

# Bone Density Screen Tied to Fewer Hip Fractures

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**B**one density screening was associated with fewer hip fractures compared with usual medical care in a study of more than 3,000 adults aged 65 and older.

"Although some groups recommend screening, no study had proved that screening prevents fractures. Our study provides new evidence for the effectiveness of osteoporosis screening," lead researcher Lisa M. Kern, M.D., of Cornell University, New York, said in a statement.

"We believe that our study is the first to measure and find a direct link between screening for osteoporosis and fewer incident hip fractures," the researchers said.

But because the study was not randomized, "the observed relationship between screening and hip fracture could be

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diminished by a small unmeasured confounder," the investigators noted (Ann. Intern. Med. 2005;142:173-81).

The study included 3,107 participants in the larger Cardiovascular Health Study (CHS). Partici-

pants were assigned to a study arm based on the state where they resided.

In one arm, 1,422 participants from California and Pennsylvania were offered osteoporosis screening using dual-energy x-ray absorptiometry (DXA) at the hip. Both the participants and their primary care providers were given a graph showing the results of their bone scan in relation to the normal range of bone mineral density (BMD). The graph did not label the participants as normal, osteopenic, or osteoporotic and did not recommend any particular intervention.

In the other arm, 1,685 participants in Maryland and North Carolina received usual medical care.

The participants were followed for 6 years from the time of their BMD scan, or if they did not receive a scan, from the date of their annual appointment as a CHS participant.

They were observed until one of the following events occurred: a hip fracture, death, loss to follow-up, or end of the surveillance period.

Participants also were analyzed for 31 variables including demographic characteristics, medical histories, medications, and physical examination findings.

Compared with usual care, osteoporosis screening was associated with a statistically significant reduction in the risk of hip fracture. The incidence of fractures per 1,000 person-years was 4.8 in the screened group (total 33) and 8.2 in the usual care group (total 69), linking screening to a 36% reduction in hip fractures.

The largest benefit for screening was in participants aged 85 years and older. "If this result is replicated in other studies, it suggests that guidelines should not set an upper age limit for osteoporosis screening among ambulatory adults," the researchers wrote.

While acknowledging that the mechanism of the association between screening and a reduction in fractures is unclear, the authors offered several possible explanations.

They found limited evidence that screening may have led to interventions for low bone density.

A total of 33% of participants who were offered screening had a BMD below the age-matched mean, and these participants were more likely to start using calcium or bisphosphonates in the year after screening, compared with those participants whose bone densities were above average.

More screened than nonscreened par-

ticipants began using multivitamins, Dr. Kern said.

In addition, a smaller percentage of the screened group had falls in the year after screening, compared with the non-screened group (16% vs. 20%, respectively), although no information on fall prevention was collected.

"There were some other differences between the groups besides screening that could partially explain the difference in hip fractures," Dr. Kern said. ■

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