

Clinical Summary: Vitamin D, Calcium, or Combined Supplementation for the Primary Prevention of Fractures in Community-Dwelling Adults

Population	Men and premenopausal women	>400 IU of vitamin D and >1000 mg of calcium in postmenopausal women	≤400 IU of vitamin D and ≤1000 mg of calcium in postmenopausal women
Recommendation	No recommendation. Grade: I (insufficient evidence)	No recommendation. Grade: I (insufficient evidence)	Do not recommend. Grade: D

Risk Assessment	Low bone mass, older age, and history of falls are major risk factors for incident osteoporotic fractures. Other risk factors for low bone mass and fractures include female sex, smoking, use of glucocorticoids, and use of other medications that impair bone metabolism (eg, aromatase inhibitors). Absolute fracture risk is very low in premenopausal women compared with postmenopausal women.
Preventive Medication	The recommendation against supplementation at lower doses was based on an overall assessment that supplementation at low doses provides no benefit. Evidence on the effect of supplementation on fractures at higher doses is conflicting, with some studies showing a reduction in certain fractures at higher doses and others showing no reduction or even an increase. More studies are needed to more clearly determine if supplementation with vitamin D, calcium, or both consistently prevents fractures. If future evidence shows a benefit, the magnitude of that benefit will need to be weighed against the magnitude of harms caused by supplementation (kidney stones).
Other Relevant USPSTF Recommendations	The USPSTF recommends against vitamin D supplementation to prevent falls in community-dwelling adults 65 years or older. The USPSTF recommends exercise interventions to prevent falls in community-dwelling older adults at increased risk for falls; multifactorial interventions may also be effective in some persons as well. The USPSTF recommends screening for osteoporosis in women 65 years or older and in younger women at increased risk. The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for vitamin D deficiency in asymptomatic adults.

For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, please go to <https://www.uspreventiveservicestaskforce.org>.