



Title	Osteoporosis – Prevention, Diagnosis, and Treatment
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Aim

To systematically and critically assess the scientific evidence on the prevention, diagnosis, and treatment of osteoporosis, focusing mainly on prevention of osteoporosis-related fractures, including economic and ethical aspects of the interventions.

Conclusions and results

There is no scientific evidence to support the use of bone density measurement as a screening method in healthy, middle-aged individuals. Patients with osteoporosis-related fractures are an undertreated group as regards pharmacotherapy and other interventions to prevent new fractures. There is some evidence that physical exercise (to reduce falls) and the use of hip protectors can prevent fractures in the elderly. Combination therapy of calcium and vitamin D is shown to reduce the risk for hip fractures and other fractures except vertebral fractures in elderly women.

Bisphosphonates are shown to reduce the number of fractures, mainly vertebral fractures. SERM is shown to reduce the risk for vertebral fractures in postmenopausal women with osteoporosis.

Important and treatable risk factors for osteoporosis-related fractures are physical inactivity, low weight, tobacco smoking, high alcohol consumption, tendency to fall, impaired vision, low exposure to sunlight, and use of corticosteroids. No particular diagnostic method or measurement site is optimal for determining the risk for fracture in all parts of the skeleton. The various measurement methods--dual energy x-ray absorptiometry (DXA), ultrasound (QUS), and computed tomography (QCT)--are not directly comparable.

Methods

Literature searches were conducted using MEDLINE, the Cochrane Library, reference lists, Swedish dissertations, and personal communications. Studies were selected based on relevance and predetermined inclusion criteria. The selected studies were reviewed and

their quality assessed. The strength of the summarized evidence has been rated on a 3-grade scale.

Further research/reviews required

- Studies in men to investigate pharmacotherapy, fracture prediction by bone density measurement, and assessment of post-fracture rehabilitation interventions.
- Economic assessments are lacking, mainly due to insufficient knowledge about the effects that various osteoporosis interventions have on risks, mortality, quality of life, and costs in different age groups and risk groups.