

# **The Effect of Vitamin D on the Treatment of Patients with Chronic Musculoskeletal Pain with Serum Vitamin D Deficiency**

## **Abstract**

**Background and objective:** Vitamin D deficiency is a major health problem and has been addressed in many parts of the world and is not limited to areas with low sunlight and even in areas with high sunlight. Vitamin D deficiency is a widespread and serious problem worldwide, and is unexpectedly high in sunny countries such as the Middle East. Therefore, the main purpose of this study was to evaluate the effect of vitamin D in the treatment of patients with chronic musculoskeletal pain with serum vitamin D deficiency.

**Method:** This research is a quasi-experimental study (pre-test-post-test). The statistical population of the study is patients with chronic musculoskeletal pain in the age range of 15-45 years referred to orthopedic clinic of Fatemi hospital in 2019. The sample consisted of 40 patients that according to the orthopedic expert and the results of the tests, their vitamin D level was less than 30 ng/ml. The study sample received intervention for ten weeks. Patients with a serum vitamin D deficiency below 10ng/ml (deficient) received a 300,000 unit dose of vitamin D every two weeks (6) and a 50,000 unit dose of vitamin D tablet each week, and patients with a vitamin D level between 10 to 30 (Insufficient) Every two weeks they received 300,000 units of vitamin D (3 Ampoules) and 50,000 units of vitamin D tablets each week. Data were collected during pre-test and post-test using demographic questionnaire and NRS pain numeric rating scale.

**Results:** The results of the study showed that the level of pain in patients with chronic musculoskeletal pain before vitamin D administration was above average level and after intervention it was lower than average level. Also, serum levels of vitamin D in patients with chronic musculoskeletal pain after vitamin D administration were higher than the average level and also, serum levels of vitamin D before and after the intervention were significantly different. Finally, the findings showed that the level of pain in patients with chronic musculoskeletal pain before and after vitamin D administration was significantly different.

**Conclusion:** After administration of vitamin D, serum levels of vitamin D are increased in patients with chronic musculoskeletal pain. also, with increasing serum vitamin D levels, patients' pain levels decrease. Therefore, it can be said that the level of pain in patients with chronic musculoskeletal pain after vitamin D administration is significantly reduced and therefore dietary enrichment with vitamin D is suggested.

**Keywords:** Vitamin D, chronic musculoskeletal pain, vitamin D deficiency.