



NEUROSURGERY AND SPINE

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LUMBAR FUSION (LLIF)

WHY IS SPINAL FUSION NEEDED?

Illness, injury or the aging process can result in the discs between your spinal bones (called intervertebral discs) to become damaged or simply wear out.

When the discs are damaged for any reason, the spine can become unstable, and without the effective shock absorber of the discs, a person will experience pain in addition to instability of the spine in the affected area.



Healthy disc

Disc degeneration

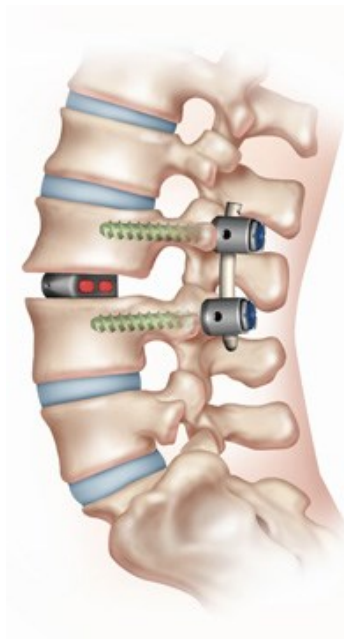
Spinal fusion is performed to stabilize the spine and reduce or remove the pain by removing the disc and joining two or more vertebral bones together using bone grafts and titanium instrumentation to stimulate bone growth (fusion) and to maintain stability and hold the bone graft material while healing and fusion occur.

The illustration to the right is a cross section of the spine showing how the vertebrae fuse together after the healing process is completed.

On the back, we discuss the LLIF (also called XLIF) spine fusion methods .



MINIMALLY INVASIVE FUSIONS ALLOW COMPLEX WORK WITH LESS IMPACT TO THE PATIENT



When Dr. Den Haese performs a *minimally invasive* LLIF or PLIF, it allows for a smaller incision and the use of specialized instruments to reach the spine, remove the damaged discs or bone, and add necessary implants without having to cut a large incision through the skin, muscle, and other soft tissues in order to give the surgeon a full view of the spine.

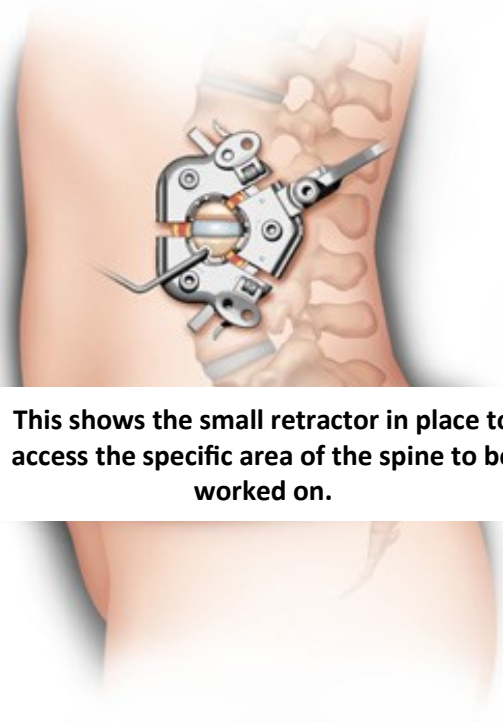
In a minimally invasive LLIF or PLIF surgery, a small incision is made, and a long thin tube is passed down through the skin and muscle to reach the spine. Surgical instruments, bone grafts and titanium instrumentation used to fuse the spinal segment are passed through this tubular retractor system, allowing for an incision small enough to be closed with a few stitches and a small bandage.

This illustration shows some of the instrumentation placed to give the spine stability while the bone graft material (shown in red) stimulates healing and “fusion”.

THE MINIMALLY INVASIVE LLIF (LATERAL) FUSION PROCEDURE (ALSO CALLED A XLIF)

If Dr. Den Haese has advised you that your spinal fusion will be done as a minimally invasive LLIF, he has chosen to do so because this method of lumbar fusion has many advantages for the patient, and minimally invasive surgery is imminently better for the patient as well.

The lateral approach (from the side) gives the surgeon access to the disc and disc space without applying excess pull on the nearby spinal nerve(s) and less injury to muscles.



This shows the small retractor in place to access the specific area of the spine to be worked on.