

Understanding Osteoporosis & Spinal Fractures

Osteoporosis is a disease that thins and weakens your bones making them more likely to break. It can develop gradually without causing any symptoms. A broken bone or “fracture,” typically in the hip, spine or wrist, is the first symptom of osteoporosis. As many as 40 percent of women age 50 and older have osteoporosis. In fact, the annual number of fractures caused by osteoporosis in women is greater than the number of heart attacks, strokes and breast cancer cases combined.

Of the 1.5 million fractures that Americans experience each year, nearly half are fractures in the spine, called vertebral compression fractures. These occur when weakened vertebrae suffer the impact of a strain, bump, or fall. Vertebral compression fractures can lead to loss of height, severe pain and stooped posture. Hip fractures are another common consequence of osteoporosis and sometimes lead to a downward spiral of declining health, increased frailty and death.

Resources

National Osteoporosis Foundation

1232 22nd Street, NW
Washington, DC 20037
1-800-231-4222 (toll free)
<http://www.nof.org>

Offers information on osteoporosis.

NIH Osteoporosis and Related Bone Diseases

National Resource Center
2 AMS Circle

Bethesda, MD 20892-3676
1-800-624-2663 (toll free)
<http://www.osteoporosis.nih.gov>

Provides resources on metabolic bone diseases.

The National Institute on Aging

NIA Information Center
PO Box 8057

Gaithersburg, MD 20898-8057
1-800-222-2225 (toll free)
<http://www.nia.nih.gov>

Provides information on aging-related health issues.

Bone Basics

Your bones are complex, living tissue. They provide structure and support for your muscles, protect your organs and store the calcium needed by the soft tissues of the body for their various functions. Your body regularly breaks down and removes old bone tissue and replaces it with new, strong bone. From birth to age 25 or 30, the body builds new bone faster than it removes old bone tissue and your bones become larger and stronger. By age 30, your bones have reached their peak bone mass, meaning they're the strongest they will ever be.

As you age, your body breaks down old bone faster than it builds new bone. As a result, your bones become more fragile. How much bone mass you'll lose as you age varies. Bone loss is influenced by genetics, diet, physical activity and other factors.

Who Is At Risk for Osteoporosis?

Women are four times more likely to develop osteoporosis of the spine or vertebrae than are men. Other factors that increase your chances of developing osteoporosis include:

- Aging
- Having a small frame
- Having low bone density, a condition called osteopenia
- Previous personal or family history of spine, hip or wrist fractures

- Being Caucasian or Asian
- Low lifetime calcium intake
- Excessive use of alcohol
- Cigarette smoking
- Inactive lifestyle
- Abnormal absence of menstrual periods and estrogen deficiency caused by menopause and certain medical conditions such as anorexia nervosa
- Long-term use of corticosteroids or some anticonvulsants

Detecting Osteoporosis

Bone density tests are the only way to detect low bone mass. DXA (dual-energy x-ray absorptiometry) scans are the most common tests used. At this time, there isn't a test available to measure bone quality. The U.S. Preventive Services Task Force recommends that women 65 and older be routinely screened for osteoporosis, and women at high risk begin screening at age 60.

Results are usually expressed as “T-scores,” a measure of how much your bone density is above or below the average bone density value. Your health care professional will consider your T-scores together with your other osteoporosis risk factors to make an accurate diagnosis.

Preventing & Treating Osteoporosis

Lifestyle Approaches

Diet. Calcium is essential for bone health. So is vitamin D. It helps your body absorb calcium. The National Osteoporosis Foundation recommends women over age 51 consume 1,200 mg of calcium per day and 400 to 800 units of vitamin D. Eating and drinking calcium-rich or calcium-fortified foods and beverages can help increase your calcium intake. Your health care professional may also recommend a calcium supplement.

Exercise. Bone and muscle respond to physical activity by becoming stronger.

Strong muscles improve balance, making falls—the most common cause of fractures—less likely. So, walk, run, or lift weights to help keep your bones strong and improve your balance.

Clear the decks. Eliminate or modify common household tripping hazards, such

as poor lighting, loose wires and slippery stairs to reduce your risk for falling.

Medical Approaches

The U.S. Food and Drug Administration (FDA) has approved medications for postmenopausal women that help slow or stop bone loss, build bone and reduce the risk of fractures. (See chart below.) Ask your health care professional for guidance on the potential benefits, risks and side effects associated with each.

strengthening exercises to improve muscle support—may be candidates for balloon kyphoplasty.

Similar to a technique known as vertebroplasty, balloon kyphoplasty repairs fractured vertebrae and relieves pain by injecting acrylic cement into the bone to help stabilize it. During balloon kyphoplasty, however, a small orthopedic balloon is inserted into the vertebrae and inflated with liquid. This additional step helps to restore the natural shape and height of the bone. The balloon is then deflated and removed, creating a cavity into which the bone cement may be applied in a more controlled way under lower pressure than required by the vertebroplasty procedure.

Questions to Ask Your Health Care Professional

1. Am I at risk for osteoporosis?
2. Do any of my medication(s) increase my risk for developing osteoporosis?
3. What options are available to prevent or treat osteoporosis?
4. How can I tell if I have fractured a bone in my spine?
5. When and how often should I have a bone density scan?
6. How much calcium should I consume each day?
7. Do any of my medications interfere with calcium absorption?
8. Can I get my daily calcium requirements from my diet?
9. If I have osteoporosis or osteopenia, is there anything I can do to help lessen its severity?
10. What kinds of exercise are best for me and how often should I exercise?

Treating Vertebral Compression Fractures

Patients with an acute vertebral fracture and pain that does not respond to standard treatment approaches—medication, increased calcium intake and back

FDA-Approved Osteoporosis Medications

Medication Type	How It Works
Bisphosphonates (alendronate, risedronate)	Reduce bone loss, increase bone density, and reduce the risk of spine, wrist and hip fractures.
Calcitonin	Slows bone loss, increases spinal bone density, and may relieve fracture pain.
Estrogen/hormone therapy	Reduces bone loss, increases bone density in both the spine and hip, and reduces the risk of hip and spinal fractures in postmenopausal women.
Parathyroid hormone (teriparatide)	Increases bone mineral density; reduces fractures in postmenopausal women, stimulates bone growth.
Selective Estrogen Receptor Modulators, or SERMs (raloxifene)	Reduce the risk of vertebral fracture and increases bone mass.

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