

## **ABSTRACT**

### **ANALYSIS OF PREVALENCE OF VITAMIN D DEFICIENCY IN ADULTS**

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## **INTRODUCTION**

Estimated vitamin D deficiency occurs in up to 1/3 of the population. Vitamin D deficiency occurs in a number of diseases and in different countries of the world.

## **AIMS**

The aim of the theoretical part of the diploma thesis was to get acquainted with vitamin D and its deficit in general. The objective of the practical part was to map vitamin D levels in adults, to assess prevalence of vitamin D deficiency, to determine if vitamin D levels fluctuate over the course of the year depending on age or gender and how they are related to individual illnesses.

## **METHODS**

PubMed and Embase database search was performed to find evidence on vitamin D deficiency in adults. Only studies in humans, published in English in the period from 2000 to 2016 were included. Non-systematic review was provided, the quality of the studies was not evaluated.

## **RESULTS**

Overall, 84 studies were included. Most of the studies enrolled healthy adults (n = 34). Among the studies concerning various diseases, musculoskeletal disorders were the most prevalent (n = 13). The highest prevalence of vitamin D deficiency was seen in the study from USA (in healthy adults) using cut-off value for deficiency  $\leq 50$  nmol/l. The lowest prevalence of vitamin D deficiency was described in patients with psoriatic arthritis in summer season in Canada (0,9 %,  $< 30$  nmol/l). Vitamin D levels association with age, season, gender, as well as negative correlation with parathormone levels and body mass index has been described.

## **CONCLUSION**

Based on the studies included in this review, vitamin D deficiency can be seen in many countries of the world. It is therefore possible to talk about the growing global problem. Considering the worldwide deficiency of vitamin D, we should place more interest in preventive measures and try to prepare simple and available laboratory methods for vitamin D levels analysis.

**Keywords:** *vitamin d/deficiency, epidemiology, ergokalciferol, vitamin D, cholekalciferol, vitamin D deficiency, prevalence*