



# Vitamin D Deficiency in Iran

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Vitamin D plays a basic role in bone growth and metabolism and has been noted for its important role in many diseases. Vitamin D deficiency causes a delay in growth during embryonic and childhood periods. It also causes skeletal deformity and increases the risk of hip fracture. The prevalence of vitamin D deficiency differs among different sex and age groups in developing countries. Iran is a country with a high prevalence of moderate to severe vitamin D deficiency. The highest prevalence of moderate to severe vitamin D deficiency in men was observed in Tehran, while Mashhad and Bushehr had the lowest prevalence rates among both men and women.<sup>1</sup> The prevalence rates of mild, moderate, and severe vitamin D deficiencies among the adult population were 19.6%, 23.9%, and 26.7%, respectively. The prevalence of vitamin D deficiency was high even in the sunny city of Isfahan, particularly among women and younger populations. This result emphasizes the necessity of vitamin D supplementation as exposure to sunlight is limited by the type of clothing required by current law.<sup>2</sup> Vitamin D deficiency was seen in 75.1% of women and 72.1% of men. Its high prevalence rate in Iran is similar to those reported by other studies in the Middle East.<sup>3</sup> People pay more for cosmetics and clothes than they do for food and health. People must be convinced that replacing unhealthy foods with healthy ones is essential if they want to be healthy. Despite the World Health Organization's recommendation that annual per capita milk consumption should be at least 165 kilograms, consumption is about 85-90 kilograms in Iran. Vitamin D deficiency is common in various cities located at sea level and in cities with lower geographic latitudes. It is a common medical problem, afflicting an estimated one billion people throughout the world. The prevalence of vitamin D deficiency in countries where food is enriched

by vitamin D (Scandinavian countries) is 1.6–14.8%<sup>4</sup>. In other European countries, the prevalence rate among middle-aged and elderly people ranges between 14–59.6%. In Tunisia, it is 47.6%, and among teenagers in Boston, Massachusetts, USA it is 24.1%. Vitamin D deficiency is much more prevalent in Asia. A total of 30–50% of people in India, Lebanon, and Turkey, and also 45.2% of females in China were found to be vitamin D deficient. Several studies in different parts of Iran and among different age groups have shown a high prevalence of vitamin D deficiency.<sup>5</sup> Its prevalence in Tehran (the capital city of Iran) was 60% in males and 91% in females. Another study in different cities of Iran with different climates showed that 27.2% of females and 37.25% of males had mild vitamin D deficiency, and 47.85% of females and 34.75% of males had moderate to severe vitamin D deficiency. Those figures confirm the results of the present study.<sup>6</sup> It is recommended that efforts be made to encourage people to take vitamin D and calcium supplements and to have more exposure to sunlight. The distribution of milk in schools will be effective in standardizing and promoting the habit of drinking milk in the society.

## Authors' Contributions

All authors contributed equally to this study.

## Conflict of Interest Disclosures

The authors declare that they have no conflicts of interest.

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