

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
THERAPY DEPARTMENT FOR NEUROMUSCULAR AND
NEUROSURGICAL DISORDER AND ITS SURGERY**

PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED

**Physical Therapy Department for Neuromuscular and
Neurosurgical Disorder and Its Surgery**

Doctoral Degree 2020

Author	:	Abdelrzak abdelnaeim ahmed Mahmoud.
Title	:	Effect Of Low Intensity Extracorporeal Shock Waves Therapy On Erectile Dysfunction In Patients With Diabetic Polyneuropathy.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Wael Salah Twfik Shendy
	2.	Moataz Mohamed Elsemary
	3.	Omar Mohamed Elsoghier
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	<p>Background: Erectile dysfunction (ED) is a common disorder among men with diabetes mellitus (DM). New therapies are warranted to treat this complex disorder. Objective: to assess the effectiveness of low-intensity extracorporeal shockwave therapy (Li-ESWT) in the management of ED in diabetic patients with polyneuropathy. Subjects: This randomized controlled trial included 40 patients 35-60 years of age with a confirmed diagnosis of ED due to diabetic polyneuropathy (DP). They were randomly allocated to one of two groups; Shock Wave Group (n=20) treated with Li-ESWT plus pelvic floor muscle exercises for six weeks and Pelvic Floor Exercise Group (n=20) treated with pelvic floor muscle exercises and sham therapy of shock wave. Methods: The erectile function was assessed and scored according to the five-item version of the International Index of Erectile Function (IIEF-5). Color-coded duplex sonography was used for the evaluation of penile perfusion to measure peak systolic velocity (PSV), end-diastolic velocity (EDV), and resistance index (RI) of the two cavernous arteries. The assessment was done before and three months after treatment. Results: International Index of Erectile Function increased significantly in the SW group ($p < 0.001$), but not in the PFE group ($p = 0.194$). IIEF was positively correlated with PSV before treatment. PSV of the right and left cavernous arteries were low at baseline, indicating arterial insufficiency. After treatment, PSV significantly in the two groups; however, the post-treatment PSV was significantly higher in the SW group (study) compared to the PFE group (control) ($p < 0.001$, for both arteries). Conclusion: Li-ESWT is a safe and effective treatment of ED caused by diabetic polyneuropathy three months after treatment.</p>
Key words	1.	Erectile Dysfunction.
	2.	Diabetic Neuropathy.
	3.	Extracorporeal Shockwave Therapy;
	4.	Pelvic Floor Exercise Therapy.
	5.	Polyneuropathy.
Classification number	:	000.000.
Pagination	:	112 p.
Arabic Title Page	:	تأثير العلاج بالموجات التصادمية منخفضة الشدة على ضعف الانتصاب في مرضى إعتلال الأعصاب السكرى.
Library register number	:	7219-7220.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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Author	:	Ali Essawy Ali Mostafa.
Title	:	Influence of selected designed paradigm in cervical radiculopathy.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Abdul Alim Atteya.
	2.	Hoda Zakaria.
	3.	Moataz Mohamed Talaat.
	4.	Sherief Al Shazly
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>Objective: The aim of the study was to investigate the effect of neural mobilization combined with mechanical intermittent traction on neck and arm pain, cervical range of motion ROM, functional disability and hand grip strength in patients with unilateral cervical radiculopathy due to lower cervical disc. Subjects and Methods: Thirty patients suffering from chronic unilateral cervical radiculopathy participated in the study. Patients were assigned into two equal groups: Group A. received neural mobilization and group B. received neural mobilization combined with mechanical intermittent traction. Both were given other conventional treatment. Patients were evaluated pre and post treatment for neck and arm pain, ROM, functional disability and hand grip strength. The patients were assessed clinically via visual analogue scale for pain intensity, CROM goniometer for cervical ROM, neck disability index for functional disability and hand grip dynamometer for hand grip strength before and after treatment program. Patients in two groups received three sessions per week for four weeks. Results: There was a significant decrease of neck pain, arm pain and functional disability, Also a significant increase of cervical ranges of motion in two groups. Comparison between groups post treatment showed a significant decrease in neck pain, arm pain and functional disability in group B compared to group A, a significant increase in ROM in group B compared to group A and no significant difference in hand grip strength and ipsilateral side bending ROM in group B compared to group A. Conclusion: Combination between neural mobilization and mechanical intermittent traction is more effective in improving neck and arm pain, cervical ROM, functional disability and hand grip strength than neural mobilization alone in patients with chronic unilateral cervical radiculopathy caused by cervical disc bulge.</p>		
Key words	1.	Cervical radiculopathy.
	2.	Cervical disc.
	3.	Neck pain.
	4.	Intermittent cervical traction.
	5.	Neural mobilization.
Classification number	:	000.000.
Pagination	:	p.
Arabic Title Page	:	تأثير برنامج علاجي مخصص لاعتلال الجذور العنقيه.
Library register number	:	7137-7138.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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NEUROSURGICAL DISORDER AND ITS SURGERY**

Author	:	Basma Hussien Mohammed.
Title	:	Cerebellar Transcranial Direct Current Stimulation versus Motor Rehabilitation in Reaching in Stroke Patients.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Nahed Ahmed Salem
	2.	Ebtesam Mohammed Fahmy
	3.	Rasha Mohammed El Rewainy
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>Background: The ability to reach and grasp is necessary for many daily life functional tasks. Stroke may disrupt efficient reach to grasp function. Cerebellar trans-cranial direct current stimulation may represent a promising tool for reconstitution of reaching coordination deficits in stroke patients. Objective: This study aimed to compare the effect of cerebellar trans-cranial direct current versus motor rehabilitation on reaching coordination in chronic stroke patients. Subjects and Methods: Thirty stroke patients with arm reaching coordination problems were included. Their age ranged between 40-60 years. Patients were assigned into two equal groups: Study group (A): received cerebellar Trans cranial direct current stimulation combined with a selected physical therapy program and Control group (B): received the selected physical therapy program only. The arm reaching activity and coordination were assessed by the Fugl-Meyer arm section scale (FMUA), Action research arm test (ARAT). For kinematic analysis: video processing by Kinovea software program was used to measure acceleration and movement time of specific reaching phase. Measurements were performed pre and post treatment. Treatment sessions were given three times per week for five successive weeks. Results: There was significant increase in mean values of Fugl-Meyer arm section scale and Action Research Arm Test post treatment in group (A) only. A highly significant increase in the mean acceleration was found in both groups post treatments, with a tendency towards significant difference between both groups post treatment in favor of group (A). A significant decrease in movement time was detected in both groups post treatment, especially in group (A). Conclusion: Cerebellar transcranial direct current stimulation is an effective and safe neuro-rehabilitation modality for improving reaching function and coordination deficits in chronic stroke patients.</p>		
Key words	1.	Cerebellar transcranial direct current stimulation.
	2.	Stroke.
	3.	Coordination.
	4.	Reaching.
	5.	Motor Rehabilitation.
	6.	FMUA.
Classification number	:	000.000.
Pagination	:	82 p.
Arabic Title Page	:	التحفيز الكهربائي للمخيخ عبر الجمجمة مقابل التأهيل الحركي للوصول لمرضى السكتة الدماغية.
Library register number	:	7167-7168.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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Author	:	Dany Alphonse Anwar Habib
Title	:	Electromyogram-Triggered Stimulation Compared to Alternating Electro-myogram Stimulation on Hand Functions in Stroke Patients
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Ebtesam Khattab Gad-El Mawla
	2.	Abeer Abo Bakr El-Wishy
	3.	Ebtesam Mohamed Fahmy
		Abd El-Hamied Ibrahim El-Sayed Mohammad
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>Background: Stroke survivors have difficulties in task performance because of motor paresis. Triggered electrical stimulation is reported to be more effective than non-triggered electrical stimulation in facilitating upper extremity motor recovery. Objective: The purpose of this study was to compare between electromyogram-triggered stimulation versus alternating electromyogram stimulation on hand functions in chronic stroke patients. Subjects and Methods: Forty five chronic stroke patients of both sexes participated in the study. They were randomly divided into 3 equal groups (A, B and C). Each group received the same designed physical therapy program for hand function training in addition to electromyogram-triggered stimulation for group A and alternating electromyogram stimulation for group B. Peak muscle torque was assessed by electromyography (EMG) threshold, hand dexterity was assessed by box and block test, upper limb function was assessed by Action Research Arm test, and quality of life was assessed by Short-Form 36-Item Health Survey (<i>SF-36</i>[®]). Measurements were taken before and after two months of intervention protocol for every patient in each group. Results: Data analysis revealed significant improvement in peak muscle torque, hand dexterity, upper limb function, and quality of life within each group post-treatment, with greater improvement percentages in group (B). There were significant differences between the alternating electromyogram stimulation group (group B) and electromyogram-triggered group (group A) compared to the control group in all measured parameters post treatment except for the quality of life scale scores. Conclusion: Adding alternating electromyogram stimulation or electromyogram triggered stimulation to a designed physical therapy program for hand functions training is beneficial in improving upper limb function, hand dexterity and quality of life of chronic stroke patients. Alternating electromyogram stimulation was more effective compared to electromyogram triggered stimulation.</p>		
Key words	1.	Electromyogram-triggered stimulation.
	2.	Rehabilitation.
	3.	alternating electromyogram stimulation
	4.	stroke.
	5.	Hand Functions.
Classification number	:	000.000.
Pagination	:	133 p.
Arabic Title Page	:	تأثير التنبيه الكهربائي المحفز برسم العضلات مقارنة بالتنبيه المتبادل مع رسم العضلات علي وظائف اليد في مرضي السكتة الدماغية.
Library register number	:	7063-7064.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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Author	:	Engi Al-Sayed Ibrahim Sarhan.
Title	:	Effect of extracorporeal shockwaves on diabetic neuropathic foot.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Usama Mohammad Rashad,
	2.	Khalid Diwan,
	3.	Nevin Shalaby
		Ibrahim Hammoda
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>The purpose of this study was to determine the effect of extracorporeal shock wave therapy on foot pain and sensory functions in diabetic neuropathic foot. Assessment: We used the Numeric Pain Rating Scale (NPRS) to measure pain intensity, electromyography and ultrasonography to measure sensory changes and cross sectional area (CSA) in the common peroneal nerve (CPN) respectively. Methods: Sixty subjects of both sexes (45-55 years) complaining of type II diabetic neuropathic feet participated in the study. Patients were randomly allotted into two groups equivalent in number; every group consisted of 30 patients. Group A (study group) received extracorporeal shock wave therapy (ESWT) 1000 shots/ 3 HZ/ 5 bars, once/week moved parallel to the course of CPN (mid-dorsum of foot) for three months, in addition to selected sensory re-education program. Group B (control group) received the selected sensory re-education program three times/day for three months without ESWT. Measurements were be done before the initial management and at the termination of the third month of management. Results: Results revealed that there was a highly significant decrease in NPRS scores, no significant difference in values of conduction studies, and a highly significant decrease in the mean value of CSA of CPN at the end of the treatment. Conclusion: Extracorporeal shockwave therapy was advantageous and fruitful in decreasing the foot pain and improving sensory functions of type II diabetic foot.</p>		
Key words	1.	Extracorporeal shockwaves.
	2.	Pain.
	3.	Type II diabetic foot.
	4.	Sensory functions
Classification number	:	000.000.
Pagination	:	107 p.
Arabic Title Page	:	تأثير العلاج بالموجات التصادمية على ألام التهاب اعصاب القدم الطرفية في مرضى السكر.
Library register number	:	7221-7222.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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Author	:	Hosam Magdy Metwally Abd Al Hamid.
Title	:	Cawthorne Cooksey versus vestibular habituation exercises on trunk kinetics and velocity of gait in patients with multiple sclerosis.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Waleed Talat Mansour
	2.	Gihan Mahmoud Ramzy
	3.	Walaa Mohammed Ragab
	4.	Hamada Ahmed Hamada,
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>Background: Gait and motor disturbances are common among hemiparetic multiple sclerosis patients. The purpose: Measure difference between the effect of Cawthorne Cooksey and vestibular habituation exercises on trunk kinetics and velocity of gait in patients with multiple sclerosis. Materials and Methods: Forty five patients with multiple sclerosis their age ranged from 35 to 55 years were assigned into three equal groups (group I, II and III): group (I) all patients received conventional physical therapy program (balance training), group (II) all patients received Cawthorne Cooksey Exercises in addition to conventional physical therapy program, group (III) all patients received vestibular habituation exercises in addition to conventional physical therapy program. Patients were assessed before and after treatment program using Biodex isokinetic dynamometer for (peak torque, average power, acceleration and deceleration time) and clinical tests of (Dynamic gait index and Timed 10-Meter Walk Test for velocity of gait). Results: Statistical analysis revealed there was significant improvement of trunk kinetics (peak torque, average power, acceleration and deceleration time) and velocity of gait ($p < 0.05$) in group II and III, statistical analysis revealed there was significant improvement of trunk flexors' acceleration and deceleration time, trunk extensors' acceleration time and velocity of gait in group I ($p < 0.05$) with the best results for group II. Conclusion: Cawthorne Cooksey Exercises could be considered a method for improving trunk kinetics and velocity of gait more than vestibular habituation and balance exercises in multiple sclerosis patients.</p>		
Key words	1.	Multiple sclerosis.
	2.	Cawthorne Cooksey.
	3.	vestibular habituation
	4.	Trunk kinetics.
	5.	velocity of gait.
Classification number	:	000.000.
Pagination	:	125 p.
Arabic Title Page	:	تأثير الليزر عالي الشدة مقابل الشيتوزان فونوفوريا على ظاهرة النفق الرسغي.
Library register number	:	7173-7174.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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Author	:	Hossam Mohammed Alsaid.
Title	:	Effect of Cognitive Behavioral Therapy on Functional Outcomes in Patients With Stroke.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Abdul Allim Abdel Fattah Attaya
	2.	Ehab Shaker Hafez Bilal
	3.	Moataz Mohamed Talaat Elsemary
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>The purpose of this study was to investigate the effect of cognitive behavioral therapy on functional outcomes in stroke patients. Methods; Forty stroke patients from both sexes participated in this study. The patients were randomly divided into two equal groups; study group (A) received cognitive behavioral therapy for 60 min and selected physical therapy program for 30 min, every other day for 24 sessions, total duration of session (90 min). control group (B) received, the same selected physical therapy program for 60 min, with three intermittent rest(30 minutes) every other day for 24 sessions total duration of session (90 min). The results revealed that, in study group(A) there was significant improvement of functional outcomes in upper limbs of stroke patients compared to the control group(B). there was significant improvement of scores in objective tools of assessment(dash scale,wolf scale,mindful attention awareness scale and jamar hand dynamometer)post treatment in study group(A) compared to the control group(B). On conclusion, cognitive behavioral therapy can improve functional outcomes in upper limbs in patients with stroke.</p>		
Key words	1.	Cognitive behavioral therapy.
	2.	Rehacom.
	3.	Wolf scale,
	4.	Mindful attention awareness scale.
	5.	Stroke.
	6.	Jamar hand dynamometer.
	7.	Dash scale.
Classification number	:	000.000.
Pagination	:	142 p.
Arabic Title Page	:	تأثير العلاج السلوكي المعرفي على المخرجات الوظيفية في مرضى السكتة الدماغية.
Library register number	:	7025-7026.

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NEUROSURGICAL DISORDER AND ITS SURGERY**

Author	:	Reham Ali Mohamed Ali Ahmed.
Title	:	Influence of central versus peripheral vestibular stimulation on recovery outcomes in patients with prepherial vestibular disorders.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Hussein Ahmed Abd El Rahman Shaker
	2.	Ebtessam Mohamed Fahmy
	3.	Amina Mohamed abd Al-Hameed
	4.	Mona Mohamed Hamdy
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>Background: Peripheral Vestibular disorders are common disorders among adult population with increased prevalence with age advancement. Most of patients with vestibular dysfunction suffer from balance disorders, postural instability and vertigo that have a direct impact on activities of daily living and social participation. Purpose: This study was conducted to compare the effect of repetitive transcranial magnetic stimulation versus transmastoidal galvanic stimulation added to a designed vestibular rehabilitation program on recovery outcomes in patients with unilateral peripheral vestibular disorders. Subjects and Methods: Sixty patients (from both sexes), age ranged from (30-60) years old diagnosed with unilateral peripheral vestibular weakness were enrolled. They were randomly designated into three groups; Group A, B and C. Group A received repetitive transcranial magnetic stimulation in addition to a vestibular rehabilitation program, Group B received transmastoidal galvanic stimulation, in addition to the same vestibular rehabilitation program, whereas Group C recieved vestibular rehabilitation program only. Treatment sessions were conducted three times per week for four successive weeks. Assessment of vestibular canal weakness was done using videonystagmography, dizziness severity was measured using dizziness handicapped inventory (DHI), dynamic balance was measured by berg balance scale (BBS), postural stability was measured using computerized dynamic posturography (CDP), while, participation in daily activities was assessed using Vestibular Disorders Activities of Daily Living Scale (VADL). All assessment measures were carried out pre and post treatment. Results: There was significant improvement in canal paresis, BBS score, total equilibrium composite score, scores of somatosensory and preference components of CDP, DHI score and score of VADL scale post treatment in the three groups with more improvement in group A. There was significant improvement in scores of visual and vestibular components of CDP post treatment in groups A and B only, with group A showing more improvement. There was no significant difference between three groups in the scores of somatosensory and preference components of (CDP). There was no significant difference between groups A and B in canal weakness, scores of total equilibrium composite and vestibular component of CDP and no significant difference between group B versus C in scores of visual component of CDP, scores of DHI and VADL scale. Overall improvement percentages of all variables were 60.64, 42.29, and 17.14%, respectively which indicates that the improvement was significantly higher in Group A followed by group B then group C. Conclusion: Adding r TMS stimulation (central stimulation) or transmastoidal galvanic vestibular stimulation (peripheral stimulation) to vestibular rehabilitation exercises has positive effect on recovery outcomes and participation in activities of daily living in patients with unilateral peripheral vestibular disorders, with r TMS shows more beneficial effect .</p>		
Key words	1.	Unilateral peripheral vestibular disorders
	2.	repetitive transcranial magnetic stimulation
	3.	transmastoidal galvanic vestibular stimulation
	4.	vestibular rehabilitation, recovery outcomes
Classification number	:	000.000.
Pagination	:	229 p.
Arabic Title Page	:	تأثير التنبيه المركزي مقابل الطرفي للجهاز الدهليزي على كفاءة التعافي في مرضى الإضطرابات الدهليزية الطرفية.
Library register number	:	7281-7282.

**ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL
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Author	:	Sara Salah El-din Abdel Megeed.
Title	:	Effect of transcranial direct current stimulation on sensory integration and risk of falling in diabetic polyneuropathy.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Moshera Hassan Darwish
	2.	Dr.Hatem Samir
	3.	Dr.Heba Ahmed Metwally
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>Diabetic peripheral neuropathy (DPN), presents in up to half of the people with diabetes, leading to sensory motor and autonomic impairment, and possibly increasing the risk of falling. Transcranial direct current stimulation (tDCS) modulates cortical excitability of the stimulated somatosensory cortex which in turn modifies brain functions resulting in neuroplastic changes. Purpose: To investigate effect of (tDCS) on sensory integration, risk of falling and pain intensity in patients with diabetic polyneuropathy. Subjects: Thirty patients with diabetic polyneuropathy were enrolled in this study. They were assigned randomly into two equal groups. Control group (GI) treated with designed physical therapy program and study group (GII) treated with the same physical therapy program in addition to tDCS over the somatosensory area of the left side. Treatment was conducted Three times per week for two months. Biodex balance system was used to assess sensory integration (sway index) in four sensory conditions (condition I, eye open firm surface; condition II, eye closed firm surface, condition III, eye opened foam surface; condition IV, eye closed foam surface) and risk of falling (fall index) and visual analogue scale was used to assess pain intensity pre and post treatment for both groups. Results: significant reductions of sway index in four sensory conditions, fall index and pain intensity were observed in both groups post treatment with more reduction in favor to study group (P<0.05). Conclusion: Adding transcranial direct current stimulation to designed physical therapy program result in more improvement of sensory integration and reduction of risk of falling and pain intensity than physical therapy alone in patients with diabetic polyneuropathy.</p>		
Key words	1.	Diabetic polyneuropathy.
	2.	Transcranial direct current stimulation.
	3.	Somatosensory cortex.
	4.	Biodex balance system. Sensory integration, Risk of falling
	5.	sensory integration.
	6.	risk of falling.
Classification number	:	000.000.
Pagination	:	113 p.
Arabic Title Page	:	تأثير الإستشارة الكهربائية عبر الرأس على التكامل الحسى وخطر السقوط فى مرضى التهاب الأعصاب الناتج عن الداء السكرى.
Library register number	:	7299-7300.

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NEUROSURGICAL DISORDER AND ITS SURGERY**

Author	:	Shereen Saad Eldin Mohamed Ali.
Title	:	Effect of visuo-motor integration on cortisol levels and gait performance in diabetic polyneuropathy patients.
Dept.	:	Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.
Supervisors	1.	Moshera Hassan Darwish
	2.	Mohamed S. El- Tamawy
Degree	:	Doctoral.
Year	:	2020.
Abstract	:	
<p>Background: Cognitive decline is the fourth diabetic microvascular complication which has an effect on gait parameters in DPN patients. The purpose of this study was to investigate influence of visuo-motor integration (VMI) on both cortisol & glycated hemoglobin (HbA1c) levels, cognitive functions and spatiotemporal gait parameters during three different gait conditions (walking without cognitive task, walking with verbal fluency & walking with arithmetic task). Also, to investigate the effect of physical therapy program on peripheral nerves functions in DPN patients. Methods: Forty patients with type II diabetes mellitus (DM) with moderate polyneuropathy were randomly assigned into two equal groups [study (G1) & control (G2)]. Group 1 treated with physical therapy program consisted of visuo-motor integration via RehaCom system in addition to therapeutic exercises for diabetic polyneuropathy. Group 2 treated only with the same selected therapeutic exercises as in (G1). Treatment was conducted three sessions per week for two months. Amplitude, latency and conduction velocity of sural, peroneal, Tibial and ulnar nerves (motor & sensory branches) were assessed. Cortisol & HbA1c levels tests were done for each patient. Rehacom was used to assess cognitive functions including (attention/ concentration (A/C), reaction behavior and figural memory). Different variables of gait parameters including (cadence, velocity & stride length) were assessed during three different gait conditions using two dimension (2D) video-based motion analysis. Pre and post assessment for all variables were done. Results showed significant improvement in all cognitive domains & significant reduction in both cortisol & HbA1c levels in (G1). Significant increase in all spatiotemporal gait parameters in (G1) during the three different gait conditions ($P < 0.05$). In G1, Tibial & ulnar nerves showed significant improvement of amplitudes, velocities & latency while sural & peroneal nerves showed only significant improvement of velocity & latency. Conclusion: Visuo-motor integration activities has a positive effect on reducing cortisol levels and consequently improving cognitive function and gait parameters in DPN patients.</p>		
Key words	1.	Cognition.
	2.	nerve conduction velocity.
	3.	cortisol.
	4.	diabetic polyneuropathy.
	5.	visuo-motor integration.
	6.	gait performance.
Classification number	:	000.000.
Pagination	:	184 p.
Arabic Title Page	:	تأثير التكامل البصري الحركي علي مستويات الكورتيزول و أداء المشي في مرضي اعتلال الاعصاب السكري.
Library register number	:	7255-7256.