

**ELECTRONIC GUIDE TO THESES APPROVED BY  
PHYSICAL THERAPY DEPARTMENT FOR MUSCULOSKELETAL  
DISORDER AND ITS SURGERY  
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

## Physical Therapy Department for Musculoskeletal Disorder and Its Surgery

Doctoral Degree  
2003

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Title	:	Electromyographic analysis of the knee extensor muscle during standing up and sitting down on chair in knee osteoarthritis.
Dept.	:	Physical Therapy Department for musculoskeletal disorder and its Surgery.
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Degree	:	Doctoral.
Year	:	2003.
Abstract	:	
<p>The purpose of this study was to find out the level of difference of quadriceps electrical activity between healthy and osteoarthritis knee joints during concentric and eccentric contraction. Forty volunteer subjects participated in this study. Ten healthy of them served as a control group . The other thirty subjects had knee osteoarthritis served as patients group. righth quadriceps muscles of both groups were electromyogrammed for vastus lateralis , rectus femoris and vastus medialis oblique during standing up and sitting down on chair without arm assistance . Average EMG data was normalized with that of maximal isometric contraction amplitude . results of these studies revealed that with knee osteoarthritis there were significant increase of vastus lateralis amplitude and rectus femoris duration and significant decrease of vastus medialis oblique amplitude in comparison with the control group . Electrical activity of eccentric contraction was lower significantly than concentric contraction in osteoarthritic group. in conclusion , the results of this study proved that the electrical activity of quadriceps of osteoarthritic knee joints differed from the healthy knees and hence the physical therapy rehabilitation program must focus on eccentric contraction closed chain type of exercise.</p>		
Key words	1.	Knee osteoarthritis.
	2.	EMG.
	3.	quadriceps contraction type.
	4.	Electromyographic analysis.
	5.	knee extensor muscle.
Arabic Title Page	:	تحليل التخطيط الكهربى لعضلة فرد الركبة اثناء الوقوف واثناء الجلوس على كرسى فى حالات التهاب الركبة العظمى المفصلى.
Library register number	:	994-995.