Department of Basic Science

Doctoral Degree

2020

Author	**:**	**Ahmed Aboul Fotouh Elsayed Abdallah.**
Title	**:**	**Prone versus supine traction in treatment of cervical disc bulge.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Wadida Hassan Abdelkader Elsyed**
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Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: The prevalence of cervical disc bulge increases with aging for both men and women and is most frequent in people in their third to fifth decades of life. It is common in females, accounting for more than 60% of cases. Cervical traction is generally regarded as a conservative management in treating various types of neck disorders. Purpose: This study was conducted to compare the effect of prone traction with supine traction on neck pain intensity level, neck disability level and the size of the bulged disc in patients with cervical disc bulge. Subjects: Forty five patients of both gender with cervical disc bulge at C5, C6 and/or C6, C7 levels participated in this study. Their ages ranged from 30 to 50 years old. They were randomly assigned into three groups (A, B and C), the three groups received conventional physical therapy for cervical disc bulge. For group B traction from prone position was added and for group C traction from supine position was conducted. All participants received 3 sessions per week for one month. The assessment done before and after one month of treatment using visual analogue scal for assessment of pain, neck disability index for neck function disability level assessment while size of disc bulge was assessed by using magnetic resonance image. Results: There was statistical significant decrease in the visual analogue scale and neck disability index scores of the three groups post treatment in comparison with that of pretreatment with high statistical significant decrease in the scores of group B and C post treatment in comparison with that of group A, while there was no statistical significant difference between group B and C in post treatment scores. There were no statistical significant differences between the post treatment measures in comparison with that of the pretreatment for the three groups regarding disc bulge size. Conclusion: It was concluded that adding cervical traction to the conventional physical therapy program for cervical disc bulge at C5-6 and/or C6-7 levels can yield more improvement in neck pain and function disability level compared with conventional physical therapy only, while the position of the patient during traction has no effect on the outcome measures.

Key words	**1.**	**Cervical Disc.**
	2.	**Neck disability index.**
	3.	**Traction**
Classification number	**:**	**000.000.**
Pagination	**:**	**116 p.**
Arabic Title Page	**:**	**الشد من وضع الاستلقاء علي البطن مقابل الظهر في علاج بروز الغضروف العنقي.**
Library register number	**:**	**7141-7142.**

Author	**:**	**Ahmed Ali Mohamed Torad.**
Title	**:**	**Electroneurographic response to cupping combined with neural mobilization in Patients with discogenic sciatica.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Amir Mohamed Saleh**
	2.	**Yasser Mohamed Aneis**
	3.	**Amr Abdallah Azzam**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Discogenic sciatica is one of the most common patient complaints expressed to emergency physicians worldwide. Objectives: This study was conducted to investigate and compare the response of cupping therapy, passive neurodynamic mobilization program and cupping therapy combined with passive neurodynamic mobilization in treatment of patients with discogenic sciatica. Materials and Methods: Forty-five patients were enrolled in this study from the outpatient physical therapy clinic at Faculty Physical Therapy, Kafrelsheik University within 1 year. This study is one shot study. Participants were randomly allocated into: Passive neurodynamic mobilization (PVM; n=15), cupping therapy (TC; n=15), and cupping therapy combined with neural mobilization (COM; n=15). Participants were assessed for pain pressure threshold at UB-25, GB-30, UB-37 and UB-57 acupuncture points, F-wave and H-reflex latencies, straight leg raising (SLR) ROM and disability by Oswestry Disability Questionnaire (ODQ), immediately prior to and following the assigned intervention. Results: Regarding algometric measures, only combined group showed total immediate improvement (P=0.000). When looking to SLR ROM, all groups show statistically significant improvements with cupping group have lowest improvement (P=0.023,13.43%). there is no statistically significant difference within and between groups regarding nerve conduction latencies (P=.0.746). There is statistically significant difference in ODQ values among groups (P=0.009) with only statistical improvement in neurodynamic group (P=0.000). Conclusions: There was no superior response for cupping therapy on neurodynamic mobilization in treatment of discogenic sciatica patients. Also, cupping therapy combined with neurodynamic mobilization in treatment of those patients has no added response. Furthermore, it was recommended to use neurodynamic mobilization only, as it is a noninvasive technique as well as to save time, effort and money with the same efficacy.

Key words	**1.**	**Cupping.**
	2.	**Low back pain.**
	3.	**Nerve conduction study.**
	4.	**Neurodynamic mobilization.**
	5.	**discogenic sciatica.**
Classification number	**:**	**000.000.**
Pagination	**:**	**185 p.**
Arabic Title Page	**:**	**استجابة التخطيط العصبي الكهربائي للعلاج بكاسات الهواء بالإضافة إلى التحريك العصبي في مرضى عرق النسا الغضروفي.**
Library register number	**:**	**6995-6996.**

Author	**:**	**Aida Amir Nassif Naguib.**
Title	**:**	**Neurophysiological and Biomechanical Effects of Spinal Mobilization with Arm Movement in Cervical Radiculopathy: Randomized Controlled Trial.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Fatma Seddik Amin.**
	2.	**Soheir Shehata Rezkallah**
	3.	**Amr Hasssan Al-Hasany.**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background and objective: Cervical radiculopathy (CR) is considered as a common neuromusculoskeletal disorder which causes pain and functional disabilities affecting both productivity and quality of life. Spinal mobilization with arm movements (SMWAMs) is one of Mulligan's techniques applied when the peripheral pain is thought to be originated from the spine. The purpose of the study: to investigate the neurophysiological and mechanical effects of SMWAMs in cervical radiculopathy. Methodology: Forty patients of both genders with chronic unilateral CR participated in the study. They were assigned randomly into two groups. Group A (experimental group): received SMWAMs in addition to a traditional physical therapy program (included hot packs, myofascial release, active cervical range of motion exercise, stretching and strengthening exercise for neck muscles). Group B (control group): received the traditional physical therapy program. All participants received 12 sessions, 3 sessions / week, for 4 successive weeks. Outcome measures included dermatomal somatosensory evoked potential (DSSEP) for the affected level by electromyographic apparatus, pain intensity level by using visual analogue scale score (VAS), cervical mobility and proprioception by using the cervical range of motion (CROM), and disability level by using neck disability index (NDI) were measured at base line and 4-weeks post intervention. Results: There was a statistical significant improvement in the experimental and control groups 4weeks post-treatment for peak-to-peak amplitude of DSSEP, pain level, and cervical ROM, proprioception and disability level ($P<0.05$). Bonferroni correction test revealed that there was a significant difference between both groups regarding all measured variables, except flexion ROM, in favor to the experimental group ($p < 0.05$). Conclusion: SMWAMs provides an additional effect in the management of chronic CR patients as it improves DSSEP, pain level, ROM, proprioception and disability level.

Key words	**1.**	**Cervical radiculopathy.**
	2.	**Cervical range of motion.**
	3.	**Dermatomal somatosensory evoked potential.**
	4.	**Spinal Mobilization.**
	5.	**Arm Movement.**
	6.	**Randomized Controlled Trial.**
	7.	**Mulligan.**
	8.	**Spinal mobilization with arm movement.**
Classification number	**:**	**000.000.**
Pagination	**:**	**213 p.**
Arabic Title Page	**:**	
Library register number	**:**	**6967-6968.**

Author	**:**	**Aliaa Mohamed Ali El-Abd.**
Title	**:**	**Effect of Cervical Posture Correction And Lumbar Stabilization Exercises on Mechanical Low Back Pain.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Haytham M. Elhafez**
	2.	**Ahmed I Elerian**
	3.	**Salah EB Ahmed**
	4.	**Ahmed F Genidy**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Although current lumbar stabilization exercises are beneficial for mechanical low back pain, further research is recommended focusing on normalizing global sagittal spinal alignment. Purpose: This study was conducted to examine the effects of adding cervical posture correction to lumbar stabilization exercises on mechanical low back pain. Methods: A randomized controlled clinical trial was conducted. Fifty adult patients of both genders with chronic mechanical low back pain and forward head posture were assigned into one of two groups to receive three sessions/ week for 12 weeks treatment; group A: cervical posture correction and lumbar stabilization, and group B (control): lumbar stabilization. The primary outcome was back pain intensity level. Secondary outcomes included disability, craniovertebral angle, lumbopelvic alignment parameters (lumbar lordosis, sacral slope, pelvic tilt, and pelvic incidence), and sagittal lumbar intervertebral movements (translation and rotation). They were measured from lateral views X-ray. Reported data were analyzed by Two-ways-MANOVA. Results: MANOVA indicates significant effects. Pain, disability, lumbar lordosis, and sacral slope were significantly reduced in group A more than B ($p< 0.05$). Craniovertebral angle and pelvic tilt were increased in A more than B ($p< 0.05$). However, pelvic incidence and all other intervertebral movements revealed no significant differences ($p>0.05$). Within-group-comparisons were significant for all variables in both groups except for pelvic incidence. Conclusion: Adding cervical posture correction to lumbar stabilization exercises for mechanical low back pain positively affect pain, disability, global sagittal spinal alignment. However, this combination has no better effects regarding segmental intervertebral movements than lumbar stabilization exercises.

Key words	**1.**	**Low back pain.**
	2.	**Postural correction exercises.**
	3.	**Sagittal spino-pelvic alignment.**
	4.	**Cervical Posture Correction.**
	5.	**Lumbar Stabilization Exercises.**
	6.	**Mechanical Low Back Pain.**
Classification number	**:**	**000.000.**
Pagination	**:**	**153 p.**
Arabic Title Page	**:**	**تأثير تمرينات تصحيح القوام العنقية وتمرينات الثبات القطنية علي آلام أسفل الظهر الميكانيكية.**
Library register number	**:**	**6959-6960.**

Author	**:**	**Ayah Mahmoud Mohamed.**
Title	**:**	**Effect of Different Postural Correction Exercises on Biomechanical Parameters in subjects with forward head and rounded shoulder.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Mohsen Mohamed El-Sayyad**
	2.	**Neveen AbdelLatif AbdelRaouf**
	3.	**Dalia Mohamed Mohamed Mosaad**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Forward head posture and rounded shoulders are two of the most common postural deviations in people of all ages and many studies were done to clearly determine the close relation between forward head and rounded shoulder deformities and the most effective treatment. The purpose: To investigate the Effect of different postural correction exercises on forward head angle, degree of rounded shoulder and cervical range of motion in subjects with forward head and rounded shoulder. Material and methods: 45 subjects were suffering from forward head and rounded shoulders. Their age ranged from 18 to 30 years .Subjects were randomly divided into three equal groups. Group A received only forward head correction program. Group B received only rounded shoulder correction program.Group C: received forward head correction program and rounded shoulder correction program .photographic analysis was used to measure forward head angle ,supine method was used to measure rounded shoulder and clinometer application was used to measure cervical range of motion before and at the end of treatment program which continued for 12 sessions. Results: Statistical analysis using mixed design MANOVA showed that group (A), (B) and (C) revealed signigicant improvement in forward head and rounded shoulder post-treatment ($p<0.05$). Comparing the results among the three tested groups, it was revealed that there was no significant difference in the posttesting mean values of forward head and rounded shoulder between the three groups (A),(B) and (C) ($p > 0.05$) Conclusion: It was concluded that treatment of forward head may improve rounded shoulder deformity and cervical range of motion and treatment of rounded shoulder may improve forward head and cervical range of motion .

Key words	**1.**	**Forward head.**
	2.	**cervical range of motion**
	3.	**Rounded shoulder.**
	4.	**Postural Correction Exercises.**
	5.	**Biomechanical Parameters.**
	6.	**rounded shoulder.**
Classification number	**:**	**000.000.**
Pagination	**:**	**121 p.**
Arabic Title Page	**:**	**تأثير تمارين التصحيح الوضعى المختلفة على القياسات الميكانيكية فى الاشخاص الذين يعانون من الوضع الامامى للرأس و دوران الكتف.**
Library register number	**:**	**6965-6966.**

Author	**:**	**Doaa Ayoub Elimy Mohammed.**
Title	**:**	**Effect of Backward Walking Training on Balance and Planter Pressure Distribution in Flat Foot.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Amal Hassan Mohammed Ibrahim**
	2.	**Marwa Shafiek Mustafa Saleh**
	3.	**Ashraf Nehad Moharam**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Flat foot (FF) is considered as a common musculoskeletal disorders which changes foot posture, affects balance and center of pressure (COP), increases Quadriceps angle (Q angle) and causes foot pain, which affects quality of life and productivity. Backward walking (BW) is a novel in rehabilitation, as it increases muscles strength and improves balance. Purpose of this study: To investigate the effect of BW training on foot posture, static and dynamic balance, COP, Q angle and foot pain intensity level in subjects with FF. Methodology: Forty four subjects of both genders with bilateral flexible FF, participated in the study, their age ranged from 19 to 35 years old. They were assigned randomly into two groups. Group A (Study group): received BW training in addition to a conventional physical therapy exercises (short foot exercises, towel curl, heel raise and calf stretch exercises). Group B (Control group): received the same conventional physical therapy exercises only. All subjects received 3 sessions/ week, for 6 weeks. Outcome measures, included foot posture using Foot Posture Index 6 (FPI-6), static balance using the modified Clinical Test of Sensory Integration of Balance (mCTSIB) with eyes open (EO) and eyes closed (EC) conditions, dynamic balance by utilizing limits of stability (LOS) test, center of pressure (COP) by the COP test, Q angle using 2D photogrammetric analysis and foot pain intensity level by using Visual Analogue Scale (VAS). All outcome measures were assessed at base line and 6-weeks post treatment. Results: There were statistical significant improvement in both groups, pre and post treatment, for all measured variables (P<0.05). There were significant difference between two groups after treatment regarding all measured variables, except mCTSIB on firm (EO and EC) and foam surface (EO), and Q angle in favor to study group (p< 0.05). Conclusion: Backward walking training provides additional effect in the treatment of FF subjects and can be incorporated with the rehabilitation program of FF.

Key words	**1.**	**Backward walking training,**
	2.	**Flat foot.**
	3.	**Foot posture.**
	4.	**Balance.**
	5.	**Planter Pressure Distribution in Flat Foot.**
	6.	**Quadriceps angle.**
	7.	**Center of pressure.**
Classification number	**:**	**000.000.**
Pagination	**:**	**132 p.**
Arabic Title Page	**:**	**التقييم الكمى للاحساس العميق لمفصل الكتف فى حالات الالم العنقى المزمن.**
Library register number	**:**	**7261-7262.**

Author	**:**	**Haidy Samir Roshdy.**
Title	**:**	**Muscle Energy Technique Versus Static Stretch and strengthening on Forward Head Posture in Mechanical Neck Pain.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Maher Ahmed El keblawy.**
	2.	**Soheir Shehata Rezkallah.**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Mechanical neck pain (MNP) is one of the most common disorders that originates mainly from poor postural habits and bad ergonomics. Forward head posture (FHP) was highly correlated to MNP, it was reported that 60% of patients with neck and shoulder pain presented with FHP. Muscle energy technique (MET) and static stretching are easy widespread techniques that are known for their effects in improving tissue extensibility, relieving pain and promoting function. purpose: to study the effect of MET versus stretching and strengthening exercises on FHP, pain, function and cervical range of motion (ROM) in patients with MNP. Methods: Thirty participants (3 males and 27 females, 18-٢٤ years old) were randomly allocated into one of 3 groups: group (A) received MET+ hot pack+ postural education, group (B) received stretching and strengthening exercises+ hot pack+ postural education, group (C) control group received hot pack+ postural education, 3 sessions /week for 4 weeks. Assessment of craniovertebral angle (CVA), numerical pain rating scale (NPRS), neck disability index (NDI) and cervical range of motion (ROM) was done pre-treatment, 4-weeks post-treatment and after 6-weeks of follow-up. Results: There were significant improvement ($p<0.05$) in all tested variables in all groups after treatment except disability in control group. There was no statistically significant difference between groups in all tested variables after 4 weeks of treatment. Follow-up revealed significant improvement of pain and cervical ROM in all groups, disability in groups (A) and (B) and FHP in group (B) only. There were significant differences between groups (A) and (B) in FHP, (B) and (C) in disability and groups (A), (B) and (C) in cervical ROM. Conclusion: Static stretching and strengthening exercises showed better improvement in FHP correction that was able to persist after 6 weeks of ending treatment. MET has equal effect to that of static stretching and strengthening exercises regarding pain, function and cervical ROM. Hot packs application and postural education are effective in pain management and seem to have a role in preserving long-term outcome.

Key words	**1.**	**Forward head posture.**
	2.	**Muscle Energy Technique.**
	3.	**Mechanical neck pain.**
	4.	**Static stretching.**
	5.	**Craniovertebral Angle.**
	6.	**Strengthening.**
Classification number	**:**	**000.000.**
Pagination	**:**	**161 p.**
Arabic Title Page	**:**	**اسلوب الطاقه العضليه مقابل تمرينات الاستطاله الثابته على الوضع الامامى للرأس فى ألم الرقبه الميكانيكى.**
Library register number	**:**	**7311-7312.**

Author	**:**	**Haitham Mahmoud Saleh Mahmoud.**
Title	**:**	**Effect of Radial Extracorporeal Shock Wave Therapy versus Mulligan Mobilization on Sacroiliac Joint Dysfunction.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Amaal Hassan Mohamed Ebrahim**
	2.	**Ahmed Omar Yosef**
	3.	**Magda Gaid Sedhom**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Sacroiliac joint (SIJ) pain is one of causes of low back pain and pelvic discomfort. Extracorporeal shock wave therapy (ESWT) is a new and non-invasive therapeutic modality for musculoskeletal disorders. Mulligan mobilization with movement (MWM) had an effective role in decreasing pain in sacroiliac joint dysfunction (SIJ dysfunction) patients. Purpose: this study was carried out to investigate and compare the outcomes of r ESWT combined with Mulligan MWM and Mulligan MWM only on functional disability, pain pressure threshold (PPT) and mobility index of the SIJ in patients with SIJ dysfunction. Methods: sixty patients with SIJ dysfunction from both genders (36 women and 24 men) were randomly selected from physical therapy outpatient clinic of Deraya University in Minya and divided into two equal groups, group (A) treated with Mulligan MWM (anterior innominate) 3 sets with 10 repetitions 3 times/week for 24 sessions among 8 weeks combined with r ESWT received 2,000 shockwaves with energy set to the maximum level tolerable by the patient applied one session at one-week intervals among 8 weeks and group (B) treated with Mulligan MWM only, measured variables was PPT, Oswestry disability index (ODI) and mobility index. Results: there was a significant increase in PPT of the group (A) compared with that of group (B) at follow-up after 6 weeks (p = 0.03) and at follow-up after 12 weeks (p = 0.001).There was a significant decrease in ODI of the group (A) compared with that of group (B) at post-treatment, follow-up after 6 weeks and follow-up after 12 weeks (p = 0.001). There was a significant increase in mobility index of group (A) compared with that of group (B) at post-treatment (p = 0.03) and follow-up after 12 weeks (p = 0.008), while there was no significant difference between groups at follow-up after 6 weeks (p > 0.05).Conclusion: Combined r ESWT with Mulligan MWM is represented a potential therapeutic effect than Mulligan MWM in treating patients with SIJ dysfunction.

Key words	**1.**	**Radial Extracorporeal Shock Wave Therapy**
	2.	**Mulligan Mobilization with movement.**
	3.	**Sacroiliac Joint Dysfunction.**
Classification number	**:**	**000.000.**
Pagination	**:**	**110 p.**
Arabic Title Page	**:**	**تأثير العلاج بالموجات التصادمية خارج الجسم مقابل تحريك موليجان على الإختلال الوظيفى للمفصل العجزي الحرقفي.**
Library register number	**:**	**7231-7232.**

Author	**:**	**Hend Hamdy Ahmed.**
Title	**:**	**Instrument Assisted Soft Tissue Mobilization Versus Stripping Massage on Upper Trapezius Myofascial Trigger Points: A Randomized Clinical Trial.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Haytham M. Elhafez**
	2.	**Ahmed F Geneidy**
	3.	**Salah Eldein Bassit Ahmed**
	4.	**Mary Kamal**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Objective: This study was conducted to investigate the effects of Instrument assisted soft tissue mobilization (IASTM) versus Stripping massage (SM) on upper trapezius myofascial trigger points. Methods: Sixty subjects with active trigger points at both side (52 females and eight males) were divided randomly into three equal groups. Group "A" received IASTM in addition to instructions twice/week for four weeks while group "B" received SM in addition to instructions twice/week for four weeks. Group "C" (control group) follow instructions for four weeks. Visual analogue scale (VAS), Pressure pain threshold (PPT), Arabic neck disability index (ANDI), and muscle amplitude (RMS) were used to evaluate subjects at two intervals (pre-treatment and post-treatment). Results: Statistical analysis shown that there was a significant differences within-group of VAS, PPT, ANDI, and RMS pre-post treatment at groups A, B and C as ($p<0.05$). Between-group analysis revealed that there was no significant differences in pre value of all variables as ($p>0.05$) while post-treatment there was a significant change in all variables as ($p<0.05$). Conclusion: IASTM and SM are effective methods in the management of subjects with active trigger points at upper trapezius myofascial trigger points with superiority for SM.

Key words	**1.**	**Instrument assisted soft tissue mobilization**
	2.	**Stripping Massage.**
	3.	**Myofascial Trigger Points.**
	4.	**Upper Trapezius.**
	5.	**Randomized Clinical Trial.**
Classification number	**:**	**000.000.**
Pagination	**:**	**120 p.**
Arabic Title Page	**:**	**تحريك الانسجة الرخوة باستخدام الادوات المساعدة مقابل التدليك التجريدى على نقاط الالم العضلى الليفى فى الجزء العلوى من العضلة شبه المنحرفة.**
Library register number	**:**	**7023-7024.**

Author	**:**	**Ibtsam Abdelkareem Ali Mohamed.**
Title	**:**	**Effect of Different Intensities of Ultrasound on Pain and Myoelectric Activities of Upper Trapezius Myofascial Trigger Points: A Randomized Clinical Trial.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Haytham Mohamed Elhafez**
	2.	**Eman Ahmed Abdelmoez**
	3.	**Rania Nagy Karkousha**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Myofascial pain syndrome is a type of chronic pain disorder that affects a portion of the population. Purpose: The aim of this study was to compare the effects of high-power pain threshold ultrasound versus conventional ultrasound on upper trapezius myofascial trigger points. Methods: Seventy participants aged from 18-30 with active trigger points were randomly divided into three Groups, Groups A, B and C. Group A received high-power pain threshold ultrasound twice/week for two weeks. Group B received conventional ultrasound twice/week for four weeks. Group C received sham ultrasound twice/week for four weeks. Visual analogue scale (VAS) scores, surface electromyography, pressure algometry and the Arabic Neck disability index (NDI) were used to evaluate participants at two time points (pretreatment and post-treatment). Results: Statistical analysis shown that there were significant change within-group of VAS, PPT, RMS, ANDI pre-post treatment in the three groups as ($p<0.05$). Between –group analysis there was no significant change in pre value of all variables as ($p<0.05$) while post treatment there was a significant improvement in RMS and PPT of the left side in group A compared with group C as ($p<0.01$). Groups A and B had significantly greater improvement in VAS scores and neck NDI after treatment than group C ($p<0.005$). In addition, group A had significant improvement in VAS scores and NDI after treatment than group B ($p<0.005$). Conclusion: Both techniques are effective methods for treatment of subjects with active trigger points, but high-power pain threshold ultrasound is superior.

Key words	**1.**	**High-power pain threshold ultrasound.**
	2.	**conventional ultrasound.**
	3.	**myofascial trigger points.**
	4.	**Ultrasound on Pain.**
	5.	**Myoelectric Activities.**
	6.	**Upper Trapezius.**
	7.	**Randomized Clinical Trial.**
Classification number	**:**	**000.000.**
Pagination	**:**	**114 p.**
Arabic Title Page	**:**	**تاثير شدة التيارات المختلفة من الموجات فوق الصوتية على الألم والأنشطة الكهربية لنقاط الزناد العضلى الليفى فى الجزء العلوى من العضلة شبه المنحرفة.**
Library register number	**:**	**6971-6972.**

Author	**:**	**Maha Gamal Ibrahim Gomaa.**
Title	**:**	**Whole Body Vibration Versus Biodex Balance Training on Patients with Chronic Ankle Instability.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Ragia Mohamed Kamel**
	2.	**Amira Hussin Draz**
	3.	**Ayman El-Sayed Shafie**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Chronic ankle instability is one of common musculoskeletal injury which characterized by laxity, proprioceptive impairment, postural control defects, and functional performance deficits. Purpose: the study was designed to determine and compare between whole body vibration and biodex balance training on patients with chronic ankle instability. Method: Forty five patients (23 females and 22 male), with age ranged from 20 to 30 years old with unilateral Chronic ankle instability randomly assigned into three equal groups, Group "A" (control group) consisted of 15 subjects (7 females and 8 males),their mean age are (27.53±5.07) years, weight (70.53 ± 10.62) kg., height (168.6 ± 8.5) cm and BMI (24.78 ± 2.87) kg/m2, they received stretching and strengthening exercises twice per week for six weeks , Group "B" consisted of 15 subjects (8 females and 7 males),their mean age are (25.66 ± 5.1) years, weight (68.73 ± 9.52) kg., height (170.53 ± 7.78) cm and BMI (23.63 ± 2.76) kg/m2, They received whole body vibration training (frequency 50 Hz, the amplitude was from 5 – 8 mm) plus stretching and strengthening exercises twice per week for six weeks and Group "C" consisted of 15 subjects (8 females and 7 males),their mean age are (25.46 ± 4.73) years, weight (71.93 ± 8.2) kg., height (168.53 ± 8.24) cm and BMI (25.37 ± 3.07) kg/m^2, they received biodex balance training (Maze control, limit of stability and Random control training modes) plus stretching and strengthening exercises twice per week for six weeks. The dynamic postural stability and postural sway control were assessed before and at the end of the treatment program using a biodex Balance System. Results: within group analysis revealed significant difference in dynamic postural stability and postural sway control in group B and C between before and after the treatment program (p value < 0.05). The between-group analysis showed significant differences in all variables after treatment, with more significant differences observed in Group C than in Groups A and B (p < 0.05). Conclusion: whole body vibration and biodex balance training are effective modalities for improving dynamic postural stability and postural sway control on patients with chronic ankle instability with superior effect of biodex balance training.

Key words	**1.**	**Dynamic postural stability**
	2.	**Limit of stability**
	3.	**Postural sway**
	4.	**Whole Body Vibration.**
	5.	**Biodex Balance Training.**
	6.	**Chronic Ankle Instability.**
Classification number	**:**	**000.000.**
Pagination	**:**	**107 p.**
Arabic Title Page	**:**	**الأهتزاز الكامل للجسم مقابل استخدام جهاز البيودكس للأتزان على مرضى عدم الأستقرار المزمن لمفصل الكاحل.**
Library register number	**:**	**7195-7196.**

Author	**:**	**Manal Bakry Abd El-Fattah Abd El-All.**
Title	**:**	**Influence Of Pulsed Magnetic Field on Red Blood Cells and Therapeutic Action of Vitamin C and E.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Ragia Mohamed Kamel**
	2.	**Neveen Abdel Latif Abdel Raoof**
	3.	**Soheir Shehata RezkAllah**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Pulsed magnetic field (PMF) was reported to have hazardous effects beside the beneficial effects to patients and therapists who are subjected to it. Studies have shown potential effects of antioxidants, such as vitamin C and vitamin E, on oxidative stress status and hazardous effects induced by PMF in animals. Purposes: To investigate the adverse effect of PMF on RBCs count and indices and investigate the therapeutic action of vitamin C and E against harmful effects induced by PMF. Subjects: Sixty patients (27 males and 33 females) with mechanical low back pain (MLBP) referred to physical therapy department to receive PMF, their ages ranged from 20 to 40 years, they were classified randomly into four equal groups. Method: Patients in *Group I* received a selected physical therapy program only which included infrared radiation and strengthening exercises for back and abdominal muscles, patients in *Group II* were treated with PMF (frequency 50 Hz, intensity of 20 gauss and duration of 20 min.) in addition to a selected physical therapy program, patients in *Group III* were treated with PMF and the selected physical therapy program followed by taking vitamin C and patients in *Group IV* were treated with PMF and the selected physical therapy program followed by taking vitamin E. Treatment was applied 3 sessions per week for four successive weeks. The red blood cells count (RBCs), hemoglobin (Hb), Packed cell volume (PCV), mean corpuscular volume (MCV), Mean Corpuscular Hemoglobin Concentration (MCHC) and red cell distribution width (RDW) were measured before and after 4 weeks of treatment. Results: MANOVA test revealed that exposure to PMF caused a significant decrease in the following blood indices: RBC, HB, PCV and MCHC and a significant increase in MCV and RDW. Additionally; There were signs of improvement in the RBCs count and indices in the patients who took supplementary vitamin C and E concurrently with the treatment with PMF. Conclusion: The RBCs count and indices have been adversely affected by PMF exposure. However, most of these changes showed signs of improvement with the addition of vitamin C and E to PMF compared to PMF exposure alone.

Key words	**1.**	**Pulsed magnetic field.**
	2.	**therapeutic effect.**
	3.	**red blood cell**
	4.	**Vitamin C and E.**
Classification number	**:**	**000.000.**
Pagination	**:**	**152 p.**
Arabic Title Page	**:**	**تأثير المجال المغناطيسى المتقطع علي كرات الدم الحمراء والعمل العلاجي لفيتامين سي و اي.**
Library register number	**:**	**7103-7104.**

Author	**:**	**Mohamed Gamal Hassan Mohamed.**
Title	**:**	**Abdominal versus pelvic floor electromyography biofeedback on bladder control in spinal paraplegic patients.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Neveen Abd El Latif**
	2.	**Eman Samir**
	3.	**Doaa I. Amin**
		Fairouz Hatem Ameen
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Spinal cord injuries patients suffer from Bladder incontinence that can cause high mortality rates and this problem needs a noninvasive method for long term use. Purpose: To investigate the efficacy of biofeedback training of the abdominal muscles compared to biofeedback training of the pelvic floor muscles to improve the bladder control and improve the quality of life in paraplegic patients. Methods: Sixty (male and female) paraplegic patients, age range from 20 to 40 years old The mean ± SD age for the (ABT) group was 30.7 ± 7.57 years and the mean ± SD age for the (PFBT) group was 31.63 ± 7.3 years, they were divided randomly into two groups. Patients in the study group were treated by abdominal muscles biofeedback strength training and the control group were treated by pelvic floor biofeedback strength training two times per week for six consecutive weeks. Subjects in both groups were evaluated before and after the treatment by; 1) Measuring post void urine residual volume, 2) Overactive bladder questionnaire (OAB-V8) the Arabic version. Results: There was an overall significant difference after training in time and interaction (P<0.05),within group comparison revealed a significant improvement in the measured variables, between group comparison revealed significant difference of void and quality of life in favour to the (ABT) group. Conclusion: Abdominal muscles' biofeedback training must be a main point in the bladder rehabilitation program of the paraplegic patients as it decreases urine residual volume and optimizes quality of life.

Key words	**1.**	**Spinal cord injury**
	2.	**Overactive bladder questionnaire**
	3.	**Urinary tract infections.**
	4.	**Intermittent catheterization**
	5.	**Abdominal.**
	6.	**pelvic floor.**
	7.	**bladder control.**
	8.	**spinal paraplegic patients.**
Classification number	**:**	**000.000.**
Pagination	**:**	**89 p.**
Arabic Title Page	**:**	**الارتجاع البيولوجي للتخطيط الكهربائي لعضلات البطن مقابل عضلات قاع الحوض في التحكم في المثانه في مرضى الشلل النصفي النخاعي.**
Library register number	**:**	**7275-7276.**

Author	**:**	**Mohamed Magdy El Meligie.**
Title	**:**	**Efficacy of high intensity laser versus chitosan nanoparticles phonophoresis on carpal tunnel syndrome.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Mohamed Hussein El-Gendy**
	2.	**Ebtesam Mohamed Fahmy**
	3.	**Ibrahim Mohamed Ibrahim**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Carpal tunnel syndrome (CTS) is an entrapment neuropathy of the median nerve at the wrist. It is one of the most common peripheral nerve disorders. Purpose of study: to investigate and compare between the efficacy of high intensity laser therapy (HILT) versus chitosan nanoparticles phonophoresis in patients with mild to moderate CTS. Design of the study: A pre-test post-test three arm randomized, controlled single blind study. Subjects and methods: Fifty-four patients with mild to moderate carpal tunnel syndrome were allocated randomly into three equal groups. Experimental group (A): received HILT and a traditional physical therapy. Experimental group (B): received chitosan nanoparticles phonophoresis and the traditional physical therapy. Control group (C): received the traditional physical therapy only (splinting, nerve and tendon gliding exercises). Treatment sessions were held 3 times per week, for five weeks. Measurements were performed pre and post treatment which included median nerve distal latencies by electromyography (EMG), pain assessment by numerical pain rating scale (NPRS) and hand grip strength by handheld dynamometer. Results: There was a significant decrease in median nerve motor and sensory distal latencies, NPRS and a significant increase in hand grip strength post-treatment in the three groups ($p < 0.05$). Between groups analysis showed that there were no significant differences between group A and B regarding all outcome measures. Comparing group, A and C showed a statistically significant difference in motor distal latency (MDL), pain intensity and hand grip strength post treatment in favor of group A, with no significant difference in sensory distal latency (SDL). Comparison between groups B and C showed a statistically significant difference in all outcome measures post treatment in favor of group B. Conclusion: HILT and chitosan nanoparticles phonophoresis have significant effect in improving median nerve distal latency, pain intensity and hand grip strength in patients with mild to moderate CTS. So, it's advisable to consider these modalities in the rehabilitation program in patients with CTS.

Key words	**1.**	**high intensity laser therapy.**
	2.	**phonophoresis.**
	3.	**chitosan nanoparticles**
	4.	**Phonophoresis.**
	5.	**carpal tunnel syndrome.**
Classification number	**:**	**000.000.**
Pagination	**:**	**138 p.**
Arabic Title Page	**:**	**تأثير الليزر عالى الشدة مقابل الشيتوزان فونوفوريا على ظاهرة النفق الرسغى.**
Library register number	**:**	**7163-7164.**

Author	**:**	**Radwa Fayek Hammam Mansour**
Title	**:**	**Different Dose-Related Effects of Radial Extracorporeal Shock Wave on knee Osteoarthritis**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Ragia Mohamed Kamel**
	2.	**Amira Hussin Draz**
	3.	**Amr Abdallah Azzam**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Extracorporeal shock wave therapy (ESWT) considered as a conservative treatment of knee osteoarthritis (OA) in recent years. Purpose: was to determine and compare between low and medium energy radial shock wave on pain, knee physical function and proprioception in knee OA. Method: Forty five subjects (26 females and 19 male) with knee osteoarthritis grade 3 according to kelgren and Lawrence classification participated in this study, their age ranged from 45 to 55 years old, were randomly assigned into three equal groups, Group "A" consisted of 15 subjects (9 females and 6 males), their mean age are (50.4± 3.4) years, weight (86.9± 10.5) kg., height (168.3± 8.9) cm and BMI (30.7±3.5) kg/m2, they received low energy radial shock wave therapy plus strengthening exercises once per week for four weeks, Group "B consisted of 15 subjects (10 females and 5 males), their mean age are (49.9± 2.6) years, weight (88.6± 10) kg., height (167.4± 9.5) cm. and BMI (31±2.4) kg/m2, they received medium energy radial shock wave therapy plus strengthening exercises once per week for four weeks and Group "C" (control group) consisted of 15 subjects (7 females and 8 males), their mean age are (49.7± 3.1) years, weight (87.3± 9.7) kg., height (167.6± 8.1) cm. and BMI (31.1±3) kg/m2, they received sham shock wave plus strengthening exercises once per week for four weeks. Assessments of pain by visual analogue scale, knee physical function by Arabic version of the knee injury and osteoarthritis outcome score physical function short form and knee proprioception by Isokinetic dynamometer were performed before and at the end of the treatment program. Results: within group analysis revealed significant difference in pain, knee physical function and proprioception in group A and B before and after the treatment program as p value < 0.05, and between group analysis revealed significant difference in all variables after treatment in favor to group B, as p value < 0.05. Conclusion: Low and medium energy radial shock wave therapy are effective modalities for treating Knee OA with superior effect of medium energy radial shock wave therapy.

Key words	**1.**	**low dose radial shock wave therapy**
	2.	**Medium dose radial shock wave therapy**
	3.	**knee Osteoarthritis**
Classification number	**:**	**000.000.**
Pagination	**:**	**91 p.**
Arabic Title Page	**:**	**التأثيرات المصاحبة للجرعات المختلفة للموجات التصادمية القطرية خارج الجسم علي خشونة الركبة.**
Library register number	**:**	**7019-7020.**

Author	**:**	**Shimaa Hosny Mohamed Abd Elrahmem.**
Title	**:**	**Effect of Ischemic Compression versus Kinesiotaping on Patellar Tendinitis.**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Haytham M. Elhafez**
	2.	**Dalia Mohamed Mosaad**
	3.	**Ghada Ismail Mohamed**
	4.	**Ahmed Fathy Geneidy**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Aim of the study: the goal of the study was to compare between the impact of ischemic compression (IC) and kinesiotaping (KT) on decreasing pain intensity level, increasing knee range of motion (ROM), improving pressure pain threshold (PPT), improving the Physical function, improving the resting bioelectric activity of Quadriceps muscles, and enhancing balance of subjects with unilateral acute patellar tendinitis. Patients and methods: thirty three subjects with unilateral acute patellar tendinitis (PT) completed a randomised controlled trial. Subjects were divided into three equal groups. Group A received ischemic compression and conventional treatment of patellar tendinitis. Group B received kinesiotaping and conventional treatment of patellar tendinitis. Group "C" received only conventional treatment. Each subject received three sessions/ week for one month. The resting bioelectric activity of Quadriceps muscles, pain intensity level, balance, pressure pain threshold, knee range of motion, and the physical functional were measured before, after and two weeks after completion of the study for follow up. Results: All the groups showed a decrease in pain intensity level; WOMAC and improvement of the Physical functional RMS, balance, PPT post treatment, and follow up when compared with pre-treatment. But group B was significantly changed at post treatment and follow up when compared with pre-treatment. Conclusion: KT is more effective than IC on decreasing pain intensity level, increasing knee range of motion (ROM), improving pressure pain threshold (PPT), improving the Physical function, improving the resting bioelectric activity of Quadriceps muscles, and enhancing balance in unilateral acute PT.

Key words	**1.**	**Ischemic Compression.**
	2.	**Pressure Pain Threshold Resting.**
	3.	**Kinesiotape.**
	4.	**Patellar Tendinitis.**
	5.	**Myoelectric Activity.**
Classification number	**:**	**000.000.**
Pagination	**:**	**142 p.**
Arabic Title Page	**:**	**تأثير الضغط الاقفارى مقابل شريط كاينزيو فى حالات التهاب أوتار الرضفة.**
Library register number	**:**	**7157-7158.**

Author	**:**	**Yasmein Mohammed Mahmoud**
Title	**:**	**Comparing effects of plyometrics closed kinetic chain and quadratus lumborum strengthening exercises on vertical jump**
Dept.	**:**	**Department of Basic Science.**
Supervisors	**1.**	**Wadida Hassan Abdelkader ElSayed**
	2.	**Amira Hussin Draz**
Degree	**:**	**Doctoral.**
Year	**:**	**2020.**
Abstract	**:**	

Background: Vertical jumping is considered an essential motor skill in a range of team sports including, volleyball, soccer, basketball and handball, Plyometrics improve jump height capabilities. Athletes use a counter movement vertical jump strategy to achieve maximum vertical jump height. Closed kinetic chain exercises like squat exercises are frequently prescribed in the training of sports which require jumping. Hip hiking which is the action of quadratus lumborum muscles is an exercise that improves vertical jump height. Purpose: to compare effect of plyometrics with closed kinetic chain and quadratus lumborum strengthening exercises on vertical jump height in non-professional athletes sports players. Design: pre- post measurements randomized controlled trial. Methods: Two hundred non-professional athletes sports players from different sports that require jumping abilities like volley ball, basketball and hand ball, were recruited from Cairo and Kafer Elsheik University, Egypt.140 players met the inclusion criteria and were randomly assigned into four groups each group was consisted of 35 players. All participant's mean body mass index (BMI) value was 21±3.76 kg/m^2, 21.44±1.681 kg/m^2, 22.17±1.8 kg/ m^2, 22.01±1.69 kg/m^2. Group (A) received plyometric exercise (Counter Movement Vertical Jump), Group (B) received closed kinetic chain exercise (double limb body weight squat), Group (C) received quadratus lumborum strengthening exercise (concentric active resisted exercise for quadratus lumborum) and the three groups received the exercises two times per week for eight weeks. Group (D) received no exercise (control group). Results: statistical analysis revealed that there was significance difference in jump height in favor to plyometrics, closed kinetic chain and quadratus lumborum strengthening exercises compared with the control group that received no exercise and plyometric exercise revealed the most improvement in jump height then quadratus lumborum strengthening exercise then closed kinetic chain exercise group. Conclusion: plyometric (counter movement Vertical jump), closed kinetic chain (double limb body weight squat), and quadratus lumborum strengthening exercises (concentric active resisted Exercise for quadratus lumborum) yields an improvement on vertical jump height, favoring plyometric exercise then quadratus lumborum strengthening exercise then closed kinetic chain exercise.

Key words	**1.**	**Plyometrics,**
	2.	**Closed kinetic chain.**
	3.	**Vertical Jump,**
	4.	**Strengthening Exercises**
	5.	**quadratus lumborum strengthening exercises.**
Classification number	**:**	**000.000.**
Pagination	**:**	**132 p.**
Arabic Title Page	**:**	**مقارنة تأثيرات تمرينات البليومتركس مع السلسلة الحركية المغلقة وتقوية العضلة الرباعية القطنية على القفز العمودي.**
Library register number	**:**	**7009-7010.**