

Preventing and treating Osteoporosis



Dr. Crutchfield, my mother was recently diagnosed with osteoporosis. What is osteoporosis?

After about age 30, humans lose more bone than we make. Over time, this loss can have serious negative health effects. Bone thinning is called osteopenia. Bone thinning to the point where it is considered a disease is called osteoporosis.

Osteoporosis is a condition where the bones become thin, weak and brittle, so much so that even mild to moderate activities like coughing hard or even bending over to tie a shoe can cause bones to break. The most common areas for broken bones associated with osteoporosis are the spine and hips.

For a good review of overall bone health, please see our *Spokesman-Recorder* article “Strong bones are necessary for good health” (September 16, 2015).

Osteoporosis prevention

These steps will reduce your risk for developing osteoporosis:

- *Optimize your calcium intake.*

Most people require 1000-1200 mg of calcium per day, depending on age and sex. The best sources of calcium include healthy dairy products and fresh green leafy vegetables.

There are many helpful foods that are supplemented with calcium, like citrus juices (orange) and several breakfast cereals. Additionally, you can take a dietary calcium supplement. Talk to your doctor to determine how much calcium you should be getting on a daily basis.

- *Optimize your vitamin D intake.*

Vitamin D is essential because it increases your body’s ability to absorb calcium, a fundamental building block for strong bones. Most adults should consume approximately 1000 international units of vitamin D daily.

The best source of vitamin D is from fortified milk and oily fish like tuna, halibut and salmon. Interestingly, sunlight causes vitamin D to be produced in the skin. This presents a controversial situation.

On the one hand, vitamin D is essential for calcium absorption and healthy bones, but the sunlight that triggers the production of vitamin D in the skin can also trigger skin cancer. Unfortunately, some ignorant or unethical people use this as a way to convince people they need excessive sun exposure or even tanning beds.

The amount of sun required to produce sufficient amounts of vitamin D is equivalent to the amount of sunlight that hits an area of skin the size of two palms for about 15 minutes per week. As a result, most doctors recommend the best source of vitamin D should come from food or dietary supplements.

Don’t run the risk of getting skin cancer from over-exposure to the sun. Your doctor will recommend the amount of vitamin D that is right for you.

- *Maintain a good exercise program.*

Physical activity of the muscles and supporting bones does two important things: It slows bone loss and strengthens existing bones. Strength training is especially necessary for maintaining good bone

health. Strength training is good for both bone and muscle health in the spine, legs and hips.

- *Maintain good health habits.*

This means avoiding tobacco and limiting alcohol consumption. Tobacco weakens bones and alcohol inhibits bone formation and strengthening.

Osteoporosis risk factors

- *A family history of osteoporosis*

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If a first-degree relative has osteoporosis, your risk for developing osteoporosis is increased. This is a great reason to maintain healthy bone habits.

- *Body size*

If you have a smaller frame, there is less bone mass available as one ages. This puts the smaller framed person at greater risk for developing osteoporosis.

- *Decreased hormones*

Decreased estrogen in women and decreased testosterone in men will also cause a weakening of bones. These hormones decrease in men gradually over time, and in women with menopause.

- *Other hormone problems*

Abnormal levels of thyroid, parathyroid, and adrenal hormones have all been associated with an increased risk of osteoporosis.

- *Low-exercise lifestyle*

A sedentary lifestyle also puts one at risk for osteoporosis. Remember, exercise is the key to good health in so many ways.

- *Disorders of absorption*

Gastrointestinal diseases or (weight loss) surgery that inhibits the ability of our intestines to absorb calcium and other nutrients necessary for good health also puts one at risk of osteoporosis.

- *Some medications*

Medications such as systemic steroids or long-term retinoid use over time can increase the risk of osteoporosis. Be sure if you are taking such medications to discuss this with your doctor so you can adequately monitor bone health.

Osteoporosis symptoms

Early on, there may be no symptoms. If the condition progresses, one may develop:

- *Stooped or bent-over posture*
- *A loss in height over time*

Without the pressure of gravity, most astronauts who spend a significant amount of time in space actually gain one or two inches in

height. Conversely, as we age and if we lose bone mass, most people will actually shrink in height by several inches over a lifetime.

- *Back pain*

This is caused by micro and standard spine fractures.

- *A broken bone*

Due to thinning bone, this can occur with very little impact or trauma.

Osteoporosis diagnosis

Normal bone, under magnification, looks like a honeycomb. When bone is osteoporotic, the honeycomb appearance has large holes or “pores,” giving the name osteoporosis.

Osteopenia is a condition that occurs when the bone begins to thin and weaken. Osteopenia is the precursor to the development of osteoporosis.

Osteopenia actually means “bone thinning.” Imaging studies, using very low levels of x-rays, can easily be done to determine bone health, including osteopenia and osteoporosis, and are the standard of diagnosis.

Osteoporosis treatments

The mainstay of osteoporosis treatment includes lifestyle modifications such as:

- *Increasing calcium and vitamin D*
- *Regular exercise*
- *Medications*

The mainstay medication for the treatment of osteoporosis is a class of drugs known as bisphosphonates. They block bone breakdown, which maintains bone mass and may even promote bone thickening. They are reasonably priced, proven useful, and have a good long-term safety profile.

There are even newer classes of medications that block bone breakdown, and also an injection (teriparatide) that stimulates bone growth. These are used as second-line treatments when other treatments are not working.

Additionally, in postmenopausal women, estrogen or drugs that mimic estrogen may be used, but they are used with caution because estrogen can also have unwanted side effects, and these must be balanced with the positive impact of healthy bones.

A doctor can best help develop a plan to both monitor, prevent and treat osteoporosis. Remember, bone health is of primary importance for a happy, healthy life.

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