### Osteoporosis quick reference guide

#### Who should be assessed for osteoporosis?

**Major risk factors**
- Age ≥ 65 years
- Vertebral compression fracture
- Fragility fracture after age 40
- Family history of osteoporotic fracture (especially maternal hip fracture)
- Systemic glucocorticoid therapy > 3 months
- Malabsorption syndrome
- Primary hyperparathyroidism
- Propensity to fall
- Osteopenia apparent on x-ray film
- Hypogonadism
- Early menopause (before age 45)

**Minor risk factors**
- Rheumatoid arthritis
- Past history of hyperthyroidism
- Chronic anticonvulsant therapy
- Low dietary calcium intake
- Smoker
- Excessive alcohol intake
- Excessive caffeine intake
- Weight < 57 kg
- Weight loss > 10% of weight at age 25
- Chronic heparin therapy

Note: Risk factors are additive and should not be considered independently of one another. Postmenopausal women and men over age 50 with at least 1 major or 2 minor risk factors should undergo testing for BMD.

#### Who should be tested for osteoporosis?

**Height loss* — Kyphosis**
- Spine radiography

**History of low-trauma fracture confirmed by radiography?**
- Age
  - < 65 yr
  - ≥ 65 yr

**Long-term moderate- to high-dose glucocorticoids?†**
- NO
- YES

**Measure BMD if available**
- Clinical and risk factor evaluation with 1 major or 2 minor risk factors
- Evaluate for treatment
- Repeat BMD to evaluate treatment response (at 1–2 yrs)
- Consider repeat BMD testing at 2–3 yrs to monitor changing risk

**Spine radiography**
- History of low-trauma fracture confirmed by radiography?
- Age
  - < 65 yr
  - ≥ 65 yr

**NO**
- Measure BMD if available
- Evaluate for treatment
- Repeat BMD to evaluate treatment response (at 1–2 yrs)
- Consider repeat BMD testing at 2–3 yrs to monitor changing risk

**YES**
- Clinical and risk factor evaluation with 1 major or 2 minor risk factors
- Evaluate for treatment
- Repeat BMD to evaluate treatment response (at 1–2 yrs)
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*4 cm historical height loss; 2 cm prospective height loss. † Low to moderate: 2.5–7.5 mg prednisone/day; moderate to high: > 7.5 mg prednisone/day. ‡ Central DXA = spine and hip. ¶ BMD classification as defined by the World Health Organization: Normal (T-score between +2.5 and –1.0 inclusive); Osteopenia (T-score between –1.0 and –2.5); Osteoporosis (T-score ≤ –2.5); Severe osteoporosis (T-score ≤ –2.5 plus fragility fracture)

Adapted from Brown JP et al. Clinical practice guidelines for the diagnosis and management of osteoporosis in Canada. CMAJ 2002;167(10 suppl):S1-S34. With permission from the publisher
Who is at high risk for fracture?

- Low BMD
- Prior fragility fracture after age 40*

*With a prior fragility fracture after age 40, the risk of fracture increases by 1.5–9.5 times, depending on age at assessment and number and site of previous fractures

Who should undergo fracture risk assessment and be treated for osteoporosis?

- Long-term glucocorticoids*
- Fragility fracture after age 40
- Nontraumatic vertebral compression deformities
- Clinical risk factors (1 major or 2 minor)
- Low BMD by DXA (T-score at or below −2.5)

Start bisphosphonate therapy

Obtain BMD by DXA for follow-up

+ Low BMD by DXA (T-score below −1.5)†

Consider therapy

Repeat BMD by DXA after 1 or 2 years

*≥ 7.5 mg prednisone for more than 3 months. † We have arbitrarily chosen T-score below −1.5; nontraumatic vertebral compression deformities; personal history of fragility fracture after age 40; clinical risk factors

What is the best treatment for osteoporosis in postmenopausal women?

**Nonpharmacologic treatment and preventive measures**

- Calcium: 1500 mg/day
- Vitamin D: 800 IU/day
- Physical activity: ≥ 30 min at least 3 times a week

**Without fragility fracture***

Vasomotor symptoms

YES

HRT

Alendronate

Risedronate

Raloxifene

Calcitonin

**With fragility fracture***

NO

Calculate BMD by DXA after 1 or 2 years

 Repeat BMD by DXA after 1 or 2 years

Calcitonin

Etidronate

HRT

++Low BMD by DXA (T-score below −1.5)††

Consider therapy

Repeat BMD by DXA after 1 or 2 years

**1ST CHOICE**

- Alendronate
- Risedronate
- Raloxifene
- Calcitonin

**2ND CHOICE**

- Alendronate
- Risedronate
- HRT

*Mainly vertebral fracture. Only alendronate and risedronate and recently continuous estrogen-progesterone have been shown to decrease hip fracture risk

This quick reference guide was produced with support from the Ontario Ministry of Health & Long-Term Care. The content and conclusions are those of the authors and no endorsement by the Ministry is intended or should be inferred.