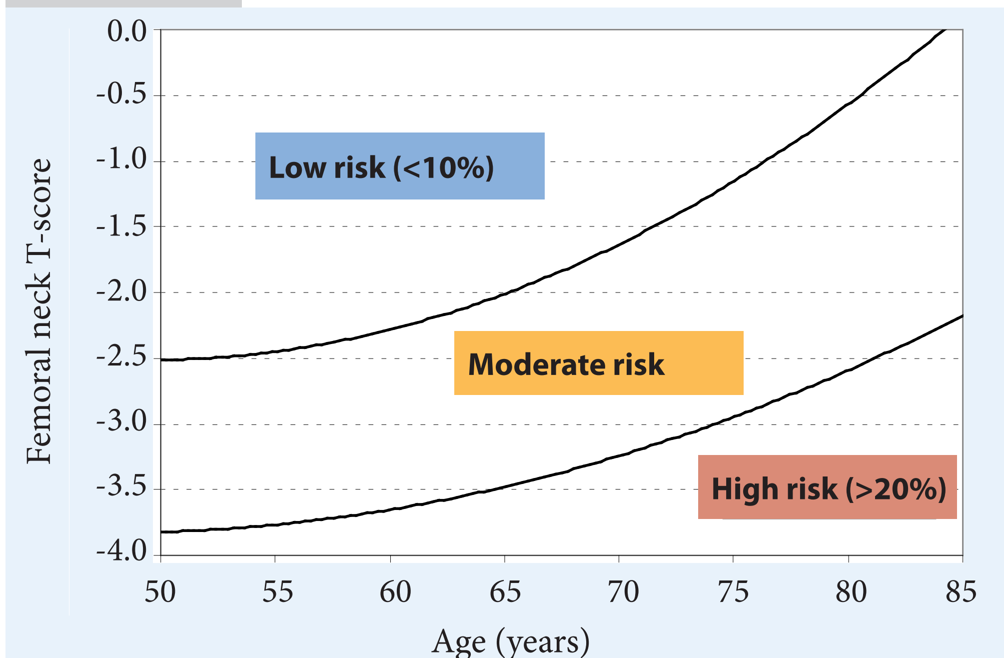
University of Toronto
Centre of Excellence in Skeletal Health Assessment



# Assessment of basal 10-year fracture risk: 2010 CAROC* system

*Canadian Association of Radiologists and Osteoporosis Canada

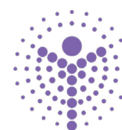
## Women




| Age | Low risk | Moderate risk | High risk |
|---|---|---|---|
| 50 | above -2.5 | -2.5 to -3.8 | below -3.8 |
| 55 | above -2.5 | -2.5 to -3.8 | below -3.8 |
| 60 | above -2.3 | -2.3 to -3.7 | below -3.7 |
| 65 | above -1.9 | -1.9 to -3.5 | below -3.5 |
| 70 | above -1.7 | -1.7 to -3.2 | below -3.2 |
| 75 | above -1.2 | -1.2 to -2.9 | below -2.9 |
| 80 | above -0.5 | -0.5 to -2.6 | below -2.6 |
| 85 | above +0.1 | +0.1 to -2.2 | below -2.2 |

1. The T-score for the femoral neck should be derived from the National Health and Nutrition Examination Survey III reference database for Caucasian women.
2. Using this model in a patient on therapy only reflects the theoretical risk of a hypothetical patient who is treatment naive and does not reflect the risk reduction associated with therapy.
3. Fragility fracture after age 40 or recent prolonged systemic glucocorticoid use increases 10-year fracture risk by one category (i.e., from low to moderate, or moderate to high). When both factors are present, the patient is automatically considered to be high risk, regardless of BMD.
4. Individuals with a fragility fracture of the vertebra or hip, or with more than one fragility fracture, are automatically considered to be in the high 10-year fracture risk category.
5. Individuals with a T-score for the lumbar spine or total hip ≤ -2.5 should be considered to have at least moderate risk.
6. Some individuals who are at moderate risk of fracture may benefit from pharmacologic therapy. Patient preference and a careful clinical evaluation to identify additional risk factors should be used to guide pharmacologic therapy. The following factors warrant consideration for pharmacologic therapy: (a) lumbar spine BMD less than femoral neck BMD by ≥ 1 standard deviation; (b) age ≥ 65 with a prior wrist fracture; (c) aromatase inhibitors or androgen deprivation therapy; (d) low dose corticosteroid therapy; (e) recurrent falls.

Papaioannou A, Morin S, Cheung AM, et al. 2010 clinical practice guidelines for the diagnosis and management of osteoporosis in Canada: summary. *CMAJ* 2010;182:1864-73.



Osteoporosis Canada
Ostéoporose Canada

CESHA
Centre of Excellence in Skeletal Health Assessment

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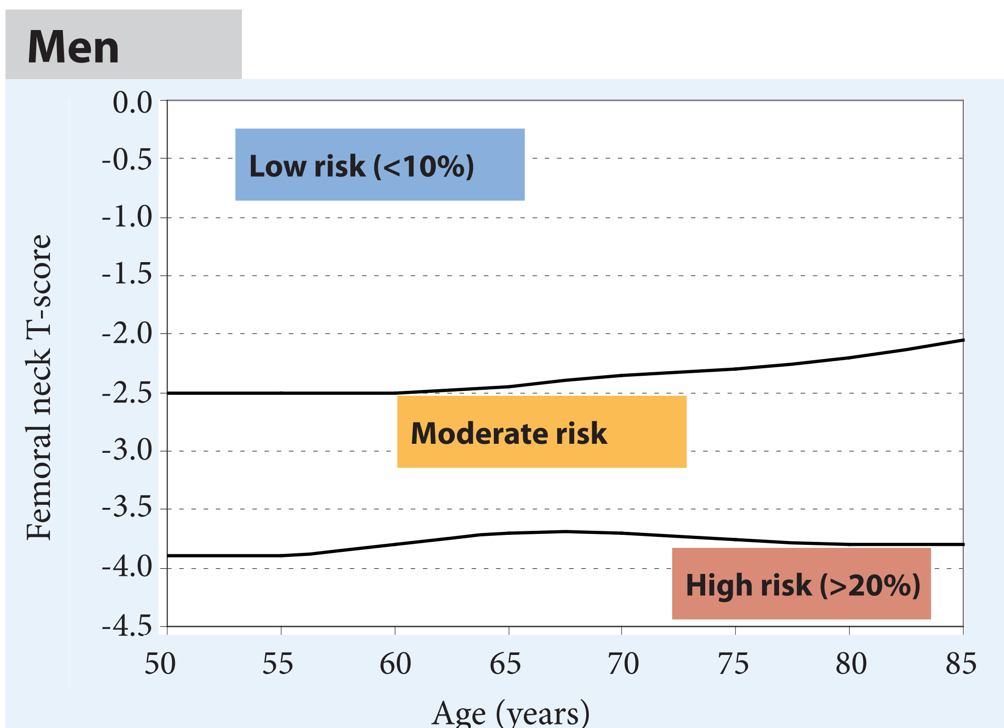
## Men




| Age | Low risk | Moderate risk | High risk |
|---|---|---|---|
| 50 | above -2.5 | -2.5 to -3.9 | below -3.9 |
| 55 | above -2.5 | -2.5 to -3.9 | below -3.9 |
| 60 | above -2.5 | -2.5 to -3.7 | below -3.7 |
| 65 | above -2.4 | -2.4 to -3.7 | below -3.7 |
| 70 | above -2.3 | -2.3 to -3.7 | below -3.7 |
| 75 | above -2.3 | -2.3 to -3.8 | below -3.8 |
| 80 | above -2.1 | -2.1 to -3.8 | below -3.8 |
| 85 | above -2.0 | -2.0 to -3.8 | below -3.8 |

1. The T-score for the femoral neck should be derived from the National Health and Nutrition Examination Survey III reference database for Caucasian women.
2. Using this model in a patient on therapy only reflects the theoretical risk of a hypothetical patient who is treatment naive and does not reflect the risk reduction associated with therapy.
3. Fragility fracture after age 40 or recent prolonged systemic glucocorticoid use increases 10-year fracture risk by one category (i.e., from low to moderate, or moderate to high). When both factors are present, the patient is automatically considered to be high risk, regardless of BMD.
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