
 COMMENTS AND
 RESPONSES

**Response to
 Comment on:
 Davidson et al.
 High-Dose Vitamin D
 Supplementation in
 People With
 Prediabetes and
 Hypovitaminosis D.
 Diabetes Care
 2013;36:260-266**

This letter is in response to Pilz et al. (1) who are concerned about the possible long-term effects of high levels of vitamin D on mortality. In a sense, our study was a “proof of concept” one. As noted in our article (2) and in its Supplementary Table 3, there have been a number of studies evaluating the effect of vitamin D supplementation on diabetes, insulin secretion, and insulin sensitivity, almost all of which have been negative. There are five possible reasons for these negative results: 1) some subjects did not have hypovitaminosis D; 2) the dose of vitamin D was too low; 3) relatedly, achieved serum vitamin D levels were not high enough; 4) duration of treatment was too short; or 5) vitamin D

supplementation was truly ineffective. We chose conditions to meet the first four situations, i.e., subjects with hypovitaminosis D at high risk for developing diabetes and treated them for 1 year with very high doses of vitamin D (88,865 IU per week or 12,695 per day) quickly achieving serum levels of nearly 70 ng/mL. Thus, our negative results strongly support the fifth reason, i.e., vitamin D supplementation is simply ineffective in delaying the development of diabetes in people at high risk who have low levels of vitamin D or in their ability to secrete or respond to insulin.

Pilz et al. (1) point out that in a meta-analysis of 14 prospective cohort studies evaluating serum vitamin D levels and mortality, a few suggested a U-shaped relationship (3). However, this suggestion was not confirmed in a recently published National Health and Nutrition Examination Survey study (4). Although our study was certainly not intended to help establish acceptable vitamin D doses, the lack of hypercalcemia and hypercalciuria while ingesting nearly 13,000 IU of vitamin D per day for a year may help meet potential reservations concerning the recommendations of The Endocrine Society that a tolerable dose of vitamin D is 10,000 IU per day.

MAYER B. DAVIDSON, MD

From the Division of Endocrinology, Metabolism and Molecular Medicine, Department of Internal Medicine, Charles Drew University, Los Angeles, California. Corresponding author: Mayer B. Davidson, mayerdavidson@cdrewu.edu.

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References

1. Pilz S, Rutters F, Dekker JM. Comment on: Davidson et al. High-dose vitamin D supplementation in people with prediabetes and hypovitaminosis D. *Diabetes Care* 2013;36:260–266 (Letter). *Diabetes Care* 2013;36:e71. DOI: 10.2337/dc12-2089
2. Davidson MB, Duran P, Lee ML, Friedman TC. High-dose vitamin D supplementation in people with prediabetes and hypovitaminosis D. *Diabetes Care* 2013;36:260–266
3. Zittermann A, Iodice S, Pilz S, Grant WB, Bagnardi V, Gandini S. Vitamin D deficiency and mortality risk in the general population: a meta-analysis of prospective cohort studies. *Am J Clin Nutr* 2012;95:91–100
4. Kramer H, Sempos C, Cao G, et al. Mortality rates across 25-hydroxyvitamin D (25[OH]D) levels among adults with and without estimated glomerular filtration rate <60 ml/min/1.73 m²: the Third National Health and Nutrition Examination Survey. *PLoS ONE* 2012;7:e47458