

Minimally Invasive Transforaminal Lumbar Interbody Fusion (TLIF)

WHAT DOES THE SURGERY INVOLVE?

- A fusion surgery is one where two or more bones of the spine are induced to heal together into one larger block of bone. This type of fusion surgery is done entirely from the back, and can usually be done minimally invasively, meaning there is less muscular disruption to promote a faster recovery. The disc between the bones that are being fused is removed, and a “cage” (piece of metal or medical-grade plastic) is placed between the bones to encourage them to grow together. Screws and rods are then placed to hold the bones in position while they heal together. This surgery is done under general anesthesia (fully asleep).

WHAT ARE THE ADVANTAGES OF THIS FUSION TECHNIQUE?

- This technique is very minimally-invasive relative to a traditional (posterolateral) fusion. This means less disruption of the muscles of the spine to promote a faster recovery.

WHAT ARE SOME REASONS FOR WHICH THIS PROCEDURE IS DONE?

- The most common reasons for this surgery are spondylolisthesis (two bones slipping out of position on each other), or foraminal stenosis (a nerve to the leg is being squished between two of the spine bones because the disc has worn out). Other reasons include trauma, scoliosis, and severe arthritic changes causing pain.

DESCRIPTION OF THE SURGERY:

- Dr. Hoel makes two small incisions on the back to allow him to place screws into the bones in a minimally-invasive fashion. For high accuracy of screw placement, Dr. Hoel places his screws either with Navigation (like GPS for the spine) or with Robotics.
- One of the facet joints (shingle-like joints in the back of the spine; two of these are between each of the vertebrae) is removed to allow access to the back of the disc. The disc is then removed, and a cage (metal or plastic block) filled with allograft (processed bone graft) is placed where the disc formerly was to encourage the bones to heal together into one bone.
- The cartilage on the other facet joint in the back of the spine is removed, and allograft is placed in that joint to encourage it to fuse together as well. Dr. Hoel then connects the screws with two rods – this holds the bones in place while they heal together.

WHAT TO EXPECT DURING RECOVERY FROM SURGERY:

- This is a large surgery (similar to a knee replacement), and so some surgical pain is expected. Most people stay in the hospital or a care suite 1-2 days after surgery, depending on how their pain from the surgery is doing.
- You will be encouraged to be up in a chair, or even up walking, the evening of your surgery.
- You are encouraged to walk as much as you are able after surgery, with a goal of 45 minutes per day. It may take 1-2 weeks to get to that point, but walking is the best exercise you can do to help your recovery along.
- Dr Hoel usually does not have you wear a brace after surgery, but will ask you to refrain from lifting objects >10 lbs, and refrain from dramatic bending or twisting of your low back until after the 6-week postop mark. Golfing is very hard on the low back and the fusion site, and therefore Dr Hoel will ask golfers not to return to golf until the 3-month mark, and then it is a gradual return to sport over several weeks.

WHAT CHANGES IN FUCTION SHOULD I EXPECT AFTER I RECOVERY FROM SURGERY?

- Most patients with a 1-level fusion (two bones) do not notice a substantial change in their motion once they have recovered from surgery. They can typically participate in all of the activities they did prior to surgery. If a fusion involves multiple levels, the more levels that are fused the more the patient will notice the restriction in motion.

VIDEOS FOR PATIENT EDUCATION:

- TLIF technique walkthrough:
https://www.youtube.com/watch?v=ggdKG0OvL90&ab_channel=NuVasiveInc
- Robotic-assisted surgery:
https://www.youtube.com/watch?v=6PQOVRORwJw&list=PLcQ7wfbnxillSKwhhKIwLnMyEG9oMZDLq&index=5&ab_channel=MedtronicSpinal