Physical Therapy Department for Musculoskeletal Disorder and Its Surgery

Master Degree
2008

Author	**:**	**Abd El Galil Allam El Galil.**
Title	**:**	**The Effect of Cervical Manipulation on Selected Parameters in Patient with Mechanical Neck Pain.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Ahmed Hassan Hussien.**
	2.	**Hazem El-Kashif.**
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Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

Mechanical neck pain can be defined as a neck disorder characterized by generalized neck and/or shoulder pain attributed to mechanical dysfunctions of the cervical spine. The purpose of this study was to examine the effect of cervical manipulation on patient with mechanical neck pain. Twenty male and female patients with an age ranging from twenty to forty five years volunteered to participate in this study. Each patient received one session of cervical manipulation. The following parameters including pain severity by the visual analogue scale, cervical range of motion by an OB goniometer (flexion, extension, right side bending, left side bending, rotation to the right and rotation to the left) and the intervertebral mobility by plane X-ray were measured before and after cervical manipulation. Results: the results revealed that there was significant improvement in all parameters tested after cervical manipulation. Conclusion: on the basis of the present data, it is possible to conclude that cervical manipulation is effective method in treating mechanical neck pain.

Key words	**1.**	**Manipulation.**
	2.	**Mechanical Neck Pain.**
Arabic Title Page	**:**	**تأثير التحريك اليدوي للرقبة على مقاييس مختارة في مرضى الآلام العنقية الميكانيكية.**
Library register number	**:**	**1813-1814.**

Author	**:**	**Abdul Rahman Taha Alahmad.**
Title	**:**	**Relationship between kinematic gait analysis and Lysholm knee scale after arthroscopic partial meniscectomy.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Bassem Galal Eldien El Nahass.**
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Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to examine the relationship between some chosen variables of kinematic gait analysis (stride length, stride time, cadence, speed, right and left stance percentage, right and left peak flexion angle) and Lysholm knee scale total score and subscores after arthroscopic partial meniscectomy. One group of thirty patients after arthroscopic partial meniscectomy aging from 21 to 41 years old were examined by means of kinematic gait analysis and Lysholm knee scale within first week after surgery. Twenty six of the same patients were available to do the same examinations within the sixth week after surgery. Significant improvements were shown by means of both kinematic gait analysis and Lysholm knee scale after six weeks from surgery (P< 0.05). Correlation between kinematic gait analysis variables and Lysholm knee scale were shown to be statistically insignificant (P> 0.05) except for cadence , speed , and stride time at week one post surgery only(P<0.05). Conclusion: Lysholm knee scale alone may be inadequate to describe the walking function and kinematic gait variable after arthroscopic partial meniscectomy. The combination between kinematic gait analysis, Lysholm knee scale, and/or modification of Lysholm knee scale, or even the use of another functional scale may help more accurate description of functional and walking status after arthroscopic partial meniscectomy.

Key words	**1.**	**meniscectomy.**
	2.	**Lysholm knee scale.**
	3.	**gait analysis.**
Arabic Title Page	**:**	**العلاقة بين تحليل المشي الكينماتيكي ومقياس ليسهولم للركبة بعد عمليات الاستئصال الجزئي للغضروف الهلالي بالمنظار.**
Library register number	**:**	**1891-1892.**

Author	**:**	**Ahmed Barakat Bekheet.**
Title	**:**	**The efficacy of laser therapy combined with early therapeutic exercises versus conventional therapeutic exercises after hand flexor repair.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Salwa Fadl Abd El Mejeed.**
	2.	**Khaled El Sayed Ayad.**
	3.	**Hamed Mohamed El Gohary.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The aim of the study was to compare between the combined effect of laser and early therapeutic exercises, versus conventional therapeutic exercises after hand flexor tendon repair in zone II. Thirty patients were assigned into two groups, each group was 15 patients. Their ages ranged from 20 to 40 years. Patients in group A were receiving the conventional therapeutic exercises and patients in group B were receiving the same therapeutic exercises combined with laser. The results showed a statistically significant increase in Total Active Motion (TAM) of the proximal interphalangeal (PIP) joints and distal interphalangeal (DIP) joints range of motion as well as maximum hand grip strength for both groups. The results between the two groups showed a highly statistically significant difference in TAM and maximum hand grip strength at three weeks and three months (P<0.01), with favoring to laser treated group. It was concluded that the combination of laser and early therapeutic exercises were effective in treatment after hand flexor tendon repair.

Key words	**1.**	**Lasers.**
	2.	**Flexor tendon.**
	3.	**Mobilization.**
	4.	**Repair surgery.**
Arabic Title Page	**:**	**تأثير العلاج بالليزر والتمرينات العلاجية المبكرة مقابل التمرينات العلاجية التقليدية بعد الإصلاح الجراحى للأوتار القابضة لليد.**
Library register number	**:**	**1871-1872.**

Author	**:**	**Ahmed EL-Prince Mohamed.**
Title	**:**	**The prevalence of low back pain among policemen in great Cairo.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Salwa Fadle Abdel Mageed.**
	2.	**Manal Mohamed Ismail.**
	3.	**Zen El Abdeen Hassan.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to determine the prevalence of LBP among policemen in great Cairo and to study the impact of years of service and types of service on the prevalence of LBP. This work included 9232 policemen who had a complaint of LBP, whose age ranged between twenty-two to sixty years. The data of this study were collected from the orthopedic medical files at police-force hospitals (Al Agouza and Mubarak Hospitals) in great Cairo and the Administration of Policemen Affair. The results showed that the prevalence of low back pain among policemen in great Cairo along the five years in the period from 2002 to 2006 was 9.85 %. The results also showed a relationship between years of service and low back pain, as with increasing the years of service, there was an increase in incidence of low-back pain among policemen with the highest percentage was found in those who worked for more than twenty years of service. The results also showed that the different types of service had an impact on low-back pain, with the highest percentage which was found in the patrol & riding circuit. Accordingly, it can be concluded that the LBP considered the most common musculoskeletal problem among policemen in great Cairo and there is a strong correlation between years of service and LBP.

Key words	**1.**	**Low- Back Pain.**
	2.	**policemen.**
Arabic Title Page	**:**	**معدل انتشار الالآم اسفل الظهر بين ضباط الشرطة بالقاهرة الكبرى.**
Library register number	**:**	**1859-1860.**

Author	**:**	**Enas Metwaly Abd El Menam.**
Title	**:**	**Comparative study between the efficacy of continuous versus intermittent traction in treatment of cervical radiculopathy.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Ibrahim Magdy Elnaggar.**
	2.	**Hala Rashad El Habashy.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

Purpose: This study investigated the efficacy of the continuous cervical traction versus the intermittent cervical traction in treating C6-C7radiculopathy patients. Subjects: Thirty patients diagnosed as cervical spondylosis or cervical disc prolapse at the level of C5-C6 and C6-C7 or at the level of C6-C7 suffering from unilateral radiculopathy participated in this study. Methods: Patients were distributed randomly into two experimental groups. The continuous traction group which consisted of 15 patients with a mean age 46.40(±6.01) years, received infrared radiation followed by continuous cervical traction. The intermittent traction group which consisted of 15 patients with a mean age 47.13(±6.69) years, received infrared radiation followed by intermittent cervical traction. Treatment was given 3 times/week, each other day, for 4 consecutive weeks. Patients were evaluated before and after treatment for neck pain severity, arm pain severity, amplitude and latency of flexor carpi radialis H-reflex, and neck mobility. Results: Patients who were treated by either intermittent cervical traction or the continuous cervical traction showed significant improvement in all the measured variables. Between groups comparison after treatment showed significant decrease in neck pain severity and significant increase in frontal and transverse neck mobiliy in favor of the intermittent traction. There was no significant difference between groups concerning arm pain severity, H-reflex amplitude and latency, and neck sagittal mobility. Conclusion: Both of the intermittent and the continuous cervical traction had a significant effect on neck and arm pain reduction, a significant improvement in nerve function, and a significant increase in neck mobility. However, the intermittent traction was more effective than the continuous type.

Key words	**1.**	**cervical radiculopathy.**
	2.	**intermittent traction.**
	3.	**continuous traction.**
	4.	**flexor carpi radialis H-reflex.**
Arabic Title Page	**:**	دراسة مقارنة فاعلية الشد المتقطع مقابل الشد المستمر في علاج اعتلال جذور الأعصاب العنقية.
Library register number	**:**	**1793-1794.**

Author	**:**	**Hamed Mohamed EL-Khozamy.**
Title	**:**	**Effect of pulsed electromagnetic field on chronic mechanical neck pain.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Salwa Fadlle Abd El Majeed.**
	2.	**Yasser Hassan El Miligui.**
	3.	**Enas Fawzy.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to examine the effects of pulsed electromagnetic field (PEMF) therapy on patients with chronic mechanical neck pain. Thirty patients were assigned randomly into 2 groups. Subjects in group (A) (n=15) received traditional physical therapy program (Infrared radiation, ultrasonic, manual traction, stretching exercises and isometric exercises for neck muscles) as well as pulsed electromagnetic field (PEMF), while subjects in group (B) (n = 15) received traditional physical therapy only (Infrared radiation, ultrasonic, manual traction, stretching exercises and static exercises for neck muscles). The following parameters including functional disability and cervical rang of motion (flexion, extension, right side bending, left side bending, right rotation and left rotation) were measured before and after 4 weeks of treatment. Results: The results of the study showed that traditional physical therapy treatment only or in addition to PEMF were effective in reducing pain, functional disability and increasing cervical range of motion with minimal difference between two groups in favor of group (A) but not statistical significant. Conclusion: On the basis of the present data, it is possible to conclude that PEMF combined with traditional physical therapy program is a promising method in treatment of chronic mechanical neck pain (CMNP) patients.

Key words	**1.**	**Pulsed Electromagnetic Field.**
	2.	**Mechanical neck Pain.**
	3.	**Exercise therapy.**
Arabic Title Page	**:**	**تأثير المجال الكهرومغناطيسي المتقطع علي ألم الرقبة الميكانيكي المزمن.**
Library register number	**:**	**1833-1834.**

Author	**:**	**Magdy Mohamed Ali Shabana.**
Title	**:**	**Dynamic balance training versus traditional rehabilitation program in unilateral total hip arthroplasty.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Ahmed Hassan Hussein.**
	2.	**Ali Osman EI-Mofty.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to examine the effects of dynamic balance training program on patient with unilateral Total Hip Arthroplasty. Twenty patients were assigned randomly into two groups. Subjects in group B (n=10) received traditional rehabilitation program (Therapeutic exercise, transfer training and gait training) as well as dynamic balance training program while subject in group A (n= 10) received traditional rehabilitation program only, The following parameters including changes of the moment of hip muscles in three plane, dynamic balance impairments and risks of falling were measured initially then at 6 weeks and at 12 weeks of treatment. RESULT: The results showed a significant improvement in dynamic balance and risks of falling in group B compared with those in group A, CONCLUSION: it is possible to conclude that dynamic balance training is an effective method of treatment for unilateral total hip arthroplasty patients with parameters used in the present study.

Key words	**1.**	**Total hip arthroplasty.**
	2.	**Dynamic balance training.**
	3.	**traditional rehabilitation program.**
Arabic Title Page	**:**	**برنامج التدريب على الاتزان الحركي مقابل برنامج التأهيل التقليدي لمرضى الاستبدال الكلى لمفصل الفخذ لجانب واحد.**
Library register number	**:**	**1865-1866.**

Author	**:**	**Maha Mostafa Mohamed Mohamed.**
Title	**:**	**Effect of Pulsed Electromagnetic Field Therapy on Healing of the Closed Humeral Shaft Fractures.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Bassem G. El Nahass.**
	2.	**Ali Osman El Mofty.**
	3.	**Mamdoh Mahfouz Ali.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to assess the effect of pulsed electromagnetic field (PEMF) therapy and exercises on the healing of the closed humeral shaft fractures (CHSFs). Fifteen patients participated in this study. All fractures were externally fixed using the humeral functional brace and treated by PEMF and exercises. Fractures were assessed clinically and radiologically by plain X-rays at 2-4 weeks interval until the evidence of radiological union. Results showed that 13 fractures united clinically at a mean of 4.4 weeks, radiologically at a mean of 10.2 weeks and non union occurred in 2 fractures. It can be expected from the results that PEMF and exercises are effective methods for accelerating healing and reducing incidence of delayed and non union rates of the CHSFs after being properly fixed by functional humeral brace.

Key words	**1.**	**Pulsed Electromagnetic Field.**
	2.	**Closed Humeral Shaft Fractures.**
	3.	**Functional Humeral Brace.**
Arabic Title Page	**:**	**تأثـير العلاج بالمجال الكهرومغناطيسي المتقطع على إلتآم الكسور المغلقة ببدن عظمة العضد.**
Library register number	**:**	**1791-1792.**

Author	**:**	**Mohamed Mahamoud El morsy.**
Title	**:**	**The effectiveness of mobilization in management of cervicogenic headache.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Enas Fawzy Youssef.**
	2.	**Mohamed Mohamed Ibrahim.**
	3.	**Khaled Hassan Mohamed.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to investigate the efficacy of mobilization in the management of cervicogenic headache in patients with chronic mechanical neck pain. Thirty male and female subjects participated in this study. *exercise group (15 patients) or a group (A) that received* stretching and strengthen exercises for specific neck muscles. Mobilizing and exercise group (B) this group will consist of 15 patients who will receive low- velocity cervical joints mobilization techniques (in which the cervical segment is moved passively with rhythmical movement), accompanied with stretching and strengthen exercises for specific neck muscles for 12 sessions over four weeks period each other day. Each patient was evaluated pretreatment and one week post treatment. the results of this study showed that significant differences was found between both programs in headache intensity, frequency, neck right and left side bending and neck right and left rotation. No significant difference was found between both programs in headache duration, neck disability index and neck flexion and extension. The combination of exercises and mobilization of the cervical spine is more effective in the management of cervicogenic headache for the patients with chronic mechanical neck pain.

Key words	**1.**	**chronic neck pain.**
	2.	**mobilization.**
	3.	**cervicogenic headache.**
	4.	**neck exercises.**
Arabic Title Page	**:**	**فاعلية التحريك اليدوي في علاج الصداع عنقي المنشأ.**
Library register number	**:**	**1817-1818.**

Author	**:**	**Mohamed Mokhtar Mostafa.**
Title	**:**	**Conservative Management of Mechanical Neck Pain: Systematic Review and Meta – Analysis.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Ahmed Hassan Hussien.**
	2.	**Enas fawzy Youssef.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

Neck pain is common musculoskeletal symptom. Effective management of this condition is vital, not only for the relief of symptoms of this condition but also more importantly, for prevention of recurrent episodes of cervical pain, personal suffering and lost work productivity. The purpose of this study was to assess the effectiveness of conservative management of mechanical neck pain and to determine which type of treatment is useful for management of this case. A search of computerized bibliographic databases covering medicine, physiotherapy, allied health, complementary medicine and biological science was under taken form January 1990 until June 2007. thirty tow study were met our inclusion criteria. Results of this review showed significant positive effect were reported in the trails of strengthening exercises with active intensive neck muscle training for mechanical neck pain. This review led us to conclude that studies support the long term positive effect of strengthening exercises with intensive active neck training for mechanical neck pain. In general, it was not possible to determine which techniques or dosage was more beneficial or if certain subgroups beneficial more from one form of care than another.

Key words	**1.**	**Mechanical neck pain.**
	2.	**chronic neck pain.**
	3.	**conservative management.**
	4.	**systematic review.**
	5.	**meta-analysis.**
Arabic Title Page	**:**	**العلاج التحفظي لحالات ألام الرقبة الميكانيكية: مراجعة منظمة وإستدلال إحصائي.**
Library register number	**:**	**1887-1888.**

Author	**:**	**Nagaty Abd El khalek El Sayed Sallam.**
Title	**:**	**Effect of aerobic exercises on patients with knee osteoarthritis.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Nadia Abd El Azeem Fayaz.**
	2.	**Osama Abd El Wahab Seleem.**
	3.	**Khaled El Sayed Ayad.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to assess the effect of aerobic exercises on patients with knee osteoarthritis. Sixty patients, both males and females, with grade 2-3 OA according to Kellgren-Lawrence scores, were randomly selected and divided into two equal groups. The physiotherapy program was conducted three times a week for 8 weeks, for a total of 24 sessions. In both groups, a hot pack placed on the affected knee for 20 minutes followed by deep heating with ultrasound application for 5 minutes. Then, both groups performed the 4 strengthening exercises including: quadriceps setting exercise, supine lying quadriceps exercise, wall slide and resisted knee extension. The patients in group II after that, performed aerobic exercises in the form of walking on treadmill and cycling on stationary bicycle at an intensity equivalent to 60% to 80% of the maximum heart rate for 30 minutes. All patients in both groups were assessed before and after treatment by using WOMAC scale for pain severity, stiffness and functional disability. Results showed that there were significant improvement in pain severity, stiffness and physical disability in both groups. Comparison between both groups revealed a significant improvement regarding to stiffness and physical disability in favor of group II after treatment. It can be expected from the results that aerobic exercises are effective methods for reducing pain, stiffness and physical disability in patients with knee OA.

Key words	**1.**	**Aerobic Exercises.**
	2.	**Knee OA.**
	3.	**Pain.**
	4.	**Stiffness.**
	5.	**Physical Disability.**
Arabic Title Page	**:**	**تأثير التمرينات الهوائية على مرضى خشونة مفصل الركبة.**
Library register number	**:**	**1843-1844.**

Author	**:**	**Naglaa Abd Al Aziz Kandeel.**
Title	**:**	**Efficacy of low level laser therapy in chronic mechanical neck pain.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Salwa Fadle Abd El Majeed.**
	2.	**Ashraf Nehad Mohurram.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

Background: Chronic mechanical neck pain represents a great variety of conditions that causes inappropriate neck function. It is considered one of the most frequently treated and most costly diseases in modern societies. Purposes: To investigate the efficacy of low level laser therapy in chronic mechanical neck pain. Study design: patients were randomly assigned to two treatment groups. Materials and Methods: Thirty patients with chronic mechanical neck pain from both sexes were involved, aged between 18-40 years, they were divided into two equal groups. In group A, patients received low level laser therapy (LLLT) in addition to traditional physical therapy program in the form of infrared, isometric and stretching exercises. In group B, patients received the traditional physical therapy program in the from of infrared, isometric and stretching exercises. Treatment was done 3 times a week for 4 weeks. Neck pain, functional disability and range of motion were measured before and after treatment. Results: in LLLT group A, statistically significant improvements in neck pain, functional disability and range of motion while in group B, significant improvements were detected in neck pain, functional disability and no improvements in range of motion. Conclusion: LLLT proved to be beneficial in improving neck pain, functional disability and range of motion in patients with chronic mechanical neck pain.

Key words	**1.**	**chronic mechanical neck pain.**
	2.	**low level laser therapy.**
Arabic Title Page	**:**	**فاعلية الليزر منخفض الشدة العلاجى فى ألم الرقبة الميكانيكي المزمن.**
Library register number	**:**	**1895-1896.**

Author	**:**	**Rasha Ragab Ibrahim.**
Title	**:**	**The suggested physical therapy program post TMJ discectomy.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Salwa Fadlle Abd El Majeed.**
	2.	**Mohamed Mohamed Ibrahim.**
	3.	**Emad Said Helmy.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to suggest physical therapy program post TMJ discectomy and compare between the combined effects of the suggested physical therapy program post TMJ discectomy in addition to splint therapy versus the effect of the splint therapy only. Materials and methods: Thirty patients were assigned randomly divided into two equal groups (experimental group A and control group B). Subjects in the experimental group (n=15) received the suggested physical therapy program (Ice packs, active exercises, pulsed ultrasonic, stretching exercises, isometric exercise, stabilization exercises, myofascial release and gentle joint distraction plus superior repositioning splint). Treatment was done three sessions weekly for the first six weeks then twice weekly for the next six weeks for three months, and the subjects in the control group (n = 15) received superior repositioning splint only. Pain severity of TMJ, functional mobility (ROM of mandibular opening and lateral motion to right and to left) and chewing ability were measured after seven days post operative, after six weeks and after three months of treatment. Results: The results showed significant improvement in all parameters in both groups with favoring of experimental group compared with those at control group. Conclusion: The suggested physical therapy program and the splint therapy significantly improved TMJ ROM, chewing ability and reduced pain intensity post TMJ discectomy. But the suggested physical therapy program plus splint therapy were more effective than splint therapy only.

Key words	**1.**	**TMJ discectomy.**
	2.	**occlusal splints.**
	3.	**Internal derangement.**
	4.	**temporomandibular joint.**
	5.	**TMJ surgery.**
Arabic Title Page	**:**	**برنامج العلاج الطبيعي المقترح بعد إزالة غضروف مفصل الفك الصدغي.**
Library register number	**:**	**1823-1824.**

Author	**:**	**Shymaa Mohamed Zayed.**
Title	**:**	**Effect of electromyographic biofeedback in rehabilitation of anterior cruciate ligament reconstruction.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Salwa Fadel Abdelmajeed.**
	2.	**Khaled Ayad.**
	3.	**Hisham Musbah.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was to investigate the effect of electromyographic biofeedback in rehabilitation of ACL reconstruction on knee pain severity, swelling, stiffness, range of motion and muscle strength. Subjects: Thirty patients with ACL reconstruction participated in this study. Methods: Patients age ranged from 20-40 years old. They were collected from Al Kasr El-Aini-Hospital and they done their operation of ACL reconstruction with Prof. Hisham Mousbah at Al Kasr El-Aini. They were their assessment pre-assessment and post assessment at Biodex laboratory at faculty of physical therapy. They were divided randomly into two equal groups: the first experimental group consist of 15 patients (n-15) with a mean age (29.4±3.77) years treated with biofeedback combined with rehabilitative exercise while the second experimental group consist of 15 patients (n=15) with a mean age (29.13±3.71) years treated with rehabilitative exercise. The results revealed that both groups (Rehabilitative group and Biofeedback group) had significant decrease in knee pain, swelling, stiffness, and significant increase in range of motion and muscle strength (P<0.05) but the rehabilitative exercise program was more effective when compared with biofeedback program. The rehabilitative exercise program should be an integral component in additional to biofeedback in treatment patients with ACL reconstruction.

Key words	**1.**	**Anterior Cruciate Ligament.**
	2.	**Reconstruction.**
	3.	**Biofeedback.**
	4.	**Rehabilitation program.**
Arabic Title Page	**:**	**تأثير التغذية الرجعية الحيوية باستخدام جهاز رسم العضلات الكهربي في تأهيل إعادة بناء الرباط الصليبي الأمامي.**
Library register number	**:**	**1855-1856.**

Author	**:**	**Tamer Mohamed Shousha.**
Title	**:**	**Energy expenditure following rehabilitation of the reconstructed anterior cruciate ligament.**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Bassem G. El Nahass.**
Degree	**:**	**Master.**
Year	**:**	**2008.**
Abstract	**:**	

The purpose of this study was first to assess the energy expenditure as an index to return to specific activities and second, to determine the net efficacy of the specific exercise program modified by (Ayad et al., 2001) following ACL reconstruction. A comparison was held between a group of 15 ACL reconstructed patients with a group of 15 normal athletes. Both receiving an accelerated rehabilitation program combined with proprioceptive training. Treatment out comes were determined from: 1) Oxygen rate (VO_2 rate) 2) Energy expenditure (EE), 3) Energy expenditure index (EEI) and 4) respiratory exchange ratio (RER). During walking at speed of 3.5 Km/hr. before rehabilitation and 3.5 Km/hr. and 5 km/hr. following rehabilitation. The results showed statistically significant difference following rehabilitation within both groups. While no significant difference was found between both groups. Thus it was concluded that energy expenditure is a useful tool in assessing improvement following rehabilitation besides, it can be used to determine when to return to previous sport activities.

Key words	**1.**	**Knee.**
	2.	**Ligament, ACL.**
	3.	**Energy expenditure.**
	4.	**gait adaptations.**
	5.	**Respiratory exchange ratio.**
	6.	**oxygen.**
Arabic Title Page	**:**	**الطاقة المستهلكة بعد تأهيل الرباط الصليبى الأمامى الذى أعيد بناءه.**
Library register number	**:**	**1809-1810.**