

**Serum Concentration of 25 Hydroxy Vitamin D  
In Patients With Multiple Sclerosis**

**Thesis**

Submitted for partial fulfillment of Master Degree in Clinical  
And Chemical Pathology

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## List of abbreviations

<b>ANTI-AQP4-IgG</b>	<b>Anti Aquaporin- 4 IgG</b>
<b>APC</b>	<b>: Antigen Presenting Cells</b>
<b>BAEP</b>	<b>: Brainstem Auditory Evoked Potentials</b>
<b>BBB</b>	<b>: Blood-Brain Barrier</b>
<b>BMD</b>	<b>: Bone Mineral Density</b>
<b>BP</b>	<b>: Blood Pressure</b>
<b>CAM</b>	<b>: Complementary And Alternative Medicine</b>
<b>CDMS</b>	<b>: Clinically Definite Multiple Sclerosis</b>
<b>CECs</b>	<b>: Cerebral Endothelial Cells</b>
<b>CIS</b>	<b>: Clinical Isolated Syndrome</b>
<b>CKD</b>	<b>: Chronic Kidney Disease</b>
<b>CMV</b>	<b>: Cytomegalo Virus</b>
<b>CNPASE</b>	<b>: 2,3-Cyclic Nucleotide3-Phosphodiesterase</b>
<b>CNS</b>	<b>: Central Nervous System</b>
<b>CSF</b>	<b>: Cerebral Spinal Fluid</b>
<b>CVD</b>	<b>: Cardiovascular Diseases</b>
<b>DCs</b>	<b>: Dendritic Cells</b>
<b>DHA</b>	<b>: Docosaheaxenoic Acid</b>
<b>DIS</b>	<b>: Dissemination of Lesions in Space</b>
<b>DIT</b>	<b>: Dissemination of Lesions in Time</b>

## List of abbreviations

<b>EAE</b>	<b>: Experimental Autoimmune Encephalomyelitis</b>
<b>EBV</b>	<b>: Epstein Barr Virus</b>
<b>EBNA</b>	<b>: Epstein-Barr Nuclear Antigens</b>
<b>EC</b>	<b>: Endothelial Cells</b>
<b>ECM</b>	<b>: Extracellular Matrix</b>
<b>EDSS</b>	<b>: Expanded Disability Status Scale</b>
<b>EFSA</b>	<b>: European Food and Safety Authority</b>
<b>ELISA</b>	<b>: Enzyme- Linked Immunoassay</b>
<b>EPA</b>	<b>: Eicosapentaenoic Acid</b>
<b>FGF-23</b>	<b>: Fibroblast Growth Factor 23</b>
<b>FOXP3</b>	<b>: Forkhead Box P3</b>
<b>GM-CSF</b>	<b>: Granulocyte-Macrophage Colony-Stimulating Factor</b>
<b>GWAS</b>	<b>: Genome- Wide Association Study</b>
<b>HDL</b>	<b>: High Density Lipoprotein</b>
<b>HLA</b>	<b>: Human Leucocyte Antigen</b>
<b>HSV</b>	<b>: Herpes Simplex Virus</b>
<b>IARC</b>	<b>: International Agency for Research on Cancer</b>
<b>IBD</b>	<b>: Inflammatory Bowel Disease</b>
<b>ICAM-1</b>	<b>: Intercellular Adhesion Molecule -1</b>
<b>IEF</b>	<b>Isoelectric Focusing</b>

## List of abbreviations

<b>IFN-1</b>	<b>: Interferon 1</b>
<b>IgG</b>	<b>: Immunoglobulin G</b>
<b>IL-17</b>	<b>: Interleukin 17</b>
<b>IM</b>	<b>: Infectious Mononucleosis</b>
<b>INKT</b>	<b>: Inhibitory Natural Killer T Cells</b>
<b>IOM</b>	<b>: Institute of Medicine</b>
<b>KFLC</b>	<b>Kappa Free Light Chain</b>
<b>KO</b>	<b>: Knock Out</b>
<b>LFA-1</b>	<b>: Leucocyte Function Antigen -1</b>
<b>LFLC</b>	<b>: Lambda Free Light Chain</b>
<b>m Ab</b>	<b>: Monoclonal Antibody</b>
<b>MAG</b>	<b>: Myelin-Associated Glycoprotein</b>
<b>MBP</b>	<b>: Myelin Basic Protein</b>
<b>MCs</b>	<b>: Mast Cells</b>
<b>MHC</b>	<b>: Major Histocompatibility Complex</b>
<b>MMPS</b>	<b>: Matrix Metalloproteinases</b>
<b>MOG</b>	<b>: Myelin Oligodendrocyte Glycoprotein</b>
<b>MRI</b>	<b>: Magnetic Resonance Imaging</b>
<b>MS</b>	<b>: Multiple Sclerosis</b>
<b>NIH</b>	<b>: National Institute of Health</b>
<b>NK</b>	<b>: Natural Killer</b>

## List of abbreviations

<b>NMO</b>	<b>: Neuromyelitis Optica</b>
<b>NO</b>	<b>: Nitric Oxide</b>
<b>n Treg</b>	<b>: Natural Treg Cells</b>
<b>OA</b>	<b>: Osteoarthritis</b>
<b>OCBS</b>	<b>: Oligoclonal Bands</b>
<b>25 (OH) D</b>	<b>: 25 Hydroxyvitamin D</b>
<b>1,25 (OH)<sub>2</sub> D</b>	<b>: 1,25 Dihydroxyvitamin D</b>
<b>ONDS</b>	<b>: Optic Neurotic Diseases</b>
<b>PAMPS</b>	<b>: Pathogen-Associated Molecular Patterns</b>
<b>PLP</b>	<b>: Proteolipid Protein</b>
<b>PP</b>	<b>: Primary Progressive</b>
<b>PPMS</b>	<b>: Primary Progressive Multiple Sclerosis</b>
<b>PR</b>	<b>: Progressive-Relapsing</b>
<b>PRR</b>	<b>: Pathogen-Recognition Receptors</b>
<b>PTH</b>	<b>: Parathyroid Hormone</b>
<b>RAAS</b>	<b>: Renin-Angiotensin-Aldosterone System</b>
<b>RA</b>	<b>: Rheumatoid Arthritis</b>
<b>RCTS</b>	<b>: Randomized Controlled Trials</b>
<b>RIS</b>	<b>: Radiologically Isolated Syndrome</b>
<b>ROS</b>	<b>: Reactive Oxygen Spies</b>

## List of abbreviations

<b>RRMS</b>	<b>: Relapsing Remittent Multiple Sclerosis</b>
<b>RT-PCR</b>	<b>: Reverse Transcriptase Polymerase Chain Reaction</b>
<b>SAE</b>	<b>: Serious Adverse Events</b>
<b>SEP</b>	<b>: Sensory Evoked Potentials</b>
<b>SP</b>	<b>: Secondary Progressive Course</b>
<b>STAT4</b>	<b>: Signal Transducers and Activators of Transcription</b>
<b>T1D</b>	<b>Type 1 Diabetes</b>
<b>T-bet</b>	<b>: T Box Expressed in T Cells</b>
<b>TGF-B</b>	<b>: Transforming Growth Factor – B</b>
<b>T<sub>h</sub>1</b>	<b>: T helper 1</b>
<b>Th17</b>	<b>: T helper 17</b>
<b>TIMPS</b>	<b>Tissue Inhibitors of Metalloproteinases</b>
<b>TLRS</b>	<b>: Toll-Like Receptors</b>
<b>TNF-<math>\alpha</math></b>	<b>: Tumour Necrosis Factor- <math>\alpha</math></b>
<b>Treg</b>	<b>: Regulatory T Cells</b>
<b>UVB</b>	<b>: Ultra Violet B</b>
<b>VCAM-1</b>	<b>: Vascular Cell Adhesion Molecule-1</b>
<b>VDR</b>	<b>: Vitamin D Receptor</b>
<b>VEGF-<math>\alpha</math></b>	<b>Vascular Endothelial Growth Factor- <math>\alpha</math></b>

## List of abbreviations

<b>VEP</b>	<b>: Visual Evoked Potentials</b>
<b>VZV</b>	<b>: Varicella Zoster Virus</b>
<b>WHO</b>	<b>: World Health Organization</b>
<b>WT</b>	<b>: Wild Type</b>

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