



Bones, Muscles & Joints

WHAT IS OSTEOPOROSIS?

Osteoporosis has been called a silent epidemic. More than 20 million women and men in the United States have this debilitating bone disease. Yet because there are no symptoms associated with it, few are aware that they are affected until they experience a disabling fracture. It is essential, therefore, that people know their risk factors and seek early diagnosis and treatment to strengthen the bones and prevent fractures.

Osteoporosis literally means “porous bones”. It is a popular misconception that once we reach maturity our bones are solid and permanent, like rigid girders. In fact, the skeleton is completely rebuilt every five years. So our bones are always under construction, always undergoing remodeling. If there is an imbalance in that remodeling process (e.g. bone is removed faster than it is replenished) or if we do not supply the body with the nutrients and physical activity required for strong bones, our bones will become brittle and fragile, susceptible to easy fracture. In severe cases of osteoporosis, the bones are so brittle that they can fracture simply by sneezing or lifting a grandchild.

HOW IS OSTEOPOROSIS DIAGNOSED?

A specialized test called bone densitometry (DEXA scan) is now available to measure bone mass. The test takes only 15-20

minutes and provides a printout of your bone mineral density and predicts your risk of future fracture. Radiation exposure from this equipment is very low, approximately 1% that of a regular X-ray. Follow-up measurements should be done on anyone receiving treatment for osteoporosis, to ensure the treatment is working. If your bone density test confirms osteoporosis, your rheumatologist may also order other diagnostic studies (blood work, urinalysis) to see if you have any medical conditions which cause the bones to thin.

WHAT CAN I DO TO PROTECT MY BONES?

Prevention is key in osteoporosis as it is in other diseases. The first step is to assess your lifestyle and make whatever modifications are needed to protect your bones. If you already have osteoporosis, you will need medications as well as lifestyle modifications to minimize fracture risk.

CALCIUM

Adequate calcium intake is critical to bone health at ev-

ery stage in the life cycle. Our bone strength is greatest in early adulthood (age 25-30), and is greatly dependent on calcium intake during years of growth. The rate at which we lose bone mass as adults is also related to our calcium intake. If we do not provide our bodies with enough calcium, which is needed for many other vital body functions, then calcium will be withdrawn from our bones to ensure adequate supply in the bloodstream. Calcium requirements vary by age group, and are affected by certain medical conditions. Ask your rheumatologist for specific recommendations.

VITAMIN D

Vitamin D is essential for the absorption of calcium and for the remodeling and repair of bones. We normally produce vitamin D in response to sunlight, although protective sunscreens can impair our body's ability to carry out this function. Vitamin D is often deficient in people over 60, and among those who live in climates which restrict time outdoors, especially winter time. Twenty min-

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If we teach you, we help you for a lifetime.

OUR DEDICATED TEAM

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utes of sun on the hands and face at midday supplies the daily requirements of Vitamin D. Milk usually has 400 i.u. per quart - check the label. Multivitamins also contain Vitamin D.

EXERCISE

When we exercise, the bones are stressed and become strengthened. Most valuable are weight-bearing exercises, which involve work against gravity, such as brisk walking, biking, tennis, or aerobics. Exercise must be dependent on a person's physical condition. Young women who exercise too strenuously may lose the protective effect of estrogen on the bones. Individuals who have osteoporosis (even if they are not yet aware of it) can risk bone fracture if they exercise inappropriately or too strenuously. Specific controlled exercises given by a physical therapist can improve function by increasing bone size, muscle strength, and joint mobility without risking injury.

ESTROGEN

Estrogen exerts a protective effect on bones. In its absence, bone loss can be dramatic. Menopause is a critical time for women's bones. The earlier the menopause, the longer a woman is deprived of estrogen's protective effect on bone. Women who go through natural menopause at an early age, or who have a hysterectomy with ovaries removed, lose their protection early and have many more years in which bone mass may progressively diminish.

AVOID TOBACCO

Yet another reason to stop smoking! Cigarette smoking increases osteoporosis risk. Tobacco smoke may be directly toxic to bone, lowers estrogen levels in

your body, and is associated with earlier menopause. Smokers have been shown to be at increased risk for osteoporotic fracture.

AVOID EXCESS ALCOHOL

Hheavy alcohol use (more than 1-2 drinks/day) is associated with lower bone mass and increased risk of fracture. This may be due to direct bone toxicity or to alcohol's effects on the liver and on Vitamin D.

TREATMENT OF OSTEOPOROSIS

Although there is no cure for osteoporosis, there are many treatment options available. The right treatment for you can only be determined by thoughtful discussion with your rheumatologist in light of your medical history and personal preferences.

HORMONE REPLACEMENT

Estrogen: Women who are menopausal can be given synthetic hormones (estrogen or estrogen/progesterone combination) to replenish their diminished supply. Estrogen not only helps protect against bone loss, but can also lower cholesterol levels and alleviate menopausal symptoms (hot flashes, insomnia, etc).

Evista: Evista is called a "designer hormone". It is similar to estrogen in its protective effects on bone and its ability to lower cholesterol, but carries no increased risk of breast or uterine cancer and does not cause menstrual bleeding.

ANTI-RESORPTIVES

This is a category of medications that slow the rate at which bone is resorbed, correcting the imbalance between bone resorption and bone formation.

There are a number from which to choose:

Alendronate (Fosamax): This is the first drug in this category to receive FDA approval for the treatment of osteoporosis. It has been shown to effectively decrease osteoporotic fractures of vertebra and hip. It should be used with caution in those with a history of esophagitis or strictures. There are specific guidelines for taking Fosamax.

Risedronate (Actonel): This is the most recently FDA approved drug for the treatment of osteoporosis. It also reduces bone turnover and, like alendronate, must be taken within specific guidelines.

Etidronate (Didronel): This drug has not been FDA approved for use in osteoporosis, although has been shown to be effective in retarding bone resorption. It is given in cycles: 2 weeks of drug treatment followed by 12 weeks without treatment, then restart.

Calcitonin (Miacalcin): This is a different type of hormone, one that is produced by the parathyroid glands in your body. Easily given by nasal spray once daily (although may also be given by injection), calcitonin reduces bone turnover and improves bone mass.

Keep in mind that medications alone are not sufficient to improve bone mass. Although they can decrease the rate of bone resorption, your body also needs the building blocks of bone (calcium, vitamin D) to ensure that new bone is formed. Medications also take time to act and, in the interim, you need to make sure that you know what you can do to protect your bones against fracture. Remember - the most effective treatment begins with education!