Vitamin D: Ten Beliefs

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We thank Lauren Mokry and Brent Richards for their letter regarding our article "Vitamin D: A Narrative Review Examining the Evidence for Ten Beliefs."[1]

We would like to begin by clarifying a few issues regarding our paper that seem to have been misunderstood. First, our paper is not a systematic review. It is a thorough narrative review that generally follows the principles of a systematic review but, as explained in the title, is a narrative review. Second, as outlined on the first page of the paper, observational studies were discussed to clarify the origin and support for a belief in the benefits of vitamin D supplementation for a specific health outcome. We used only the highest level evidence, randomized controlled trials (RCT) and systematic reviews/meta-analysis of RCTs, to determine whether vitamin D supplementation truly influences clinical outcomes. Third, in addition to fracture prevention, we suggested that vitamin D supplementation may reduce falls and have a small impact on mortality.

Mokry and Richards suggest that vitamin D is off-patent so RCTs are unlikely, but as our review shows, some meta-analyses included 95,000 randomized patients so RCTs do get done. Still, multiple sclerosis (MS) is relatively rare, and a prevention RCT would likely require a very large number of randomized patients. Mendelian randomization is one way to examine potential cause-and-effect relations in a non-experimental way. However, despite the term "randomization," this methodology is still observational with some of the typical risks of bias seen in observational studies, and they have been shown to provide findings discordant with RCT evidence.[2]

The Mendelian randomization paper of Mokry and colleague does support a potential causal role of vitamin D in the etiology of MS. While intriguing, we strongly agree with the authors' own conclusions: "Whether vitamin D sufficiency can delay, or prevent, MS onset merits further investigation in long-term randomized controlled trials."[3] We believe before clinicians recommend wholesale vitamin D screening and treatment for any condition, the evidence for benefit should be based on findings from RCTs.

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