

Drug Treatment for Low Bone Density or Osteoporosis to Prevent Fractures: A Clinical Practice Guideline from the American College of Physicians

Summaries for Patients are a service provided by *Annals* to help patients better understand the complicated and often mystifying language of modern medicine.

The full report is titled “Pharmacologic Treatment of Low Bone Density or Osteoporosis to Prevent Fractures: A Clinical Practice Guideline from the American College of Physicians.” It is in the 16 September 2008 issue of *Annals of Internal Medicine* (volume 149, pages 404-415). The authors are A. Qaseem, V. Snow, P. Shekelle, R. Hopkins Jr., M.A. Forciea, and D.K. Owens, for the Clinical Efficacy Assessment Subcommittee of the American College of Physicians.

Who developed these guidelines?

The American College of Physicians (ACP) developed these recommendations. Members of the ACP are internists—specialists in the care of adults.

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

As people get older, their bones become less dense and can break (fracture) more easily—conditions known as *osteopenia* (mild bone loss) and *osteoporosis* (severe bone loss). Osteoporosis is especially common in women after menopause, but men get it, too. Other factors that increase osteoporosis are smoking, alcohol, low intake of calcium and vitamin D, lack of exercise, white ethnicity, low body weight, a family history of osteoporosis, certain drugs (especially corticosteroids), thyroid disease, and possibly caffeine.

Testing for osteoporosis involves a test called *dual-energy x-ray absorptiometry* (DXA) that uses x-ray beams to measure soft tissue and bone thickness. Newer tests involve the use of other x-ray techniques and ultrasonography.

Drugs can slow bone loss and have been used to prevent or treat osteopenia and osteoporosis. These drugs include bisphosphonates, estrogens and drugs that affect estrogen receptors, calcitonin, and teriparatide. Although they are dietary supplements, not drugs, vitamin D and calcium supplements can also prevent bone loss. However, drugs have side effects and cost money. Doctors and patients must weigh the benefits and harms when deciding whether to use them to prevent fractures related to low bone density.

How did the ACP develop these recommendations?

The guideline authors reviewed published research to determine the benefits and harms of using drugs to prevent fractures in men and women with low bone density. They also looked for studies that compared one drug with another to see whether certain drugs provided more benefit or harm than others.

What did the authors find?

Good evidence shows that bisphosphonates reduce fractures, but good information is lacking on how long people should take these drugs. The most common side effect with bisphosphonates is stomach upset, but a rare and more serious event involves breakdown of the jawbone. Estrogens prevent fractures but can increase the risk for certain types of cancer, stroke, and blood clots. Studies show that drugs that work on estrogen receptors decrease spine fractures (but not hip fractures) and have no serious side effects. Fair to good information shows that calcitonin and teriparatide reduce spine fractures, but calcitonin does not reduce other types of fractures; neither drug has serious side effects. It is unclear how effectively calcium or vitamin D alone can prevent fractures, but taking both together reduces fractures. No good evidence proves that one drug is better than the others.

What does the ACP suggest that patients and doctors do?

First, doctors should offer drugs to prevent fractures to adults who are known to have osteoporosis by testing or who have previously experienced a fragility fracture (a fracture that occurred without significant trauma). Second, doctors and patients should consider drug treatment to prevent fracture in adults who are at risk for osteoporosis. Finally, doctors and patients should choose from among the available drugs on the basis of each patient’s risks and preferences.

What are the cautions related to these recommendations?

The recommendations may change as new studies are done.

Summaries for Patients are presented for informational purposes only. These summaries are not a substitute for advice from your own medical provider. If you have questions about this material, or need medical advice about your own health or situation, please contact your physician. The summaries may be reproduced for not-for-profit educational purposes only. Any other uses must be approved by the American College of Physicians.