

# Vitamin D supplementation: A double edged sword

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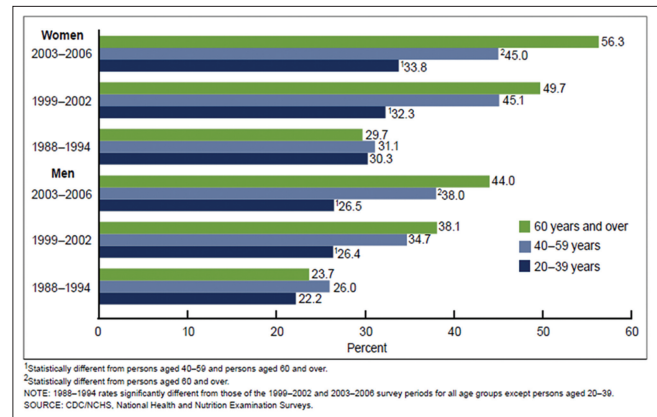
Sir,

Vitamin D supplementation has captured the spotlight, both in medical and non-medical literature. Aside from its affect on bone, vitamin D has been linked to a host of illnesses like diabetes and cardiovascular disease. Whilst the optimal level of vitamin D is still open for debate, the Endocrine Society advises that vitamin D deficiency should be defined as a 25-hydroxyvitamin D [25(OH)D] level below 20ng/ml, and insufficiency be defined as a 25(OH)D of 21–29 ng/ml.<sup>1</sup> Mechanisms of delivery include capsules, creams, sprays, oral drops, tablets, sachets and intramuscular injections. Doses can range from an over the counter multivitamins containing 400 IU, to an injection containing 600,000 IU.<sup>2</sup> As per data from the National Center for Health Statistics, there has been a recent rise in the consumption of vitamin D (Figure 1).<sup>3</sup>

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The issue, however, lies not with vitamin D itself, or its mode of delivery, but in the way that it is being prescribed. The dosage of the supplement may greatly vary, as may the frequency at which is taken. Prescriptions of doses as high as 50,000 IU daily or repeated injections of 600,000 IU, within the span of a few weeks, are more commonly seen. Compounding pharmacies offer their own strengths. Active forms of vitamin D, such as alphacalcidol, have also found their way into over the counter calcium supplements. Albeit infrequently, vitamin D over supplementation can be dangerous as it can result in vitamin D toxicity. Vitamin D toxicity can lead to hypercalcemia and its subsequent pathological sequelae, like an acute kidney injury. This causes severe morbidity and certainly offsets any benefit hoped to derive from vitamin D itself.

The onus lies on us as clinicians, regardless of whether we practice in the realm of allopathic medicine or in the realm of alternative medicine, to ensure that even a supplement like vitamin D is prescribed appropriately and within the standard of care. 25-hydroxyvitamin D levels, when judiciously ordered, can identify deficiency and ensure targeted therapy. This in turn will offset the chance of



**Figure 1:** Prevalence of supplemental vitamin D use in adults aged 20 and over, by age group: United States, 1988–2006

developing iatrogenic hypervitaminosis D. Public health platforms should also be used as a tool to educate the general public on the risks, benefits and appropriate use of vitamin D. Pharmaceutical manufacturers must analyze the risk/benefit of potential drug combinations, and limit compounds like alphacalcidol reaching the over-the-counter formulary. Only then, will we be able to correct and treat vitamin D deficiency in a safe and effective manner.

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