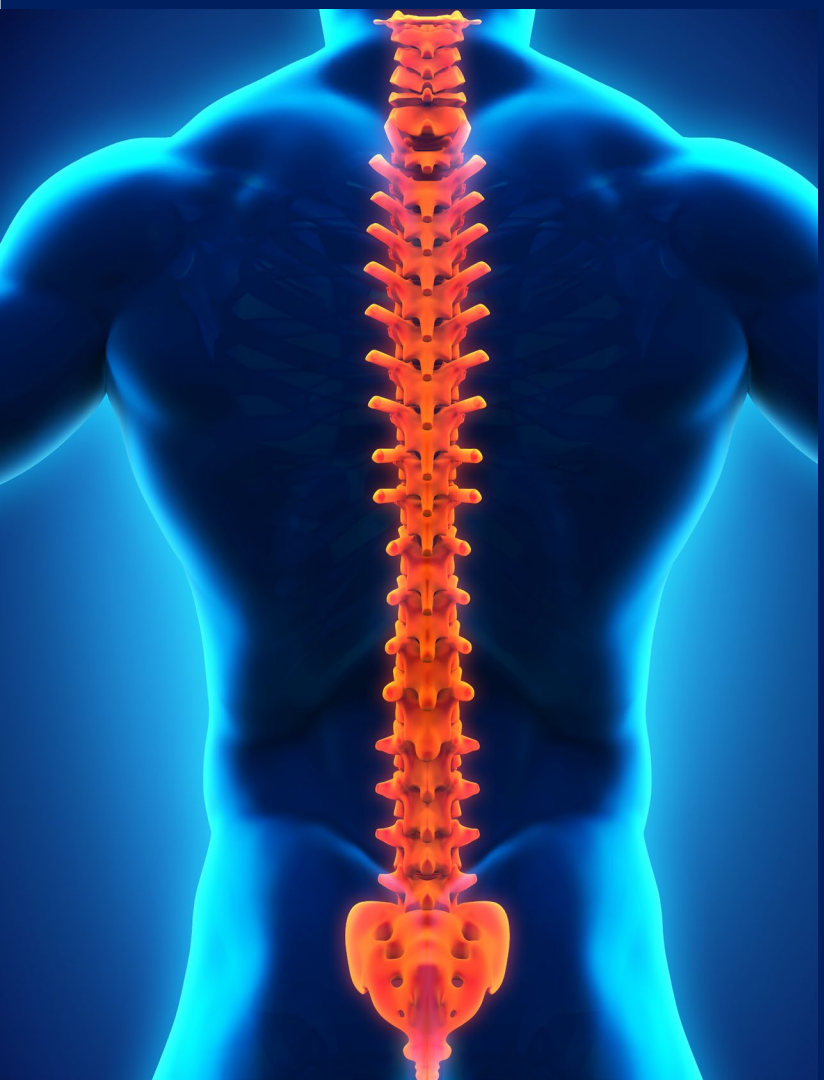
NEUROSURGERY SPINE SURGERY

Enhanced Recovery After Surgery (ERAS)

Your Guide to Healing



UVA Health

UVA Neurosurgery Spine Clinic
Fontaine Research Park
415 Ray C. Hunt Drive, Suite 3100
Charlottesville, VA 22903

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Patient Name

Surgery Date/Time to Arrive

Surgeon

Thank you for choosing the UVA Health for your surgery. Your care and well-being are important to us. We are committed to providing you with the best possible care using the latest technology.

This handbook should be used as a guide to help you through your recovery and answer questions that you may have. Please give us any feedback that you think would make your experience even better.

Please bring this book with you to:

- ❒ Every office visit
- ❒ Your admission to the hospital
- ❒ Follow up visits

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Contact Information

The main hospital address:

UVA Health -University Medical Center
1215 Lee Street
Charlottesville VA 22908

Contact	Phone Number
Department of Neurosurgery	800.362.2203
Neurosurgery Spine Clinic	434.924.2203
If you don't receive a call by 4:30pm the day before surgery (or by Friday at 4:30pm if your surgery is scheduled for Monday) please call:	434.924.5035
Preoperative Anesthesia Clinic	434.924.5035
UVA Main Hospital	434.924.0000 (After 4:30pm and on weekends ask for the Neurosurgery resident on call)
Lodging Arrangements/ Hospitality House	434.924.1299 434.924.2091
Parking Assistance	434.924.1122
Interpreter Services	434.982.1794
Hospital Billing Questions	800.523.4398

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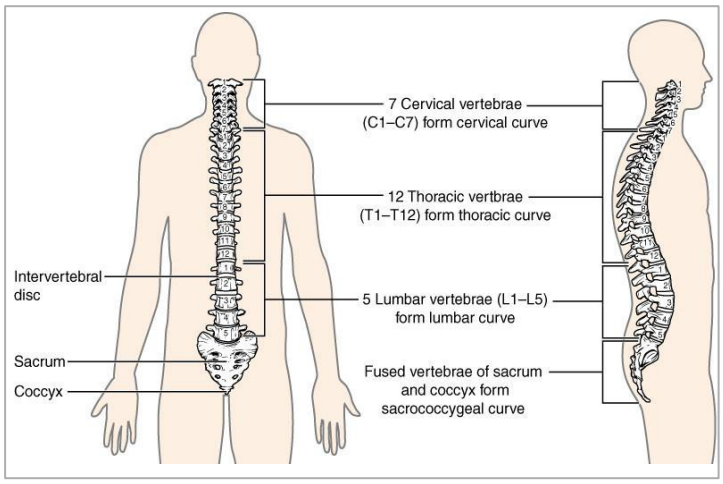
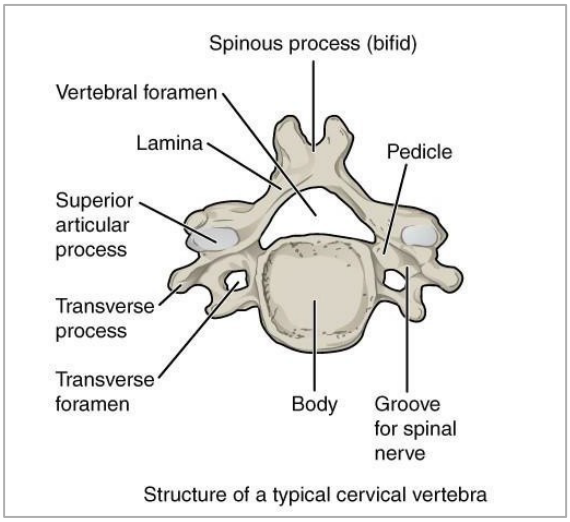
Introduction to Spine Surgery

Cervical Spine Surgery

Cervical surgery is a type of surgery that is performed on the cervical spine, which is the part of the spine that is located in the neck. The cervical spine is made up of seven bones, called vertebrae, that are stacked on top of each other. The vertebrae are connected by ligaments and muscles, and they protect the spinal cord, which is a bundle of nerves that runs from the brain down the back. Cervical surgery may be recommended to treat a variety of conditions.





Structure of a typical cervical vertebra

The type of surgery that is recommended will depend on the specific condition that is being treated. Some common types of cervical surgery include:

Anterior Cervical Discectomy and Fusion (ACDF) –Surgery is used to decompress (take pressure off) the cervical spine. It is performed by an incision on the front of your neck. The surgery removes damaged or diseased bone and surrounding discs to relieve symptoms caused by pressure on the spinal cord and nerves. The advantages of ACDF are that it requires little manipulation of the spinal cord or cervical roots. A fusion is when bone graft is placed between the vertebrae, and a plate may be used to hold the bones in place during healing.

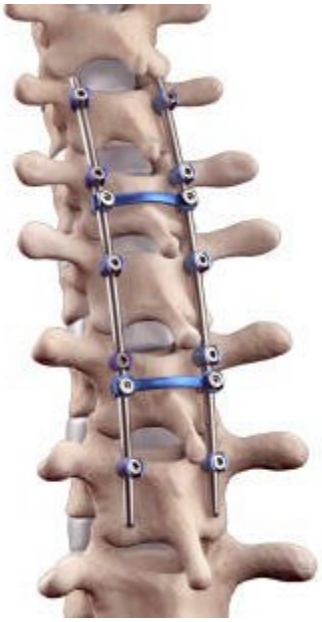
Posterior Cervical Laminectomy – Surgery is performed through an incision in the back of your neck when a single lateral disc herniation is present. The surgeon removes a section of bone, called the lamina, from one or more vertebrae to relieve pressure on the spinal cord and nerves. The main advantages of a posterior approach are that it involves no change in the structure of the cervical spine and no risk of damage to anterior neck structures.

Posterior Cervical Foraminotomy – Surgery that removes bone and/or portions of a herniated or diseased disc to relieve neck and radiating arm pain caused by parts off the disc pressing on nerve roots.

Posterior Cervical Fusion – Surgery where bone graft is placed between the vertebrae. The graft may be an allograft from a bone bank or an autograft bone taken from your own hip. The surgeon may screw a small metal plate or use rods and screws over the area to hold the bones in place while the vertebrae heal and limit movement between them.

Thoracic Spine Surgery

Thoracic spine surgery is an operation on the middle part of your back, called the thoracic spine. This part of your spine is located between your neck and lower back. It helps you stand up straight and protects your spinal cord, which is a bundle of nerves that runs down your back and connects your brain to the rest of your body.



Conditions that may require thoracic spine surgery may include but are not limited to: herniated disc(s), degenerative disc disease, scoliosis, compression fractures, and kyphosis.

The specific name of your surgery will depend on the condition being treated and the surgical approach used. Your surgeon will discuss the procedure in detail, including the name and what it entails.

Laminectomy - Removal of the bony arch (lamina) of a vertebra to create more space for the spinal cord and nerves. Laminectomy.

Discectomy - Removal of a damaged or herniated disc that is pressing on nerves.

Spinal Fusion- Joining two or more vertebrae together to stabilize the spine and reduce pain.

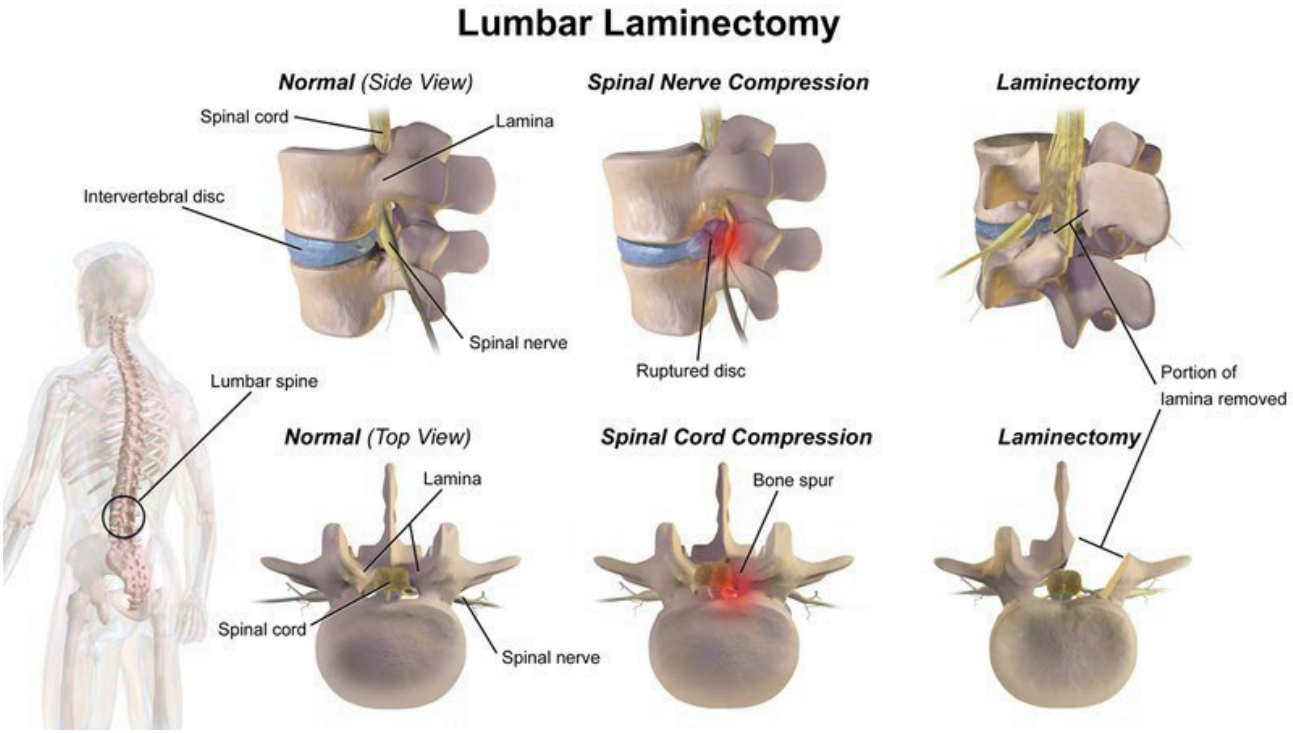
Corpectomy - Removal of a vertebral body (the main part of the bone) and replacement with a bone graft or artificial spacer.

Decompression - A general term for procedures that relieve pressure on the spinal cord or nerves.

Minimally Invasive Surgery - Techniques that use smaller incisions and specialized instruments to reduce tissue damage and recovery time.

Lumbar Spine Surgery

Lumbar surgery is a type of surgery that is performed on the lumbar spine, which is the part of the spine that is located in the lower back. The lumbar spine is made up of five bones, called vertebrae, that are stacked on top of each other. Lumbar surgery may be recommended to treat a variety of conditions. There are many different types of lumbar surgery.



The type of surgery that is recommended will depend on the specific condition that is being treated. Some common types of lumbar surgery include:

Lumbar Laminectomy – Surgery is performed through an incision in the lower back. The surgeon removes a section of bone, called the lamina, from one or more vertebrae. This is done to relieve pressure on the spinal cord and nerves. In some cases, a piece called the spinous process is also removed. Overlying connective tissues, ligaments, and muscle may be cut to gain access to the vertebra.

Lumbar Laminectomy with Fusion – Surgery to remove a section of the bone, called the lamina, from one or more vertebrae. This is done to relieve pressure on the spinal cord and nerves. A bone graft is placed between the vertebrae. The graft may be an allograft (from a bone bank) or an autograft bone (taken from your own hip). The surgeon may screw a small metal plate over bones or use rods and screws in the area to hold the bones in place while the vertebrae heal, and to limit movement between them.

Lumbar Discectomy – Surgery to remove part of a disc in the lower back. The surgery removes damaged or diseased bone and discs to relieve symptoms caused by pressure on the spinal cord and nerves.

Lumbar Foraminotomy - Surgery that removes bone and/or portions of a herniated or diseased disc to relieve neck and/or radiating arm pain caused by parts of the disc pressing on nerve roots.

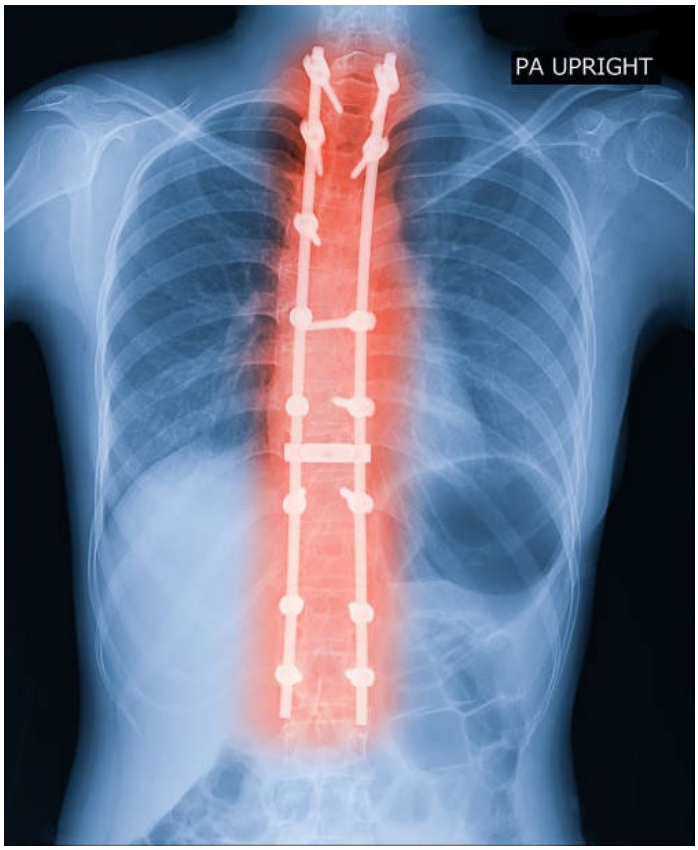
Complex Spine Surgery

Simple spine surgery is a type of surgery that is performed on the spine to correct a relatively minor problem, such as a herniated disc or spinal stenosis. Simple spine surgery is typically less invasive than complex spine surgery, and it usually requires a shorter recovery time. Complex spine surgery, on the other hand, is a type of surgery that is performed to correct a more serious problem, such as scoliosis or spinal cord injury. Complex spine surgery is typically more invasive than simple spine surgery, and it usually requires a longer recovery time.

Here are examples of complex spine surgeries:

Osteotomy- Surgery that cuts and reshapes your bones. You may need this type of procedure to help straighten your spine or fix a deformity.

Spinal fusion – Surgery that joins two or more vertebrae together using bone graft



Interbody Fusion – Surgery that combines spinal fusion with an interbody device, such as a threaded cage. Bone graft may be from the patient (autograft) or a donor (allograft). Your surgeon places bone graft around the interbody device and between the vertebrae to stimulate fusion.

Laminectomy with Fusion – Surgery to remove a section of the bone, called the lamina, from one or more vertebrae. This is done to relieve pressure on the spinal cord or nerves. A bone graft is placed between the vertebrae. The graft may be an allograft (a donor bone) or a biologic (material that helps stimulate development of bone regeneration). The surgeon will then place screws and rods in the area to hold the bones in place while the vertebrae heals and to limit the movement between them.

Pelvic Fixation – The surgeon will also place screws into the pelvis, which is a biomechanically sound method for the stabilization of long multi-level spinal constructs.

Instrumentation- The use of medical devices, such as rods, screws, plates, and hooks, to stabilize and support the spine during complex spine surgery. These devices are used to correct spinal deformities, treat spinal instability, or facilitate spinal fusion in cases of degenerative disc disease or other spinal disorders.

Frequently Asked Questions

Why do I need surgery?

You might need spine surgery for a few key reasons, all stemming from problems with your spinal discs and the overall structure of your spine. Think of your spine like a tower of building blocks (vertebrae) with cushions (discs) in between. These cushions allow for comfortable movement. However, over time, due to age, injuries, or conditions like arthritis, these cushions can get damaged.

Here's a breakdown:

Disc Problems: The discs can become thin, dry out, swell, bulge (herniate), or even break open. This means they can't cushion the vertebrae properly anymore. This "disc degeneration" or "herniation" can cause pain, muscle stiffness, and even pain that spreads to other areas like your head, back, or shoulders. Damaged discs can also press on nerves, leading to tingling, numbness, or a "pins and needles" feeling (neuropathy).

Spinal Stenosis: Imagine the spaces inside your spine as hallways for your nerves. Stenosis is when these hallways become narrow, squeezing the nerves. This narrowing can be caused by disc problems or other issues, and it puts pressure on the nerves, causing pain and other symptoms.

Spinal Deformities (Scoliosis and Kyphosis): Sometimes, the spine itself can curve in ways it shouldn't. Scoliosis is a sideways curve (like a C or S shape), while kyphosis is an excessive forward curve (causing a hunched back). These deformities can put pressure on nerves, cause pain, and affect your posture and movement.

So, in short, spine surgery might be necessary to fix damaged discs, widen the spaces for your nerves (stenosis), or correct the curvature of your spine (scoliosis or kyphosis) to relieve pain, numbness, tingling, and improve your overall quality of life. Your doctor will recommend surgery based on your specific condition and how it's affecting you.

Will I need a blood transfusion?

Depending on the type of surgery you have will some patients will need a blood transfusion, during and/or after surgery. Options and medications are before and during surgery that may help decrease the need for a blood transfusion. Some surgeries we use a cell saver. The Cell Saver is a machine that takes your own blood you lose during surgery, cleans it, and gives it back to you.

How long is the surgery?

Expect approximately 1.5 to 2 hours for each spine (vertebral) level and understand some surgeries may take up to 10 hours. The right amount of time is taken to ensure that your surgery is successful and that you are safe.

Will I need physical therapy at home?

Your recovery requires movement after surgery. Your surgeon and the physical therapist in the hospital will give you advice on movement after the operation. Once you are discharged from the hospital you may be able to follow up at an outpatient therapy clinic, have physical therapy in the home through a home health agency or you may have to transferred to an Inpatient Rehabilitation Facility. Please determine your insurance coverage for all options of Physical Therapy before your surgery. You and your care team will decide which option is best for you after your surgery. Please make sure you will have transportation to your Physical Therapy appointments.

How long will I stay in the hospital?

The type of surgery will determine how long you will stay in the hospital. If you have a cervical decompression you should expect to be in the hospital for about 1-2 days after your surgery. If you have a cervical fusion, expect to be in the hospital 1-3 days. If you have a lumbar decompression you should expect to be in the hospital for about 1 day after your surgery. If you have a lumbar fusion you should expect to be in the hospital for about 3-5 days. If you have a complex spinal fusion you should expect to be in the hospital for about 5-7 days after your surgery. However, how long you stay in the hospital is dependent on many factors. **Remember that each patient is different and your care team will discuss this with you individually.**

Notes:_____

_____

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Enhanced Recovery After Surgery (ERAS)

What is Enhanced Recovery?

Enhanced recovery is a program for improving the experience for patients who need major surgery. ERAS helps patients recover sooner so life can return to normal as quickly as possible. The ERAS program focuses on making sure that patients are actively involved in their recovery.

There are four main stages in the ERAS program:

1. Planning and preparing before surgery– giving you plenty of information so you feel ready.
2. Reducing the physical stress of the operation – allowing you to drink fluids up to 2 hours before your surgery.
3. A pain relief plan that focuses on giving you the right medicine you need to keep you comfortable during and after surgery.
4. Early feeding and moving around after surgery – allowing you to eat, drink and walk around as soon as you can.

It is important that you know what to expect before, during and after your surgery. Your care team will work closely with you to plan your care and treatment. You are the most important part of the care team.

It is important for you to participate actively in your recovery and to follow the ERAS program. By working together, we hope to keep your hospital stay as short as possible.

Before Your Surgery

Clinic

During your clinic visit we will check to see if you need surgery and what type you will need. You will work with our entire team to prepare for surgery:

- The surgeons, who will have fellows, residents, or medical students working with them
- Physician Assistants (PAs)
- Nurse Practitioners (NPs)
- Registered Nurse Care Coordinators
- Medical Assistants (MAs)
- Access Associate

During your clinic visit, we will:

- Discuss your home medications. Please bring all of your prescription and over-the-counter medications with you to your pre-surgery appointment.
- Ask questions about your medical history
- Perform a physical exam
- Ask you to sign the surgical consent forms

You will also receive:

- Instructions on preparing for surgery and for making a discharge plan.
- Instructions for what to do before surgery if you are on blood thinners.
- Special body wash to be used to shower prior to surgery.
- Instructions on quitting nicotine/tobacco products if you are currently using any.

You will decide who your care partner is going to be:

- Care partner(s) are 1 or 2 adults identified by you to be an active part of your healthcare team.
- Care partner(s) may visit or stay with you around the clock.
- Your care partner(s) may be the same people you identify to be your help once you discharge home.
- Your care partner and the person who will be providing your ride home will need to be at the hospital by 9 AM the morning of your discharge. It is important that they are here to listen to discharge instructions and learn how to safely care for you at home.

Please discuss any paperwork related to work and FMLA with your surgical team at this visit.

Preoperative Anesthesia Clinic

The Preoperative Anesthesia Clinic will review your medical and surgical history to determine if you will need an evaluation prior to surgery.
If an anesthesia evaluation is needed the Preoperative Anesthesia Clinic will notify you.

- An appointment will be scheduled for an office visit a few weeks prior to the surgical date.
- Your medications will be reviewed
- You may have a blood test, test of the heart (EKG), and/or other tests the surgeon or anesthesiologist requests.
- For questions or if unable to keep the appointment with Preoperative Anesthesia Clinic please call 434-924-5035. Failure to keep this visit with the Preoperative Anesthesia Clinic before surgery may result in cancellation of surgery.

Please note: If you were told by your surgical team that you did not need any testing or evaluation prior to surgery but receive a call to schedule with the Preoperative Anesthesia Clinic, this is because the anesthesia team feels it is in your best interest when they review your history.

Sometimes, after examining you or based on the result of your tests, we may ask that you see a specialist, such as a cardiologist (heart doctor), to evaluate you further before your surgery.

Do you take anticoagulant/antiplatelet (blood thinner) medication?

If you are taking any blood thinning medications, be sure to tell your doctor and nurse as your medication may need to be stopped before surgery. See the list of some of these medications on the next page.

It is the prescribing provider's responsibility to provide instructions for how long you can safely be off this medication.

It is very important to follow the instructions given to you to prevent your surgery from being postponed or cancelled!

If you have any questions on the instructions you received, call your surgeon's office right away.

Medications to Stop Prior to Surgery

14 Days Prior

Stop all vitamin, herb, and joint supplements, such as:

CoQ10	Glucosamine	Juice Plus®	Ogen	Omega 3, 6, 9
Chondroitin	Flaxseed oil	St. John's Wort	Ginkgo	Ginseng
Echinacea	Fish oil	Saw palmetto	Garlic	Multivitamins
Emcy	Kava	Valerian	Ephedra	MSM

7 Days Prior

Stop all aspirin containing products, such as:

Alka-Seltzer®	Excedrin®	BC Powder®	Goody's Powder®	Percodan®
Aspirin (81mg to 325mg)	Fasprin® (81mg)	Bufferin®	Norgesic®	Ecotrin®
Disalsid® (Salsalate)	Pepto-Bismol®	Dolobid® (Diflunisal)		

Stop all non-steroidal anti-inflammatory medications (NSAIDs), such as:

Advil® (ibuprofen)	Aleve® (naproxen)	Arthrotec® (volatren/cytotec)
Ansaid® (flubiprofen)	Anaprox® (naproxen)	Cataflam® (diclofenac)
Celebrex® (celecoxib)	Clinoril® (sulindac)	Daypro® (oxaprozin)
Feldene® (piroxicam)	Indocin® (indomethacin)	Meclomen® (meclofenamate)
Mediprin® (ibuprofen)	Mobic® (meloxicam)	Motrin® (ibuprofen)
Naprelan® (naproxen)	Naprosyn® (naproxen)	Nuprin® (ibuprofen)
Orudis® (ketoprofen)	Oruvail® (ketoprofen)	Relafen® (nabumetone)
Tolectin® (tolmetin)	Voltaren® (diclofenac)	

Remember: If you are taking any blood-thinning medications be sure to tell your doctor and nurse as it may need to be stopped before surgery. IF you have heart stents and take Aspirin and Plavix, check with your cardiologist about stopping prior to surgery. It is very important to follow the instructions given to you to prevent your surgery from being postponed or cancelled!

If you have any questions on the instructions you receive, call your surgeon's office right away.

Medications you may continue prior to surgery:

Iron, Tylenol® or other pain medications such as Codeine®, Lortab®, Percocet®, Ultram® (tramadol), or Vicodin®.

All Medications should be discussed with you Surgeon and RN Care Coordinator.

If you are uncertain or have any questions, please call your provider right away!

Quitting All Nicotine Products Before Surgery

Quitting smoking and other tobacco products is always helpful. Nicotine products impedes the healing process. **You will have to be nicotine free for 6-8 weeks before your surgery will be scheduled.** Your surgery team will test for nicotine preoperatively with a urine nicotine test. This is for your safety.

If you are not able to quit using nicotine products, your surgery may not be scheduled. Please let your surgeon's nurse know if you smoke or use nicotine products.

We encourage you to quit at least **6-8 weeks before surgery and 3 months after surgery because it will:**

- Improve wound healing after surgery
- Help avoid complications during and after surgery

Some Long-Term Benefits of Quitting May Include:

- Improved Survival
- Fewer and less serious side effects from surgery
- Faster recovery from treatment
- More energy
- Better quality of life
- Decreased risk of secondary cancer

Some key things to think about before your surgery, as you begin to think about quitting:

- ❒ All hospitals in the United States are smoke free. You will not be allowed to smoke during your hospital stay

Here are some tips to help you throughout your journey:

- ❒ Speak with your provider about medications that can help you with transitioning.
- ❒ Identify your triggers and develop a plan to manage those triggers.
- ❒ Plan what you can do instead of using tobacco. Make a survival kit to help you along your quit journey. In this kit have: sugar-less gum or candy, coloring books, puzzles, or bubbles for blowing.

Keys to Quitting and Staying Free of Nicotine:

- ❒ Continue your quit plan after your hospital stay
- ❒ Make sure you leave the hospital with the right medications or prescriptions
- ❒ Identify friends and family to support your quitting

You Don't Have to Quit Alone!

Please call your Primary Care Provider to discuss Tobacco Cessation

1.800.QUITNOW **https://smokefree.gov/**

Preparing for Surgery

When you leave the hospital after your surgery, you will need some help from family or friends, 24 hours a day, for at least 3-5 days. You should arrange for support at home prior to coming for surgery. It will be important to have help with meals, taking medications, etc.

A few things you can do before you come into the hospital:

- ❒ Clean and put away laundry
- ❒ Clean your bed linens, especially if you have a pet who shares your bed.
- ❒ Put the things you use often at waist height to avoid having to bend down or stretch up too much to reach them.
- ❒ Buy the foods you like and other things you will need since shopping may be hard when you first go home. Prepare meals that you can freeze and easily reheat.
- ❒ Cut the grass, tend to the garden and do all house work.
- ❒ Arrange for someone to get your mail and take care of pets and loved-ones, if necessary.
- ❒ Be sure you have a working digital thermometer. We will ask you to monitor your temperature once you are discharged from the hospital.
- ❒ Arrange transportation to and from the hospital and all appointments.

Remember to review the page in section 1 for medications you may be taking and when to stop taking them before your surgery. ***This is very important to prevent your surgery from being postponed or cancelled!***

If you have any questions on the instructions you received, call your surgeon's office right away.

Pre-Surgery Checklist

What you SHOULD bring to the hospital:

- ☐ This ERAS Handbook.
- ☐ A list of your current medications.
- ☐ Any paperwork given to you by your surgeon
- ☐ A copy of your Advance Directive form, if you completed one
- ☐ Your "blood" bracelet, if you were given one
- ☐ A book or something to do while you wait
- ☐ A change of comfortable clothes for discharge
- ☐ Any toiletries that you may need
- ☐ Your CPAP or BiPAP, if you have one
- ☐ If you use an oxygen tank, be sure you have enough oxygen and tank supplies for the ride home after surgery
- ☐ Have your Front Wheeled Walker and other necessary equipment available for use the morning after surgery.

What you SHOULD NOT bring to the hospital:

- ☒ Large sums of money
- ☒ Valuables such as jewelry or non-medical electronic equipment

*Please know that any belongings you bring will go home with your care partner or be locked away in "safe keeping." *

For your safety, you should arrange for:

- ☐ Your care partner and responsible ride home should be at the hospital by 9 AM the morning of your discharge. It is important that they are here to listen to discharge instructions and learn how to safely care for you at home. We aim to discharge by noon.
- ☐ If possible, identify someone to stay with you the first 3-5 days after discharge to help take care of you.

Weight Loss

Losing weight can make your recovery easier. Beginning an exercise program prior to surgery and/or consulting with a dietician can help you reach your weight loss goals, if needed. Please let your surgeon or nurses know if you would like further information regarding weight loss.

Visit uvahealth.com/spinerecovery to watch a short video learn more about your spine surgery. The video covers:

- what to expect during your recovery at UVA
- the right way to get out of bed and moving after surgery
- tips for dressing, showering and other everyday tasks

Days Before Surgery

Instructions for Bathing

We will give you a bottle of HIBICLENS foam (body wash) to use once a day, for 5 days prior to your surgery; this includes the night before and the morning of your surgery.

HIBICLENS is a skin cleanser that contains chlorhexidine gluconate (an antiseptic). This key ingredient helps to kill and remove germs that may cause an infection. Repeated use of HIBICLENS creates a greater protection against germs and helps to lower your risk of infection after surgery.

Before using HIBICLENS, you will need:

- ☐ A clean washcloth
- ☐ A clean towel
- ☐ Clean clothes

IMPORTANT:

- ❒ HIBICLENS is simple and easy to use. If you feel any burning or irritation on your skin, rinse the area right away, do NOT put any more HIBICLENS on, and call the clinic.
- ❒ Keep HIBICLENS away from your face (including your eyes, ears, and mouth).
- ❒ DO NOT use in the genital area. (It is ok if the soapy water runs over but do not scrub the area.)
- ❒ Do NOT shave your surgery site. This can increase the risk of infection. Your healthcare team will remove any hair, if needed.

Directions for when you shower or take a bath:

1. If you plan to wash your hair, do so with your regular shampoo. Then rinse hair and body thoroughly with water to remove any shampoo residue.
2. Wash your face and genital area with water or your regular soap.
3. Thoroughly rinse your body with water from the neck down.
4. Move away from the shower stream.
5. Apply HIBICLENS directly on your skin or on a wet washcloth and wash the rest of your body gently from the neck down.
6. Rinse thoroughly.
7. Do NOT use your regular soap after applying and rinsing with HIBICLENS.
8. Dry your skin with a clean towel.
9. Do NOT apply any lotions, deodorants, powders, or perfumes after using HIBICLENS.
10. Put on clean clothes after each shower and sleep on clean bed linens the night before surgery.

Bowel Preparation Prior to Surgery

In order to prepare your bowel for surgery, we ask that you take 1 dose (1 heaping tablespoon) of MiraLAX daily on each of the 3 days before you come in for surgery. This is easiest taken in the late afternoon or early evening. This will help to get your bowels regular before you begin taking pain medications, which can cause constipation. Patients who are prone to loose stools or diarrhea may decrease the amount of MiraLAX taken each day.

Scheduled Surgery Time

A nurse will call you the day before your surgery to tell you what time to arrive. If your surgery is on a Monday, you will be called the Friday before.

If you do not receive a call by 4:30 pm, please call 434.924.5035.

Please write the time and check in location that the nurse tells you on page 1 of this handbook in the space provided.

Food and Drink the night before surgery

- ☐ Stop eating solid foods at midnight before your surgery.
- ☐ Be sure to have a 20-ounce Gatorade™ ready and available for the morning of surgery. If you are diabetic, you should drink a 20-ounce Gatorlyte™, Gatorade ZERO™, or water instead. Drink this on your way into the hospital in the morning.

Day of Surgery

Before you leave home

- ☐ Remove nail polish, makeup, jewelry and all piercings.
- ☐ Continue drinking Gatorade™ or water on the morning of your surgery. Do NOT drink any other liquids. If you do, we may cancel your surgery.
- ☐ Remember to drink your Gatorade™ on the way to the hospital. If you are diabetic, you should drink Gatorlyte™, Gatorade ZERO™, or water instead.
- ☐ Remember to wash with the HIBICLENS soap (follow instructions on previous pages).

Hospital arrival

- ☐ Arrive at the hospital on the morning of surgery at the time you wrote on page 1 - (this will be approximately 2 hours before surgery).
- ☐ Finish your water or Gatorade™ as you arrive. You cannot drink after this.
- ☐ Check in to the location as instructed by the call nurse.
- ☐ Your family will be given a tracking number so they can monitor your progress.

Surgery

When it is time for your surgery, you will be brought to the Surgical Admissions Suite (SAS).

In SAS, you will:

- ❒ Be identified for surgery and get an ID band for your wrist.
- ❒ Be checked in by a nurse and asked about your pain level.
- ❒ Be given an IV and weighed by the nurse.
- ❒ Be given several medicines that will help keep you comfortable during and after surgery.
- ❒ Meet the surgery team where your consent for surgery will be reviewed. Your family member can be with you during this time.
- ❒ Meet the anesthesia team who will review your medical history and will discuss your anesthesia plan.

In the Operating Room

From SAS, you will then be taken to the operating room (OR) for surgery and your family will return to the family waiting lounge.

Many patients do not recall being in the OR because of the medication we give you to relax and manage your pain.

Once you arrive in the OR:

- ❒ We will do a "check-in" to confirm your identity and the location of your surgery.
- ❒ You will be connected to monitors.
- ❒ Boots will be placed on your feet to reduce the risk of developing blood clots during surgery.
- ❒ You will be given antibiotics through your IV prior to surgery to reduce your risk for infection.
- ❒ A foley catheter will be placed to help empty your bladder during and after surgery.
- ❒ Just before starting your surgery, we will do a "time out" to check your identity and confirm the location of your surgery.

After this, your surgical team will perform your operation.

Depending on your surgery, neuromonitoring may be used to assess the function of your spinal cord. This will alert the surgeon and anesthesiologist to any potential injury to the spinal cord so that they can prevent permanent damage.

During your surgery, the Operating Room nurse will call or text approximately every 2 hours to update your family, when possible.

After Surgery

Recovery Room (PACU)

After surgery, you may be taken to the recovery room (PACU) or to an ICU (NNICU). If you are taken to PACU, you will remain in the recovery room for about 4-6 hours and then may be assigned a room on an Intermediate Care Unit (NIMU) or Acute Care Unit (6 West). No matter where you go after surgery, once you are awake:

- ❒ You will be given clear fluids to drink.
- ❒ Post-operative nausea and vomiting is very common after your surgery. We give you medication to reduce this.

The surgeon will also call your family after surgery to give them an update, or the surgeon might visit them in the Surgery Consult Room in the 1st floor Surgical Family Waiting Lounge.

Once to your room, you:

- ❒ May be in a semi-private room with a roommate, with a privacy curtain drawn around your bed.
- ❒ ICU and NIMU- You will be in a room by yourself and you will have neurological checks (testing strength in your legs) every 2 hours
- ❒ Will have a large dressing at your surgical site to help to control bleeding and reduce swelling.
- ❒ You may be given a cervical collar (brace), lumbar brace, or abdominal binder to wear depending on your surgery.
- ❒ Will have x-rays taken and once reviewed (cleared) you will get out of bed (with help) to start moving as soon as possible. This speeds up your recovery and decreases the chances you will get blood clots and pneumonia.
- ❒ Will be encouraged to take deep breaths to exercise your lungs and help prevent pneumonia
- ❒ Will be given oxygen and will have your temperature, pulse, and blood pressure checked after you arrive
- ❒ Will have an IV in your arm to give you fluid and you will be allowed to drink fluids
- ❒ Will have inflatable sleeves or boots placed on your legs to help prevent blood clots. These should be worn whenever you are in the hospital bed after surgery.
- ❒ May also receive a blood thinner shot in the abdomen to help prevent blood clots
- ❒ Will resume your home medications (with the exception of some diabetes, blood pressure, and blood thinning medications)
- ❒ Will get up and out of bed to the chair on the day of your surgery, with help from the nurse or physical therapist
- ❒ May have one or more small tubes coming from your incision to drain any fluids inside. Your nurse will empty the drain a few times per day.

CALL, DON'T FALL

Cervical Collar

A cervical collar (brace) may be placed on your neck after surgery. It is used to support your neck, control pain, and limit neck movement during recovery from surgery. If a collar is recommended for you, your surgeon will discuss how long it must be worn.

Lumbar Brace

A lumbar brace may be provided for you after surgery. It is used to support your back, control pain, and limit undesired movement during recovery from surgery. If you receive one, you will wear the lumbar brace for 3 months after surgery, unless you are lying down or showering. You should limit back movement as much as possible when the brace is off.

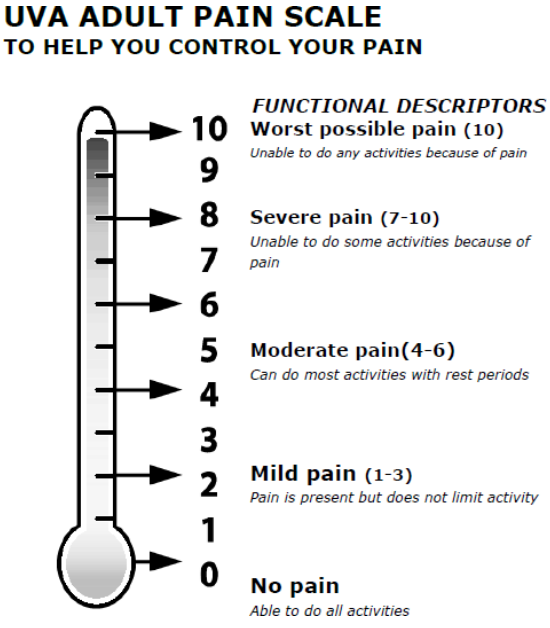
Bowel Management Plan

Constipation is very common with the use of anesthesia and narcotic pain medication. It is very important to avoid constipation and hard stools after surgery. We have established a bowel management plan to prevent constipation. You will be given a stool softener (Colace and Senna) and laxative (MiraLAX) when you are in the hospital. It is important for you to know that you will also be given a suppository medication to help prevent constipation while in the hospital. As long as you are taking narcotic pain medicine, it is important that you take these. If diarrhea occurs, please stop this medication.

Pain control following surgery

Managing your pain is an important part of your recovery. We will use the UVA Pain Rating Scale where you rate your pain on a scale from 0 to 10 - where 0 means no pain and 10 means the worst imaginable pain. We will ask you regularly about your level of comfort because it is important that you are able to take deep breaths, cough, and move.

Preventing and treating your pain early is easier than trying to treat pain after it starts so we have created a specific plan to stay ahead of your pain. We will manage your pain, but will not be able to eliminate all pain.



- ❒ We will treat your pain during surgery with an injection at the surgery site.
- ❒ You will get several other pain medicines around-the-clock to keep you comfortable.
- ❒ You will be prescribed narcotic pain pills (for example, oxycodone) as needed for additional pain.

This pain plan will decrease the amount of narcotics we give you after surgery. Narcotics can significantly slow your recovery and cause constipation.

If you are on long standing pain medication prior to surgery, you will be provided with an individualized regimen for pain control with the assistance of our pain specialists.

Comfort Menu

Keeping you comfortable and controlling your pain is very important to us. As part of your recovery, we like to offer you different ways to address your pain in addition to medication. We hope this comfort menu will help you and your healthcare team to better understand your pain and recovery goals. Please discuss your pain control goals and comfort options with your nurse.

- ☐ **Aromatherapy:** scented tablets like orange, lavender or eucalyptus can create a calming, scented environment
- ☐ **Distraction**: focus your mind on an activity like creating art with our art supplies, doing puzzle books and reading magazines
- ☐ **Ice or Heat Therapy**: ice packs and dry heat packs are available, depending on your surgery
- ☐ **Noise or Light Cancellation**: an eye mask, earplugs and headphones are available for your comfort and convenience. We can also help you create a sleep plan.
- ☐ **Pet Therapy**: hospital volunteers visit the unit with therapy animals. Ask about their availability.
- ☐ **Positioning/Movement**: changing position in your bed/chair or getting up to walk (with help) can improve your comfort.
- ☐ **Prayer and Reflection**: connect with your spiritual or religious center of healing and hope through prayer, meditation, reflection and ritual. Also, ask about our chaplaincy services.
- ☐ **Controlled Breathing**: taking slow deep breaths can help distract you from pain you are feeling. This can also help if you are feeling nauseated (upset stomach).
  Using the 4-7-8 technique, you can focus on your breathing pattern:
  - ❒ Breathe in quietly through your nose for 4 seconds
  - ❒ Hold the breath for 7 seconds
  - ❒ Breathe out through your mouth for 8 seconds
- ☐ **Television Distraction**: we offer a relaxation channel through the UVA in-room television. Turn to channel 17.
- ☐ **Calm App**: for Android or iOS: if you have a smart device, download the free **Calm** app for meditation and guided imagery. You can find it by searching in the app store.

First Day After Surgery

On the day after your surgery, you will:

- ❒ Be able to eat regular foods as soon as you are ready.
- ❒ Be encouraged to drink.
- ❒ Be asked to get out of bed, get dressed, sit in chair and walk the hallways, with help from nursing staff, physical and occupational therapy.

Subsequent Days After Surgery

- ❒ Foley will be removed on Day 1 or 2
- ❒ Continue to work with physical therapy to strengthen your muscles and make getting around easier
- ❒ You will have your IV stopped and changed over to oral pain medications
- ❒ Prepare for discharge

You will be able to go home when you are:

- ❒ Comfortable and your pain is controlled.
- ❒ Off all IV fluids and drinking enough to stay hydrated.
- ❒ Not nauseated and able to tolerate medications by mouth.
- ❒ Not running a fever.
- ❒ Able to get around with your walker or cane and have worked with Physical Therapy.

Complications Delaying Discharge

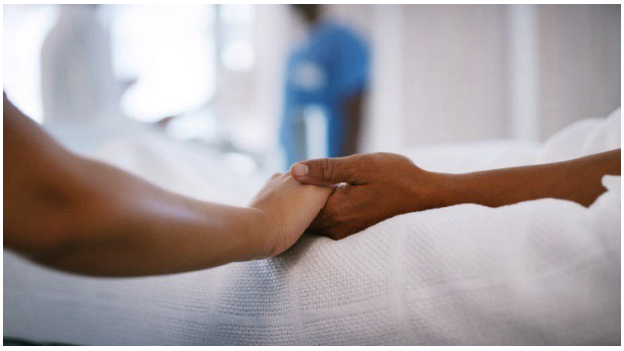
Trouble Swallowing: one of the most common complications after anterior spine surgery (ACDF). We will monitor you closely and it should resolve quickly.

Incision Drainage: the incision may drain fluid. Clear, pink fluid in small amount is ok. We will monitor you closely to watch for changes in color, odor and amount of drainage.

Ileus: is the lack of movement of your bowels that leads to buildup and potential blockage of food. It is temporary, but is often painful and causes bloating of your abdomen. It is very common with the use of anesthesia and narcotic pain medication and is one of the reasons we do our best to manage your pain with non-narcotic options.

Urinary Retention: the inability to completely empty the bladder. Sometimes your bladder is slow to start working on its own again and urinary retention (difficulty or inability to urinate) occurs. Urinary retention is more common in men but it can also happen in women. If you develop urinary retention, we may have to put a temporary catheter in or give you special medication to treat it. In some cases, we may discharge you home from the hospital with a catheter until your urinary retention resolves. We do everything we can to help prevent urinary retention after surgery.

Cerebrospinal Fluid Leak (CSF): is a rare complication of spine surgery. A lumbar drain may be placed to manage a CSF leak if it is not able to be repaired during surgery.



Discharge

Before you are discharged, you will be given:

- ❒ A copy of your discharge instructions.
- ❒ A list of any medications you may need.
- ❒ A prescription for pain medicine
- ❒ Instructions on when to return to the surgical clinic (usually 6 weeks), depending on your surgery. You *may* need to return for suture or staple removal.
- ❒ Equipment (such as a walker or cane) if unable to obtain before surgery

If you will be on a blood thinner medication, you will receive instructions at discharge

Before you leave the hospital

- ☐ We will ask you to identify how you will get home.
- ☐ We will ask who will stay with you.
- ☐ Be sure to collect any belongings that were stored in "safe keeping."

Our Case Managers help with discharge needs. Please let us know the names, locations, and phone numbers of:

☐ Your home pharmacy:

_____

☐ Your preference for home healthcare agency (if you have one):

_____

☐ Your preference for Inpatient Rehab Facility (if you have one):

_____

☐ Your preference for Outpatient Physical Therapy (if you have one):

_____

☐ Any special needs after your hospital stay:

_____

After Discharge

When to Call

Complications do not happen very often, but it is important for you to know what to look for and who to call in case you start to feel bad.

Red Zone: Medical Emergency– Call 911

- Unrelieved shortness of breath
- Chest Pain

Yellow Zone: Worsening Symptoms – call your Home Health nurse or call the surgeon's line.

- Temperature over 101.5° F
- Continuous drainage from your incision
- Colored or cloudy drainage from your incision
- Odor or redness to the surgical area
- Any increase in swelling or pain in your lower leg
- Severe calf pain
- No bowel movement in 3 days
- You experience unusual signs of bleeding, such as dark brown or red urine, blood in stool (red or black), nosebleeds, or any bleeding that does not stop
- You are vomiting, nauseated or have diarrhea
- You have a heart beat that feels fast, too slow, or skips
- You are feeling faint
- You have a change in your mental status
- You are feeling weaker instead of stronger
- You are unable to pass urine for more than 6 hours

Green Zone: Symptoms are under control

- Low grade temperature of 100.0-101.4° F
- Mild Constipation
- Light drainage on your surgical dressing

If you any have trouble between 8am and 4:30pm, call the Department of Neurosurgery at 800.362.2203. After hours, please call the UVA Main Hospital at 434.924.0000 and ask for the neurosurgery resident on call.

Wound Care

Surgical wounds may be closed differently depending on the type of surgery you have.

Some incisions are closed with a sterile liquid skin adhesive called Dermabond and no dressing is used.

- The film will remain in place for 5 to 10 days and naturally fall off your skin.
- Do not scratch, rub or pick at the Dermabond adhesive film.

If you have a surgical dressing, you may have staples or sutures closing the incision. The dressing will be changed before you leave the hospital. It will be replaced with a lightweight dressing called Telfa. Your dressing will need to be changed daily until the staple are removed in about 10-14 days. Most patients have sutures under the skin that will dissolve naturally.

- You MUST cover your incision with a water-resistant bandage such as Tegaderm or other plastic covering prior to showering.
- If you have a brace to wear after surgery, you may remove this to shower but should limit back movement as much as possible.
- The best time to change your dressing is after you shower.

To Change Your Dressing:

You will need to purchase ultra-absorbent wound dressings (Telfa) from any pharmacy. Some available dressings have adhesive around the border. Other non-adhesive dressings can be taped down with adhesive medical tape.

- Wash your hands before changing your dressing.
- Remove the water-resistant dressing and the soiled dressing.
- If the incision is wet or damp, gently pat dry with a clean towel.
- You may have paper strips (Steri-Strips) covering the incision. These will fall off on their own.
- Look at your wound when you change the dressing for signs of infection including redness, swelling and a large amount of drainage. A small amount of bloody or blood-tinged drainage is normal. If you have any of these signs, contact your doctor immediately.
- Apply a new telfa dressing every day for 7 days. You do not need a dressing over your incision after 7 days, unless you have external stitches or staples. If you have external stitches or staples, continue to change the dressing every day until the stitches or staples are removed. This is usually done in 10- 14 days.

If you have external stitches or staples that close your incision, they will need to be removed 10-14 days after surgery. You may have these removed by your primary care doctor or call the Department of Neurosurgery to schedule an appointment.

- Do not soak in the tub or get in a pool for at least 6 weeks or until you are instructed that it is safe to do so.
- It is important to NOT scrub, pick at or attempt to clean the incision. Do not apply any creams, lotion, antibiotics or hydrogen peroxide.
- In order to prevent infections, the most important thing you and your family members can do is to keep your hands clean and take proper care of your incision. It is important to wash hands before and after incision care.
- You will want to make sure that your home environment, particularly your bed and resting areas, are kept very clean to eliminate risks for infection. Keep pets out of your bed and away from your incision.

If you have questions or concerns regarding your wound, you may take a picture and send it to the clinic through MyChart

How to upload Photo with MyChart APP

1. Open the MyChart App on your phone.
2. Log in using your username and password.
3. One the main page click the Messages icon.
4. Click the Send a Message button at the bottom
5. Press the option to ask a medical question then select what type of medical question.
6. Select which Clinic you would like to contact.
7. Enter a description of your image in the text box.
8. Click the Add an attachment button and either,
    a. Choose photo from Album on your phone
    b. Use Camera and take the picture now
9. Click the Send button.

Infection

Signs of infection are listed in the Yellow Zone on page 25.

If you develop a low fever, this may mean that you need to work on deep breathing

You should use your incentive spirometer (lung exerciser) 10 times every 2 hours while awake. You should continue every 2 hours for 7 days. You should walk at least 3 times per day to help prevent pneumonia after surgery.

Pain

You may have Tylenol for improved pain control. Take this over-the-counter medication as prescribed.

Do NOT take Non-Steroidal Anti-Inflammatory medications (Motrin, Advil, Ibuprofen, or Aspirin) for pain relief. These medications slow down the bones ability to heal.

Additionally, we may send you home with a prescription for pain medication (narcotic) for severe pain. Your prescription will be filled at the hospital pharmacy. This is the preference of the surgical team to ensure you have your medications for discharge.

Narcotic pain medications often cause nausea (upset stomach). To help reduce the risk of nausea, take your pain medication with a small amount of food.

Your health care team will work with you to create a treatment plan based on the medications you are prescribed.

It is important to remember that misuse of narcotic pain medicines is a serious public health concern. If you take more of your narcotic pain medication than was prescribed or more often than what was prescribed, you will run out of your medication before your pharmacy will allow a new prescription to be filled. This is important because prescriptions for narcotic pain medications cannot be called in to your pharmacy. The prescription must be picked up in person at your doctor's office with a valid ID.

Virginia has a Prescription Monitoring Program for these types of medications to help keep patients safe. Ask your health care team if you have specific questions.

Pain Medication Weaning

If you are taking narcotic pain medication, you will need to wean off these medications as your pain improves. Weaning means slowly decreasing the amount you take until you are not taking it anymore. Weaning to lower doses of narcotic pain medication can help you feel better and improve your quality of life.

It's important to remember that narcotic pain medication may not provide good pain relief when taken over a long period of time and sometimes they can actually cause your pain to get worse. Narcotic pain medications can also have many concerning side effects including constipation, nausea, tiredness and dependency (addiction). The side effects of narcotic pain medications increase with higher doses which means the more you take, the worse the symptoms may be.

To Wean From Your Narcotic Pain Medication

We recommend slowly reducing the dose you are taking. *You can increase the amount of time between doses*.

If you are taking a dose every 4 hours, extend that time:

- Take a dose every 5 to 6 hours for 1 or 2 days
- Then, take a dose every 7 to 8 hours for 1 or 2 days.

You can also reduce the dose. If you are taking 2 pills each time, start taking fewer pills:

- Take 1 pill each time. Do this for 1 or 2 days.
- Then, increase the amount of time between doses, as explained above.

If you are not sure how to wean off of your narcotic pain medication, please contact your family doctor.

Once your pain has improved and/or you have weaned off your narcotic pain medication, you may have pills remaining. The **UVA Pharmacy** is now a **DEA registered drug take-back location**. There is a Drop Box available in the main lobby of the pharmacy 24 hours 7 days per week for patients or visitors to safely dispose of unwanted or unused medications.

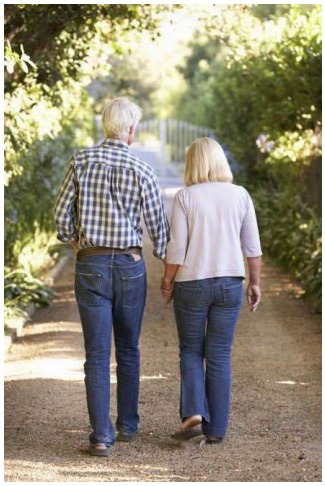
Constipation

Constipation is very common with the use of narcotic pain medicine. The ERAS program decreases the risk of constipation by using pain medicine alternatives to help keep you comfortable.

- It is very important to AVOID CONSTIPATION AND HARD STOOLS after surgery.
- If you are on a regular diet, include plenty of fiber. Good sources of fiber include fresh fruits, vegetables, dried beans and whole grains. You may use fiber supplements with water.
- It is important that you drink 6-8 cups of non-caffeinated fluids per day to prevent constipation. Water is best.
- We will ask you to take a stool softener (Colace) and laxative medication (MiraLAX) to help prevent constipation once you are home. Please continue to take this each night until you stop your narcotic pain medication. If diarrhea occurs, please stop taking the Colace and MiraLAX.
- Walking and regular activity can also help prevent constipation.

Hobbies and Activities

Walking is encouraged from the day following your surgery. Start slowly and give your muscles time to warm up before starting any activity. Remember to use caution as you resume your previous activities.



You should NOT:

☒ Do any heavy lifting for 6 weeks.
No more than a gallon of milk which equals 10 lbs.
☒ Do not make any sudden movements. You should avoid twisting of the neck.

You SHOULD:

❒ Plan to walk three or four times daily
❒ Be able to climb stairs from the time you are discharged.
❒ Return to hobbies and activities soon after your surgery. This will help you recover.

Remember, it can take up to 2-3 months to fully recover. Plan rest periods for each day. Your body is using its energy to heal your wounds on the inside and out.

Resuming Sexual Relationships

You can resume sexual activity safely immediately after surgery, unless your surgeon recommends a different timeline for you.

Driving

You should not drive until you are off pain medications and have been cleared by your surgeon.

Work

- You should be able to return to work 4–6 weeks after your surgery. **This estimate might be longer or shorter depending on your recovery rate, how you are feeling, and what type of work you do.** Patients with more strenuous jobs may require up to 3 months of recovery before returning to work. Please discuss your specific work activities with your surgeon and check with your employer on the rules and policies of your workplace, which may be important for returning to work.

- If you need a "Return to Work" form for your employer or disability papers, ask your employer to fax them to our office at:

_____

Write any questions you have here:

_____

_____

_____

_____

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RECOVERY After Discharge

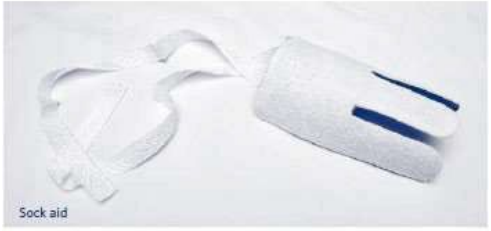
Special equipment

Please bring a list of equipment you have access to. We encourage you to get equipment prior to surgery. You can obtain equipment through online stores, borrowing from family/friends, home supply stores, thrift shops, local community resources, and pharmacies.

The following equipment may be necessary after surgery:

The following equipment is optional after surgery:

Bidet Attachment



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Notes: