

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABDEL SALAM ABDEL KADER AHMED**

Department of Basic Science

**Doctoral Degree
2012**

Author	:	Abeer Mahmoud Yousef.
Title	:	Neuromuscular electrical stimulation versus neuromuscular training on balance in knee osteoarthritis.
Dept.	:	Department of Basic Science.
Supervisors	1.	Maher Ahmed El-Keblawy.
	2.	Neveen Abdel latif Abdel Raouf.
	3.	Yasser Hassan El-Meleeegy.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: Balance disturbance is one of the most common complications of knee osteoarthritis (KOA). Purpose: this study was conducted to compare the effect of neuromuscular training with neuromuscular electrical stimulation (NMES) on balance in KOA. Subjects: 45 patients with bilateral KOA (21 males and 24 females) were included in the present study, their age ranged from 45 to 60 years; they were assigned randomly into three equal groups. Group (A) consisted of fifteen patients with mean age of 56.24 ± 2.38 years, mean heights of 166.0 ± 7.0 cm and mean weight of 85.4 ± 4.68 kg. Group (B) consisted of fifteen patients with mean age of 55.73 ± 3.19 years. Mean heights of 167.4 ± 7.64 cm and mean weight of 86.8 ± 6.74 kg also group (C) consisted of fifteen patients with mean age of 56.4 ± 2.38 years, mean heights of 165.53 ± 7.28 cm and mean weight of 85.46 ± 7.66 kg. Methods: group (A) received neuromuscular training in addition to ultrasound (US) and moist heat, group (B) received NMES plus US and moist heat, group (C) received US and moist heat only. Balance was assessed using the biodex system and pain intensity was assessed by using the visual analogue scale for each patient before and after treatment for 12 weeks. Results: Indicated that, there was a significant difference in Balance between all groups with highly significant improvement for group (A), and there was a significant difference for pain intensity with highly significant improvement for group (A), Conclusion: while comparing the results of the three groups, group (A) (neuromuscular training) showed the most significant improvement for all variables (balance and pain) than NMES and conventional treatment, neuromuscular training has a beneficial effect for treatment of patients with KOA.</p>		
Key words	1.	Neuromuscular Training
	2.	Neuromuscular electrical stimulation
	3.	Knee osteoarthritis
	4.	Balance
	5.	Pain.
Arabic Title Page	:	مقارنه بين تأثير التنبيه الكهربائي العصبي العضلي والتدريب العصبي العضلي علي الاتزان في التهاب مفصل الركبه.
Library register number	:	3005-3006.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Ahmed Mohamed Abd El-Rahman.
Title	:	Efficacy of Mulligan Sustained Natural Apophyseal Glide Mobilization in Patients with Chronic Mechanical Neck Pain.
Dept.	:	Department of Basic Science.
Supervisors	1.	Wadida H. El-Sayed.
	2.	Maher A. El-Keblawy.
	3.	Yasser El-Meligy.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: Mechanical neck pain (MNP) is common, disabling and costly. It can affect social and physical functions. Mulligan Sustained Natural Apophyseal Glides (SNAGs) is a mobilization technique commonly used in the treatment of painful movement restrictions of the cervical spine. In the manual therapy literature, there remains a need for clinical trials of cervical SNAGs, in order to provide empirical evidence to support their reported clinical efficacy. The Purpose of the study was to investigate the efficacy of cervical SNAGs on cervical range of motion (CROM), pain intensity level, and neck functional activity level in the management of patients with chronic MNP. Subjects: Sixty male subjects participated in this study. Their age ranged between 20-38 years with a mean of 24.7 ± 5.31. The Patients reported MNP and restriction of CROM. The patients were assigned into three groups; Group I: traditional group, Group II: the SNAGs group, and Group III: the SNAGs and traditional group. Methods: CROM, pain, and functional activities were measured pre-treatment, post 4 weeks of the treatment, and during follow up periods (one, two and three months after completion of the treatment) using CROM device, visual analogue scale (VAS), and neck disability index (NDI). Results: Traditional treatment and SNAGs mobilization had significantly increased CROM and decreased VAS and NDI. The combination of SNAGs with traditional treatment had a high significant difference in the management of patients with MNP than SNAGs or traditional treatments as solo treatments; post-treatment and during follow up periods. The SNAGs mobilization and traditional treatment as solo treatment had no significant difference post-treatment and during follow up. The present study concluded: Incorporating the SNAGs mobilization and traditional treatment demonstrates greater benefit for the patients with MNP than the SNAGs mobilization alone or the traditional treatment alone in pain relief, CROM and functional activities both at short and long term effect.</p>		
Key words	1.	Cervical SNAGs.
	2.	mechanical neck pain.
	3.	neck function.
	4.	neck disability index.
	5.	Mulligan Effect.
	6.	Mobilization.
	7.	Chronic Mechanical Neck Pain.
Arabic Title Page	:	تأثير التحريك الطبيعي المستمر (بطريقة مولجين) للمفاصل المسطحة على مرضى ألم الرقبة الميكانيكي المزمن.
Library register number	:	2945-2946.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Doaa Ibrahim Amin.
Title	:	Three Dimensions and Electromyography Measurement of Facial Muscles in Healthy Subjects.
Dept.	:	Department of Basic Science.
Supervisors	1.	Wadida Hasan Abd El Kader
	2.	Sahar Mohamed Adel.
	3.	Aliaa Attiah Diab.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: Facial movement measurement is very important to give information about personality and communication. Purpose: of this study was to obtain the range of motion of four face movement and the value of root mean square for each side. Subjects: forty healthy subjects in one group with age mean of 23.26 ± 3.3 year, height mean of 161.45 ± 6.57cm, weight mean of 60.77 ± 6.61kg and body mass index mean of 23.26 ± 1.4. All were evaluated by three dimensional motion analysis to obtain the range of motion of face movement synchronized with kinesiological electromyography to obtain the value of root mean square. Results: There was statistical significance difference in measuring root mean square between left and right sides of face while no statistical significance difference in measuring range of motion of face between right and left. Conclusions: The range of motion and root mean square used in diagnosis, planning, rehabilitation process of facial cases.</p>		
Key words	1.	facial movements.
	2.	three Dimensional motion analysis.
	3.	electromyography.
	4.	Healthy Subjects.
Arabic Title Page	:	القياس ثلاثى الأبعاد ورسم العضلات الكهربائى لعضلات الوجه فى الأشخاص الإصحاء.
Library register number	:	2741-2742.

**ELECTRONIC GUIDE TO THESES APPROVED BY
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Author	:	Doaa Rafat ElAzab Mohamed.
Title	:	Correlation of quadriceps femoris muscle fatigue to back muscles activity during lifting.
Dept.	:	Department of Basic Science.
Supervisors	1.	Wadida Hassan Abd Elkader.
	2.	Sahar Mohamed Adel.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: Muscle fatigue alters neuromuscular responses, quadriceps muscle fatigue tended to be accompanied by increased forces at the low back. Purposes: To investigate the relation between quadriceps muscle fatigue, leg dominance, and root mean square of lumbar erector spinae muscles, during lifting. Study Design: A pre test post test design. Materials and Methods: Sixty normal subjects from both genders were involved, age ranged between 18-25 years with mean age 20.8 ± 1.9 years. The subjects were divided randomly into two equal groups A and B, thirty subjects in each group. Subjects in group A were subjected to fatigue exercises to dominant quadriceps muscle, and subjects in group B were subjected to fatigue exercises to non dominant quadriceps muscle on Biodex isokinetic dynamometer. The root mean square of lumbar erector spinae muscles during lifting pre fatigue and immediately post fatigue exercise were recorded by EMG. Results: There was significant increase in root mean square of lumbar muscles within subjects and between groups after quadriceps fatigue. Conclusion: There is a correlation between fatigue level of quadriceps muscle and lumbar muscle loads during lifting.</p>		
Key words	1.	quadriceps femoris.
	2.	muscle fatigue.
	3.	back muscles.
	4.	lifting.
Arabic Title Page	:	العلاقة بين الاجهاد العضلى للعضلة الرباعية ونشاط عضلات الظهر أثناء الرفع.
Library register number	:	2973-2974.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABDEL SALAM ABDEL KADER AHMED**

Author	:	Ghada Abd Elmoniem Abdallah.
Title	:	Effect of proprioceptive training and pulsed magnetic therapy on peripheral nerves.
Dept.	:	Department of Basic Science.
Supervisors	1.	Awatif Mohamed Labib.
	2.	Ebrahim Nagib Elebrashy.
	3.	Azza Mohamed Atya.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: Peripheral neuropathy is one of the most common complications of diabetes. It is usually characterized by pain and proprioception disturbance. The prurpose: this study was conducted to investigate the effect of proprioceptive training and magnetic therapy on peripheral nerves. Subjects: 45 patients with bilateral diabetic peripheral neuropathy (20 males and 25 females) aged from (40-60 years) and they were assigned randomly into three equal groups. group (A) consisted of fifteen patients with mean age (56.4±2.38) years, mean heights (166.6±8.22)cm and mean weight (85.47±7.66)kg. group (B) consisted of fifteen patients with mean age (55.73±3.19) years. Mean heights (163.73±7.3)cm and mean weight (86.47±8.99)kg also group (C) consisted of fifteen patients with mean age (56.6±2.38)years, mean heights (163.13±9.03)cm and mean weight (87±5.96)kg. Methods: group (A) received proprioceptive training and pulsed magnetic therapy in addition to rang of motion exercises, group (B) received pulsed magnetic therapy and rang of motion exercises, group (C) received proprioceptive training and range of motion exercises. Proprioception was assessed using the isokinetic device. Balance was assessed using the biodex system and pain intensity was assessed by using the visual analogue scale for each patient before and after treatment. Results: Indicated that, there was a significant difference in overall stability index (Balance) between all groups with highly significant improvement for group C, there was a significant difference for proprioception level, with highly significant improvement for group C, and there was a significant difference for pain intensity with highly significant improvement for group C, Conclusion: Proprioceptive training and magnetic therapy has a beneficial effect for treatment of patients with diabetic peripheral neuropathy.</p>		
Key words	1.	Proprioceptive training
	2.	Pulsed magnetic therapy
	3.	Peripheral neuropathy
	4.	balance
	5.	pain
	6.	Diabetes.
Arabic Title Page	:	تأثير تدريب المؤثرات الحسية العميقة والعلاج بالمجال المغناطيسي المتردد على الأعصاب الطرفية.
Library register number	:	2809-2810.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Ghada Ismail Mohamed Kamel.
Title	:	Effect of serum cotinine level on peripheral fatigue and repositioning accuracy of back extensors.
Dept.	:	Department of Basic Science.
Supervisors	1.	Awatif Mohamed Labib.
	2.	. Marzouk Abd-Elfattah Ellethy.
	3.	Amal Mohamed Rashad.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: smoking is a well known risk factor for many diseases; also the back extensors play an essential role in trunk stability. The Purpose: of this study was to investigate, the effect of serum cotinine level (the metabolite of nicotine) on peripheral fatigue, repositioning accuracy of back extensors and on serum serotonin level. Materials and methods: 60 normal males were assigned into three equal groups according to serum cotinine level, 20 non-smokers (control group) with mean age (25.2±3.83) years, mean body mass index (22.25±1.83) Kg/m² and mean cotinine level (7.64±2.84) ng/mL, 20 moderate smokers with mean age (27.95±7.57) years, mean body mass index (22.74±1.81)Kg/m² and mean cotinine level (30.87±13.01) ng/mL. And 20 heavy smokers with mean age (26.8±7.41) years, mean body mass index (22.09±1.84) Kg/m² and mean cotinine level (365.44±33.34) ng/mL. Blood samples were taken from all subjects to analyze cotinine and serotonin levels by laboratory tests, Isokinetic dynamometer was used to measure reposition accuracy (absolute error) and measure fatigue susceptibility by calculating fatigue index. Results: there was statistical significant difference between three groups in fatigue index the highest mean value was recorded in heavy smokers group so heavy smokers more susceptible to fatigue, and there was statistical significant difference in serum serotonin level the highest mean value was recorded in nonsmokers group so there was inverse relationship between serum cotinine and serotonin levels and there was statistical significant difference in repositioning accuracy(absolute error) between smokers groups and non smokers group the non smokers had lower error than smokers but there was no statistical significant difference in repositioning accuracy between moderate and heavy smokers groups. Conclusions: Cotinine has significant effects on the peripheral fatigue, repositioning accuracy of back extensors and on serum serotonin level.</p>		
Key words	1.	Cotinine level.
	2.	Back Extensors
	3.	Fatigue
	4.	Repositioning accuracy
	5.	Serotonin.
	6.	peripheral fatigue.
Arabic Title Page	:	تأثير مستوى الكوتينين على الاجهاد الطرفى ودقة استرجاع الوضع لعضلات فرد الظهر.
Library register number	:	2841-2842.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Hanaa Kenawy Ata.
Title	:	Effect of Different Positions and Movement Velocities on the Electromyographic Activity of Shoulder Rotators during Isokinetic testing.
Dept.	:	Department of Basic Science.
Supervisors	1.	Awatif Mohamed Labib .
	2.	Dalia Mohamed Mosaad.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	<p>Background: Isokinetic dynamometry has been employed for assessing the performance of voluntarily contracting muscle. Peak torque is the most representative and widely used parameter to evaluate muscle function. Electromyography is the study of muscle function through analysis of electrical signals occurring during muscular contractions. The purpose: To investigate the effect of different positions and movement velocities on the EMG activity of shoulder rotators during isokinetic testing . Design and subjects: Single repeated measurement design was used. Forty healthy female subjects of physical therapy faculty employees participated in this study, their age ranged between 30-45 years. Methods: All testing was performed by a single investigator. The EMG activity and isokinetic measures of subjects' dominant shoulder rotators were recorded in different positions and at different velocities. The EMG activity was recorded while the subjects were moving the isokinetic dynamometer and was analyzed using the EMG software . The mean peak torque and normalized EMG amplitude of the trials were measured. Two-way ANOVA test was used to investigate the effect of different positions and velocities on EMG activity of shoulder rotators . Results: The results revealed that there was a significant effect of different velocities on normalized EMG amplitude of shoulder internal rotators as F-value was (48.46) and p-value was (0.0001), and for external rotators as F-value was (66.22) and p-value was (0.0001) also there was a significant effect of different position on normalized EMG amplitude of shoulder internal rotators as F-value was (7.14) and p-value was (0.001), and for external rotators as F-value was (4.08) and p-value was (0.01) . Discussion and conclusion: The EMG amplitude and isokinetic strength of shoulder internal and external rotator muscles during concentric isokinetic contraction varies according to shoulder joint testing position and movement velocity.</p>
Key words	1.	Isokinetic
	2.	EMG
	3.	Shoulder rotators
	4.	Movement Velocities.
	5.	Electromyographic Activity.
Arabic Title Page	:	تأثير الأوضاع و السرعات المختلفة على نشاط الرسم الكهربائي لعضلات دوران الكتف أثناء الاختبار الأيزوكينتيكي.
Library register number	:	3001-3002.

**ELECTRONIC GUIDE TO THESES APPROVED BY
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PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Manal Mohamed Ali El dessouki.
Title	:	Efficacy of Diadynamic Versus Transcutaneous Electrical Nerve Stimulation on Patients with Peripheral Arterial Disease.
Dept.	:	Department of Basic Science.
Supervisors		1. Wadida H. Abd El kader El Sayed. 2. Ali Mamdouh Elashmawy. 3. Amal Mohamed Elshehaby. 4. Azza Mohamed Attya.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: Peripheral arterial disease (PAD) is most commonly manifestation of systemic atherosclerosis in which the arterial lumen of lower extremities becomes progressively occluded. It causes ischemic pain in the legs. Purpose of the study: was to compare the effect of diadynamic current (DDC) versus transcutaneous electrical nerve stimulation (TENS) on ischemic pain level ,ankle brachial pressure index (ABPI), cutaneous blood flow rate and nitric oxide (NO) level in blood in patients with PAD . Subjects: Fifty patients with PAD (47 females and 3 males) (67 legs affected) with age ranged from 43 to 59 years with mean age of 49.42 ± 4.28 year. With weight ranged from 60-91 kilogram with mean weight of 79.14 ± 6.58. With height ranged from 156 to 179 centimeter with mean height of 167.1 ± 5.87. Methods: The patients were assigned randomly into two equal groups. Group I (DDC Group) (23 females and 2 males)(33 legs affected) with age ranged from 43 to 58 years with mean age of 49.28 ± 4.47 year. With weight ranged from 69-90 kilogram with mean weight of 79.48 ± 5.91. With height ranged from 159 to 179 centimeter with mean height of 166.92 ± 5.56 received DDC stimulation on the tibial and common peroneal nerves for 6 minutes each nerve, 3 times / week for 4 weeks. Group II (TENS Group) (23 females and 2 males)(34 legs affected) with age ranged from 44 to 59 years with mean age of 49.56 ± 4.25 year. With weight ranged from 60-91 kilogram with mean weight of 78.80 ± 7.78. With height ranged from 156 to 177 centimeter with mean height of 167.28 ± 6.36 received burst TENS on tibial and common peroneal nerves, 3 times /week for 4 weeks. Pain intensity level, ABPI, cutaneous blood flow rate and NO level in blood were measured before treatment, after 6 sessions and after 12 sessions of treatment by modified visual analogue scale, ultra sound Doppler, laser Doppler flowmetry and NO analysis in blood respectively. Results: There was significant decrease in pain intensity in the two groups, Group II was significantly less in pain scores. There was significant increase in ABPI in the two Groups, Group II was significantly higher in ABPI. There was significant increase in cutaneous blood flow rate in Group II only. There was significant decrease in NO level in the two groups, Group II was significantly less in NO level after 12 sessions of treatment. Conclusion: This study showed the feasibility and safety of diadynamic current and burst TENS for treating PAD patients, Both of diadynamic current and burst TENS provide statistical significant improvement in Pain intensity level and ABPI, Burst TENS provides statistical significant improvement in cutaneous blood flow rate of affected legs.</p>		
Key words		1. Peripheral arterial disease 2. Diadynamic current stimulation 3. TENS 4. Ankle brachial pressure index 5. Nitric oxide 6. cutaneous blood flow rate.
Arabic Title Page	:	كفاءة التنبيه بتيار الديناميك مقابل التنبيه العصبى الكهربائى عبر الجلد عند مرضى الشرايين الطرفية.
Library register number	:	3065-3066.

**ELECTRONIC GUIDE TO THESES APPROVED BY
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PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Mohamed Samy Mohamed Ahmed.
Title	:	Efficacy Of Three Dimensional Head Orientation On The Neuromuscular Control Of Lower Extremities.
Dept.	:	Department of Basic Science.
Supervisors	1.	Mohamed Hussein EL-gendy.
	2.	Ibrahim Moustafa Abu Amer.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p><u>Background:</u> The cervical spine is an area of the body that has great mobility and influences on the neurological mechanisms throughout the entire locomotor system. There is lack of literature concerning the global effect of three dimensional (3D) head orientation on the neuromuscular control of lower extremities. <u>The purpose:</u> This study was conducted to investigate the efficacy of 3D head orientation on the neuromuscular control of lower extremities during the gait. <u>Subjects:</u> Thirty asymptomatic subjects were selected in one group with mean age of 21.83 ± 1.84 years to participate in this study. <u>Method:</u> A correlational design was used in this study. For every subject, translational and rotational displacements of cervical spine were measured to represent the 3D head orientation, in addition to the electromyographic (EMG) activities of lower limbs musculature were measured to represent the neuromuscular control of lower extremities during the gait, to demonstrate the relationship between them. <u>Results:</u> The multiple relationship analysis for each of the EMG activities of lower extremities and all the 3D head orientations showed a significant relationship ($P < 0.05$), where the multiple correlation coefficient R-values for right rectus femoris (0.81), right medial hamstrings (0.59), right medial gastrocnemius (0.88), right anterior tibialis (0.86), left rectus femoris (0.66), left medial hamstrings (0.75), left medial gastrocnemius (0.46) and left anterior tibialis (0.62). <u>Conclusion:</u> It was concluded that 3D head orientation had a moderate to very strong association with the neuromuscular control of lower extremities during the gait.</p>		
Key words	1.	EMG
	2.	Head orientation
	3.	Three dimensional.
	4.	Neuromuscular Control.
	5.	Lower Extremities.
Arabic Title Page	:	تأثير وضع الرأس ثلاثى الأبعاد على التحكم العصبى العضلى للطرفين السفليين.
Library register number	:	2901-2902.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Nesreen Ahmed Abd El-Galil.
Title	:	Selected Osteopathic Techniques In Chronic Lumbar Dysfunction.
Dept.	:	Department of Basic Science.
Supervisors	1.	Fatma Sedeek.
	2.	Ysser Hasan El-Miligue.
	3.	Marzouk Abd El-Fattah El-Lythy.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	<p>Back ground: Manual therapy clearly had a positive effect on chronic low back pain and was better than medical treatment, bed rest, and instructional information . Design of study : pre test post test design was used Objectives: The objective of this study was to investigate the effects of selected osteopathic techniques on chronic lumbar dysfunction. Method: Sixty patients suffering from chronic lumbar dysfunction of both sexes participated in the study. Their age was from (30-60) years, height from (160-180) cm. The body mass index <30, The sample is assigned into three equal groups, every one consists of twenty patients, for the first group received traditional program in form of (Infrared, Ultrasound, TENS and exercise in form of, active abdominal, active back exercise and stretching of hamstring), second group received (Muscle energy techniques in addition to traditional program). The third group received (myofascial release in addition to traditional program). The lumbar spine ROM, Pain intensity and functional performance using OSWESTRY index were evaluated before treatment and after twelve sessions. Every patient received treatment for four weeks, three sessions per week. Results: There was a significant improvement in the three groups. There was significant improvement in lumbar spine ROM, pain intensity and functional performance for the second and third than the first one. there was no significant differences between second and third group Conclusion: Both techniques of therapy are very valuable in management of chronic lumbar dysfunction.</p>
Key words	1.	Muscle energy.
	2.	Myofascial release.
	3.	chronic lumbar dysfunction.
	4.	Osteopathic Techniques.
Arabic Title Page	:	بعض التقنيات المختاره من الاستيوباثى فى علاج الم اسفل الظهر المزمن.
Library register number	:	2937-2938.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE**

PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED

Author	:	Olfat Ibrahim Ali.
Title	:	Cervical and thoracic extensor muscles activation pattern in chronic mechanical low back pain.
Dept.	:	Department of Basic Science.
Supervisors	1.	Samy Abd El Samid Nasef.
	2.	Nasef Mohamed Nasef.
	3.	Soheir Shehata Rezk-Allah.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: Low back pain (LBP) is one of the most prevalent and costly health problems nowadays in people who stand for a long time. Different parts of the erector spinea muscle act as a guy wires to prevent buckling of the spine. This analogy demonstrates the critical role of those muscles to ensure sufficient stability of the spine so that it is prepared to withstand loading, and sustain postures and movement. The purpose: Of this study was to investigate activation patterns of cervical, thoracic erector spinea and trunk muscles, in patient with chronic mechanical low back pain (CMLBP) and subjects with no history of LBP. Material and method: 60 male and female volunteered subjects, their mean age, weight, height and BMI % were (26.66 ±1.8), (70.5±4.5), (1 66.53 ±3.74) & (22.33±1.52) respectively. They were assigned into two groups; CMLBP group (group A) includes 40 subjects and subjects with no history of LBP group (group B) include 20 healthy subjects. Subjects in both groups were asked to stand for 30 min, the activation patterns (normalized root mean square (RMS) & median frequency (MDF)) of Rt & Lt (CES, TES, LES & EO) muscles were detected at 1st 5min and last 5min of the 30 min standing task. The results: Indicated that the normalized RMS and MDF were not changed statistically within each group & between groups, as (p values were >0.05) except for Lt CES & EO normalized RMS in group (A). In addition, there was a significantly difference between Rt & Lt of all ms sides of trunk ms in late standing in group(B) and between groups in Rt& Lt(CES, TES, LES& EO) ms for normalized RMS and MDF. Furthermore, there was a significant correlation between CES, TES and LES & EO ms in both groups and there was a significant difference in pain intensity in group (A) as (p values were ≤0.05). This study concluded: That there was no change in the activation patterns of the majority of the tested ms within and between groups. Activation pattern of cotralatral back ms is adversely affected in prolonged standing and there was co activation between different parts of erector spinea and abdominal ms in both groups.</p>		
Key words	1.	Low back pain
	2.	cervical
	3.	thoracic erector spinea muscle
	4.	activation pattern
	5.	EMG.
	6.	thoracic extensor muscles
	7.	chronic mechanical low back pain.
Arabic Title Page	:	نمط تنشيط العضلات العنقية والصدرية الباسطة في الام أسفل الظهر المزمن الميكانيكي.
Library register number	:	2817-2818.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABDEL SALAM ABDEL KADER AHMED**

Author	:	Rabab Ali Mohamed Ali.
Title	:	Effect of Quadriceps Muscle Fatigue on Electromyographic Activities in Knee Osteoarthritis.
Dept.	:	Department of Basic Science.
Supervisors	1.	Wadida H. Abdel Kader El Sayed.
	2.	Alaa El Din A. Balbaa.
	3.	Sahar Mohamed Adel.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	<p>Background: Knee osteoarthritis is a chronic joint disease characterized by weakness of the quadriceps, proprioceptive deficits, pain and difficulty with functional activities, all common manifestations can inhibit voluntary and reflexive motor output of quadriceps muscle. Purpose: This study was conducted to investigate the effect of quadriceps muscle fatigue of sound limb on electromyographic (EMG) activities of vastus lateralis (VL), vastus medialis (VM) and gluteus maximus (GM) recorded from affected and sound limb during sit to stand (STS) in patients with unilateral knee osteoarthritis (UKOA). Material and methods: 40 female subjects were assigned into two groups; Group (A) consisted of 20 healthy control subjects. Their mean age was 47.90 ± 1.77 years. Group (B) consisted of 20 patients with UKOA. Their mean age was 48.40 ± 2.39 years. Subjects in both groups were asked to stand from seated position, EMG activities; root mean square (RMS), median frequency (MDF) and onset of muscle activities of VL, VM and GM muscles were recorded during STS. Then fatigue exercise was induced to quadriceps muscle of sound limb (group B) and of matched limb (group A) and EMG activities of VL, VM GM muscles were recorded post fatigue exercise during STS from both legs for all subjects. Results: Indicated that, RMS wasn't changed statistically within and between groups ($P > 0.05$) after fatigue exercise, but in VM of fatigued leg in group (A). Regarding MDF, although MDF was decreased after fatigue exercise in group (B) compared to group (A). This wasn't to statistical significant level ($P > 0.05$). In addition, onset of muscle activities was delayed in group (A) but there was no statistical significant differences within group (B) but in GM muscles of sound (fatigued) and of affected (unfatigued) leg. Also, There was statistical significant delay in onset of muscles activities in VL, VM and GM of affected and of sound leg in group (B) compared to group (A) before fatigue exercise ($P < 0.05$). This delay increased after fatigue exercises in VL and GM of fatigued leg in patients with UKOA when compared with healthy control group, but in VM ($P > 0.05$). Conclusion: There were changes in motor control strategies exhibited by patients with UKOA to compensate for the reduced force output and maintained knee stability. Also, delayed onset of muscles activities in patients with UKOA in VL, VM and GM before fatigue exercises and this delay increased after fatigue exercises when compared with control group could explain the fact that the patients with UKOA usually develop bilateral joint degeneration.</p>
Key words	1.	Quadriceps muscle fatigue
	2.	Electromyographic activities
	3.	Knee osteoarthritis.
	4.	Muscle Fatigue.
Arabic Title Page	:	تأثير الإجهاد العضلي للعضلة الرباعية على الرسم الكهربائي للأنشطة العضلية في التهاب مفصل الركبة.
Library register number	:	3027-3028.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Rania Nagy Karkoucha.
Title	:	Normative isokinetic data of quadriceps and hamstring muscles performance in egyptian adolescents.
Dept.	:	Department of Basic Science.
Supervisors	1.	Fatma Sedeek Amin.
	2.	Azza Mohamed Atya
	3.	
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	
<p>Background: Isokinetic system is a valuable tool for documenting muscle performance. The purpose of this study was to provide physical therapy field with normal range data of Quadriceps and Hamstring muscles performance in Egyptian adolescents, and to establish reference data of isokinetic measurement for both muscles. Subjects and method: Two hundred adolescents (100 males and 100 females), aged from 14 to 18 years with mean age (16 years) were participated in this study. They were classified into eight groups of 25 each. Quadriceps and Hamstring muscle performance were assessed using isokinetic Biodex system dynamometer, the peak torque, work, power and Hamstring to Quadriceps muscle ratio in concentric mode were measured at two angular velocities (60 and 240°/sec). Results: The results revealed that there was significant difference between both angular velocities in all measured variables. Significant differences existed in peak torque, power and work between male and female subjects, at both test speeds in the favor to male group, while there was no significant difference in Hamstring to Quadriceps torque ratio between male and female subjects, at both test speeds. Conclusion: On basis of the present data, it is possible to conclude that the power and Hamstring to Quadriceps torque ratio increased by increasing angular velocity while peak torque and work decreased by increasing angular velocity. Males have significant greater values in peak torque, work and power than females in concentric mode with the same age, while there was no significant difference in Hamstring to Quadriceps torque ratio between males and females subjects in concentric mode with the same age.</p>		
Key words	1.	Isokinetic
	2.	Muscle performance
	3.	Hamstring muscles.
	4.	Quadriceps
	5.	Adolescent in Egyptian.
Arabic Title Page	:	البيانات الطبيعية للأداء الأيزوكينتيكي للعضلة ذات الأربعة رؤوس وعضلة الفخذ الخلفية لدى المراهقين المصريين.
Library register number	:	2761-2762.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Yasser Ramzy Abu El-Mhasen Lasheen.
Title	:	Effect of spinal manipulation on proprioception and asymmetry of lumbar facet angles in chronic mechanical low back dysfunction.
Dept.	:	Department of Basic Science.
Supervisors	1.	Maher El-Keblawy.
	2.	Neveen Abd EI-Latif.
	3.	Mohammed Salah El-Din EI-Zawawi.
Degree	:	Doctoral.
Year	:	2012.
Abstract	:	<p>Background: low back pain is not a diagnosis; it is a symptom that tends to occur in association with wide variety of musculoskeletal and neurological disorders. Purpose: To investigate the effect of spinal manipulation on lumbar proprioception, asymmetry of lumbar facet angles (L4-L5), lumbar flexion range of motion and pain, in subjects with chronic mechanical low back dysfunction. Subjects: Thirty subjects suffering from chronic mechanical low back pain from both sexes were involved, aged between 20 - 45 years, they were randomly assigned into two equal groups in number, group A (control) received ultra sonic and intrared radiations for 3 days! week for 4 week. While group B (experimental) received ultra sonic therapy, intrared radiations and lumbar manipulation techniques. The treatment was don 3 days/week for 4 weeks. Design of the study: Pre-test, post-test design was used in this study. Methods: The proprioception of lumbar region (lumbar repositioning accuracy) was measured by Biodex system III , asymmetry of lumbar facet angles was evaluated by Computerized Axial Tomography, lumbar tlexion range of motion was recorded by OB goniometer and pain was assessed by Visual Analogue Scale. The variables were measured before the begging of treatment program and at the end of program. Results: There were significant differences between the two groups in proprioception accuracy, asymmetry of lumbar facet angles, lumbar flexion range of motion and pain intensity .Conclusion : Lumbar manipulation proved to have significant. effects in improving lumbar proprioception accuracy, asymmetry of lumbar facet angles, lumbar flexion range of motion and improving pain intensity .</p>
Key words	1.	Spinal manipulation.
	2.	Proprioception.
	3.	Low back dysfunction.
	4.	Asymmetry of lumbar facet angel.
	5.	Computerized axial tomography.
Arabic Title Page	:	تأثير المعالجة اليدوية للعمود الفقري عنى المستقبلات الحسية الداخلية وتباين زوايا المفاصل الوجهية القطنية فى حالات الخلل الوظيفي الميكانيكى المزمن أسفل الظهر.
Library register number	:	2893-2894.