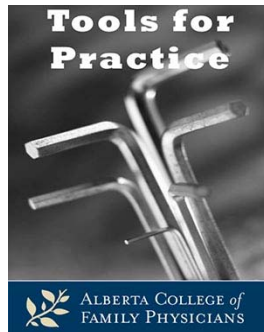


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Screening for Osteoporosis – Who Should Receive Bone Mineral Density Testing?

Clinical Question: What is the most efficient way to determine which patients are at high risk of osteoporosis and require further testing (Bone Mineral Density (BMD))?

Evidence:

- Study of 860 postmenopausal Asian women examined 11 risk factors to predict osteoporosis:¹
 - Multiple risk factors had minimal value over age and weight alone
 - A formula of age and weight was developed and called the Osteoporosis Self-Assessment Tool (OST)
- 4 systematic reviews 2007-2010, with up to 36 studies and 72,315 postmenopausal women, examined the OST and other tools to assess the risk of osteoporosis:²⁻⁶
 - OST performs at least as well as others.²⁻⁶ Specifically, OST performs
 - Moderately well identifying femoral neck osteoporosis (sensitivity 92%, specificity 39%).²
 - Not as well identifying lumbar spine osteoporosis (sensitivity 84%, specificity 38%).²
 - Tools with fewer risk factors (like OST) predict osteoporosis as well as or better than those with more risk factors.^{3,4}
 - No tool was clearly superior.^{3,4}
 - Unlike other tools to assess the risk of osteoporosis, OST has been validated in both sexes and a variety of races.⁶
 - There were a number of methodological limitations of included studies.

Context:

- 2010 Osteoporosis Canada guidelines recommend detailed history and focused physical examination for all patients 50-64 years, including assessment of 10 different risk factors for osteoporosis.⁷
- Time required to fully satisfy preventive recommendations is prohibitive.
 - For example, physicians need 7.4 hours per working day for the provision of preventive services alone.⁸
- Simple application of OST: **Age - Weight (kg)**
 - If > -5 , increased risk of osteoporosis and BMD is warranted.
 - A cut-off of >5 should be used for Asian patients.

Bottom-line: The OST is simple, quick and predicts osteoporosis as reliably as other more complicated instruments. It is a reasonable screening tool to identify those who would benefit from bone mineral density testing.

Authors: Christina Korownyk MD CCFP & G Michael Allan MD CCFP

1. [Osteoporos Int 2001;12: 699-705](#)
2. [Osteoporos Int 2007;18:1177-1187](#)
3. [Screening for Osteoporosis: Systematic Review to Update the 2002 U.S. Preventive Services Task Force Recommendation \[Internet\]. Evidence Syntheses, No. 77 Nelson HD, Haney EM, Chou R, et al. Rockville \(MD\): Agency for Healthcare Research and Quality \(US\); 2010 Jul.](#)
4. [Ann Intern Med. 2010;153 :99-111](#)
5. [Osteoporos Int 2009;20:599-607](#)
6. [Am J Prev Med 2009;36\(4\): 366-375](#)
7. [CMAJ. 2010 Nov 23;182\(17\):1864-73](#)
8. [Am J Public Health. 2003;93\(4\):635-41](#)

Tools for Practice is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practising family physicians. Archived articles are available on the ACFP website.

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