

## OSTEOPOROSIS

### About Your Diagnosis

Osteoporosis is a metabolic bone disease in which bones become brittle, predisposing them to fractures.

Decreased estrogen levels in postmenopausal women is one of the most common causes of osteoporosis. Oral steroids taken for asthma or arthritis may also cause osteoporosis. Osteoporosis may be caused by poor nutritional intake of vitamins and minerals, such as calcium and vitamin D. Cigarette smoking, alcohol consumption, and a sedentary lifestyle predispose individuals to osteoporosis. Small Caucasian women with a positive family history of osteoporosis are at high risk. Hyperthyroidism, hyperparathyroidism, or Cushing's syndrome can also lead to osteoporosis.

Osteoporosis has been diagnosed in 4—6 million individuals in the United States. It is four times more common in women than men. Risk increases with age. There are at least 275,000 osteoporotic fractures of the hip every year.

Osteoporosis may be detected on an x-ray of a bone. The osteoporosis must be advanced to be noticeable on x-ray. Dual-energy x-ray absorptiometry (DEXA) is a more sensitive measure of bone density and can be used to follow bone density over time. Osteoporosis is defined as a bone density of 2.5 standard deviations below the peak mean bone density of the general population. Patients with bone densities below this level are at high risk for having fractures. Patients with intermediate bone densities and a previous history of fracture also have osteoporosis.

Osteoporosis may be prevented or cured with proper medical therapy.

### Living With Your Diagnosis

Many individuals with osteoporosis have no symptoms. Some have a loss of height and curvature of the spine. Others may have pain from a hip, spine, or wrist fracture.

### Treatment

Regular weight-bearing exercise such as walking is excellent preventive therapy. Dietary calcium intake should be between 1,000 and 1,500 mg of elemental calcium a day. Vitamin D is necessary for the absorption of calcium from the diet; 400—800 international units (IU) of vitamin D is recommended daily. Postmenopausal women should also consider estrogen replacement therapy with 0.625 mg of conjugated equine estrogen per day. Alendronate, an oral bisphosphonate, in a dosage of 5—10 mg

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once a day has been approved for the prevention of osteoporosis. All of these preventive therapies may also be used in patients with established osteoporosis. In addition, calcitonin, available as a nasal spray or as an injection, is indicated for women who cannot take estrogen and who are postmenopausal by more than 5 years. Surgery is often required to repair fractured bones.

Side effects of treatment may include kidney stones caused by excess calcium replacement, vitamin D toxicity, or esophageal ulcers caused by alendronate therapy. Estrogen therapy has been associated in some studies with a mild increase in the risk for breast cancer, and a marked increase in endometrial uterine cancers. Women who have not had a hysterectomy must take estrogen in combination with a progestin to minimize the risk of endometrial cancer. Estrogen may also lead to breast tenderness and resumption of menses in postmenopausal women. Benefits of estrogen therapy include a markedly decreased risk of coronary artery disease and increased vaginal lubrication. Each woman with osteoporosis should discuss individual concerns about estrogen replacement therapy with a knowledgeable physician before beginning this therapy. Raloxifene (Evista) is a newer product recently approved for the prevention of osteoporosis. It shares some of the benefits of estrogens such as increased bone density and lowering of lipids and is without significant adverse effects on the endometrium and breasts. It can, however, cause hot flashes and increase the risk of thrombosis.

### The DOs

- \* Minimize any risk factors for osteoporosis by quitting cigarette smoking, decreasing alcohol or caffeine intake, increasing exercise, and taking adequate calcium and vitamin D.
- \* Have a vitamin D level measured in your blood, especially if you live in a northern climate and have low sun exposure.
- \* Have regular breast examinations and mammograms if you take estrogen.

### The DON'Ts

- \* Don't take alendronate with food; it will not be absorbed.
- \* Don't take alendronate when you lay down; it may cause esophageal ulcers. Instead, stand up and take it with a full glass of water.
- \* Don't take calcium without consulting your doctor if you have a history of kidney stones or hyperparathyroidism.
- \* Don't take more vitamin D than recommended by your physician.
- \* Don't take estrogen alone if you are postmenopausal and you have a uterus. Instead, take estrogen with a progestin.

### When to Call Your Doctor

- \* You wish to have a bone density measured.
- \* You would like an assessment of your current calcium intake.
- \* You notice any new hip, back, wrist, or rib pain, especially if it occurs after falling, coughing, or

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sneezing.

- \* You wish to discuss the risks and benefits of estrogen replacement.
- \* You notice a new lump on your breast.
- \* You have heartburn while taking alendronate.

For More Information

National Osteoporosis Foundation

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Washington, DC 20036-4603

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The Endocrine Society

4350 East West Highway, Suite 500

Bethesda, MD 20814-4410

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<http://www.endo-society.org>.

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