

Osteoporosis Canada

Ostéoporose Canada

## Executive Summary

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

#### Introduction

Osteoporosis Canada's **2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada** focus on:

- The clinical impact of fragility fractures
- Assessment and management of women and men at high risk for fragility fracture
- Integration of ten-year absolute fracture risk prediction into an overall management approach
- The guideline authors emphasize that there is currently a large gap between the optimal practices and treatments that they recommend and those that are currently being provided to Canadians with osteoporosis. These guidelines are part of a concerted effort to close this gap
- The target readership is meant to be broad, encompassing all healthcare professionals (e.g., physicians, nurses, pharmacists) and healthcare policy makers who have an interest in the management of osteoporosis
- Following is a point-form summary of the guidelines' recommendations. For more information, consult the full guideline document at [www.osteoporosis.ca](http://www.osteoporosis.ca)

#### Fragility Fractures and Care Gaps

- Definition of fragility fracture: fracture occurring spontaneously or following minor trauma such as a fall from standing height or less
- Consequences of fracture: increased risk of subsequent fracture, hospitalization / institutionalization and death; decreased quality of life; increased economic burden on healthcare system
- Fewer than 20% of patients with fragility fracture receive anti-osteoporosis treatment post fracture
- High proportion of individuals with fragility fractures have bone mineral density (BMD) in the low bone mass range; a missed opportunity to prevent future fractures due to over-reliance on BMD

#### Clinical Approach to Osteoporosis — Recommendations

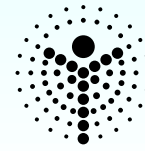
1. Individuals 50 years and older who have experienced a fragility fracture should be assessed and considered for treatment.
2. Recommended Elements in the History and Physical Examination: Identify risk factors for low BMD, future fractures and falls: prior fragility fractures, parental hip fracture, glucocorticoid use, current smoking, high alcohol intake, rheumatoid arthritis, inquire about falls in the previous 12 months and inquire about gait and balance, accurate height and weight measurement; Get-Up-and-Go Test.
3. Investigations:
  - a. For all patients with osteoporosis: calcium corrected for albumin, complete blood count, creatinine, alkaline phosphatase, and thyroid-stimulating hormone.
  - b. For individuals being treated with pharmacologic therapy for osteoporosis, with recurrent fractures, with bone loss despite osteoporosis treatment, or with co-morbid conditions that affect vitamin D absorption or action: measurement of serum 25-OH-D\*.
  - c. For those with vertebral fractures: serum protein electrophoresis.
  - d. In selected patients based on clinical assessment: additional biochemical testing to rule out secondary causes of osteoporosis.
  - e. If clinical evidence is suggestive of a vertebral fracture: lateral thoracic and lumbar spine radiographs.

#### Key Changes from the 2002 Guidelines<sup>1</sup>

- 10-year fracture risk prediction tools incorporate clinical risk factors beyond BMD for improved clinical decision making:
  - **CAROC or FRAX**
- Increased focus on the clinical impact of fragility fractures
- Increased focus on the care gap that exists in the treatment of at-risk individuals
- Higher daily vitamin D supplementation (D3)
  - 400 – 1000 IU for individuals < 50 years
  - 800 – 2000 IU for individuals ≥ 50 years
- Lower daily calcium intake (from all sources): 1200 mg
- Updated list of pharmacologic therapies for fracture prevention

1. Brown JP, Josse RG, *et al.* CMAJ. 2002; 167(10 Suppl):S1-S4

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



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### Fracture Risk Assessment -- Recommendations

1. Initiation of pharmacologic treatment for osteoporosis should be based on an assessment of ten-year absolute fracture risk using a validated fracture prediction tool that incorporates BMD and clinical risk factors.
  - a. The Canadian WHO Fracture Risk Assessment Tool (FRAX) and the Canadian Association of Radiologist and Osteoporosis Canada (CAROC) risk assessment systems can be used in Canada at the present time, since they have been validated in a Canadian population.
    - For purposes of BMD reporting, CAROC is the preferred national risk assessment system at the present time
    - For BMD in these systems, only the femoral neck T-score should be used
  - b. All individuals with a T-score of the spine or hip  $\leq -2.5$  should be considered as having at least moderate risk of osteoporotic fractures.

### Strategies for Fracture Prevention

1. Vitamin D and Calcium
  - a. Adequate vitamin D status, in addition to calcium from diet and supplements (total 1200 mg daily), is essential for the prevention and treatment of osteoporosis.
  - b. In healthy adults < 50 years old, routine vitamin D supplementation (D3) 400 - 1000 IU (10 - 25 mcg) per day is recommended. Serum 25-OH-D should not be measured.
  - c. Adults over 50 years old are at moderate risk for vitamin D deficiency. Supplementation with at least 800 – 1000 IU (20 – 25 mcg) of vitamin D3 daily is recommended. To achieve optimal vitamin D status, supplementation greater than 1000 IU (25 mcg) per day may be required. Daily doses up to 2000 IU (50 mcg) are safe and do not require monitoring.
  - d. In individuals receiving pharmacologic therapy for osteoporosis, measurement of serum 25-OH-D should follow three to four months of an adequate vitamin D supplementation dose and should not be repeated if an optimal level (25-OH-D  $\geq 75$  nmol/L) is achieved.
2. Other Non-pharmacologic Therapies
  - a. For those with or at risk for osteoporosis: appropriate resistance training and/or weight-bearing aerobic exercise.
  - b. For those with vertebral fractures: directed core stability exercises.
  - c. For those at risk of falls: exercises that focus on balance (e.g., Tai chi, balance and/or gait training).
  - d. For those in long-term care at high risk: use of hip protectors.

### Pharmacotherapy

1. Pharmacotherapy should be offered to patients at high risk (> 20% probability for major osteoporotic fracture over 10 years).
2. Fragility fracture of the hip or vertebra, or more than one fragility fracture event, constitutes a high risk for future fracture and such individuals should be offered pharmacologic therapy.
3. For those at moderate risk (10% – 20% probability for major osteoporotic fracture over 10 years), lateral radiographs or vertebral fracture assessment (VFA) of the thoracolumbar spine is recommended for further risk stratification and to aid in clinical decision-making regarding pharmacologic interventions.
4. For those at moderate fracture risk, patient preference and clinical risk factors that are not already incorporated in the risk assessment system should be used to guide pharmacologic management decisions.
5. For menopausal women requiring osteoporosis treatment:
  - a. Alendronate, denosumab, risedronate, and zoledronic acid can be used as first-line therapies for prevention of hip, non-vertebral, and vertebral fractures.
  - b. Teriparatide can be used as a first-line therapy for prevention of non-vertebral and vertebral fractures.
  - c. Raloxifene can be used as a first-line therapy for prevention of vertebral fractures.
  - d. Hormone therapy can be used as a first-line therapy for prevention of hip, non-vertebral, and vertebral fractures among women who also require treatment for vasomotor symptoms.
  - e. Calcitonin or etidronate can be considered for prevention of vertebral fractures among those intolerant of first-line therapies.
6. For men requiring osteoporosis treatment, alendronate, risedronate, and zoledronic acid can be used as first-line therapies for prevention of fractures.
7. Clinicians should avoid prescribing more than one anti-resorptive agent concurrently for fracture reduction.
8. Individuals at high risk for fracture should continue osteoporosis therapy without a drug holiday.
9. Potential benefits and risks of the prescribed agent should be discussed with each patient prior to initiating therapy to support informed decision-making.