

Provider: Conor Regan, MD

Lumbar Posterolateral Fusion

A lumbar fusion is a common procedure generally performed for relief of back and leg pain. Fusion means making two or more bones grow together over time to form one bone. The most common site in the spine to require a fusion is the fourth and fifth lumbar vertebrae although other sites may require treatment.

The reason to perform a fusion is instability of the spine. The most common signs of instability in the adult spine are spondylolisthesis (slipped disc) and scoliosis (curvature). Sometimes levels next to an old fusion degenerate and require a revision fusion as well.

Normal Disc



Spondylolisthesis



Spondylolisthesis

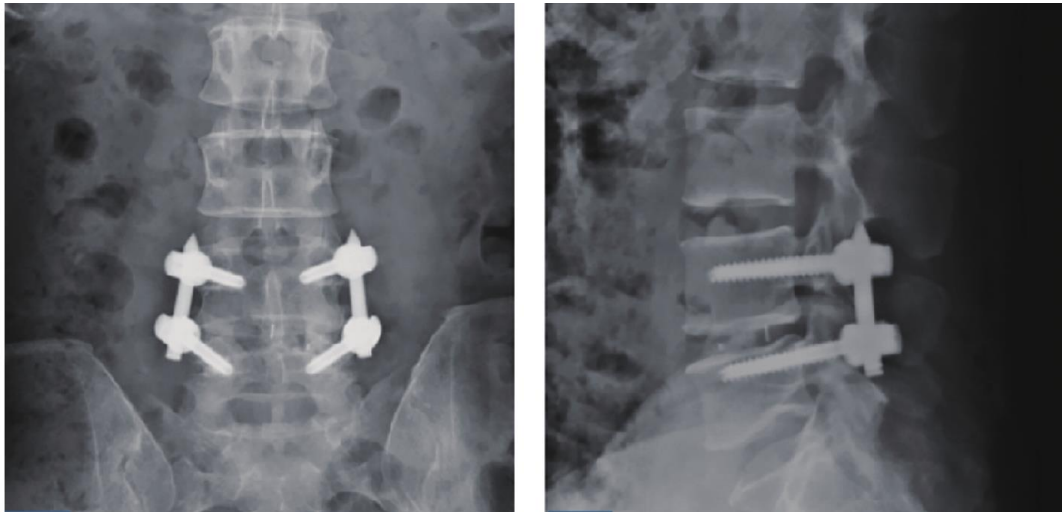


Scoliosis

There are many ways to perform a fusion but the purpose of all of them is to get the bones to grow together. To get this to happen, we must show the bones where to grow together. I accomplish this by using bone graft to encourage the vertebrae to fuse. The bone graft can come from several places, but the simplest is to use the bone I remove during a laminectomy combined with some growth factors. If there is no laminectomy planned, I will use cadaver bone (all the cells are removed so this is just a scaffold for your bone to grow into), growth factors, bone harvested from the pelvis, or a chemical called BMP (bone morphogenetic protein) which encourages your stem cells to help with the fusion.

The rate of successful fusion with graft alone is about 40%. This obviously isn't good enough, so we need to hold the bones still while the fusion is healing, just like a cast or plate does for the radius and ulna if you broke your forearm. Many years ago, a full body

cast was really the only available option, but it doesn't work very well in the spine and frankly, no one was excited about wearing one. So instead, we use pedicle screws. These are titanium screws inserted into each of the vertebrae (2 per bone) connected by titanium rods. This stabilizes the fusion site and holds it still so the bones can heal together like we want. The addition of pedicle screws increases the successful fusion rate to above 90% and therefore has been the standard of care in this country for the last 30 years.



A lumbar fusion is a big operation. I plan for patients to be in the hospital for 2 to 3 days after surgery. Even though I do everything I can to be less invasive with the approach and placement of the rods and screws, I still have to move the muscles out of the way and the surgery still hurts. I tell everyone that it will feel like you were hit by a car. You will still have pain in your back when you leave the hospital, and you may not feel ready to go. However, you will only be able to get to the bathroom and around the house initially and then build from there. You do not need to be running marathons to be able to go home.

After surgery, your job is to walk as much as possible. You will only be walking short distances initially, but your goal is to be walking about half a mile at a time by the time I see you three (3) weeks after the procedure. I only rarely prescribe formal physical therapy, and even then, I try to wait until about three (3) months post-op to start it. There have been some well-done studies recently that show better overall outcomes in patients who have later physical therapy (if needed) versus therapy immediately after surgery.

You may sleep however you want and the therapists in the hospital will teach you how to limit your bending and twisting. You will not ruin the fusion if you bend or twist, it will simply not be very comfortable to do so. You should not lift more than about 25 lbs. for six (6) weeks after the procedure. You are allowed to drive when you can be off of narcotic pain medications.

It does take a long time to heal from a lumbar fusion. The actual fusion takes about 1 to 2 years to mature, and patients usually require somewhere between 3 to 6 months to fully recover from the operation. It can be a long road to recovery, but multiple studies and my own experience of over two thousand surgeries have shown that it is worth it for most people in the end.