



Sensible Nutrition

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Osteoporosis Fact Sheet

Most of us think of bone as a hard, lifeless structure when in fact, it is a complex, living tissue. Throughout the life span, bones are breaking down and building up, a process called remodeling. Until the ages of 30-35, when you reach what is called “peak bone



mass”, you build more bone than you lose. In fact, about 90% of bone is made before the age of 20 with the remaining 10% will be made over the next 10-15 years. Then, as part of the natural aging process, your bones begin to break down faster than new bone is formed. In women, the decrease in bone is accelerated after menopause, when ovaries stop producing estrogen - the hormone that protects bone.

What is Osteoporosis?

Osteoporosis is the name for the disease caused by loss of bone mass and a disruption in the skeletal micro-architecture. With osteoporosis, bones become brittle and weak making them

more prone to fractures. Of those diagnosed with the disease, 80% are women. Osteoporosis is a major public health threat for an estimated 28 million men and women age 50 and over in the United States. Of these 28 million, 10 million already have the disease and 18 million have a bone mass lower than expected for their age, placing them at a high risk for the disease. As the baby boomers age, the situation will become even more serious. It is estimated that by the year 2015, the disease will threaten 41 million Americans. Osteoporosis is referred to as a silent disease because it typically progresses without symptoms until fractures occur.

The bones most susceptible to fractures are the hip, spine and wrist. Each year approximately 1.5 million fractures are associated with osteoporosis – 300,000 hip fractures, 700,000 vertebral fractures, 250,000 wrist fractures, and 250,000 fractures at other sites -- contributing \$13.8 billion to health care costs. Vertebral fractures can cause the spine to collapse and lead to loss of height and stooped posture. Hip fractures are clearly the most devastating. Following a hip fracture, there is a 10-20% rate of death within the next six months, and of those that do survive, 50% will be unable to walk without assistance and 25% will require long term care.

Prevention

One in three women over 50 years of age will suffer a fracture in their lifetime. As women age, they often worry about developing breast, uterine or ovarian cancer, but the fact is that a woman's risk of developing a hip fracture is equal to her combined risk of these cancers. A comprehensive medical assessment, which includes both lifestyle and medical history, can help a woman determine whether she is at risk for osteoporosis. A



doctor may recommend a bone mass measurement which is a specialized test that measures bone density. The most common type is dual energy x-ray absorptiometry, or DXA, while another diagnostic tool using urine is on the rise to monitor bone changes over time.

The good news is, you can avoid osteoporosis by taking preventive steps. The way we live – our eating habits, physical activity levels, alcohol intake, and tobacco use can increase or decrease our risk of bone loss. Nicotine and alcohol wreak havoc on bone by slowing growth and damaging tissue. Although there are some risk factors that we cannot modify, there are many that we can positively effect regardless of our age (see Table 1).

Young women need to be particularly concerned with these modifiable risk factors, since there is only one chance to maximize your bone mass – before age 35. With eating disorders on the rise, in both athletic and inactive young women, the future prevalence of osteoporosis may be worse than predicted. Eating disorders like anorexia nervosa (starvation) and bulimia nervosa (binge and purge) deprive the body of nutrients for bone growth and hormone production. When hormone production becomes irregular or ceases, a condition known as amenorrhea (loss of menstrual function) may occur. This condition mimics menopause in that estrogen is no longer present, leading to the weakening of bones. Pre-menopausal osteoporosis is a very serious problem and deserves immediate attention if detected. A young female athlete with low bone mass could potentially experience a devastating fracture that could change her future. Exercise, adequate calcium and moderate caffeine and alcohol intakes can help you prevent osteoporosis.

A large number of Americans fail to meet currently recommended guidelines for optimal intake of calcium, a mineral that keeps bones strong. The average intake of calcium in US women ranges from 500-600 mg/day, compared to the recommended 1000-1500mg. Increasing calcium intake is one of the most important steps you can take to prevent osteoporosis.

Table 1:
Risk factors for osteoporosis

Modifiable	Non-modifiable
Calcium intake	Frame or bone size
Exercise/physical activity	Race
Alcohol consumption	Age
Caffeine consumption	Gender
Tobacco use	Family history
Medication use (i.e. cortisone like drugs)	Estrogen levels