Higher monthly doses of vitamin D associated with increased risk of falls

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Higher monthly doses of vitamin D were associated with no benefit on low extremity function and with an increased risk of falls in patients 70 or older in a randomized clinical trial, according to an article published online by *JAMA Internal Medicine*.

Lower extremity function that is impaired is a major risk factor for falls, injuries and a loss of autonomy. Vitamin D supplementation has been proposed as a possible preventive strategy to delay functional decline. However, definitive data are lacking.

Heike A. Bischoff-Ferrari, M.D., Dr.P.H., of the University Hospital Zurich, Switzerland, and coauthors conducted a one-year, randomized clinical trial that include 200 men and women 70 or older with a prior fall.

Participants were divided into three study groups: 67 people in a low-dose control group who received 24,000 IU of vitamin D3 per month; 67 people who received 60,000 IU of vitamin D3 per month; and 66 people who received 24,000 IU of vitamin D3 plus calcifediol per month. The study measured improvement in lower extremity function, achieving 25-hydroxyvitamin D levels of at least 30 ng/mL at six and 12 months, and reported falls.

The authors report:

- Of the 200 participants, 58 percent were vitamin D deficient at baseline
- Doses of 60,000 IU and 24,000 IU plus calcifediol were more likely to result in 25-hydroxyvitamin D levels of at least 30 ng/mL but they were associated with no benefit on lower extremity function
- Of the 200 participants, 60.5 percent (121 of 200) fell during the 12-month treatment period
- The 60,000 IU and 24,000 IU plus calcifediol groups had higher percentages of participants who fell (66.9 percent and 66.1 percent, respectively) compared with the 24,000 IU group (47.9 percent)
- The 60,000 IU and 24,000 IU plus calcifediol groups had a higher average number of falls (1.47 and 1.24, respectively) compared with the 24,000 IU group (0.94)

"Compared with a monthly standard-of-care dose of 24,000 IU of vitamin D3, two monthly higher doses of vitamin D (60,000 IU and 24,000 IU plus calcifediol) conferred no benefit on the prevention of functional decline and increased falls in seniors 70 years and older with a prior fall event. Therefore, high monthly doses of vitamin D or a combination of calcifediol may not be warranted in seniors with a prior fall because of a potentially deleterious effect on falls. Future research is

needed to confirm our findings for daily dosing regimens," the study concludes.

"The strategy of supplementation with vitamin D to achieve serum levels of at least 30 ng/mL has not been established by RCTs [randomized clinical trials] to reduce the risk of falls and fractures. It may increase the risk of falling. Until that approach is supported by randomized trials with updated meta-analyses, it would be prudent to follow recommendations from the Institute of Medicine (IOM) that people 70 years or older have a total daily intake of 800 IU of vitamin D without routine measurement of serum 25 (OH)D levels. It is prudent to get recommended intakes of vitamin D and other vitamins from a balanced diet with foods that naturally contain what is manufactured into supplements," writes Steven R. Cummings, M.D., of the California Pacific Medical Center Research Institute, San Francisco, and coauthors.

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