

Who should receive bone mineral density testing?

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Clinical question

What is the most efficient way to determine which patients are at a high risk of osteoporosis and require bone mineral density (BMD) testing?

Bottom line

The Osteoporosis Self-Assessment Tool (OST) is simple and quick, and predicts osteoporosis as reliably as other more complicated instruments. It is a reasonable screening tool to identify those who would benefit from BMD testing.

Evidence

A study of 860 postmenopausal Asian women examined 11 risk factors to predict osteoporosis¹:

- Multiple risk factors had minimal value over age and weight alone.
- The OST was developed based on weight and age.


Eight systematic reviews were conducted from 2007 to 2015, with up to 108 studies and 208 738 patients evaluating more than 9 tools to assess the risk of osteoporosis or fractures.²⁻⁹

- The OST performed at least as well as other tools.²⁻⁹ For example:
 - The OST performs moderately well at identifying femoral neck osteoporosis (sensitivity 89%, specificity 41%) in postmenopausal white women.⁹
- Tools with fewer risk factors (eg, OST) predict osteoporosis as well as or better than those with more factors.^{3,4,7-9}
 - No tool was clearly superior.^{3,4,8}
- Unlike other tools to assess the risk of osteoporosis, the OST has been validated in both sexes and in several races.^{6,9}
- The included studies had methodologic limitations.²⁻⁹

Context

- The 2010 Osteoporosis Canada guidelines recommend detailed history taking and focused physical examinations for all patients aged 50 to 64 years, including assessment of 10 different risk factors for osteoporosis.¹⁰
- The time required to fully satisfy preventive recommendations is prohibitive.
 - For example, physicians need 7.4 hours per working day to provide preventive services alone.¹¹
- Application of the OST is simple: weight (in kg) minus age (in years).
 - If the score is less than 10, there is an increased risk of osteoporosis and BMD testing is warranted.
 - If the score is 10 or greater, there is a low risk (<5%) of osteoporosis and BMD testing is not required.

Implementation

For practices with organized screening programs, the OST can be done at the administrative level. Websites¹²⁻¹⁴ and charts¹⁵ are available to help with OST screening. A simplified version uses weight (in kg) minus age (in years) and if the score is 10 or greater, then the person has a low risk of osteoporosis. Patients should weigh more than their age by at least 10 kg to have a low risk. For example, a 55-year-old woman weighing 70 kg has an OST score of $70 - 55 = 15$. She has a low risk of osteoporosis and does not need BMD testing. A 60-year-old woman weighing 60 kg has an OST score of $60 - 60 = 0$. She has an increased risk of osteoporosis and should be offered BMD testing. 

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The opinions expressed in Tools for Practice articles are those of the authors and do not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.

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