RACGP
Royal Australian College *of* General Practitioners

osteoporosis australia

Osteoporosis risk assessment, diagnosis and management

Recommendations restricted to postmenopausal women and men aged >50 years

Practice tips	
Diagnosis	A minimal trauma fracture of the hip or spine in a person older than 50 years of age is presumptive of osteoporosis **(Recommendation 1 A)**. Treatment may be initiated without confirmation of low bone mineral density (BMD). Use BMD to guide management after fracture at other sites.
Suspected vertebral fracture	Perform a standard spine X-ray if height loss of ≥3 cm, kyphosis or unexplained episodes of back pain. If vertebral wedge or crush fractures are detected, perform BMD testing at the hip and spine.
Assessing absolute fracture risk	Use the Garvan Fracture Risk Calculator (www.garvan.org.au/bone-fracture-risk) or Fracture Risk Assessment Tool (FRAX) (www.shef.ac.uk/FRAX) to assess the need for treatment in individuals who do not clearly fit established criteria **(Recommendation 6 D)**. Calculator estimations assist, but do not replace clinical judgement.
Falls prevention	A full falls risk assessment should be conducted in any person who has fallen twice or more in the previous 12 months or is having difficulty with walking or balance. A multifaceted fall prevention program should be tailored to individual needs **(Recommendation 10 A)**.
Calcium and vitamin D supplementation	Routine supplementation in non-institutionalised individuals is not recommended. Those at risk of deficiency may benefit from 500–600 mg/day of elemental calcium. Calcium supplements are recommended for people taking osteoporosis treatments if dietary calcium intake is below 1300 mg/day **(Recommendation 14 C)** and vitamin D if serum 25(OH)D is below 50 nmol/L.
Exercise	Leisure walking, swimming and cycling do not improve bone density. Prescribe regular, varied, high-intensity resistance training and progressive balance training **(Recommendation 11 A)**. High-impact activities should be avoided by individuals at high risk of fracture. Avoid forward flexion and twisting in vertebral osteoporosis. Programs should be individualised and may require supervision.
Duration of therapy	If T-score remains below –2.5, and/or there are incident vertebral fractures, continue treatment. Reconsider therapy after 5–10 years in individuals with T-score ≥–2.5 and no recent fractures. Treatment should be restarted if there is continued bone loss or a further minimal trauma fracture **(Recommendation 17 D)**.
Repeat BMD testing	Repeat testing is generally not required for confirmed osteoporosis, unless a medication change or interruption is planned. Test a minimum of two years apart, less frequently in low-risk individuals. Annual scans may be needed in high-risk individuals (eg those on glucocorticoid therapy).
Medication-related osteonecrosis of the jaw (MRONJ)	The benefits of osteoporosis treatment for those at high risk of fracture far outweigh the risk of MRONJ (between <1 and 10 cases per 10,000 patients). Optimise oral hygiene and treat dental disease prior to therapy. There is insufficient evidence to interrupt therapy for minor oral surgery, or to measure bone turnover markers to predict onset of MRONJ.

This guide is based on *Osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age, 2nd edition.* For the full list of evidence-based recommendations, explanation of grades, practice tips and background information, access the full guideline from Osteoporosis Australia **osteoporosis.org.au** or The Royal Australian College of General Practitioners **racgp.org.au**

Information for patients	Information for healthcare professionals
Osteoporosis Australia **osteoporosis.org.au**	Osteoporosis Australia **osteoporosis.org.au**
Know Your Bones **knowyourbones.org.au**	NPS MedicineWise **nps.org.au**
Healthy Bones Australia **healthybonesaustralia.org.au**	Therapeutic guidelines **tg.org.au**

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Minimal trauma hip or vertebral fracture

DXA to establish baseline BMD – recommended but not essential

Initiate treatment with anti-osteoporosis medication
- Bisphosphonates (Grade A)
- Denosumab (Grade A women, Grade B men)
- Oestrogen replacement therapy (Grade A)

Address lifestyle risk factors
- Implement falls reduction strategies (Grade A)
- Encourage balance training and resistance exercise (Grade A)
- Modify diet, smoking and alcohol intake (Grade C)
- Provide education and psychosocial support (Grade D)

Minimal trauma fracture at any other site*

DXA of spine and proximal femur (Grade A)

- T-score ≤–1.5 → **Initiate treatment with anti-osteoporosis medication**
  - Bisphosphonates (Grade A)
  - Denosumab (Grade A women, Grade B men)
  - Oestrogen replacement therapy (Grade A)
- T-score >–1.5 → **Consider specialist referral**

Address lifestyle risk factors
- Implement falls reduction strategies (Grade A)
- Encourage balance training and resistance exercise (Grade A)
- Modify diet, smoking and alcohol intake (Grade C)
- Provide education and psychosocial support (Grade D)

No history of minimal trauma fracture

Aged ≥70 years‡ (Grade D Consensus)

Assess risk factor profile (Grade B) Major risk factors that qualify for MBS reimbursement of DXA†

Non-modifiable
- Parental history of fracture

Modifiable and lifestyle
- Premature menopause†
- Hypogonadism†
- Multiple falls
- Low physical activity or immobility
- Low body weight
- Low muscle mass and strength
- Poor balance
- Protein or calcium undernutrition
- Smoking
- Alcohol >2 standard drinks/day
- Vitamin D insufficiency

Diseases or conditions§
- Rheumatoid arthritis†
- Hyperthyroidism†
- Hyperparathyroidism†
- Chronic kidney disease†
- Chronic liver disease†
- Coeliac disease or malabsorption†
- Diabetes mellitus
- Myeloma or MGUS
- Organ transplant
- Bone marrow transplant
- HIV infection
- Depression

Medications (large effect)
- Glucocorticoids†‖ (>3 months≥7.5 mg/day)
- Excess thyroid hormone replacement
- Aromatase inhibitors
- Anti-androgen therapy†

Medications (modest effect)
- SSRIs
- Anti-psychotics
- Thiazolidenediones
- Anti-epileptic medications
- PPIs

DXA of spine and proximal femur (Grade A)

T-score ≤–2.5?
- Yes → **Initiate treatment with anti-osteoporosis medication**
  - Bisphosphonates (Grade A)
  - Denosumab (Grade A women, Grade B men)
  - Oestrogen replacement therapy (Grade A)
- No → **Estimate absolute fracture risk** Garvan Fracture Risk Calculator or FRAX (Grade D Consensus)
  - **High 10-year risk of fracture** Hip fracture >3%, any fracture >20% OR **T-score ≤–2.5** → **Initiate treatment with anti-osteoporosis medication**
    - Bisphosphonates (Grade A)
    - Denosumab (Grade A women, Grade B men)
    - Oestrogen replacement therapy (Grade A)
  - Low risk of fracture → Treatment not recommended

Address lifestyle risk factors
- Implement falls reduction strategies (Grade A)
- Encourage balance training and resistance exercise (Grade A)
- Modify diet, smoking and alcohol intake (Grade C)
- Provide education and psychosocial support (Grade D)

BMD Bone mineral density
DXA Dual energy X-ray absorptiometry
HIV Human immunodeficiency virus
MBS Medicare Benefits Schedule
MGUS Monoclonal gammopathy of undetermined significance
PPIs Proton pump inhibitors
SSRIs Selective serotonin reuptake inhibitor

* Excluding fingers and toes
† Qualifies for MBS reimbursement of BMD testing
‡ Consensus recommendation. The MBS reimburses costs for measurement of BMD testing in any person aged ≥70 years
‖ See other guidelines specific to glucocorticoid treatment for more information and recommendations regarding glucocorticoid use and risk of osteoporosis and fracture
§ Treatment of an underlying condition may improve bone strength

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