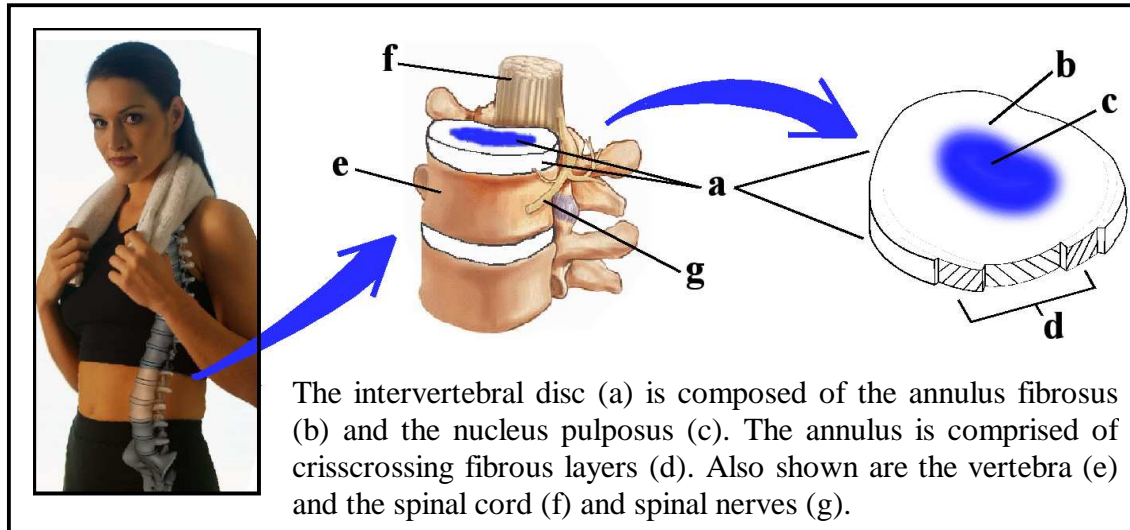


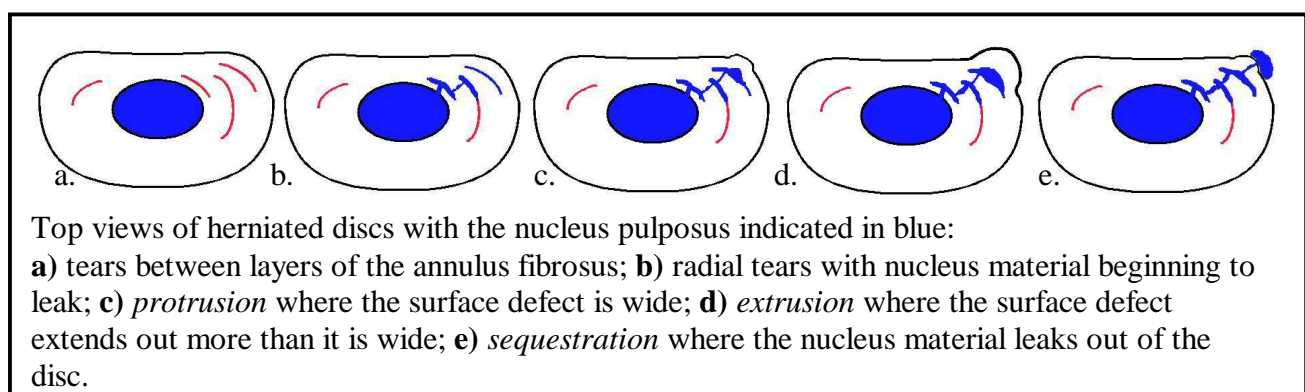
Low Back Pain: “Herniated Disc”

The bones of the spine in the lower back are called lumbar vertebrae (singular “vertebra”). Between vertebrae are flexible discs to allow movement. These discs are called **intervertebral discs (IVD)**.



The disc is made up of two parts. The central part is called the “**nucleus pulposus**”. It has no nerves or blood supply, but is made up of cells that live in a protein gel that holds water. The cells survive by the absorption of water (containing oxygen and nutrients) from the vertebrae above and below the disc. Normal movement of the vertebrae, as with physical activity, helps the exchange of water and keeps the cells of the nucleus pulposus healthy. The outer portion of the disc is called the “**annulus fibrosus**”. This is made of layers of fibrous cartilage. The layers of fibers crisscross each other similar to layers of plywood. This makes a flexible, tough band around the nucleus pulposus. The outer rings of fibers have nerve supply so damage to them can cause the person to feel pain.

A herniated disc is a general term for an injury to an IVD. Currently more specific terms such as **disc bulge** (not shown), **protrusion**, **extrusion** and **sequestration** are used to classify disc injuries.



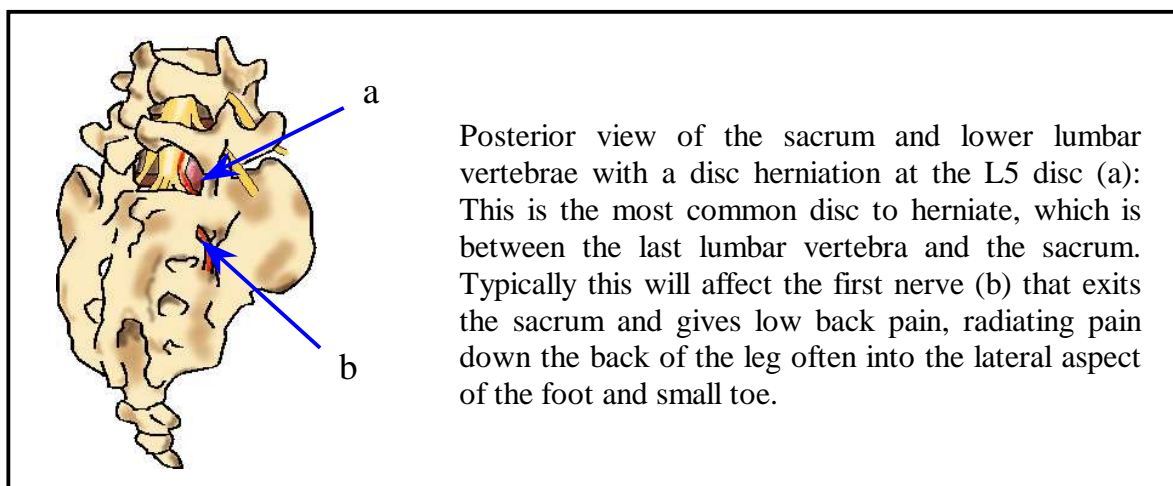
How does the disc herniate?

Overtime the IVD loses its water content which is one of the first signs of degeneration. Furthermore tears can form in the disc, especially with movements that combine bending and twisting as the layers of fibers can tear and separate. These weak spots can result in a tear radially (outwards), which allows the nuclear material to migrate or herniate to the periphery of the disc and can cause pain. Originally it was thought that a “herniated disc” often protruded enough to compress the nerve.

However it is now thought that in many cases inflammation (a chemical response to injury) is what is affecting the nerve. If the nerve is affected then symptoms can be felt down the leg.

What are the symptoms of a disc herniation?

People suffering from a herniated disc have low back pain and spasm, which is worse with movement or changing positions. They lean to one side, which they find less painful. Furthermore as the nerves that serve the legs and feet areas travel within the lumbar spine there can be symptoms of pain, numbness, tingling or weakness experienced into the leg. These radiating symptoms are often worse with increased pressure in the abdomen such as with coughing, sneezing or straining at the bowel. Often those with a disc injury have had some sort of low back pain previously.



Posterior view of the sacrum and lower lumbar vertebrae with a disc herniation at the L5 disc (a): This is the most common disc to herniate, which is between the last lumbar vertebra and the sacrum. Typically this will affect the first nerve (b) that exits the sacrum and gives low back pain, radiating pain down the back of the leg often into the lateral aspect of the foot and small toe.

Is an X-ray or MRI necessary?

No. X-rays and magnetic resonance imaging (MRI) can often be useful, but the benefit (clinical information) does not necessarily improve outcome and does not always outweigh the costs (radiation exposure if using x-rays, financial cost of x-ray or MRI, etc). What is most important, regardless of what an x-ray or MRI would show, is the clinical picture of that individual. This includes their medical history, their signs and symptoms and how they are responding to treatment.

What can a chiropractor offer me to prevent or treat a disc herniation?

First the chiropractor must diagnose the problem from conducting a history and physical examination. A neurological examination must be performed and more serious pathology must be ruled out. Then a proper treatment plan is formulated. Initially treatment focuses on reducing pain, supporting the body's healing process and monitoring to ensure positive progress. Therapeutic exercises, physical therapies, soft tissue massage, a back support as well as nutritional & ergonomic advice may all be appropriate. During the acute phase of a disc herniation chiropractic adjustments can help as they reduce spasm and pain, but they must be done with care.

The ultimate goals are to minimize pain, restore function and address the factors that put the patient at risk for a future re-occurrence. At this point chiropractic adjusting helps maintain motion between vertebrae. This allows the diffusion of nutrients and oxygen to the disc to keep it healthy. As the disc heals and muscle spasm resolves, rehabilitation exercises help to strengthen the area. The maintenance of a proper exercise regime will help maintain the stabilizing muscles that support the spine. The combination of this mobility and stability along with the minimization of other risk factors are the best protection against disc herniation.

Disclaimer: The information is provided for general knowledge only. As each person is different and other conditions cause radiating leg pain, this information may not apply to you. If you are seeking information, advice or treatment please contact the clinic for an appointment.