Austin Sports Medicine

Open Access

Austin Publishing Group

Short Communication

Supplementation Vitamin D: Sport Key Performance

Diego Fernandez-Lazaro*
Department of Cellular Biology, Histology and Pharmacology, University of Valladolid, Spain

***Corresponding author:** Diego Fernandez-Lazaro, Faculty of Physical Therapy, University of Valladolid, Spain

Received: October 25, 2018; **Accepted:** November 09, 2018; **Published:** November 16, 2018

Short Communication

Vitamin D (VITD) supplementation has been received wide attention in the athletic communities because VITD deficiency or insufficiency is a prevalent issue among athletes [1]. Likewise, low values of 25(OH) D may reduce physical performance, while adequate levels of 25(OH) D in serum are positively related to strength and potency, running performance, endurance performance, and the aerobic capacity [2-6]. The VITD has been proposed as a suitable factor that facilitates erythropoiesis, given that erythrocyte precursor cells express receptors of the active form of VITD, which induce the proliferation and maturation of erythrocytes [7]. Therefore, it has been observed that VITD is a potent regulator of the hepcidin-ferroportin axis, responsible for regulating the absorption, tissue distribution and extracellular concentration of iron [8]. VITD receptors exist in human skeletal muscle tissue, indicating that 1, 25-dihydroxyvitamin D has a direct effect on skeletal muscle activity [9] and it has been observed a positive and close correlation between 25(OH) D levels and testosterone, and inversely with those of cortisol [10]. For these reason oral VITD supplementation could be proposed as an alternative to obtain adequate levels of 25(OH) Das stimulus to improve the hematological profile and iron metabolism values, as well as the hormonal response in elite athletes. This would be a key supplement to sports performance.

References

1. Orysiak J, Mazur-Rozycka J, Fitzgerald J, Starczewski M, Malczewska-Lenczowska J, Busko K. Vitamin D status and its relation to exercise performance and iron status in young ice hockey players. PloS one. 2018; 13: e0195284.
2. Reid IR. What diseases are causally linked to vitamin D deficiency? Arch Dis Child. 2016; 101: 185-189.
3. Wyon MA, Koutedakis Y, Wolman R, Nevill AM, Allen N. The influence of winter vitamin D supplementation on muscle function and injury occurrence in elite ballet dancers: a controlled study. Journal of science and medicine in sport. 2014; 17: 8-12.
4. Close GL, Leckey J, Patterson M, Bradley W, Owens DJ, Fraser WD, et al. The effects of vitamin D (3) supplementation on serum total 25[OH] D concentration and physical performance: a randomised dose-response study. Br J Sports Med. 2013; 47: 692-696.
5. Carswell AT, Oliver SJ, Wentz LM, Kashi DS, Roberts R, Tang JC, et al. Influence of vitamin D supplementation by sunlight or oral D3 on exercise performance. Med Sci Sports Exerc. 2018.
6. Koundourakis NE, Androulakis NE, Malliaraki N, and Margioris AN. Vitamin D and exercise performance in professional soccer players. PLoS One. 2014; 9: e101659.
7. Alon DB, Chaimovitz C, Dvilansky A, Lugassy G, Douvdevani A, Shany S, et al. Novel role of 1,25(OH) (2) D (3) in induction of erythroid progenitor cell proliferation. Exp Hematol. 2002; 30: 403-409.
8. Zughaier SM, Alvarez JA, Sloan JH, Konrad RJ, Tangpricha V. The role of vitamin D in regulating the iron-hepcidin-ferroportin axis in monocytes. Journal of clinical & translational endocrinology. 2014; 1: e19-e25.
9. Dahlquist DT, Dieter BP, Koehle MS. Plausible ergogenic effects of vitamin D on athletic performance and recovery. Journal of the International Society of Sports Nutrition. 2015; 12: 33.
10. Lombardi G, Vitale JA, Logoluso S, Logoluso G, Cocco N, Cocco G, et al. Circannual rhythm of plasmatic vitamin D levels and the association with markers of psychophysical stress in a cohort of Italian professional soccer players. Chronobiol Int. 2017; 34: 471-479.

Citation: Fernandez-Lazaro D. Supplementation Vitamin D: Sport Key Performance. Austin Sports Med. 2018; 3(1): 1026.