Stand Tall Against Osteoporosis

A guide to prevention, detection and treatment

THE CLEVELAND CLINIC FOUNDATION
CENTER FOR OSTEOPOROSIS AND METABOLIC BONE DISEASE
What is osteoporosis?

Osteoporosis literally means “porous bone.” As we age, our bones naturally lose thickness and strength. Osteoporosis leads to an increased risk of fracture. Called the “silent cripper,” it often progresses without symptoms or pain until a fracture occurs.

Osteoporosis is a major health threat for more than 28 million Americans — 80 percent of whom are women. The disease is responsible for more than 1.5 million fractures every year in both men and women.

If left untreated, osteoporosis can be both debilitating and painful. Hip fractures are a serious health consequence of osteoporosis; approximately 20 percent of patients die in the first year after being diagnosed. Hip fractures often result in a loss of independence and the need for nursing home care.

The best way to avoid osteoporosis is to determine your risk early and then take steps to prevent the disease.

It’s important to start prevention early. Peak bone mass is attained by age 25–30 in women. With proper diet, including calcium, and exercise, you may be able to slow or prevent the onset of osteoporosis. If you already have the disease, early detection and proper medical care can help you slow or even reverse its progress.

Are you at risk?

Bone loss in women begins at about age 30 and accelerates after menopause. Women over age 50 have the greatest risk for developing osteoporosis, but the disease can strike at any age. It is important to remember that this disease does not only strike women: one in eight men over the age of 50 is at risk for developing osteoporosis.

Some people are more likely to develop osteoporosis. The following risk factors have been identified so that people can be aware if they have an elevated risk.

- Female
- Thin and/or small frame
- Age (All women over age 65 should have a bone density test regardless of the presence of any risk factors.)
- Family history of osteoporosis
- Post-menopause, including early or surgically induced menopause
- Absence of menstrual periods (amenorrhea)
- Anorexia nervosa or bulimia
- Diet low in calcium
- Use of certain medications, such as corticosteroids and anticonvulsants
- Low testosterone levels in men
- Inactive lifestyle
- Cigarette smoking
- Excessive alcohol use
- Being Caucasian or Asian, although African Americans and Hispanic Americans are at risk as well
- Diseases such as intestinal problems, kidney problems, hormonal problems, kidney stones, liver disease
- Organ transplant recipients

After someone has had one compression spinal fracture, they are five times more likely to have subsequent fractures.
What can you do to prevent osteoporosis?
Building strong bones before age 25–30 is the best defense against developing osteoporosis later in life. At any age, good nutrition and a healthy lifestyle can help prevent osteoporosis or minimize its effect on your life. Follow these guidelines for building and maintaining strong bones:

- **Eat a balanced diet rich in calcium and vitamin D.** Pre-menopausal women need 1,000–1,200 milligrams of calcium each day, while post-menopausal women need 1,200–1,500 milligrams daily. Milk, other dairy products and green vegetables are excellent natural sources of calcium. Calcium supplements are an effective alternative for those with low dietary calcium intake. Vitamin D helps the body absorb calcium. The body manufactures vitamin D when it is exposed to sunlight. The vitamin is also available in fortified milk, 400–600 IU per day is recommended.

- **Exercise regularly.** Do 30 minutes of weight-bearing exercise — such as walking or jogging — 3 to 4 times a week.

- **Maintain a healthy lifestyle.** Both smoking and excessive alcohol intake reduce bone mass. It's best to avoid smoking altogether and consume no more than two alcoholic drinks per day.

- **Prevent falls so you can stay active.** Accidental falls — and the broken bones that often result — can limit your activity and threaten your independence. If you have osteoporosis, it is important to protect yourself against falls. This is especially important if you feel unsteady on your feet or have a history of falls. Physical therapy and balance training may help to prevent falls.

Osteoporosis can cause compression fractures in the spine, leading to backache and loss of function.

The Cleveland Clinic Center for Osteoporosis and Metabolic Bone Disease
If you are concerned about your risk for osteoporosis or have been diagnosed with the disease, the Cleveland Clinic Center for Osteoporosis and Metabolic Bone Disease can help.

This center is a team effort, and includes three departments at The Cleveland Clinic:

**Rheumatology…** Our staff is dedicated to providing complete, state-of-the-art diagnosis, treatment, and rehabilitation for children and adults affected by osteoporosis. For people affected by a chronic rheumatic disorder, finding the right treatment can mean the difference between leading a life of constant pain and being able to perform everyday tasks more easily.

The Cleveland Clinic Department of Rheumatology has been consistently ranked among the top ten in the nation by *U.S. News & World Report.*

**Endocrinology…** Cleveland Clinic endocrinologists diagnose and treat the full range of endocrine disorders, including osteoporosis, in adult, pediatric and adolescent patients.

The Cleveland Clinic Department of Endocrinology was ranked among the top ten in the nation by *U.S. News & World Report* for the treatment of hormonal disorders.

**Radiology…** The Division of Radiology at The Cleveland Clinic offers a full spectrum of radiological services and is one of the leading radiology academic centers in the world, as well as one of the busiest clinical departments in the country. Each year more than 500,000 examinations are performed and interpreted by Cleveland Clinic radiologists. More than 12,000 bone densities are performed every year.

Our nationally recognized osteoporosis team includes specialists in orthopaedics, orthopaedic surgery, internal medicine, physical medicine, physical rehabilitation, rheumatology, endocrinology, geriatrics, physical therapy and pain management. If necessary, we can refer you to one of these specialty departments.

**Research leadership**
The Cleveland Clinic pioneered research on agents that inhibit bone loss and remains at the forefront of testing new osteoporosis treatments. If you have osteoporosis, you may be able to participate in one of our clinical trials to determine the effectiveness of new medications.
When should you get tested for osteoporosis?

We recommend that you have a baseline assessment for osteoporosis at menopause if you have risk factors. This way, we can alert you to any problems, prescribe treatment to curb bone loss and monitor your progress as you grow older. All women over age 65 and men at age 70 should have a bone density test. Patients with risk factors should be tested at a younger age.

Bone density tests are important tools used in the diagnosis and treatment of osteoporosis and other bone diseases. Doctors use these tests to detect the presence of osteoporosis, determine how quickly you are losing bone mass and predict your risk of fracture. We also use them to follow the course of the disease and monitor the effects of various treatments.

**DEXA (Dual Energy X-ray Absorptiometry)**
The most accurate test available for the detection of osteoporosis is the dual-energy X-ray absorptiometry (DXA). The test measures the bone loss in your hips and spine and takes about 10 to 15 minutes. Radiation exposure is a fraction of the amount in a standard chest X-ray.

The procedure is similar to getting an X-ray taken: You will wear a hospital gown and be asked to lie on your back while they perform the test. No needles or injections are involved. Results are performed by specially trained certified technologists and reviewed by board-certified physicians. Test results are provided to your physician, who will then discuss the results with you.

You may find a smaller version of the DXA machine or ultrasound in retail stores that measure bone mass in your forearm or a heel ultrasound. However, these bones don’t reflect bone loss in your hips and spine, where the most common debilitating fractures occur.

Treatment plans to suit your needs

If you are diagnosed with osteoporosis or have a high risk for developing it, we will design a course of treatment to suit your individual needs. Treatment plans typically include a diet rich in calcium or calcium supplements and vitamin D, a weight-bearing exercise program and possibly drug therapy.

Alendronate (brand name Fosamax®), calcitonin (brand name Miacalcin®), risodronate (brand name Actonel®), raloxifene (brand name Evista®) and parathyroid hormone (brand name Forteo®) are already approved for the prevention and/or treatment of osteoporosis. Many other options are currently under investigation.

In patients with recent spine fractures our doctors can refer you to a spine surgeon who will perform an evaluation to determine if you are a candidate for surgery. Kyphoplasty is one procedure used that may relieve pain and may restore collapsed vertebrae to nearly normal height if performed soon after fracture.
Center for Osteoporosis and Metabolic Bone Disease
Staff Directory

Chad Deal, M.D., Head
Dr. Deal is a clinical rheumatologist in the Department of Rheumatic and Immunologic Diseases. He received his medical degree from the University of Arkansas School of Medicine.

He received specialty training from Boston University Hospital and Boston City Hospital. He is board-certified in Rheumatology and Internal Medicine, and his specialty interests include osteoporosis, metabolic bone disease and general rheumatology.

Angelo Licata, M.D., PhD, FACP, FACE, Director of Clinical Research
Dr. Licata is a clinical endocrinologist in the Department of Endocrinology, Medical Director of the Research and Osteoporosis Unit and former Chairman of the Institutional Review Board. He received his medical degree and his Ph.D. in Pharmacology from the University of Rochester School of Medicine and Dentistry and completed training in Endocrinology and Internal Medicine at Washington University, National Institutes of Health, and the Georgetown VA Hospitals.

His research interests include calcium disorders and metabolic bone diseases.

Bradford Richmond, M.D., Director of Densitometry
Dr. Richmond attended Case Western Reserve School of Medicine. He completed a Diagnostic Radiology Residency at The Cleveland Clinic. Subsequently, Dr. Richmond was a fellow in the Section of Skeletal Radiology at University of California, San Francisco, with specific interest in metabolic bone disease and osteoporosis.

He is certified by the American Board of Radiology. His specialty interests include bone densitometry, bone biopsies and musculoskeletal radiology.

Miriam Delaney, M.D., Associate Head
Dr. Delaney is a clinical endocrinologist in the Department of Rheumatic and Immunologic Diseases. She received her medical degree from the University College, Dublin, Ireland, and post-graduate fellowship training at Harvard Medical School, Brigham & Women’s Hospital and the Joslin Diabetes Center. Her specialty interests include osteoporosis, transplant bone disease, metabolic bone disease, disorders of calcium homeostasis and steroid osteoporosis.

Abby Abelson, M.D., F.A.C.R.
Dr. Abelson is a clinical rheumatologist in the Department of Rheumatic and Immunologic Diseases. She received her medical degree from Case Western Reserve University School of Medicine, Cleveland, Ohio. She received specialty training from University Hospitals of Cleveland and Mount Sinai Medical Center. Her specialty interests include general rheumatology and metabolic bone disease.

John Carey, M.D.
Dr. Carey is a clinical rheumatologist in the Department of Rheumatic and Immunologic Diseases. He received his medical degree from University College, Dublin, Ireland. He received specialty training from Boston Medical Center and The Cleveland Clinic Foundation. His specialty interests include general rheumatology and metabolic bone disease.
To Make An Appointment

Cleveland Clinic Center for Osteoporosis and Metabolic Bone Disease

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Diagnostic testing is available at our Cleveland Clinic family health centers.

Solon Family Health Center
29800 Bainbridge Road
440/519-6925

Westlake Family Health Center
30033 Clemens Road
440/899-5641
DEXA

Independence Family Health Center
5001 Rockside Road
216/986-4000

Beachwood Family Health Center
26900 Cedar Road
216/839-3440

Lorain Family Health Center
5700 Cooper Foster Park Road
440/204-7400

Strongsville Family Health Center
16761 Southpark Center
440/878-2500

For more information, visit our Web site at:
www.clevelandclinic.org/arthritis/osteo
The Cleveland Clinic is an independent, not-for-profit, multispecialty academic medical center. It is dedicated to providing quality specialized care and includes an outpatient clinic, a hospital with 959 staffed beds, an education division, and a research institute.