SOUTHERN NEUROSURGERY

(470) 293-9800
southernneurosurgery.com

YOUR SURGERY PACKET

Lateral Lumbar Interbody Fusion (LLIF)

Patient name: _____

Surgery date: _____

Surgery location: _____

Follow-up appointment: _____

What's in this packet

Part 1 - About Your Surgery: Lateral Lumbar Interbody Fusion pages 2-4

Part 2 - After Your Surgery: Posterior or Lateral Lumbar Fusion pages 5-9

Part 3 - Questions After Surgery: Our 24/7 Virtual Assistant page 10

Before you go

- Read Part 1 before surgery so you know what to expect.
- Keep Part 2 handy at home. It covers recovery, medicines and when to call us.
- You will also get a separate Surgery Day Guide for the hospital or surgery center where your operation is scheduled. It has arrival and parking details.
- Have a question after surgery? Our Virtual Assistant answers 24/7 (see Part 3).
- Bring this packet to your appointments and write down your questions.

Questions? Our Virtual Assistant is available 24/7:
md-aid.com/c/southernneurosurgery · or call (470) 293-9800

For chest pain or trouble breathing, call 911 or go to the nearest ER.

This packet is for educational purposes only. It is not medical advice and does not replace individualized care from a licensed physician. Always follow the specific instructions Dr. Grunch and her team give you, and contact your provider about your personal symptoms.

ABOUT YOUR SURGERY

Lateral Lumbar Interbody Fusion (LLIF)

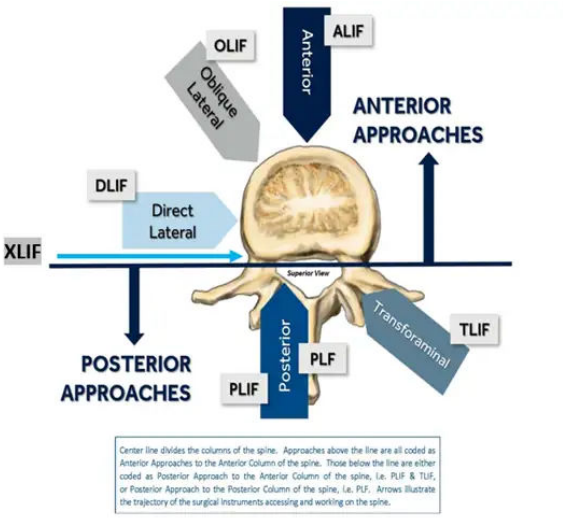
When a worn or unstable disc in the lower back is causing pain, a lateral lumbar interbody fusion (LLIF) can often correct the problem through a small incision on the side, restoring the disc space and stabilizing the spine without disturbing the back muscles.

What Is an LLIF?

A lateral lumbar interbody fusion, or LLIF, is a minimally invasive type of lumbar fusion done from the side of the body. You may also hear it called XLIF (extreme lateral interbody fusion) or DLIF (direct lateral interbody fusion), which are brand names for the same idea.

Through a small incision on your side, the surgeon passes between the fibers of the psoas muscle, which runs along the spine, to reach the disc. The disc is removed and replaced with a wide spacer filled with bone graft. Because the spacer rests on the strongest outer rim of the vertebrae, it supports the spine well and restores disc height, which opens up the nerve passages without having to work directly around the nerves.

LLIF is well suited to the upper and middle levels of the lower back, from about L1-L2 to L4-L5. The pelvis blocks side access to L5-S1, so that level is usually treated with an ALIF or TLIF instead.



The direction each approach takes to reach the spine

Who Needs an LLIF?

- Degenerative disc disease or a collapsed disc causing back and leg pain
- Spondylolisthesis or spinal instability
- Foraminal stenosis or spinal stenosis that can be relieved by restoring disc height
- Adult degenerative scoliosis, where lateral spacers help straighten and balance the spine
- Adjacent segment disease above a previous fusion, which can often be treated without reopening the old incision

Not every level or every patient is a fit for a lateral approach. Dr. Grunch reviews where your blood vessels, nerves and pelvis sit on your imaging to decide whether LLIF, ALIF or TLIF is the safest choice for you. She also performs OptiLIF (percutaneous lateral lumbar fusion) for selected patients.

How an LLIF Is Done

- **Anesthesia and positioning:** You'll be fully asleep and lying on your side.
- **Nerve monitoring:** Real-time nerve monitoring is used to locate and protect the nerves that run through the psoas muscle.
- **Reaching the spine:** Through a small incision on your side, the surgeon gently separates the fibers of the psoas muscle, rather than cutting through it, to reach the disc.
- **Removing the disc:** The damaged disc is removed and the bone surfaces are prepared so they can fuse.
- **Placing the spacer:** A wide spacer filled with bone graft is placed across the disc space to restore height and alignment.
- **Stabilizing:** Screws and rods are usually placed through small incisions in the back, sometimes without needing to turn you over.
- **Closing:** The incisions are closed with dissolvable stitches and skin glue.

Benefits and Risks

Benefits

- Small incisions and less disturbance of the back muscles
- Usually less blood loss and a shorter hospital stay than open fusion
- A wide spacer that restores disc height and indirectly relieves pressure on the nerves
- Helpful for correcting curves and for treating levels above an old fusion

Risks

- Temporary numbness, tingling or weakness in the front of the thigh or groin, or weakness lifting the hip, from working through the psoas muscle; this usually improves over weeks to months
- Infection or bleeding
- Injury to the bowel, kidney or blood vessels, which is rare
- The spacer settling into the bone (subsidence)
- The bones not fusing (nonunion), which is more common in people who smoke
- Extra wear at the levels above or below the fusion over time (adjacent segment disease)
- Risks related to anesthesia, including blood clots

What to Expect

Before surgery

You'll meet with Dr. Grunch or one of her physician assistants to review your imaging, your exam and your goals, and to decide together whether an LLIF is right for you. Our team will coordinate any pre-operative testing, review your medications (including blood thinners you may need to pause) and walk you through the day of surgery so nothing is a surprise. Smoking and nicotine slow bone healing and can cause a

fusion to fail, so stopping before surgery is strongly recommended. Our office can help.

Procedure day

Surgery usually takes two to four hours, depending on the number of levels and whether screws are placed in the back. Most patients stay in the hospital for one or two nights. You'll be up and walking by the end of the first day after surgery, and physical therapy will help you get moving safely before you go home.

Recovery timeline

- **First two weeks:** Leg pain often improves quickly. Soreness in the side, back or thigh is normal. Walk several times a day and wear your brace when you're up.
- **Four to six weeks:** Your follow-up visit, with X-rays to check healing. Many people with desk jobs return to work in three to six weeks.
- **Six to twelve weeks:** Restrictions are gradually lifted, and physical therapy may begin to strengthen your core and hips.
- **Six to twelve months:** The bones continue to fuse. Most patients are back to their normal activities.

Every patient heals differently. Your exact timeline will depend on your symptoms, the number of levels fused, your job and your overall health.

Your post-operative guidelines explain how to care for yourself at home, and when to call our office.

Questions after surgery? Our Virtual Assistant answers common questions 24/7 at md-aid.com/c/southernneurosurgery, or call our office at (470) 293-9800. For chest pain or trouble breathing, call 911.

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AFTER YOUR SURGERY

Postoperative Guidelines for a Posterior or Lateral Lumbar Fusion

Incision care

- Your incision is closed with sutures (also called “stitches”) on the inside of your skin. These are absorbed over time by your body. The outside of your skin is closed with a skin glue. The skin glue will eventually come off in its own time.
- Sometimes patients may need sutures or staples on the outside of their skin. If you have sutures on the outside, these will be removed at your follow up appointment (in 10-14 days).
- You may take a shower the day after surgery if your incision is closed with skin glue. If your incision is closed with sutures or staples, you may take a shower in 3 days. Do not scrub your wound, but gently cleanse it and pat dry.
- Do not submerge into water or a tub for 6 weeks.
- Leave the wound open to dry unless otherwise directed.
- It is normal to have a small amount of brown to reddish colored ooze for a few days.
- Do not apply ointments or creams to the incision.
- We recommend wearing a back brace when out of bed and moving around.
- Some patients may also need a bone growth stimulator. If so, the company will contact you after your surgery. If you have questions about this, please contact our office.

Hospital Expectations after Surgery

- You will start on a liquid diet after your surgery. This is because it is very important for the bowels to wake up after this surgery to avoid an ileus.
- An ileus is an absence of movement in the bowels which leads to a buildup of gas. This requires treatment with medicines and diet control.
- It is important to participate in physical therapy and walk while in the hospital because this helps your bowels to wake up and move normally.
- After you have a successful bowel movement, we will advance your diet.

Pain Expectations

- It is normal to expect pain after back surgery. That is why we prescribe medication to ease you through the healing process.
- After surgery, common pain areas are in the low back, hips, and around the incision.
- This pain will get better with time as your body heals, so it is important to be patient as your body is healing.
- Many patients report that their prior back pain and/or leg pain is much improved soon after surgery.
- It is normal to have a sore throat after endotracheal intubation, and this will improve over the week after surgery.

Medications

- You will be given prescriptions for a pain medication and a muscle relaxer.
- Do not take pain medication on an empty stomach. This may make you feel nauseated.
- Do not drink alcohol if you are taking pain medication.
- Most patients can taper off the pain medication within a few weeks. The muscle relaxer may be needed a little longer.
- If you feel that your pain is well tolerated, you may begin to wean yourself off of your pain medication sooner than your post-op visit.
- Because pain medication can cause constipation, it is important to have stool softeners and laxatives at home such as Colace or Senna to prevent constipation.
- Take the stool softener daily and use the laxative as needed.
- If you still have constipation after using these medicines, you may use an over-the-counter suppository or enema.

Medications to avoid

- NO Advil, Aleve, Motrin, Naprosyn, Ibuprofen, Naproxen, Mobic, Meloxicam, Celebrex, Diclofenac or any other anti-inflammatory medication. These are anti-inflammatory medications and may impair fusion.
- If you normally take these medications for other medical conditions such as arthritis, we ask that you hold these until otherwise discussed at your office visit.
- NO blood thinners such as Aspirin, Coumadin, Warfarin, Xarelto, Plavix, etc. for 5-7 days after your surgery. We will tell you when you may resume your blood thinners.

Therapy

- You will receive physical therapy while you are in the hospital. This will help you to walk and move around for normal daily activities before you are discharged.
- When you are at home, walk between 30-60 minutes a day, but not all at the same time. Divide your walks into smaller intervals of 10-15 minutes at a time.
- It is important to walk for your overall recovery for a number of reasons. Getting out of bed is good for your lungs, it prevents blood clots from forming in your legs, and speeds your recovery.
- Do not sit for more than 30 minutes at a time. Move around to prevent your muscles from tightening and becoming stiff, which can lead to more discomfort.
- Use your common sense, if your body says that it is tired, listen to it.

Restrictions

- Activities such as bending at the waist, lifting >10 lbs, and twisting are restricted during your recovery period, which is about 6 weeks.
- This means NO household chores such as vacuuming and laundry, hobbies such as golfing, and yard work and gardening.
- If you have young children or grandchildren, do NOT pick them up.
- Allow someone else to help you at home.

- You may drive as long as you are not taking narcotic pain medication.
- It is ok to ride as a passenger if you are taking narcotic pain medication.
- If you are unable to work due to these restrictions, please let us know if we need to complete any paperwork for your employer.

Diet

- When you have a successful bowel movement, you may advance your diet to solid foods.
- It is important to remember to eat and drink fluids so that your body may properly heal.
- If you are experiencing nausea, follow a “BRAT diet” which is Bananas, Rice, Applesauce, Toast and advance as tolerated.

Smoking

- Smoking constricts your blood vessels which carry oxygen and nutrients to your healing bone and muscles.
- It also slows down the bone healing process and may possibly lead to failure of fusion of the bone graft, which is the ultimate goal of your surgery.
- Vaping and other nicotine products also slow healing.
- If you would like help in smoking cessation, please let us know.

Sexual Activity

- Back pain can interfere with your sex life, but we want you to resume normal relations with your partner as soon as possible after surgery. We recommend avoiding sex for 6 weeks after surgery. Once you have begun the healing process, use the position that is most comfortable. You may find that lying on your back is the most comfortable if you can support your partner’s weight or your partner can support him/herself with arms and knees. Side lying may also be comfortable since neither partner is bearing the burden of the weight. Decide if a small pillow at the waist is helpful in supporting the spine and you will probably want a pillow located under your neck and head. Be careful not to twist the lower back. Be sure you communicate your fears and concerns with your partner before you resume sexual relations.

Call our office if you have any of these symptoms:

- Fever over 101°F.
- Constipation that is not relieved by stool medications.
- Redness, warmth, or significant drainage from your incision.
- Pain, swelling, or redness in your calves.
- Unexplained incontinence or accidents involving your bladder or bowel, or if you are unable to urinate.
- Worsening pain radiating down the leg.

Call 911 or go to the nearest emergency room for chest pain, shortness of breath or trouble breathing.

Follow up appointment

- We have scheduled a follow up appointment for you that is 4-6 weeks after your surgery.
- You will be provided with a card listing the date and time.
- If you need this appointment changed, please call our office.

If you are experiencing any problems or have any questions, please call our office.

6 Tips for Recovery from Spine Surgery

1. Put commonly used items within reach.

In the early stages of recovery from spine surgery, patients should avoid bending, lifting, and twisting. It is helpful to place items you use daily on the countertops or shelves where you can easily reach them. Keep toiletry items near the sink. Place dishes on the kitchen counter. You may choose to purchase disposable plates, cups, and cutlery to avoid the need to wash dishes for the first few days after you return home.

2. Arrange for someone to stay with you.

If you live alone, it is a good idea to have a friend or family member stay with you for the first few days after surgery. You may need help with errands or getting around the house. If you require more extensive help after surgery, our office may arrange for home health services.

3. Prepare meals ahead of time.

It can be difficult to prepare healthy meals the first few days you are recovering from back surgery. Prepare your meals ahead of time that you can keep in your freezer. You should also stock your refrigerator and pantry with healthy snacks so you are not tempted to reach for unhealthy convenience foods.

4. Items like slip-on shoes and grabbers can help to avoid bending.

Bending is restricted after surgery. You may want to have shoes that you can easily slip on to avoid bending over to tie your shoes. If you are doing physical therapy exercises or walking for longer periods of time, you may want to have someone help you lace up your shoes instead of wearing slip-on shoes. Grabbers are hand-held devices that are about 2-3 feet long and have a grabber on the end to pick up small items. They can be purchased at large department stores and pharmacies.

5. Take precautions to avoid slipping.

Patients are encouraged to get up and walk around to avoid stiffness. You will want to make sure to avoid any slipping hazards in your walking path. Before surgery, make sure that the areas where you will be walking are clear of tripping hazards. Electrical cords should be secured and out of the way. Rugs should be removed or taped down. A shower mat can help avoid slipping in the shower.

6. Make sure you have extra pillows for support when sitting or lying down.

When lying on your back, a pillow placed under the knees can help to take pressure off your lower back. If you prefer to lay on your side, you can place a pillow between your knees. Reclining chairs and donut pillows can sometimes help to increase a patient's comfort while sitting.

By taking time to prepare yourself and your home before surgery, it will help to ease your mind to know that everything is in place for you when you return home from surgery.

Questions after surgery? Our Virtual Assistant answers common questions 24/7 at md-aid.com/c/southernneurosurgery, or call our office at (470) 293-9800. For chest pain or trouble breathing, call 911.

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PART 3

Questions After Surgery? We're Here 24/7.

Recovering from surgery often brings up questions between appointments: about your activity restrictions, your collar or brace, incision care, or what's normal and what's not. You don't have to wait for a call back. Our Virtual Assistant answers common post-operative questions 24 hours a day, 7 days a week, using information approved by our clinic.

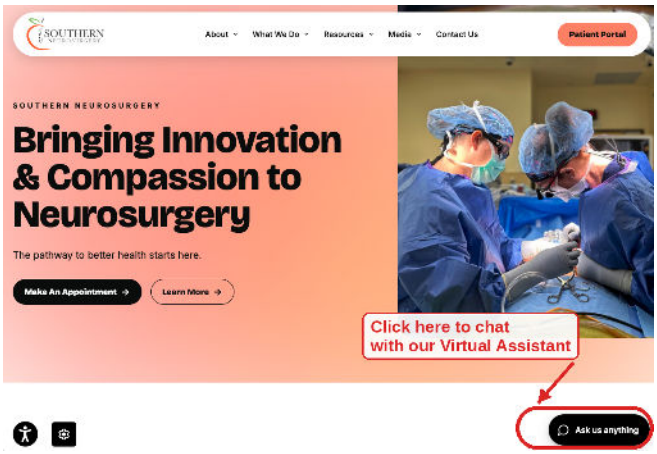
Fastest way: scan the code

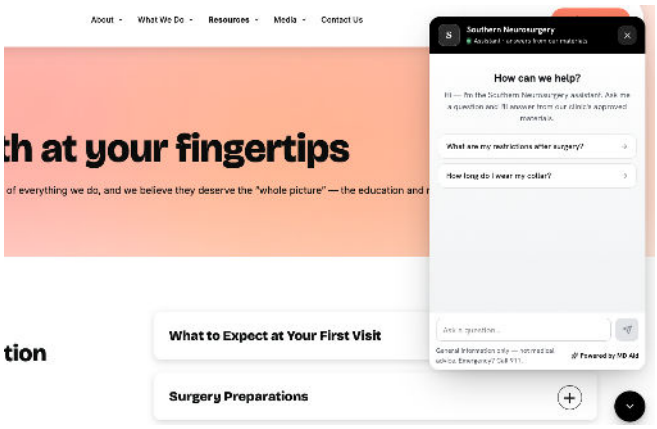
Point your phone's camera at the QR code to open the Virtual Assistant directly, or type this address into your web browser:

md-aid.com/c/southernneurosurgery

Or use our website

1. Go to southernneurosurgery.com and click the black "Ask us anything" bubble in the bottom right corner of the screen (left picture).
2. Type your question, or tap one of the suggested questions to get started (right picture).





Need to talk to a person?

If you don't find your answer or would rather speak with our team, call our office at (470) 293-9800.

Medical emergency? Call 911.

Do not use the Virtual Assistant or wait for a call back in an emergency.

The Virtual Assistant provides general information only. It is not a substitute for medical advice from your physician.