



# **Serum Vitamin D Level in Non-specific Low back pain**

*Thesis*

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توطئة للحصول علي درجة الماجستير في الطب الطبيعي، أمراض  
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قالوا

لسببائك لا علم لنا  
إلا ما علمتنا إنك أنت  
العليم العظيم

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## *List of Abbreviations*

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Abb.	Full Term
μl .....	Microliter
μmol/L .....	Micromol per liter
1, 25(OH) 2D .....	1,25-dihydroxyvitaminD (1,25dihydroxycholecalciferol, calcitriol)
15-PGDH .....	15-prostaglandin dehydrogenase
1-OHase .....	25-hydroxyvitamin D-1α-hydroxylase
24, 25(OH) D .....	24, 25-hydroxyvitamin
24-OHase .....	25-hydroxyvitamin D-24-hydroxylase
25(OH) D .....	25-hydroxy vitamin D
25-OHase .....	Vitamin D-25-hydroxylase
7-DHC.....	7-dehydrocholesterol
ACR.....	American College of Radiology
AD.....	Alzheimer's disease
AIDs.....	Acquired immune deficiency syndrome
ALP.....	Alkaline phosphatase
AMPs .....	Antimicrobial peptides
AP .....	Anterior-Posterior
APCs .....	Antigen-presenting cells
AUC .....	Area under curve
BMD .....	Bone mineral density
BMI.....	Body mass index
Ca <sup>2+</sup> .....	Calcium
cAMP .....	Cyclic AMP
cAMP/PKA.....	Cyclic AMP/protein kinase A
CF.....	Cystic fibrosis

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## *List of Abbreviations*

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CI.....	Confidence Interval
CKD .....	Chronic kidney disease
cm.....	Centimeter
COPD .....	Chronic obstructive pulmonary disease
COX-2.....	Cyclooxygenase-2
CT .....	Computed tomography
CVDs.....	Cardiovascular diseases
CYPs .....	Cytochrome P450 mixed-function oxidases
DBP.....	Vitamin D binding protein
DC .....	Dendritic cell
DCs .....	Dendritic cells
DEXA .....	Dual-energy X-ray absorptiometry
DM .....	Diabetes mellitus
EGF .....	Epidermal growth factor
ELISA .....	Enzyme-linked immunoassay
ER .....	Endoplasmic reticulum
ESCEO.....	European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis
ESRD .....	End stage renal disease
FGF-7 .....	Fibroblast growth factor-7
FGF-23 .....	Fibroblast growth factor-23
FGFRs.....	Fibroblast growth factor receptors
GABA .....	Gammaaminobutyric acid
GDNF.....	Glial cell line derived neurotrophic factor
HIV .....	Human immunodeficiency virus
HOMA-IR.....	Homeostasis model assessment—Insulin Resistance

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## *List of Abbreviations*

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HPLC-MS .....	High-pressure liquid chromatography combined with mass spectrometry
HPO <sub>4</sub> <sup>2-</sup> .....	Phosphorus
HS .....	Highly significant
HT .....	Hypertension
IFN- $\gamma$ .....	Interferon-gamma
IGF-1 .....	Insulin-like growth factor-1
IL.....	Interleukin
IL-1 .....	Interleukin-1
IL-1 $\beta$ .....	Interleukin-1beta
IL- 6 .....	Interleukin-6
IL-8 .....	Interleukin-8
IL-10 .....	Interleukin-10
IL-12 .....	Interleukin-12
IL-17 .....	Interleukin-17
IL-21 .....	Interleukin-21
iNOS .....	Inducible nitric oxide synthase
IU .....	International unit
IU/L.....	International unit per liter
IU/ml .....	International unit per milliliter
IUs.....	International units
Kg.....	Kilogram
Kg/m <sup>2</sup> .....	kilogram per square meter
Kgs .....	Kilograms
LBP .....	Low back pain
LPL .....	Lipoprotein lipase
LPS.....	Lipopolysacaride
m .....	Meters

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## *List of Abbreviations*

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MRI.....	Magnetic resonance imaging
MAP.....	Mitogen activated protein
MARRS.....	Membrane-associated rapid response steroid
mcg.....	Micrograms
mcg/ml.....	Microgram per milliliter
M-CSF.....	Macrophage colony-stimulating factor
MED.....	Minimal erythematous dose
MEPE.....	Matrix extracellular phosphoglycoprotein
mg.....	Milligram
mg/dl.....	Milligram per deciliter
MHC.....	Major histocompatibility complex
min.....	Minutes
MKP-1.....	Mitogen-activated protein kinase phosphatase
mRNA.....	Messenger ribonucleic acid
ml.....	Milliliter
mVDR.....	Membranous vitamin D receptor
ng/ml.....	Nanograms per milliliter
NGF.....	Neural growth factor
NICE.....	National Institute for Health and Care Excellence
NK.....	Natural killer
nm.....	Nanometer
NMDA.....	N-methyl-D-aspartate
nmol/L.....	Nanomoles per liter
NO.....	Nitric oxide
No.....	Number
NS.....	Non-significant
NSAIDs.....	Non-steroidal anti inflammatory drugs
nVDR.....	Nuclear vitamin D receptor

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## *List of Abbreviations*

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OSC .....	O'Sullivan classification system
P .....	Level of significance
PD .....	Parkinson disease
PENS.....	Percutaneous electrical nerve stimulation
PH .....	Potential of hydrogen
PKA.....	Protein kinase A
PTH.....	Parathyroid hormone
r .....	Correlation coefficient
RA.....	Rheumatoid Arthritis
Raf.....	Rapidly growing fibrosarcoma
RANK .....	Receptor activator of nuclear factor kappa-B
RANKL.....	Receptor activator of nuclear factor kappa-B ligand
RDA .....	Recommended dietary allowance
ROC .....	Receiver Operating Characteristic
ROM .....	Range of motion
RPM .....	Revolutions per minute
RTI.....	Respiratory tract infections
RXR .....	Retinoid X receptor
S .....	Significant
SA-HRP .....	Streptavidin-HRP
SD .....	Standard deviation
sFRP-4.....	Secreted frizzled-related protein-4
SLR .....	Straight leg raising
SPECT.....	Single-photon emission computed tomography
SPF.....	Sun protection factor
TB .....	Tuberculosis
TENS.....	Transcutaneous electrical nerve stimulation

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## *List of Abbreviations*

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TGF- $\alpha$ .....	Transforming growth factor- alpha
TGF $\beta$ -1.....	Transforming growth factor beta -1
TH .....	Tyrosine hydroxylase
Th1 .....	T helper 1
Th2 .....	T helper 2
Th17 .....	T helper 17
TMP .....	Tetramethyl-benzidine
TNF- $\alpha$ .....	Tumor necrosis factor-alpha
UL .....	Upper intake level
ULs.....	Upper intake levels
UVB .....	Ultraviolet B
UVR .....	Ultraviolet radiation
VAS.....	Visual Analogue Scale
VDD .....	Vitamin D deficiency
VDIR.....	Vitamin D inhibitory receptor
VDR .....	Vitamin D receptor
VDRs.....	Vitamin D receptors
VDRE.....	Vitamin D response element
VDREs .....	Vitamin D response elements
VEGF .....	Vascular endothelial growth factor
Vit D.....	Vitamin D

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