



**18<sup>TH</sup>** International Scientific Conference of  
Faculty of Physical Therapy, Cairo University  
INNOVATIVE PHYSICAL THERAPY AND REHABILITATION

## The 18<sup>th</sup> International Scientific Conference, Faculty of Physical Therapy, Cairo University

Under the title of

"Innovative Physical Therapy and Rehabilitation"

**16-17 March, 2017**  
**Conrad hotel, Cairo**

*Under the patronage of*

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*Dean, Faculty of physical therapy*  
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## ***Conference Chairman Message***

Our Esteemed guests, My professors, esteemed colleagues, my students in the family of the Faculty of Physical Therapy, employees and workers; peace upon you.

I pray to Allah that; this conference is due on our science, welfare, progress and knowledge. And to be the cause of the increasing communication and linkages between the profession of physical therapy inside and outside Egypt and among various community parties, and the main goal of that is to provide the best medical services and health care for the patient in general and people with a disability in particular. Hence, the 17<sup>th</sup> international scientific Conference that will be held by the Faculty of physical therapy, Cairo University under the title of "Empowering Disability".

Faculty of Physical, Cairo University, that I'm honored that I was a student, and then administrator till a professor; learning, searching and knowing. And Allah honored me more by electing me and my appointment as dean of the faculty. And I'm not supposed to be that without my parents' prayer, love and cooperation of my fellow colleagues. And I would like to express thanks and gratitude to my professors who taught us and the faculty was grown upon their hands all our appreciation and respect.

I also wish to express my thanks to the faculty staff members and ancillary staff for everything they provided to the faculty and profession.

I must also thank the faculty employees and administrative staff for their efforts in all areas to support the faculty and also thanks go to all workers who exert effort to keep the faculty in the best form.

The students of the faculty who are the flame of movement; my deepest wishes and payers to have a very successful future in our beloved Egypt.

Faculty of Physical Therapy, Cairo University Was, still and will remain "God willing" the leader of progress in the profession of physical therapy in Egypt and the Middle East. Our faculty moved to cancel diploma of physical therapy and rehabilitation, which was planned to be hosted by Ain Shams University for a non professional candidate.



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Then the Faculty of Physical Therapy, Cairo University, was a pioneer in the development of internal rules where the increased number of years of study physiotherapy to six years even drew international certificates in that specialization and then only Faculty of Physical Therapy, Cairo University established the degree of professional Doctorate of physiotherapy "DPT", a dream that has long dreamed of implemented and achieved thanks to God Almighty. Faculty of physical therapy Cairo university has the honored to lead the establishment of the physiotherapy faculties sector for Supreme Council of Universities for the first time in the history of the profession and then set up the faculty continuing education programs, which helped many graduates to complete a number of study hours, which allows them to compete in the global market.

The Faculty of Physical Therapy, Cairo University developed its institutional capacities by finishing fifth floor to provide more classrooms in addition to the installation of a new elevator and modernization of research laboratories in the faculty.

So, as a result of all that mentioned above, Faculty of physical therapy achieved its accreditation in July 2014 from the National Authority for quality Assurance and accreditation of education. To be the first Faculty of Physiotherapy got accreditation.

Faculty of physical therapy, Cairo university was not satisfied enough with this, but our belief in responsibility and duty towards people with a disability has adopted the faculty to establish a global center for physiotherapy and rehabilitation titled "No more disability" that will provide the best medical services to patients and which intensify our efforts to ensure the success of this national project is here asking you all, institutions and companies, banks, ministries and civil society to support this project to alleviate the suffering of people with a disability and their families.

Finally, a special thanks to the esteemed organizing committee of this conference and especial thanks to Dr. Amel Yusef, Dr. Maher Al Kabalawy, Dr. Gehan Ali and Dr. Hamada Ayoub.

*Prof Dr Alaa Balbaa*

*Chairman of the conference, Dean, faculty of  
physical therapy, Cairo University*



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*The 17<sup>th</sup> international scientific conference, faculty of Physical Therapy Cairo University  
"empowering disability"*

## General Secretary Message

My dear colleagues, welcome to our 17th international scientific conference under the title of "empowering disability" which is a continuity to last year conference "no more disability" to emphasize the role of physical therapy in such cases and to go with our target of building the international center of physical therapy rehabilitation for disability to deal with patients as whole and integrate them into society with assurance to them and their families , we wish our great attendance the utmost benefits which will reflect on society ..

I want to thank all the participants that made this day, and my regards to our researchers who make a brighter future for the profession with their efforts.. You are the hope

*Prof. Dr.*

*Amal Yousef*

*Vice dean, faculty of physical therapy*

*For graduate studies and research*

*Cairo University*

*General Secretary of the conference*



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## General Secretary Message

Dear Guest speakers, Chair Persons and Participants :

On behalf of the entire Secretariat, I do welcome all of you to 17th International Scientific Conference for Faculty of Physical Therapy Cairo University . under the title of "Empowering Disability". As Secretary General of Conference, I would like to take the opportunity to mark milestone of this project, which is indeed an extraordinary accomplishment and epitomizes the will, determination and success of our project which includes the construction of the largest center for treatment and rehabilitation of people with disabilities in Egypt.

This year, our conference meant to update the theoretical knowledge and the practical skills of our colleagues as it contain several subjects in prevention of different types of disability and improve the health care awareness to overcome the disability. The conference program encompasses about ..... sessions, including about ..... talks covering most of disability diseases, genetic causing disability and the ways of rehabilitation theoretically and practically topics, As we organizing a lot of workshop too in the field of Physical Therapy.

Preparations for this conference started just after "No Disability" 2015 a year ago. I am very thankful to my incredible Secretariat team for all of their efforts, energy and enthusiasm. It is thanks to them that "Empowering Disability"2016 is both possible but also bigger and (hopefully) better than ever before.

I do warmly welcome our eminent international speakers who are leading and adding precious knowledge and skills to all colleagues internationally. Also, a worm welcome to all our participants from everywhere, hoping the most benefits from this grand gathering in our university.

*Prof. Dr.*

*Maher Elkabalawy*

*General Secretary of the conference*



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## Conference Director Message

The need of scientific research is increasing by the time , as it brings together observation ,knowledge data to solve problems ,invent solution and develop more new ideas that consider the proper way to reduce and properly rehabilitate disabilities and help to overcome the limitation of various aspects of life and provide scientific room to look at research result and to explore the essential needs to use them for reducing disability .

So, this conference " innovative physical therapy and rehabilitation " came where provided faculty of physical therapy display the products of scientific research in the area of disability ,discuss, draw, conclusion and serve the disability issue .

During the conference is extracted, recommendations regarding multiply aspects of prevention and care of persons with disabilities help to rehabilitate and facilities their access to services and practice different aspects of life .

Therefore, this conference may be considered as a base for scientific researches and application issues to face the difficulties and rehabilitation of people with special needs in the field of physical therapy.

*Dr.*

*Gehan Ali Abd-Elsamea*

*Dr.*

*Hamada Ayoub*



## **Electroneurography: Clinical and electrophysiological finding**

**Prof. Dr. EMAM EL-Negamy**

PhD clinical Neurophysiology, Faculty of medicine, Southampton University.

Because of great advances in technology witnessed nowadays, physical therapy modalities showed tremendous improvement as many new treatment techniques have been introduced which necessitate validating their efficiency using advanced and most objective evaluative techniques. Electroneurography is an advanced neurophysiologic study which represents an extension and not an alternative of the clinical evaluation; it provides additional precision, details, and objectivity. It is of great value in initial as well as in periodical evaluation and plays a major role in identifying the suitable modalities to be used in effective treatment, also in exploring the prognosis and predicting the expected time of recovery. Electroneurography is of particular value in detecting denervation and reinnervation during neurotization period and before starting maturation.

Electroneurography is of special value in pediatrics as it has certain advances over other electrodiagnostic techniques. It uses only surface recording so it is non-invasive, causing no pain and it can be repeated every week and can be used early after only 3 days from time of the lesion.

Additional advantages of electroneurography include using the opposite sound limb as control; also no contribution is needed from the child.



## **THE USE OF LOW REACTIVE LEVEL LASER THERAPY IN THE TREATMENT OF MYOFASCIAL TRIGGER POINTS: A CRITICAL REVIEW**

**ABDULLAH M. ALSHENQITI<sup>1</sup> and JACQUELINE A OLDHAM<sup>2</sup>**

<sup>1</sup> Rehabilitation Hospital, Madinah Al-Munawarah, Ministry of Health, Saudi Arabia, dean of Physical therapy and rehabilitation , Faculty of Medical rehabilitation sciences, Taibah University

<sup>2</sup> Centre for Rehabilitation Science, University of Manchester, United Kingdom

### **Abstract**

**Background:** Myofascial trigger points (MTrPs) are a common cause of pain in clinical practice. They are the source of pain in many patients consulting for pain in primary care. Many different approaches have been reported to be effective in the treatment of MTrPs. The success rates of these approaches are variable and are often associated with side effects. Low reactive level laser therapy (LLLT) has been reported to relieve pain in soft tissue lesions including MTrPs. Its positive therapeutic effects can be obtained without side effects. **Aims:** This review describes the possible factors that may have contributed to the variability of the results between studies that have evaluated the efficacy of LLLT in treating MTrPs. **Methods:** A comprehensive search of the literature was carried out. Only randomised controlled and clinical trials were included. **Results:** 16 studies were critically reviewed and showed considerable variability in treatment parameters, techniques, symptoms duration and diagnosis. **Discussion/Conclusion:** Studies have that tested LLLT in treating MTrPs result in opposing results. These may be due to varying symptoms duration, treatment parameters and techniques, non-homogenous populations. Forthcoming research should aim to improve the quality of clinical studies, and thus provide evidence that will enable successful treatment for patients.



## **Physical Therapy effect on cardiac innervation for Cardiac Transplantation (Review Study)**

**Prof. Dr. Naguib Salem**

Dean of faculty of physical therapy, MTI University.

The heart transplantation is the last therapy for patients with final-stage heart failure, resulting in hemo-dynamic normalization in rest and during exercise, improving tissue perfusion and the neuro-hormonal harmful effects that follow heart failure.

After heart transplantation, patients present physical exercise intolerance due to disturbance on hemodynamic performance as result of cardiac, neurohormonal, vascular, muscle-skeletal and pulmonary abnormalities. This could be partially explained by the pre-transplant heart failure, the surgical act itself, the in-hospital period, the use of immunosuppressive agents, the number of rejection events and the transplantation time. Physical activity has demonstrated to be of great relevance in the post-transplantation rehabilitation, improving the exercise capacity, thus facilitating the return to regular daily activities after long pre- and post-transplantation deconditioning period, also reducing some frequent complications such as: hypertension, obesity, body alteration, libido reduction, osteoporosis, anxiety, depression, euphoria and lower physical capacity.

Post-heart transplantation patients present improvement in the quality of life. However, they frequently present physical de-conditioning, muscular atrophy, muscle weakness and lower aerobic capacity as result in part of the pre-surgical inactivity and factors as the difference in the donor/receptor body surface and heart denervation. The immunosuppressive therapy that aids receptor to tolerate the donor's heart limits the physical capacity such as the rejection episodes or symptoms that suggested the reduction in the cardio-circulatory performance.

Conclusion Cardiac transplantation physical therapy program post operatively will take longer period in phase one until innervation of the implanted heart takes place.



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## **Different methods of training to enhance our functional capacity**

**Prof. Dr. Farag Abed Elmoem Aly**

Professor of Physical therapy and rehabilitation

Faculty of Medical rehabilitation sciences, Taibah University

Faculty of Physical therapy, Cairo University

Many people today are interested in exercise training as a way of improving their health and physical abilities in addition to reducing their body fat. But we have to understand also that too much exercise, or exercise that is not appropriate and individualized for certain individuals, may actually be harmful not beneficial for them. During effort and exercises our muscles need more  $O_2$  than normal to match their increased metabolic activity, so our functional capacity or fitness can be evaluated by determining the maximum amount of oxygen that an individual can utilize during intense or maximal exercise ( $vo_2$  max). To enhance our functional capacity or aerobic fitness we have to properly select different methods of training that stimulate our aerobic energy system that have to be practiced in a proper and scientific way to insure its beneficial effects and avoid its harm.



## **Epidermolysis bullosa**

**Dr. Nesreen Afify**

Lecturer, Faculty of Physical, Therapy, Cairo University

Epidermolysis bullosa (EB) is a group of inherited bullous disorders characterized by blister formation in response to mechanical trauma. Historically, epidermolysis bullosa subtypes have been classified according to skin morphology. epidermolysis bullosa may produce significant multiorgan system involvement.

Management include

- a-Wound healing
- b-Infection
- c-Tumors
- d-GI management
- e-Eye lesions
- f-Oral care
- g-Research therapies



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## **An Introduction to Manual Therapy Essentials**

**Prof. Dr. Wael Shendy**

Assistant Professor, Faculty of Physical Therapy, Cairo University.

There are many different approaches within the rapidly growing field of manual therapy. Ranging from the heavy handed techniques of Orthopedic Manual Therapy to the gentle, light touch techniques within Cranial Sacral Therapy, manual therapy is a hugely diverse field that can seem overwhelming and intimidating. By pulling the core concepts from traditional manual therapies, replacing structured techniques with the development of sound hand skills, and streamlining the diagnostic and treatment process, the creators have developed a simplified but precise model of manual therapy that will benefit the beginner and advanced manual therapist alike.



## **Prevalence of dysmenorrhea, its physical impact and seeking of treatment among Egyptian university students**

**Dalia M Kamel<sup>1</sup>, Sayed A Tantawy<sup>2,3</sup>, Gehan A Abdelsamea<sup>1</sup>**

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3 Department of Physiotherapy, Centre of Radiation, Oncology and Nuclear Medicine, Cairo University

### **ABSTRACT**

**Study Objective:** this study aimed to explore the prevalence of dysmenorrhea and its physical impact among the university female students and they handle this issue. Study design: a cross sectional study. **Setting:** Faculty of Physical Therapy, Cairo University. **Participants:** 269 college age female students. **Intervention:** a self-reported questionnaire developed based on the literature to reflect their experience with the dysmenorrhea. **Main outcomes:** 84.01% reported dysmenorrhea with the most pain felt at the abdomen and back. The mood swings (84.8%) and dizziness (48.2%) were the commonest symptoms of dysmenorrhea. 91.2% did not seek medical consultation with 62.4% analgesic use. 48.7% poorly satisfied with their academic performance due to their dysmenorrhea. **Conclusion:** age college Egyptian female students reported high prevalence rate of dysmenorrhea with many physical and activity limitations. Health Multidisciplinary, educational and parental support all are needed to increase the awareness and help these young females to cope with their dysmenorrhea issues.



## **Cryotherapy as an Adjunctive Treatment Modality for Migraine**

**Enas Elsayed<sup>1,2</sup>, Rasha Hegazy<sup>2</sup>, Ghaidaa Khalifa<sup>1</sup>, Aseel Ba-amer<sup>1</sup>**

<sup>1</sup>Department of Physical Therapy, Faculty of Applied Medical Sciences, King Abdulaziz University, Jeddah, KSA

<sup>2</sup>Department of Physical Therapy for Neuromuscular Disorders and its Surgery, Faculty of Physical Therapy, Cairo University, Egypt

### **ABSTRACT**

**Background:** There are evidences that cryotherapy may improve the quality of life and this hypothesis was tested in patients with migraine. **Objective:** The study aimed of to evaluate the effectiveness of cryotherapy in reducing symptoms of migraine and consequently improving the quality of life of migraine patients. **Subjects:** Twenty two patients (two males and 20 females) with chronic migraine were selected from King Khaled National Guard Hospital. **Methods:** All patients were evaluated before and after treatment regarding the Headache Impact Test (HIT-6) scores, the frequency of migraine attacks/month and the duration of each attack. Both groups received their standard medications. In addition, the study group received cryotherapy by using forehead ice pack for 20 min. during the attack, 2 times/week for four weeks. **Results:** The results revealed significant decrease in frequency of attacks/month and duration of each attack. **Conclusion:** Cryotherapy was effective modality in improving the quality of life in patients with migraine.

**Keywords:** *Cryotherapy, Migraine, Headache Impact Test-6.*



## **RESPONSIVENESS OF THE ARABIC MODIFIED QUICKDASH-9 SCALE AFTER PHYSICAL THERAPY AND REHABILITATION OF HAND BURN INJURIES**

**Dalia Galal Al Sayed\*, Mohamed Mahmoud Khalaf\*\* and Mohamed Hassan  
Hussine**

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University,

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University.

### **ABSTRACT**

**Background:** to test the responsiveness of the Arabic - Modified QuickDASH -9 scale to measure the quality of recovery after hand burn injury to ensure better care delivery. **Methods:** The study was performed in the following steps: (1) Modification of the Arabic Modified QuickDASH – 9 questionnaire with respect to Egyptian accent. (2) Cross-cultural adaptation of the Upper Extremity Functional Index -15 through the translation process from the original English version of the UEFI-15 scale into Arabic one according to the international published guidelines, (3) Psychometric Properties of the two questionnaires were measured (content validity, reliability and Evaluation of responsiveness of Arabic Modified QuickDASH-9 questionnaire and compared it with Arabic UEFI-15 one. The content validity was measured by seeking expert opinions by using Index of content Validity (ICV), internal consistency by measuring Cronbach's alpha and test-retest reliability by asking fifty Patients (22 male + 28 female) with dorsal hand burn injuries to fill the Arabic Modified QuickDASH-9 scale and Arabic Upper Extremity Functional Index-15 (UEFI-15), average two days interval, they were asked to re-fill it again. Responsiveness was assessed by asking the patients to fill the two questionnaires after 3 or 6 sessions of physical therapy and estimating their Standardized Response Mean (SRM), Effect Size (ES). **Results:** The mean ICV of the Arabic Modified QuickDASH-9 questionnaire and UEFI-15 (ICV= 0.71, 0.7) respectively, the internal consistency of Arabic Modified QuickDASH-9 and UEFI-15 were good and excellent (Cronbach's alpha=0.8, 0.9) respectively, and test- retest reliability were strong and moderate, Pearson correlation coefficient ( $r = 0.720$  and  $0.56$  ) respectively, The SRM and ES of Arabic Modified QuickDASH-9= 1.01, 1.45 respectively, and of UEFI-15 = 0.54, 0.46 respectively. **Conclusion:** The Modified QuickDASH-9 scale is valid, reliable and responsive enough to measure the quality of recovery after physical therapy and rehabilitation for patients with dorsal hand burn injuries.

**Key Words:** Psychometric Properties, Cross-Cultural Adaptation Process, Validity, Reliability, Responsiveness and Disability Arm Shoulder and hand Scale, Dorsal Hand Burn.



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**The musculoskeletal ultrasonography in rehabilitation : assessment and biofeedback tool for the physiotherapist**

**Prof. Dr. DEMONT Anthony**

Lecturer and responsible of international Affairs, physical therapy school, University of Orleans, France.

Ultrasonography is a tool used in rehabilitation for the 1990s in several countries around the world.

The musculoskeletal ultrasonography is considered a gold-standard for static and dynamic observation of many anatomical structures compared to other imaging techniques. Its absence of side effects, the extent of the number of observable joints, its noninvasive nature and the possibility of realtime analysis are so many assets to systematic use.

Ultrasonography allows for many diseases (chronic low back pain, scapular muscles dysfunction...) to improve the accuracy of results obtained during different assessments of the patient. This contributes exactly to the analysis of the movement potential of the patient and improves the decision of the physiotherapist in the development of therapeutic strategies adapted to the observed dysfunctions. This tool allows to measure quantitatively and qualitatively the structures during movements made by the patient. Changing of sonographic signs during the treatment allows to evaluate the physiotherapy treatment effectiveness to question its relevance. Its use requires solid fundamental knowledge and be based on international standards of practice. From the perspective of practices financially responsible and evidence based, physiotherapists will need to maximize the effectiveness of their interventions.



## **Efficacy of Therapeutic Taping on Wrist Flexors hyper tonicity in Hemiplegia**

**Saleh A<sup>1</sup>, Wadee AN<sup>1</sup> and El Nassag BA<sup>2</sup>**

<sup>1</sup> Department of Basic Science for Physical Therapy, Faculty of Physical Therapy, Cairo University.

<sup>2</sup> Department of physical therapy for Neuromuscular Therapy, Faculty of Physical Therapy, Cairo University.

### **ABSTRACT**

**Background:** wrist hyper tonicity is one of the most common complications associated with hemiplegia. **Purpose:** To investigate the efficacy of therapeutic taping on wrist flexors hyper tonicity in hemiplegia. **Design:** A pre-test post-test experimental-control design. **Subjects:** Thirty hemiplegic patients from both genders (male/female:22/8). Their age ranged between (42 -63) years. **Materials and methods:** They were assigned randomly in two groups: group (A): Experimental group (n=15) received selected physical therapy program and therapeutic tapping treatment and group (B): Control group (n=15) received selected physical therapy program. All patients were tested for Hoffmann reflex/myogenic response ratio (H/M ratio) before and after twelve sessions using electromyography (EMG). **Results:** Paired t-Test revealed that there was high statistical significant decrease in hyper tonicity ( $t= 4.36$  and  $p=0.001$ ) concerning experimental group (pre-test mean  $47.27\% \pm 11.9$ , post-test mean  $32\% \pm 7.2$ ) but there was insignificant statistical increase in hyper tonicity ( $t= 0.44$  and  $p=0.07$ ) concerning control group (pre-test mean  $46.9\% \pm 8.01$ , post-test mean  $48.15\% \pm 7.3$ ). Unpaired t-Test revealed that there was insignificant results concerning the pre-mean H/M ratio ( $p= 0.07$  and  $t= 0.8$ ) while there was significant results concerning the post-mean H/M ratio ( $p= 0.001$  and  $t= 4.06$ ). **Conclusion:** adding therapeutic taping to physical therapy sessions decreased wrist hyper tonicity.

**Key words:** hemiplegia, therapeutic tape, hyper tonicity, H/M ratio.



## **The Relationship between Balance and Spinal Deformities in Young Adult Female**

**Eman s. Favez<sup>1</sup> and Kholoud kedish<sup>2</sup>**

1-Professor of physical therapy Cairo university<sup>1</sup>

1-Associate professor of physical therapy university of Dammam KSA<sup>2</sup>, BSC of physical therapy university of Dammam

### **ABSTRACT**

**Background:** Spinal deformities have been considered to affect balance. Previous studies were more focused on proving that on specific type of spinal deformities and older aged groups. This study's **purpose** is to further investigate the relationship of spinal curves alignment as a whole and its effects on balance on young adult Saudi female. Such study can provide vital information for therapeutic approach in treatment of these patients. We **hypothesize** that there is a relationship between balance and spinal deformities in young adult Saudi female population. **Methodology:** A cross sectional randomized control trial of 30 young adult female aged from 18 to 25 years old who will subjected to spinal assessment by (DIERS Formetric III 4D) and balance assessment by (BIODEX Balance System). Data will be analyzed by using descriptive statistics and inferential statistics including t.test with a significant level of 0.05. **Result:** The result of this study showed that there was difference but statistically non-significant except in normal group compared to lordosis group in open eye stability test which was significant **Conclusion:** there is an effect of spinal deformities on balance in young adult female Specially lordotic deformities.

**Key words:** spinal deformities ,balance ,posture



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**Buildings Accessibility in the University of Jordan for Students with Disabilities**

**Dr. Hassan Sarsak (PhD, OT)**

**ABSTRACT**

**Background:** Accessibility for Persons with Disability (PWD) is a worldwide concern especially for academic facilities. Every PWD has right to full and equal enjoyment of the goods, services facilities, privileges, accommodations of any place of public accommodations. International standards should be followed in building new facilities whereas existing buildings can be modified to be accessible. Public accommodations are required to make their existing public areas accessible only if doing so is readily achievable. In other words, readily achievable barrier removal should be easily accomplished and could be carried out without much difficulty and effort or expense. Measuring accessibility in university buildings can help us identify accessibility problems and solutions in existing facilities. **Objectives:** The main purpose of this study was to assess the accessibility in University of Jordan buildings for students with disabilities. In addition, this study will help plan how to make an existing facility more usable for students with disabilities. Furthermore, recommendations for the development of an implementation plan, specifying what improvements we can make to remove barriers and when each solution will be carried out, could serve as evidence of a good faith effort to comply. **Methods:** The Americans with Disabilities Act (ADA) Checklist for Readily Achievable Barrier Removal "Checklist for Existing Facilities-Version 2.1" was used to measure accessibility in university buildings. **Results:** A convenient sample of a total of 10 buildings out of 39 within the UJ was examined to investigate accessibility in this study. High percentages indicated relatively high compliance and good accessibility while low percentages indicated relatively low compliance and poor accessibility. In the accessible approach and entrance, the highest score was (86%) which is in the route of travel section. The lowest score was (49.45%) which is in the parking and drop-off section. In the access to goods and services, the highest score was (94%) which is in the horizontal circulation. The lowest score was (55%) which is in the signage of goods and services. In the access to rest rooms, the highest score was (84%) which is in the lavatories. The lowest score was (45.54%) which is in getting to the rest rooms. The compliance score for items such as parking and drop of areas, and entrance for users with disability in University of Jordan had the lowest score among other scores, which means the least accessible items among building, is probably because the physically challenged persons and experts in the area of physical ability management were not consulted and involved in the design and construction of these buildings. **Conclusion:** Academic institutions should be accessible for students with disabilities. This study has provided useful baseline data for future studies in university of Jordan buildings and in other universities in Jordan in general used for educational and community services for which also need to be accessible. Collaborative professional teams need to work together to make universities buildings even more accessible for every person with disability to meet the needs for this vulnerable population in our community.



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## **Rehabilitation Trends and Updates Post Bankart Repair**

### **Abd elkhalek mansour**

Pt, DPT, Alazhar university hospital, Alfa care centers

Shoulder anatomical variation of bony and muscular element like latismus dorsi that may be compressive or stabilizer and how it affect shoulder stability

Evidence based effects of shoulder proprioception and it's affection and regaining post bankart repair take around 6 month

Effect of focusing on regions away from the GH like core stability, breathing pattern and scapular dyskinesia

Discus debates around newly accelerated rehabilitation protocol and it's faster return to sport and criteria to safe return to sport.



## **Flexibility deficit in chronic ankle instability**

**Afaf Tahoon<sup>1\*</sup>, Salwa Shendy<sup>2\*</sup>, Hamed El-khozamy<sup>3\*</sup>, Waleed Abdel Baky<sup>4</sup>**

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### **ABSTRACT**

**Background:** influence of a localized injury in a distal joint on the function of proximal muscles is an important consideration in assessment and treatment of musculoskeletal injuries. Many studies approved significant proximal deficits in chronic ankle instability (CAI) subjects regarding EMG activity, motoneuron pool excitability, strength, kinematics and kinetics. Up to our knowledge, there is no study assess flexibility changes in CAI.

**Objectives:** The objective of this study is to investigate Hamstring flexibility in CAI.

**Material and methods:** The study conducted on 42 subjects with unilateral CAI and controls had measure of hamstring flexibility using digital inclinometer during passive knee extension test

**Results:** Revealed statistical and clinical significant difference between non-injured control group and CAI group with decreased hamstring flexibility in the later.

**Conclusion:** CAI subjects have proximal muscular affection include hamstring tightness which may alter sacroiliac joint stability and subsequently back pain. **Key words:** chronic ankle instability, Hamstring, flexibility.



## **EFFECT OF PROGRESSION FROM HYDROTHERAPY TO LAND-BASED EXERCISE ON BALANCE IN CHILDREN WITH HEMIPARETIC CEREBRAL PALSY**

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### **ABSTRACT**

**Background:** Cerebral palsy (CP) is a disorder of movement and posture caused by damage to the motor cortex, Hemiplegic cerebral palsy is a type of cerebral palsy that results from damage to the part (hemisphere) of the brain that controls muscle movements. The consequences of chronic muscle imbalance and the resultant deformities may be leading to increasing disability with age, that also characterized by abnormalities of motor activity, posture and balance. In CP children, voluntary movement that should be complex, coordinated, and varied is instead uncoordinated, stereotypic, and limited. Simple actions that are performed unconsciously by unaffected individuals require marked effort and concentration and often fail in patients with CP. **Aim of the study:** This study designed to study the effect of progression from hydrotherapy to land based exercises program on balance in hemiparetic cerebral palsy children. **Subjects and Methods:** Thirty children with hemiparetic cerebral palsy from both sexes (16 boys and 14 girls). Their ages ranged between 5-10 years, were assigned into two equal groups: progression from under water to land based intervention group and land based exercises group. Balance was assessed by Biodex Balance System while Gross Motor Function Scale used to assess patient motor functional improvement. Treatment program was conducted for 3 successive months/3 sessions / week. Evaluation for each child in both groups was done before, intermediate and after the conduction of treatment program. **Results:** Significant difference was recorded between post treatment mean values of the two groups after treatment in favor of underwater intervention group. **Conclusion:** The obtained results suggested that progression from underwater exercises therapy to land based exercise therapy is effective to improve balance in children with hemiparetic cerebral palsy.

**Key words:** Cerebral palsy –Hydrotherapy– Balance.



## **TREATMENT OF SCOLIOSIS WITH F.E.D.: The Results of 1.267 cases**

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Professor Paolo Raimond**

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### **ABSTRACT**

**Background:** The conservative treatment of spine deviations is often met with little enthusiasm and conviction. We have recently finished this study which started at the end of 1989, after having been encouraged by the results of our research work. Which consisted in applying the conservative treatment to scoliosis, first in animals (rabbits), then in humans, during their growth period. **Objectives:** To evaluate the reduction of the Cobb angle and the vertebra rotation, the averages, and the improvement percentage of 1.267 scoliosis cases who were treated with conservative treatment F.E.D. for 12 months. **Material and Methods:** We analyze a sample of 1.267 patients with various types of scoliosis of various etiologies, ranging in age from 4 to 78 years old, with a mean of 17'66 years. The rachis alterations were measured by physical and functional tests and by an antero-posterior X-ray. The curves ranged between 10° and 66°, with an average Cobb angle of 20,22°, being 9'02 the sample standard deviation. The average of vertebra rotation was 10,29° , and 5'91 being the standard deviation of the sample. All patients had special physiotherapy treatment for 12 months. The treatment consisted in applying external corrective forces on the scoliosis curves. These were generated by a designed, experimented and patented system (F.E.D.) This system allows the rachis to be elongated and set three-dimensionally while applying a pressure (of between 1 and 100 kg) to the apex of the scoliosis curve, de-rotating and inflecting it intermittently (30 seconds of pressure and 10 of relaxation) for 30 minutes. Every session ended with 30 minutes of analytical asymmetric kinesitherapy. **Results:** At the end of 12 months, the radiological study showed a significant reduction in the average Cobb angle, from 20,22° to 6,3°, with a recuperation percentage of 65%. The vertebra rotation was reduced from 10,29° to 2,62°, with a recuperation percentage of 75%. **Conclusions:** The results blatantly contradict the negative concept that many specialists have of the effectiveness of physiotherapy in treating scoliosis and prove the effectiveness and value of physiotherapy.

**Keywords:** Idiopathic scoliosis; conservative treatment; scoliosis correction; vertebra de-rotation; inflection of the scoliosis curve; F.E.D.



## **Impact of TMJ changes in body posture In children and Adults**

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Locomotor dysfunction is not just a problem of back pain, head, limbs etc. This is also the problem of the dysfunction of internal organs causing symptoms that resemble disease of these organs. Causes of dysfunction have the character of civilization. There are many: lifestyle, shortage of motion, occupation, previous injuries and disease, congenital or acquired structural changes, the type of activity (or lack thereof) of non-professional like. Most, however, the source of dysfunction is stress.

Medicine is more effective in the treatment of organic, structural and saving lives. There is however a matter of routine treatment of disorders, that is, approx. 80% of cases. Often she hears: "It does not die", "there is no such disease entity." The disease, whose sources lie dysfunction, primarily musculoskeletal dysfunctions, treated symptomatically and their origin mistakenly considers to be unknown. For this reason, "Understanding the roads connecting the states of mental health and ability to consciously move through them - is the most important challenge of modern medicine" (H. Benson, Newsweek 42/2004).

With the development of physiotherapy more and more increasing awareness of the multiplicity of connections and cross-functional and structural existing in the human body. One of the places especially heavily involved in the formation of global disorder are temporomandibular joints along with working on not muscles. The problem can be quickly identify situations in which the treatment of other, often remote regions, it is advisable to develop the area of the temporomandibular joints and the designation of therapy.

Dependence; TMJ is a possible non-specific pain in the lumbar spine. Road communication disrupted the pulse of the temporomandibular joint are made possible by the muscles, joints, roads peripheral nervous system, neurophysiological. It is also possible to move the chain of cause - effect relationship, in which a significant shortcut lower limb leads to disorders of statics in the plane of occlusion / set obliquely through the pelvis /, and insufficiently chewed food irritates the stomach and intestines and these send the wrong impulses through the phrenic nerve. Disturbed pulses with temporomandibular joint - mandibular can also be transmitted through the dura.

Diers system - based on the projection of the light patterns method of measurement and analysis of the spine in three-dimensional space. It is non-invasive, safe for the patient and staff, an alternative to X-ray examination. Three-dimensional analysis of the spine is an innovative and future-oriented combination of the latest optical and digital data processing. It is a fast and non-contact, and in most cases also automatically - without the use of the markers, measurement and analysis of the back and spine of the patient as well as the difference in leg length. The measurement results are very accurate, and thanks to the instant transmission of images to the computer, data analysis takes place immediately after testing. By measuring the exact diagnosis it is possible for easy selection of the best possible, individual therapy. As part of monitoring progress of treatment can be easily visually compare the current state of the states earlier or research output. Based on the conducted research, advanced optical measurement methods made it possible to obtain a picture of the body posture and the position of the spine in three-dimensional space.



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**Evidence Based Physical Therapy Practice”**

**Ibtissam Saab P.T. PhD.**

Head of Physical Therapy Department, Faculty of Health Sciences, Beirut Arab University.

Evidence based practice has been increasingly emphasized in physical therapy practice. This is why the purpose of the lecture is to highlight the importance of evidence based practice in physical therapy, and will try to simplify ways to increase the access to the literature. It will also allow audience to understand how to integrate research evidence, clinical expertise, and patient values in order to make the best clinical decisions.



## **Effect of Kinesio taping on pain post laparoscopic abdominal surgery: randomized controlled trial**

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### **ABSTRACT**

**Purpose** of this study was to investigate the effect of Kinesio® Tex Taping on pain and physical tolerance post laparoscopic abdominal surgery. **Subjects& Methods:** 65 Patients with recent abdominal surgeries were recruited and randomly divided into 2 groups: the study group (n= 32), received kinesiology taping applied immediately postoperatively and changed every 48 hours until the 8th day postoperatively in addition to the standard postoperative care. While the control group (n= 33) received the standard postoperative care only. **The measurements** of pain numerical rating scale, visual analogue scale, and 2 minutes' walk test were taken after the first, third and eighth days. While, patient's global impression of change was taken only at the eighth day. **Results:** both study and control groups revealed a highly significant differences of the first 3 parameters between the first& third and third & eight days ( $P < 0.05$ ). Between groups, the first day showed that there was non-significant difference. The third and eighth days showed highly significant differences ( $P < 0.05$ ). Patient's global impression of change showed a highly significant difference between the study and control groups on the eight's day ( $P < 0.005$ ). **Conclusion:** the data suggest that the kinesio taping is very effective in treating postoperative abdominal pain.



## **Effect of H Technique versus X Technique kinesio taping on Mechanical Low Back Dysfunction**

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### **ABSTRACT**

**Background:** Mechanical Low back dysfunction is considered a common problem affecting many population and can result in functional disability. Purpose: to investigate the effect of H technique versus X technique kinesio taping on mechanical low back dysfunction. **Material and Methods:** Forty-five patients from both gender with chronic mechanical low back dysfunction (CMLBD) participated in the study. The age of the participants ranged from 40 to 50 years. The participants were assigned randomly into three groups; group A received H technique and group B cross X technique kinesio taping(KT) respectively in addition to stretching exercises for hamstring, calf and back muscles and strengthening exercises for back and abdominal muscles, the control group C received traditional program (infrared and ultrasound) with the same exercises as A & B. The sessions applied three times per week for total four weeks. Outcome measures, visual analogue scale for pain severity, disability questionnaire and inclinometer for trunk range of respectively. **Results:** There were significant differences in the measures of pain severity, functional disability, trunk flexion, extension and side bending. **Conclusion:** A physical therapy program involving stretching exercises for hamstring, calf and back muscles and strengthening exercises for abdominal and back muscles accompanied with kinesio taping was beneficial in the treatment of mechanical chronic low back dysfunction.

**Keywords:** Mechanical Low Back dysfunction, Kinesio Taping



## **Effect of therapeutic exercises augmented by kinesio tap in treatment of scoliosis in adolescent females**

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### **ABSTRACT**

**Background:** Scoliosis is a lateral curvature of the spine. It is the most common deformity in adolescent females . Kinesio Taping is a method used for treatment of various musculo-skeletal conditions. **Purpose :** to detect the effect of therapeutic exercises augmented by kinesio tap in treatment of scoliosis in adolescent females **Subjects and Methods:** Forty adolescent females complain from scoliosis, their ages ranged from 11 to 17 years old, and their BMI was from 15 to 25 kg/m<sup>2</sup>. They were divided randomly into two groups. Group A received therapeutic exercises for scoliosis, while group B received therapeutic exercise in addition to kinesio taping. X ray plain used for measuring of Cobb's angle and present pain intensity (Ppi) for pain assessment before and after treatment. **Results:** There was a significant reduction of Cobb's angle and pain intensity at post treatment at both groups ( $p < 0.05$ ). There were significant reduction  $p < 0.0001$  in Ppi and this significant reduction in favor of group B. There was no significant differences between both groups in Cobb's angle. **Conclusion:** Exercises for scoliosis augmented by kinesio taping had a significant effects on reduction of both Cobb's angle and pain intensity.

**Keywords:** Adolescent females, Kinesio taping, Scoliosis, Therapeutic exercises



## **Effect of aerobic exercises on blood coagulation in obese pre and post menopausal women.**

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### **ABSTRACT**

**Background:** Coagulation is a complex process by which blood forms clots. Disorders of coagulation can lead to an increased risk of bleeding (hemorrhage) or clotting (thrombosis).

**Purpose:** The aim of this study is to determine the effect of aerobic exercises on blood coagulation in obese pre and post menopausal women. **Materials and Methods:** Forty (pre and post menopausal) women were selected randomly from physical therapy department in El Mahala El Kobara General Hospital. They were divided into: groups (A) and group (B).

Their ages ranged from (group A 30-40years) (group B 50-60years). Their body mass indices (BMI) were ranged from 30-40 kg/m<sup>2</sup>. Both groups (A&B) performed aerobic exercises program on treadmill 3 times /week for 12 weeks. Each session took 30 minutes as follow: 5 min warming up exercise by walking on treadmill at low speed, 20 min walking at sub maximal intensity (60-70 % of maximal heart rate) and 5 min cooling down by walking on treadmill at low speed as in warming up. Blood coagulation that included (Platelet aggregation and fibrinogen) were evaluated in the two groups (A&B) before and after the end of the twelve week. **Result:** The results showed that aerobic exercises have a great effect in reducing blood coagulation in obese pre and post menopausal women.

**Conclusion:** It seems that aerobic exercises can be used as a method of reducing risk factors for cardiovascular diseases of inactive obese women.

**Key words:** Aerobic exercises, Blood coagulation, Menopausal women.



## **PROPIOCEPTIVE NEUROMUSCULAR FACILITATION TECHNIQUE VERSUS KINESIOTAPING ON LYMPHEDEMA AFTER MASTECTOMY**

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### **ABSTRACT**

**Background:** Breast cancer is the most frequently occurring cancer in women. With this transformation of the disease into a chronic condition that focus attention is being directed towards late post treatment sequelae like lymphedema which is a swelling of a part of the body secondary to accumulation of interstitial fluid (ISF) due to malformation or malfunction of the lymphatic system. **Purpose:** This study was designed to compare the therapeutic effect of the proprioceptive neuromuscular facilitation (PNF) technique and Kinesiotaping on lymphedema after mastectomy. **Materials and Methods:** Thirty patients who had lymphedema post mastectomy were participated in this study. Their ages ranged from 40-55 years. The participants were selected from National Cancer Institute and randomly distributed into two equal groups: Group (A): Proprioceptive Neuromuscular Facilitation (PNF) Technique group, they received PNF plus the traditional physical therapy protocol for 3 months (3 sessions of 30 minutes/week) and Group (B) Kinesio taping (KT) technique group They received kinesio tape plus the traditional physical therapy protocol for 3months once weekly. Tape measurement was used to assess the edema volume according to edema equation:  $V = h \times (C^2 + Cc + c) / (\pi \times 12)$  and Universal goniometer to assess shoulder flexion range of motion (ROM). Evaluations were done before starting the treatment then after the end of the treatment course. **Results:** Both PNF technique and kinesiotape have a significant improvement on arm lymphedema post mastectomy and shoulder flexion ROM. **Conclusion:** Both PNF and KT have an effect on decreasing upper limb lymphedema and increasing shoulder flexion ROM.

**Key words:** Lymphedema, Proprioceptive Neuromuscular Facilitation Technique, Kinesiotaping.



## **THE EFFECT OF OSTEOPATHY ON MECHANICAL BLADDER DYSFUNCTION**

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### **ABSTRACT**

**Background :** Bladder dysfunction is a current condition ( a term used ) to define most functional problems of the bladder that occur following a ptosis which was result in incontinence. So the aim of this study was to investigate the effect of isteopathy on mechanical bladder dysfunction. **Methods:** a sample of 20 female volunteers suffering from stress incontinence were selected from Ghoniem hospital, El Mansoura university. Their age were ranged between 35 and 55 years old of group (A) consisted of 10 female patients with mean age , body mass , height, and BMI values of  $46.1 \pm 7.56$  years ,  $84 \pm 12.89$ kg,  $162.3 \pm 662$ cm, and  $31.82 \pm 3.82$  kg/m<sup>2</sup> respectively Group (B) consists of 10 female patients with manage, body mass, height, and BMI values of  $41.3 \pm 776$  years,  $88 \pm 8.62$  kg,  $159.2 \pm 5.29$  cm, and  $34.78 \pm 3.82$  kg/m<sup>2</sup> respectively . Females were randomly assigned into two equal groups. Group(A) control group consists of 10 women patients who were treated by kegelex. 2 times / week for 4 weeks. Group (B) osteampulation group consists of 10 subjects women who were treated by kegelex in addition to osteopathion treatment, 2 times /week for 4 weeks. Assessment of all women in both groups were carried out before and after treatment program through ultrasonography device and kings health incontinence questionnaire. **Results :** of urodynamic study revealed that there were no statistical significant reference between the two groups while regarding the king's incontinence questioner stress urinary incontinence symptoms were decreased significantly in group B (osteopathic and kegel exercise group) more than in group A (kegel exercise group). **Conclusion:** Adding osteopathy to kegel exercise had agreed positive effect on mechanical bladder dysfunction than kegel exercise alone.

**Keywords:** Osteopathy, mechanical bladder dysfunction, stress urinary incontinence.



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**Effect of Pulsed Electromagnetic Field on hyperandrogen symptoms in obese women with polycystic ovarian syndrome**

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**ABSTRACT**

**Background:** Polycystic ovarian syndrome (PCOS) is common endocrinal problem that leading to irregularity of menstruation, acne, hirsutism, and finally infertility. **Purpose:** The purpose of this study was to investigate the effect of pulsed electromagnetic field (PEMF) on hyperandrogen symptoms (Acne & Hirsutism) in obese PCOS women. **Subjects and Methods:** Thirty volunteer obese PCOS women were participated in this study and randomly divided into two equal groups; group A, which received PEMF three times per week with diet control therapy, group B, which received diet control therapy only. Both groups were evaluated before and after therapy (12weeks). **Results:** The results of this study showed that there was a statistically significant difference ( $P>0.05$ ) between both groups (A&B) after therapy (12 weeks) in female sex hormones, weight and hyperandrogen symptoms in favor to group (A). **Conclusion** the present study revealed that pulsed electromagnetic field are effective in decreasing hyperandrogen symptoms and improve fertility by improving hormonal variables.

**Key words:** Polycystic ovarian syndrome, Pulsed Electromagnetic, Female sex hormones, Hyperandrogen



## **Pilot Study: Correlation Between Increased Body Mass Index And Static Foot Posture In Children With Down Syndrome**

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### **ABSTRACT**

**Background:** Children with Down syndrome have tendency to become overweight and obese. They have problems with collagen, which is the major protein that makes up ligaments, tendons and bones. This creates significant laxity from the feet up. The combination of this ligamentous laxity and low muscle tone contribute to orthopedic problems in them. **Purpose:** To identify the correlation between increasing the body mass index and the static foot posture in children with Down Syndrome. **Subjects and Methods:** the study was carried out on 37 girls with Down Syndrome selected from the public schools of special needs and their ages ranged from 10 to 18 years old. They were classified according to their body mass index into (5 of healthy weight, 12 of overweight and 20 obese). Assessment of the foot posture was conducted by the foot posture index-6. **Results:** the study indicates that increased body mass index has a negative weak correlation ( $r = -0.0615$ ;  $p < 0.05$ ) to the value of the foot posture index-6 of right foot and also negative weak correlation ( $r = -0.0118$ ;  $p < 0.05$ ) to the value of the foot posture index-6 of left foot. **Conclusion:** Based on the findings of this study, it could be concluded that there was weak negative correlation between increased body mass index and static foot posture in children with Down Syndrome .

**Keywords:** Down Syndrome, Children, Body Mass Index, Foot Posture.



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## **Prevalence of Cerebral Palsy in Damanhur at Elbuhera Governorate**

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### **ABSTRACT**

**Back ground:** Cerebral palsy (CP) is one of the most common causes of physical disabilities. The prevalence of CP in developing countries isn't clearly documented.

**Purpose :** To determine the prevalence of cerebral palsy in Damanhur at Elbuhera Governorate.

**Subjects and Methods:** One hundred sixty one children with CP receiving physical therapy services of both genders participated in this study. Their ages ranged from one month up to 14 years. They were recruited from two public hospitals and six private centers in Damanhur. They were subjected to modified Australian Registry Form.

**Results:** within study population the results revealed that the prevalence of CP children who received physical therapy services were 0.8/ 1000 live birth in Damanhur. Boys and girls represented 39.1% and 60.9% respectively from total cases. The percentage of CP types was spastic 88.2%, hypotonic 5%, dyskintic 4.9% and ataxic 1.9%. The results of Gross Motor Function Classification System (GMFCS) and Manual Ability Classification System (MACS) revealed that level IV and level V respectively had the highest percentages.

**Conclusion:** Spastic type is the highest percentage while ataxic type is the least percentage of total cases . Based on GMFCS and MACS, most of patients were severe cases.

**Keywords:** Cerebral Palsy, Damanhur, prevalence, GMFCS, MACS.



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## **Awareness of Gynecologists About The Role of Physical Therapy in Treatment of Stress Urinary Incontinence**

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### **ABSTRACT**

**Background:** Physical therapy plays an important role in prevention and treatment of stress urinary incontinence but there is a lack of communication between physiotherapists and gynecologists. This study is a trial to investigate the awareness of Egyptian gynecologists by the role of physical therapy modalities used in treatment of stress urinary incontinence. **Purpose :** to measure the extend of knowledge by the role of physiotherapy in treatment of stress urinary incontinence and to study what are the limitations that lack of teamwork relationship between gynecologists and physical therapists. **Method:** 500 gynecologists participated in the study. From the 500 gynecologists, there were 128 from Upper Egypt, 125 from Lower Egypt, 97 from Delta, and 150 from Greater Cairo. A questionnaire form had been designed from 20 questions based on the reviewed literature. Data was collected and analyzed using descriptive and quantitative statistics. **Result:** The results of this study assured the unawareness of most gynecologists by the role of physical therapy by the role of physical therapy in treatment of stress urinary incontinence **Conclusion:** we concluded that, more awareness is needed for gynecologists about the role of physical therapy modalities used for treatment of stress urinary incontinence and more connection is needed between physical therapists and gynecologists to explain our role.

**Key words:** Physical therapy - gynecologists - stress urinary incontinence



## **Conditioning Effects of backward Treadmill Training in Children with spastic diplegic Cerebral Palsy**

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### **ABSTRACT**

**Background:** A new way to increase the challenge of walking is to walk backwards. Backward treadmill walking may provide advantages by promoting improvement in balance, walking spatiotemporal parameters and quality that may reflect in improving walking speed. Information about the energy expended by the patient during ambulation could provide objective data to help guide the decision-making process.

**Objective:** To evaluate the effects of a backward treadmill training program in improving walking endurance in children with cerebral palsy. **Materials and Methods:** Twelve children diagnosed with spastic diplegic cerebral palsy from both gender were included in this study. They were divided into 2 groups, group A (control) received the regular therapeutic exercise program according to neurodevelopmental approach for such cases and group B (study) received the regular therapeutic exercise program for such cases along with 20 min backward treadmill walking using Biodex unweighing equipment. Heart rate was monitored continuously each session for both groups. walking speed was assessed using The Biodex Gait Trainer 2TM and energy expenditure index was assessed by measuring heart rate using pulsometer (Japan model Tunturi TPN-400) for both groups before and after three months of the treatment program. **Results:** There was statistically significant improvement in walking speed in the study group ( $P < 0.05$ ) with significant difference when comparing post treatment results between groups ( $p < 0.05$ ), but The change in mean EEI scores was not significant when comparing post treatment results between groups while there were a significant improvement in mean EEI scores within groups. **Conclusion:** This study demonstrated an effective protocol using backward treadmill training to increase walking speed and endurance in children with CP. Although no significant change in EEI scores was noted, the sample size was small. This gait training method provides a safe and controlled environment for children to perform continuous walking at a cardiovascular training intensity to improve their gait and fitness.

**KEY WORDS:** Backward, Treadmill Training, Energy Expenditure Index, Diplegia, walking speed, Cerebral Palsy.



## **The EFFECT OF BODY MASS INDEX ON THE LEVEL OF FATIGUE IN YOUNG ADOLESCENT**

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### **ABSTRACT**

**Background:** Although fatigue is one of the most common complaints that impacts quality of life, no study have been investigated the relation between Body Mass Index (BMI) and level of fatigue. **Purpose:** To investigate the effect of body mass index on the level of fatigue in young adolescent. **Subjects:** Two hundred and twenty normal healthy subjects from both genders, their age ranged from 12 to 18 years old and their body mass index varied between 13 to 39.9 kg/m<sup>2</sup>. Subjects were divided into five equal groups according to their body mass index; each group consists of forty four subjects, **Group 1 (underweight)** BMI < 18.5 kg/m<sup>2</sup> · **Group 2 (ideal weight)** with BMI between 18.5-24.9 kg/m<sup>2</sup> **Group 3 (over weight)** with BMI between 25-29.9 kg/m<sup>2</sup> **Group 4 (obesity class1)** with BMI between 30-34.9 kg/m<sup>2</sup> **Group 5 (obesity class 2)** with BMI between 35-39.9 kg/m<sup>2</sup>. **Methods:** An Arabic version of the fatigue severity scale (FSS) was used to measure the level of fatigue in the five groups. **Results:** There was A negative significant correlation between BMI and FSS score in underweight and ideal weight groups ( $r = -0.571, p = 0.000$ ) and ( $r = -0.708, p = 0.000$ ) respectively, while there was A positive significant correlation between BMI and FSS score in overweight , obesity class1 and obesity class2 groups ( $r = 0.671, p = 0.000$ ), ( $r = 0.390, p = 0.000$ ) and ( $r = 0.946, p = 0.000$ ) respectively, which indicate that group 1 with the lowest BMI value and group 5 with the highest BMI value show the highest level of fatigue than other groups. **Conclusion:** there was a significant relationship between the body mass index and the level of fatigue in young adolescent.

**Key Words:** Body mass index, Fatigue severity scale, Under weight, Obesity



## **MANUAL ISCHEMIC COMPRESSION IN PATIENTS WITH PATELLOFEMORAL PAIN SYNDROME**

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### **ABSTRACT**

**Background:** The presence of trigger points in the quadriceps muscle is considered one of the most important causes of patellofemoral pain syndrome (PFPS). Manual ischemic compression has been reported to be effective in treating trigger points. **Objective:** This study was done to investigate the effect of manual ischemic compression on quadriceps trigger points in patients with PFPS. **Methodology:** Thirty males and females patients aging between 25-40 years old participated in this study. They were assigned randomly into two equal groups; experimental group (group A) consisted of 15 patients who received manual ischemic compression on quadriceps trigger points and the conventional physical therapy program (hot packs, patellar mobilization, and quadriceps strengthening exercises). The control group (group B) consisted of 15 patients who received the conventional physical therapy program only. They got three visits a week for five weeks. All participants were assessed at the baseline and after 15 sessions. Pressure algometer and the Arabic version of Kujala patellofemoral score were used to measure pressure pain threshold and functional disability, respectively. **Results:** The results showed that the experimental group showed statistical significant reduction of pain and functional disability. **Conclusion:** Manual ischemic compression was effective in reducing the signs and symptoms of PFPS by treating the quadriceps trigger points and could be used as a rehabilitation intervention for patient with PFPS.

**Keywords:** Patellofemoral pain syndrome - Ischemic compression - Triggers points-Pain.



## **EFFECT OF DYNAMIC STANDING FRAME ON GROSS MOTOR FUNCTION IN NON AMBULANT SPASTIC DIPLEGIA**

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### **ABSTRACT**

**Background:** Anticipation (feed-forward) is crucial in movement and postural control, which is learned through trial and error. **The purpose of this study:** was to investigate the effect of dynamic standing frame on gross motor function in spastic diplegic cerebral palsy children. **Methods:** Thirty spastic diplegic children ranging in the age from two to four years participated in this study. They were divided randomly into two groups of equal numbers (control and study). The control group was treated by especially designed exercise program, while the study group received the same treatment program given to the control group in addition to training on dynamic standing frame. Treatment was conducted for three successive months, at three days/week. Basis evaluation was carried out for each child individually before and after application of the treatment program. Gross Motor Function Measure was used to measure gross motor functional changes in kneeling and standing parameters. **The results:** No significant difference was recorded between the two groups before treatment, while significant difference was recorded between them in favor of the study group. **Conclusion:** According to the results of the study, it can be concluded that dynamic standing frame is a beneficial therapeutic tool that can be used to improve gross motor function in spastic diplegic cerebral palsy children.

**KEYWORDS:** gross motor, dynamic standing frame, spastic diplegia



## **Montreal Cognitive Assessment Capability after Cognitive Rehabilitation in Stroke Patients**

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### **ABSTRACT**

**Background:** Screening tests are necessary tools in detecting post-stroke cognitive dysfunction. Montreal Cognitive Assessment is a sensitive scale for cognitive impairment. However, assessing its capability for detecting patient improvement after cognitive training is still unknown. **Purpose:** The study was conducted to examine Montreal Cognitive Assessment capability for detecting patient improvement after cognitive rehabilitation in stroke patients. **Methods:** Forty right sided Egyptian male stroke patients participated in the study. They were evaluated through using Montreal Cognitive Assessment (MoCA) and Computer-based Cognitive Assessment device (RehaCom) before and after cognitive training. Cognitive training was performed by RehaCom system for six weeks. Data were collected using the RehaCom system and MoCA scale. **Results:** It was revealed that RehaCom training significantly improved patient executive functions and working memory. The result revealed also that the mean values of RehaCom percentage of improvements are significantly higher than mean values of MoCA percentage of improvements. **Conclusion:** Montreal Cognitive Assessment has a lower capability than RehaCom device for evaluating patient progression after Cognitive Rehabilitation in stroke patients.

**Keywords:** Montreal Cognitive Assessment, Computer-Based Cognitive Rehabilitation, Stroke.



## **MILD VERSUS MODERATE EXERCISES ON GLUCOSE LEVEL IN TYPE 2 DIABETES MELLITUS PATIENTS.**

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### **ABSTRACT**

**Background:** Glucose level is increased in diabetic patient and exercise is an important method in decreasing fasting and postprandial glucose level. **Purpose:** the main objective of this study was to determine the effect of mild exercises versus moderate exercise on glucose level in patients with type 2 diabetes. **Methods:** 40 patients (men and women) diagnosed with type 2 diabetes (non-insulin dependent diabetes mellitus) with age ranged from 50 to 60 years old. They were selected from medical Health insurance clinic in Misr el Gedida. They were divided into two groups. Group A included 20 patients participated in mild exercise in form of 10 minute walking program 3 times weekly for two months and Group B included 20 patients participated in a moderate exercise in form of 10 minute walking program 3 times weekly for two months. Blood sample for measuring fasting and postprandial glucose level before and after exercise program. **Results:** it showed that in most measures the rate of decrease of fasting and postprandial glucose level in group B who participated moderate exercise is greater than Group A who participated mild exercise. **Conclusion:** participating exercise decreases fasting and postprandial glucose level in patients with type 2 diabetes. Moderate exercise had a greater effect on decreasing glucose level than mild exercise.

**Key words:** fasting blood glucose level, type 2 diabetes mellitus, mild and moderate exercise, postprandial glucose level



## **MILD VERSUS MODERATE EXERCISES ON INFLAMMATORY CYTOKINES IN TYPE 2 DIABETES MELLITUS PATIENTS.**

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### **ABSTRACT**

**Background:** immunity is decreased in diabetic patient and exercise is an important method in decreasing inflammatory cytokines and increasing immunity. **Purpose:** the main objective of this study was to determine the effect of mild exercise versus moderate exercise on inflammatory cytokines in patients with type 2 diabetes.

**Methods:** 40 patients (men and women) diagnosed with type 2 diabetes (non-insulin dependent diabetes mellitus) age ranged from 50 to 60 years old. They were selected from medical health insurance clinic in misr el gedida. They were divided into two groups. Group A included 20 patients participated in mild exercise in form of 10 minute walking program 3 times weekly for two months and Group B 20 patients participated in a moderate exercise in form of 10 minute walking program 3 times weekly for two months. Blood sample for measuring inflammatory cytokines level (IL1 and IL6) were taken before and after exercise program.

**Results:** it showed that in most measures that rate of decrease of inflammatory cytokines in group B who participated moderate exercise is greater than Group A who participated mild exercise. **Conclusion:** participating exercise increases immunity by decreasing rate of inflammatory cytokines in patients with type 2 diabetes. Moderate exercise had a greater effect on decreasing inflammatory cytokines than mild exercise.

**Key words:** inflammatory cytokines, type 2 diabetes mellitus, mild and moderate exercise, interleukins.



## **Hologram-based Rehabilitation of Stroke Patients: Case Study**

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### **ABSTRACT**

**Background:** there is no evidence that Hologram Technology affects stroke patients' rehabilitation. **Objective:** The aim of the study was to evaluate the efficacy of Hologram Technology in stroke patients' rehabilitation. **Subjects:** A hemiplegic patient with thrombotic stroke was selected from King Abdulaziz University Hospital, Jeddah. **Methods:** The patient was evaluated regarding balance by Berg Balance Scale (BBS) and Functional reaching test (FRT), activities of daily living (ADL) by Barthel index and spasticity by Modified Ashworth Scale (MAS). The patient received traditional physical therapy program in addition to balance exercises through hologram technology. Treatment program was given for four weeks, three times/week, every session lasted for 45 minutes. **Results:** The findings revealed no improvement in balance or ADL but there was mild improvement in spasticity. **Conclusion:** Use of hologram technology, in the present study, showed no significant improvement in rehabilitation outcomes of stroke patient.

**Keywords:** Stroke, hologram technology, balance, Berg Balance Scale, Barthel Index, Modified Ashworth Scale.



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**Important questions about gait and its answers**

**Prof. Dr. Mohammed Tag**

Professor of pediatric orthopedic surgery, faculty of medicine, Cairo University.

Some challenging questions about gait frequently asked yet hard to be answered like ; what really extends the knee in human gait ; like why the body prefers 2 articular muscles ...like what it means that some muscles act as a transducer transferring energy between joints ; like what is the difference between kinetic and potential energy.



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## **Decision making regarding different approaches in management of frozen shoulder.**

**Dr. Mohammed Sarhan**

Lecturer, Faculty of Physical Therapy, South Valley University

One of the most challenging and confounding treatment entities is that of the frozen shoulder (adhesive capsulitis). Significant advances have occurred in treatment approaches to many shoulder pathologies; however, very little has changed in the past 25 years for the patient afflicted with this problem. In this lecture, we outline a recommended sequence of care for these patients based on our clinical experience and available evidence of interventional efficacy. We will address each group with pathogenesis, treatment concepts, and evidence-based clinical outcomes after providing a history of this condition.



## **Challenges of Reaccreditation**

**Prof Dr Hoda Abdel-Azim Eltalawy**

Professor , Pediatrics Department, Faculty of Physical Therapy, Cairo University.  
Member, Board of National Authority for Quality Assurance and Accreditation of Education (NAQAAE)

The main goal for Egyptian higher education in the 21st century is to establish a quality education system that provides learning experience relevant to current and future needs for Egyptian continued economic and social development". A growing number of higher education institutions (HEIs) across Egypt are pursuing and receiving accreditation by the National Authority for Quality Assurance and Accreditation of Education ( NAQAAE) . The goal of these institutions is to raise educational quality, enhance the value of offered degrees and claim prestige. Academic accreditation assures quality of HEIs by verifying that an institution (1) meets threshold standards and (2) is engaged in continuous improvement. According to the bylaws of the NAQAAE all HEIs are required to complete a self - assessment study report every five years and in addition, an annual faculty report of the institutional update should be carried out based on NAQAAE standards and practices. Program reform includes upgrading and qualified implementation of academic Standards, of quality of learning opportunities , enhancement of research activities and Community Contribution.

Accreditation promotes implementation of the guiding principles of education reform in Egypt which are including principally enhancement of: a student profile competences that meets labor market needs, capacity building of the academic staff; achieving the confidence of the community and a sustainable system for continued reform.

HEIs in Egypt are confronted with formidable challenges at both policy and operational levels which can be described as: economic challenges, challenges of globalization and leadership challenges . Future steps include better equipping of our graduates to the challenges of the labor market on the national- regional and international Levels which can be achieved through designing of flexible programs, implementing of more attentive teaching and learning procedures , and engaging in rigorous reviews to adapt to the constant changes and challenges



## **Academic staff satisfaction of institutional process in the faculty of physical therapy**

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Quality Assurance and Accreditation Unit, faculty of physical therapy, Cairo University.

### **ABSTRACT**

**Objective:** the aim of this study was to measure the satisfaction of academic staff about institutional process in the faculty of physical therapy. **Methods:** This study was performed on 50 participants from the academic staff of faculty of physical therapy, Cairo university and. The tool of data gathering is 50 participants from the academic staff of faculty of physical therapy, Cairo University and. Based on extracted dimensions, consists of seven domains with Likert's continuum was devised which represents Teaching, Research, Management Systems and leadership, General Job satisfaction, Co-workers' relationships, Work conditions & support facilities and Quality assurance unit (QAU). **Results:** Collected data were analyzed by SPSS 18 through descriptive analysis frequency tables and Chi-Square Tests. The linear measures obtained by the Likert scale used to compare total response of questionnaire between domains. The analysis of data revealed that most of the academic staff had a nearly satisfied attitude towards all domains except towards Work conditions & support facilities where there was a degree of un-satisfaction. **Conclusion:** the neutral or the nearly satisfying conditions of the academic staff of faculty of physical therapy, Cairo University need to be mentioned in the strategic plan of the institution in order to be involved in the corrective actions plans of the faculty, concerning each domain in particular.



## **Solving the Problem of Thoracic Pain**

**Prof. Dr. Samir, Sabbahi**

Ph.D.PT, Dean of Faculty of Physical Therapy, Deraya University

Thoracic back pain or Interscapular pain is pain localized in the interscapular area between the shoulder blades. The common causes of interscapular pain are due to secondary or primary disease conditions. The primary diseases in interscapular pain are often rare. Once all the common secondary causes have been excluded, primary problems in the interscapular area should be considered. Investigations for identifying the cause of severe interscapular pain, is focusing on proximal and distal areas.

The biomechanical link between the cervical and thoracic spine is evident. Many neck, thoracic spine and shoulder problems can give rise to secondary pain in the interscapular area. In these cases the primary problem is often felt in the affected area, with radiation to the interscapular region. On observation the clinician can plainly see involvement of the thoracic structures in all cervical movements. Furthermore, the neural and dural tissues span both regions.

The clinical prediction rules allow a treating practitioner to identify the underlying pathology and choose the convenient treatment methods “modalities and/or manual therapy”. Different manual techniques can solve the interscapular pain according to the primary causative factor/s. It would seem reasonable to study the effects of different manual techniques for various underlying causative factors in interscapular pain to solve the patient’s problem.



## **Central representation of gravitational force and its effect on planning and Execution of movement patterns**

**Mohamed Khallaf**

**PT PhD, DPT, ABPTS**

Coordinating muscular activity to produce a given movement control in a variety of anti-gravity postures (e.g. supine, sitting and standing) is a complex motor control problem that requires appropriate integration of sensory information to adapt to the environment. Depending on the motor task kinematic or dynamic criteria could influence the motor planning process in the CNS. It appears that even though the patterns of muscle activity are abnormal in hemiplegia, and even though these abnormal patterns tend to degrade with verticality, the ability to modulate agonist and antagonist muscle activity in response to a gravitational stimulus remained intact. Recovery of arm function after stroke can be stimulated by an intensive program of exercise therapy that involves active movement of the affected arm. In clinical practice, active arm movements are frequently facilitated by supporting the weight of the arm, for example by suspending the arm from a frame overhead. Recently, technological innovations such as robotic devices are also applied to stimulate recovery of arm function after stroke. These devices often include arm support, to compensate for the effect of gravity on the arm. Research on arm support for stroke patients showed an increase in maximal voluntary torques of isometric elbow extension when the hemiparetic arm was supported.



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## **Is Isokinetic Testing is the solution for safety return to sports after ACL reconstruction**

**Rafik Almamoon Radwan**

Sports and Spine rehabilitation, Fizik Center, Jeddah, Saudi Arabia, Assistant Lecturer  
Biomechanics, Cairo University

The anterior cruciate ligament (ACL) is the most common sports injury. In the United States there are between 100,000 and 300,000 ACL ruptures per year, Understanding ACL loading mechanisms and risk factors for ACL injury is critical for designing effective prevention programs. High researches in the last two decades focus on interventional targeting of the primary neuromuscular and biomechanical risk factors associated with the ACL injury. One of the old-recent famous equipment used during the rehabilitation and testing of the injured ACL player is the isokinetic which consider an important factor in return to play safety even it is alone not enough to save the player from recurrence of injury .high number of the graft failure become a critical for most sport professionals in last 10 years. the movement quality considering the neuromuscular and biomechanical adaptation in addition to the isokinetic results interpretation represent the majority of decision to safety return to the sports



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**The Foot: Foundation for Optimum human movement control**

**Dr. Bassam Alnassag**

Lecturer, Faculty of Physical Therapy, Cairo University.

The Human feet are the main parts that interact with the ground during walking, running & almost every activity of our daily life. They only represent about 9 – 10 % of our body surface area, instead of that; they have a profound & major role in controlling our postural control & body functions in upright and ambulatory activities. Here we are going to highlight the major role of feet in body orientation in space, extension potential against gravitational forces, sensory feedback about the supporting surfaces, and interaction with different systems in promoting upper extremity function. Activating the foot and its role in body functions' modulation will be demonstrated on video presentations of patients with different neurological disorders.



## **Transcutaneous Electrical Acupoint Stimulation versus acupressure on Postoperative Nausea and Vomiting after Abdominal Hysterectomy**

**Asmaa M. El-Bandrawy**<sup>\*</sup> and **Hassan O. Ghareeb**<sup>\*\*</sup>

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<sup>\*\*</sup> *Faculty of Medicine, department of Obstetrics and Gynecology, Cairo University.*

### **ABSTRACT**

**Background:** Postoperative nausea & vomiting (PONV) complicates the lives of both patients and health care providers. Transcutaneous electrical acupoint stimulation (TEAS) is non-invasive and effective stimulation in treating nausea (morning sickness). **Purpose:** To compare between the effectiveness of transcutaneous electrical acupoint stimulation versus Acupressure on post-operative nausea and vomiting in women scheduled for abdominal hysterectomy. **Subjects and Methods:** 150 patients (age ranged 45-65 years) with post-operative nausea and vomiting after abdominal hysterectomy. They were selected from Department of Gynecology, Kasr El-Aini University Hospital, Cairo University. Their body mass index was less than 30 kg/m<sup>2</sup> without medical history of gastrointestinal diseases. Patients were equally divided into three groups. Group (A), received transcutaneous electrical acupoint stimulation (TEAS10Hz was applied on the P6 point of the dominant hand 30 min before induction of anesthesia and continued for 8 h postoperatively) in addition to post-operative anti-emetic drug. In group (B), acupressure (elastic wrist bands with a sphere to apply pressure on P6 point) was performed exactly in the same way as in group (A) in addition to post operative anti-emetic drug. Patients of group (C) received post operative anti-emetic drug only. Post-operative metoclopramid 10mg/iv was administrated for all patients in groups (A, B & C) as antiemetic. Assessment of all patients in all groups (A, B&C) was carried out after 4h and 8h of the treatment through Mc Gill assessment for postoperative nausea and vomiting. **Results:** Showed a statistically more significant decrease ( $P < .0001$ ) in nausea and vomiting scales for group A than both groups B&C after 4 and 8 hours. **Conclusion:** Transcutaneous electrical acupoint stimulation of P6 point appears to be more effective than acupressure in alleviating post-operative nausea and vomiting after abdominal hysterectomy.

**Keywords:** TEAS; acupressure; nausea; vomiting; hysterectomy



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## **BLOOD PRESSURE RESPONSE TO FOOT REFLEXOLOGY ADJUNCT TO TRANSCENDENTAL MEDITATION TRAINING ON POSTMENOPAUSAL HYPERTENSION**

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### **ABSTRACT**

**Background:** Hypertension is by far the most paramount risk factor that affects the ladies in the early postmenopausal years. Reflexology is a noninvasive therapy that performed on the hands, feet, or ears at perceivers at categorical reflex points. **Purpose:** To detect the response of blood pressure to foot reflexology and transcendental meditation training on hypertensive postmenopausal women. **Subjects and Methods:** Fifty volunteers, postmenopausal women were diagnosed clinically as hypertensive, their age was ranged between (50 – 65) years, their body mass index (BMI) was  $<30 \text{ kg/m}^2$  and their blood pressure were ranged between (140/90) mmHg and (180/110) mmHg. They were randomly assigned into two equal groups in number (A& B). Participants in group (A) received the foot reflexology in addition to the transcendental meditation training techniques, while Participants in group (B) received the transcendental meditation training technique only. The treatment program were done three times per week for 8 weeks. Assessment of all subjects in both groups (A& B) was carried out before and after the treatment program throughout using the mercury column sphygmomanometer. **Results:** Both groups (A&B) showed a significant reduction ( $P<0.001$ ) in their blood pressure values after the end of two consecutive months of training program. However, foot reflexology plus transcendental meditation training group (A) showed a greater reduction in the blood pressure values. **Conclusion:** So, it could be concluded that using the foot reflexology in addition to the transcendental meditation training had a positive effect on hypertensive postmenopausal women than using the transcendental meditation training only.

**Keywords:** Reflexology, Transcendental Meditation, Menopause, Hypertension.



## **Comparison between aerobic training versus anaerobic training on blood coagulation in obese women**

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### **ABSTRACT**

**Purpose:** to investigate the effect of aerobic versus anaerobic training on blood coagulation in obese women. **Methods:** Forty obese women aged 25-35 years were included in the present study selected from outpatient clinic of Elyom Elwahed hospital at Cairo. Their body mass index (BMI) ranged between 30 to 34.9 kg / m<sup>2</sup>. They were classified into two groups, each group consisted of twenty women, the first group was those on low-calorie diet with aerobic exercise (40 min walking on treadmill 3 time/week 60-90% from predicted maximum heart rate), the second was those on low-calorie diet with anaerobic exercise (40 min of resistive exercise by weight graduated from 40-60% of 1-RM 3time/week for 12 week). **Results:** The biochemical changes in blood coagulation platelet aggregation and fibrinogen level were measured at the beginning of the study and after twelve week. **Conclusion:** Decrease in platelet aggregation and fibrinogen level took place in both groups without significant difference between both of them

**Keywords:** Aerobic exercise / anaerobic exercise / Blood Coagulation / Obese women.



## **INFLUENCE OF AEROBIC EXERCISE AND RESISTANCE TRAINING IN MANAGEMENT OF OBESE FEMALES**

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### **ABSTRACT**

**Background/aim:** Metabolic complication of obesity is rising not only in developed countries but also in non developing countries. In fact, Obesity can be presented as (new world syndrome) the greatest health problem in the modern industrial world. The aim of this study was to investigate the influence of Aerobic Exercise and Resistance Training in Management of obese females. **Material and methods:** Forty-five obese females participated in this study. Obese females were allocated randomly into three groups; group A, B, and C, fifteen obese females in each group. Group A received aerobic exercise only, group B received resistance exercise only, and group C received combined (aerobic and resistance) exercise. The study lasted for four weeks; Fasting lipid profile was measured before and at the end of the study for the three groups. **Results:** statistical analysis revealed that there was significant improvement in fasting lipid profile in the three groups with a greatest improvement to group c. **Conclusion:** Aerobic, resistance and combined training are effective methods for treating dyslipidemia in obese females.

**KEY WORDS:** Metabolic complications, Aerobic exercise, resistance training, Fasting lipid profile.



## **EFFECT OF HYDROTHERAPY ON MUSCLE STRENGTH IN CHILDREN WITH BRAIN TUMOR**

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### **ABSTRACT**

**Background:** Brain and spinal cord tumors are the second most common cancers in children after leukemia. They account for about 1 out of 4 childhood cancers. More than 4,000 central nervous system tumors are diagnosed each year in children and teens. It has been reported that those children have easy fatigability. **Objective:** This study was conducted to investigate the effectiveness of pool therapy on muscle strength in Children with brain tumor. **Methods:** Twenty-six children of both gender participated in this study. They were selected from Children's Cancer Hospital Foundation 57357, Cairo. Their ages between 5-12 years old, they have affection of motor function and muscle weakness of upper and lower limbs, Time elapsed since the start of treatment more than 1 month. They were classified into two groups, group A received land-based exercise program for such cases, and group B received hydrotherapy besides the land-based exercise program, Lafayette manual muscle tester used to assess muscle strength of upper and lower limb muscles pre and post 6 weeks. **Results:** There was a significant improvement in muscle strength of both upper and lower limbs in both groups in favor of the study group. **Conclusion:** From the obtained study it can be concluded that 6 weeks hydrotherapy is effective, so hydrotherapy can be added to the regular physical therapy program to improve muscle strength in children with brain tumor.

**Keywords:** hydrotherapy, muscle strength, brain tumor.



## **Correlation Between Soleus Muscle Spasticity And Ankle Range Of Motion In Children With Spastic Cerebral Palsy**

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### **ABSTRACT**

**Introduction:** Spasticity is one of the main characteristics that define children with spastic cerebral palsy which is specified by hyper-tonia and hyper-reflexia of the muscle. Spastic cerebral palsy children, which clearly accompanied by an increase in soleus muscle activity, shows a limited joints range of motions especially to their ankles dorsiflexion range, affecting functional abilities and standing abilities. **Objective:** To determine a correlation between soleus muscle activity and ankle range of motion in spastic cerebral palsy children. **Participants and methods:** the study was carried out on forty eight ankles and soleus muscles of spastic cerebral palsy children selected from the outpatient clinic of the Faculty of physical therapy Cairo University, the children was level II according to Gross Motor Function Classification System and their developmental age ranged from 9 to 12 month according to Peabody developmental motor scale, Hoffman reflex to Muscle response (H/M) ratio was used to assess spasticity of soleus muscle; Ankle dorsiflexion range of motion (ROM) was measured using digital goniometer. **Results:** the study indicates that H/M Ratio concerning soleus muscle spasticity has a negative moderate correlation ( $r = -0.5306$ ;  $p < 0.05$ ) to ankle dorsiflexion ROM. **Conclusion and recommendation:** Soleus muscle spasticity in spastic cerebral palsy children is correlated to the ankle dorsiflexion ROM in those children, where the higher the spasticity is the more decrease in the dorsiflexion range, so its highly recommended in physical therapy treatment program to link the goal of increasing the ankle range of action to controlling and inhibiting the soleus muscle spasticity.

**Keywords:** *Spasticity, Cerebral Palsy, Soleus, Ankle, Children.*



## **VALIDITY OF A NEWLY DEVELOPED EGYPTIAN ALGOMETER**

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<sup>1</sup> Professor of Physical Therapy, Department of Basic Science, Faculty of Physical Therapy, Cairo University.

### **ABSTRACT**

**Background:** Scientists long periods has perplexed in the ways of assessing pain. The estimated cost of pain treatment is about \$ 100 billion and about 77% of them feel depressed as a result of their pain. Seven out of 10 people around the world find that pain is very important interest in research. One of the aspects of measuring pain is pressure-pain thresholds (PPTs) that is measured by algometer. Currently used algometers are not wide spread because of the high cost. An Egyptian Algometer treat all the drawbacks and offers a cheap way to assess pain in the same efficiency and effectiveness of the high-priced devices. **Purpose of the study:** This study was designed to present a newly valid developed Egyptian Algometer. **Material and methods:** Validation of this device is made and certified by Egyptian organization for standardization and quality using Egyptian standard no.1-1128 / 2008. **Results:** Readings were collected. The relative error for accuracy is -2.98% and relative error for frequency is 0.68% in 99% confidence interval according to Egyptian standard no.1-1128 / 2008 in the certificate no.3-2017-93. **Conclusion:** An Egyptian Algometer has an excellent validity to measure pain pressure threshold.

**Keywords:** Algometer – Innovation – Pain – Wranger.



## **Detection of cancer cells through differences of frequencies and wavelengths**

**Mohab Sobhy Mohamed El-Moa'zen**

Undergraduate student, faculty of physical therapy, Kafr El-Shiek university

This project provides an amazing way to find the cancer cells, detect its position.

We can detect cancer cells through the electric frequency of each organ

.we can detect breast cancer by using DS18B20 sensor

.we can get any organ frequency alone. We can apply this device in all kinds of cancer.

D-cancer is a device which can detect any cancer cells in the body by making sense of them. The device is wholly independent that it is allowed to move upon the body and measure the frequencies of the body cells then the calculated frequencies is shown on LCD positioned on the front of our device. So it's simply capable of measuring the frequencies of the cells by the electrode and the transmitter and then comparing them to the normal ones if there are any abnormalities then the device will show us that on the LCD and then we can easily say that person has cancer!



## **Sports Injuries; Definition, Classification and Prevention**

**Fatemah M. AL-Boraey**

Undergraduate student, faculty of physical therapy, Kafr El-Shiek university

### **ABSTRACT**

This review characterizes sports injuries, mentions their classifications, common causes, symptoms and provides a full systematic prevention program. Data has been collected from college library, P.T journals, YouTube lectures, sports injuries websites and external text books. Sports injuries are injuries that occur as a result of acute trauma or repetitive stress in athletic activities. As they affect bones and soft tissue, they are associated with instability, obvious dislocation of a joint, pain, swelling, weakness and high levels of anxiety, stress or depression. Sports injuries differ in mechanisms, type of the destructive force and equipment interacting with each sport. Thus, the key to describe any sport injury, is to obtain a complete image of its nature, severity and acquired symptoms. Then determining which body tissues are affected, monitoring the processes, establishing a prime treatment method and finally creating a prevention program that suits the athlete and helps prevent injury recurrence.

**Keywords:** Sport; Trauma; Overuse; Prevention.



## **Effect of back bag wearing style on musculoskeletal pain**

**Mohamed Abobakr, Zahraa Abolkher, Rowan Tarek and Rola Borhamy.**

Undergraduate students, faculty of physical therapy, Pharos university

### **ABSTRACT**

The **purpose** of this research is to evaluate how much the carrying style of backpacks of elementary school children can affect musculoskeletal pain. Study Design: **Materials and Methods:** This is a study conducted on school girls and boys of age between 5-15 years during December 2016 in Alexandria. Sample of 360 students was taken from 10 different schools. Students were interviewed with visual analogue scale and questionnaire asking about: How they going to & from school (walk/transport)? How they carry bags? If they have pain due to bag carriage? Where they feel pain (shoulder/neck/back)? **Results:** Many students about 68% carry school backpacks that exceed 10 percent to 15 percent of their body weight, on one shoulder which puts them at risk for back pain and related disorders. As back pain related to this carrying style about 64%. Improper backpack use also led to poor posture. Girls and younger kids are especially at risk for backpack-related injuries because they're smaller and they carry loads that are heavier in proportion to their body weight. The prevalence of school children carrying heavy backpacks is extremely high. **Conclusion:** we have to teach our children the right way to carry their backpacks in order to prevent deformities and musculoskeletal pain that may be developed in their posture.

**Key words:** posture, carrying back pack, musculoskeletal pain



## **Effect of exercise on type 2 diabetic patients with peripheral Neuropathy**

**Asmaa Samy, Asmaa Adel, George Adel and Abanoub Malak.**

Undergraduate student, faculty of physical therapy, Pharos university

### **ABSTRACT**

Diabetic neuropathy, one of the late complications of diabetes, is likely to affect every segment of central nervous system. The Effect of various methods of physiotherapy in diabetic peripheral neuropathy like transcutaneous electrical stimulation with high frequency (**TENS**) reduces neuropathic pain in diabetic peripheral neuropathy by inhibiting the excitability of sensory nervous system, electrotherapy ,massage, kinesiotherapy and aerobic exercise. The aim of the study was to study the role of physical therapy in diabetic neuropathy and to provide control measures to prevent diabetic neuropathy. The study was performed on 152 patients (88 female, 64 male).108 patients has diabetic neuropathy and 44 without neuropathy. 70 patients were on regular exercise and 82 don't exercise. 40 Of the patients without neuropathy were on regular exercise while 4 of them don't do exercise. 78 of patients with neuropathy don't do exercises while 30 of them were on regular exercise. Results of the study support the importance of using exercise training program in general and specially walking training. Aerobic exercise training has a positive effect on body mass index and blood glucose level. So, exercise training generally should be recommended as a protective and treatment factor against major risk factor.



## **Role of physiotherapy in osteoporosis**

**Mennat -Alha Gazally, Mohamed Mohamed Attia Arakob, Amre Adel Abo-Hassan, Mohamed Ibrahim Mohamed, Kyrollos Sameh Kamal**

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### **ABSTRACT**

**Background:** Osteoporosis is a global health issue once bones have been weakened by osteoporosis, symptoms as back pain, Loss of height, a stopped posture and bone fracture with minimal fall is the clearest symptom of osteoporosis. Early detection of bone loss is critical in preventing osteoporotic fractures. Life style changes by getting plenty of calcium and vitamin D in the diet can help slow bone loss .As Bone tissue is continuously remodeled it adapts and responds to various stimuli, such as physical exercise. **The aim** of our study is to instruct and encourage the patients how to improve their physical exercise by practice several types of exercise; Weight bearing exercise, resistance exercise, and posture and balance trainings exercise. Our target patients were patient in senior houses or relatives, After 3 weeks, we re-assessed the range of movement using manual goniometer, and also we assessed the degree of pain in the affected joints in order to estimate the improvement in joints after the increase in physical activity. The **limitation** of our study was short time which obstructed our ability to gain more joints improvement in the patients. Our study was carried on about 100 patients (29 males-71 females). **Results:** There was a great variation in the physical improvement of each joint, where the hip joint showed the best improvement by 59% while the knee joint showed improvement with 29% and the wrist joint with 12%. Physiotherapists can help patients to reduce pain, improve mobility, increase joint mobility and posture, so as to prevent falls and fractures by encouraging patients to practice different types of exercise. Finally, the early screening for osteoporosis and increasing the physical activity will help to protect from severe fracture and progression of the osteoporosis



## **Patient Satisfaction of Physical Therapy Services in Health Institutes**

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### **ABSTRACT**

The **purpose** of the study was to determine the degree of patient satisfaction of physical therapy services in a sample of health institutes. **Subjects:** About 1000 patient from different ages were selected randomly from physical therapy departments in different hospitals. Patients were asked to fill in a survey form to measure their degree of satisfaction of the services provided to them. The survey was in Arabic, and included 10 questions about the appropriateness of the location of the institute, the location of the PT department, the session's cost, time, availability of equipment, degree of communication between staff members and patients, and finally the patient's opinion of the service provided to them. Data were collected and percentage of patient's opinion of services was calculated for each parameter in the questionnaire. **Results** of the study revealed that the most satisfying parameter to patients is the way therapist deal with them (89%) while, location of health institutes (39%) and shortage of necessary equipment (31%), were the most un satisfying parameters to patients. From the obtained results, it can be **concluded** that physical therapy services in Egyptian governmental health institutes need more financial and administrative support from the Egyptian government or civil society in order to improve quality of health service provided to patients.



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## **Survey on Breast Cancer and Rehabilitation After Surgery**

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### **ABSTRACT**

This project involves discovering how the Physical therapy missing its role in the rehabilitation after surgery especially in Breast cancer patient. The goal is putting spots on the main reasons causing the increment of breast cancer rate in Egypt and make a spot light on the important of physical therapy role after breast cancer surgery. The first phase of the project involves collecting data from about 930 breast cancer patients in different hospitals and oncology centers throughout a specific item in a data sheet. Upon examination of these data, it becomes clear that Breast cancer is spreading so fast in Egypt, most of the patients we met who didn't undergo physical rehabilitation after surgery, while they were needed it. This data suggests that we must increase the awareness about breast cancer, pre-examining test, and the role of physician after discovering the disease.



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## **Eval Battle**

**Abdelrahman Osama and Aya Abdullah**

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### **ABSTRACT**

**Introduction:** Now a days, No one don't have smart phones, from here we get the idea .. Why don't we make a clinical and educational smart phone application instead of wasting time with social media all the time? **Purpose:** To evaluation, Diagnosis, teach and giving treatment. **Procedure:** At first we had many meetings to have a group of good ideas, Finally we choosed "the application for smart phones". So, we decided to collect information about anthropometry, Goniometry, Skinfold, Muscle test, breadth, that used in evaluation, treatments, Theraputic modalities, and exercises. Then we Organized these Information in an easy way like a data to be available for everyone. **Results:** We did it! We have exerted every possible effort to make it useful for our friends and physical therapy students, Doctors and patients. **Conclusion:** This project will teach us how to be an effective team and we now know the core of being one unit with a common goal in mind and how to create time within our study time.



## **Photo Measurements**

**Esraa Khairy**

Undergraduate student, faculty of physical therapy, Misr University for Science and Technology.

### **ABSTRACT**

**Introduction:** This Project was designed to get long measurements using photos instead of using tape. The idea depends on using a drawing scale of the taken photos to get the real measurements. **Purpose:** Obtaining the measurements of all segments of the human body from only one photo.

**Procedures:** Color strips were used to detect the bony prominences of the measured segment. A still camera was used to take a photo for the tested subject from certain distance. A drawing scale was used to determine a factor to be multiplied by the photo measurement. **Results:** When the resulted factor is multiplied by the photo measurement, the real measurement was obtained.

**Conclusion:** testing the reliability of the results, printed photos can be used to obtain real long measurements.



## **Efficacy of low level laser therapy in carpal tunnel syndrome management: A systematic review and meta-analysis**

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### **ABSTRACT**

**Background:** Low level laser therapy (LLLT) is one of the physiotherapy modalities used in patient with peripheral nerve injuries such as carpal tunnel syndrome (CTS), through anti-inflammatory and analgesic effect. LLLT has an effect on cases of Carpal tunnel syndrome(CTS) through improving nerve conduction and enhancing regeneration of damaged nerves in addition to stimulation of microcirculation, improving cellular oxygenation and acetyl cholinesterase activities that facilitate recovery of nerve compression, The purpose of this study was to compare the effectiveness of LILT to control (sham or placebo) for management of mild and moderate CTS.**Search methods:** in April 2016 we searched pubmed, web of knowledge, Scopus, VHL and Cochrane.**Eligibility criteria and study selection:** We included Randomized controlled clinical trials that met all the following criteria, trails that compare the effect of low level laser therapy(LLLT) with or without splinting versus placebo.**Risk of bias assessment:**The quality of the included RCTs was assessed according to the Cochrane Handbook for Systematic Reviews of Interventions 5.1.0 (updated March 2011)**Data collection:**Two independent reviewers extracted the following data from the included studies, using excel data extraction form. Disagreements were resolved by the opinion of third reviewer.**Data Synthesis:**All outcomes were pooled as MD (mean difference) in a fixed effects model using the inverse variance (IV) method. We used Microsoft excel, MetaXL plugin during data synthesis. We tested for heterogeneity among the included studies by using the Chi-Square test and quantified its amount by the I-square test.**Results:**Eight RCTs (473 patients/631 wrists) were eligible for the final analysis.The overall effect estimates did not favor LLLT therapy group over placebo in all primary outcomes: Visual analogue scale (MD -1.11, 95% CI [-2.58, 0.35]), symptoms severity scale score (MD -1.41, 95% CI [-5.12, 2.29]), functional status scale score (MD -1.33, 95% CI [-3.27, 0.61]). However, the LLLT group was superior to the placebo group in terms of grip strength (MD 2.19, 95% CI [1.63, 2.76]), and inferior to placebo in terms of sensory nerve action potential (SNAP) amplitude (MD -2.74, 95% CI [-3.66, -1.82]).**Conclusion:** Laser therapy is superior to placebo in terms of improving the grip strength; however, no significant difference was found between both groups in terms of functional status improvement, pain reduction, or motor electro diagnostic evaluations. Further high quality trials with longer follow up periods are required to establish the efficacy of LLLT for CTS treatment.

**Keywords:** Laser therapy; Carpal tunnel syndrome; entrapment mononeuropathy; Meta-analysis



## **Effect of function electric stimulation on gait in cerebral palsy: Systematic Review and Meta-analysis**

**Basma Ragab(1) and Mostafa Mohmed(2)**

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### **ABSTRACT**

**Background:** Cerebral palsy (CP) is a non-progressive damage that leads to permanent motor dysfunctions and abnormal control of the central nervous system over musculoskeletal system (with overall prevalence; 2.11 per 1000 live births). This motor dysfunction is manifested by spasticity, muscle weakness, lack of coordination, and balance disorders. All those forementioned symptoms lead to abnormal movement pattern as equinus gait pattern in lower limb (decreased active dorsiflexion and a lack of heel strike at initial contact) due to plantar flexors spasticity and dorsiflexors weakness. CP rehabilitation approaches aim to improve development and function by increasing the innate capacity of the brain to change and adapt throughout the patient's life. Electrical stimulation is one of the effective methods of managing hypertonia, facilitating voluntary motor control, and improving gait pattern. NMES and FES may improve muscle volume and strength, decrease spasticity, increase passive range of motion (PROM), and enhance upper extremity function, walking speed, and positioning of the foot and ankle kinematics during walking. (FES) refers to electrical stimulation of muscles during motion to improve the impaired motor function and motor learning. FES assisted walking involves stimulating the relevant leg muscles in a coordinated fashion that is needed for normal gait. The lower-limb muscle groups that are activated are; hip flexors, abductors and extensors, knee flexors and extensors, and the ankle plantar flexors and dorsiflexors.

**Purpose:** To determine the efficacy of FES on gait pattern in children with CP. **Methods:** MEDLINE, Cochrane, and Web of Science were searched for randomized control trials. we included studies that use FES during gait in CP children from 296 studies by screening on excel software. Meta analysis was done by inverse variance statistical method on revman software using fixed and random effect analysis method. Heterogeneity was measured by chi-square and I-square tests. **Results:** Four randomized control trials matched our criteria with 109 participants (59 of them used FES). Two studies reported that FES can improve gait mechanics, without long-term effect. One study reported that FES increased agonist muscle volume, decreased antagonist muscle tone without impact on selective motor control. Main outcomes in Meta-analysis were; Initial contact angle (MD: -1.21, 95% CI [-1.85,0.56], p=0.0003, effect size ES: 3.6), Dorsiflection swing (MD:-1, 95% CI [-3.08,1.07], p=0.34, ES= 0.95), Step length (MD 0.39, 95% CI [-0.75,1.54], p=0.5, ES: 0.67), and velocity (MD 0.02, 95% CI [0.45,0.48], p=0.95). **Conclusion:** This Study revealed that FES has a significant effect on initial contact angle and dorsiflection swing, but there was no significant effect on step length and velocity of gait.

**Keywords:** Cerebral Palsy, FES, Gait



## **Mechanical advantages of novel KZ bag on the spine and posture of school age children**

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### **ABSTRACT**

**Background and purpose:** The effects of backpack on 'school-age' children (Age 9 – 12) years, have been a critical subject of discussion throughout the past years. It has been one of the factors that contribute to a bad posture for 40% to 70% of developed countries. A child carrying a heavy backpack for a prolonged time period, on a daily basis has shown significant changes on the child's spinal posture, foot shape and gait. The back pain caused by the compensatory posture, or "Backpack syndrome", is also known for its headaches, fatigue, cervical and lumbar pain caused by the abnormal body posture. The child tends to balance himself by bending forward to match the heavy backpack, moving his center of gravity forward, resulting in decreased lumbar lordosis and increased thoracic kyphosis. Since no bag has addressed the weight distribution issue as my idea till now. Therefore, KZ bag is believed to prevent the huge backward shift of COG due to the load, and hence all the symptoms accompanied, by combining the design of a normal backpack with a messenger bag. The purpose of this study is to investigate the improvement of the child's spine and minimizing the compensatory posture after using the KZ bag. **Materials and Methods:** KZ bag would compromise the pros of a messenger bag (keeping the COG in place) by a diagonal load strap and of a backpack (distributing the load on both shoulders) by connecting another load strap parallel to the sagittal plane of the body. The design would be made adjustable to match the child's height and the bag load kept within limits, (10-15%) of the child's body weight. Measurements of Postural angles (Cervical, shoulders and Trunk) would be taken after the use of KZ bag for a specified period. **Conclusion:** KZ bag will prove an improved distribution of weight of the bag on the child's body, and reduce the degree of the compensatory posture, that occurs in attempt to balance the external weight of the bag.

**Keywords:** Posture, Backpack syndrome, Backpack.



## **EFFECTIVENESS OF RS ORTHOSIS ON FOOT DEFORMITY**

**Ramy Saad El Madah**

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### **ABSTRACT**

**Background and Purpose :** Flat feet is a postural deformity in which the arches of the foot collapse, with the entire sole of the foot coming into complete or near –complete contact with the ground. Some individuals (an estimated 20- 30% of the general population) have an arch that simply never develops in one foot (unilaterally) or both feet (Bilaterally) RS orthosis is supposed to raise the longitudinal arch of the foot and the general postural of foot to enhance functional biomechanical, state of the foot and correct the gait cycle. The idea of using straps is based on (Three point pressure law which aim to correct deformity of foot and reshape the way of a ground contact point of the alignment of body weight bearing. **Materials and methods:** RS orthosis consists of straps and soft materials with light weight, rigid bars as supportive part. **Conclusion:** we hope RS orthosis can effect on flat feet cases so it could have significant effect on pain, gait cycle functional performance and quality of life.



## **Effect of Spinal Mobility and Dural Stretch on Tension Type headache**

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### **ABSTRACT**

**Background:** headache affects nearly every one and affects women more than men (ratio; 3:1). There are two main classifications of the headache; primary and secondary headache. The tension type headache (TTH) is the major type of primary headache that represent 69%, and classified as episodic (30min / 7days) and chronic type (>15 days per month). It can cause mild, moderate, or tense pain in the head, neck, and behind eyes in both sides, and felt like a tight band around the forehead. TTH caused by muscle spasm in the head and neck region that affects population from 20 to 50 years old. The pain is usually bilateral and may be unilateral, and the patient may remain active or may need rest.

**Hypothesis:** the dural movement restriction is a source of head and neck pain and cause suboccipital nerve stimulation. The skull bones have many attachments and the dura mater is one of those attachments that exposed to many stresses and poor posture. Spinal mobilization and dural stretch techniques are supposed to decrease this tension (TTH) by providing mechanical stimulation, breaking down the adhesions, and and reducing soft tissue restriction. Also regular mobility exercises will regain normal elasticity of dura mater.

**Methodology:** Patients with TTH will be assigned into two main groups; Control and Experimental groups. Cervical spinal mobilization with regular mobility exercises and dural stretch techniques will be delivered to the Experimental group. Patients in Control group will take regular headache medications. Pretest / posttest control group design will be used and patient outcomes will be measured by a valid and reliable questionnaire and pain rating scale.

**Keywords:** tension type headache, spinal mobilization, dural stretch, suboccipital region



## **200-meter Fast Walk Test Normative Data for Young Healthy Individuals — an Observational Study**

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### **ABSTRACT**

**Background:** The 200-meter fast walk test (200-mFWT) is a physical performance assessment tool used in cardiac rehabilitation (CR) that to date has had limited normative data available for healthy individuals. Thus, the aim of this study was to determine the normative data for the 200-mFWT for young healthy adults between the ages of 20 and 49 years. **Methods:** Ninety healthy participants (45 males and 45 females) contributed in this study and were classified into three age groups of 20 to 29, 30 to 39, and 40 to 49 years. Pre and post cardiovascular parameters and rate of perceived exertion (RPE) were measured. The blood pressure (BP) was measured using a digital sphygmomanometer, heart rate (HR) was recorded by placing two fingers over your radial artery on the subject's radial artery at the wrist and by counting the beats for 60 seconds, respiratory rate (RR) was recorded by visually observing how many times the chest rose over 60 seconds, oxygen saturation was measured by pulse oximeter and the Borg scale was used to measure the rate of perceived exertion (RPE). Also, time to perform the 200-mFWT was measured by stopwatch after the test. **Results:** Slower walking times were associated with increasing age and female gender and also correlated with advancing age, gender, height, weight, and body mass index (BMI). BP, HR, RR and RPE were higher following the 200-mFWT. No significant gender difference was found in cardiovascular response to the 200-mFWT. **Conclusions:** Normative data were reported for the 200-mFWT for 20-49-year-old healthy adults. Anthropometric variables contributed to the walking time. The cardiovascular parameters changed significantly following the 200-mFWT except for oxygen saturation.

**Keywords:** Cardiac rehabilitation, walking test, reference value.



## **ELECTROMAGNETIC FIELD VERSUS DICLOFENAC DRUGS ON PRIMARY DYSMENORRHEA.**

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### **ABSTRACT**

**Background:** Primary dysmenorrhea is one of the most common complaints of women and is also the most common gynecological problem worldwide. These cramps are recurrent and 90% adolescent girls and about 50% women suffer from it. **Purpose of the study:** to determine which is more effective in treatment of primary dysmenorrhea; pulsed electromagnetic field or diclofenac drugs. **Methodology:** Fifty adult females participated in this study, their age ranged from 17 to 24 years and their body mass index was ranged from 20 to 25 kg/m<sup>2</sup>. They were divided randomly into two groups equal in numbers: group (A) received pulsed electromagnetic field applied on pelvic region, 3 times per week for 3 months, 20 minutes per day and group (B) received diclofenac tablets, 50 mg only with onset of menstrual pain. All participants in both groups (A and B) were assessed pre- and post-treatment through measuring progesterone level in the blood, assessment of pain using visual analogue scale and physical as well as psychological symptoms by using menstrual symptom questionnaire. **Results:** revealed that pre-treatment, there was a non-statistical significant difference between both groups (A&B) in median value of pain, menstrual symptoms questionnaire & progesterone where the p-value was (>0.05). comparison between pre and post treatment showed a statistically highly significant improvement in pain, physical and psychological symptoms associated with dysmenorrhea and progesterone blood level in group (A) than in group (B). **Conclusion:** pulsed electromagnetic field was effective than diclofenac drugs in relieving pain and associated symptoms with dysmenorrhea.

**Key Words:** Primary Dysmenorrhea- Pulsed electromagnetic field- Diclofenac drugs.



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## **Effect of Kinesio Tape on Primary Dysmenorrhea**

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### **ABSTRACT**

**Background:** The term dysmenorrhea means the occurrence of painful cramps during menstruation. Primary dysmenorrhea refers to complex symptoms that may encompass nausea, vomiting, headache, nervousness, fatigue, diarrhea, syncope, lower abdominal cramping, bloating, breast tenderness, mood changes, backache and dizziness. These symptoms often appear just before (24 to 48 hours) or at the onset of menstruation and are maximal during the first 48 hours (**Kennedy, 2005**). Kinesiology tape is a thin, stretchy, elastic cotton strip with an acrylic adhesive. Therapeutic kinesiology tape that can benefit a wide variety of musculoskeletal and sports injuries, plus inflammatory conditions. It is almost identical to human skin in both thickness and elasticity, which allows kinesio tape to be worn without binding, constricting or restriction of body movement (**Murray and Husk, 2001**).

**Purpose:** The present study was conducted to investigate the efficacy of kinesio tape on primary dysmenorrhea.

**Subjects and Methods:** Thirty virgin females with primary dysmenorrhea who had lower back and abdominal pain were participated in this study, their ages ranged from 18 to 21 years, they had body mass index (BMI) less than 30kg/m<sup>2</sup>, they were selected from students of Faculty of Physical Therapy, Cairo University. They were classified into two groups as study group (Group A) and control (Group B) in equal number and each group had 15 virgin females. The two groups received specific exercises program 3 times / week for four weeks and then Group (A) received kinesio taping treatment in the first 24 hours on their lower back and abdominal site of pain with the menstruation. Evaluation of both groups(A&B) by using Present pain intensity (PPI) scale, Verbal multidimensional scoring system (VMSS) and Serum cortisol level (ug/dl) were assessed before and after treatment exercise program (at the end of the four weeks) and again assessed after 24 hours of menstrual blood flow. **Results:** The results revealed significant improvement of all measured variables after four successive weeks and after 1st 24 hours in both groups (A&B) with a significant improvement in study group (A) than group (B). **Conclusion:** kinesio taping treatment can be added to the physical therapy program for female with primary dysmenorrhea who had lower back and abdominal pain.

**Keywords:** Virgin females, Primary dysmenorrhea, Specific exercises program, Kinesio tape.



## **Effect of Pulsed Electromagnetic Field on Menstrual Distress in Primary Dysmenorrhic Women.**

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### **ABSTRACT**

**Background:** Primary dysmenorrhea is a common menstrual cramps that are recurrent and are not due to other diseases that is common cause of stay at home and school or work. **Purpose:** The purpose of this study was to investigate the effect of pulsed electromagnetic field (PEMF) on menstrual distress in primary dysmenorrhic women. **Materials and Methods:** Forty women suffering from primary dysmenorrhea were selected from Physical Therapy Department in Al Matria Teaching Hospital in Cairo. Their ages ranged from 20 to 30 years old. They were divided randomly into two groups equal in number, group (A)(Study Group), treated with pulsed electromagnetic field, 3 times /week for three months. Each session lasted for 30 minutes, in addition to medical treatment and, group (B) (Control Group) received medical treatment only [Non Steroidal Anti-Inflammatory Drugs ]. Menstrual distress questionnaire and Visual analog scale were used for assessment of menstrual distress and Pain pre and post treatment for both groups (A & B). **Results:** The results showed that there is a significant improvement in menstrual distress and pain scores in both groups (A & B) post treatment ,in favor of group (A). **Conclusion,** It was concluded that pulsed electromagnetic field is effective in improving dysmenorrhic pain and menstrual distress score.

**Key words:** Primary Dysmenorrhea – Pulsed electromagnetic – Menstrual distress questionnaire.



## **Effect of Aerobic Exercise on Endurance in Children with Type I Diabetes Mellitus**

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### **ABSTRACT**

**Background:** Decrease in endurance is one of the challenging complications in children with type I diabetes mellitus. **Purpose:** to evaluate the effect of aerobic exercise on the endurance in children with type I diabetes mellitus. **Patients and methods:** Thirty patients with type I diabetes mellitus from both sexes ranged from 8 to 11 years old. They were selected from Police Hospital at Nasr City. They were divided randomly into control & study groups. Both groups were evaluated pre and post treatment by lab analysis for blood glucose level and treadmill to evaluate endurance (distance & time). Treatment time was 40 minutes \ 3 sessions per week \ 3 successive months. Control group received program as muscle strengthening exercise and same regimen for study group and treadmill as a form of aerobic exercise. **Results;** Children in both groups were showed significant improvement in all measured variable post treatment ( $p < 0, 05$ ). The significant improvement was in the favor of study group as compared to control group. **Conclusion:** aerobic exercise may be added as a part of treatment program in improving the endurance of children with type I diabetes mellitus.

**Key words:** diabetes mellitus - aerobic exercise - endurance.



## **Physical Therapy Registry For Establishment Of Cerebral Palsy Children In Elgharbya**

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### **ABSTRACT**

Patient registry is an organized documented system to collect uniformed data that evaluate specified outcomes for population defined by a particular disease that serves a predetermined scientific, clinical, or policy purposes. **Aim;** this study was conducted to establish data base for cerebral palsy (CP) in ElMahalla city and and its surrounding cities Samanoud, Qutor, Ztfta, **Subjects and Methods:** children with CP who are receiving physical therapy services of both genders, ranged in age from 3 months to 18 years in Ministry of Health, Insurance hospitals, units of family medicine in villages and cities and all private centers of physical therapy in ELGarbia were involved in this study there number were 965 case. The outcome measures were Gross Motor Measurement Scale (GMMS), Gross Motor Function Classification System (GMFCS) from 3month to 18 years, Manual Ability Classification System (MACS) and Viking Speech Scale. **Results:** Within the study participants, 72.5% are spastic type, 16% are dyskinetic, 7% are ataxic and 4.5% are hypotonic. Percentage of CP based on GMFCS were; 9.5% for level I, 25% for level II, 31.5% for level III, 18.5% for level IV, and 15.5% for level V. (GMMS) was used to determine score performance for each participant. According to MACS and Viking speech scale high incidences of children with CP were classified at level III. **Conclusion:** The current study revealed that CP children who are receiving physical therapy; incidence of spastic type is the major while hypotonic is the least prevalence. High incidences of children with CP were classified level III in GMFCS, MACS and Viking speech scale. The results revealed that more than 2/3 of children with CP are actively ambulant, functional and able to communicate.



## **Effect of exercise on posture in adolescent girls with Primary Dysmenorrhea**

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### **ABSTRACT**

**Background:** Primary dysmenorrhea means the occurrence of painful cramps during menstruation and it is referred to complex symptoms that may encompass nausea, vomiting, headache, nervousness, fatigue, diarrhea, syncope, lower abdominal cramping, bloating, breast tenderness, mood changes, backache, and dizziness which can affect posture. **Purpose:** The present study was conducted to investigate the effect of exercise on posture in adolescent girls complaining from primary dysmenorrhea. **Subjects and Methods:** Thirty adolescent girls complaining from primary dysmenorrhea, their ages ranged from 15 to 17 years were participated in this study. They were classified into two groups as study group (Group A) and control (Group B) in equal number. The two groups received the same analgesics and Group (A) participated in an exercise training, 3 times per week for one month. Evaluation of both groups (A&B) by using Present pain intensity (PPI) scale, Verbal multidimensional scoring system (VMSS) and Formetric II Device were assessed before and after exercise program (at the end of the four weeks). **Results:** The results revealed significant improvement of all measured variables after four successive weeks in both groups (A&B) with a significant improvement in study group (A) than group (B). **Conclusion:** Exercise can improve posture and reducing pain in adolescent girls with primary dysmenorrhea who had lower back and abdominal pain.

**Key Words:** Adolescent girls, Primary dysmenorrhea, Exercise, Posture.



## **EFFICACY OF BIPOLAR RADIOFREQUENCY ON TREATMENT OF ACNE VULGARIS**

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### **ABSTRACT**

**Background:** Acne vulgaris is a common chronic skin disease involving blockage and/or inflammation of pilosebaceous units (hair follicles and their accompanying sebaceous gland). Acne can present as noninflammatory lesions, inflammatory lesions, or a mixture of both, affecting mostly the face but also the back and chest. **The Purpose:** of this study was to investigate the effect of bipolar radiofrequency on treatment of acne vulgaris. **Material and Methods:** Thirty patients suffer from inflammatory acne vulgaris with grade II to grade IV on acne global severity scale selected randomly from Outpatient Clinic, Shobra El Khema, Qalubia, Egypt. Their ages ranged from 18- 25 years. They assigned into two groups equal in number: Group (I)(Study group): 15 patients received bipolar radiofrequency twice/week for one month plus medications (Salicylic acid soap) twice/day, Group (II)(Control group): 15 patients received medications (Salicylic acid soap) twice/day only for one month. Acne global severity scale and digital camera were used to evaluate acne degree before and after the study. **Results:** There was significant improving in inflammatory acne in study group(I) compared to the control group(II). **Conclusion:** Bipolar radiofrequency is useful and safe approach in treatment of inflammatory acne vulgaris and improving cosmetic appearance.

**Key words:** Bipolar radiofrequency, Acne vulgaris.



## **COMBINATION THERAPY USING LOW VERSUS MEDIUM FREQUENCIES IN TREATING TRIGGER POINTS OF UPPER FIBERS OF TRAPIZIUS**

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### **ABSTRACT**

**Background:** A myofascial trigger point (MTrP) has been described as a hyperirritable spot located in a taut band of muscle; which is painful to palpation or compression and refers pain, tenderness, or an autonomic response to a remote area. Some investigators stated that when pressure is applied to a MTrP, a “jump sign” or “jump response” is elicited whereby the patient reacts with facial grimacing or by jumping away from the examiner. **Purpose:** the aim of this study was to compare between low frequency, high intensity burst-transcutaneous electrical nerve stimulation (TENS) CT and medium frequency, low intensity amplitude modulated frequency (AMF) interferential therapy (IFT) CT on upper trapezius active myofascial trigger points (MTrPs). **Design:** Single-blinded randomized controlled trial design was used. **Methodology:** Seventy participants with acute mechanical neck pain and more than two active MTrPs in upper trapezius were allocated randomly into three groups: The Burst-TENS-CT group (A), the AMF-CT group (B) or the sham CT control group(C). Group (A) consisted of 23 patients with mean age and height values of  $34.39 \pm 5.92$  years, and  $163.73 \pm 11.69$  cm respectively. Group (B) consisted of 25 patients with mean age, and height values of  $34.88 \pm 5.67$  years, and  $167.92 \pm 10.22$  cm respectively. Group (C) consisted of 22 patients with mean age and height values of  $35.18 \pm 5.56$  years and  $167.5 \pm 13.83$  cm respectively. All groups received progressive pressure release (PPR) and passive stretch for the upper trapezius muscle, 3 sessions per week for 4 consecutive weeks. **Results:** Demonstrated that CT significantly increased both PPT values as well as cervical lateral flexion ROM with a  $P < 0.0001$ . However, among groups comparison low frequency burst TENS-CT ( $4.73 \pm 0.59$ ) yield a greater increase in PPT values and cervical lateral flexion ROM with a 547% increase than medium frequency AMF-CT ( $2.74 \pm 0.32$ ) with a 290% increase. Primary measurement outcome included pressure pain threshold (PPT) using an electronic digital algometer. Secondary outcome included active cervical lateral flexion using a smart phone Clinometer application. Data was collected prior to the first treatment and at the end of the 4-week trial. **Conclusion:** Within the scope of our study, we conclude that both CT modalities were effective in increasing PPT and cervical lateral flexion, however, low frequency, high intensity burst-TENS CT produced significant improvements than medium frequency, low-intensity AMF-CT in the management of upper trapezius active MTrPs.

**Keywords:** combined therapy, interferential therapy, transcutaneous electrical nerve stimulation, myofascial trigger points and pressure pain threshold.



## **PREVALENCE OF OBESITY AMONG PRIMARY SCHOOL CHILDREN IN AL MINEA GOVERNMENT**

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### **ABSTRACT**

**Introduction** Overweight and obesity in childhood have significant impact on both physical and psychological health for example; Overweight and obesity are associated with hyperlipidemia, Hypertension, abnormal glucose tolerance, and infertility. In Addition, psychological disorders such as depression occur with an increased frequency in obese children. It is imperative to understand the prevalence and determinants of childhood obesity in order to develop effective preventive strategies. **Objective:** To determine prevalence of obesity in primary school children in AlMinea Government. **Participants and methods:** a cross-sectional study was carried out on 1000 Egyptian children to calculate prevalence of Overweight and obesity among primary school children at age of 6–12 years living in Alminea Government. 9 schools from 9 districts in Al Minea government including both sexes were selected randomly in this study. They were subjected to anthropometric measurements including weight, height , waist circumference, and body mass index, percentile body mass index, a questionnaire applied on the selected students . **Results:** the prevalence of overweight and obesity is relatively high. Obesity is more prevalent among age group (8-10) years and among female than male. **Conclusion and recommendation:** Pediatric obesity is a problem that poses a serious risk to the health and well-being of the nations' youths. . It was more common in female individuals than male individuals, and major risk factors was lack of physical activity and usage of fast food; family history and type of food have an important role in increasing obesity of many of them. Different strategies can be implanted through many approaches to outline some important targets for anticipatory guidance to prevent obesity.

**Keywords:** obesity, AlMinea, prevalence.



## **EFFECT OF FOOT REFLEXOLOGY ON PAIN AND OUTCOMES OF LABOR**

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### **ABSTRACT**

**Back ground:** Labor is a process that permits a series of extensive physiologic changes in the mother to allow for the delivery through the birth canal. **Purpose:** This study was conducted to determine the effect of foot reflexology on pain and outcomes of labor. **Subjects:** Forty primigravida women diagnosed in labor clinically by Gynecologist as primigravida. They were selected from obstetrics department in El Sahel Teaching Hospital, their age ranged from 20 to 35 years and their gestational age ranged from 37 to 41 weeks. They were divided into 2 equal groups (A&B). **Methods:** Group (A): received foot reflexology during labor for 20 minutes for each foot when cervix is at 3to5 cm dilatation in addition to the routine health care as well as verbal and emotional support. Group (B) received routine healthcare as well as verbal and emotional support when cervix was at 3 to 5 cm dilatation. **Main measures:** Pain was evaluated by Visual Analogue Scale while outcomes of labor were evaluated by Apgar score to evaluate new born physical condition. **Results:** There was statistical significant increase in the mean value of Apgar score measured after 1 minute and after 5 minutes of labor in group (A) when compared with its corresponding value in group (B) .There was a statistically highly significant decrease in pain, after receiving reflexology in addition to the routine health care in group (A) compared with the degree of pain in group (B) who received routine healthcare only. **Conclusion:** It could be concluded that the reflexology was very effective method in reliving labor pain and improving outcomes of labor.

**Key words:** Reflexology - Labor pain – Outcomes of labor - Apgar score.



## **Efficacy of Abdominal Muscles Stimulation on Pulmonary Functions in Preterm Infants With Lung Collapse**

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### **ABSTRACT**

**Background:** respiratory problems in premature infants are the major causes of their morbidity and mortality, and they often use the expiratory breath hold more than term infants. So contraction of abdominal muscles might brake breathing. **Purpose:** to evaluate the effect of stimulation of the abdominal muscles on weight and the arterial blood gases of preterm infants with collapsed lung. **Subjects and procedures:** 30 preterm infants with lung collapse did not under mechanical ventilation. They randomly assigned into two groups with equal number, group A received chest physiotherapy modalities (percussion & vibration) and group B received chest physiotherapy modalities in addition to stimulation to abdominal muscles by using faradic stimulation. Faradic stimulation was applied to rectus abdominis and external oblique abdominal muscles for 10 minutes twice time daily. Weight and arterial blood gases (pO<sub>2</sub>, PaCO<sub>2</sub>, PH, and Hco<sub>3</sub>) were monitored before and after two weeks of treatment application. **Results:** when the mean values of measured variable of both groups compared before and after treatment, there was significant difference within and between groups (p≤0.001). **Conclusion:** Finally the abdominal stimulation could intensify the effect of chest physiotherapy on pulmonary function in preterm infant which in turn help to improve respiration and decrease lung collapse.

**Key words:** Preterm infant, Chest physiotherapy, faradic stimulation, abdominal muscles, lung collapse, pulmonary functions.



## **Positional Release Versus Muscle Energy Techniques on Functional Ability of Shoulder in Chronic Adhesive Capsulitis**

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### **ABSTRACT**

**Background:** Adhesive capsulitis is a condition of the shoulder of unknown etiology. It is characterized by pain, loss of function and restriction of both passive and active range of motion (ROM). Both positional release and muscle energy techniques considered effective manual therapy techniques in treatment of many musculoskeletal conditions. Till now the difference in efficacy between both techniques is not known. **Objectives:** The purpose of this study was to compare between the efficacy of positional release and muscle energy techniques on functional ability of the shoulder in adhesive capsulitis. **Methods:** Thirty patients from outpatient clinic of Bolak Eldakror hospital had participated in this study; they were randomly assigned in two groups (group A& B). Group A consisted of 15 patient (5males and 10 females) with mean age  $50.80 \pm 6.48$  years, received positional release technique and conventional physical therapy program. Group B consisted of 15 patients (6males, 9 females) with mean age  $51.13 \pm 5.77$  years, received muscle energy technique and conventional physical therapy program. **Results:** The results revealed that there was a significant difference in the post treatment values ( $P < 0.05$ ) where the t-value was (7.22) and p-value was (0.0001) between Group A and Group B in favor of group B. **Conclusion:** Both positional release and muscle energy techniques were shown to be effective in improving functional ability of shoulder in Adhesive Capsulitis, but muscle energy technique was better than positional release technique.

**Key Wards:** Positional release, muscle energy, adhesive capsulitis



## **Secondary motor impairment in cerebral palsy: relationship to gross motor function and primary motor impairment**

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### **ABSTRACT**

**Background:** Children with Cerebral Palsy (CP) have different types of motor impairments which divided into primary and secondary impairments. **Purpose:** to evaluate the effects of primary and secondary impairments on gross functional outcome in children with spastic CP. **Subjects and Methods:** One hundred and thirty six children with spastic CP (54 hemiplegic and 82 diplegic), aged from 2 to 5 years, all children underwent the evaluation procedures for the gross motor functions, primary and secondary impairments. The gross motor function was evaluated by gross motor function classification system (GMFCS). Primary impairment was evaluated by using Early Clinical Assessment of Balance scale (ECAB) and modified athwarth scale. Secondary impairment was evaluated by using Spinal Alignment and Range of Motion Measure scale (SAROMM), functional strength assessment scale, and early activity scale of endurance. **Results:** Diplegic CP showed higher GMFCS than hemiplegic CP level ( $p=0.001$ ), lower ECAB total score than hemiplegic CP ( $p<0.001$ ), and higher score of secondary impairment than hemiplegic CP ( $p=0.03$ ). GMFCS showed negative correlation to ECAB total score ( $r=-0.7$ ,  $p<0.001$ ) and positive correlation to score of score of secondary impairment ( $r=0.3$ ,  $p<0.006$ ). **Conclusion:** The functional outcome of CP children largely affected by postural stability and the extent of secondary impairment.

**Key-words:** Cerebral palsy, primary impairment, Secondary impairment.



## **Efficacy of cupping therapy on headache in chronic sinusitis patients**

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### **ABSTRACT**

**Objective:** To determine the efficacy of cupping therapy on headache in chronic sinusitis patients. **Background:** Cupping therapy is a type of alternative medicine that is gaining popularity among people during last few years but the extent of its use and awareness of public towards it has not been widely studied. Chronic sinusitis is important public health problems affect approximately 12.5% of people. This study assessed the effects of cupping therapy on headache in chronic sinusitis. **Subjects and Methods:** Thirty chronic sinusitis patients of both sexes participated in the study, their ages ranged from 30-60 years, who were received cupping therapy for one session. Pain in Numeric Pain Rating Scale, peak nasal expiratory flow (PNEF), peak nasal inspiratory flow (PNIF), Right peak nasal expiratory flow (RPNEF), Left peak nasal expiratory flow (LPNEF), Right peak nasal inspiratory flow (RPNIF) and Left peak nasal inspiratory flow (LPNIF) in nasal spirometer measured pre and post treatment **Results:** cupping therapy had significance improvement of headache in chronic sinusitis as examine by numeric pain rating scale and nasal spirometer. **Conclusion:** Cupping therapy showed improvement of headache in chronic sinusitis patients.

**Key words:** Cupping therapy- chronic sinusitis - Numeric Pain Rating Scale - nasal spirometer.



## **INFLUENCE OF REGULAR AEROBIC TRAINING ON INTRAOCULAR PRESSURE IN ELDERLY SUBJECTS**

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### **ABSTRACT**

**Purpose:** To determine the effect of aerobic training on intraocular pressure on elderly subjects. **Procedure:** Thirty men with age ranged from 50 to 60 years old . They were selected from the outpatient ophthalmic clinic of Police Hospital in Assiut They were complaining from increased intraocular pressure (IOP) that was ranged between 13-20 mmHg. All participants were submitted to the Viswanathan questionnaire on systemic and ocular diseases as well as on the use of systemic and topical medication . Intraocular pressure was measured by Goldman applanation tonometer for both eyes at the beginning of the study and after 12 weeks. Participants were assigned randomly into two groups equal in number, **Gr. A** trained for 12 week with a rate of three sessions per week in the form of controlled treadmill walking exercise with incremental increase in speed on an individual bases until the heart rate reached 140 beats / min by the use of pulsometer , each exercise session lasted for 40 minutes ;(10 minutes warming up ,the active phase 20 minutes that was followed by 10 minutes for cooling down ), while **Gr. B** acted by their traditional daily living activities that was assessed on Borg scale of perceived exertion by 13-15 point. The practical work was performed from March 2015 to December 2015. **Results:** It shows that the intraocular pressure reduced by 32.95 % in Gr. A after training when this was compared with the results of Gr. B that was 22.2 % after 12 weeks. **Conclusion:** It was concluded that Aerobic exercises training program using treadmill induces significant reduction in on intraocular pressure in elderly.

**Key words:** (IOP– aerobic exercise-glaucoma-Goldman applanation tonometer).



## **INFLUENCE OF BODY MASS INDEX ON LUMBAR PROPRIOCEPTION IN ADULT SUBJECTS**

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### **ABSTRACT**

**Background:** Proprioceptive sense plays an important role of protective reflex response against harmful forces on joint. Load on musculoskeletal system increases with higher body weights and joint becomes prone to injuries. Body mass index (BMI) is the most useful variable which reflects the change of mechanical structure of the lumbar spine than other variables. **Objective:** The aim of the study was to determine the effect of BMI on lumbar proprioception in adult subjects. **Methods:** A cross-sectional observational design was conducted in the study. A total of 60 adult subjects (30 males and 30 females) with age ranged from 18 to 35 years, they were assigned into three equal groups according to BMI, group A was normal (18–24.9), group B was over weight (25.0–29.9) and group C were obese (30–34.9). Biodex system 3 pro isokinetic dynamometer was used to measure lumbar proprioception deficits through active repositioning test in lumbar flexion. **Results:** One Way Analysis of Variance (ANOVA) test revealed that there was significant difference in lumbar flexion active repositioning error between both normal and overweight subjects ( $p < 0.001$ ). Also, there was significant difference between normal and obese subjects ( $p < 0.001$ ). However there was no significant difference between overweight and obese subjects ( $p > 0.98$ ). **Conclusion:** There was lumbar proprioception deficit in obese and overweight subjects in comparison to normal subjects. These alterations in the proprioception would be associated with decreased postural control capacity in obese subjects and may be the cause of lumbar spine disorders in obese subjects.

**Keywords:** lumbar proprioception, active repositioning error, body mass index (BMI).



## **Effectiveness Of A Novel Un-loader Thumb Orthosis For Physiotherapist**

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### **ABSTRACT**

**Introduction:** Pain at the base of the thumb is common problem especially in physical therapist performing mobilization techniques .certain maitland techniques apply pressure through the tip of the thumb to produce passive intervertebral mobilization so these techniques apply compressive force longitudinally through the thumb which cause thumb arthritis and subluxation at first carpo-mtacarpal joint. so I designed a new orthosis that decrease the compressive forces through the thumb and sharing the forces between the tip of the thumb and the orthosis . **The purpose** of this study to investigate the effectiveness of a novel thumb orthosis for physiotherapists in terms of pain and quality of technique application. **Methods:** the novel unloader thumb orthosis includes: padded ulnar and radial metal support ,spring system ,open tip circle .during mobilization techniques the applying force transmits from the arm of the physiotherapist to the supporting metals to the spring system which de-load the force on the thumb. **Conclusion:** the most common strategy used to control thumb pain are changing the choice for treatment, altering thumb joints and using supporting splints so the novel thumb unloader orthosis is needed to manage the cause of the thumb pain for physiotherapist.

**Key words:** Thumb, Un-Loader orthosis, Occupational injuries



**18<sup>TH</sup>** International Scientific Conference of  
Faculty of Physical Therapy, Cairo University  
INNOVATIVE PHYSICAL THERAPY AND REHABILITATION

Title: Physiotherapy for Children with Type 1 Diabetes Mellitus (T1DM) in Malta: the effects of exercise and the perceptions towards exercise

Authors: Carabott Pawley, Daniela; Damato, Andrea; Torpiano, John; Xerri de Caro, John.

Affiliation: University of Malta

Relevance: This study explored the input of physiotherapy within the management of children suffering from T1DM in Malta offering an opportunity to consider how exercise can impact on, and enhance, the health and well-being of these patients.

Purpose: The purpose of this study was to investigate changes in blood glucose levels in children with T1DM throughout a programme that consisted of structured exercises; seeking to understand the perceptions of these children and their parents towards exercise in the management of T1DM.

Methods: Data was collected in two phases. First, information leading to the perceptions and health beliefs linked to juvenile T1DM was sought via a questionnaire from the current population (n = 73) and included children and their parents. Second, a quasi-experimental design was adopted to observe 7 children (aged 6 to 10) engaging in regular exercise, at moderate intensity levels, for 30 minutes daily over a period of 6 weeks. 3 other children were followed up as a control group. Blood glucose readings were recorded 4 × daily, over a period of 12 weeks including 6 weeks prior to the exercise intervention.

Results: 49% (n = 36) responded to the survey. 89% (n = 31) of children reported that they did exercise, however at a level below the dose recommended by the WHO. 83% (n = 30) of parents reported to understand that exercise was effective in controlling the blood glucose levels in their children but did not consider exercise as being one of the main strategies for control. A reported concern was the fear of hypoglycaemia and/or injuries during exercise. Children between 5 and 8 years generally participated in individually supervised exercise whilst older children participated in team events. Children appeared to be more aware of the psychological benefits resulting from exercise than their parents and were less concerned about the possible negative effects. The parents appeared not to understand the role of physiotherapy in the management of T1DM.

The blood glucose levels stabilised at  $7.05 \pm 0.25$  mmol/l for the exercise group compared to the control group ( $8.63 \pm 1.03$  mmol/l) after lunch ( $p < 0.011$ ) and before dinner ( $p < 0.006$ ). This was the time when the children performed the exercise. HbA1C levels were stable in the experimental group but increased by 0.6% in the control group.

Discussion and conclusions: This study has demonstrated that a structured exercise programme had a stabilising effect on the blood glucose and HbA1C levels in children with T1DM.



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A lack of education towards the effects of exercise on children with T1DM was noted. Practical advice on the quantity and quality of exercise and management of hypoglycaemic events could contribute to better engagement in physical activity.

Impact and implications: The results serve to reinforce the notion of a positive outcome on blood glucose levels with exercise for children with T1DM however both children and parents require better education if the management of T1DM in Malta is to include exercise.

Funding acknowledgement: Nil.

Ethics: University of Malta Research and Ethics Committee

Title: WCPT Education Policies

Presenter: Dr John Xerri de Caro

Affiliation: World Confederation of Physical Therapy (WCPT)

Relevance: This presentation provides an overview on the WCPT Education Statements.

Purpose: The purpose of this presentation is to present the WCPT Policy Statement on Education together with WCPT guidelines related to Education that are: Guideline for physical therapist professional entry level education; guideline for the clinical education component of physical therapist professional entry level education: guideline for qualifications of faculty for physical therapist professional entry level education programmes; and guideline for Standard evaluation process for accreditation and recognition.

Impact and implications: The WCPT offers an education accreditation service to physical therapy professional entry level programmes. WCPT reviewers assess the programmes against the WCPT guideline for physical therapist professional entry level education. Accreditation is a type of quality assurance process which utilises all aspects of review and assessment according to pre-defined standards. WCPT had developed the process to enable accreditation/recognition to be granted to an educational programme when it meets the WCPT guidelines. The service provides an optional pathway for international accreditation/recognition in addition to existing national programmes. It aims to contribute to the development of professional education internationally, leading to improved quality and availability of physical therapy services. A high standard of education results not only in well educated professionals providing quality services, but also an enhanced ability to attract faculty.