

Osteopenia and Osteoporosis

Brown Health Services Patient Education Series

What is osteopenia and osteoporosis?

Osteoporosis, which means “porous bones,” is a skeletal condition that causes weak and thin bones. People with this disease have an increased risk in sustaining bone fractures. Osteopenia refers to decreased bone mass, like osteoporosis, but to a lesser severity and without the increased risk of fractures. Unlike Osteoporosis, which is most often seen in postmenopausal people, osteopenia affects people of all genders and ages. Individuals with osteopenia have an increased chance of developing osteoporosis.

People with eating disorders, lack of exercise, eating a diet low in nutrients, tobacco use, patients on certain medications, or individuals with certain medical conditions may be at a greater risk of developing osteopenia and/or osteoporosis.

Important: Even if you have no high risk factors, building strong bones today may prevent osteoporosis from occurring in the future.

How does it occur?

Our skeleton provides structural support for our body. Bone is a living, growing tissue that is constantly being remodeled, broken down, and reformed again. During childhood and adolescence, the body produces bone faster than it is broken down - leading to growth and improving density. Peak bone density occurs during young adulthood (around mid 20s). As early as age 35, bone begins to break down faster than it is made. If the bones are not thick and dense at the peak, an individual may be at higher risk for developing the thin, weak, and fracture-prone bones that typify osteoporosis.

Therefore, it is crucial that young adults “bank” enough calcium in their bones to draw on later in life to prevent osteoporosis.

What are the signs and symptoms of osteopenia/osteoporosis?

Osteopenia has no symptoms. Osteoporosis typically does not have any symptoms until advanced stages of the disease, when fractures may occur easier.

- Most common fractures as a result of minor trauma include:
 - Vertebrae or spine, hips, and wrists
- Vertebral fractures are often asymptomatic but may present as:
 - Severe back pain
 - Loss of height
 - Stooped posture

What factors increase your risk of developing osteoporosis?

- Increasing age
 - Greater risk after age 60
- Estrogen deficiency
 - Postmenopausal - either naturally or surgically
 - Loss of menstruation occurring in persons with eating disorders or high performance athletes
- Low Testosterone
- Medications
 - Steroids
 - Anticonvulsants
 - Immunosuppressants
- Thin, slight body frame
- Low intake of calcium and vitamin D
- Cigarette smoking
- Alcohol use
- Inactive or sedentary lifestyle
- Certain metabolic diseases

What tests can be done to confirm the diagnosis of osteoporosis?

Osteoporosis can be confirmed by bone-density testing. This is usually suggested for postmenopausal people over age 65. Testing may be

considered for young people who have risk factors for osteoporosis such as an eating disorder, loss of menstruation, or history of multiple bone stress injuries.

Currently, the most accurate technique for determining bone density is dual-energy x-ray absorptiometry (DXA). It is similar to having an x-ray done but with lower levels of radiation. Based on the results, individuals are categorized as having normal bone density, osteopenia, or osteoporosis.

How is osteoporosis treated?

Medications can slow down the loss of bone but cannot eliminate osteoporosis. Most of the medicines available today are primarily aimed at treating osteoporosis in postmenopausal people. The best treatment is prevention of the disease:

- 1200mg per day of calcium
 - Dairy, leafy green vegetables, beans, almonds, soy milk, tofu
- 800IU per day of vitamin D
 - Salmon, tuna, vitamin-D fortified dairy products, eggs, mushrooms, liver, beef, vitamin-D fortified cereals
- Maintain normal weight
- Take part in regular physical activity, especially weight bearing
- Avoid smoking
- Moderate or eliminate alcohol intake