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:
  - 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:
  - OST performs at least as well as others. Specifically, OST performs
    - Moderately well identifying femoral neck osteoporosis (sensitivity 92%, specificity 39%).
    - Not as well identifying lumbar spine osteoporosis (sensitivity 84%, specificity 38%).
  - Tools with fewer risk factors (like OST) predict osteoporosis as well as or better than those with more risk factors.
  - No tool was clearly superior.
  - Unlike other tools to assess the risk of osteoporosis, OST has been validated in both sexes and a variety of races.
  - 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.
- 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.
- 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.

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5. Osteoporos Int 2009;20:599-607
7. CMAJ. 2010 Nov 23;182(17):1864-73

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