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PID:

## Osteoporosis

### What Is Osteoporosis?

Osteoporosis is a disease that currently afflicts approximately 25 million older Americans. Osteoporosis causes the bones in your body to become less dense, making them weaker and much more prone to injury. Generally osteoporosis increases with ageing as a normal occurrence.

Osteoporosis mainly affects women over the age of 40, after the onset of menopause.

Women are at greater risk then because estrogen helps the bones retain calcium, and after menopause the body no longer produces estrogen.

Because osteoporosis most often strikes an older population, fractures that occur as a result of weakened bone, such as to the hip and spine, can be very serious and even life threatening. Many people who experience a hip fracture do not ever fully recover from the injury, and for some it is ultimately fatal.

The bones in your body provide a great deal of stability needed to go about the activities of your daily life. They support your body's weight and provide stability for your muscles when you move.

Bone is hard, hard enough to support the weight of your body, but it is important to understand that it is actually living tissue.

When you are young, the bones in your body grow because the cells are so active and multiplying, and later, up until age 30, they become progressively denser. New bone cells add strength and the old cells are removed. Old bone is broken down and new, stronger bone replaces it. Calcium and other minerals are instrumental in helping

this process of building stronger, denser bone. Good nutrition is obviously important in providing the necessary building material for growing healthy bone.

With further ageing, the rate of new bone replacement is surpassed by old bone removal and at a progressive rate.

After menopause, however, women begin to lose bone density quite rapidly.

This process takes place in men over age 40 as well, but is more rapid in women due to the drop in estrogen levels in the body. Women are also more severely affected because their bones are less dense than men's even before the onset of menopause drops estrogen levels. Women have approximately 20-30% less density at age 30, when bone density is greatest, than do men.

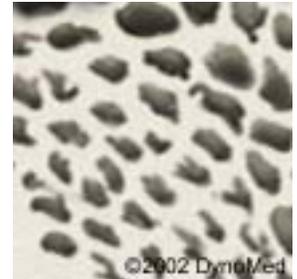
All persons over age 40, then, and women in particular, will lose bone density.

In very rare cases, children may suffer from osteoporosis. If this happens, most often another disease is to blame or sometimes a medication the child takes is at fault.

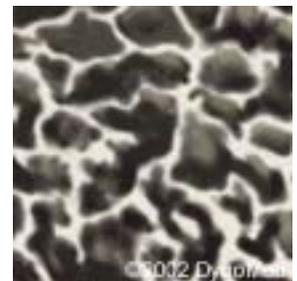
### Causes of Osteoporosis

Osteoporosis is diagnosed by a combination of factors. Your family history is important in understanding whether you are at risk for the disease.

Your doctor will perform a complete physical examination and may order



Normal bone



Osteoporosis



Hip fracture



Osteoporosis of spine

blood tests to rule out any other possible conditions. If you are at risk for developing osteoporosis, your doctor will most likely order a bone density test. This is done with a special machine called a bone densitometer.

You may also hear your doctor refer to it as a "DXA Scan", which refers to the dual-energy x-ray absorptiometry technology it uses. This can tell your doctor how much bone density you have lost. He may order this scan at several periods throughout your treatment, to check the progression of the disease.

Other tests your doctor may order include a test of the calcium level in your blood, a test of your thyroid level, and liver and/or kidney tests. These will help your doctor to assess your overall physical condition, which will impact on the treatment plan for your particular condition.

Before age 30, there are several things you can do to increase your bone mass. You should increase your calcium intake to approximately 1500 mg. per day, get regular exercise, and avoid activity that will put you at an increased risk, such as smoking and heavy alcohol use. In addition to taking calcium, it is important to get enough vitamin D, as this will increase the amount of calcium your body absorbs. You can get vitamin D from fortified milk, fish, liver, and exposure to sunlight.

Dairy products such as milk and cheese are rich in calcium, as are green leafy vegetables, tofu, and some nuts. Some other foods such as orange juice may also be fortified with calcium. If you need to take a calcium supplement, you should try to find one that contains calcium carbonate, as it provides the highest quantity of useful calcium.

You should also be sure to get sufficient exercise. It is important that this includes some weight-bearing exercise, as your bone will strengthen in response to the forces placed on it. This includes walking, jogging, skiing and other sports.

Smoking puts you at an increased risk for osteoporosis because it lowers estrogen levels and reduces bone mass. If you smoke, it is important for both your health in general, and also to lower your risk for osteoporosis.

Heavy alcohol use can also put you at a higher risk for developing osteoporosis, as it contributes to the loss of bone density and may make you more prone to falling.

For women, another important factor in the loss of bone density is the decrease in estrogen levels in the body.

After menopause, the ovaries stop producing estrogen, which is a hormone that regulates your menstrual cycles and helps to sustain bone density. Estrogen therapy begun within the first few years after menopause can significantly reduce your risk for developing osteoporosis.

Osteoporosis is mainly caused by too little estrogen or too little calcium.

Other risk factors include:

- \* Being female
- \* Early menopause
- \* Being Caucasian
- \* Being underweight
- \* Family history of osteoporosis
- \* Eating disorders such as anorexia or bulimia

## Symptoms of Osteoporosis

Some people who have osteoporosis may have no symptoms until their bones start to break.

Sometimes, in the early stages of the disease people may have a backache and start slowly to become round shouldered.

Once the disease has begun to worsen, a loss of height can occur. And, of course, bones start to break with only minor injuries.

## Treatment of Osteoporosis

If your doctor thinks you might have osteoporosis, she or he will most likely take a complete medical history and do a complete physical exam first. Then, you might need some bone x-rays and even a bone densitometry test. This test measures the density of your bones to see if some mass has been lost.

Treatment of osteoporosis does not cure it. Instead, it helps to minimize bone loss.

Treating patients with osteoporosis will depend on a number of factors, including age and the degree to

which the disease has progressed. Many medications are available that help to add calcium to the bones, including Alendronate Sodium, a calcitonin spray, estrogen, and other hormones.

Estrogen treatment can be helpful for women who have begun to experience the effects of osteoporosis following menopause. Estrogen can help to strengthen the bones, even once they have begun to weaken, and can greatly reduce the chance of fractures. Estrogen also does reduce the risk of heart disease and stroke.

Some women are surprised to discover that their menstrual periods resume during estrogen therapy. This occurs because estrogen stimulates the uterus. However, once you have gone through menopause, the ovaries do not release eggs. Without ovulation, then, you cannot become pregnant.

Your doctor should be able to offer you several different options for taking estrogen. There are various forms, including tablets and a patch. Your doctor will also take into consideration whether or not you have had your uterus removed, because estrogen given alone can increase the risk of uterine cancer. Your doctor may prescribe another hormone, progestin, to decrease this risk, if you are at risk.

Another group of medications your doctor may prescribe are known as biphosphonates. You may hear your doctor refer to Alendronate, which is one of these. Biphosphonates help to increase bone mineral density and reduce bone loss, but they are not hormones. There are additional benefits and drawbacks to these as compared to estrogen, however, so you should discuss your options thoroughly with your doctor.

In addition to hormones or other medications, your doctor may prescribe a combination of calcium and vitamin D to raise the calcium level in your bones. You should consult with your doctor before beginning any such treatment, as too much vitamin D can be harmful.

Finally, there are many things you can do to maintain good health and activity even after you have been diagnosed with osteoporosis. You should get regular exercise, preferably weight bearing. Your doctor or a physical therapist or rehabilitation specialist can help

you to determine what exercises will be helpful for your condition.

You should also take care to maintain good posture, particularly when lifting anything. This will help to reduce the stress on the bones in your spine. Finally, you should take care to minimize your chances of falling. You should make sure that any area rugs are carefully secured, and other slippery surfaces such as the tub and shower are addressed.

Calcitonin is another drug that is sometimes used to decrease bone loss.

The National Research Council recommends 800 mg of calcium each day, yet the average person consumes only about 450 to 550 mg. Milk and dairy products provide the best sources of calcium. But, there are also calcium supplements that you can buy to increase your intake of calcium. Along with the need for calcium, you also need vitamin D to make sure that you absorb the calcium you are getting.

There are also some newer drugs that hold promise for the disease. Some of these are:

\* Eli Lilly & Co.'s Evista(r) has been shown to greatly reduce the number of new spinal fractures in women with osteoporosis.

\* Raloxifene can be taken to increase bone mineral density in the spine and hip. It lessens the risk of spinal fracture, too.

\* Fosamax(r) by Merck is for men and women who need daily steroids and who also have some loss of bone density. The drug can help increase hip and spinal bone mass density.

The information provided herein is not intended to be a substitute for professional medical advice. You should not use this information to diagnose or treat a health problem or disease without consulting a licensed physician.

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