



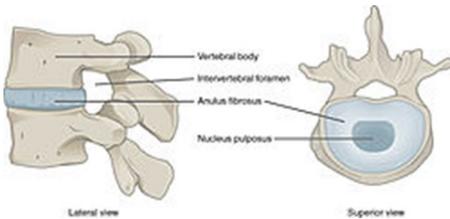
NEUROSURGERY AND SPINE

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## INTERVERTEBRAL DISC DISEASE

Vertebrae are the bones that form the spine. The vertebrae are cushioned by small discs which are located in between each of the vertebrae (intervertebral). The discs are round and flat, with a tough outer layer that surrounds a jellylike material. This material acts as a shock absorber for the vertebrae. The discs are held in place by thick ligaments.



**If you look at the image to the left, the blue area is the disc, while the grey areas are the vertebrae (spinal bones)**

**The first view is from the side of your spine, while the second view is what the disc looks like if you were looking down the center of your spine.**

## THE DEGENERATION OF THE INTERVERTEBRAL DISC

Disc degeneration is a very common condition; 25% of people show some disc degeneration in at least one area of the spine. The incidence of degeneration increases after age 40.

As we age, the disc begins to degenerate because the jellylike material dehydrates, decreasing the shock absorber quality of the disc. The thicker outer shell which surrounds the jellylike material also becomes weaker, increasing the risk of tearing and there are also changes to the cartilage and bone in the vertebrae as well. These degenerative changes to the intervertebral discs may be a cause of those back twinges we all feel as we get older, or it can be the cause of significant pain and debility – particularly as the result of an injury or accident.

While even normal discs can become herniated due to a severe injury, usually the discs that become herniated are in an early stage of degeneration as discussed above. When a disc becomes herniated, a portion or fragment of the jellylike center of the disc (the nucleus) is pushed out into the spinal canal through a tear or rupture of the harder outer ring. Because there is limited space within the spinal canal – really just enough space for the spinal nerve itself – the disc material which has pushed out can press on spinal nerves, causing pain, which may be severe. Herniated discs can occur in the lower back or in the neck.

## THE HERNIATED DISC (ALSO CALLED A SLIPPED OR RUPTURED DISC)

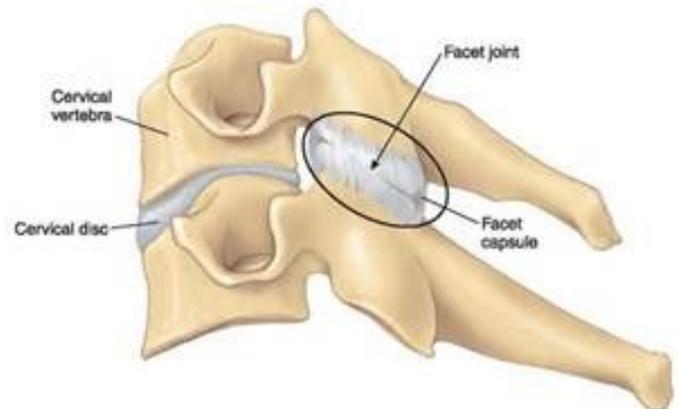
The green arrow points to where the herniated disc is pushing on



## FACET ARTHROPATHY

Facet arthropathy is the name for disease of the facet joints in the spine. Facet arthropathy occurs when the joint structures, which include the ligaments surrounding the joint, the membrane-enclosed synovial capsule, the lubricating synovial fluid, and the cushioning joint cartilage within, begin to degenerate often causing the joint space to compress and the cartilage begins to wear away.

If facet arthropathy progresses to a point where the friction on the adjoining bony surfaces increases, bone spurs may develop in response to increase the surface area of the joint.



The black arrow points to the facet joint.

## SYMPTOMS OF DISC HERNIATION AND FACET ARTHROPATHY

The symptoms of disc herniation range from no pain or a minor back or neck ache, to pain (often severe), and numbness or weakness in an area of the body affected by the nerve on which the disc is pressing.

The symptoms of facet arthropathy are also pain, but the pain will be localized to the affected joint (facet).

Careful examination and review of diagnostic images will allow the provider to determine the cause and location of your symptoms and to recommend a course of action.