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Opinion

# The Sunny Side of Vitamin D

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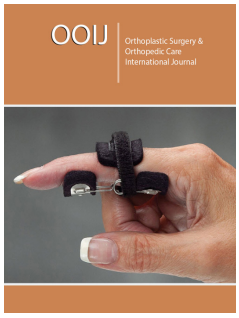


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## Opinion

While there are conflicting studies on the utility of vitamin D supplementation, it continues to be prescribed as go to ambrosia in many disease states. The cardio-protective, anti-cancer & even bone density enhancing properties of vitamin D are yet to be fully understood [1]. However, this does not entirely belittle the benefits of vitamin D supplementation. Cochrane datasets hold testimony to the advantage that vitamin D supplementation offers in Pre-eclampsia, gestational diabetes & low birth weight babies [2]. Nutritional rickets is a disease which has existed since medical history has been documented. Though vitamin D supplementation seems to thwart disease progression in children the same results are not evident when vitamin D supplements are given to adults. Many large RCTs have generated new results regarding the effects of vitamin D supplementation on the adult skeleton. The VITAL Bone Health study, aimed at evaluating the effects of vitamin D on bone structure and architecture, is a well-known example among physicians. The study included a cohort of 771 participants (men aged over 50 years and women aged over 55 years who had never taken vitamin D supplements in their lifetime. The same subjects were given supplements & evaluated at baseline and after 2 years. Supplemental vitamin D (compared with placebo) had no effect on 2 years changes in areal Bone Mineral Density (BMD) at the spine, femoral neck, total hip or whole body, or on measures of bone structure. This conclusion remained valid in a subgroup analysis, including individuals with the lowest vitamin D status (as measured by total 25OHD) at baseline.

New technology allows the direct measurement of free (non-protein-bound) 25OHD as an alternative strategy to define vitamin D status. In participants of the VITAL trial with the lowest directly measured free 25OHD concentrations, vitamin D supplementation generated a slight increase in spine areal BMD (0.75% in the vitamin D group versus 0% in the placebo group; P=0.043) and attenuation in loss of total hip areal BMD (-0.42% in the vitamin D group versus -0.98% in the placebo group; P=0.044).Clinical significance & implication of this marginal increase is debatable [3]. Vitamin D is a nutrient which plays a pivotal role in homeostasis beyond the musculoskeletal system. Genetic mechanisms & genes responsible for Vitamin D synthesis are being extensively studied & estimation of 25OHD levels is becoming ever increasingly common. It could be hypothesized that genetic mechanisms can determine the bio-availability of vitamin D. A single yardstick such as estimation of 25OHD levels cannot be applied to determine candidates for vitamin D supplementation. With advanced tools such as next generation sequencing & microarrays genetic such genetic mechanisms are likely to be studied with more rigor & our understanding of the sunshine vitamin is bound to grow in the near future.

## References

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