fizjoterapii II Wydziału Lekarskiego Warszawskiego Uniwersytetu Medycznego, [2]Zakład Informatyki i Telemedycyny Warszawskiego Uniwersytetu Medycznego, Zakład Rehabilitacji Samodzielnego Publicznego Centralnego Szpitala Klinicznego w Warszawie[3]

Background. To determine the degree of risk of falls in "65+" group is currently used various kinds of functional tests, which are based on an assessment of the human locomotive and equilibrum abilities. Modern technological developments, offer opportunities for other, more objective studies.

Material and methods. 61 people aged 65-91 years (mean 76 ±6,96 years) were enrolled in the study.

All subjects were evaluated for daily physical activity using a shortened version of the international IPAQ questionnaire. Based on the results of the IPAQ, the individuals were divided into two groups. Group A included 33 people aged 65-91 years (75 ± 6.84 years) declaring systematic physical activity, and Group B, 28 people aged 65-87 years (mean 7,7 ± 7,17 years), characterizing low physical activity. Measurements were carried out twice at an interval of approx. 6 months. Posturography was performed using a PEL 38 pedobarograph with computer image analyzer and WIN-POD software version 3.81 and Tinetti test. The resulting data were analysed in STATISTICA using t-Student and U Manna-Whitneya tests. A regression test was also performed. The level of statistical significance was set at p=0.05.

Results. 1.There was a significant difference in the Tinetti test and the values of selected posturographic parameters between groups. 2.Correlation between the Tinetti test and the posturographic study parameters was demonstrated.

Conclusions. 1.Posturography should be included in the studies seeking an objective prognostic tool for falls in the elderly. 2.The reliability of the results should be confirmed in a study of a larger study group.

Key words: posturography, risk of falls, Tinetti Test, diagnostic tools

Evaluation of the body's ability of balance of residents of a Social Welfare Home

Bartłomiej Szrajber [1], Tomasz Adamczewski [2], Beata Kunikowska [3], Kawczyńska Justyna [1]
[1]Społeczna Akademia Nauk w Łodzi, [2]Klinika Rehabilitacji Medycznej Uniwersytet Medyczny w Łodzi, [3]Zakład Nauczania Pielęgniarstwa z Pracowniami Praktycznymi, Uniwersytet Medyczny w Łodzi

Introduction: Assessment of gait and balance is one of the main determinants of the functional status of elderly people. An important part of geriatrics prophylaxis is identifying the factors that favor falls and preventing the falls of elderly. Maintaining a sufficiently high level of functional fitness for seniors is a challenge for physiotherapy.

Material and methods: The research comprised 50 residents (22 women and 28 men) of the Social Welfare Home in Lodz aged 55 to 87. The average age was 66.7 years. The study was carried out using the author's own questionnaire, Berg's balance scale, and Tinetti test.

Results: The study showed that 60% of the subjects were able to maintain their body's balance during the tripping, even when they had their eyes closed. Positive Tinnetti test in the upper point range was obtained by 55% of the social welfare home (SWH) residents. The high body-balance ability assessed according to the Berg's scale was observed in 52% of the patients. The most frequent scenario of falls in seniors is: falling on stairs, in the room and toilet (58%), falling on the street (28%), and falling in the hallway (14%).

Conclusions: 1. The residents of a social welfare home studies have a high ability to maintain the body's a balance. Most of the residents had one incident of a fall in the last year, and only a few had multiple. 2. Uneven surfaces contribute to falls, eg defects of the pavement compared to the smooth and even surfaces of enclosed areas.

Key words: gait, elderly, imbalance

Robotics in rehabilitation.

BEATA TARNACKA [1,2]
Warszawski Uniwersytet Medyczny, Klinika Rehabilitacji, Warszawa, [2]Mazowieckie Centrum Rehabilitacji STOCER, Konstancin-Jeziorna

Rehabilitation specialists, neurologists and physiotherapists are increasingly using newer methods of neurological rehabilitation in brain and spinal cord injuries. Recently, many new concepts have been developed to improve neurological status such as neuronal regeneration, functional repair and reorganization, which may lead to a better return of neuronal function and the search for new therapies. The lecture will introduce new methods of robotic walk rehabilitation and their impact on core and brain circuits. Lecture will also apply to the application of the division of various robotic systems for rehabilitation of the gait and the resulting practical aspects in their application.

Key words: robotics, gait, rehabilitation.

Principles of qualification for the rehabilitation of pre-term infants and at risk of developmental disorders.

Jolanta Taczała [1,2]
[1]*Zakład Rehabilitacji i Fizjoterapii, Wydział Nauk o Zdrowiu Uniwersytetu Medycznego w Lublinie,* [2]*Oddział Rehabilitacji Uniwersyteckiego Szpitala Dziecięcego w Lublinie*

Introduction: Children born prematurely or having complications during pregnancy and childbirth and children with congenital central nervous system defects and genetic syndromes are at risk for developmental disorders. It is necessary to monitor psychomotor development, but it is not always clear that rehabilitation is necessary. The qualification for rehabilitation should be based on the clinical research.

Aim of the study: To present the principles of qualification of pre-term infants and at risk of developmental disorders.

Materials and methods: The study involved 385 infants sent to the Rehabilitation Clinic and the Day Rehabilitation Unit of the University Children's Hospital in Lublin during the period 01.09.2016 – 31.08. 2016. Premature and delayed babies accounted for 348, while the remaining 37 children were children with genetic syndromes and congenital malformations of the central nervous system. The research tools were: medical assessment and psychomotor development study card - milestones of development. Observations were conducted in 2,4,6,9 and 12 months of life, for prematurely born babies by adjusted age.

Results: 65% of premature and delayed babies were qualified for rehabilitation in infancy, the rest required only observation. On the other hand, children with genetic syndromes and congenital central nervous system defects were 100% qualified for multiprofile rehabilitation. Applied research tools allowed to identify 35% of children who did not require rehabilitation

Conclusions: Children born prematurely or having complications during pregnancy and childbirth need to monitor development and qualification for rehabilitation based on symptoms of developmental disability. All children with genetic syndromes and congenital malformations of the central nervous system from the beginning need to conduct multiprofile rehabilitation.

Key words: rehabilitation, prematurity, psychomotor development, milestones of development

Assessment of back pain in terms of international guidelines

Peter Takáč
Department of Physiatry, Balneology and Medical Rehabilitation Pavol Jozef Safarik University in Kosice, Medical Faculty and L. Pasteur University Hospital in Kosice Slovak Republic

Background. Low back pain is one of the most common painful conditions. Although a large part of the pain essentially signals a benign musculoskeletal disorder, part of it may be caused by a serious illness. In clinical practice there is important the differential diagnosis of pain and in rehabilitation medicine it is moreover especially important to evaluate the impact of pain on the functional status as well as the quality of life of the patient. We analyse the assessment of spine pain according to the recommendations of 10 international guidelines. We also particularly evaluate the benefits of ICF Core Set for Low Back Pain according to International Classification of Functioning, Disability and Health - ICF - WHO 2001 in the evaluation of back pain.

Methods. In our sample of 80 patients with low back pain, we evaluated the disability with the Oswestry Low Back Pain Disability Questionnaire and ICF Core Set for Low Back Pain.

Results. We found statistically significant correlations between the Oswestry Low Back Pain Disability Questionnaire items and the ICF Core Set for Low Back Pain domains of body structures, body functions as well as domains of activities and participations.

Conclusions. Based on the analysis of the recommendations of the current guidelines, we selected the most important items for the comprehensive assessment of back pain in terms of both diagnostic and disability assessment. Based on the analysis of our research sample, we assume that evaluating the back pain by ICF domains can be a beneficial tool in rehabilitation practice.

Key words: dizability, back pain, Oswestry Low Back Pain Disability Questionnaire, ICF Core Set for Low Back Pain

PHYSICAL AND REHABILITATION MEDICINE IN THE EYES OF PHYSIOTHERAPY STUDENTS

Piotr Tederko [1], Marek Krasuski [2], Marek Łyp [3], Anna Cabak [4], Dariusz Białoszewski [5], Iwona Stanisławska [3], Beata Tarnacka [1]
[1]Klinika Rehabilitacji I Wydziału Lekarskiego Warszawskiego Uniwersytetu Medycznego, [2]Prywatna Praktyka Lekarska Marek Krasuski, [3]Wyższa Szkoła Rehabilitacji, Warszawa, [4]Katedra Fizjoterapii Wydziału Rehabilitacji Uniwersytetu Wychowania Fizycznego im. J. Piłsudskiego, Warszawa, [5]Zakład Rehabilitacji Oddziału Fizjoterapii II Wydziału Lekarskiego Warszawskiego Uniwersytetu Medycznego

Introduction: Interdisciplinary collaboration within multiprofessional team allows for an effective rehabilitation of persons with disabilities in multiple health conditions. Health professionals' education should ensure an appropriate mutual recognition of competencies and roles in healthcare. Studies monitoring this effect of education are scant.

Material/methods: To analyze how the role of physical and rehabilitation medicine specialists (PRM) in healthcare is perceived by physiotherapy students we performed a cross-sectional observational study on a convenient population of 677 physiotherapy students and 519 final year medical students after PRM classes of the largest educational institutions in Warsaw. We applied a questionnaire previously used in similar studies of medical students and physicians.

Results: The definition of PRM was known to 32.9% of the medical and 19.9% of physiotherapy students. Typical mistakes resulted from an inability to distinguish PRM from physiotherapy. The leading role of PRM specialists in team management of persons with selected disabilities was perceived adequately by 55.5-25.4% of medical and 12.1-9.0% of physiotherapy students. Inadequate perception of the PRM role in healthcare may result from organizational changes (derangement of the previously effective system of comprehensive and continuous rehabilitation, tendencies towards professional independence among health professionals) and insufficient formative education.

Conclusion: We found an inadequate perception of the role of PRM in healthcare in the studied population. Changes in health professional education resulting in the achievement of skills and competencies are warranted to maintain patient-centered collaborative practice. Further investigations to address the mutual perception of competencies and roles among students of health professions are warranted.

Key words: physiotherapy – physical and rehabilitation medicine - education – interdisciplinary collaboration – rehabilitation team

GROUNDS FOR REHABILITATION AFTER CERVICAL DISCEKTOMY DUE TO RADICULOPATHY – A SYSTEMTIC REVIEW

Piotr Tederko [1], Marek Krasuski , Beata Tarnacka [1]
[1]*Klinika Rehabilitacji I Wydziału Lekarskiego Warszawskiego Uniwersytetu Medycznego,*
[2]*Prywatna Praktyka Lekarska Marek Krasuski*

Introduction: Increasing number of patients with neck pain and radiculopathy due to cervical disc disease undergo cervical disc surgery (CDS) with anterior cervical disc excision and fusion and intervertebral arthroplasty being the most frequently performed. The rate of the patients who are not referred to rehabilitation after cervical disc surgery (CDS) is higher that in patients after lumbar surgery. The contribution of rehabilitation in the overall treatment effect in patients after CDS who receive it is not clear. Review studies addressing feasibility of and evidence for rehabilitation after CDS are probably nonexistent.

Material/Methods: Systematic literature review

Results: Among 502 articles identified in Pubmed Medline, Embase, PeDRO databases only 8 papers analyzed the efficacy of rehabilitation procedure after CDS. Anecdotical, unevidenced mentions were found in further 40 papers. Analysis focused on disability profile in CDS persons and interventions typical for rehabilitation identified during the review: use of a cervical orthosis, activity regain, pharmacotherapy. therapeutic exercises, passive therapies (magnetotherapy and neuromodulation), education, information, psychological therapy and support and comprehensive rehabilitation programs.

Conclusions: Patients after CDS are at risk of a complex disability with a significant psychosocial component. Early detection of persons with a high risk of a poor functional outcome after CDS should be emphasized in a diagnostic presurgical proceeding. Comprehensive rehabilitation, though infrequently supported by strong evidence, appears to be mandatory in achieving good and long-lasting functional effect of CDS. Rehabilitation after CDS is poorly evidenced and more work on this field is warranted.

Key words: Keywords: cervical disc surgery – radiculopathy - rehabilitation – disability – evidence

Quality of life scales in children with cp

Olga Wolińska [1], Piotr Poul [2]
[1]*Kliniczny Regionalny Ośrodek Rehabilitacyjno-Edukacyjny dla Dzieci i Młodzieży w Rzeszowie,*
[2]*Ośrodek Rehabilitacyjo-Terapeutyczny dla Dzieci Niepełnosprawnych w Zamościu*

The concept of quality of life in recent years has become important due to the interdisciplinary approach to the situation of the patients. The WHO definition of 1994 defines quality of life as an individual`s perception of his/her position in life in the context of culture, the system of values in which she or he lives according to one`s goals, expectations, standards and interests. In the 1990s, the concept of Health-related quality of life (HRQOL) was created. Research on quality of life provides data on the effectiveness of medical procedures and the patient`s sistuation. One of the forms of the quality of life assessment are questionaries. They are divided into general and specific.General ones are used for different disease units, spesyfic for a specyfic disease. The first one can be used ina study of patients with different diseases,while the second can be used to test patients with a specific disease unit.
When evaluating the quality of life in children in different disease units, it is important to choose the right tool. In children with cerebral pulsy several questionaries are aviable.The general questionnaries are Children`s Health Scale (CHQ), Kidscreen, PedsQL generic, and specyfic include CPQOL-Child, CPQOL-Teen, CPCHILD, LAQ, CQ, PedsQL CP.

Key words: quality of life, assessment questionnaries, cerebral pulsy

Health-promoting habits of students of physiotherapy and dieteticsIntroduction: A healthy lifestyle is determined by, inter alia, physical activity and eating habits. Providing enough physical activity and adequate to the needs of the diet allows you to m

Monika Wójcik [1], Bartłomiej Szrajber [2], Agnieszka Zawadzka [1], Ireneusz Pieszyński [1], Tomasz Adamczewski [1], Jolanta Kujawa [1]
[1]Klinika Rehabilitacji Medycznej, Uniwersytet Medyczny w Łodzi, [2]Społeczna Akademia Nauk w Łodzi

Introduction: A healthy lifestyle is determined by, inter alia, physical activity and eating habits. Providing enough physical activity and adequate to the needs of the diet allows you to maintain good health. Improper diet and passive lifestyle are a factor in the incidence of civilization diseases. The paper presents a comparative analysis of dietary behaviors, physical activity and knowledge about proper nutrition between students of physiotherapy and student of dietetics at the Medical University of Lodz.

Material and Methods: A questionnaire survey was carried out in a group of 50 physiotherapy students (40 women and 10 men) and 50 students of dietetics (42 women and 8 men). The International Physical Activity Questionnaire (IPAQ) and the QEB Diet and Nutrition Questionnaire were used.

Results: Students physiotherapy and dietetics have a high physical activity (respectively ± 7216 4984 MET-min / week, and 5409 ± 3582 min-MET / week). The level of physical activity of physiotherapy students, determined by the total effort of MET / min, is significantly higher than that of the dietitian students. Dietetic students have a significantly higher level of nutritional knowledge (39.2 ± 10.1 points) compared to physiotherapy students (24.4 ± 12.8 points).

Conclusions: The nutritional and dietary knowledge acquired by dietetics students influences the higher levels of nutritional knowledge and proper diet. Physiotherapy students, on the other hand, exhibit higher levels of physical activity, which may be due to the acquired knowledge about the health of the movement and the awareness that the physiotherapist's work requires physical fitness.

Key words: physiotherapy, nutritionist, physical activity, dietary behavior, diet, students

I / T Curve Coefficient in Evaluating Changes in Neuromuscular Excitation after PILER Irradiation PILER Irradiation and Muscular Excitation

Jolanta Zwolińska
Uniwersytet Rzeszowski Instytut Fizjoterapii

Introduction: PILER irradiation as an athermic method is used in systemic and local irradiation often using filters of different color.

Aim: Evaluation of neuromuscular changes occurring after PILER irradiation using filters of different colors; evaluation of usefulness of i / t curve in neuromuscular excitation test.

Material and methods: 60 healthy volunteers divided into 4 groups in which 10 PILER irradiation sessions were used (yellow filter, red filter, blue filter, placebo).

Senso-motor excitability was assessed using i / t curve coefficient developed by the author. Pressure Pain Threshold (PPT) was evaluated using an algometer.

Results: There were no significant differences between the irradiated and unexposed group in terms of PPT and significant differences between the groups in terms of sensory excitability. In the exposed group, a significant increase in the i / t curve coefficient was observed for both triangular and rectangular pulses.

There was a statistically significant difference between groups in terms of motor excitability .

There were no significant differences in terms of PPT and changes in sensory excitability between the groups exposed to different color of filters.

There was a statistically significant difference in terms of muscle motor excitability between the groups exposed to different color of filters.

Conclusions

1. The i / t curve coefficient may be useful in the assessment of neuromuscular excitability.
2. PILER light irradiation can reduce the sensomotor excitability of a healthy muscle.
3. Confirmation of the effect of color of the applied filter on changes in neuromuscular excitability requires further investigation.

Key words: Neuromuscular Excitation, Electrodiagnostics, PILER, Algometry

The influence of magnetotherapy and the type of the magnetic field on functional status and the level of hands pain in patients with rheumatoid arthritis.

Jolanta Zwolińska [1,2], Monika Gąsior [2], Mariusz Drużbicki [1], Andrzej Kwolek [1]
[1]*Instytut Fizjoterapii UR,* [2]*Kliniczny Regionalny Ośrodek Rehabilitacyjno-Edukacyjny dla Dzieci i Młodzieży przy Klinicznym Szpitalu Wojewódzkim nr 2 w Rzeszowie*

Introduction: Magnetotherapy is a commonly used method for treating people with rheumatoid arthritis.

Objective: The aim of the study was to evaluate the influence of magnetotherapy and the type of magnetic field on the pain and function of the hands in people with rheumatoid arthritis.

Material and method: 62 patients with rheumatoid arthritis were included in the study. Physiotherapeutic protocol covering hand motor rehabilitation was implemented. Magnetotherapy was applied in 32 patients (static or pulsed magnetic field). The condition of the hands was evaluated before and after the treatment.

Results: Significant reduction of pain and morning stiffness and improvement in Box & Blokcs test results were reported in the group with magnetotherapy and without magnetotherapy.

After magnetotherapy, there was a statistically insignificant time of maintaining the maximum grip force, while in the group without magnetotherapy a significantly shorter maximum grip force time was observed.

Better efficiency of static field was demonstrated in terms of the time of maintaining maximum cylindrical power grip and Box & Blocks test results compared to pulsed field and non-magnetotherapy group ($p < 0.05$).

Conclusions:

1. The influence of magnetotherapy on the functional status of the hand (Box & Blocks) as well as the level of pain was not confirmed.
2. The influence of the type of the field on the therapeutic effects expressed by pain and stiffness was not confirmed.
3. Static field can be more effective in improving hand function compared to pulsed field.

Key words: rheumatoid arthritis, magnetotherapy, pulsed and static magnetic field

PILER light therapy on a healthy muscle using different color filters

Jolanta Zwolińska
Instytut Fizjoterapii Uniwersytetu Rzeszowskiego

Introduction. Filters of different colors allow to use PILER irradiation with visible light of a strictly defined wavelength. According to the objectives of chromotherapy, yellow light enhances the sensitivity to stimuli, red light has a strong stimulating effect on tissue, and blue light has a relaxing effect.

Material and methods. Irradiation of biceps brachii was performed in 60 healthy volunteers divided into 4 groups. Different color of a filter (yellow, red, blue, placebo) was used in every group. Before and after the series of 10 irradiations, the electrodiagnostic examination was performed to assess motor excitability of the muscle. The value of rheobase, chronaxia and accommodation coefficient were determined.

Results. In terms of motor excitability, there was a significant increase in rheobase after yellow filter irradiation. Significantly shorter chronaxia time was noted after PILER irradiation with blue and yellow filter. After exposure to the blue filter, a significant increase in the accommodation coefficient was observed, and after the yellow filter irradiation it decreased.

Conclusions. The influence of color of the filter applied in the PILER irradiation on changes in motor excitability of the healthy muscle has not been confirmed.

Key words: PILER, chromotherapy, traditional electrodiagnostic examination

Constraint- induced movement therapy in hemiparetic children with cerebral palsy

Ewa Lenart-Domka, Elżbieta Domka-Jopek, Jolanta Zwolińska
Uniwersytet Rzeszowski

Introduction. Constraint - induced movement therapy (CIMT), originally developed as intensive adult functional training, is recently extended in children and adolescents with cerebral palsy (CP) in a modified, playful way.

Objective. Evaluation of CIMT effectiveness in children with CP

Material and method. Eleven hemiparetic CP patients aged 5-12 years (mean 8.3 years) were qualified for CIMT program. Control group consisted also of 11 children of similar age (mean 9.3 years) trained without any restraint of healthy upper limb. In both groups, the majority consisted of left-sided paretic patients (7 persons each). CIMT was the 5 day per-week intervention over the course of 2 weeks, covering daily 4-hour sessions of exercises in two groups supervised by occupational therapist and physiotherapist. Every patient was constantly accompanied by a personal assistant, watching over the correctness of motor tasks and motivating children to be as active as possible. In both groups, box and blocks test (gross manual dexterity) and the Abilhand questionnaire (manual ability) were used to evaluate therapy effectiveness.

Results. Significant improvement in the functional activity ($p = 0.02$) and a trend of improvement in manual dexterity ($p = 0.09$) were reported in the CIMT group. Significantly, a higher increase in manual dexterity measured by box and blocks test and improved functional activity ($p < 0.05$) was demonstrated in children who participated in the CIMT program compared to controls in the control group.

Conclusion. CIMT may be a suggestion of an effective functional upper limb therapy in CP children

Key words: Constraint- induced movement therapy, cerebral palsy

Correlations between functional balance tests and objective tests using a stabilometric platform in patients of the Scientific and Research Institute of Sebastian Kneipp in Kamień Śląski. Preliminary report

Alicja Śliwa [1], Joanna Roziak [1], Zygfryd Glaeser [2], Katarzyna Białek [2]
[1]Technomex Sp. z o.o., [2]Instytut Naukowo- Badawczy Ks. Sebastiana Kneippa. Zespół Rehabilitacyjno- Wypoczynkowy w Kamieniu Śląskim

Background. Falls is one of the most common causes of serious health problems among the elderly. Falls is the cause of forearm , femur and spinal fractures. An objective assessment of the balance and a functional assessment of postural control is important in the risk assessment process.

Material and methods. 23 men and 15 women participated in the study. Patients did not report disorders of the balance. Major lesions in these patients were degenerative changes in the lower limbs and spine. The following functional tests were performed: Tiinetti balance and walk test, Functional Reach Test, Tandem Stance Test with open eyes and closed and 180 ° Tandem Pivot Test and objective tests using the platform: Romberg test with open/closed eyes and dynamic test.

Results. There was a positive correlation between the Tinetti functional test and the Tandem Stance Test and the Tandem Pivot Test and the dynamic test on the platform (time of the dominant load during the dynamic test). In contrast, in the women group, a negative correlation between the functional test Tinetti and the Tandem Stance Test and the Tandem Pivot Test and the Romberg test with open eyes (maximum deviation in the right-hand side of the center of gravity) were observed. There were no statistically significant correlations in the remaining test results.

Conclusions. It is possible to observe correlation between functional test results and objective tests using a stabilometric platform, but further studies are needed in a larger group of patients.

Key words: Functional tests, stability platform, falls

The role of motor activity in the prevention of hypertension in people over 60, depending on the BMI

Izabela Zbrońska [1], Rafał Trąbka [1], Tomasz Ridan [2]
[1]*Krakowskie Centrum Rehabilitacji i Ortopedii,* [2]*Akademia Wychowania Fizycznego Kraków, Wydział Fizjoterapii*

Introduction: Overweight and obesity contribute to the development of many clinical complications, which significantly negatively affect health and life expectancy. This is a condition that predisposes, among others. to develop hypertension. The purpose of the study was to present the role of motor activity in the prevention of hypertension in overweight and obese elderly.

Material and methods: 720 subjects under 60 years of age in three groups, depending on body weight: subjects with obesity (BMI≥30 kg / m2), overweight (BMI = 25.0-29.9 kg / m2), people with normal body mass (BMI The average age of all subjects was 66.81±4,161 years. The study uses the BIA TANITA BC-420MA body composition analyzer and a standardized research tool for measuring the level of physical activity - IPAQ.

Results: Studies have shown that physical activity determines the level of overweight in seniors and is an important factor in the prevention of hypertension. Statistically significant positive correlations were found between the level of motor activity and the lipid profile and blood pressure values in overweight and obese individuals.

Conclusions: The most important action in the field of hypertension is prevention in particular by promoting active lifestyle. The low level of physical activity of the elderly affects the deterioration of the health of seniors and the occurrence of obesity. Obesity treatment is a difficult and expensive task.. There is a need for many preventive measures to ensure that seniors choose the right path to a healthy lifestyle, with the right weight.

Key words: motor activity, seniors, hypertension, prophylaxis, overweight, obesity