High monthly doses of vitamin D may not be beneficial in seniors with a prior fall

Compared with a standard monthly dose of vitamin D, higher monthly doses may not be beneficial for the prevention of functional decline and falls in community-dwelling seniors with a prior fall. This has been demonstrated by a study led by the Department of Geriatrics at University Hospital Zurich and the Centre on Aging and Mobility at the University of Zurich.

The study's 200 participants had fallen at least once in the 12 months leading up to the study, were at least 70 years old, and lived independently at home. Participants were randomized into three treatment groups: the first received a standard dose of 24,000 IU of vitamin D per month, the second received 60,000 IU of vitamin D per month, and the third received 24,000 IU of vitamin D plus 300 micrograms of calcifediol per month. At the start of the study, participants were an average age of 78 years and 58% were vitamin D deficient with 25-hydroxyvitamin D blood levels of less than 20 ng/ml.

Of the 200 participants, 60.5 percent (121 of 200) fell during the 12-month treatment period. The two monthly high dose groups, 60,000 IU and 24,000 IU plus calcifediol, had no benefit in lower extremity function and 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). Participants in the 24'000 IU vitamin D group (equivalent to 800 IU/day) experienced the most improved lower extremity function and also had the fewest number of falls.

A consistent pattern was seen by achieved 25-hydroxyvitamin D blood levels. The best functional improvement and fewest falls were observed at the lower replete 25-hydroxyvitamin D range of 21.3 to 30.3 ng/ml, while no functional benefit plus most falls were observed between 44.7-98.9 ng/ml.

“Seniors who have had a fall in the past year do not benefit from a high monthly dose of vitamin D or from a blood level increase to over 44.7 ng/ml,” says study leader Prof. Heike A. Bischoff-Ferrari, MD and DrPH, adding that the study provides an important indication of the optimum vitamin D level for fall prevention. The result is consistent with the recommendation of the Federal Office of Public Health, which stipulates a daily intake of 800 IU or a monthly intake of 24,000 IU for persons age 60 years or over.
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Monthly high dose vitamin D treatment for the prevention of functional decline: a double-blind randomized controlled trial

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