Live it Safe: Prevent Broken Hips

What is a broken hip?

Hip fractures are breaks in the thighbone just below the hip joint. Most require hospitalization and surgery. In 1996, there were more than 323,000 hospitalizations for hip fractures, or more than 850 fractures a day. Most hip fractures occur in older women. White, post-menopausal women have a 1 in 7 chance of sustaining a hip fracture during their lifetime.

Many experts predict a future epidemic of hip fractures because the U.S. population is aging. The number of people 65 and older is expected to double to 65 million in 2030 and those 85 and older, to increase five-fold to 15 million by 2050. The number of hip fractures could reach 650,000 by 2050.

How serious is a broken hip?

Although modern orthopaedic care and surgical technology assist satisfactory bone healing, most hip fracture patients require extended periods of rehabilitation. Most hip fracture patients who previously lived independently will require assistance from their family or home care. Forty percent of hip fracture patients 65 and older are discharged or transferred from hospitals to long-term care facilities. All hip fracture patients require walking aids for several months after injury, and nearly half will permanently require canes or walkers to move around their house or outdoors.

The death rate for hip fracture patients is higher than for other people of the same age who do not sustain the injury. About 24 percent of hip fracture patients over age 50 die within 12 months after injury because of complications related to the injury and the extended recovery period.

What is the annual cost?

The current annual cost to the U.S. health care system for acute and convalescent care for patients with hip fractures is more than $12.6 billion. That's an average of $37,000 per patient.

The expected hospital stay is almost two weeks. Continuing care, including nursing homes, paid caretakers, and assistance from family members, etc., greatly increases the expense of hip fractures beyond that of hospitalization and surgery.

Who is at risk for a broken hip?

Here are some of the common characteristics of people who are at risk:

- **Age.** The rate increases for people 65 and older.
- **Gender.** Women have two to three times as many hip fractures as men.
- **Heredity.** A family history of fractures in later life, particularly in Caucasians and Asians. A small-boned, slender body.
- **Nutrition.** A low calcium dietary intake or reduced ability to absorb calcium.
- **Personal habits.** Smoking or excessive alcohol use.
- **Physical impairments.** Physical frailty. Arthritis. Poor balance and coordination. Poor eyesight.
- **Mental impairments.** Senility, dementia, e.g., Alzheimer's disease.
- **Medications.** Weakness or dizziness due to adverse side effects of medication.

Why do broken hips occur?

The upper femur in young people is one of the strongest bones in the body, but with aging and disease, the upper femur weakens and becomes vulnerable to a fracture.

Why do bones weaken?

Bone is a living tissue, composed mainly of calcium and protein. Bones with high calcium content are strong. Healthy bone is always being remodeled; that is, small amounts are being absorbed in your body and small amounts are being replaced. If more bone calcium is absorbed than is replaced, the density or the mass of the bone is reduced. This bone becomes progressively weaker, increasing the risk that it may break.

The loss of bone tends to occur most in the spine, lower forearm above the wrist, and upper femur-the site of hip fractures. Spine fractures, wrist fractures, and hip fractures are common injuries in older people.

A gradual loss of bone mass, generally beginning about age 35, is a fact of life for everyone. After growth is complete, women ultimately lose 30 to 50 percent of their bone density, and men lose 20 to 30 percent.

Women lose bone calcium at an accelerated pace once they go through menopause. Menstrual periods cease because a woman's body produces less estrogen hormone. Estrogen in women is important for the maintenance of bone mass or bone strength.

Your family doctor or gynecologist may evaluate and recommend a treatment program of estrogen replacement for women near menopause. To be most effective, such treatment should begin at menopause. A measurement of bone density when menopause begins may help a woman decide whether to use estrogen replacement therapy to retard bone loss.

For more information, contact The National Osteoporosis Foundation, 1232 22nd St., NW, Washington, D.C. 20037 and The American College of Obstetricians and Gynecologists Resource Center, 409 12th St., SW, Washington, D.C. 20090.

What is osteoporosis?

Osteoporosis means "porous bone." This condition develops when bone is no longer replaced as quickly as it is removed. More than 1.5 million Americans have fractures related to osteoporosis each year. Most people are unaware that they have osteoporosis until a fracture occurs.

The exact medical cause for osteoporosis is not known, but a number of factors are known to cause osteoporosis: aging, physical inactivity, reduced levels of estrogen, heredity, excessive cortisone or thyroid hormone, smoking, and excessive alcohol intake.

Although osteoporosis will occur in all people as they age, its rate of progression and effects can be modified with proper early diagnosis and treatment.

Your family doctor working with your orthopaedic surgeon can evaluate whether your bone density has been reduced, and can evaluate the cause for the reduction. Early treatment for osteoporosis is the most effective way to reduce bone loss and prevent fractures. However, treatment programs after a fracture also are of value and may help to prevent future fractures.

Current treatment can reduce bone loss, but there are no proven methods of restoring lost bone. Building bones through adequate calcium intake and exercise when you are young is an investment that will pay off years later with a reduced risk of hip and other fractures.

How can I prevent a broken hip?

Orthopaedic surgeons are experts in the care and treatment of patients with fractured hips. They are concerned about the epidemic of hip fractures and the impact these severe injuries has on patients, their families, and on society. Orthopaedic surgeons know that prevention of hip fractures is far better, and far less costly, than treatment after the bone is broken.

Here's what you can do:

Calcium and Vitamin D

Be sure your diet contains the necessary calcium and vitamin D during childhood, adolescence, and adulthood. The typical American diet provides about 300 milligrams (mg.) of calcium a day from non-milk sources. Each dairy product serving provides an additional 300 mg.

A recommendation by the National Research Council for a daily dietary intake of 800 mg. of calcium is thought to be too low.

The National Institutes of Health (NIH) recommends the following daily calcium intake:

- 11 - 24 years: 1,200 mg.
- Pregnant or nursing women under age 19: 2,000 mg.
- Pregnant or nursing women 19 or older: 1,400 mg.
- Before menopause: 1,000 mg.
- Menopausal, postmenopausal women not taking estrogen: 1,500 mg.
- Menopausal, postmenopausal women taking estrogen: 1,000 mg.
- Middle-aged men: 1,000 mg.

Vitamin D plays a major role in calcium absorption and its incorporation in bone. The Food and Drug Administration's USRDA (Recommended Daily Allowance) for vitamin D is 400 international units (IU). One glass of milk contains 100 IU. Your doctor may recommend an increase in your intake of vitamin D after menopause. Because elderly people may consume less vitamin D and absorb calcium poorly, they should ask their doctor about increasing their daily intake of vitamin D.

Exercise

Exercise to minimize bone loss. You should engage in weight-bearing exercises, such as walking (considered one of the best methods of maintaining bone strength), jogging, hiking, climbing stairs, dancing, aquatic exercises, treadmill exercises, and weight training. Consult your doctor before beginning any vigorous exercise program. Your doctor can evaluate your physical condition and help you decide which activity suits you best.

The National Institute of Aging recommends you begin exercising slowly, especially if you have been inactive. Start with short periods of about 5 to 10 minutes twice a week and build up slowly, adding a few minutes each week. You can build up to exercise periods of 15 to 30 minutes, three or four times a week.

Talk With Your Doctor

- Proper diagnosis and early treatment can help reduce the risks of osteoporosis. Consult your medical doctor because a treatment must be prescribed individually.
- Treatment plans should be initiated as early as possible because once bone is lost it is difficult to replace.
- Ask your physician about medication to prevent menopausal bone loss such as estrogen replacement therapy, calcitonin or other medications currently under development.
- Eliminate smoking and excessive alcohol use which cause bone loss and increase your risk for a fracture.
- Consult with your physician if you require medications regularly that can alter your balance or cause dizziness. Certain drugs, such as benzodiazepines, that are common treatments for anxiety or insomnia, may cause dizziness and falls.

What can I do to my home to make it safer?

Most hip fractures occur as a result of a fall and most falls and injuries occur in the home. Many are preventable by recognizing the dangers and taking the necessary steps to minimize the risks of preventable falls from known home hazards. Here are some safety tips:

Stairways

- Provide enough light to see clearly each step and the top and bottom landings
- Repair loose stairway rugs or boards immediately
- Do not leave objects on the stairs
- Do not use patterned or dark carpeting on stairs
- Install full-length handrails on both sides of the stairway

Bathrooms

- Place a slip-resistant rug next to the bathtub for safe exit and entry
- Place nonskid textured adhesive strips on the bathtub and shower floor
- Install grab bars on the walls around the bathtub

Bedrooms

- Keep the floor clear of clutter
- Place a lamp and flashlight near your bed
- Install a night-light along the route between the bedroom and the bathroom

Living areas

- Arrange furniture to provide a clear pathway between rooms
- Remove low-rise tables, magazine racks, footrests, and plants from pathways
- Keep electrical and telephone cords out of pathways
- Secure loose area rugs and runners with double-faced tape, tacks, or slip-resistant backing
- Do not stand on unsteady stools, chairs, ladders, etc.

Kitchen

- Clean up spills, dropped food, etc., from floors immediately
- Use nonskid floor wax
- Use step stools with an attached handrail

What research on broken hips is being done?

Hip fractures have a major impact on society, however, only a very small portion of medical research funds are devoted to improving our ability to prevent hip fractures. More research must be done by government agencies, private foundations, and orthopaedic scientists to shed new light on bone metabolism, treatment programs to prevent bone loss, and injury programs to prevent falls and fractures. Support for this research through increased private and public funding will be necessary to curb the coming epidemic of hip fractures in the decades ahead. For more information contact the Orthopaedic Research Education Foundation, 6300 N. River Rd. Rosemont, IL 60018 (847) 698-9980.

Last reviewed and updated: July 2007