

## Understanding Osteoporosis

Did you know that the most likely reason your mother or grandmother (or even dad) got “shorter” with age was due to multiple vertebral fractures from osteoporosis? Osteoporosis is a progressive disease process in which bones become thinner, softer, and more porous (“spongelike”) due to a loss of the minerals stored in the bones. Osteoporosis is usually painless until a bone breaks or fractures. Bone fractures and height loss are all too often consequences of osteoporosis.

Osteoporosis is defined as ~ 25% bone loss compared to a healthy young adult or, on a bone density test, 2.5 standard deviations below normal. Although some loss in bone density occurs naturally with age, stooped posture and loss of height [greater than 1-2 inches] is actually caused by vertebral fractures due to osteoporosis. The two key nutrients for bone health are calcium, which makes bones stronger, and vitamin D, which helps the body absorb the calcium.

Of all the side effects of aging, osteoporosis is one of the more preventable through proper nutrition, exercise, changes in lifestyle, and early diagnosis

### Identifying the Problem

Osteoporosis is a major public health threat for more than 28 million Americans. 10 million individuals already have the disease and 18 million more have low bone mass, placing them at increased risk. Half of all adult women and one in eight men over age 50 will have an osteoporotic fracture in their lifetime. Fractures due to osteoporosis can lead to chronic pain, loss of independence and, in the case of hip fracture, can be life-threatening. One of every five persons who have a hip fracture will not survive more than one year. In people age 65 and older, 90% of hip fractures in women and 80% of those in men can be attributed to osteoporosis. Each year, osteoporosis is responsible for 1.5 million fractures and costs the US nearly \$14 billion each year.

Seventy-one percent of women with osteoporosis are unaware of the problem, leaving them at increased risk for fractures. Multiple vertebral fractures can result in collapsed vertebrae, stooped posture, and loss of height, chronic pain and disability, loss of independence, and can cause compression of the lungs and stomach. This compression can lead to difficulty in breathing and even loss of appetite. Despite the general public awareness of osteoporosis in general, very few connect osteoporosis with fracture and fracture risk. Without medical treatment, men and women lose one to three percent of their bone mass each year after age 50

### Who is at risk?

While the cause of osteoporosis is not known, a loss of estrogen due to menopause is the risk factor most commonly associated with osteoporosis. Tobacco, alcohol and caffeine use increases your risk of osteoporosis. Risk factors for osteoporosis and individuals who may benefit from screening include: female over age 40, thin and/or small frame, family history, anorexia nervosa or bulimia, inadequate dietary calcium or vitamin D, high caffeine intake, inactive lifestyle, cigarette smoking, excessive use of alcohol, certain hormonal disorders. Prolonged use of steroids [given for asthma, arthritis, allergies], anticonvulsants [seizure medication] or aluminum-based antacids, can weaken your bones.

## **What can be done?**

The first step in treating osteoporosis is accurate diagnosis. The EBT e-Speed™\* scanner, using a method called QCT, available at the PrevaHealth Wellness Diagnostic Center can perform rapid imaging of the spine and/or hip and provide a reliable, repeatable and absolute standardized measure of bone mineral density (BMD) along with the more traditional t- and z-scores. Following completion of the scan, the analysis is done quickly and reproducibly followed by a consultative report generation and estimates of fracture risk. The QCT program allows for diagnosis of low bone density as well as monitoring of same patient's bone density on serial examinations.

Once the diagnosis of Osteoporosis is made there are many things that can be done to help the problem. Exercise, adequate calcium intake, good nutrition and regular physical exercise play important roles in the prevention of osteoporosis. Where the disease is caused by some ingestible such as medication, alcohol or tobacco, substitution or behavior modification should be initiated. Limit alcohol intake to 1-2 alcoholic drinks per day and limit caffeine intake to no more than three cups of caffeine-containing beverages a day. Aging is another risk factor for osteoporosis. Where a deficiency is the cause, dietary changes or supplements should be considered. There are plenty of sources for calcium in the diet including dairy products or green vegetables such as broccoli, spinach, or kale. For osteoporosis prevention, vitamin D should be taken in doses of 400-800 IU/day. Dietary supplements for both are widely available and inexpensive. Exercise is also important. The emphasis should be on weight-bearing activities [walking, jogging, racquet sports] in which bones and muscles work against gravity. Lifting weights and using resistance machines can help preserve bone density.

Although there is no cure for osteoporosis, there are several treatments available. Several types of medication may prevent further bone mineral loss, and some of these can increase bone density by up to 5-10%, which can reduce the risk of fracture. Currently, all approved osteoporosis medications are known as “antiresorptive” agents because they stop resorption (or depletion) of minerals from bones.

*At PrevaHealth we use the innovative EBT e-Speed™ technology for our unique high resolution, low radiation osteoporosis screen. This information serves as the starting point for working with you and your doctor to design a personalized “HealthPATH” specifically tailored to your needs.*

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\* The EBT e-Speed™, was developed by General Electric, the world leader in medical imaging and is exclusively available In Ohio and it's surrounding states at the PrevaHealth Wellness Diagnostic Center