

# OSTEOSCOOP

News on current events in osteoporosis and rheumatology

## Long-term risk of incident vertebral fractures

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Vertebral fractures are the hallmark of osteoporosis. They are the most common osteoporotic fracture, with prevalence estimates of 35% to 50% among women older than 50 years. Women with vertebral fractures experience decreased survival and an increased risk of future vertebral, hip, and other nonspinal fractures. It was previously shown that, over an average follow-up of 3.7 years, low bone mineral density (BMD) is associated with an increased risk of vertebral fracture, and that a prevalent vertebral fracture is associated with a 5-fold increased risk of sustaining a new vertebral fracture. The aim of this study [1] was to examine the absolute risk of incident vertebral fractures by spine and hip BMD and prevalent vertebral fracture status over 15 years of follow-up in a population-based cohort of community-dwelling older women.

A total of 9704 white women were enrolled in the Study of Osteoporotic Fractures, a longitudinal cohort study. Of these, 2680 attended a clinic visit an average of 14.9 years after baseline; mean age 68.8 years at entry and 83.8 years at follow-up. Incident vertebral fractures were identified from lateral spinal radiographs, defined as a decrease of at least 20% and 4 mm at any vertebral level. Prevalent vertebral fractures were identified on the baseline radiographs using vertebral morphometry. Bone mineral density was measured at the total hip and lumbar spine using dual-energy x-ray absorptiometry.

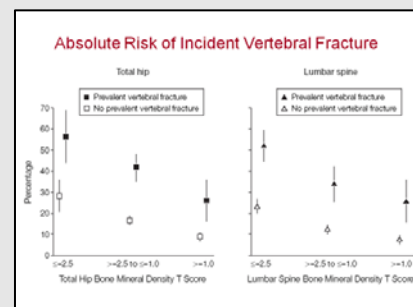
Of the 2680 women, 487 (18.2%) had an incident vertebral fracture including 163 of the 394 (41.4%) with a prevalent vertebral fracture at baseline and 324 of the 2286 (14.2%) without a prevalent vertebral fracture at baseline (odds ratio, 4.21). Low BMD was associated with an increased risk of incident vertebral fracture (odds ratio per 1 SD decrease in total hip BMD, 1.78). The absolute risk of vertebral fracture ranged from 56% among women with total hip BMD T score of  $\leq -2.5$  or less and a prevalent vertebral fracture to 9% in women with normal BMD and no prevalent vertebral fracture.

It is concluded that low BMD and prevalent vertebral fractures are independently related to new vertebral fractures over 15 years of follow-up. Women with a prevalent vertebral fracture have a substantially increased absolute risk of an incident fracture, especially if they have osteoporosis diagnosed by BMD.

1. Cauley JA et al. *JAMA*. 2007;298:2761-2767.

## Long-term risk of incident vertebral fractures

In this study with 15 years of follow-up in a population-based cohort of older women, it is shown that low BMD and prevalent vertebral fractures are independently related to new vertebral fractures.



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