



Refills

Your dose of drug information in between sessions

Should adults take 2000 IU of vitamin D daily to prevent fractures?

Conclusion: For adults living in community who are well nourished, with a low burden of chronic disease, vitamin D supplementation does not reduce the risk of any fracture, hip fracture, or falls.

The BC Provincial Academic Detailing (PAD) service is now delivering the 2023 topic [Medications for osteoporosis: an update](#).¹ This topic looks at the evidence for bisphosphonates, denosumab, raloxifene, teriparatide and romosozumab.

A common question we receive is: Should adults take 2000 IU of vitamin D daily to prevent fractures?

2022 VITAL vitamin D trial²

In 2022, the [VITAL research group](#) published the results of a 5-year trial with 25,871 community-dwelling adults in the United States. Females age 55 or older and males age 50 or older were eligible. The mean age of participants was 67 years. Just over half (51%) were female, and 71% were White. Participants were randomized to 2000 IU of vitamin D3 daily or placebo. At baseline, mean 25-hydroxyvitamin D levels were approximately 80 nmol/L and increased to approximately 100 nmol/L during the trial, yet vitamin D supplementation did not reduce the risk of:

- any fracture (HR 0.98, 95%CI 0.89 to 1.08)
- non-vertebral fracture (HR 0.97, 95%CI 0.87 to 1.07)
- hip fractures (HR 1.01, 95%CI 0.70 to 1.47)

2018 vitamin D meta-analysis³

This trial adds to an earlier 2018 meta-analysis (81 trials; 53,537 people), which had already demonstrated that vitamin D supplementation at various doses does not have a beneficial effect on:

- any fracture (RR 1.00, 95%CI 0.93 to 1.07)
- hip fracture (RR 1.11, 95%CI 0.97 to 1.26)
- falls (RR 0.97, 95%CI 0.93 to 1.02)

Context

These vitamin D supplementation trials do not represent adults at risk for severe vitamin D deficiency and where supplementation at doses of 400–1000 IU per day might be targeted²⁻⁶. These could be people living in institutions or who are housebound, with limited sun exposure, poor nutrition, certain medical conditions or taking medications that affect vitamin D metabolism.⁴⁻⁶

If you are looking for a current evidence summary for vitamin D supplementation across health outcomes, consider requesting from your medical library [Vitamin D: 100 years of discoveries, yet controversy continues \(May 2023\)](#) by Gallagher & Rosen, published in *Lancet Diabetes Endocrinol*.⁵

¹BC Provincial Academic Detailing Service 2023 Medications for osteoporosis: an update; ²VITAL Research Group *N Engl J Med* 2022;387:299-309 (PMID:35939577); ³BOLLAND *Lancet Diabetes Endocrinol* 2018;6:847-58 (PMID:30293909); ⁴CUMMINGS *N Engl J Med* 2022;387:368-70 (PMID:3593953); ⁵GALLAGHER *Lancet Diabetes Endocrinol* 2023;11:362-74 (PMID:37004709); ⁶BOLLAND *BMJ* 2016;355:i6201 (PMID:27881372)