AXIS
NEUROSURGERY AND SPINE

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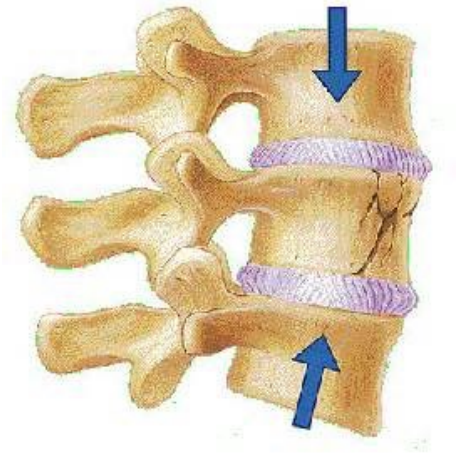
SPINAL COMPRESSION FRACTURES

A compression fracture of a spine bone (vertebra) causes the bone to collapse in height. Compression fractures are the most common type of fracture affecting the spine.



CAUSES OF COMPRESSION FRACTURES

Compression fractures of the spine can occur from an injury to the spine such as a hard, direct fall on the buttocks, or by a downward blow the head.

Cancer may weaken spinal bones also, making simple movements such as coughing result in a compression fracture.

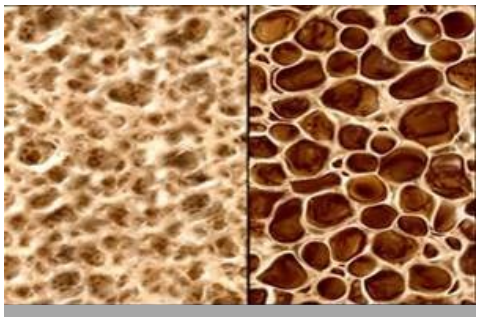
By far though, compression fractures are commonly the result of osteoporosis. About 700,000 cases of compression fractures due to osteoporosis occur each year in the US.

As we age, osteoporosis may occur (although rarely, osteoporosis can be caused by other conditions and occur in younger people). Spine bones that are weakened from osteoporosis may become unable to support normal stress and pressure. As a result, something as simple as coughing, twisting, or lifting can cause a vertebra to fracture.

TREATMENT

Typically consists of:

- Using back braces
- Avoidance of the use of anti-inflammatories (e.g. Motrin)
- Use of calcium supplements and bisphospenates
- Pain control
- Surgery may be advised in certain circumstances (such as having failed bracing)
- Kyphoplasty is usually the surgical treatment of choice, although in rare cases more complex surgery may be required.



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TREATMENT OF KYPHOSIS

Conservative Care - Conservative treatment includes medications, exercise, and certain types of braces to support the spine. If osteoporosis is the cause, treatment of the osteoporosis may slow the progression of the kyphosis.

Physical Therapy - Physical therapy and exercise is an important part of treating adult kyphosis. A well-designed exercise program can also provide pain relief in many patients. A physical therapist will develop an appropriate exercise routine for your case. Typical advice includes:

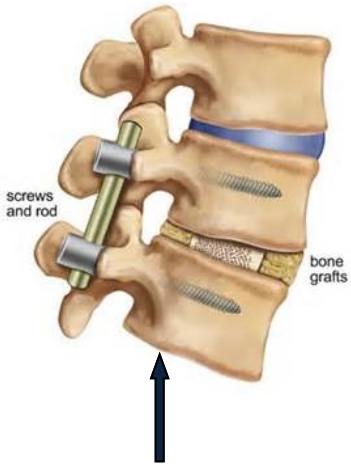
- Learning correct body mechanics to maintain erect posture
- Doing regular non-jarring exercises, such as swimming
- Maintaining high levels of activity
- Doing your daily stretching exercises

Surgery - Surgery is recommended only when the expected benefits outweigh the risks. Surgery may be recommended in the following situations:

- **Pain** - The most common reason for surgery is for relief from severe pain which is not manageable through any conservative treatment.
- **Progression of curve** - If the curvature continues to worsen, surgery may be suggested to prevent the problems that come from severe kyphosis.
- **Cosmetics** - In some cases, kyphosis causes physical deformity that is unbearable to the patient. In these cases, surgery is the only option for correcting the condition.

Type of Surgery - When kyphosis requires surgery the surgery is usually a multiple level spinal fusion, however each individual patient and the location and degree of kyphosis will be considered before recommendations are made to the patient. Regardless of the type of surgery recommended, the goals of most surgical procedures for adult kyphosis are to:

- Reduce the deformity (straighten the spine as much as possible)
- Stop the progression of the deformity
- Remove any pressure from the nerves and spinal cord
- Protect the nerves and spinal cord from further damage



Example of bone grafts and metal implants used in fusion

The surgical approach may include an operation on the back of the spine, the front of the spine - or both.

The goal is to first straighten the spine and then fuse the vertebrae together into one larger bone using both bony and metal implants such as screws, plates, or rods, in order to help straighten the spine and hold the vertebrae in place while the fusion heals and becomes solid.