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Long-term high dose vitamin D well tolerated

A research letter published in the October 26, 2009 issue of the American Medical Association Journal [*Archives of Internal Medicine*](#) revealed that treatment with 50,000 international units (IU) of vitamin D per week was safe and effective over an 8 week period, and could also be safe to use every other week as maintenance.

In their introduction to the article, the authors, from Boston University School of Medicine, note that "The worldwide prevalence of vitamin D deficiency is striking, and more than 40 percent of the population may be vitamin D deficient. Despite this, to our knowledge, there are no long-term studies of the safety and efficacy of giving pharmacologic doses of vitamin D (50,000 IU of ergocalciferol) to treat and prevent vitamin D deficiency."

"To prevent recurrent vitamin D deficiency and also to maintain adequate levels in patients who are vitamin D sufficient, we treat with 50,000 IU ergocalciferol every other week indefinitely, a regimen that, to our knowledge, has not been published to date," they write.

The researchers, including well-known vitamin D authority Michael F. Holick, PhD, MD, reviewed medical records of 86 patients aged 18 to 91 who had received two or more blood tests for 25-hydroxyvitamin D levels and were treated for vitamin D deficiency or insufficiency. Pretreatment 25-hydroxyvitamin D levels of 92 percent of the patients were below 30 nanograms per milliliter (ng/mL). Forty-one subjects received 50,000 IU vitamin D₂ (ergocalciferol) weekly for 8 weeks followed by a maintenance dose of 50,000 IU every other week for up to 6 years. The remainder of the patients received every other week maintenance therapy without the initial weekly treatment.

For the 41 patients who received the weekly 50,000 IU starting therapy, average 25-hydroxyvitamin D levels rose from 19 ng/mL to 37.2 ng/mL after 8 weeks. Maintenance therapy increased these levels to an average of 46.9 ng/mL. For the patients who received only maintenance therapy, 25-hydroxyvitamin D levels increased from an average of 26.9 ng/mL to 47 ng/mL. Serum calcium levels, which could be an area of concern when high amounts of vitamin D are ingested, did not change over the course of treatment. No kidney stones or other signs of vitamin D toxicity were observed.

"Vitamin D₂ is effective in raising 25-hydroxyvitamin D levels when given in physiologic and pharmacologic doses and is a simple method to treat and prevent vitamin D deficiency," noted Dr Holick, who is a director of the General Clinical Research Unit and professor of medicine, physiology and biophysics at Boston University School of Medicine. "While treating and preventing vitamin D deficiency, these large doses of vitamin D₂ do not lead to vitamin D toxicity," he concluded.