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The full report is titled “Relative Effectiveness of Osteoporosis Drugs for Preventing Nonvertebral Fracture.” It is in the 6 May 2008 issue of *Annals of Internal Medicine* (volume 148, pages 637-646). The authors are S.M. Cadarette, J.N. Katz, M.A. Brookhart, T. Stürmer, M.R. Stedman, and D.H. Solomon.

## Drug Therapy for Osteoporosis

### What is the problem and what is known about it so far?

As people age, their bones become thinner. Some loss of bone density with age is natural, but in many older adults, the extent of bone loss results in a brittle bone condition called *osteoporosis*. It results from an imbalance between the natural breakdown and rebuilding of bone. Thin, osteoporotic bones are fragile and break more easily than dense bones. Fortunately, many things may help prevent osteoporosis. They include adequate intake of vitamin D and calcium; regular weight-bearing exercise, such as walking; and avoidance of smoking. There also are many drug therapies that may help treat osteoporosis and prevent broken bones. Few studies, however, have compared the benefits of the different drug therapies for osteoporosis.

### Why did the researchers do this particular study?

To see whether certain drug treatments for osteoporosis prevent bone fractures better than others do.

### Who was studied?

43 135 new recipients of drug treatments for osteoporosis. Most were women (96%) older than age 75 years (mean age, 79 years). None lived in nursing homes.

### How was the study done?

The researchers identified Medicare beneficiaries in 2 states who received drug treatments for osteoporosis between April 2000 and June 2005. The drug treatments included oral bisphosphonates (alendronate or risedronate), nasal calcitonin, and oral raloxifene. The researchers then reviewed Medicare claims records to see which patients had hip or arm fractures within 12 months of treatment initiation. They then compared fracture rates among the patients receiving the different drugs.

### What did the researchers find?

The researchers found no large differences in fracture risk between patients who were prescribed risedronate or raloxifene and those prescribed alendronate. Fracture risk seemed higher with nasal calcitonin than alendronate.

### What were the limitations of the study?

The researchers did not know whether patients took their prescribed drugs, and they did not assess side effects of the drugs. Because of the small number of fractures, the researchers could not rule out potentially important differences between some agents.

### What are the implications of the study?

There might not be a single clearly superior drug therapy for preventing fractures in older adults with osteoporosis.

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