

What is Osteoporosis?

Bones are not simply a hard skeleton, but a porous, living tissue. Bone mass decreases with age starting in your mid-30s and deteriorates more quickly in women following menopause.

Osteoporosis is a skeletal disease characterized by low bone mass and bone tissue deterioration. The disease affects about 25% of women and 5% of men over the age of 65. In individuals with osteoporosis, bones are more fragile, increasing the risk of fractures, which can be fatal in some cases.

Osteopenia is a condition characterized by low bone mineral density, which may develop into osteoporosis in some cases. Osteoporosis screening using a bone density test is recommended for postmenopausal women and men over 50.

Causes and risk factors

The table below summarizes the risk factors for osteoporosis.

Uncontrollable risk factors	Controllable risk factors
50 years old + Being female Family history of osteoporosis Previous bone fracture(s) Certain pharmaceutical medications Certain medical conditions that cause bone loss	Insufficient vitamin and mineral intake Excess animal protein intake Excess alcohol or caffeine intake Excess sodium intake Sedentary lifestyle Smoking tobacco



Signs, symptoms, and complications

Early bone loss often has no noticeable symptoms until the occurrence of a bone fracture. Signs and symptoms of osteoporosis include:

- Changes in posture such as a stooped back
- Height loss as bones weaken
- Bone fractures when falling down from standing or without extra force
- Back pain (that may result from a fractured or collapsed vertebra)

Diet and Osteoporosis

It's never too early or too late to maintain your bone health in order to prevent osteoporosis or slow its progression. The table below summarizes bone-supportive nutrients and the food sources in which you can find them.

Nutrient	Function	Sources
Calcium	Provides structure to the bones and teeth	Milk and dairy products, almonds, sardines, blackstrap molasses, broccoli
Vitamin D	Stimulates calcium absorption from intestines; Used in the endocrine (hormonal) system to help control calcium balance in the body	Cod liver oil, salmon, mackerel, snapper, milk, fortified orange juice, and soy milk
Vitamin K	Assists bone and cartilage mineralization	Green leafy vegetables, cabbage, liver, fermented cheeses
Vitamin C	Used as a cofactor in gene regulation of bone development and regeneration	Citrus fruits, kiwi, strawberries, bell peppers, broccoli, kale
Magnesium	Forms part of the apatite crystals in bone structure	Nuts and seeds, tempeh (fermented soy), green leafy vegetables (spinach, Swiss chard)

Lifestyle and Osteoporosis

The National Institutes of Health recommends a minimum of 30 minutes of physical activity each day, including strength training two to three times per week. If you have been diagnosed with osteoporosis, low-impact exercise, such as swimming, elliptical training, and fast-paced walking, may be a safer option. Including balance training at least once per week, such as Tai Chi or yoga, can help reduce the risk of falls.

You can also make your home safer to prevent falls by removing rugs or other obstacles, improving lighting, and adding handrails or grab bars where needed. Other lifestyle factors include quitting smoking and moderating intake of sodium, alcohol, and caffeine.