

Fast Facts on Osteoporosis

Definition

Osteoporosis, or porous bone, is a disease characterized by low bone mass and structural deterioration of bone tissue, leading to bone fragility and an increased susceptibility to fractures, especially of the hip, spine and wrist, although any bone can be affected.

Prevalence

Osteoporosis is a major public health threat for an estimated 44 million Americans, or 55 percent of the people 50 years of age and older. In the U.S. today, 10 million individuals are estimated to already have the disease and almost 34 million more are estimated to have low bone mass, placing them at increased risk for osteoporosis.

Of the 10 million Americans estimated to have osteoporosis, eight million are women and two million are men.

Significant risk has been reported in people of all ethnic backgrounds.

While osteoporosis is often thought of as an older person's disease, it can strike at any age.

Women

Eighty percent of those affected by osteoporosis are women.

Twenty percent of non-Hispanic white and Asian women aged 50 and older are estimated to have osteoporosis, and 52 percent are estimated to have low bone mass.

Five percent of non-Hispanic black women over age 50 are estimated to have osteoporosis; an estimated additional 35 percent have low bone mass that puts them at risk of developing osteoporosis.

Ten percent of Hispanic women aged 50 and older are estimated to have osteoporosis, and 49 percent are estimated to have low bone mass.

Osteoporosis is under-recognized and under-treated not only in Caucasian women, but in African-American women as well.

Men

Twenty percent of those affected by osteoporosis are men.

Seven percent of non-Hispanic white and Asian men aged 50 and older are estimated to have osteoporosis, and 35 percent are estimated to have low bone mass.

Four percent of non-Hispanic black men aged 50 and older are estimated to have osteoporosis, and 19 percent are estimated to have low bone mass.

Three percent of Hispanic men aged 50 and older are estimated to have osteoporosis, and 23 percent are estimated to have low bone mass.

Fractures

One in two women and one in four men over age 50 will have an osteoporosis-related fracture in her/his remaining lifetimes.

Osteoporosis is responsible for more than 1.5 million fractures annually, including:

- ▶ over 300,000 hip fractures; and approximately
- ▶ 700,000 vertebral fractures;
- ▶ 250,000 wrist fractures; and
- ▶ 300,000 fractures at other sites.

Hip fracture risk is increasing most rapidly among Hispanic women.

Women with a hip fracture are at a four-fold greater risk of a second one, and the risk factors are similar to those for the first hip fracture.

Osteoporotic fractures lower a patient's quality of life.

Cost

The estimated national direct care expenditures (including hospitals, nursing homes, and outpatient services) for osteoporotic fractures is \$18 billion per year in 2002 dollars, and costs are rising.

Symptoms

Osteoporosis is often called a "silent disease" because bone loss occurs without symptoms. People may not know that they have osteoporosis until their bones become so weak that a sudden strain, bump or fall causes a fracture or a vertebra to collapse. Collapsed vertebrae may initially be felt or seen in the form of severe back pain, loss of height, or spinal deformities such as kyphosis or stooped posture.

Risk Factors

Certain people are more likely to develop osteoporosis than others. Factors that increase the likelihood of developing osteoporosis and fractures are called "risk factors." These risk factors include:

- ▶ Personal history of fracture after age 50
- ▶ Current low bone mass
- ▶ History of fracture in a 1° relative
- ▶ Being female
- ▶ Being thin and/or having a small frame
- ▶ Advanced age
- ▶ A family history of osteoporosis
- ▶ Estrogen deficiency as a result of menopause, especially early or surgically induced
- ▶ Abnormal absence of menstrual periods (amenorrhea)
- ▶ Anorexia nervosa
- ▶ Low lifetime calcium intake
- ▶ Vitamin D deficiency
- ▶ Use of certain medications (corticosteroids, chemotherapy, anticonvulsants and others)
- ▶ Presence of certain chronic medical conditions
- ▶ Low testosterone levels in men
- ▶ An inactive lifestyle
- ▶ Current cigarette smoking
- ▶ Excessive use of alcohol
- ▶ Being Caucasian or Asian, although African Americans and Hispanic Americans are at significant risk as well

Women can lose up to 20 percent of their bone mass in the five to seven years following menopause, making them more susceptible to osteoporosis.

Detection

Specialized tests called bone mineral density (BMD) tests can measure bone density in various sites of the body. A BMD test can:

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- ▶ Detect osteoporosis before a fracture occurs
- ▶ Predict chances of fracturing in the future
- ▶ Determine rate of bone loss and/or monitor the effects of treatment if a DXA BMD test is conducted at intervals of one year or more

Medicare reimburses for BMD testing every two years.

An increase in BMD testing and osteoporosis treatment was associated with a decrease in hip fracture incidence.

Bone density is an important determinant of fracture risk even in nursing home patients.

There has been a five-fold increase in office visits for osteoporosis (from 1.3 to 6.3 million) in the past 10 years.

Prevention

By about age 20, the average woman has acquired 98 percent of her skeletal mass. Building strong bones during childhood and adolescence can be the best defense against developing osteoporosis later. There are five steps, which together can optimize bone health and help prevent osteoporosis. They are:

- ▶ A balanced diet rich in calcium and vitamin D
- ▶ Weight-bearing and resistance-training exercises
- ▶ A healthy lifestyle with no smoking or excessive alcohol intake
- ▶ Talking to one's healthcare professional about bone health
- ▶ Bone density testing and medication when appropriate

A study of disease management in a rural healthcare population demonstrated that a preventive program was able to reduce hip fractures and save money.

Fractures

The most typical sites of fractures related to osteoporosis are the hip, spine, wrist and ribs, although the disease can affect any bone in the body.

The rate of hip fractures is two to three times higher in women than men; however, the one year mortality following a hip fracture is nearly twice as high for men as for women.

A woman's risk of hip fracture is equal to her combined risk of breast, uterine and ovarian cancer.

In 2001, about 315,000 Americans age 45 and over were admitted to hospitals with hip fractures. Osteoporosis was the underlying cause of most of these injuries.

An average of 24 percent of hip fracture patients aged 50 and over die in the year following their fracture.

One in five of those who were ambulatory before their hip fracture requires long-term care afterward.

At six months after a hip fracture, only 15 percent of hip fracture patients can walk across a room

unaided.

Not just hip fractures, but vertebral fractures are also linked with an increased risk of death.

One in five hip fracture patients ends up in a nursing home, a situation that participants in one study described as less desirable than death.

White women aged 65 or older have twice the incidence of fractures as African-American women.

Medications

Although there is no cure for osteoporosis, the following medications are approved by the FDA for postmenopausal women to prevent and/or treat osteoporosis:

- ▶ Bisphosphonates
 - ▶ Alendronate and alendronate plus vitamin D (brand name Fosamax® and Fosamax® plus D)
 - ▶ Ibandronate (brand name Boniva®)
 - ▶ Risedronate and risedronate with calcium (brand name Actonel® and Actonel® with Calcium)
- ▶ Calcitonin (brand name Miacalcin®)
- ▶ Estrogen/Hormone Therapy
 - ▶ Estrogens (brand names, such as Climara®, Estrace®, Estraderm®, Estratab®, Ogen®, Ortho-Est®, Premarin®, Vivelle® and others)
 - ▶ Estrogens and Progestins (brand names, such as Activella™, FemHrt®, Premphase®, Prempro® and others)
- ▶ Parathyroid Hormone – Teriparatide (PTH (1-34) (brand name Fortéo®)
- ▶ Selective Estrogen Receptor Modulators (SERMs)
 - ▶ Raloxifene (brand name Evista®)

Alendronate is approved as a treatment for osteoporosis in men and is approved for treatment of glucocorticoid (steroid)-induced osteoporosis in men and women.

Risedronate is approved for prevention and treatment of glucocorticoid-induced osteoporosis in men and women.

Parathyroid hormone is approved for the treatment of osteoporosis in men who are at high risk of fracture.

Treatments under investigation include sodium fluoride, vitamin D metabolites, and other bisphosphonates and selective estrogen receptor modulators.

Medical experts agree that osteoporosis is highly preventable. However, if the toll of osteoporosis is to be reduced, the commitment to osteoporosis research must be significantly increased. It is reasonable to project that with increased research, the future for definitive treatment and prevention of osteoporosis is very bright.

The National Osteoporosis Foundation (NOF) is the nation's leading resource for patients, healthcare professionals and organizations seeking up-to-date, medically sound information on the causes, prevention, diagnosis and treatment of osteoporosis. Please contact us to learn more about NOF, Awareness & Prevention Month or how to become a member.

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