

## Department of Basic Science

### Doctoral Degree 2008

Author	:	Ibrahim Moustafa Moustaf Abu Amer.
Title	:	Remodeling of thoracolumbar orthosis in view of 3D analysis and its therapeutic application.
Dept.	:	Department of Basic Science.
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Degree	:	Doctoral.
Year	:	2008.
Abstract	:	
<p><b>Background:</b> The effectiveness of the bracing concept in the treatment of adolescent idiopathic scoliosis (AIS) has been the subject of debate for many years. The concept prevailing today uses a mechanical three-point system, ignoring the three dimensional nature (3D) of scoliosis. <b>The purpose:</b> This study was conducted to verify the results of a new optimization approach using a 3D postural analysis, compared to traditional treatment. <b>Patients:</b> Forty five AIS patients with mean age (15.46±1.2) years were participated in this study. Fifteen patients participated in test retest with blind raters design, the remaining thirty patients were assigned randomly into two equal groups (study and control group). <b>Method:</b> 3D orientation in terms of translational and rotational displacements, in addition to 3D scoliotic angle were measured before and after the application of adjustable thoracolumabr orthosis. <b>Results:</b> The ambulatory thoracolumbar posture corrective orthosis produced significant improvement in 3D thoracolumbar orientation in terms of rotations and translations in addition to 3D scoliotic angle. Rotation around Z axis (48.75%) (P&lt;0.0001), rotation around X axis (52.09%) (P&lt;0.0001), rotation around Y axis (flexion and extension) (30.3%) (P=0.007), translation around X axis (48.1%) (&lt;0.0001), translation around Y axis (17.7%) (0.0132), and 3D scoliotic angle (12.57%) (P=0.0054) while the control group showed no statistical significant improvement in any of the previous variables. For the study group, the multiple regression analysis correctly estimated the 3D scoliotic angle from combined aspects of torso balance including rotational displacement around X, Y, and Z axis and translational displacement around X and Y axis (R<sup>2</sup> =97.2%) (P=0.0064). <b>Conclusion:</b> It was concluded that ambulatory thoracolumbar posture corrective brace is safe and efficient modality to improve the 3D orientation of thoracolumabr region and 3D scoliotic angle.</p>		
Key words	1.	Thoracolumbar orthosis.
	2.	AIS.
	3.	3D Analysis.
Arabic Title Page	:	إعادة تصميم الدعامة الظهرية القطنية فى ضوء التحليل الثلاثى الأبعاد وتطبيقاتها العملية.
Library register number	:	1857-1858.

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

Author	:	Kadria Hosny Mohammed Battecha.
Title	:	Efficacy of different therapeutic modalities on altering pressure and skin blood perfusion in diabetic neuropathic foot.
Dept.	:	Department of Basic Science.
Supervisors	1.	Awatef Mohammed Labib.
	2.	Sami Abd-El Samad Nasef.
	3.	Ali Mamdoh El Ashmawi.
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Degree	:	Doctoral.
Year	:	2008.
Abstract	:	
<p><b>Objectives:</b> This study was done to investigate the effect of ankle and foot ROM exercises and Low Intensity Laser Therapy (LILT) on altering the plantar pressure points of foot, skin blood perfusion and pain in diabetic neuropathic foot, to prevent the foot ulcer that lead to lower extremity amputation. <b>Subjects:</b> forty five diabetic polyneuropathic patients (25 females and 20 males) were selected from the out clinic of diabetes in El-Kasr El-Einy hospital with mean age was <math>53.2 \pm 3.94</math> years, mean height was <math>165.2 \pm 6.14</math> cm, and mean weight was <math>80.53 \pm 5.8</math> kg. <b>Methods:</b> all patients were assigned randomly into three equal groups. Group A (ROM group) that received ankle and foot exercises in the form of passive stretching and free active exercises as home program, Group B (LILT group) that received LILT on plantar surface of foot and lumbo-sacral region, and Group C (combined group) that received the both. Peak plantar pressure, microcirculation, and pain were measured pre and post treatment by Tec scan clinical foot, Laser Doppler flow meter and Visual Analogue Scale, respectively. Three areas in plantar surface of foot were measured; the big toe, little toe and centre of heel. The every patient in 3 groups received 3 sessions per week for 4 weeks plus home routine exercise for exercise and combined groups. One way ANOVA with repeated measurements was done to determine the significance effect in all variables. <b>Results:</b> there was significance decrease in both static and dynamic plantar pressure in all groups with higher significance in group C. Also, there was significance decrease in pain intensity in all groups with higher significance in group C. While, there was significance increase in skin blood perfusion in all groups with higher significance in group C. <b>Conclusion:</b> there are a significance effect of foot and ankle ROM exercises and LILT on foot plantar pressure, skin blood perfusion and pain in diabetic neuropathic patients.</p>		
Key words	1.	Diabetes mellitus.
	2.	polyneuropathy.
	3.	Diabetic foot.
	4.	Microcirculation.
	5.	Range of motion exercise.
	6.	low Intensity laser Therapy.
Arabic Title Page	:	تأثير الوسائل العلاجية على تغيير الضغط والدورة الدموية الجلدية في القدم السكرى.
<b>Library register number</b>	:	<b>1897-1898.</b>

**ELECTRONIC GUIDE TO THESES APPROVED BY  
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Author	:	Soheir Shehata Rezk-Allah Rezk.
Title	:	Effect of aerobic exercise on chronic non-cirrhotic active hepatitis c (HCV).
Dept.	:	Department of Basic Science.
Supervisors	1.	Samy Nasif.
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Degree	:	Doctoral.
Year	:	2008.
Abstract	:	
<p>The study was to investigate the effect of aerobic exercise on IL-2 and IF <math>\gamma</math>, and ALT and AST in patients with chronic non-cirrhotic active HCV. 40 patients, two groups, exercise group who received aerobic exercise for two months, two sessions a week, control group who didn't receive exercise. Their mean age was (40<math>\pm</math>5). Serum level of IL2 and IF <math>\gamma</math> were measured using ELISA test, also serum levels of ALT and AST were measured before and after exercise. There was statistical significant increase in serum levels of IF <math>\gamma</math>, IL2, decrease in ALT and AST in the experimental group while there was no statistical significant difference in serum levels of IL2 and IF <math>\gamma</math>, and there was a significant increase in levels of ALT and AST without exercise.</p>		
Key words	1.	HCV (chronic non-cirrhotic active hepatitis c).
	2.	Aerobic exercise.
	3.	immune system.
Arabic Title Page	:	تأثير التمرينات الهوائية على مرضى الألتهاب الكبدى المزمن الغير تليفى الفيروسى سى.
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