VB SPINE

Patient Guide to

Osteoporosis

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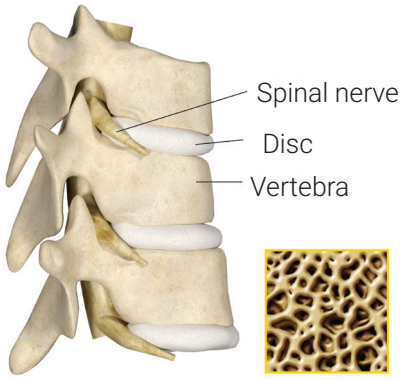
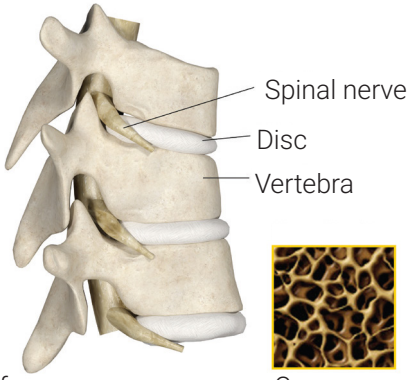
What Is Osteoporosis?

Osteoporosis is a condition in which bone density and quality are below normal levels. Although anyone can develop osteoporosis, it most commonly occurs in older women who are white or Asian.1 Osteoporosis typically affects the spine, wrists and hips more than other bones. Bones are living tissues in which old bone is constantly replaced by new bone. As humans get older, old bone is removed faster than new bone can be produced by the body. This disparity causes bones to become weak and brittle, which can result in fractures without suffering significant trauma. Osteoporosis often does not produce any symptoms until a fracture occurs, and many people may not even know that they have osteoporosis. A simple, painless, non-invasive test that is similar to an X-ray, called a DEXA (DEK-sah) scan, can be performed to check your bones for osteoporosis.

Vertebral compression fracture



Cross section of healthy bone



Cross section of osteoporotic bone

What Is the Effect of Osteoporosis on the Spine?

The spinal bones (vertebrae) are particularly susceptible to osteoporosis. Brittle, weak vertebrae can fracture as a result of minimal trauma or even during activities of daily living such as bending, coughing or lifting. The most common type of spinal fracture is called a vertebral compression fracture (VCF).2 In these cases, the front (anterior) part of the vertebra, which is usually rectangular in shape, is crushed and becomes wedge shaped.

What Are Some of the Possible Risk Factors for Osteoporosis?[3]

- Reduced hormone levels in women (estrogen) and men (testosterone)
- Thyroid problems
- Low calcium or Vitamin D levels
- Long-term use of steroids or some other medications
- Some medical conditions including metabolic disorders, malabsorptive diseases, rheumatism, and hypogonadism
- Sedentary lifestyle
- Excessive alcohol consumption
- Strong family history of osteoporosis

What Are Some Common Symptoms of Vertebral Compression Fractures?

- Sudden onset of back pain
- Loss of height
- Stooped or hunched forward posture
- Abnormal curvature of spine, known as **kyphosis** (see Glossary)

What Can Be Done to Prevent Osteoporosis?

- Good nutrition
- Maintain a healthy body weight
- Consume recommended levels of calcium and Vitamin D, especially after the age of 50
- Exercise regularly
- Avoid smoking and excessive alcohol consumption

Surgical Treatment Options for **Osteoporosis**

In general, surgical treatment options presented by your surgeon are aimed at relieving pressure on nerve roots in an attempt to address pain.

What Are the Treatment Options for Osteoporosis and Vertebral Compression Fractures?

If you are diagnosed with osteoporosis, your doctor may prescribe one or more medications to help prevent further loss of bone density or to help you rebuild lost bone.

If you develop a **vertebral compression fracture** (see Glossary), it is possible for you to be successfully treated with the use of pain medication(s) and/or a brace to help stabilize the bones of your spine. In some cases, your physician may recommend a minimally invasive surgical procedure during which cement is injected into the fractured vertebra to stabilize the bone, reduce pain, and prevent further collapse. In this procedure, known as **vertebroplasty** (see Glossary), the cement acts as an internal "cast" or "splint" to help stabilize the spine until the bones heal.

Vertebroplasty

Glossary

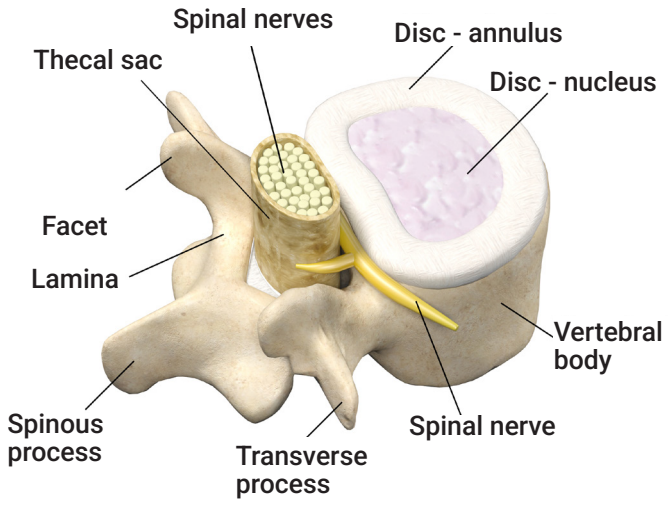
Kyphosis: a forward rounding of the back characterized by a “hunchback” appearance

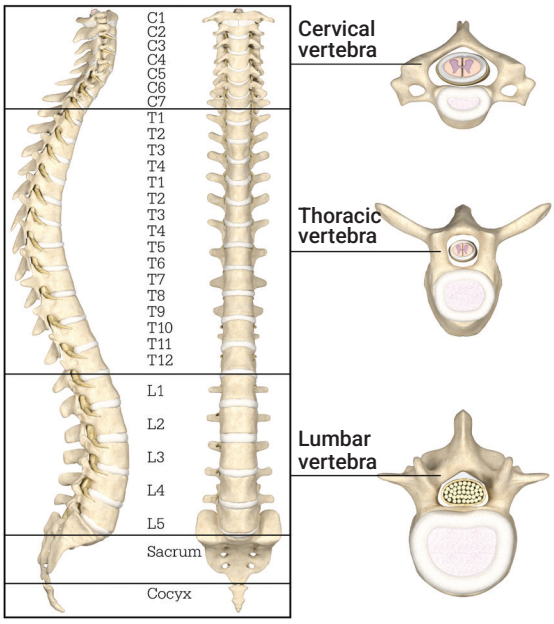
Vertebra/Vertebral body: spinal bone

Vertebral compression fracture: an injury to the spine where the front (anterior) part of the spinal bone (vertebra), which is usually rectangular in shape, is crushed and becomes wedge shaped

Vertebroplasty: spinal procedure in which bone cement is injected through a small hole in the skin into a fractured vertebra with the goal of relieving back pain caused by vertebral compression fractures

Key Spinal Structures to Know





Reference:
1. Thomas, PA. “Racial and Ethnic Differences in Osteoporosis.” Journal of the American Academy of Orthopaedic Surgeons. Volume 15, Supplement 1. 2007: S26-S30. Print.
2. Heinzelmann M & Wanner G. “Thoracolumbar Spinal Injuries.” Spinal Disorders: Fundamentals of Diagnosis and Treatment. Ed. Norbert Boos & Max Aebi. Berlin: Springer-Verlag Berlin Heidelberg, 2008. 883-924. Print.
3. Forstein DA, Bernardini C, Cole RE, Harris ST, Singer A: Before the breaking point: Reducing the risk of osteoporotic fracture. J Am Osteopath Assoc 2013;113 (2 suppl 1):S5-S24, quiz S25

In general, surgical treatment options presented by your surgeon are aimed at relieving pressure on nerve roots in an attempt to address pain.

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