

Minimally Invasive Lumbar Decompression



What is a lumbar decompression?

A lumbar decompression is a surgery that aims to take pressure off of single or multiple nerves in the low back. The lumbar spine is made up of the bones in the low back that are below the ribs and above the pelvis. The spinal cord usually ends around the first lumbar vertebrae (aka. L1) and after this there are only nerve roots traveling in the spinal canal. You can think of the spinal canal as the highway where all of the nerves from the spinal cord travel out to the legs, there are two “off-ramps”, one on each side, called foramen where a single nerve root exits at each level. Nerves can be compressed, or “pinched” at any spot along its path to its final destination in the leg where it provides specific areas of sensation and gives input to specific muscles. In the case of a block on the highway/canal, where multiple nerves are compressed, this is often terms “spinal stenosis” and often leads to a syndrome known as “neurogenic claudication”. Conversely, if single nerves become compressed on the off-ramp/foramen this often leads to specific nerve pain known as “radiculopathy”. These conditions can often be successfully addressed by removing bone, ligaments, and/or disc material to open up the space around the nerve(s).

What does it mean that the decompression is “Minimally Invasive”?

The traditional way that a lumbar decompression surgery was performed was through a single large incision in the middle of the back that usually extends well above and well below the level of the nerve compression. The muscle below the skin was peeled away from the spine to allow for direct visualization of the bones to allow for removal of the bone over the area of the compression. A traditional decompression, known as a laminectomy, involved removing the ligaments that connect the bones, removal of a large portion of the bone, and then direct visualization of the area of compression. Once the surgery was performed a drain would be left under the skin to remove blood that pools and the muscle is sewn back together over the spine.

The term minimally invasive means that the surgery is performed using a small incision, usually 1.5cm, and tubes are used as a working portal under microscope

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visualization which allows for much less damage to the muscles and the bones, avoids excessive stripping of muscle away from the spine, and implies the use of enhanced technology to target and visualize the compression. This allows for ligaments to be left in place, muscles to remain untouched, and yet still provides adequate access to perform a successful surgery. This allows most patients to leave the hospital the day of surgery without a drain and minimal postoperative pain. The whole idea is to treat the problem and leave everything else alone and untouched.

When is this surgery recommended?

While nerve compression can cause significant pain and functional problems, these conditions can often be successfully treated with specific physical therapy, medication and sometimes targeted injections. However, when these treatments fail to adequately address the pain or dysfunction and the imaging (such as xrays and MRI) match the symptoms, a decompression may be recommended. Sometimes, the nerves are pinched due to issues of instability in the spine, or the nerves are pinched in very specific areas of the spine that cannot be addressed with a decompression alone, and a fusion (placing screws and rods in the spine) may be required in addition to the decompression.

What are the risks of the surgery?

Risks associated with a decompression surgery are very low. However, the risks common to all spine surgery include nerve irritation or nerve injury (rare), spinal fluid leak, fracture of the bone, and subsequent instability in the spine as a result of removal of bone, disc or ligaments. In addition, areas that have been decompressed can have recurrent compression due to additional disc herniation or other issues. Most of these risks are extremely rare, and it is important to make sure that you have had all of the appropriate workup to make sure you have the best chance of having maximum improvement in pain and function once you have recovered.

What is the recovery like?

Each patient's recovery is unique and depends on a number of factors such as age, fitness, medical history, and preoperative pain medication requirement. However, in general, a single area of decompression requires approximately 30-45 minutes of surgical time. Sometimes there are multiple areas of nerve compression and each spinal level that requires decompression adds more surgical time and adds to the amount of surgical pain that can be experienced. There is minimal blood loss with the minimally invasive technique and the risk for infection or wound healing issues is exceedingly low. In most cases you will be able to leave the hospital the day of your surgery. Pain that has been present in the legs and often in the low back due to the nerve compression usually resolved very quickly, sometimes with complete resolution immediately after the surgery. However, after the nerves are

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decompressed you might experience odd, intermittent nerve symptoms that can come and go over the first several weeks as the nerves recover. Additionally, there is always some low back pain due to the surgery itself which is usually present for the first 5-7 days and might require prescription medication to address. In most cases, it is safe to return to normal activity and exercise relatively quickly after surgery, but each case is unique and you will be provided specific instructions based on your unique situation.

How should I prepare for my surgery?

The most important thing is to stay active leading up to surgery. Eat a healthy, well-balanced diet, keep up whatever cardiovascular exercise you can such as walking, biking, elliptical etc. If you are able to add a plank-based core routine to help tighten up the muscles around your spine that will also be beneficial. If you are already taking prescription pain medications, you will likely be instructed to try to decrease your overall dose or stop them completely for at least 2 weeks prior to your date as this will help with your pain management following the surgery. If you take other prescription medications, blood thinner, or supplements you should receive specific instructions on which medications to stop taking and when to stop taking them before your surgery.

Most importantly, as much as your recovery is a physical experience, for many it is also a mental and emotional experience as well. You have to be prepared for some discomfort, for some hard work, and for some mental and emotional toughness as you begin your journey to recovery. It is a process, with highs and lows, excitement and frustration – but ultimately it is about buying into the part you play in your recovery and in you eventually achieving your specific goals for your spine, your health, and your overall well-being.