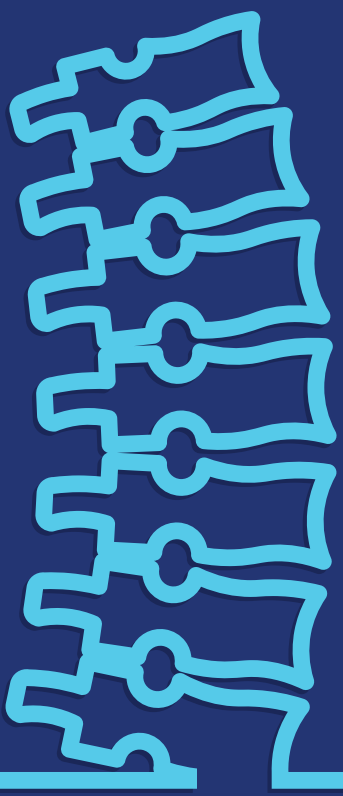
We've got Your Back!

What you need to know before *and* after your surgery

ATLAS
SURGERY CENTER

716.650.0905

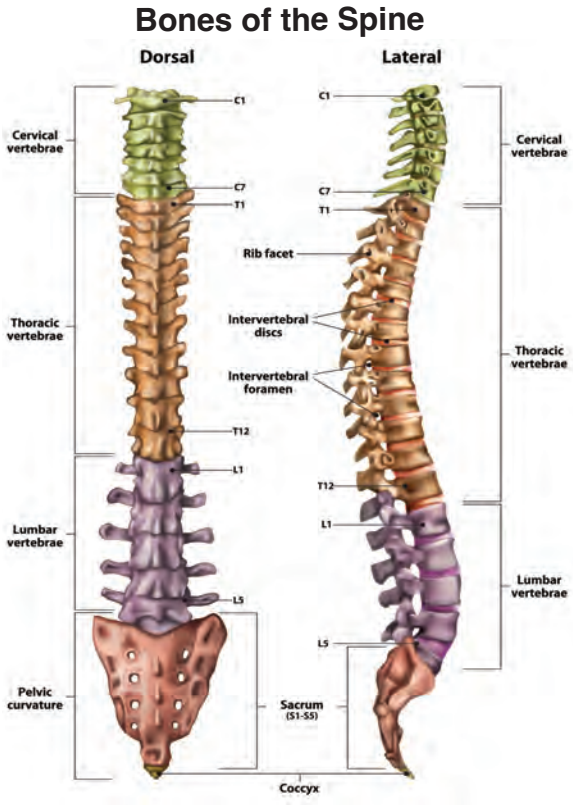
atlassurgery.com



Thank you for choosing us for your care.

Spinal conditions and injuries, particularly neck and back pain, are quite common, but can be among the most complex and difficult ailments to treat. Millions of people suffer from the broad range of diseases that can affect the spine. Debilitating pain and impaired function often keep people from working and enjoying normal lives. It is estimated that 80% of people will suffer from an episode of back or neck pain in their lifetime.

Our experienced team of highly-skilled neurosurgeons and staff work together to provide the best care possible. Whether acute or chronic, we are committed to understanding the problem and will work with each patient to determine the best way to treat it. Patients travel from all over the Northeast to have our experts treat problems, including spinal cord and nerve compression, spinal deformities, spinal tumors, neck and back pain, and sciatica.



Common conditions we treat:

Neck or Back Pain. Both are very common even in an otherwise healthy person. Most back pain is due to age, muscle sprain, or arthritis. There are also lifestyle conditions that significantly contribute to spine pain including obesity and inactivity. Understanding the cause of your back pain is the key to proper treatment.

Disc Herniation. A herniated, slipped, or ruptured disc all mean the same thing. These result from an injury to the disc, usually over months or years, causing it to leak out or herniate. Depending on the location of this leak it can put pressure on, or "pinch" nerves and may cause injury resulting in pain or weakness in arms and legs. Not all disc herniations cause pain or require surgery.

Bulging Disc. This is a term that may be confusing because discs are ***supposed*** to bulge – this is how they absorb shock and allow normal motion of the spine. A bulging disc is different from a disc herniation in that the disc does not tear, rupture or herniate; it is also more common than a disc herniation. Most disc bulges are normal. However, depending on the location of the bulge, it may put pressure on nerves and result in symptoms.

Degenerative Disc Disease. Disc degeneration is a result of the aging process and the everyday wear and tear we place on our spines. Over time, these stresses accumulate and symptoms may begin to develop. Chronic low back pain that radiates to the hips, buttocks, and thighs is a common symptom. In your neck, you may feel pain that extends to your head, shoulders, arms and hands.

Muscle Strain and Sprain. A muscle strain results when a muscle and/or tendon connected to your spine becomes over stressed and causes a tear or inflammation. A sprain results from injury to ligaments that connect to your spine. These may cause you to experience pain and spasm that result in difficulty bending or twisting.

Radiculopathy. Radiculopathy describes the irritation of a nerve as it leaves the spinal canal in the neck or low back. The pain may 'shoot' or radiate down the extremity all the way to the fingers or toes. This can result in pain, weakness, or loss of sensation among other things. It can be caused by anything that puts pressure on a nerve or "pinching" it. Herniated disc, overgrowth of bone (arthritis), or slipping of one vertebra on another (spondylolisthesis) are common causes.

Preop Nutrition

Making healthy choices at home before surgery can increase your chances of success. Begin increasing protein intake a few weeks before surgery to build up both your strength and your tissues. A large amount of research exists that links a poor level of nourishment (malnutrition) to infections and other complications after surgery on the digestive system.

Eat plenty of vegetables, fruits, nuts, seeds, legumes, whole grain breads, fish/seafood and extra virgin olive oil. **AVOID** unhealthy foods such as soda pop, candy, ice cream, table sugar, white bread, pasta, and any highly-processed foods that are labeled as "diet" or "low fat".

What should I expect after surgery?

Follow-up Appointment
This should have been scheduled during your pre-operative planning. If not, call our office at 716/218-1000 to schedule with your team nurse. This is usually 10-21 days after surgery.

Medications
Prescriptions will be sent electronically to your pharmacy or may be filled at the hospital. Resume all prescriptions from your primary care doctor unless instructed otherwise.

Driving
Do not drive until cleared by your surgeon, which typically happens after your first post-operative appointment.
Remember, never drive while taking pain medication!

Exercise and Activity
Light exercise is an important part of the recovery process. In addition to the exercises given to you by the physical therapist, walking is the best exercise you can do after spine surgery.

Caring for Your Wound
Keep the dressing dry, and do NOT use ointments, such as Neosporin. A small amount of bloody drainage is normal for the first few days following surgery. Dressings can be discontinued 72 hours after surgery, and then you may take a shower. Always pat wounds dry, and never rub over them. Never apply lotions, powders, or perfumes over your surgical wound. Do NOT soak your wound in water for at least FOUR weeks following surgery. Notify your surgeon if you notice any redness around the edges of your wound or any thick yellow or green drainage, or odor. Report any fever or chills, including a temperature over 101°.

Zipline Suture Closure (Zip)
The "Zip" is non-invasive, and uses two flexible, non-latex adhesive strips on either side of the incision. These strips are linked by a closure system to gently distribute forces and precisely align the edges of your incision to close it securely.

Removal is as easy as peeling off a bandage. Please remove your Zip 14 days after surgery if you have not had it removed in the office.

What to Avoid Following Surgery
There are several actions you should avoid to ensure a successful recovery, including:

- BLTs: No **B**ending, **L**ifting, or **T**wisting!
- Do not lift items weighing more than 7 pounds for lumbar surgery and 1 pound for cervical surgery, until your post-operative visit.
- **Housework:** Avoid heavy housework, especially any chores that involve bending, lifting and twisting (laundry, mopping, lifting groceries, etc.). Arrange for someone to help you with these tasks.
- **Sports/Strenuous Exercise:** Do not participate in recreational activities that cause strain or pain to your neck or back until permitted by your surgeon. Comfortable walking and light exercise are permitted.
- **Travel:** If you must travel long distances, you should often change positions or stand every hour.
- **Smoking**: Avoid at all times..
- **Sexual Activity:** Do not have sexual relations for the first six weeks following lumbar surgery or four weeks following cervical surgery.
- **Soaking:** Avoid soaking or submerging your wound for at least FOUR weeks following surgery!

When to Call Our Office

Please call our office at 716/650-0905 right away if you experience any of the following:

- Increasing redness or swelling around your incision with or without any soreness
- The edges of your incision start coming apart
- Drainage from your incision, especially if yellow/green and/or bad smelling
- Fever over 101° F
- Loss of bowel or bladder control
- Increasing pain that you cannot control
- Any new numbness or tingling in your hands or fingers on either side
- Weakness of your arm, hand or legs

Post-operative Activity Recommendations

Exercising is important to obtain the best results from spine surgery. You may receive exercises from physical therapist (if ordered post-operatively), or you can choose to exercise at home. In either case, you need to participate in an ongoing home exercise program.

You will be provided with a detailed list of general activities to follow up to 12 months after your surgery.

Here are some important things you need to know. Remember, you are in good hands!

What should I bring to Atlas Surgery Center the day of my surgery?

Suggested items to bring to the Pre-operative area include:

- Any imaging media if you have not already given them to the surgeon, including discs with x-rays, CT, and MRI scans, etc.
- Glasses, hearing aids and any other item you use on a daily basis, as well as their protective cases. Never wrap dentures in paper towels or napkins as they can be mistaken as trash by staff.
- Picture ID, insurance information, Living Will/Advance Directive, etc.
- A list of any allergies and associated reactions to medicine, food, clothing, latex, etc.
- A list of any medicine you take at home, including the strength of each dose
- Please leave valuable items with your support person or security as they CANNOT go to surgery with you.
- Please do NOT bring money and valuables, such as jewelry and wallets

What should I bring for overnight hospital stays?

You may either leave these items in the car or ask one of your family members or friends to hold them for you until you move into your inpatient room following surgery.

- Personal-care items such as toothpaste, toothbrush, mouthwash, deodorant, etc.
- Hairbrush or comb
- Makeup, if desired
- Comfortable shoes with non-slip soles and closed heels for your discharge home. Please do not bring flip-flops, open-back shoes or slippers.
- If you use a CPAP or BIPAP machine, please bring it with you to the hospital.
- Assistive device(s) if you use one, including a cane, walker, etc.

What preparation do I need to do on my surgery day?

Personal Care

- Showering is fine, however do not put anything topical near the surgical site (lotions, ointments)
- Brush your teeth, but do not swallow any water or mouthwash
- No make-up or fingernail polish
- Follow any instructions regarding medications to take the morning of surgery

Diabetic Patients: do not take oral meds or insulin unless otherwise instructed

What should I expect after surgery?

After surgery and recovery, you will be taken to your hospital room if you are staying in the hospital or you will be transferred back to ambulatory for discharge home. You will be encouraged to begin walking and getting out of bed as soon as possible. Do not expect to be pain free. Every attempt will be made to keep you comfortable. Some patients go home the same day or the following day.

Will I be able to manage pain?

There is to be some pain to be expected after surgery. Every effort is made to make surgery as comfortable as possible. Many surgeries are minimally invasive which reduces post-operative pain. In fact, many of our outpatient surgeries no longer require post-operative narcotics and pain is managed with over-the-counter medications.

- Only take medications as directed
- Only use pain medications as needed
- If it's not working or you have side effects, stop taking and call our office
- All narcotic medications cause constipation and are addictive
- Prescriptions are provided in 7 day supplies. If a refill is needed we ask you call 2 days prior to your script running out

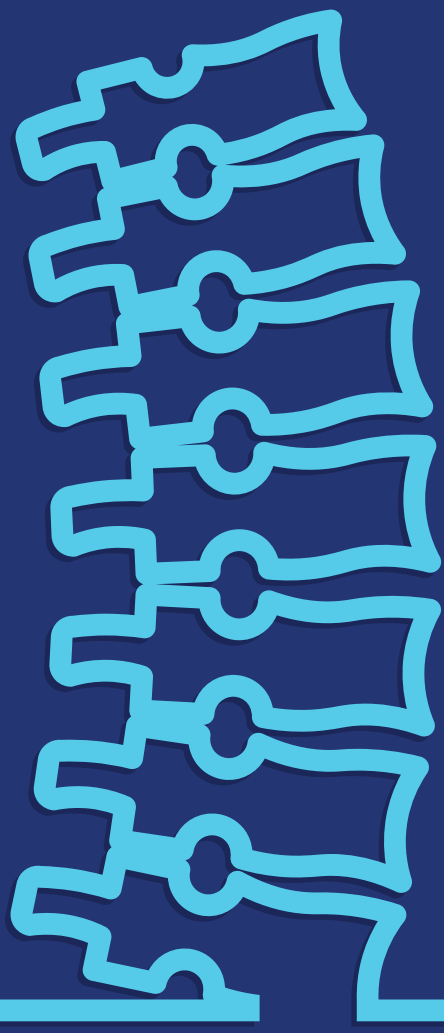
Never drive or consume alcohol while taking pain medication.

Spinal Stenosis. This is the result of your spinal canal narrowing with age, usually occuring over the age of 60. Ligaments and joints near the spine can become enlarged resulting in pressure on the spinal nerves. The term "neurogenic claudication" is used to describe the symptoms, which means after standing for a few minutes the legs feel painful or like they are falling asleep. Patients find they can only walk for a few minutes before they have to rest or sit down.

Spondylolisthesis. This is when one vertebral segment (usually in the low back) slips forward compared to the one just below it. This is commonly seen with age, and many people have a small slip but have no symptoms. More severe "slips" can result in more severe back and leg pain, in which case surgery (spinal fusion) is often required to restore alignment and decompress the nerves.

You can increase your chances of having a successful spinal fusion by following all pre/post-operative instructions, including quitting smoking, avoiding strenuous activity, following proper nutrition guidelines, etc.

PLEASE KEEP IN MIND the less narcotic medications you take before surgery, the smoother and easier your recovery will be.



Postop Nutrition
Eat fresh, healthy foods that are rich in nutrients. Protein is particularly important as it will help you heal faster and build your tissues. Aim for ten 8 oz. glasses of water each day unless your doctor tells you that you need to restrict fluids.

Drinking water prevents dehydration and helps fiber work well and prevents constipation and bladder infections.

Weight Loss and Core Strengthening
This is also called lumbar stabilization exercises. Certain exercises strengthen muscles and keep the spine straight. These exercises will strengthen your abdominal, pelvic and low back muscles all at the same time.

Exercising and activity will help you to be physically strong so you recover faster after surgery. In the days/weeks leading up to your surgery, low impact activities such as yoga, walking, swimming, aqua aerobics are appropriate. Talk to your surgeon before starting any exercise program. Your program should match your present ability and avoid all exercises that make symptoms worse.

Atlas Surgery Center Preparation Checklist:

2-3 weeks prior to surgery

- Your pre-operative history and physical will be scheduled with your primary medical doctor and any specialist as needed
- Pre-operative testing (lab work, EKG, chest x-ray, etc.) will be arranged at the hospital
- Begin increasing your protein intake and making healthier food choices
- **Stop smoking. AND NEVER RESUME!**
- Begin making home preparations with family and/or friends to assist you in your recovery

One week prior to surgery

- You will receive a pre-admitting phone call
- Discontinue medication as directed by your surgeon and primary doctor
- Reduce or stop alcohol consumption
- Continue eating healthy and exercising in preparation for surgery

Day before surgery

- Take a shower but do not apply any lotions, creams, powders, or perfumes afterwards
- Do NOT shave or wax around the surgical site area
- Make sure you have your bag packed for your hospital stay
- Do not eat or drink after midnight

Day of surgery

- Do not eat or drink anything, including chewing gum!
- Take any medications as instructed by your doctor with the smallest sip of water possible
- You may brush your teeth, but be mindful not to swallow any toothpaste or mouthwash
- Do not wear make-up or dark fingernail polish
- Please arrive on time to the admitting department at the hospital

Spine Surgery Overview

Laminectomy. This is performed by shaving bone from the back of the spine (lamina) to take pressure off the back of your spinal cord and nerves. It is performed on the cervical spine or lumbar spine through an incision in the back of the neck or lower spine.

Discectomy. This is also performed through an incision in the neck or lower back. The surgeon removes the portion of the disc that is ruptured and placing pressure on the nerves. Only the herniated fragments are removed and is usually 20-30% of the entire disc.

Spinal Fusion. A fusion is performed by joining separate vertebrae together to grow into one bone, thereby stopping the movement between the bones. This is designed to strengthen the spine to prevent further deformity and to reduce pain. A fusion may be recommended for conditions such as spondylolisthesis, spondylolysis, degenerative disc disease, deformity, or for recurrent disc herniation. Spinal fusion may also be needed for large spinal deformities such as scoliosis or from major trauma.

The surgeon's approach for this will vary depending on many factors and the following are the most common techniques. The list below is only a sample, there are many other fusion techniques not reviewed here. These techniques below are designed to prevent your bones from moving until they can fuse together. This can take 3-9 months. If donor bone is used, it is processed and sterilized to prevent transmission of disease.

- Anterior Cervical Disc Fusion (ACDF): An incision is made in the front of your neck beside your trachea (windpipe). The disc is removed all the way back to your spinal cord and the space is filled in with a "spacer." This may be synthetic bone, metal or synthetic cage, and may include a tiny plate with fixation screws.
- Posterior Cervical Fusion. This is typically done in combination with a laminectomy. Small screws are fixed to the vertebrae in the neck and then connected with small posts (or rods).
- Anterior Lumbar Fusion (ALIF). This incision is in the lower abdomen usually with the help of a vascular surgeon. The organs and vessels in your abdomen are carefully moved to the side to allow the surgeon to see the front of your spine. The problem disc is removed and a spacer cage, plate and screws are inserted to stabilize the bones until they fuse. Your neurosurgeon then locates the problem disc, removes it, and replaces it with the bone graft.
- Transforaminal Lumbar Fusion (TLIF). The posterior approach to lumbar spinal fusion is done through an incision in your back. The surgeon will remove the disc, and it will be replaced with a space cage and bone graft. Additionally, screws and a post (rod) are often needed to assure stabilization.
- Sacroiliac (SI) Fusion. The joints that connect the sacrum to the ilium are called the sacroiliac (hip) joints. SI joint pain can develop when these ligaments become damaged or degenerate due to age. Excessive motion due to age may inflame and disrupt the joint and surrounding nerves causing pain in the lower back, buttocks and thighs.

Medications & Smoking

Important Notices

- You may NOT eat or drink after midnight the night before your surgery. This includes cigarettes, gum, lifesavers, coffee, etc.
- You may take approved medications with a small sip of water
- If you take any heart, blood pressure, or diabetic medications check with your doctor, or our office, regarding which medication to take the morning of surgery
- STOP taking Ace Inhibitors **24 HOURS BEFORE SURGERY**
- STOP taking blood thinning medications **SEVEN DAYS BEFORE SURGERY** unless instructed otherwise

Please refer to the medication list below. **Tylenol is not in this category and may be continued.**

Blood Thinning Medications (Stop taking 7 days before surgery)

- Advil
- Aggrenox
- Aleve
- Arthrotec
- Aspirin
- Brilinta
- Celebrex
- Coumadin (warfarin)
- Diclofenac
- Dipyridamole
- Persantine
- Ibuprofen
- Indomethacyn (indocin)
- Lovenox
- Xarelto
- Eliquis (apixiban)
- Mobic (meloxicam)
- Motrin
- Naprocyn (naproxen)
- Plavix (clopidogrel)
- Pletal (cilostazol)
- Pradaxa (dabigatran)
- Relafen (nabumetone)
- All vitamins
- Fish oil
- Herbal supplements
- Vitamins

Ace Inhibitors (Stop taking 24 hours before surgery)

- Benazepril (lotensin)
- Captopril
- Enalapril (vasotec)
- Fosinopril
- Lisinopril (prinivil, zestril)
- Moexipril
- Perindopril (aceon)
- Quinapril (accupril)
- Ramipril (altace)
- Trandolapril (mavik)

Effects of Smoking on Spine Surgeries
Quitting smoking can greatly reduce the risk of complications following surgery!

Smoking greatly inhibits bone growth as well as blood circulation. This is particularly true with spinal fusion procedures. If the fusion fails, this may loosen the hardware resulting in increased pain and possibly additional surgery.

Every attempt to quit the use of nicotine products should be made **at least two weeks** prior to your scheduled surgery. Nicotine use greatly impacts the outcomes of spine surgery.

Many studies show that nicotine negatively affects pain management, rehabilitation, infection, and overall success of surgery. **Please do YOUR part in the spine surgery process and quit smoking as soon as possible!**

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Neurosurgical Conditions Treated

Spinal Compression Fractures • Sacroiliac (SI) Joint Fusions • Herniated Disk Disease • Degenerative Spine Disease • Cervical and Lumbar Spine Fusions • Spondylolisthesis • Movement Disorders • Parkinson's Disease Pain Pumps • Spinal Cord Stimulation • Deep Brain Stimulation

Interventional Pain Conditions Treated

Back Pain & Lower Back Pain Management • Carpal Tunnel Syndrome Complex Regional Pain Syndrome • Compression Fracture Management Diabetic Neuropathic Pain Management • Headache and Migraine Pain Management • Herniated Disk Pain • Joint Pain • Knee Pain • Mechanical Pain • Post-Herpetic Pain • Sciatica Injury Relief • Spinal Stenosis Pain Management

This booklet is written for the general education of our patients and to help you with the general concepts of the spine. Our hope is to make the continuum of care through are office a better experience. It is not authoritative in any way and should be considered casual information. This is not a substitute for informed consent, surgical technique, or your specific condition.