

# OSTEOSCOOP

News on current events in osteoporosis and rheumatology

## Biochemical markers of bone turnover, hip bone loss, and fracture in older men

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Osteoporosis in men is an increasingly important concern and, compared with women, the pathophysiology of bone loss and fragility fractures in men is less well studied. Although sex hormones, cytokines, and other biological determinants likely play an important role, it is probable that these factors impact the male skeleton at least in part by their effects on bone turnover. In a recent study [1], the authors used data from the Osteoporotic Fractures in Men (MrOS) study to test the hypothesis that men with higher levels of bone turnover would have accelerated bone loss and an elevated risk of fracture.

MrOS enrolled 5995 subjects >65 y; hip BMD was measured at baseline and after a mean follow-up of 4.6 y. Nonspine fractures were documented during a mean follow-up of 5.0 y. Using fasting serum collected at baseline, bone turnover measurements (type I collagen N-propeptide [PINP];  $\beta$  C-terminal cross-linked telopeptide of type I collagen [bCTX]; and TRACP5b) were obtained in 384 men with nonspine fracture (including 72 hip fractures) and 947 men selected at random. Among randomly selected men, total hip bone loss was 0.5%/y among those in the highest quartile of PINP (>44.3 ng/ml) and 0.3%/y among those in the lower three quartiles ( $p = 0.01$ ). Fracture risk was elevated among men in the highest quartile of PINP (hip fracture relative hazard = 2.13; nonspine relative hazard = 1.57) or bCTX (hip fracture relative hazard = 1.76; nonspine relative hazard = 1.29), but not TRACP5b. Further adjustment for baseline hip BMD eliminated all associations between bone turnover and fracture.

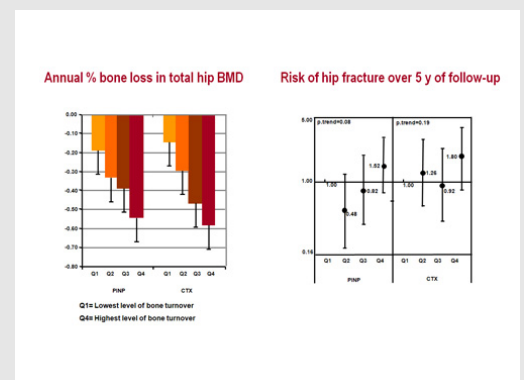
It is concluded that higher levels of bone turnover are associated with greater hip bone loss in older men, but increased turnover is not independently associated with the risk of hip or nonspine fracture.

1. Bauer DC, et al. *J Bone Miner Res.* 2009;24:2032–2038.

Key words: osteoporosis, men, bone turnover markers, fracture risk

### Biochemical markers of bone turnover, hip bone loss, and fracture in older men

In older men, markers of bone turnover were correlated with bone loss in total hip bone mineral density. Fracture risk was elevated among men in the highest quartile of PINP or bCTX, but further adjustment for baseline hip BMD eliminated all associations between bone turnover and fracture. Higher levels of bone turnover are associated with greater hip bone loss in older men, but increased turnover is not independently associated with the risk of hip or nonspine fracture.



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