

# A Women's Guide to Osteoporosis

**O**steoporosis is the most common bone disease in the United States, and is a major public health problem among women.

Osteoporosis:

- Causes more than 1.5 million fractures every year.
- Is responsible for fractures in 50% of women over age 50 years.
- Carries a risk of hip fracture that is equal to a woman's risks of breast, uterine, and ovarian cancer combined.
- Leads to loss of mobility and independence in 25% of women who have hip fractures.
- Kills about 24% of women within a year after a hip fracture
- Costs \$47 million every day in hospital and nursing home care.
- Is a problem that no woman can afford to ignore.

## WHAT IS OSTEOPOROSIS?

Osteoporosis, which means "porous bone," is a disease of low bone mass due to weakening of the bone structure, resulting in bone fragility and an increased tendency to fracture. It affects 44 million Americans, 10 million of whom already have osteoporosis and 34 million of whom have a bone mass low enough to place them at risk.

## WHAT CAUSES OSTEOPOROSIS?

Lots of factors affect bone strength, including calcium, vitamin D, and phosphorus intake, and production of calcium-regulating, thyroid, and sex hormones (especially estrogen). Bone is constantly lost and replaced; this "remodeling" process is essential to keeping bones healthy. The body forms more bone than it loses until age 35 years, and then begins to lose more than it forms as one ages. Osteoporosis develops after years of this "mismatch" between bone formation and breakdown.

## DO SOME WOMEN HAVE A HIGHER RISK OF OSTEOPOROSIS THAN OTHERS?

Yes. Some risks affect all women, including:

- Female gender
- Increasing age
- Loss of estrogen at menopause.

## OTHER RISKS VARY WITH THE INDIVIDUAL, SUCH AS:

- Family and personal history of fractures in adulthood (susceptibility to fracture may depend partially on heredity)
- Race (White and Asian women are more likely to develop osteoporosis than black and Hispanic women, but all women are at risk)
- Body weight and structure (thin, small boned women are at higher risk)
- Early menopause (occurring naturally or because of uterine or ovarian surgery)
- Menstrual irregularity due to excessive exercise or eating disorders like anorexia nervosa and bulimia (reduces estrogen production)
- Poor lifestyle habits (cigarette smoking, drinking too much alcohol, consuming too little calcium, lack of exercise)
- Chronic disease (rheumatoid arthritis; thyroid, liver, seizure, and gastrointestinal disorders)
- Long-term medication use (glucocorticoids like prednisone, thyroid hormones, anticonvulsants).

### WHAT ARE THE SYMPTOMS OF OSTEOPOROSIS?

Osteoporosis is a "silent" disease that causes no symptoms until it's far advanced and a fracture occurs. Often, patients can have several spinal fractures without even knowing it until they develop back pain, or the breaks are detected during chest or abdominal x-rays. The fractures and pain can occur during routine activities such as bending or lifting. If the patient has fractures in several spinal vertebrae (joints), she can lose height, leading to breathing and digestive difficulties. Osteoporosis may also be discovered after a fracture of the hip or wrist due to a fall.

### CAN I DO ANYTHING TO PREVENT OSTEOPOROSIS?

Much can be done in terms of your lifestyle to prevent osteoporosis. Ideally, prevention should begin in childhood and adolescence, but it's never too late to benefit from healthy habits.

- **Diet.**-Good bone health depends on three dietary factors: adequate calories, adequate calcium consumption, and adequate vitamin D intake.
- Recommendations for calorie amounts are determined according to your height, activity level, and whether you're pregnant or breast feeding. Daily calcium intake should be at least 1,000 mg in premenopausal women and 1,500 mg in postmenopausal women, and shouldn't be more than 2,000 mg. The best food sources of calcium are low-fat dairy products (milk, cottage cheese, yogurt) and green vegetables (spinach, broccoli). However, as it's often difficult to get enough calcium from food without gaining too much weight, many women use calcium supplements. Most experts prefer calcium carbonate, which is best taken with meals, or calcium citrate, which may be better for elderly women. Remember that the "real" amount of calcium in a tablet is expressed as "elemental calcium," which can usually be found on the label. For example, calcium carbonate contains 40% elemental calcium; that is, 500 mg of calcium carbonate contains 200 mg of elemental calcium. With regard to vitamin D, you should consume 800 International Units per day. Milk is the best food source, and exposure to sunlight helps the body to manufacture vitamin D (just 10 to 15 minutes two or three times a week is enough). It's essential to get adequate calcium and vitamin D, as they work together to promote bone strength. You should also limit alcohol consumption, which can lead to both poor nutrition and an increased risk of falling.
- **Exercise.**-Just like muscle, bone is living tissue, and it responds to exercise by getting stronger. Two types of exercise (weight-bearing and resistance) are necessary for maintaining bone health. Weight-bearing exercises involve working against gravity by bearing your own weight; examples include jogging, walking, stair-climbing, and dancing. Resistance exercises use muscle strength to improve bone density, and include weight-lifting. If you've been sedentary for many years, even a daily walk can produce a significant improvement.
- **Smoking Cessation.**-Smoking actually accelerates bone loss; for example, smoking one pack per day during adulthood causes a 5% to 10% decrease in bone density by menopause. Smoking also lowers your estrogen levels even before you reach menopause.

### HOW CAN I FIND OUT WHETHER I HAVE OSTEOPOROSIS?

There are several painless, noninvasive, and safe ways to measure bone mineral density (BMD). Measurements are usually taken at the spine, hip and wrist, which are the most common fracture sites. Newer tests use the middle finger, heel, knee, or shin bone. Types of tests include special x-rays, ultrasound, various forms of computed tomography, and absorptiometry studies. Your doctor will use this information together with your personal risk assessment and a complete medical work-up to determine whether you have osteoporosis and which type of therapy would be best for you.

### IF I ALREADY HAVE OSTEOPOROSIS, WHAT CAN BE DONE TO TREAT IT?

Most women with osteoporosis require medication to help stop, or perhaps reverse, bone loss. However, you'll also need to make lifestyle changes to maximize the medication benefits. Again, diet, supplements, exercise, and smoking cessation are the keys.

There is no cure for osteoporosis, but several medications are available to help prevent the disease if you're at risk; these medications can stop bone loss, or even encourage bone regrowth.

Such drugs include:

#### Bisphosphonates

- Alendronate (Fosamax)
- Calcitonin (Miacalcin)
- Risedronate (Actonel)

#### Estrogen/hormone therapy

- Estrogens (Climara, Estrace, Estraderm, Estratab, Ogen, Ortho-Est, Vivelle, Permarin)
- Estrogens plus progestins (Activella, FemHrt, Premphase, Prempro) Parathyroid hormone (Forteo) Selective estrogen receptor modulations (SERMs), Raloxifene (Evista).

In the past, estrogen or estrogen-progestin therapy was the mainstay for preventing and treating post-menopausal osteoporosis. Estrogen had the additional advantages of controlling menopausal symptoms. However, data from the large Women's Health Initiative study found that estrogen can raise the risk of breast cancer, stroke, and blood clots. Therefore, estrogen is no longer one of the first-line drugs for managing osteoporosis.

Currently, most authorities are recommending the bisphosphonates, and raloxifene as first-line drugs for both preventing and treating osteoporosis. Your doctor will probably perform tests every few months to monitor the success of your therapy, including BMD measurements and certain laboratory tests.