

# Vitamin D and human health: more than just bone

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In their Perspective article [Common misconceptions about vitamin D implications for clinicians](#). *Nat. Rev. Endocrinol.* doi:10.1038/nrendo.2013.75

Rosen and Taylor have provided a primer on the state of vitamin D research. However, the analyses presented of the current literature are not balanced. The conclusions of the authors largely reflect those of the 2011 Institute of Medicine (IOM) report, which immediately created a controversy, leading to rebuttals.<sup>3</sup> The IOM report was controversial in part because of its very conservative recommendations for dietary intakes, its conclusions of insufficient evidence for any role of vitamin D in nonbone health, and the way it presented evidence for potential harm associated with circulating 25-hydroxyvitamin D levels.

Notably, considerable debate surrounds potential roles of vitamin D in nonbone indications including cancer prevention and control of immune system function. The authors conclude that "effects of vitamin D on nonbone disorders is currently best described as consisting of hypotheses of emerging interest". They also claim that vitamin D supplementation has not been shown to prevent infections. In fact, several randomized placebo-controlled trials have been published providing evidence for vitamin D supplementation of deficient populations in preventing a variety of infections. In addition to the (highly cited) results of a trial published in 2010 concluding that

vitamin D supplementation reduced the risk of seasonal influenza infections in a paediatric population,<sup>4</sup> recent studies have provided evidence for a beneficial role of vitamin D supplementation of populations at risk for upper respiratory tract or ear infections,<sup>5,6</sup> either because of severe vitamin D deficiency or a history of recurrent infections.<sup>5,6</sup> By contrast, one study that produced a negative result involved a healthy population with baseline 25-hydroxyvitamin D levels of 78 mol/l.<sup>7</sup> The authors also discuss the emerging evidence for a U-shaped curve of risk associated with 25-hydroxyvitamin D levels and focus largely on the potential risks associated with excessive vitamin D intake, an area that should not be ignored. They cite a recent review<sup>8</sup> suggesting that there may be an increase in prevalence of certain cancers associated with high serum 25-hydroxyvitamin D levels (>75 mol/l). However,

U-shaped curves have two sides, and the IOM recommends that the vitamin D needs