TACSM Abstract

Vitamin D Deficiency in TAMU Female Basketball Players and Supplement Effectiveness

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ABSTRACT

Purpose:
Vitamin D deficiency has been defined by the Institute of Medicine (IOM) as a level of serum 25-OH vitamin D less than 20 ng/mL. The Endocrine Society went on to further define vitamin D insufficiency as a level between 21 and 29 ng/mL. Research suggests that vitamin D deficiency could increase fracture risk in athletes, especially females who are naturally prone to deficiency.

Methods: Eight female athletes from the Texas A&M women’s basketball team (21 ± 1 yrs; 88 ± 18 kg; 179 ± 16.5 cm; BMI 26 ± 3 kg/m²; black female) were identified to have low vitamin D blood levels in April of 2012. Each of these women was ordered to supplement with 50,000 IU of vitamin D2 1x/week. After 8 weeks, the subjects were again evaluated in July 2012. Body composition information was also attained via DEXA scan. For each subject, the change in blood vitamin D levels (final – initial) and bone mineral density (BMD) difference was calculated. Data were analyzed for frequency and for pre-post significance by dependent t-test, [α=0.05].

Results: See table

Conclusions:
Vitamin D supplementation improved serum vitamin D levels significantly. 100% of the women were initially deficient in vitamin D. After intervention, 100% of the athletes were brought into the acceptable range as defined by the IOM (>20 ng/mL), while 22.22% of the women improved to the standards to the standards of The Endocrine Society (>30ng/mL). The changes in pre-post vitamin D values were statistically significant after 8 weeks, while the BMD changes were not. Improvements in BMD may take longer than 8 weeks to become evident. Vitamin D assessment is critical to ensuring bone health and injury prevention in athletes, especially in black females.