

### ***The Operation***

The patient is positioned on the operating table in a prone position. The incision is made over the anatomic position of the spinous process. When indicated, soft tissue and bony decompression are performed to relieve neurological compression. The bone is “scraped” to a denuded bone and a graft is inserted over this open bone. Corticocancellous bone graft taken from the iliac crest, along with any fragments of bone taken during decompression are firmly pressed into the bone fusion bed. Once the construct has been assembled, fixation may be added to stabilize the bone. Then a final tightening is performed. The incision is closed in the traditional fashion.

**4. Anterior Cervical Discectomy Fusion:** Anterior Cervical Discectomy Fusion (ACF) is an operation that involves approaching the spine through an incision in the neck. The affected disc is removed from the spine and replaced with a bone graft, screws and plates may be inserted into the spine to supplement the stability of the entire construct. Patients who are suffering from neck and arm pain are potential candidates for the ACF procedure. This pain is generally caused by natural degeneration of the disc space and/or injury.

### ***The Operation***

The ACF operation is performed with the patient lying on his or her back. The surgeon makes an incision in the patient's neck. To have a clear view of the spine, the surgeon then retracts the soft tissue and vascular structures. Once the spine is in view, the surgeon removes a portion of the degenerated disc from the affected disc space. After this disc material is removed, the surgeon inserts bone graft material into the disc space to restore the normal anatomic condition of the spine. After the surgery, the patient will normally stay in the hospital about 1-2 days. The specific time of stay in the hospital will depend on the patient and the surgeon's specific post-operative treatment plan. Your surgeon will have a specific post-operative recovery/exercise plan to help you return to normal life as soon as possible. A soft collar is usually worn for the first few weeks after surgery.

### **5. Minimally Invasive Spinal Surgery:**

- Lumbar Injection
- Outpatient Disc Surgery
- IDET / X- Stop
- Kyphoplasty



## Guide to Spinal Surgery Spinal Procedures



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*Spine Surgery*

*Joint Replacement*

*General Orthopaedics*

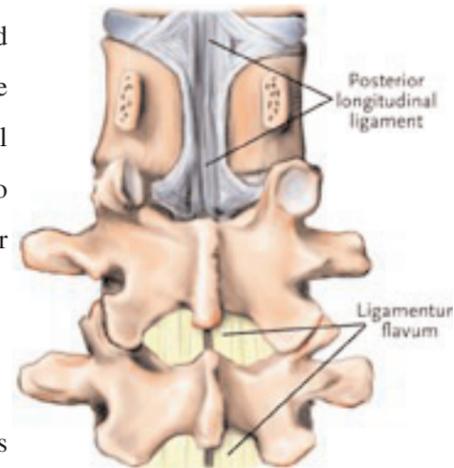
## Procedures

**1. Laminectomy:** Lumbar laminectomy is an operation performed on the lower spine to relieve pressure on one or more nerve roots. The term is derived from lumbar (lower spine), lamina (part of the spinal canal's bony roof), and ectomy (removal).

Pressure on a nerve root in the lower spine, often called nerve root compression, causes back and leg pain. In this operation the surgeon reaches the lumbar spine through a small incision in the lower back. After the muscles of the spine are spread, a portion of the lamina is removed to expose the compressed nerve root(s).

Pressure is relieved by removal of the source of compression part of the herniated disc, a disc fragment, a tumor, or a rough protrusion of bone, called a bone spur. Successful recovery from lumbar laminectomy requires that you approach the operation and recovery period with confidence based on a

thorough understanding of the process. Your surgeon has the training and expertise to correct physical defects by performing the operation; he and the rest of the health care team will support your recovery. Your body is able to heal the involved muscle, nerve, and bone tissues. Full recovery, however, will also depend on your having a strong, positive attitude, setting small goals for improvement, and working steadily to accomplish each goal.



### *The Operation*

Surgery for lumbar laminectomy is performed with the patient lying on his abdomen or side. A small incision is made in the lower back. After a retractor is used to pull aside fat and muscle, the lamina is exposed. Part of it is cut away to uncover the ligamentum flavum—a ligament that supports the spinal column. Next an opening is cut in the ligamentum flavum through which the spinal canal is reached. The compressed nerve is now seen, as is the caudal equina (bundle of nerve fibers) to which it is attached. The cause of compression may now also be identified a bulging, ruptured or herniated disc, or perhaps a bone spur. Sometimes a fragment of disc has moved away from the disc space to press on the nerve root as it leaves the spinal canal. This will often cause more severe symptoms. The compressed nerve is gently retracted to one side, and the herniated disc is removed. As much of the disc is taken out as is necessary to take pressure off the nerve. After the cause of compression is removed, the nerve can begin to heal. The space left after removal of the disc should gradually fill with connective tissue. The operation is completed when the incision is closed in several layers. Unless absorbable suture material is used, the skin sutures (stitches) will have to be removed after the incision has healed.

**2. Discectomy:** Lumbar microdiscectomy is an operation on the lumbar spine performed using microsurgical techniques. A microdiscectomy requires only a very small incision and will remove only that portion of your ruptured disc which is "pinching" one or more spinal nerve roots. The recovery time for this particular surgery is usually much less than is required for traditional lumbar surgery. Lumbar microdiscectomy is usually recommended only when specific conditions are met. In general, surgery is recommended when a ruptured disc is pinching a spinal nerve root(s) and you have:

- Leg pain which limits your normal daily activities
- Weakness in your leg(s) or feet or numbness in your extremities
- Failure of non-surgical care

### *The Operation*

In the operating room, a lumbar microdiscectomy begins with a small incision in your lower back. Through this opening, your surgeon will insert microsurgical instruments. Because the work is viewed with magnification, this approach requires a relatively small incision. Guided by diagnostic studies, your surgeon will remove a small portion of bony material from the back of your vertebra. Once this material is removed, the surgeon can locate the exact area where the nerve root is being pinched. Once the "pinched" nerve is located, the extent of the pressure on the nerve can be determined. Using microsurgical procedures, your surgeon will remove the ruptured portion of the disc and any disc fragments which have broken off from the main disc. The amount of work required to complete your microdiscectomy will depend in part on the number of disc fragments present and the difficulty presented in finding and removing them. The operation is completed when each layer of the incision is closed with suture material (stitches) or surgical staples. If the outer incision is closed with staples or non-absorbable sutures, they will have to be removed after the incision has healed.

**3. Spinal Fusion:** A spinal fusion is simply the uniting of two bony segments, or vertebra. The reason for instrumentation with rods and screws is to act as an 'internal cast' to stabilize the vertebra until the fusion, or bony re-growth, can occur. Fusions allow stabilization and usually are indicated to relieve back pain.

