# Assessment of Serum Vitamin D Levels in Surgical Adolescent Idiopathic Scoliosis Patients: A Retrospective Study

Alfadhil R[1], Al-Aqel M[1], Ababtain N[1], Almajed N[1], Alatassi R[2], Awwad W[3], Bakarman K[3], Alsiddiky A[3]

[1]College of Medicine, King Khalid University Hospital, King Saud University, Riyadh, SA
[2]Security Forces Hospital Program, Riyadh, Saudi Arabia
[3]Department of Orthopedics, College of Medicine, King Khalid University Hospital, King Saud University, Riyadh, SA

**Abstract:**
Background: The mechanism behind idiopathic scoliosis and its progression is not fully understood. Vitamin D insufficiency is known to play a role in the progression and/or occurrence of a variety of bone diseases. In this study, we aimed to estimate the prevalence of vitamin D insufficiency among patients with adolescent idiopathic scoliosis. Additionally, we aimed to calculate the differences in serum vitamin D levels, Cobb angle, spinal bone mass densities, and serum alkaline phosphatase levels between the sexes in the sample and to assess the possibility of a correlation between any of these factors.
Methods: Data of patients' demographics, vitamin D levels, Cobb angle, spinal bone mass density, and alkaline phosphatase were collected from the records of 60 patients who were eligible for corrective surgery. Those values were compared to normal levels and between the sexes in this study.
Results: Out of 60 patients, 47 (79.9%) were female. The mean serum vitamin D level was 37.14 +/- 26.78 nmol/L, and low levels were found in 91.7% of the patients. Statistical analysis showed significant differences ($p<0.001$) in serum alkaline phosphatase levels between the sexes. No correlation was found among those four variables including: vitamin D levels, Cobb angle, spinal bone mass densities, and serum alkaline phosphates levels.
Conclusions: Most patients had insufficient serum vitamin D levels. We recommend that more studies be conducted regarding this topic and that measurement of serum vitamin D levels prior to surgery should be made mandatory.

**Key-words:** Adolescent Idiopathic Scoliosis, Scoliosis, Spine, Vitamin D.

**Professional Biography:**
Rheema is currently a medical intern at King Saud University, and is expected to finish in June 2019. She graduated from King Saud University's College of Medicine with first degree honors and ranking the 3rd on her batch. She is applying to orthopedics residency and has published 3 articles with more currently in the process of publication. She was the youngest and only female oral presenter at the Joint 5th Emirates international orthopedic congress and 1st American academy of orthopedic surgeons middle-east forum in March 2017 and was chosen as the model student for the College of Medicine in 2018. Rheema has represented her country as a delegate in the UNESCO Youth Forum in Paris, France in 2015 and has taken multiple local and international orthopedic clinical electives such as in McGill University in Canada, Asan Medical Center in South Korea, and in multiple major tertiary centers in Saudi Arabia.

**Photograph:**



**Email ID:** rheema.f@gmail.com
**Contact Number:** +966558787682