

Physical Therapy Department for Growth and Development Disorder in children and Its Surgery

**Doctoral Degree
2014**

Author	:	A`laa Abdullah Abd-almohsen
Title	:	Role of kinesio-taping on ankle range of motion and locomotion in children with hemiparesis.,
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Amira El Tohamy
	2.	Hassan Magdy El-Barbary
	3.	Nanees Essam Mohamed
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>The purpose of this study was to evaluate the effect of ankle taping on ankle range of motion and locomotion in hemiparetic cerebral palsied children. Twenty five children with hemiparesis, with age range from 2 to 6 years, participated in this study. They were divided randomly into two groups. Group A (control group) received the designed physical therapy program for hemiparetic children which emphasized on exercises for ankle for three sessions per week each one lasted for one and half hour for three months without ankle taping .Group B (study group) received the same designed physical therapy program given to group A in addition to ankle taping. All children were assessed before and after the treatment program by Gross Motor Functional Measure (GMFM) which used to assess change in gross motor function over time. Also we used the digital-goniometer to measure the ankle range of motion. A statistically significant improvement was recorded after training periods. From the obtained results of this study, it could be concluded that taping technique in addition to physical therapy program are beneficial therapeutic techniques to improve locomotion and ankle ROM in hemiparetic cerebral palsy children.</p>		
Key words	1.	Hemiparetic
	2.	ankle range of motion
	3.	kinesio taping
	4.	range of motion
	5.	locomotion in children.
	6.	hemiparesis.,
	7.	children.
Arabic Title Page	:	دور شريط الاصق على مدى حركه الكاحل والتنقل عند اطفال الخذل النصفي
Library register number	:	4017-4018.

Author	:	Doaa Ahmed Mahmoud Sanad
Title	:	Anticipatory Postural Adjustment During Forward Arm Reaching From Standing Position In Children With Spastic Diplegia
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Zahra Mohamed Hassan Serry
	2.	Ali Mustafa Abd El-Monem
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>Objective: The purpose of this study was to determine whether individuals with spastic diplegia exhibit anticipatory activation of postural muscles associated with voluntary arm movement while standing. Methods: Fifteen children with spastic diplegia (study group) and fifteen age- and gender-matched children who were typically developing (TD)(control group) performed unilateral arm reaching at their own timing while standing, during which electromyographic (EMG) activities of focal and postural muscles were recorded. Pediatric reach test (PRT) was applied on all children in both groups to describe variability of the PRT scores. Results: In both groups, root mean square amplitude was higher in the dorsal and ventral trunk muscles on the opposite side to arm movement with significantly smaller amplitude and higher baseline muscle activity in the SDCP group than in the control group. All participants were able to produce directionally-specific anticipatory activity in the leg muscles. However, the responses in the children with CP had variability more than the TD children. In both groups, there was significant difference in pediatric reach test scores. Conclusion: These findings suggested that individuals with spastic diplegia have the ability to anticipate the effects of disturbance of posture and equilibrium caused by arm movement and reaching test and to activate postural muscles in advance of focal muscles. However the anticipatory increase in postural muscle activity is insufficient in individuals with spastic diplegia.</p>		
Key words	1.	forward arm reaching,
	2.	Anticipatory postural adjustment,
	3.	EMG.
	4.	spastic diplegic CP.
	5.	A Standing Position In Children
	6.	Children
Arabic Title Page	:	التعديل الوضعي المتوقع أثناء الوصول الأمامي للذراع من وضع الوقوف في حالات الشلل التقلصي المزدوج.
Library register number	:	3933-3934.

Author	:	Hamada El-Sayed Abd Allah Ayob
Title	:	Efficacy of unweighing system during treadmill versus over ground walking on gait pattern in children with spastic diplegia
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Amira Mohamed El Tohamy
	2.	Eman Ibrahim El-Hadidy
	3.	Ali Mustafa Abd El-Monem
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>The development of an independent and efficient walking is one of the major targets for children with cerebral palsy especially those with spastic diplegic type of cerebral palsy. The purpose of this study was to compare the efficacy of unweighing system during treadmill versus over ground walking on gait pattern in children with spastic diplegia. Sixty children with spastic diplegia from both sexes with mean age 7.4 years participated in this study. They were classified into three groups of equal number, (one control and two study groups); the control group received a selected physical therapy program. The first study group received over ground gait training with the partial body weight bearing (30% weight relief), while the second study group received treadmill training with the partial body weight bearing (30% weight relief), in addition to the same therapeutic exercise program. Gait pattern was assessed using the Biodex Gait Trainer II and Gross Motor Function Measure (GMFM) for all groups before and after three months of the application of the treatment program. The results of this study revealed statistically significant improvement ($P<0.05$) in the measured variables (walking speed, step length, time on each foot and GMFM score) for both study groups in favor to first study group. Therefore it's better to uses the unweighing system with over ground walking as an additional therapeutic modality to improve gait pattern and functional abilities of diplegic children.</p>		
Key words	1.	Unweighing system
	2.	Gait Pattern
	3.	Diplegic children
	4.	walking
	5.	spastic diplegia
	6.	children
Arabic Title Page	:	فاعلية التحميل الجزئي للوزن أثناء المشي على السير المتحرك مقابل المشي على الأرض على أنموذج المشي في حالات الشلل التقلصي المزدوج
Library register number	:	3989-3990.

Author	:	Hayam Mohamed Amin Osman
Title	:	Impact of different programs on hypothyroidism in obese down syndrome children
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Faten Hassan Abdel Azem
	2.	Nayera El Morsi Hassan
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>Most recent research has thrown new light in understanding the relationship between down syndrome and obesity This study aimed to investigate the effect of different intervention for obesity in Down syndrome (DS) children with hypothyroidism. Thirty nine DS children were divided into three equal groups (thirteen patients each). Group A (nutrition intervention) received balanced diet. Group B (land exercise) received aerobic exercises, jogging-abdominal, bicycling, and body building using free weights. Group C (under water exercise) received exercises, and free swimming, with upper and lower limb exercises). The treatment sessions for land exercises and under water exercise group were conducted for 6 months (3 times/week, and last for 30 minutes) with regular change of diet program every week. Assessment of weight, height, BMI using the center of disease and control prevention CDC BMI for age growth charts. Body composition analyzer (Tanita) was used to measure body composition fat percentage, fat mass, fat free mass, and total body water. Thyroid function (T3, T4, and TSH) and cholesterol were done using enzyme linked immune sorbent assay (ELISA). Assessment was carried out in the beginning and after six successive months of intervention. There was a significant improvement between groups. It was also, observed in favor of Group A regarding comparing the post intervention results of the three groups. The study concluded that, the nutrition intervention with balanced diet was effective to reduce BW, BMI, fat percentage, fat mass and TSH in DS children. Aerobic exercises were the best intervention to reduce cholesterol in DS aged from 7 to 18 years, while under water intervention must be accompanied with both dietary intervention and aerobic exercise to reduce BW, fat mass in this population.</p>		
Key words	1.	Down syndrome
	2.	Obesity
	3.	Hypothyroidism
	4.	children
Arabic Title Page	:	تأثير البرامج المختلفة على الاطفال البدناء المنغولين المصابين بقصور الغدة الدرقية
Library register number	:	4011-4012.

Author	:	Mahmoud Salah Mahmoud Abu-Zeid
Title	:	Effect of different electrodes placement on hand functions in children with hemiparesis
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Samia Abdel Rahman Abdel Rahman
	2.	Khaled Ahmed Olama
	3.	Sahar Mohamed Nour El Dien
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>The purpose of this study was to investigate the effect of different electrodes placement on hand functions in children with hemiparesis. Sixty spastic hemiparetic cerebral palsied children of both sexes ranged in age from four to eight years participated in this study. They were classified randomly into three groups of equal numbers. A hand held dynamometer and Peabody developmental motor scale were used for measuring hand grip strength and fine motor skill of the affected upper extremity respectively before and after six months of application of the faradic stimulation and physical therapy program. The first group received faradic stimulation on wrist extensor. The second group received reciprocal faradic stimulation on wrist extensors and flexors. The third group received faradic stimulation on wrist extensor muscle, shoulder flexor and abductors. The physical therapy program was created from Peabody developmental motor scale. Results revealed a high significant improvement in hand grip strength and fine motor skills in all groups in favor to the third group. It was concluded that high significant effect of faradic stimulation is gained when it is applied on wrist extensor muscle, shoulder flexor and shoulder abductors simultaneously.</p>		
Key words	1.	Hemiparesis.
	2.	Cerebral palsy.
	3.	Faradic stimulation.
	4.	Hand functions.
	5.	Peabody developmental motor scale
	6.	children
Arabic Title Page	:	تأثير اختلاف أوضاع اقطاب التنبيه الكهربى على وظائف اليد لدى أطفال الوهن الشقى.
Library register number	:	3967-3968.

Author	:	Mohamed Abdalla Aly Mohamed .
Title	:	Role of Kinesio Taping on Hand Function in Children with Erb's Palsy.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Gehan Hassan El-Meniawy,.
	2.	Hassan Magdy EL-Barbary.
	3.	Nahed Shukri Thabet.
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>The purpose of this study was to determine the efficacy of Kinesio taping on hand function in children with Erb's palsy. This study was conducted on thirty children of both sexes (17 girl and 13 boy) having unilateral Erb's palsy, their ages ranged from 4 to 6 years old. They were selected from the out-patient clinic of the Faculty of Physical Therapy, Cairo University. The children hand function was evaluated using Peabody Developmental Motor Scale (version two) and Biodex Isokinetic Dynamometer before and after six weeks of treatment. The children were classified randomly into two groups of equal number. Group A (control) received a selected physical therapy program, where group B (study) received the same exercise program given to group A, in addition to wrist taping. The results of this study revealed significant improvement in all the measured variables of the two groups (A and B), when comparing their pre and post-treatment mean values. Significant difference was also observed when comparing the post-treatment results of the two groups in the favor of group B. From the obtained results of this study it could be concluded that using kinesio taping in conjunction with different treatment procedures had significant effect on hand function for children with Erb's palsy.</p>		
Key words	1.	Kinesio taping.
	2.	Erb's palsy.
	3.	Hand functions.
	4.	Children.
Classification number	:	618.92836.MMR
Arabic Title Page	:	دور شريط الكاينيزيو على وظائف اليد لدى الأطفال المصابين بشلل الولادة.
Library register number	:	3601-3602.

Author	:	Mohamed Nader Al Kholly.
Title	:	Standardization of Motor Development for Egyptian Infants.
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Faten Hassan Abd El Azeim.
	2.	Ehab Ragaa.
	3.	Kamilia Saad.
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>The current research utilized the Peabody Developmental Motor Scale Second Edition (PDMS-2) to assess and evaluate the infantile Egyptians motor developmental parameters. Furthermore, differential item functioning and structures of the PDMS-2 were examined for their utility discriminating various levels of motor development. Purpose of the study: to standardize the Egyptian infants' motor development and compare them with other European infants according to PDMS-2. Three thousands of normal Egyptian infants, with age range from birth up to two years old participated in this study. They were selected from five major geographic sectors representing whole Egypt (Great Cairo, Alexandria, Delta, Upper Egypt and Sinai). They were assigned into five groups according to their chronological age. The subjects were selected according to their APGAR score for first group and Portage for the other older groups. The infants either boys or girls were evaluated by PDMS-2 twice weekly for both first and second group and once every two weeks for the other groups. The variables evaluated in this study are reflex, stationery, locomotion, grasping and object manipulation. The results of the study were compared with the results obtained from PDMS-2. The results showed significant difference in favor of the Egyptian infants and significant difference between boys and girls in favor of boys. This reflects the importance of standardizing the motor development for the Egyptian infants to be a national reference for all staff specialized in assessment of infant motor development.</p>		
Key words	1.	Motor development.
	2.	Standardization.
	3.	Egyptian infants.
	4.	Infants development.
	5.	Peabody Developmental Motor Scale.
	6.	children
Classification number	:	612.65.KMS
Arabic Title Page	:	معايرة النمو الحركي لرضع المصريين.
Library register number	:	3597-3598.

Author	:	Nagwa Ibrahim Mohammed Rehab
Title	:	Trunk restraining versus balance training on reaching and hand function in stroke patients
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Hussein Ahmed Shaker.
	2.	Salah Sawan
	3.	Ebtesam Mohammed Fahmy
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>Back ground and Purpose: The ability to reach and grasp is a necessary component of many daily life functional tasks, hence reduced upper limb function has an impact on the ability to perform activities of daily living. In hemiparetic patients, the unrestricted and unguided repetition of a motor task may reinforce compensatory movements. Trunk restraint allowed the patients to use joint ranges that were present but not recruited during unrestrained reaching. This study aimed to compare the effect of trunk restraining versus balance training on improving active range of motion (ROM) during reach to grasp and hand function in stroke patients. Patients and methods: Forty -five stroke patients with age ranged from 40 to 55 years were included in the study. Patients were divided into three equal groups according to therapeutic intervention(GI, GII and GIII), GI received program of reach to grasp movements training during which compensatory movement of the trunk was prevented by trunk restraint, GII received the same program with balance training and without trunk restraint and GIII received the same program only. All patients were assessed for arm impairment using Fugl-Meyer scale, arm function using Upper Extremity Performance Test, gross and fine hand function using Box and Block test and Purdue Pegboard test respectively and for kinematic measures by two- dimensional motion analysis system during reach to grasp movement. Results: showed a statistically very highly significant improvement of arm impairment, arm and hand function in the three groups post treatment. There was a statistically very highly significant increase in time of reach to grasp in GI and GII and a statistically non significant increase in GIII post treatment. There was a statistically very highly significant and significant decrease in trunk displacement in GI and GII respectively, while there was a statistically significant increase in trunk displacement in GIII post treatment. There was a statistically non significant difference in shoulder flexion ROM in GI and GII and a statistically very highly significant decrease in GIII post treatment. There was a very highly significant improvement of elbow extension ROM in GI and non significant in GII while a statistically highly significant decrease in GIII post treatment. The improvement in clinical and kinematic parameters post treatment was significantly higher in GI as compared to GII and GIII post treatment. There was a significant strong positive linear correlation between FM score and elbow extension ROM in GI and between TEMPA score and trunk displacement in GIII, while there was non significant correlation between FM score and elbow extension ROM in GII and GIII and between TEMPA score and trunk displacement in GI and GII. Conclusion: Stroke patients had different reaching movement recovery according to therapeutic intervention. Limitation of compensatory trunk movement may be an essential element to include during task-specific training of reaching and grasping to improve reaching kinematics and arm and hand function for chronic patients with moderate arm impairment.</p>		
Key words	1.	Stroke.
	2.	Two-dimensional motion analysis
	3.	Recovery of function..
	4.	Trunk restraint.
	5.	Reaching.
	5.	Balance.
Arabic Title Page	:	تقييد الجذع مقابل تدريب الاتزان على وصول ووظيفة اليد فى مرضى السكتة الدماغية.
Library register number	:	3937-3938.

Author	:	Nahla Mohamed Ibrahim
Title	:	Effect of using integrated sensory stimulation on gait pattern in children with spastic diplegia
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Kamal El- Sayed Shoukry
	2.	Mohamed Hossam El Sabbagh
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>Background: The improvement or maintenance of walking ability in children with spastic cerebral palsy is a primary goal of most therapeutic interventions. Purpose: This study was conducted to determine the effect of using integrated sensory stimulation on gait pattern in children with spastic diplegia. Methods: Thirty spastic diplegic cerebral palsy children of both sexes participated in this study, their age ranged from 10 to 12 years. They were divided randomly and equally into two groups: control (Group A) and study (Group B). Both groups had received the designed physical therapy program. Group A had received the traditional gait training program, and Group B participated in gait training exercise program based on sensory integration therapy. Treatment was applied for successive three months for both groups. The right and left foot to foot distribution time, average speed and average right and left step length were assessed using the Biodex gait trainer for children of both groups before and after three months of the application of the suggested treatment program. Findings: Mixed design 2×2 MANOVA indicated that there was insignificant effects of the tested group on all tested dependent variables ($F=1.265$, $P=0.312$). While, there were significant effects of the treatment on them ($F=34.731$, $P=0.000^*$). When comparing the post treatment values, non significant improvement was observed in the control group, However statistically significant improvement was observed in the measuring variables for the study group. Interpretation: Based on the previous findings, it may be concluded that gait training exercise program based on sensory integration approach may result in positive outcomes in sensorimotor skills and motor planning.</p>		
Key words	1.	Cerebral Palsy
	2.	Diplegia
	3.	Biodex gait trainer
	4.	integrated sensory stimulation
	5.	gait pattern in children
	6.	spastic diplegia
	7.	children
Arabic Title Page	:	تأثير التنبيه الحسي المتكامل علي أنموذج المشي لدي الأطفال المصابين بالشلل التقلصي المزدوج.
Library register number	:	3983-3984.

Author	:	Rania Galal El-Deen Abdou
Title	:	The Impact of Backward Gait Training on Dynamic Balance in Children with Hemiparesis
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Emam Hassan El-Negamy
	2.	Amena Hendawy Salem
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>The purpose of this study was to investigate the impact of backward gait training using treadmill on dynamic balance in hemiparetic C.P children. Thirty hemiparetic C.P children of both sexes were selected from out- patient clinic, Faculty of Physical Therapy, Cairo University. They were classified randomly into two groups of equal number, (A&B); Group (A) represented the control group; children in this group received regular physical therapy program based on neurodevelopmental approach used for rehabilitation of such patients. Group (B) represented the study group; they received the same regular physical therapy program applied on the control group in addition to 20 min backward gait training using treadmill. The rehabilitation program was conducted for both groups day after day over a period of six successive weeks. Dynamic balance was assessed by using Biodex stability system for both groups conducted before starting physical therapy program, after 3 weeks and 6 weeks of treatment. The results of this study revealed no statistically significant difference between the two groups before treatment and after 3 weeks of treatment while after 6 weeks of treatment there was significant improvement in all measured variables (overall stability index, mediolateral stability index, anteroposterior stability index) for both groups. The results also showed significant difference between the two groups after 6 weeks of treatment in favor of the study group. It can be suggested that adding Backward Gait Training to the physiotherapy program can improve dynamic balance in Children with hemiparesis</p>		
Key words	1.	Backward Gait Training
	2.	Dynamic Balance
	3.	Hemiparetic Children
	4.	Children
Arabic Title Page	:	تأثير تدريب المشي للخلف على الاتزان الحركي عند الاطفال المصابين بالخلل الشقي .
Library register number	:	3919-3920.

Author	:	Samah Mahmoud Ahmed Sheha
Title	:	Normative Values of Shoulder Muscles Performance In Healty School – Age Children
Dept.	:	Physical Therapy Department for Growth and Developmental Disorder in Children and its Surgery.
Supervisors	1.	Amira Mohamed El-Tohamy.
	2.	Samah Attia Tolba El Shemy
Degree	:	Doctoral.
Year	:	2014.
Abstract	:	
<p>Background: Muscle strength is necessary for optimal posture and efficient movement to occur. It enables individuals to perform everyday activities without undue fatigue. Purpose: To establish a reference data of isokinetic strength measurements of shoulder flexors and extensors muscles by gender and age. Methods: One hundred healthy non-athletic children (50 boys and 50 girls) aged 8 to12 years participated in this study. They were classified according to their ages into five groups of equal number and were assessed using Biodex isokinetic dynamometer at two angular velocities (60 and 180 degrees per second.) for the dominant side (right side). The measured variables were peak torque, average power and maximum repetition total work. Results: The results revealed significant increase in isokinetic strength for all muscle strength measures with age and gender differences in favor of boys at both testing speeds from 8 to 12 years of age. Conclusion: Such normal data are extremely useful as reference values when assessing, planning and implementing shoulder joint rehabilitation programs following specific surgical procedures, general injury and dysfunction.</p>		
Key words	1.	Normative values-.
	2.	Shoulder muscles.
	3.	School age children.
	4.	Isokinetic dynamometer
	5.	Healty School .
	6.	Muscle strength.
	7.	children.
	8.	Age Children
Arabic Title Page	:	القيم الطبيعية لأداء عضلات الكتف عند الأطفال الاصحاء في سن المدرسة.
Library register number	:	3935-3936.