Osteoporosis Canada

Ostéoporose Canada

Quick Reference Guide

2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada

This guide has been developed to provide healthcare professionals with a quick-reference summary of the most important recommendations from the **2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada.** For more detailed information, consult the full guideline document at www.osteoporosis.ca.

Recommendations for Clinical Assessment

Assessment	Recommended Elements of Clinical Assessment
History	☐ Identify risk factors for low BMD, fractures and falls: ☐ Prior fragility fractures ☐ Parental hip fracture ☐ Glucocorticoid use ☐ Current smoking ☐ High alcohol intake (≥3 units per day) ☐ Rheumatoid arthritis ☐ Inquire about falls in the previous 12 months ☐ Inquire about gait and balance
Physical Examination	☐ Measure weight (weight loss of >10% since age 25 is significant) ☐ Measure height annually (prospective loss > 2cm) (historical height loss > 6 cm) ☐ Measure rib to pelvis distance ≤ 2 fingers' breadth ☐ Measure occiput-to-wall distance (for kyphosis) > 5cm — Screening for vertebral fractures ☐ Assess fall risk by using Get-Up-and-Go Test (ability to get out of chair without using arms, walk several steps and return)

Recommended Biochemical Tests for Patients Being Assessed for Osteoporosis

- ☐ Calcium, corrected for albumin
- ☐ Complete blood count
- ☐ Creatinine
- ☐ Alkaline phosphatase
- ☐ Thyroid stimulating hormone (TSH)
- ☐ Serum protein electrophoresis for patients with vertebral fractures
- ☐ 25-hydroxy vitamin D (25-OH-D)*

**Should be measured after 3-4 months of adequate supplementation and should not be repeated if an optimal level ≥75 nmol/L is achieved.*

Indications for BMD Testing

Older Adults (age ≥ 50 years)

- All women and men age ≥ 65 years
- Menopausal women, and men aged 50-64 years with clinical risk factors for fracture:
  - Fragility fracture after age 40
  - Prolonged glucocorticoid use†
  - Other high-risk medication use*
  - Parental hip fracture
  - Vertebral fracture or osteopenia identified on X-ray
  - Current smoking
  - High alcohol intake
  - Low body weight (< 60 kg) or major weight loss (>10% of weight at age 25 years)
  - Rheumatoid arthritis
  - Other disorders strongly associated with osteoporosis such as primary hyperparathyroidism, type 1 diabetes, osteogenesis imperfecta, uncontrolled hyperthyroidism, hypogonadism or premature menopause (< 45 years), Cushing's disease, chronic malnutrition or malabsorption, chronic liver disease, COPD and chronic inflammatory conditions (e.g., inflammatory bowel disease)

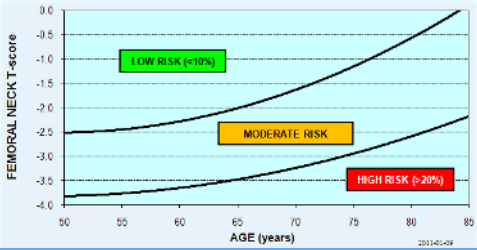
Younger Adults (age < 50 years)

- Fragility fracture
- Prolonged use of glucocorticoids*
- Use of other high-risk medications†
- Hypogonadism or premature menopause
- Malabsorption syndrome
- Primary hyperparathyroidism
- Other disorders strongly associated with rapid bone loss and/or fracture

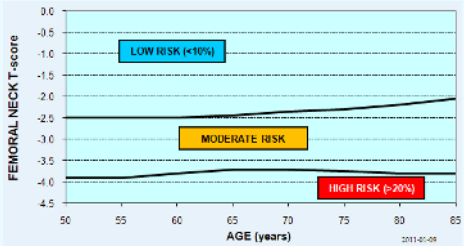
*†≥3 months in the prior year at a prednisone equivalent dose ≥7.5 mg daily; *e.g., aromatase inhibitors, androgen deprivation therapy.*

Assessment of Basal 10-year Fracture Risk: 2010 CAROC System

Women



Men



Note: 1) Fragility fracture after age 40 or recent prolonged systemic glucocorticoid use increases 2010 CAROC basal risk by one category (i.e., from low to moderate or moderate to high).
2) Using this model in a patient on therapy only reflects the theoretical risk of a hypothetical patient who is treatment naïve and does not reflect the risk reduction associated with therapy.
3) Femoral neck T-score should be derived from NHANES III Caucasian women reference database.
4) Individuals with a fragility fracture of the vertebra or hip, or with more than one fragility fracture are at high fracture risk.

Adapted from Papaioannou A et al. Clinical practice guidelines for the diagnosis and management of osteoporosis in Canada. CMAJ 2010 http://www.cmaj.ca/cgi/doi/10.1503/cmaj.100771.

Integrated Management Model

Encourage **basic bone health** for all individuals including: regular active weight bearing exercise, calcium (diet and supplements) 1200 mg daily, vitamin D: 800 - 2000 IU daily after age 50 (400 - 1000 for those <age 50 at low risk), and fall prevention strategies.

Age <50

- Fragility fractures
- High-risk medication use
- Hypogonadism
- Malabsorption syndromes
- Chronic inflammatory conditions
- Primary hyperparathyroidism
- Other disorders strongly associated with rapid bone loss and/or fractures

Age 50 - 64

- Fragility fracture after age 40
- Prolonged glucocorticoid or other high-risk medication use
- Parental hip fracture
- Vertebral fracture or osteopenia identified on X-ray
- High alcohol intake or current smoking
- Low body weight (< 60 kg) or major weight loss (>10% of weight at age 25)
- Other disorders strongly associated with osteoporosis

Age ≥65

- All men and women

Initial BMD Testing

Fracture Risk Assessment

Low Risk
10-year fracture risk <10%

Unlikely to benefit from pharmacotherapy
Reassess risk in 5 years

Moderate Risk
10-year fracture risk 10 - 20%

Lateral thoracolumbar x-ray (T4-L4) or vertebral fracture analysis (VFA) may aid in decision-making by identifying vertebral fractures

High Risk
10-year fracture risk > 20%
or
Prior fragility fracture of hip or spine
or
More than one fragility fracture

Always consider patient preference

Factors that Warrant Consideration for Pharmacological Therapy:

- ☐ Additional vertebral fracture(s) identified on VFA or lateral spine X-ray
- ☐ Previous wrist fracture in individuals older than age 65 or those with T-score ≤ -2.5
- ☐ Lumbar spine T-score much lower than femoral neck T-score
- ☐ Rapid bone loss
- ☐ Men receiving androgen-deprivation therapy for prostate cancer
- ☐ Women receiving aromatase-inhibitor therapy for breast cancer
- ☐ Long-term or repeated systemic glucocorticoid use (oral or parenteral) that does not meet the conventional criteria for recent prolonged systemic glucocorticoid use
- ☐ Recurrent falls defined as falling 2 or more times in the past 12 months
- ☐ Other disorders strongly associated with osteoporosis, rapid bone loss or fractures

Repeat BMD in 1-3 years and reassess risk

Good evidence of benefit from pharmacotherapy

First Line Therapies with Evidence for Fracture Prevention in Postmenopausal Women*

Type of Fracture	Antiresorptive Therapy						Bone Formation Therapy
	Bisphosphonates			Denosumab	Raloxifene	Estrogen** (Hormone Therapy)	Teriparatide
	Alendronate	Risedronate	Zoledronic Acid				
Vertebral	✓	✓	✓	✓	✓	✓	✓
Hip	✓	✓	✓	✓	–	✓	–
Non-vertebral†	✓	✓	✓	✓	–	✓	✓

† In Clinical trials, non-vertebral fractures are a composite endpoint including hip, femur, pelvis, tibia, humerus, radius and clavicle.
* For postmenopausal women, ✓ indicates first line therapies and Grade A recommendation. For men requiring treatment, alendronate, risedronate, and zoledronic acid can be used as first-line therapies for prevention of fractures (Grade D).
** Hormone therapy (estrogen) can be used as first-line therapy in women with menopausal symptoms.

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