

FP Essentials

Call for Authors – October 2026

Bone Health in Older Adults

We are seeking an author or author group to write a manuscript for this edition of *FP Essentials* on the topic of bone health in older adults. This edition will cover four topics:

- Osteoporosis: Screening and Diagnosis
- Vitamin D and Calcium
- Osteoporosis: Pharmacologic Management
- Nonpharmacologic Management and Multimodal Fracture Prevention

The main text of the manuscript should be approximately 10,000 words in length, divided into four sections of approximately 2,500 words each, plus an abstract of approximately 200 words for each section. In addition, there should be key practice recommendations, a maximum of 15 tables/figures total, and up to 200 references to provide support for all recommendations and factual statements in the manuscript. References must be numbered sequentially by section, with each new section starting over at “1.”

This edition should focus on what is new in each topic and should answer the key questions listed for each section. Each section should begin with an illustrative case, similar to the examples provided, with modifications to emphasize key points; each case should have a conclusion that demonstrates resolution of the clinical situation. The references provided here include information that should be considered in preparation of this edition of *FP Essentials*. However, these should be used only as a starting point in identifying the most current guidelines and references to include in the edition.

Needs Assessment

Osteoporosis affects approximately 1 in 3 women and 1 in 5 men over age 50 worldwide,¹ causing over 2 million fractures annually in the US alone.² Despite this burden, osteoporosis remains widely underdiagnosed and undertreated, particularly in primary care settings. Evolving recommendations for osteoporosis screening, fracture risk assessment, vitamin D testing and supplementation, and pharmacologic therapy present ongoing challenges. This issue of *FP Essentials* will update family physicians with practical, evidence-based recommendations on osteoporosis screening and diagnosis, vitamin D and calcium supplementation, and pharmacologic and nonpharmacologic management to improve bone health and reduce fracture risk in older adults.

1. Morin SN, Leslie WD, Schousboe JT. Osteoporosis: A Review. *JAMA*. 2025 Sep 9;334(10):894-907.

2. Harris K, Zagar CA, Lawrence KV. Osteoporosis: Common Questions and Answers. *Am Fam Physician*. 2023 Mar;107(3):238-246.

Section 1: Osteoporosis: Screening and Diagnosis

Example Case

MR is a 58-year-old postmenopausal woman presenting for a routine wellness visit. She reached menopause at age 45 and has a BMI of 19.2 kg/m². She has a 20-year smoking history and drinks two glasses of wine per day. She does not take calcium or vitamin D supplements and has a sedentary lifestyle. She has never had a DXA scan. Her mother sustained a hip fracture at age 67. Based on her risk factor profile, you consider whether early bone density screening is indicated.

Key Questions to Consider

- What is osteoporosis and how prevalent is it in the US? How frequently is it detected (or suggested) on plain film radiographs?
- What is the definition of a fragility fracture and how can this be used to define osteoporosis without a T-score? What is the US incidence of fragility fractures? What are the morbidity and mortality associated with such fractures?
- What are the risk factors for primary and secondary osteoporosis? What medical conditions and medications are associated with loss of bone mineral density? What conditions and medications are associated with an increase in bone density or decreased risk of fracture?
- What racial and ethnic disparities exist in bone health and related outcomes in the US?
- What are the recommendations for osteoporosis screening in the US? Which patients should be screened before 65 years of age? What are the indications for screening men?
- When should clinical risk prediction tools (eg, Fracture Risk Assessment Tool [FRAX], Osteoporosis Self-Assessment Tool) be used to determine the need for osteoporosis screening? What tools are recommended and how accurate are they? What are their limitations?
- What is dual-energy X-ray absorptiometry (DXA) and how accurate is it? Which bones should be measured?
- How should patients prepare for DXA testing? Should they eat normally and avoid calcium and vitamin D supplements prior to testing? When is DXA unreliable or uninterpretable?
- How should DXA results be interpreted? What are the T-score and Z-score? What results are considered normal, and what results indicate osteoporosis or osteopenia? How should results be interpreted when bone densities of the spine and hip are markedly different? When should the FRAX calculator be used?
- In transgender individuals, how do osteoporosis screening guidelines, DXA interpretations (assigned sex at birth vs affirmed gender), and FRAX calculations differ due to long-term gender-affirming hormone therapy or history of pubertal suppression?
- How does DXA compare with other tests commonly used for community screening, such as peripheral DXA and quantitative ultrasound? What is a Trabecular Bone Score and what is the utility in primary care?
- What does a DXA scan cost? What are the requirements for Medicare coverage?
- How often should screening be repeated depending on the results?
- What evaluation should be performed following an osteoporosis diagnosis? What are the indications for vertebral imaging?

- What is the potential utility of other common imaging modalities such as chest radiographs, panoramic dental radiographs, and CT scans for detecting osteoporosis?
- What are the roles of deep learning- and machine learning-based prediction models for postmenopausal osteoporosis? How accurate are they? What are their limitations?

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Section 2: Vitamin D and Calcium

Example Case

RM is a 72-year-old male recently diagnosed with osteopenia (femoral neck T-score = -1.8) on screening DXA. His dietary calcium intake is estimated at 400 mg/day, primarily from dairy. His 25-hydroxyvitamin D level is 18 ng/mL. He takes no calcium or vitamin D supplements. You advise RM to increase dietary calcium through daily low-fat dairy and calcium-fortified foods, with a 500-mg calcium citrate supplement to reach a target of 1,200 mg/day. How should you advise RM to increase vitamin D intake, and are supplements needed?

Key Questions to Consider

- What are the physiologic roles of vitamin D and calcium in bone health and musculoskeletal function? How do these change with aging?
- What are the recommended daily intakes of vitamin D and calcium for older adults, including those with low bone density?
- What are the best dietary sources of vitamin D and calcium? How should physicians and patients estimate daily intake, and how does this affect supplementation recommendations?
- How well does sunlight exposure increase vitamin D levels in older adults? How much sun exposure is needed? How does sunscreen affect this?
- Which older adults should be evaluated for vitamin D or calcium deficiency? What tests should be performed? What defines deficiency?
- How should vitamin D and calcium deficiencies be corrected and subsequently maintained after correction? What dosing and frequency for vitamin D and calcium supplementation is preferred? What are the differences in bioavailability and side-effects between calcium supplementation formulations (eg, calcium citrate vs calcium carbonate), and when is each type preferred? When should laboratory measurements be repeated?
- What common health conditions and medications can affect absorption of vitamin D and calcium?
- What is the current evidence regarding the impacts of vitamin D and calcium supplementation on fracture risk in older adults?
- Does vitamin D supplementation reduce or increase fall risk in older adults? How has this evidence evolved?
- What are the potential harms of calcium supplementation, including nephrolithiasis and cardiovascular risk? What are the potential harms of vitamin D supplementation, including the risks of high-dose or bolus dosing?
- What practical counseling points should family physicians emphasize when discussing vitamin D and calcium with older adult patients?
- How should vitamin D and calcium recommendations be individualized for patients with osteoporosis or other medical conditions, including those receiving osteoporosis pharmacotherapy?

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<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/vitamin-d-calcium-or-combined-supplementation-for-the-primary-prevention-of-fractures-in-adults-preventive-medication>--update in progress as of 7/1/2026

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Section 3: Osteoporosis: Pharmacologic Management

Example Case

JT is a 72-year-old postmenopausal woman with known osteoporosis (femoral neck T-score = -3.1) who presents after sustaining a low-trauma vertebral compression fracture 3 months ago. She has a history of a prior distal radius fracture at age 66. She has never received pharmacologic treatment for osteoporosis. Her renal function is normal, and she has no history of cardiovascular disease. She takes calcium and vitamin D supplements daily. Given her high fracture risk, what is the most appropriate initial pharmacologic therapy for this patient?

Key Questions to Consider

- Which patients with osteoporosis should receive pharmacologic treatment? What treatment thresholds are recommended based on bone mineral density, fracture risk assessment, and history of fragility fractures?
- How should fracture risk be stratified to guide treatment selection? What are the criteria for very high fracture risk? What is goal-directed therapy in osteoporosis, and what are the limitations of this approach?
- What medications are available to treat osteoporosis? What is the difference between antiresorptive and anabolic medications?
- Consider using a figure or table(s) for the following:
 - Which medications are recommended as initial therapy for patients at a very high fracture risk? Where are these medications administered?
 - Which medications are recommended as initial therapy for patients with osteoporosis who do not meet criteria for very high fracture risk?
 - When should an intravenous bisphosphonate or another agent such as denosumab be considered instead of an oral bisphosphonate? Where are these medications administered?
 - When should second-line options such as calcitonin and raloxifene be considered?
 - What are treatment durations for each of the pharmacotherapies? Which specific medications require immediate initiation of bisphosphonate after completion or discontinuation?
 - How should family physicians individualize medication selection?
- Create a table to compare the recommended doses, routes of administration, dosing schedules, contraindications, adverse effects, and costs of available osteoporosis medications.
- How effective are various medications for reducing vertebral, hip, and overall fracture risk? Does their benefit persist, or does fracture risk increase after discontinuation? What is a key limitation of ibandronate compared to other bisphosphonates? What are rebound vertebral fractures, and how should their risk be mitigated?
- How should patients be monitored after pharmacologic therapy is initiated? When should DXA be repeated?
- Which patients are appropriate candidates for a bisphosphonate 'drug holiday'? What metrics (eg, FRAX scores, T-score, fracture history) can help determine this? When should a patient resume therapy?

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Section 4: Nonpharmacologic Management and Multimodal Fracture Prevention

Example Case

SK is a 68-year-old postmenopausal woman diagnosed with osteoporosis on DXA screening (lumbar spine T-score = -2.7). She has no history of fragility fractures. She began taking alendronate 6 months ago and takes calcium 600 mg and vitamin D 800 IU daily. Her dietary calcium intake is approximately 400 mg/day. She reports a sedentary lifestyle, occasional difficulty with balance, and a recent near-fall at home. She does not smoke and drinks alcohol socially. She asks what else she can do beyond medication to protect her bones and prevent fractures.

Key Questions to Consider

- Which nonpharmacologic interventions other than vitamin D and calcium supplementation are effective for older adults with osteoporosis?
- What role does dietary protein and overall nutrition play in maintaining bone health and reducing fracture risk in older adults?
- What types of exercise are most effective for improving bone strength, reducing falls, and preserving function? How should exercise be prescribed for patients with osteoporosis? What is the role of physical therapy and supervised exercise programs? What types of exercise/activity should be avoided in patients with osteoporosis?
- How can family physicians identify patients at increased risk for falls (eg, STEADI, Timed Up and Go)?
- What are the key components of a fall prevention strategy for older adults with osteoporosis, and how effective are these interventions?
- Which commonly prescribed medications increase fall risk or decrease bone mineral density, and how should they be addressed in patients with osteoporosis?
- What environmental and home safety modifications can reduce fall and fracture risk, and how should family physicians facilitate these assessments? What is the role of occupational therapy, physical therapy, and home health nursing?
- What is the clinical efficacy and cost-effectiveness of wearable hip protectors in reducing hip fracture risk, and how do these recommendations differ for community-dwelling adults versus patients in long-term care or inpatient settings?
- What modifiable lifestyle factors contribute to bone loss and fracture risk?
- How should spinal health and posture be addressed in patients with osteoporosis, especially patients with vertebral fractures or multiple low-trauma fractures?
- What are fracture liaison services, and what is the evidence for their effectiveness in secondary fracture prevention?
- What complementary and alternative interventions are effective for osteoporosis?
- How should nonpharmacologic and pharmacologic strategies be integrated into a comprehensive, multimodal fracture prevention plan?
- What is the role of shared decision-making and patient education in optimizing adherence to nonpharmacologic fracture prevention strategies?

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