





In Lewis et al. (2010) in Australia, it was stated that the amount of vitamin D and calcium should be at a level that does not negatively affect the health of the mother and the fetus [9]. In an intervention study by Brunner et al. (2008) in America, it was reported that there was no relationship between the levels of vitamin D and calcium in pregnant women and their daily physical activities [18]. Based on the results of our study, no significant difference in the levels of vitamin D and calcium was seen before and after the exercises ( $P>0.05$ ), a finding in line with the result of the above-mentioned study. Also, in Prentice et al. (2001), the results showed that women need a different amount of vitamin D during pregnancy, and that one of the factors affecting the level of vitamin D is people's physical activity [19], which is not in line with the results of the present study, probably due to type and intensity of activity in the individuals investigated in the study.

### CONCLUSION

The results of the present study showed that physical exercises are effective in increasing the level of vitamin D and calcium during pregnancy, corroborating the studies that have been conducted earlier. Furthermore, in the Iranian society, the insufficiency of dairy products in people's diet creates an adverse condition that affects vitamin D absorption and other nutritional measures in a negatively way. It is suggested that, in addition to vitamin D supplement, calcium supplements and sunlight be considered as important healthcare priorities in pregnancy hygienic and the improvement of pregnant women.

### REFERENCES

- Carek PJ, Laibstain SE, Carek SM. Exercise for the treatment of depression and anxiety. *Int J Psychiatry Med.* 2011; 41(1):15-28.
- Short KR, Sedlock DA. Excess postexercise oxygen consumption and recovery rate in trained and untrained subjects. *J Appl Physiol.* 1997; 83(1):153-59.
- Thornton MK, Potteiger JA. Effects of resistance exercise bouts of different intensities but equal work on EPOC. *Med Sci Sports Exerc.* 2002; 34(4):715-22.
- Sedlock DA. Postexercise energy expenditure following upper body exercise. *Res Q Exerc Sport.* 1991; 62(2):213-16.
- Gannagé-Yared MH, Chemali R, Yaacoub N, Halaby G. Hypovitaminosis D in a sunny country: relation to lifestyle and bone markers. *Journal of Bone and Mineral Research.* 2000; 15(9):1856-62.
- Holick MF. Sunlight and vitamin D for bone health and prevention of autoimmune diseases, cancers, and cardiovascular disease. *The American journal of clinical nutrition.* 2004; 80(6):1678S-88S.
- Peifer M, Begerow B, Minne HW. Vitamin D and muscle function. *Osteoporos Int J.* 2002; 13(3):187-94.
- Evans KN, Bulmer JN, Kilby MD, Hewison M. Vitamin D and placental-decidual function. *J Soc Gynecol Investig.* 2004; 11(5):263-71.
- Sertac N, Kip E. Vitamin D<sub>3</sub> upregulates plasma membrane Ca<sup>2+</sup>-ATPase expression and potentiates apico-basal Ca<sup>2+</sup> flux in MDCK cells. *Am J Physiol Renal Physiol.* 2003; 286(2):363-69.
- Ainy E, Mirmiran P, Mirsaied Ghazi A A, Mohammadi F, Azizi F. Daily Intake and Serum Levels of Calcium, Phosphorus, Magnesium and Vitamin D During Normal Pregnancy. *Feyz.* 2005; 9(1):16-20.
- Golafrooz Shahri M, Rivandi M, Kooshki A. The Relationship between Calcium Intake and Anthropometric Indices. *J of Sabzevar Uni of Med Sci.* 2011; 18(1):41-6.
- Mahmoodi Z, Behzadmehr M, Salarzaei M, Havasian MR. Examining High-Risk Behaviors and Behavioral Disorders in Adolescents with Addicted and Non-Addicted Fathers in Public School of Zabol in the Academic Year 2016-2017. *Indian Journal of Forensic Medicine & Toxicology.* 2017; 11(2):251-56.
- Shayan A, Jamshidi F, Tahmasebiboldaji V, Khani S, Babaei M, Havasian MR, Masoumi SZ. Impact of a Stress Management Intervention Program on Sexual Functioning and Stress Reduction in Women with Breast Cancer. *Asian Pacific journal of cancer prevention: APJCP.* 2017; 18(10):2787-93.
- Valizadeh R, Malekshahi F, Saki M, Kavarizadeh F. Concentration Extent of People with a History of Methamphetamine Consumption Via Measuring Brain Waves in Recovering Addicts who Referred to Taleghani Hospital of Ilam, Iran 2016. *Indian Journal of Forensic Medicine & Toxicology.* 2017; 11(2):246-50.
- Raza S, Sheikh MA, Hussain MF, Siddiqui SE, Muhammad R, Aziz S, Qamar S, Saleem MA, Waki N, Faruqi H, Zia A. Dietary modification, body mass index (BMI), blood pressure (BP) and cardiovascular risk in medical students of a government medical college of Karachi. *J Pak Med Assoc.* 2010; 60(11):970-74.
- Børsheim E, Bahr R. Effect of exercise intensity, duration and mode on post-exercise oxygen consumption. *Sports Med.* 2003; 33(14):1037-60.
- Kaushal M, Magon N. Vitamin D in pregnancy: A metabolic outlook. *Indian J Endocrinol Metab.* 2013; 17(1):76-82.
- Richard D. Vitamin D and smooth muscle function. *Osteoporos Int.* 2002; 13(3):187-94.
- Prentice A. Milk intake, calcium and vitamin D in pregnancy and lactation: effects on maternal, fetal and infant bone in low- and high-income countries. *Nestle Nutr Workshop Ser Pediatr Program.* Karger Publishers, 2011.