# 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 tailor 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 D) 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 minor 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 graded recommendations, 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

| 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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Recommendations restricted to postmenopausal women and men aged >50 years

**Minimal trauma hip or vertebral fracture**

- DXA of spine and proximal femur (Grade A)

**Minimal trauma fracture at any other site***

- T-score ≤–1.5
- T-score >–1.5

**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† (≥7.5 mg/day)
- Excess thyroid hormone replacement
- Aromatase inhibitors
- Anti-androgen therapy†

**Medications (modest effect)**

- SSRIs
- Anti-psychotics
- Thiazolidinediones
- Anti-epileptic medications
- PPIs

**DXA of spine and proximal femur (Grade A)**

- T-score ≤–2.5?

**Yes**

- 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)
- Strontium ranelate – second line only (Grade A)

**No**

- Low risk of fracture

**Treatment not recommended**

**Where appropriate**

- Implement falls reduction strategies (Grade A)
- Encourage exercise participation (Grade A)
- Modify diet, smoking and alcohol intake (Grade C)
- Provide education and psychosocial support (Grade D)

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**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