Osteoporosis – Can It Be Prevented?

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Osteoporosis is a crippling bone disease that affects more than 44 million Americans, 80% of whom are women. Osteoporosis is the cause of 90% of all hip fractures, and more than 1.5 million total bone fractures per year. Complications arising from osteoporosis is the 12th leading cause of death in the U.S. Osteoporosis represents a major health concern for women and all people over the age of 60.

Bone is living, growing tissue composed of a soft protein called collagen which is hardened by the mineral calcium. Bone mass is the combination of bone density and strength. Peak bone mass is reached between the ages of 25 – 35. After that, bones begin to lose density and may become weak and porous (like swiss cheese). Bone loss occurs without symptoms, progressing silently for years, and if preventive measures are not taken, can lead to osteoporosis.

Signs and Symptoms

The first sign of osteoporosis is usually a bone fracture. Bones become so weak that a sudden strain, bump or fall will cause a bone to break. The most common sites of fractures are the hip, wrist, spine, and ribs.

Fragile, porous bones may cause aches, pains, backaches, and discomfort when sitting or standing.

Weakened bones in the spine compress and collapse, causing a curvature in the spine called a Dowager's Hump. A curved spine causes a decrease in height. Dental problems, such as gum disease and tooth loss may be a sign of osteoporosis.

A diagnosis of osteoporosis can be made by an X-ray technique called Dual-energy X-Ray Absorptiometry. This test measures bone density or BMD (Bone Mineral Density) in different parts of the body. According to the guidelines of the American Association of Clinical Endocrinologists, BMD testing is appropriate for assessing risk in perimenopausal (prior to and during menopause) and postmenopausal women who are concerned about osteoporosis and are willing to accept available interventions. Medicare covers BMD screening for all women over age 65.

What Are the Risk Factors?

Certain people are more likely to develop osteoporosis than others. The following risk factors may increase a person’s likelihood of developing the disease:

- Gender - women may lose up to 20% of bone mass after menopause. Thin, small-boned women are at highest risk.
- Race – Caucasian, fair-skinned, and Asian women appear to be at higher risk but the disease affects people of all races and nationalities.
- Heredity – 75% of bone density is determined by heredity. It is important to know if there is a family history of fractures and diagnosed osteoporosis.
- Age – 50% of women over age 70 and 10% of men over age 60 develop osteoporosis.

The following are controllable factors that influence the development of osteoporosis:

- Decreased estrogen levels after menopause. Estrogen protects against bone loss by protecting the bones from certain body hormones that break down bone mass. Estrogen replacement or estrogen-like drugs may be prescribed for postmenopausal women.
- Smoking increases loss of calcium in the bones, and increases the loss of bone mass after menopause.
- Lack of exercise affects bone growth. Exercise helps to prevent osteoporosis by causing the contraction of muscles to put stress on the bones. Stress stimulates bones to grow new, denser bone tissue.
- Alcohol, in excess, blocks the absorption of calcium in the body, interfering with new bone tissue growth.
Diet affects bone mass. Because 45% of bone consists of minerals, it is essential that there is an adequate daily intake of calcium which helps to build bone mass and is needed for many other body functions. If calcium intake is low, the body will take calcium from the bones to meet its other needs. Magnesium and phosphorus are other necessary minerals that are needed for calcium absorption in the body. Vitamin C is necessary for bone cartilage formation, and Vitamin D also helps your body to absorb calcium.

**Preventing Osteoporosis**

By age 20, the average woman has acquired nearly 98% of bone mass. Building strong bones early in life can be the best defense against developing osteoporosis later. Taking preventive action to develop and maintain a healthy lifestyle can be beneficial at ANY age. A preventive program should include:

Eat a balanced diet rich in calcium and other minerals. Most Americans do not get enough calcium in their diets. Recommended daily intake is 1000-1500 mg. for women over age 50. Calcium is found in dairy products, broccoli, spinach, sardines, and many food products are now calcium-fortified. Calcium supplements may also be taken - consult your physician. Phosphorus is found in protein (meats, fish, poultry) and magnesium. (1200 mgs./daily is recommended). 600 mgs./daily of magnesium is recommended and may be found in whole grains, beans, and leafy vegetables. Magnesium is often found in calcium supplements, make sure you read the label.

Include Vitamins C and D in your diet. Many elderly people are deficient in Vitamin D. It is recommended that 400 IU of Vitamin D be taken daily. Vitamin D is found in fortified milk, liver, and egg yolks. Multivitamin supplements contain 400 IU of Vitamin D. Vitamin C is found in dark green and yellow fruits and vegetables, berries, potatoes, turnips, tomatoes, cauliflower, and cabbage. (Megadoses of vitamin and mineral supplements can be dangerous - be sure to check with your physician before taking supplements).

Exercise regularly. Exercise is one of the most important factors in maintaining bone mass throughout your life. Weight bearing exercises are best: walking, climbing stairs, jogging, tennis, dancing, lifting weights, skiing. However, it is important to exercise in moderation and discuss your exercise program with your physician.

Do not smoke, and limit alcohol consumption to 2 ounces per day.

If you are postmenopausal, discuss hormone replacement therapy or non-hormonal drug therapies with your physician. Make sure your physician is aware of your family history and risk factors. If you are considered at high risk for osteoporosis, your physician may feel that BMD testing is appropriate. Although osteoporosis is not curable, it IS preventable. By being aware of the risks and changing your lifestyle accordingly, you can take the necessary steps to prevent or decrease the severity of osteoporosis later in life.

This information is provided for educational purposes only and is not a substitute for sound medical judgment. If you have any questions or concerns, you should discuss them with your physician.

**Resources:**

National Osteoporosis Foundation
Harvard Women's HealthWatch
Dairy Council of California
American Association of Clinical Endocrinologists

**Related Healthy Living Links:**

HealthyExtensions
Discounted programs, products, and services