

**BONE LOSS AND
FRACTURE RISK**

The annual rate of bone loss at the distal forearm in women predicts nonvertebral fractures independently of baseline BMD but not independently of follow-up BMD. Furthermore, follow-up BMD is the factor most strongly predictive of fracture risk in men and women, new findings from Norway reveal.

Whether rate of bone loss constitutes an independent risk factor for fractures is unclear. The researchers conducted a prospective, population-based study that included 1,208 postmenopausal women (mean age at baseline 60 years) and 1,336 men (mean age at baseline 62.7 years) from the Tromsø study. Annual rate of bone loss was calculated from BMD measurements at the distal and ultra-distal forearm obtained in 1994 (baseline BMD) and 2001 (follow-up BMD). During follow-up (from 2001 onwards; mean duration 3.3 years), 100 women and 46 men had a nonvertebral fracture.

Independent of baseline BMD, annual rate of bone loss at the distal forearm in postmenopausal women predicted fracture—the relative risk associated with a bone loss of 1 SD % per year was 1.23 (95% CI 1.01–1.50) for a low-trauma fracture and 1.32 (95% CI 1.07–1.62) for osteoporotic fractures; in men, bone loss was not predictive of fracture, but the statistical power of this analysis was limited. After adjustment for follow-up BMD, bone loss did not predict fracture risk and follow-up BMD itself proved the most strongly predictive indicator of fracture risk.

“Maintenance of good levels of BMD is crucial in order to prevent fractures. This can be achieved through comprehensive prevention and/or treatment of osteoporosis including physical activities and exercises, a healthy lifestyle, good nutrition targeting of the bone, prevention of falls and early administration of antiresorptive and osteoanabolic therapies,” concludes Luai Ahmed of the University of Tromsø.

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Original article Ahmed, L. A. *et al.* Bone loss and the risk of non-vertebral fractures in women and men: the Tromsø study. *Osteoporos. Int.* doi:10.1007/s00198-009-1102-z