

hossam maghraby



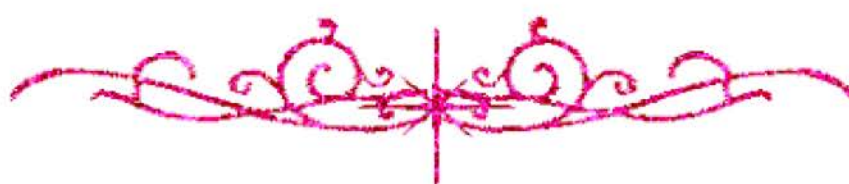
# بسم الله الرحمن الرحيم



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# شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم





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# جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

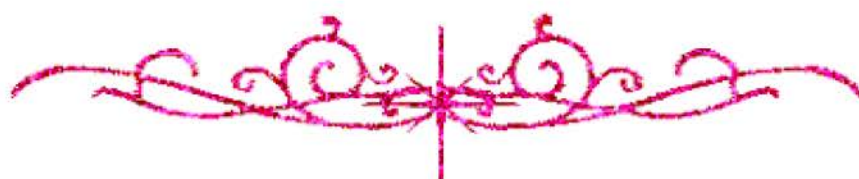
## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



## يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



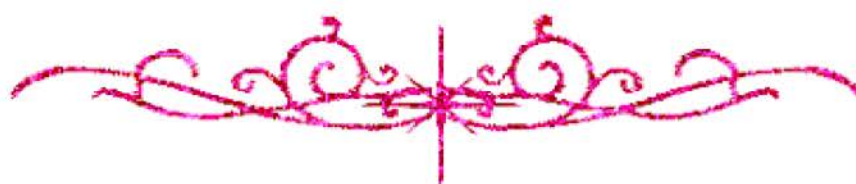
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شبكة المعلومات الجامعية



# بعض الوثائق الأصلية تالفة





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بالرسالة صفحات  
لم ترد بالأصل



Cairo University  
Faculty of Physical Therapy  
Department of Biomechanics

B19A0A

**Influence of Unilateral Knee Osteoarthritis on Some  
Radiological Parameters of the Lumbar Spine.**

By

**Hossam El-Dien Hassan Hassan**  
B.Sc. in Physical Therapy  
Cairo University  
1995

**THESIS**

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Master degree in Physical Therapy

2001

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وقل رب زدني علما

صدق الله العظيم

سورة طه- الآية ١١٤

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Special appreciation to **Dr. Ghada El-Hafez** Lecturer of Biomechanics, and **Dr. Salam El-hafez** Lecturer of Biomechanics, Faculty of Physical Therapy, Cairo University, for their beneficial remarks during the preparation of this work.

## Abstract

Influence of Unilateral Knee Osteoarthritis on Some Radiological Parameters of The Lumbar Spine / Hossam El-Dien Hassan Hassan El-Kholy;

Supervisors: Prof. Amira Eltohamy Vice Dean for graduate studies and research, Faculty of Physical Therapy, Cairo University. Prof. Magdi Bassiouni Assistant professor in The Radiology department, Faculty of Medicine, Cairo University, Faculty of Physical Therapy, Thesis; M.Sc., Department of Biomechanics

**Abstract:** Osteoarthritis (OA) is one of the most common diseases affecting the knee joint that is characterized clinically by pain, stiffness, tenderness at the joint margins, effusion, ligamentous laxity, impairment of motion, capsular contracture, muscle weakness, spasm, impairment of function and loss of independence. These clinical findings causes a symptomatic change in the functional performance of the patient that would result in change of the location of the line of gravity in relation to various body segments in static situations and abnormal oscillation of the center of gravity in dynamic activities. Thus, the purpose of this study is to determine the structural changes in the lumbar spine in patients with unilateral knee OA. Thirty healthy subjects (the control group) and thirty subjects with unilateral knee OA (the study group ) were included in this study. X-ray images of the lumbar spine (A-p and Lateral) were obtained for each subject in the natural standing position. From the lateral X-ray films the radiological parameters concerning the lordotic curve angle (LCA) (measured as the angle between the tangential line of the superior end-plate of L1 and the tangential line of the superior sacral plateau), the lumbosacral angle (LSA) (measured as the angle between the tangential line of the inferior endplate of L5 and that of the superior sacral plateau and the sacral inclination angle (SIA) (measured between the tangential line of the superior sacral plateau and a horizontal line) were recorded for each subject. also, the radiological findings regarding osteophytes, disc degeneration and spondylolisthesis were recorded from both views. The independent t-test was used to compare the study group to the control group regarding the LCA, LSA and SIA. Also the incidence of osteophytes, disc degeneration and spondylolisthesis were calculated. The results of this study suggested that there is no significant difference ( $p < 0.05$ ) between both groups regarding the LCA, LSA and SIA. While the

incidence of osteophytes, disc degeneration and spondylolisthesis were higher in the study group.

Key words; osteoarthritis-lordotic curve angle-lumbosacral angle-sacral inclination angle-knee joint-lumbar spine.



## **DEDICATION**

*To my parents that gave me every  
thing in my life*

## List of Contents

Subject	Page No.
<b>Chapter I</b>	1
Introduction	1
Statement of the problem	3
Purpose of the study	3
Significance of the study	4
Hypothesis	4
Limitations	4
<b>Chapter II</b>	5
The mechanical axis of the lower extremity	6
The articular surfaces of the knee	8
Menisci of the knee	10
The patellofemoral articulation	14
Passive and active stabilizers of the knee	18
Mechanical stresses in the knee	30
The curvature of the vertebral column	34
Stabilizing elements of the spine	39
The effect of pain on knee joint loading	54
The effect of knee OA on posture and proprioception	56
<b>Chapter III</b>	62
Subjects Sample	62
Instrumentation and procedures	62
Shimizu X-ray instrument	64
Lateral X-ray filming	65
A-P X-ray filming	66
Statistical design	68
<b>Chapter IV</b>	70
Results	70
<b>Chapter V</b>	82
Discussion	82

<b>Chapter VI</b>	<b>84</b>
Summary	84
Conclusion	85
Recommendations	86
Appendix	87
References	88



## List of figures

<b>Fig. No.</b>	<b>Contents</b>	<b>Page No.</b>
Figure 1	The anatomical and mechanical axis of the femur and tibia	7
Figure 2	Anterior and posterior view of the femoral condyles	9
Figure 3	The articular surfaces of the tibia	10
Figure 4	Attachment of the anterior and posterior horns of menisci	13
Figure 5	The patellar articular surface	15
Figure 6	The posterior aspect of the knee joint	20
Figure 7	The medial aspect of the knee showing semimembranosus muscle expansions	23
Figure 8	The collateral ligaments of the knee	26
Figure 9	The cruciate ligaments of the knee	27
Figure 10	Pathway of the line of gravity in relation to the knees in the frontal plane	30
Figure 11,a	The Pelvic deltoid mechanism	32
Figure 11,b	The pathway of the line of gravity in relation to the knees in the sagittal plane	32
Figure 12	The sigmoid shape of the vertebral column	35
Figure 13	Shimadzu X-ray instrument	64
Figure 14	Lateral X-ray filming of the lumbar spine.	65
Figure 15	A-P X-ray filming of the lumbar spine.	66
Figure 16	The difference between both groups regarding the mean of age	72
Figure 17	The difference between both groups regarding the mean of height	73
Figure 18	The difference between both groups regarding the mean of weight	74
Figure 19:	The difference between both groups regarding the mean of SIA	77