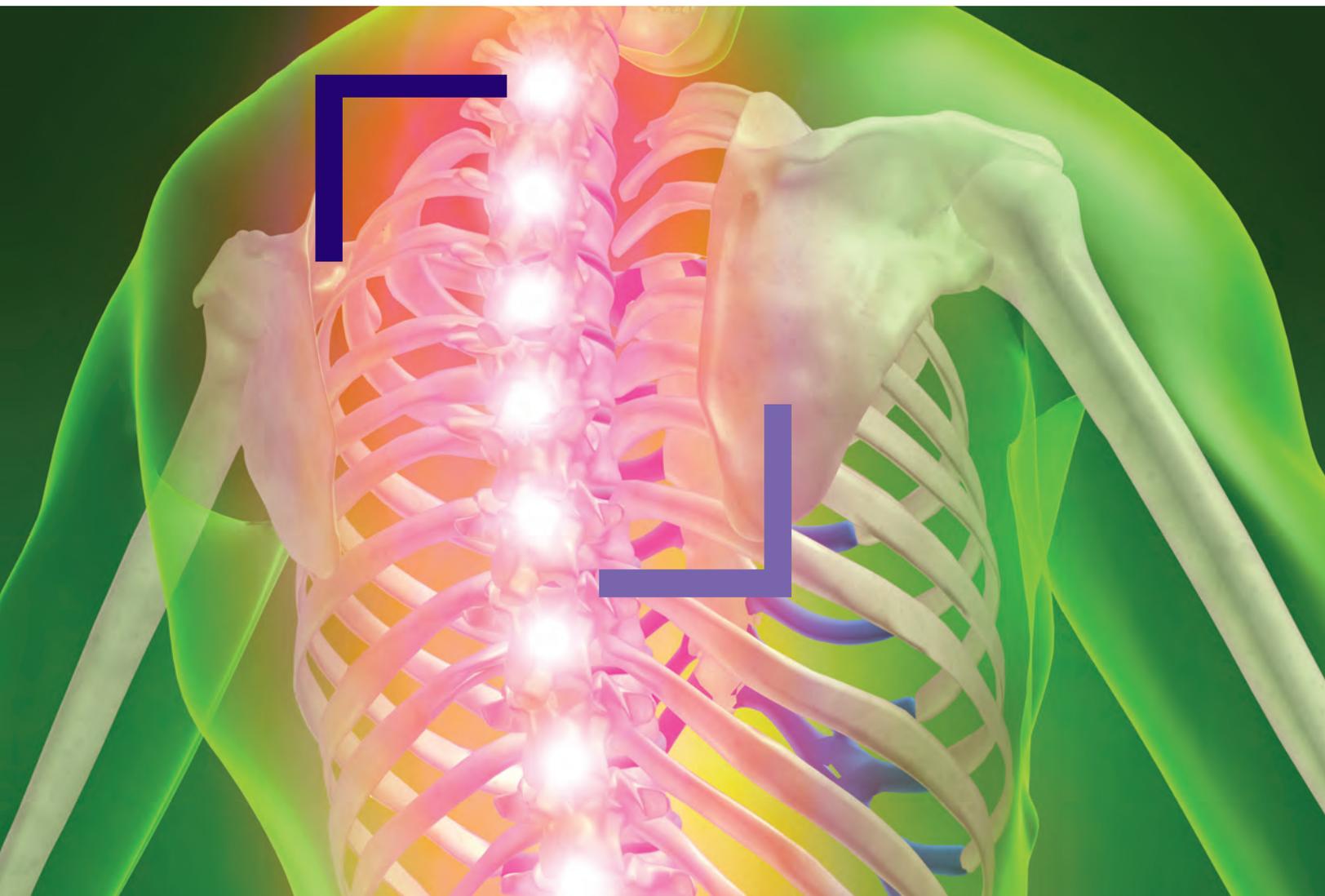


Spine surgery guide for patients



 **Salem Health**[®]
Hospitals & Clinics

Salem Health Spine Center

Key patient information

Name: _____

Coach/contact person: _____

Phone: _____

Date of surgery: _____

Surgeon: _____

Check-in time: _____

PIN: _____

Presurgical screening:

Date: _____ Time: _____

Postsurgical follow-up appointment with surgeon:

Date: _____ Time: _____

Other appointments requested by your surgeon:

Date: _____ Time: _____

We look forward to having you spend a few days with us in order to spend the rest of your life doing the things that you love!

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Presurgical checklist

Two to three weeks before surgery:

- Stop smoking or using nicotine products.
- Reduce or eliminate alcohol consumption.
- Attend your preoperative visit at your surgeon's office to finalize your surgery plans and discuss when to discontinue any blood thinning medication you are taking.
- Attend Salem Health Spine Center education class.
- Complete any lab work or testing ordered by your surgeon.
- Begin bathing with antibacterial soap.
- Start making preparations at home.

Seven days before surgery:

- If you take a blood thinner such as Coumadin, warfarin or Plavix®, stop taking this medication as directed by your surgeon and the prescribing physician. It is important to coordinate medication needs between both providers so you will be off the medication for the shortest time necessary for your surgery.
- Stop any NSAIDs (Advil, Aleve, ibuprofen, etc.)
- Stop taking any vitamins, supplements, fish oil or herbal medications as directed by your surgeon.

Two days before surgery:

- Over-the-counter medication such as Claritin® and Benadryl® are fine to continue.
- You may take Tylenol®, if necessary.

One day before surgery:

- Pack your bag for the hospital, including clean clothes, this resource guide and any personal care items you may want to bring.
- Please shower and clean the surgical area with the special cleanser provided to you.
- Drink 16 ounces of Gatorade® the evening before surgery.
- Remove fingernail polish.
- Do not eat or drink anything after midnight. This includes gum, mints or candy. **See special instructions for Gatorade® before surgery on page 19.**

Should you become ill with a fever, cold, sore throat, flu or any other illness, please contact your surgeon's office.

Day of surgery:

- Drink up to 16 ounces of Gatorade®. Make sure you are done drinking when you leave for the hospital.
- Bathe from the neck down, not the face, hair, or genitals, with the special cleanser given you by your surgeon's office. Spend two to three minutes concentrating in the area you will be having surgery. Be sure to use a clean towel and put on clean clothes.
- Wear eyeglasses instead of contacts. Come make-up free.
- Take any medications as instructed with Gatorade® or a small sip of water.
- Bring insurance card, photo identification, medication list, packed bag and any brace ordered.
- Report to the check-in area (Building A, second floor) on time, two hours before procedure.

Welcome to the Salem Health Spine Center



Thank you for choosing the Salem Health Spine Center to have your neck or back surgery in order to improve your lifestyle, increase your mobility and relieve some of your pain.

As you approach the day of surgery, you probably have mixed emotions. Patients are often nervous about the procedure and the journey ahead. That is completely normal. Our team of experts will be here to help and guide you every step of the way. We hope you are excited about taking this important step toward a new life.

Here are some facts about the Salem Health Spine Center.

- We have received the Gold Seal from The Joint Commission as a Spine Center of Excellence.
- Our patients have ranked us in the top 10 percent in the country for patient satisfaction.
- Salem Health Spine Center patients have large, private rooms at Salem Hospital, which include a sleeping area for family and a bathroom with a shower.

- We are a national leader in spine care.
- Salem Health Spine Center is a part of Salem Hospital, a Magnet®-recognized hospital that demonstrates a commitment to excellent nursing care.

The purpose of this guide is to prepare you and your family for your experience and to help you achieve your goals. As a health care team, we are here to help you meet these goals. However, every individual is unique, and this is simply a guide to assist you on your journey. Your care will be individualized and adjusted to fit your personal needs. We encourage you to attend the presurgical spine education class to give you additional information and help you prepare for your surgery.

You will receive questionnaires every six months for a year after your surgery, then again, two years after surgery asking about your progress. We strongly encourage you to complete these surveys, and send them back to us. Your experiences and feedback are very valuable to us. This information will be used to help Salem Health Spine Center continue to improve the care we provide and assist us in our ongoing commitment to excellence.

The experts at the Salem Health Spine Center have carefully planned every step of your care to help ensure a successful journey to recovery. Our goal is that you have an exceptional experience every time you receive care from Salem Health.

To our community



This book is the result of Salem Health, Salem Health Spine Center and the spine specialists in our community seeing the need to work together to assure our patients the best, most appropriate, most efficient and most timely spine care.

The staff at Salem Health Spine Center is dedicated to helping patients with back and neck problems navigate through the maze of treatment options. All of our spine specialists are committed to providing you the best in care.

We use proven best practices in spine care to support our treatment decisions. We track our outcomes so that we can always improve when needed. I am proud to be part of this collaborative effort between Salem Health Spine Center and our community spine specialists.

Thank you for choosing the Salem Health Spine Center.

Warmest regards,

Maurice Collada Jr.

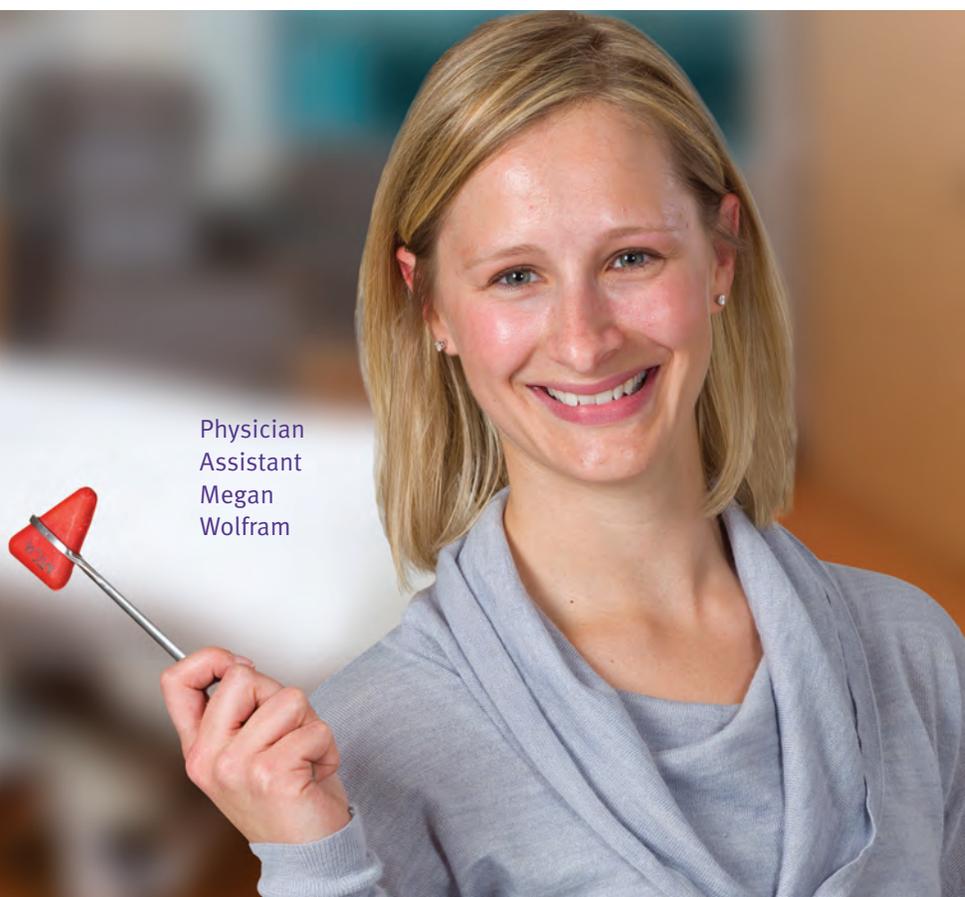
Maurice Collada Jr., MD
Medical Director, Salem Health Spine Center



Introducing your health care team

Our expertly trained staff at the Salem Health Spine Center is here to support and guide you through every step of this process. Here are some of the people you may encounter along your journey.

- **Surgeon:** Your surgeon is the physician who is specially trained in spine care and will perform your surgery. Your surgeon will oversee your care throughout your stay.
- **Anesthesiologist:** Your anesthesiologist is responsible for administering the medications required to keep you asleep and comfortable throughout surgery, as well as monitor your heart and lungs during surgery. Your anesthesiologist will also help manage your post operative pain.
- **Primary care physician:** Your primary care physician is your family physician and the team expert who will manage your overall health. You can expect your primary care physician to stay in contact with your surgeon and be informed regarding your progress after your discharge from the hospital.
- **Hospitalist:** A hospitalist is a physician who may follow your medical care during your hospital stay and will work with your surgeon to meet your care needs.
- **Physician assistant:** Some of our surgeons also work with physician assistants. These health care professionals will assist your surgeon throughout your surgical process.
- **Spine Center navigator:** This is a health care professional, who is there to assist and guide you through your journey. The navigator will teach your presurgery class, visit you while in the hospital and answer any questions you may have throughout the process.



Physician
Assistant
Megan
Wolfram



- **Registered nurse (RN):** Before, during and after your surgery, you can expect to meet many different nurses who perform many different jobs. Nurses will help prepare you for surgery and will be in the operating room with you throughout your surgery. After surgery, a team of nurses will carry out orders given by your surgeon, as well as keep you comfortable and safe in the hospital. You will see these individuals in royal blue scrubs.
- **Certified nursing assistant (CNA):** Your CNA will help you with activities like bathing, dressing or getting to the bathroom. CNAs will often help nurses with their jobs and are valuable members of the health care team. You will see these individuals in maroon scrubs.
- **Physical therapy team:** Your physical therapy team is trained to help you learn to safely get in and out of bed, walk, and enter and exit your home while maintaining postoperative spinal precautions. They also help educate you on the use of any walking aids or brace you may need to use during your recovery. These individuals wear navy blue scrubs.
- **Occupational therapy team:** Your occupational therapy team is trained to help you learn to safely and effectively perform activities of daily living like bathing, toileting and dressing while maintaining spinal precautions. They may teach you to use specialized equipment for independence and safety in your home, especially in the bathroom. This may include adaptive equipment to assist you throughout your recovery such as walkers, reachers, sock pulls, raised toilet seats or shower seats. These individuals also wear navy blue scrubs.
- **Dietitian:** Your dietitian provides nutritional counseling to help you make healthy choices about the foods you eat and can help you understand the connection between diet and healing.
- **Chaplain:** Our chaplains are specially trained to serve your spiritual needs upon your request, as well as those of your family, regardless of your religious denomination. Our chaplains are also available to assist you with advance directives.
- **Pharmacist:** A pharmacist manages your medications while you are in the hospital and may meet with you prior to your discharge if you have any questions.
- **Coach:** Your coach is a person that you designate as a support person to help you prepare for and recover from your spine surgery. This may be a spouse, friend, or family member who will provide you support and encouragement in your immediate recovery. You may have more than one support person. With you, your coach is encouraged to attend the presurgery education class as well as your appointments with your surgeon.

Other team members that you'll likely meet include lab technicians, X-ray technicians, patient transporters, the lift team and a respiratory therapist.

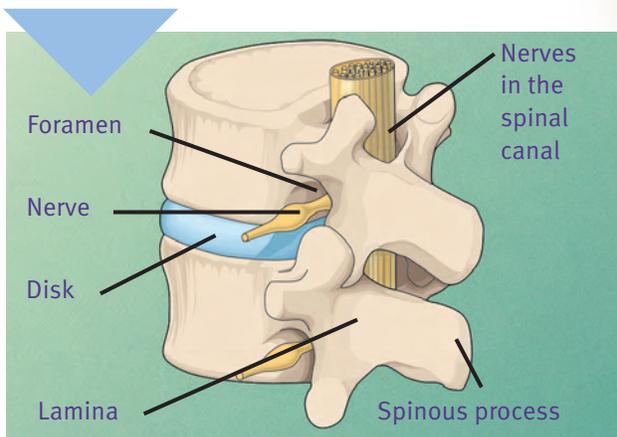
How your spine works

The spine

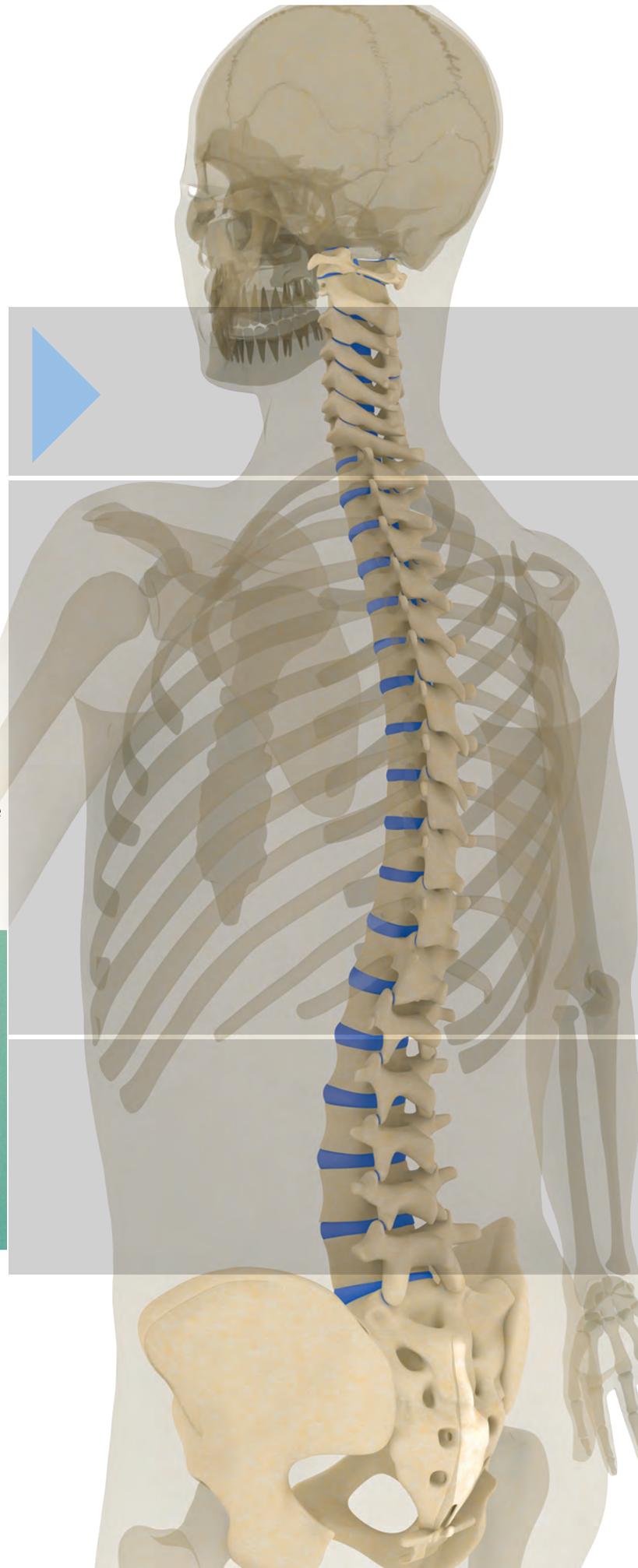
Your spine is made up of vertebrae, bones that are separated by elastic pads (discs) that act as shock absorbers. This make up of bones and discs allows the spine to move, bend and twist. The spine is further supported by muscles and ligaments, adding strength and flexibility. The vertebrae of the spine are divided into three regions: neck (cervical), mid-back (thoracic) and lower back (lumbar). The tailbone (sacrum and coccyx) are located at the base of your spine.

The vertebra

Each vertebra forms an opening through which the spinal cord passes. This opening is formed by the lamina, a part of the vertebral bone, on each side of the spine and the spinous process in the back. The hard ridges you feel when you rub your hand down a back are the spinous processes.



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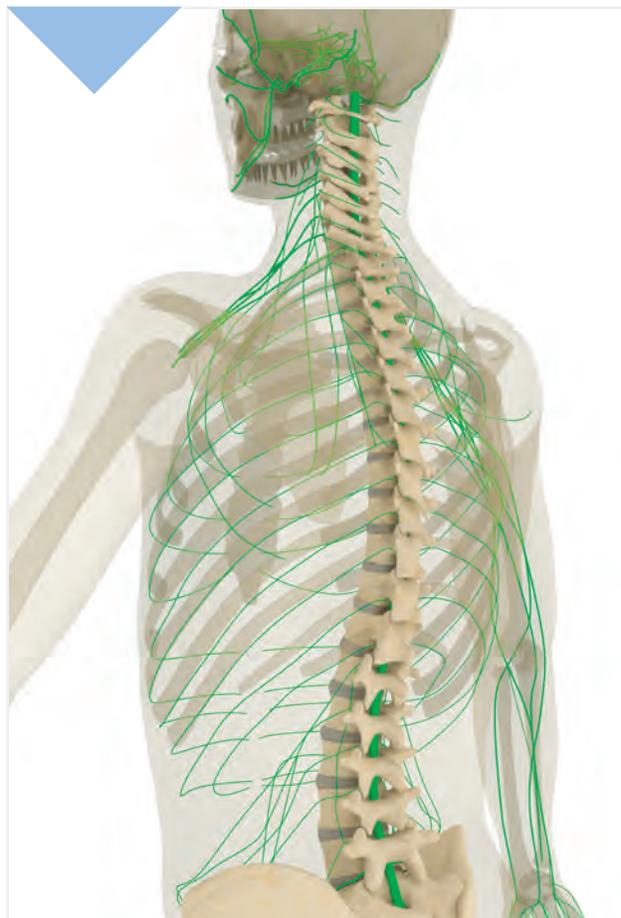
Cervical curve (neck)

Thoracic curve (middle back)

Lumbar curve (lower back)

The spinal cord

The spinal cord runs from your brain to your lower back. Spinal nerves branch off the length of the spinal cord. These nerves pass through small openings on the sides of the vertebrae called foramina. The foramina are formed by the facet joints of the vertebrae. The spinal nerves from the neck (cervical) vertebrae affect the feeling and motion of the face, arms, shoulders and hands. The mid-back (thoracic) spinal nerves affect your digestion and urinary system. The lower back (lumbar) spinal nerves affect your legs, feet and bowel function.

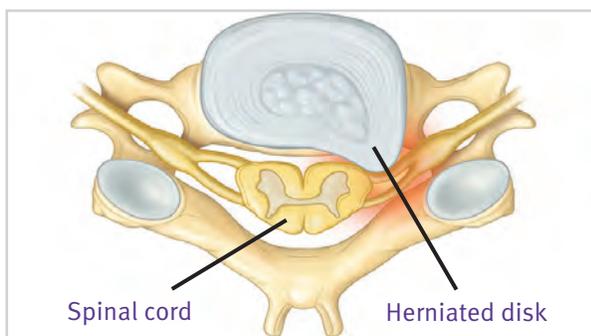


Understanding your spine surgery

Common causes of back and neck problems

What is a herniated disc?

The rupture of a vertebral disc can be caused by the normal wear of aging or by traumatic injury. A herniated disc can push painfully against a nerve root, sending pain down the sciatic nerve and resulting in a burning, tingling and/or numbing sensation from the lower back to one or both legs and feet. A herniated disc occurs when small tears form in the wall of an injured disc. Damaged pieces of the nucleus (which can harden and break apart with age) push through the tears and out of the disc wall. The herniated disc can compress a nerve root, causing pain, changes in sensation, or weakness.



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What is spinal stenosis?

This condition affects the spine between the neck and the lower back. Spinal stenosis is a narrowing of the spinal canal that is caused by the degeneration of bones in the spine, disc herniation or thickening of the tissues that surround the spinal cord. Spinal stenosis could be a natural part of your anatomy or more typically caused by age and overuse, which can lead to degeneration of the

spine's discs, bones and joints. Vertebrae may slip out of their normal alignment and rub harmfully against each other. The tissues that surround the spinal cord may thicken.

What is sciatica or radiculopathy?

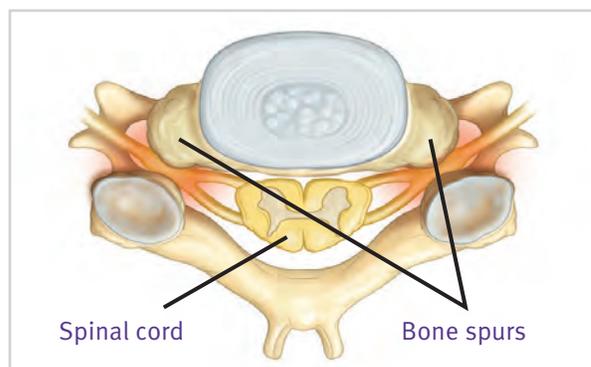
The spinal cord branches out to all parts of the body. The part of a nerve that connects to the spinal cord is called the nerve root. If one of these roots is injured or pinched, pain, weakness, numbness or tingling may be felt in the part of the body served by that nerve.

What is degenerative disk disease?

This condition is a weakening of one or more vertebral discs, which normally act as a cushion between the vertebrae. This condition can develop as a natural part of the aging process, but it may also result from injury to the back. The site of the injury may be painful. Some people experience pain, numbness or tingling in the legs. Strong pain tends to come and go. Bending, twisting and sitting may make the pain worse. Lying down relieves pressure on the spine.

What is spondylosis?

Also called osteoarthritis of the spine, it is a degenerative disease. Spondylosis is the degeneration of



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the cartilage that coats the ends of the bones in a joint. The smooth articular cartilage coating the facet joints of the spine is generally what deteriorates. The bones of the joints then cannot move smoothly over the roughened cartilage which causes irritation, fixation, stiffness and damage to the bone. Bone spurs may also form which leads to spinal stenosis.

What is spondylolysis?

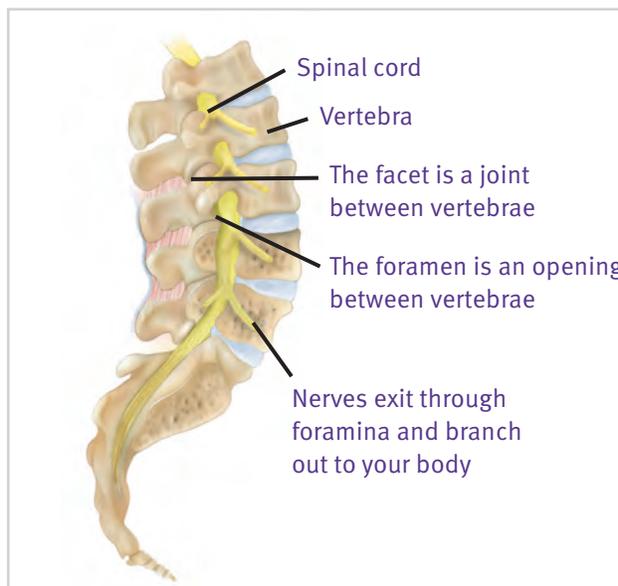
Different from spondylosis, Spondylolysis is actually a weakness in one of the bony bridges that connect the upper and lower facet joints. Spondylolysis is a condition that affects the movable joints of the spine that help keep the vertebrae aligned one on top of the other.

What is spondylolisthesis?

In this condition, damage to bones or joints causes vertebrae to slip forward and distort the spinal cord. Degenerative spondylolisthesis occurs when the joints weaken, allowing a vertebra to slip forward. Nerve roots may become pinched, causing pain to radiate to the legs and feet. Isthmic spondylolisthesis occurs when vertebral bone fractures, allowing a vertebra to slip forward. This can also pinch nerve roots, causing pain to radiate.

What is kyphosis?

This unnatural curving of the spine is a deformation caused by disease or damage to the vertebrae. Some curving of the spine is good and helps with overall balance, but too much can lead to problems. Bad posture can loosen the spine's ligaments, causing a curve to develop over time. Disease or physical damage to the bones of the spine can weaken and collapse the vertebrae, allowing the spine to curve. Diseases that are common culprits include osteoporosis, Scheuermann's disease, Pott's disease or spinal tumors.



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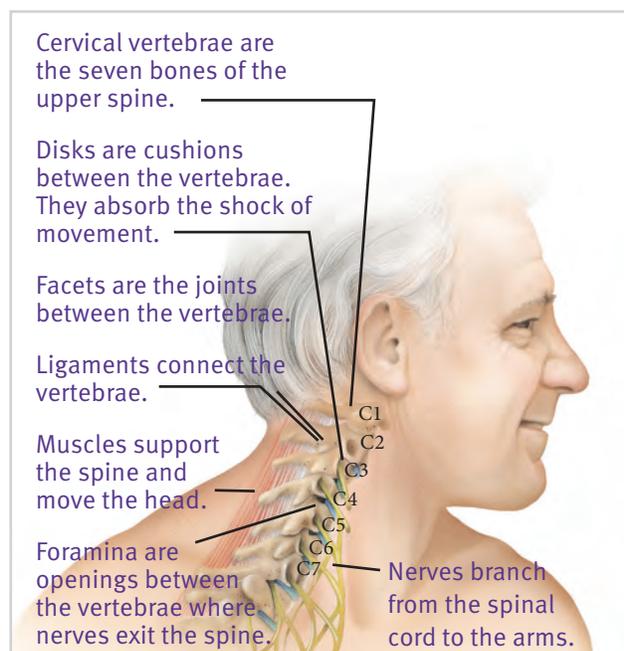
What is facet syndrome?

Facet syndrome is a deterioration of the facet joints, which help stabilize the spine and limit excessive motion. The syndrome occurs when the joints become stressed and damaged which can occur from everyday wear and tear, or injury to the back or neck. At first, facet syndrome is treated conservatively with therapy or injections. If this fails, then a bone fusion may be considered.

What is myelopathy?

Myelopathy affects the nerve tracts that run inside the spinal cord. This may develop from compression of the spinal cord from extensive stenosis, bone spurs and arthritic changes.

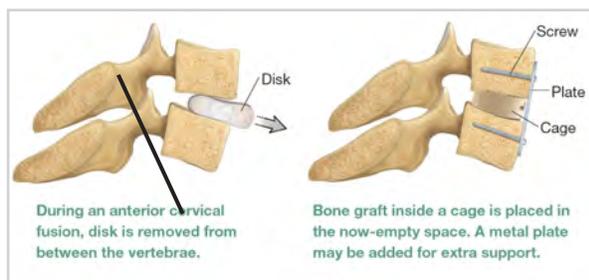
Common cervical surgeries



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Cervical fusion

For people with cervical instability, the surgeon joins the vertebrae that are next to each other. Small pieces of bone may be used as bone grafts. Sometimes wire, screws, rods or plates may also be used to stabilize the vertebrae of the spine. There are two main types of cervical spine fusion surgery.



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- Anterior Cervical Discectomy and Fusion (ACDF) is the most common type of cervical surgery in which the surgeon approaches from the front of the neck.
- Posterior spine fusion is where the surgeon approaches from the back of the neck.

Laminectomy

In a laminectomy, a part of the vertebral bone, called the lamina, is removed in order to relieve pressure on the spinal cord.

Discectomy

In a discectomy, part of the herniated disc is removed in order to relieve pressure on the spinal cord or nerve root.

Cervical disc arthroplasty (artificial disc)

In certain cervical spine cases, when doing a discectomy and decompression to manage the spine segment, or segments, the surgeon may proceed with an artificial disc instead of a fusion. Specific criteria need to be met for this option to be utilized.

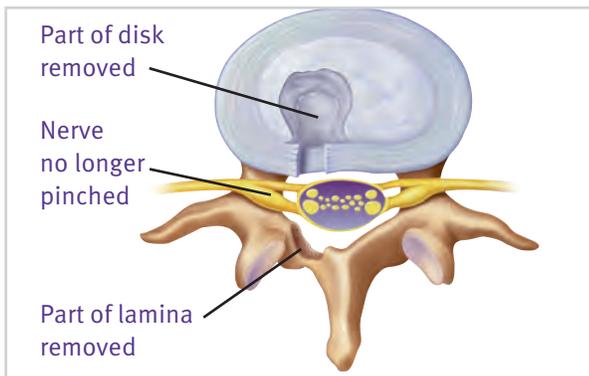
Common lumbar surgeries

Common thoracic and lumbar surgeries

For these types of surgeries, the surgeon usually approaches from the back side. Less commonly, the surgeon may need to complete the surgery from the front of the body, going through the abdomen or chest cavity. If your surgery requires this, your surgeon will discuss it with you beforehand.

(Micro)discectomy

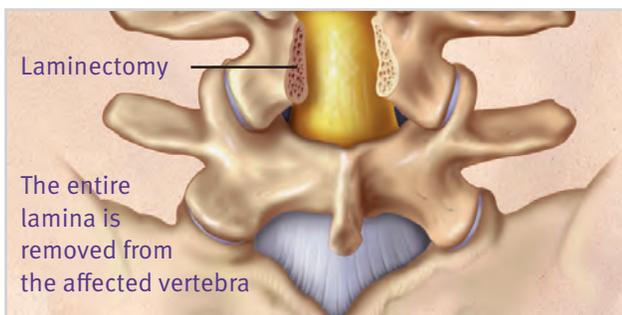
In a discectomy, part of the herniated disc is removed in order to relieve pressure on the spinal cord or nerve root.



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Laminectomy

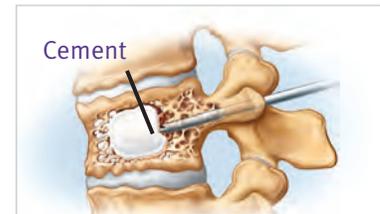
In a laminectomy, a part of the vertebral bone, called the lamina, is removed in order to relieve pressure on the spinal cord or nerve root.



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Kyphoplasty

Kyphoplasty/Vertebroplasty stabilizes fractures or strengthens areas weakened by osteoporosis, trauma or a tumor by injecting a cement-like substance into the affected vertebrae.



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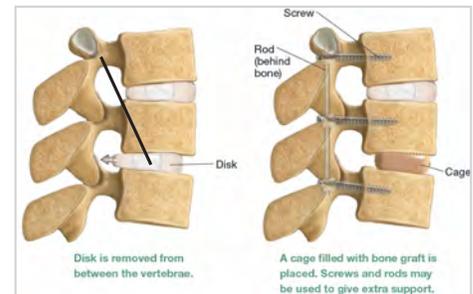
Spinal fusion

Spinal fusion is when one or more of the vertebrae of the spine are united together or “fused” so that motion no longer occurs between them.

The concept of fusion is similar

to that of welding. However, spinal fusion surgery does not weld the vertebrae immediately during surgery.

Rather, bone grafts are placed around the spine during surgery. The body then heals the grafts over several months – similar to healing a fracture – which joins, or “welds,” the vertebrae together. Depending where your issues are, your surgeon may enter from the front (abdomen) or back.



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Preparing for your surgical experience

Your journey begins many weeks before your actual surgery. Long-term success starts in these early stages. By following the guidelines on the following pages, you will be well on your way to a rapid and safe recovery in your journey to improved health.

Optimize your health before surgery to optimize your outcome after surgery!

You should have a current physical exam with your primary care provider. Now is the time to be sure you are in optimal physical condition for your surgery. This gives you the best chance for a safe and successful surgical experience. If your primary care provider identifies any conditions that need further workup or management, now is the time to take care of these issues. Having a current physical exam is essential to your safety during surgery. In addition to your physical exam, you will also need to undergo a series of tests to help make sure you are healthy and ready for spine surgery. These tests may include X-rays, blood and urine tests and a test of your heart function called an electrocardiogram (EKG). Your results will be shared with your physician and neurosurgeon for their review. If any of the tests reveal significant risk factors, you may need to undergo additional testing. Any abnormal results will be shared with you.

There are both modifiable and non-modifiable risk factors that increase the risk of postoperative complications after spine surgery. Research shows that improving one or all of these modifiable risk factors can significantly improve your pain after surgery and long-term surgical outcomes.

Featured modifiable risk factors

MALNUTRITION

Nutrition status, particularly around protein, is extremely important when recovering from a spine procedure. Poor nutrition status increases the risk of the wound reopening, infection and delayed postoperative recovery.

Goal: Talk to your primary care provider and/or work with a dietitian if you think you could benefit.

MENTAL HEALTH

Our emotional state can play a role in how we feel, and affect our pain and how we cope with painful situations, particularly during surgical recovery.

Goal: Consult your primary care provider for treatment options before surgery.

OBESITY

Body mass index (BMI) is a measure of body fat based on height and weight.

Goal: BMI below 40 kg/m², preferably 35 kg/m²

VITAMIN D DEFICIENCY

Vitamin D is critical to overall health and helps aid recovery.

Goal: Work with PCP to establish goal if low on Vitamin D

UNCONTROLLED DIABETES

Diabetes becomes 'uncontrolled' when HbA1c levels are above 7.5%.

Goal: HgA1c ≤ 7.5%

ANEMIA

Anemia is when your blood is not fully oxygenated due to a low red blood cell count.

Goal: Hgb above 12g/dL for females; above 13g/dL for males

NICOTINE USE

Nicotine products include cigarettes, cigars, pipe and chewing tobacco, e-cigarettes, vaping, and nicotine patches or gum. Nicotine users have a higher risk of blood clots, surgical complications, infections, and six times higher rate of failed fusions.

Goal: Patients need to quit all nicotine use leading up to surgery, ideally at least 30 days. If you can not quit, abstain for four weeks before and after surgery.

PREOPERATIVE OPIOID USE

Long-term opioid use (longer than 6 months) is a big predictor of poorer postoperative pain control, increased surgery site infection risk and higher likelihood of long-term opioid use after surgery. We know your long-term goal is to stop using opioid medication after surgery. We know the safest way is a slower taper, gradually reducing the amount you are taking for weeks to months before surgery to help with your recovery and long-term success.

Goal: Partner with your primary care provider or prescribing provider to reduce opioid intake by up to 50% of MME (or less than 30 MME prior to surgery).

The inability to control these modifiable risk factors can increase your risk of the following complications:

- Surgical site infection
- Longer time in surgery and longer length of stay
- Higher rate of readmission to the hospital
- Higher rate of revision surgery
- Poorer surgical outcomes long-term
- Increased risk of blood clots
- Medical complications
- Higher rate of discharge to a skilled facility



The risks of surgery

Although advances in technology and medical care have made surgery very safe and effective, there are risks. These risks should be considered carefully before you decide to have surgery. We encourage you to discuss the potential risks with your surgeon, primary care physician and your family. Possible risks are:

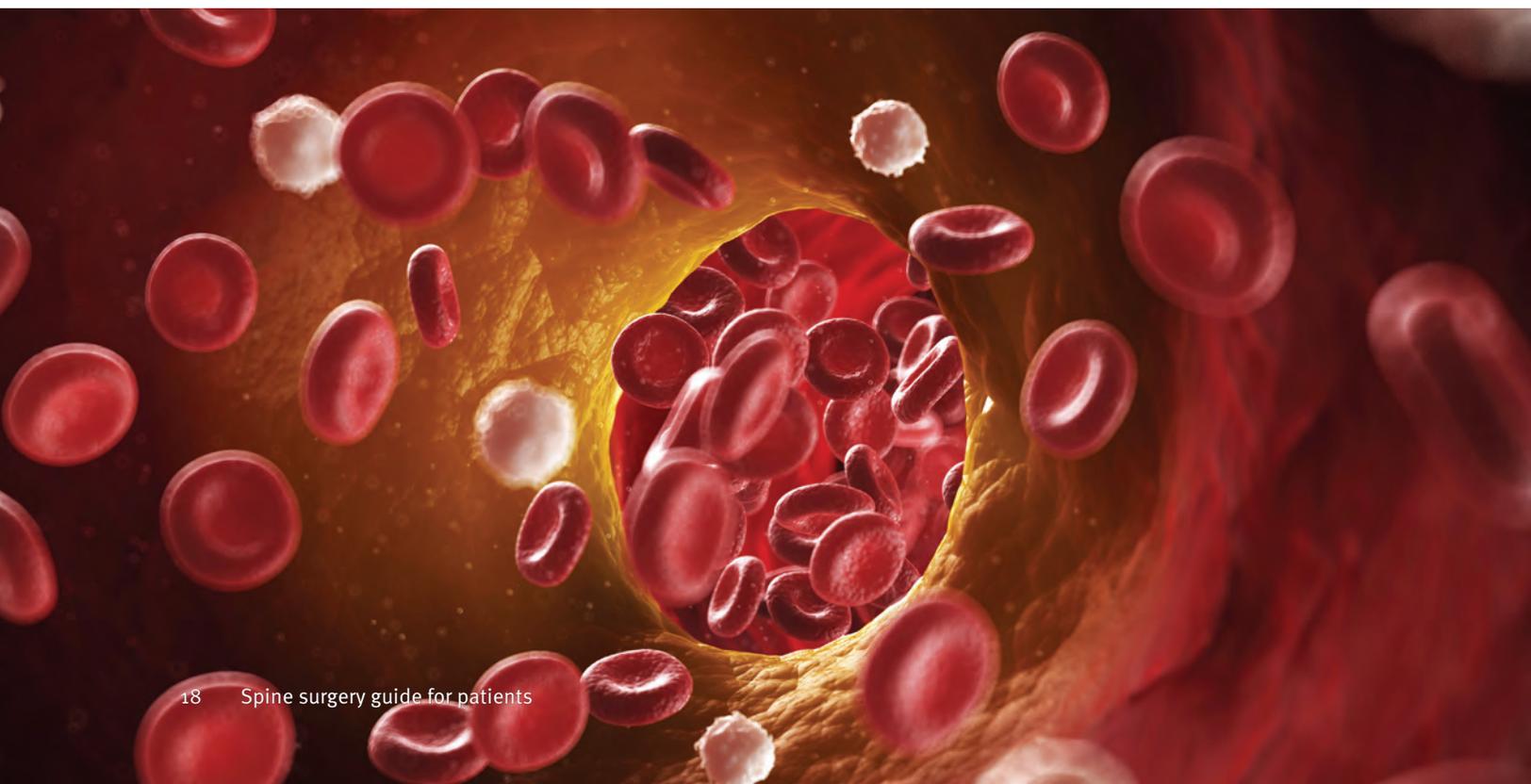
- Blood clots
- Infection
- Anesthetic complications
- Nerve injury
- Slow wound healing
- Hematoma
- Cerebrospinal fluid leak (CSF)
- Hardware problems

You can reduce your risks of these complications by reducing or eliminating the use of tobacco and alcohol, being compliant with managing diabetes, congestive heart failure, chronic obstructive pulmonary disease or other chronic illness, along with maintaining a healthy diet and using good hand-washing techniques.

How to prepare

Below are the steps to help prepare you for surgery. Detailed instructions follow.

- Presurgical physical exam
- Medications
- Infection prevention
- Home preparation
- Packing for your hospital stay
- Countdown to surgery



Medications

Do not take certain medications

These medications may be harmful during surgery because they thin your blood and after surgery because they may increase your risk of bleeding:

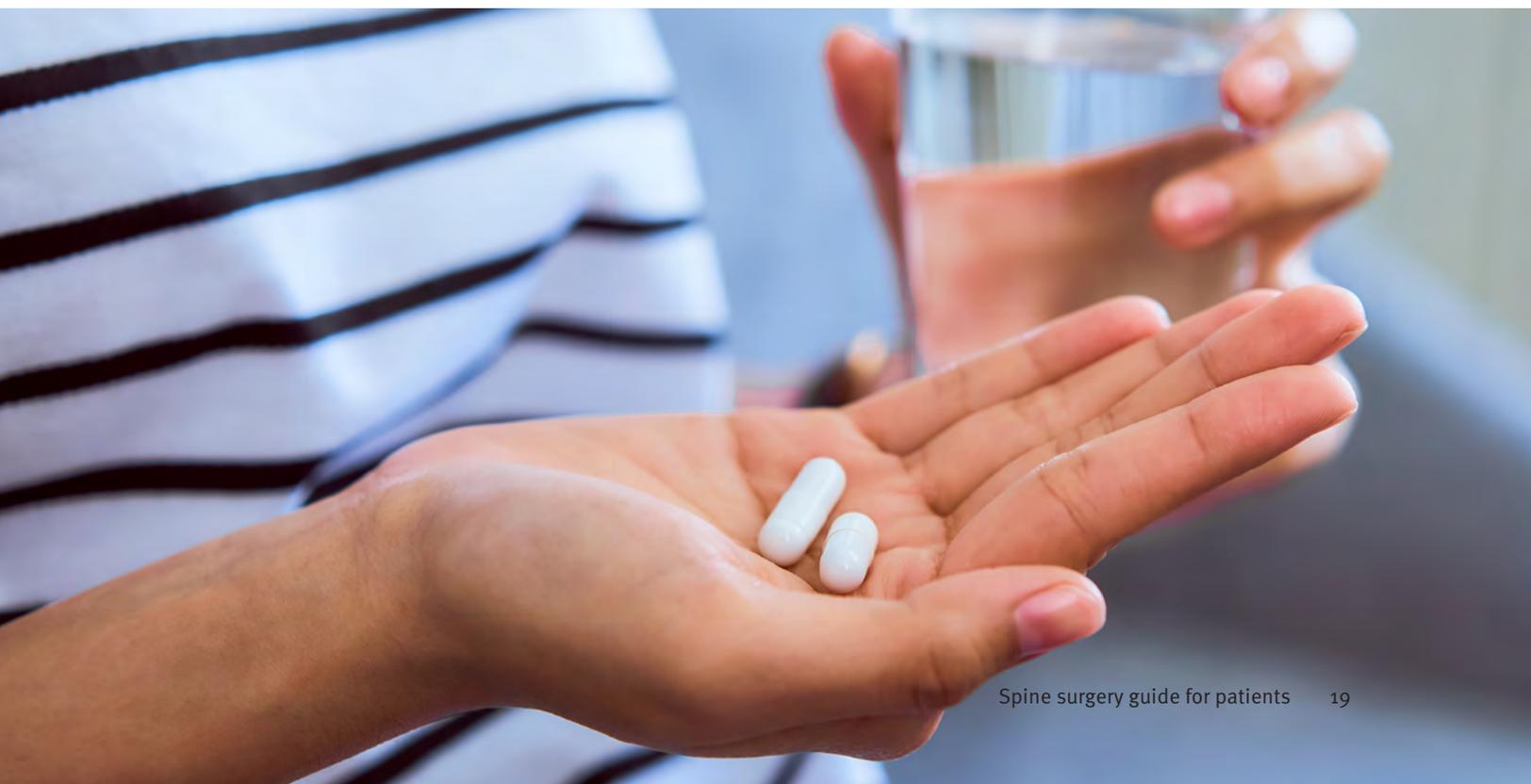
- Aspirin
- Anti-inflammatories (Ibuprofen, Motrin®, Advil®, Aleve®, etc.)
- Blood thinners (Coumadin, etc.),
- Herbal supplements
- Arthritis medications

Your surgeon will review your list of medications at your presurgical appointment. They will tell you which medications to stop before surgery and when to stop taking them.

If you are confused, ask your surgeon when it is best for you to stop taking these medications.

Stay hydrated before surgery

- The evening before surgery, drink up to 16 ounces of regular Gatorade.
- The morning of surgery, drink up to 16 ounces of regular Gatorade. You are not required to drink all 16 ounces.
- Drink Gatorade **before you leave home** the morning of your surgery. Do not drink it on the way to the hospital.
- **IMPORTANT NOTE: Do not eat or drink anything besides Gatorade after midnight before surgery! This will cause your surgery to be postponed or canceled.**



Infection prevention

There are several steps that you can take to help prevent surgical-site infections. These steps start a few weeks before surgery.

Showering

Start using an antibacterial soap to wash your whole body two weeks before surgery.

Hibiclens® showers

You will be given two packets or a dispenser of Hibiclens® from your surgeon's office. You will use this the night before surgery and morning of surgery.

During your shower, concentrate on your surgery site for about two minutes. After your Hibiclens® shower, do not use any lotions, perfumes, powders or deodorant. Put on clean clothes and sleep in clean sheets. The morning of your surgery you will repeat this process before coming to the hospital in clean, comfortable clothes.

“Nose to toes”

In the prep room, we will take you through the “nose to toes” protocol. You will use wipes to clean your body in a specific order, then a special cleanser to brush your teeth or swab your mouth, and finally a set of swabs to use, one in each nostril. All of these steps have been shown to dramatically reduce the amount of bacteria that is present on your body as you proceed to surgery. This has produced a dramatic reduction in post-operative infections.

Clean hands

Hand hygiene is very important. You will notice your caregivers using alcohol-based hand sanitizer when entering your room. We also strongly encourage your family and friends to use this cleanser, as well as wash their hands frequently, to prevent the spread of infection. After surgery, please avoid touching your incision site. If you coach is inspecting, please have them wash their hands before and after contact with your skin.

Pets

Pets may increase your risk of infection after surgery. Wash your hands after any contact with pets. During recovery, approximately 6 weeks, always keep a barrier (such as a blanket) between you and your pet at all times, and do not sleep with your pet.



Home preparation



Home preparation

You and your family may want to consider these tips to help make your home safe and comfortable for your return home.

- Clear pathways. Check your home for tripping hazards. Remove throw rugs and secure cords out of the way.
- Move items you regularly need to easily accessible home dressers, cabinets and shelves so when you return from the hospital you avoid excessive bending and reaching. Any item you use often should be moved to counter height.
- If there are stairs in your home, be sure to have handrails securely fastened to the wall.
- If you have pets, make sure they are not able to jump on you or get in your path while walking. It is advisable to secure them in another area of the home until you get inside your home and are seated.
- You should designate a chair where you'll spend most of your time when you return home. Ideally, the chair would have a firm back and arm rests. A chair that sits higher will help you stand easier. Chairs with wheels should **NOT** be used under any circumstances.

- Consider placing a basket of frequently used items within reach of your designated chair.
- If your bedroom is on the upper or basement level, you may want to consider arranging a temporary sleeping area on the main level of your house
- Consider installing a hand-held showerhead as well as grab bars in the tub and toilet areas.
- Apply friction strips to the shower area if not already in place.
- In order to minimize cooking, prepare meals in advance and freeze them. Alternately, you can also purchase individual serving-sized meals for times you are alone. Family and church groups can be excellent resources to assist with meals. These arrangements should be made before your hospital stay.
- Purchase nightlights and install them in bathrooms, bedrooms and hallways.
- Attend to, and arrange for, upcoming outdoor work such as gardening or cutting the grass.
- Do laundry ahead of time, and put clean linens on your bed.
- Arrange for someone to collect your newspaper and mail and take out your trash/recycling bins.

You will need to have a family member or friend to stay with you at home at all times for at least two days after surgery. In some cases, this extra help will be necessary for up to a week.

Packing for your hospital stay

The following checklist should help you pack for your hospital stay.

Items to pack

- This patient guide.
- Neck or back brace if ordered by your surgeon. Please label with your first and last name.
- List of medications and health history.
- Clean, comfortable and loose-fitting clothing such as elastic-waist pants/sweats, shorts, skirts, dresses or jogging outfit and bathrobe.
- Tennis shoes or shoes with flat, non-skid or rubber bottoms. Non-skid slippers are also acceptable. Do not bring tight-fitting footwear as your feet may swell a bit following surgery. Do not bring slides or backless slippers. Slip-on shoes are usually easier to manage than shoes with laces.
- Eye glasses, contact lens case with solution and denture storage. Please label all cases with your first and last name.
- If you use a CPAP or BIPAP, bring your mask, tubing and settings you currently use.
- Your insurance card/photo ID.

- Your own pillow and blanket if you think they would make you more comfortable. To help keep your pillow separate from hospital pillows, it is helpful if you place it in a colorful pillowcase.
- Your advance directive, either a living will or durable power of attorney for health care. If you don't already have an advance directive, forms will be available at the hospital.
- Medical implant cards such as stents, pacemaker and joint replacements.

Items to leave at home

Credit cards, checks, jewelry, cash or valuables of any kind should be left at home or given to a trusted loved one just prior to surgery.

DO NOT bring medications from home unless specifically instructed to do so. Generally the only medications that you will be asked to bring will be Inhalers, eye drops and birth control. These items will be taken to pharmacy, relabeled, administered by your RN while you are here, then returned to you at the time of discharge. For your safety, all medications will be provided by nursing staff during your stay. This eliminates the risk of double dosing as well as ensures that no medications will interact.



Your spine surgery

Arriving at the hospital

The day of your surgery will be a busy one. There may be several hours that pass between the time you check into the hospital and the time that your surgery is completed. This is to ensure that all necessary preoperative steps are able to be performed on time. Your coach, family member or friend should be prepared for a wait of at least two or more hours.

- It is important that you arrive at the hospital with plenty of time to check in and prepare for surgery. You will be instructed on your expected arrival time. It is usually two hours before your surgery start time.

- When you arrive, you should plan on parking in the main parking garage or have your coach drop you off at the Oak Street turnaround in front of Building A. For your convenience, a campus map is provided at the back of this guide.
- Take the elevator to the second floor of building A and report to the surgical check-in area.
- We strongly recommend that you ask your coach, family member or a friend to accompany you throughout the preoperative process. Nursing staff will advise them where to wait when they may not be able to be at the bedside.
- Your coach, family member or friend will be notified when your surgery is completed and will receive updates on your progress throughout the procedure.



Surgery preparation



Surgery preparation

After you check in at registration, you will be directed to the surgical preparation area. A wristband will be applied at this time. If you have any allergies, an additional wristband will be applied noting your allergies. It is important for you to verify that all information on your identification bracelet is correct. We'll be asking you to confirm this information many times throughout your hospital stay. These questions may seem very redundant. However, please be patient with us as these questions are repeated as one way to ensure your safety.

Once you have determined that your identification bracelet is correct, you will be asked to change into a hospital gown. Your clothes and any items you brought with you will be placed in a plastic bag with your name on it. Your clothing items will be delivered to your room on the Neuro Trauma Care Unit (NTCU), located on the seventh floor of Building A (west tower) after surgery, unless you arrange to leave them in the care of your coach, family member or friend. If you wear eyeglasses, contact lenses or dentures, you'll be asked to remove them.

Just before surgery, a nurse will review your medical records, listen to your heart, take your pulse, perform a brief physical exam, ask several questions and make sure everything is in order. During this prep phase is when your nurse will guide you through the nose to toes protocol which is an important part of our infection prevention process. Sometimes additional tests may need to be performed.

As surgery approaches a nurse will start an IV. This allows medication and fluids to flow directly into your bloodstream.

Your surgeon and the anesthesiologist assigned to your care will visit you before surgery. Your anesthesiologist will ask you a number of questions to help determine the best anesthesia for you. Both physicians will answer any questions you have.

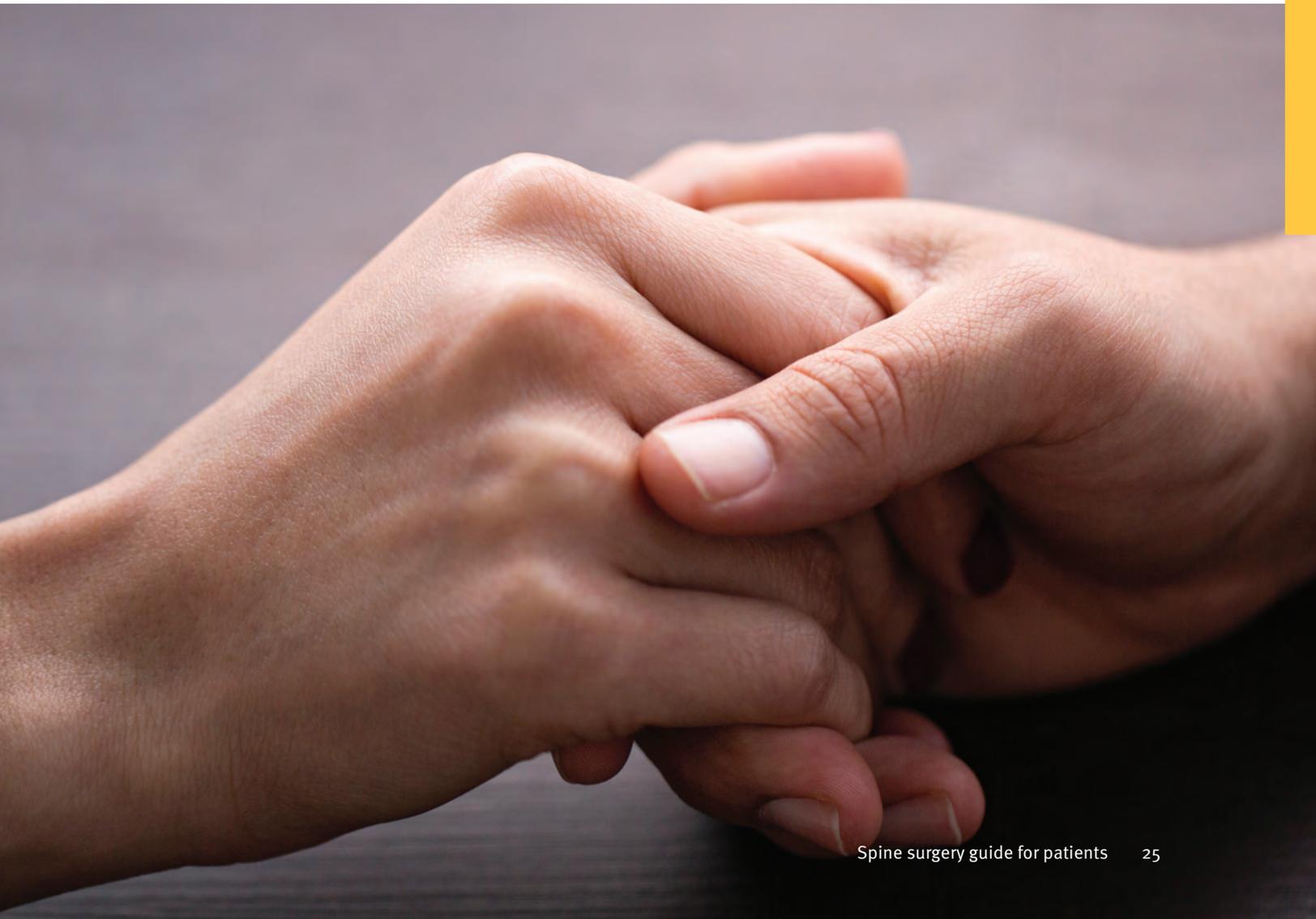
Family waiting

On the day of surgery, your coach, family member or friend will be able to stay with you until you're ready to be transported to the surgery room. At this point, they will be escorted to a reception area where they will wait while you have your surgery.

Your coach/family member will be given a number that is specific to you so they can track your progress on a large screen in the surgical waiting area. They can also sign up for text-message alerts during your check-in process.

While your coach, family member or friend waits, there is a gift shop on the first floor of Building A. This shop also has coffee, cold beverages, salads, sandwiches and a large selection of other snacks. Creekside Dining is located on the first floor of building D (see map in back of guide) and has a wide range of food options.

Once your surgery is completed, a member of the surgical team will call your coach, family member or friend. At this point, they will be able to speak with your surgeon about your procedure.



Neuro Trauma Care Unit (NTCU)



The NTCU is located on the seventh floor of Building A (west tower). The hallway forms a large circle, with patient rooms on the outside and medical team spaces on the inside. The unit clerk at the main desk will tell your coach, family member or friend which room you have been assigned or advise you if there will be a wait before a room can be assigned.

The main waiting area or lobby for NTCU is on your right when you exit the elevator on the seventh floor. You will walk directly past this seating area on your way to the main desk or nurse's station.

Public restrooms are just to the left as you come off of the elevators. There is a vending machine for snacks and drinks in this area as well.

Anesthesia

General information

As a rule, general anesthesia is required for spine surgeries. This provides for a total loss of consciousness, and intubation (or a breathing tube placed in the throat) is necessary to ensure adequate breathing throughout your surgery. Your condition will be constantly monitored by the anesthesiologist while you are asleep.

Regardless of what type of anesthesia you and your anesthesiologist determine is best for you, our goal is to make you as comfortable and safe as possible.

Your anesthesiologist will meet with you before surgery. At this time, the anesthesiologist will determine the best plan for your anesthetic care, based on your age, other medical conditions, surgery to be performed and his or her physical examination of you.

It is important that you tell your anesthesiologist of any prior problems or difficulties you have had with anesthesia.

Your anesthesiologist will discuss the risks and benefits associated with the various anesthetic options and the potential side effects that can occur with each. You may experience some nausea and vomiting after your surgery. Medications are available to treat both, if needed.

For those of you who are stable enough to go home the same day as surgery, you will likely not be alert enough to remember speaking with your surgeon before they are onto their next surgical case. Your surgeon will plan to relay how the surgery went to your family member or friend and let them give that information to you once you are fully awake.



Surgery

The operating room

Inside the operating room, you will be cared for by a specific team of physicians, nurses and skilled technicians, who have been specially chosen and trained to care for our spine surgery patients. The total time required for your surgery will vary from patient to patient depending on the complexity of the procedure. Your surgeon will be able to give a general idea of how long to expect during your preoperative office visit. Although every effort is made to keep surgeries on schedule, sometimes unforeseeable events can delay the process. It is helpful if your coach, family member or friend is aware that delays can occur, and they should not be concerned if your surgery is not completed by the anticipated time. Staff will attempt to keep them informed of any delays should they occur.

Before your surgery begins, you will be connected to various monitors so that your anesthesiologist can begin to safely administer medications. You will be positioned on a special surgical table designed for your specific surgery, and drapes will be applied to ensure a sterile environment.

The recovery room

After surgery, you will be transported to an area called the Post Anesthesia Care Unit (PACU) or recovery room. You will spend one to one and one-half hours in the PACU while you recover from the effects of anesthesia.

In the PACU

- Specially trained nurses will monitor your progress and check your vital signs such as blood pressure, breathing and heart rate.
- Your anesthesiologist will continue to monitor your progress as well.
- Pain medications will be provided as needed.
- Nurses will check your bandages, check drainage from your surgical site, move your feet and ankles, and encourage you to take deep breaths.

After your stay in the PACU, you will be transported to your hospital room on NTCU, on the seventh floor of Building A, to begin the recovery portion of your journey.

For those of you not spending the night in the hospital, you will be transported to the outpatient recovery room. Your surgeon will determine if you spend the night in the hospital or if you will be able to go home the same day as your surgery.

Your hospital stay

Spiritual care

At Salem Health, we understand that your spiritual well-being can be an integral part of the healing process. Hospital chaplains are available to visit you 24 hours a day during your stay if you wish. Your family pastor, priest, rabbi or other spiritual advisor is welcome to provide support at any time during your stay as well.

Speak up

We encourage you to be involved in your care, because that will only make it better! Please “speak up” and play an active role to ensure you receive excellent care.

- Speak up if you have questions or concerns.
- Educate yourself about your diagnosis, tests and treatments.
- Ask someone you trust to be your advocate.
- Know what medications you are taking and why you take them.
- Participate in all decisions about your health care

A HELP line for families

You and your family should always communicate your concerns to your nurse and care team. If you or your coach worry that your changing medical condition is not being addressed, call extension 2-3456. This call will activate a special team with a critical care nurse and respiratory therapist to come to your bedside.

What happens after surgery?

Upon arrival to NTCU, you will be greeted by specially trained staff and oriented to your room, the bed controls and safety measures we have in place. You will be assigned a registered nurse (RN) and a certified nursing assistant (CNA) who, as a team, will monitor your vital signs and check your neurological status throughout

the day and night. Nursing staff will check your blood sugar levels when you first arrive on the unit. If the level is within a normal range, they will not check it again. If it is out of range, nursing staff will check your blood sugar throughout your stay. It is very important to let staff know if you have any change in sensation, such as numbness and tingling, that is new.

Depending on what closure method your surgeon has determined is best for you, you may or may not have a dressing in place over your incision. You will likely have oxygen tubing in place in your nose. As soon as your oxygen levels are stable, the oxygen will be removed. You will also have a sticker with a long cord on one of your fingers that will monitor your oxygen levels. Nursing staff will refer to this as your “pulse ox.”

You can expect to receive medications for pain and perhaps anticoagulants to prevent blood clots. Sometimes, patients will feel nauseous or constipated. Both symptoms can be managed with medication, so it is important that you talk with your surgeon and nurse if you don’t feel well.

For longer or more complex surgeries, you may have a small tube, or catheter, inserted into your bladder so you don’t have to get out of bed to urinate immediately after surgery. The goal is to have this catheter removed by the morning after your surgery to help reduce the risk of a urinary tract infection. You can also expect to have compression wraps on your lower legs that connect to a small pump at the end of the bed. This pump will squeeze the wraps on your legs at regular intervals to circulate blood and to help prevent clotting. If you do not feel the compression, be sure to let your nurse know.

You may also have a drain placed during surgery. These drains will be inserted at the surgery site and have a long tube to a collection container. Right after surgery, the drainage may be bright red and the collection container may need to be emptied often. Do not be alarmed. This is completely normal. Either your surgeon or your nurse will remove the drain as soon as the drainage decreases to the proper amount – generally, in the first day or two after surgery.

Your safety is of the utmost importance to us. To help ensure your safety, we will ask you not to get out of bed without assistance. There will be an alarm on your bed to help you remember not to get out of bed without help.



Managing your pain

Many spine surgery patients are very anxious about the pain they may experience after surgery. Your pain level depends a great deal on the complexity of the surgery performed, what kind of pain you had prior to surgery, the amount of medication you were on and how long you were on medication prior to surgery. Pain medications will generally be given through your IV site immediately after surgery and until you are able to tolerate food well. The goal is to transition to oral pain medications as soon as possible, and by the morning after surgery at the latest. This allows plenty of time to ensure that the proper oral medications are ordered to manage your pain at home. The goal of the pain medications is to keep your pain at a tolerable level, but also to keep you alert enough to participate in the needed exercises and activities that will allow you to progress in your recovery.

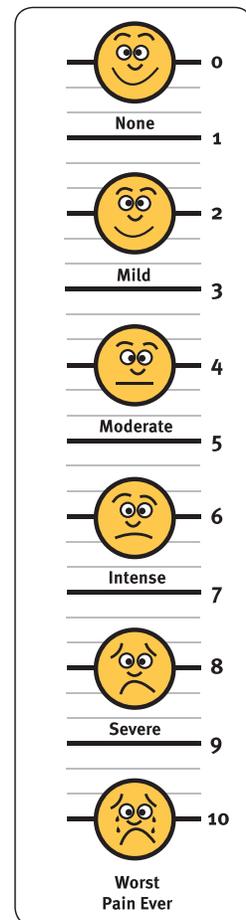
While your surgery is designed to reduce or eliminate the pain you have been experiencing, you will have discomfort as your incision heals. Surgery of any kind impacts the nerves and tissues in and around the incision, due to the irritation and swelling created by the surgery. The swelling is normal, and can cause additional pain, but will begin to subside in the days following your surgery.

It is important to not let your pain get out of control. The nursing staff will rely on you to speak up if you are having discomfort that is beyond what is tolerable for you. Your nurse will work directly with you to create a pain management schedule that works for your needs. Your pain management needs will change over the days after surgery. Your nurses will work with you and your surgeon to adjust your medications right up until discharge so that we can send you home with a pain management plan that will keep you comfortable and

able to progress your activity level. Nursing staff will be asking you to rate your pain, using this zero to ten scale. It is also helpful to describe where the pain is located and the type of pain you are feeling (i.e., sharp, stabbing, aching, burning, etc.).

- Besides the pain medications offered, other methods that can help decrease pain include:
- Ice packs.
- Deep breathing.
- Relaxation techniques.
- Walking.
- Repositioning.
- Distractions such as music, visitors, TV, puzzles and books.

Adequate pain control as you recover from your surgery is very important to all professionals involved in your care. This will continue to be a priority of your spine surgeon post-operatively as he/she sees you in their office. Within a couple of months, the responsibility of overseeing and prescribing pain medications will be transferred to your primary care provider, if needed. Your primary care provider oversees your health care and will continue to serve as our partner in your ongoing spine health.

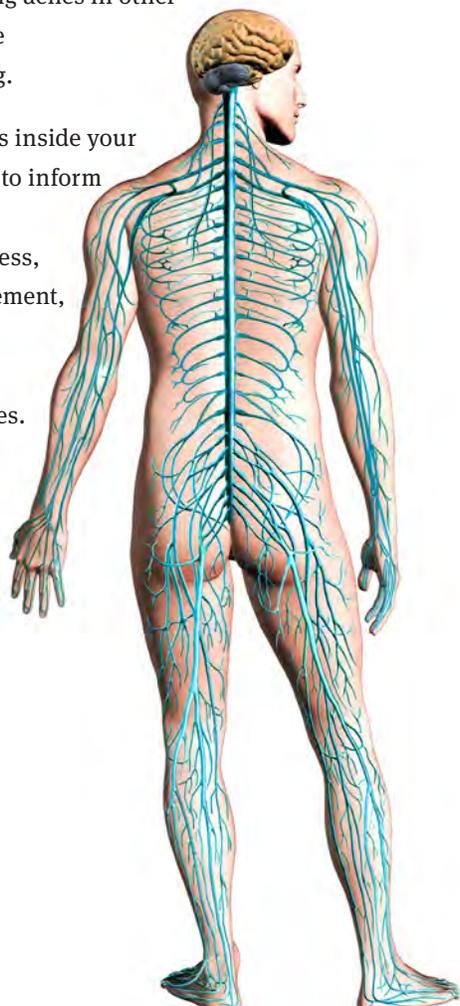


Understanding your pain

The nervous system is a connected structure made up of all the nerves in the feet, legs, back and arms. Those nerves form a network like a road map. When you get hurt, they send messages to your spinal cord and brain like an alarm system. Your brain then creates pain to alert and protect you from the problem.

When the danger has passed, the nerve settles down and returns to normal. Because the nervous system is connected, if nerves are irritated in the lower back or hip it can cause the other nerves close by to become sensitive, creating aches in other areas such as the upper back or leg.

There are sensors inside your nerves designed to inform and protect you. Temperature, stress, blood flow, movement, and pressure are common sensors inside your nerves. As an example, when you face surgery, it is

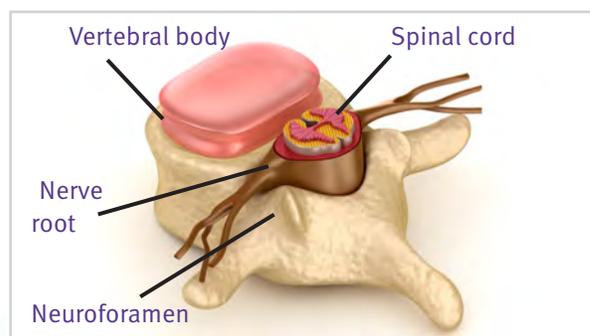


common to have a little more anxiety and have more stress chemicals in your body. Your nerve sensors for stress will wake up. When the stress chemicals in your body calm down, your nerves will become less sensitive to stress.

Factors that may affect your nerves

- **Blood:** Nerves thrive on oxygen carried by your blood. Something as simple as sitting too long can decrease blood flow. You may feel discomfort and aching because nerves aren't getting the oxygen they need.
 - **Space:** Nerves travel around the body, through small holes in and around muscles and tissues. If the spaces are too small, nerves will become sensitive and irritated.
 - **Movement:** Nerves should glide around muscles and tissue easily. When they are irritated, movements are limited and the spaces where nerves can travel are restricted even further.

Nerves need blood, space and movement to perform at their best. After surgery, your nerve(s) will have more space and movement, but it's important to walk and move within your surgeon's guidelines to also increase blood flow.



Ways to calm your nerves and decrease pain

- 1. Move.** As mentioned above, exercise pumps oxygen and blood around nerves to help soothe them.
- 2. Educate yourself.** You will be able to care for your nerves and worry less if you increase what you know about pain and what causes it.
- 3. Take medications as prescribed.** Your physician will order medication to help with some of the pain you are experiencing. It is important to stay ahead of the pain and not let it get too bad.

The brain is a powerful medicine cabinet. As you move, understand your pain, and take prescribed medication, the brain can release powerful chemicals such as endorphins, enkephalins and serotonin to help ease pain.

Your recovery after spine surgery

Soreness

Your pain is real. Spine surgery is designed to give the nerve in your back some space, but some pain in the back and legs after surgery is normal, due to increased nerve sensitivity. Your experiences are stressful and have caused your nerves — your alarm system — to wake up.

That alarm system is sophisticated and unlikely to completely turn off right away. However, it will turn down over time. This is normal. Your back will heal throughout recovery, and the nerve sensitivity will decrease over the following weeks and months.

Flare-ups

Your recovery will have ups and downs. Some flare-ups are expected. They are caused by sensitivity, not additional trauma. In many ways, nerves are indicators for stress in your life. The more stressed you are, the more back and leg pain you may experience. Try to stay calm and learn about the back, nerves and recovery in order to reduce pain as much as possible.

Motion

Walking will be your main mode of exercise after surgery in the first 6 to 12 weeks. Our body responds to short, frequent walks in the recovery phase to minimize flare ups. Short, frequent bouts of walking can increase blood flow and nutrients to your surgery site and nerves. See the back of this guide for a walking tracker to track your progress.

Knowledge, gentle movement and realistic goals will help your nerves calm down over time, leading to a successful recovery from back surgery.

Bladder and bowel function

Bladder function

After surgery, it is important to monitor bladder function. In a very small number of cases, patients have a difficult time emptying their bladder right after surgery or after the urinary catheter has been removed. The goal after surgery is to have the catheter removed as quickly as possible to allow adequate time to assess bladder function, as well as to minimize the risks of a urinary tract infection. In the rare case that you would have a catheter in after surgery, we would expect it to be removed within 24 hours.

Once the catheter has been removed, or with the first urination after surgery, your nurse will perform a quick, painless procedure called a bladder scan. A bladder scan is done using a very small bedside ultrasound machine that measures how much urine is left in your bladder after you have used the bathroom. This procedure is called post void residual or PVR. In the event that your PVR is greater than what your surgeon feels is safe, an “in and out catheter” will be done. As the name implies, an “in and out catheter” consists of your nurse placing a urinary catheter, fully draining your bladder, and then removing the catheter, rather than leaving it in place. More often than not, once the over-extended bladder has been emptied, it will be possible to fully empty your bladder on your own again.

Bowel function

After your surgery, there are many factors that contribute to constipation. These may include narcotic medications, immobility, pain, and changes to food and fluid intake. Beginning a simple bowel routine immediately following your surgery will help prevent constipation. Use the guidelines below, as needed, to help you feel more

comfortable. All medications are available over the counter and should be used until you are off prescription pain medications.

- Move frequently. Start with three or four small walks a day.
- Over the counter Senokot-S (Senna-docusate 8.6mg/50mg) take two tablets twice daily (hold for loose stools). Onset of action: 6 to 12 hours.
*You may also buy Senna and Docusate separately, take two tablets of 8.6 mg Senna twice daily and two tablets of 100 mg Docusate sodium once daily.
- Drink plenty of fluids. Try to target 6 to 8 glasses of water per day.

Additional tips

Try to limit narcotic pain medication. Increasing dietary fiber by eating more fruits and vegetables is the best way to manage constipation. If you develop any of the following symptoms call the surgeon’s office for further instructions:

- Your constipation lasts more than four days or gets worse.
- You have abdominal or rectal pain.
- You have excessive nausea and vomiting.

Your recovery schedule



When you have arrived in your room, you will be greeted by Salem Health Spine Center staff and oriented to your room. Everyone's recovery schedule will be individualized for them, based on the surgery that was performed, and your activity level and ability before surgery.

The following is only a recovery guide and will be adjusted for every individual. Most patients are able to go home one to three days after surgery.

Day of surgery

- Nurses evaluate your spinal nerves to make sure they are functioning properly after surgery by checking strength and sensation. In addition, vital signs (i.e., blood pressure, heart rate and temperature) will be monitored frequently.
- Special blood pressure readings, called orthostatics, are taken your very first time out of bed (within the first six hours after surgery). This involves taking your blood pressure while you are lying down and then again after you stand up.
- Do frequent deep breathing and coughing exercises. We recommend using your incentive spirometer five times every hour throughout the day. See page 37 for more information.

- Pain medicine, as needed.
- Nausea medication, as needed.
- Diet, as tolerated.
- Walking to the bathroom if there is not a catheter in place. We will also be performing bladder scans to make sure your bladder is emptying.
- Ankle pumps and heel slides to prevent blood clots.
- Incision care.
- If you have a drain in place, this will require the nursing staff to monitor/empty it every four hours.

Day 1 after surgery

- Vital signs and neurological assessment taken.
- Do frequent deep breathing and coughing exercises.
- Continue using your incentive spirometer hourly.
- Diet, as tolerated.
- Pain medication by mouth.
- Practice getting dressed.
- Walking up to three times in the hallway.
- Initial evaluation with physical and/or occupational therapist if ordered by your surgeon.
- Removal of catheter if still in place. Some people may still need the bladder scanned post urinating.
- Drain and incision care, as needed.
- Some patients will go home this day.

Day 2 after surgery:

- Vital signs and neurological assessment taken.
- Do frequent deep breathing and coughing exercises.
- Continue using your incentive spirometer hourly.
- Diet, as tolerated.
- Pain medication by mouth.
- Walking in the hallway three times.
- May work with physical and/or occupational therapist to address needs and goals for home.

- Removal of catheter if still in place. Some people may still need the bladder scanned post urinating.
- Drain and incision care, as needed.
- Some people will go home this day.

These activities will continue until you meet your goals to go home or to go to another facility. The goal of the Salem Health Spine Center is your health, well being, safety and successful return to your regular routine. The nursing staff will promote your progress by working collaboratively with your surgeon, family doctor, therapists and your family support to advance activities toward a positive recovery.



Exercises and activities

Incentive spirometer



Chest congestion is the most common cause of post-operative fever and can lead to pneumonia. In order to prevent chest congestion after surgery, you will be encouraged to use your incentive spirometer. In most cases, we will have you use an incentive spirometer every one to two hours while awake along with actual coughing and deep breathing. Some people will have a respiratory therapist follow up with them post-operatively.

Deep breathing and coughing

- Use your stomach muscles to help you cough. Take a deep breath in and cough while using your abdomen to push.

How to use the incentive spirometer

1. Sit on the edge of your bed, if possible, or sit upright in a chair.
2. Hold the incentive spirometer in an upright position.
3. Place the mouthpiece in your mouth, and seal your lips tightly around it.
4. Inhale slowly and as deeply as possible, raising the ball toward the top of the column.
5. Hold your breath as long as possible and for at least five seconds. Allow the ball to fall to the bottom of the column.
6. Rest for a few seconds, and repeat steps one to five frequently while awake.
7. Move the indicator on the left side of the spirometer to show your best effort. Use the indicator as a goal to beat during each repetition.
8. After each set of five breaths, practice coughing to make sure your lungs are clear.
9. Once you are able to get out of bed, walk in the hallway and cough well. You may stop using the incentive spirometer unless otherwise instructed by your surgeon.

Proper brace placement

Lumbar brace



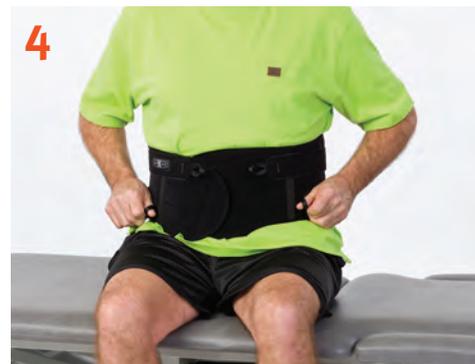
1 Place brace against back with large curve pointing up and strips open.



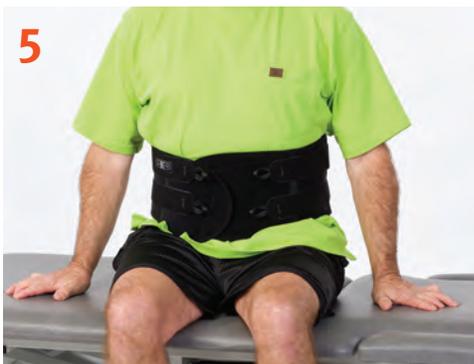
2 Fasten large strap, right over left, and secure.



3 With thumbs in loops of small straps, pull tight, but allow enough room to breath.



4 Fasten to large strap and repeat with lower small strap.



5 The brace should be snug, but still allow you to breath without difficulty.

Proper brace placement

Cervical soft collar



Neck brace should be snug with chin resting on brace.



DO NOT strap the neck brace in the front. Velcro straps should be in the back.



DO NOT wear brace upside down. Brace is shown upside down in this photo.



DO NOT tuck chin inside brace. Chin should rest on top of the brace.

Cervical hard collar (Aspen brace)



Neck brace should be snug, with chin resting on brace.



DO NOT tuck chin inside brace. Chin should rest on top of brace



DO NOT wear brace too loose. Brace should be snug, allowing chin to rest comfortably.



Neck brace is properly placed.



DO NOT wear brace incorrectly. Back piece of brace is upside down.

Exercise/leg movements

Postoperative spinal precautions

Specific instructions will be provided based on the type of spinal surgery you had. All surgery patients should follow these basic guidelines. Your surgeon will let you know when it is safe to start reintroducing bending, lifting and twisting after your procedure.

- **NO** bending
- **NO** twisting
- **NO** heavy lifting (lift no more than five pounds)
- Remember to keep your knees, nose and toes in alignment at all times.

Walking/Exercise

Walking will be the main mode of exercise for the first six to eight weeks after your surgery. It is safe and can be done based on your pain levels and energy. Consistency is key in the first couple weeks more than distance or time. Our body prefers shorter, frequent walks rather than long walks after surgery. Your surgeon will let you know when it is safe to resume other activities such as pool exercise, cycling, yoga, tai chi or whatever other mode you prefer.

Ankle pumps



Ankle pump exercise consists of pulling your toes toward your head and then pointing them to the ground.



You should feel a gentle stretch in your calf when your toes are pointed up. One set of ten, three times a day is recommended.

Gluteal sets



Squeeze your buttock muscles together. Hold for five seconds.

Quad set



Tighten knee muscles by pushing the back of the knee down. Hold for five seconds.

Heel slide



This exercise is done one leg at a time.



While lying on your back, bend your knee as you slowly slide the heel of your leg up toward your buttocks.



Slide as far as you can and hold for two to three seconds.



Slowly return to the starting position, and repeat again. After you have done about ten, switch to your other leg. One set of ten per leg, three times a day is recommended.

Bed mobility/log roll technique

Mobility

Log roll - best way to get in and out of bed after spine surgery



Start lying flat on your back.



Raise up both knees one at a time.



Keeping knees, hips and shoulders parallel, look the direction you want to turn and reach opposite arm over body.



Continue keeping knees, hips and shoulders together. Continue reaching and turn onto your side. Readjust for comfort, always moving knees, hips and shoulders together.

Lying to sitting



1 From a side lying position, use your elbow to raise your upper body off the bed. Use opposite arm to push self off bed.



2 As your upper body lifts off the bed, bring legs off side of bed, keeping legs together.



3 Continue this movement to the sitting position.

Getting in and out of bed or chairs

Sitting to standing

Begin with feet firmly on ground directly in front of you. May use walker for stability and brace if ordered by your surgeon.



Lean slightly forward, stabilizing self with hands on bed.



Use legs to stand up.



Use legs to support body weight, keeping back straight. Use walker for stability if needed.

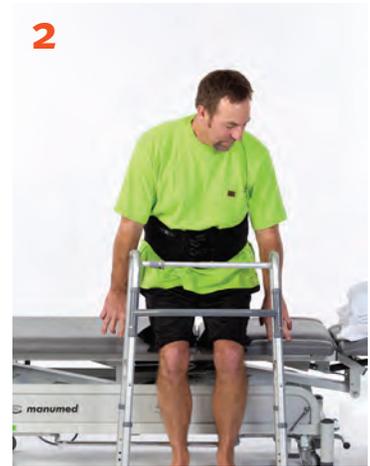


Standing to sitting

Stand with back of knees touching chair or bed. Look down to where you are going to sit.



Lean slightly forward, keeping your back straight. Bend your knee, and reach your arms back to feel chair or bed.



Continue bending your knees, being careful not to twist, and lower yourself. This movement should be slow and controlled.



Dressing information

Shoes

1. We recommend wearing closed-heel, slip-on shoes or using elastic shoe laces.
2. To eliminate excessive forward bending and twisting at your back, use your long-handled shoe horn and dressing stick to assist in putting on and taking off shoes.



Socks

1. If you are unable to reach your feet or have spinal precautions that prevent you from reaching your feet, use adaptive equipment as instructed by your occupational therapist.
2. Put sock on the sock aid.
3. Holding the cord ends, toss the sock aid straight out in front of your leg.
4. Slide your foot into the sock. Pull firmly on the cords until the sock is in place and the sock-pull slides out of the sock.
5. To remove, position the large end of the dressing stick at the back of your heel, and then push the sock off your foot.



Dressing the upper body

To dress your upper body after your surgery, we recommend you do so in a sitting position to ensure your safety and decrease your chance of falls. Remember not to bend or twist your spine during dressing.

Pull over shirt

1. Put both arms into shirt sleeve up to your elbow.
2. Gather the neck hole, bring the head/neck through the hole (be careful not to bend or twist the neck if you had neck surgery).
3. Pull down remaining material.

Button down shirt or jacket

1. Dress weaker or more painful arm through shirt or jacket first.
2. Pull shirt or jacket around back (either by collar or by reaching behind your back).
3. Dress opposite arm through sleeve.
4. Adjust, button or zip appropriately.

Undressing

1. Unbutton shirt if able.
2. Always undress your unaffected arm first.
3. For a button down shirt, reach across your body to opposite shoulder and pull shirt down around back and remove opposite arm.
4. For a pull over shirt, grab back of collar and pull over head with out bending or twisting neck.
5. Remove arms.

Activities of daily living

General instructions for the use of your walker

1. First, move the walker forward. Then, if you have one leg that seems weaker or more painful, step with that leg first followed by your other leg.
2. Stand tall, and do not look at the floor.
3. When turning, take small steps.
4. If you leave the hospital using a walker, continue to use the walker until your surgeon or therapist instructs you otherwise.

Stairs

In general, climb up stairs with your stronger or less painful leg first, and go down with your weaker or more painful leg first.

Self care activities

Tub/shower

Techniques for transferring in and out of your bathtub or step-in shower will depend on your individual needs and function. A shower seat, bathtub bench or grab bars may be recommended for your safety.

Toileting

1. To avoid twisting, stand to wipe every time.
2. A raised toilet seat and/or grab bars at your sides may be recommended depending on your individual needs.



Caring for your incision

Your surgeon will choose the best method of closing and securing your incision at the end of surgery.

Before you leave the hospital, your nurse will give you written information on how to care for your incision. Remember to call your surgeon's office if you have any questions after you leave the hospital.



Guide to returning to daily activities

Cervical

This activity guide is a general guideline only. Please discuss with your surgeon before starting activities.

Activity chart following cervical discectomy or laminectomy

	Immediate	2 weeks	2-3 months	6 months	1 year
Shower	Yes*				
Lifting 10-15 pounds	Varies	Yes			
Walking outside	Yes				
Cooking	Varies	Yes			
Light housework	No	Yes			
Climbing stairs	Yes				
Short car rides 15-20 minutes	Yes				
Long car rides (>30 minutes)	No	Varies	Yes		
Short outings	No	Varies	Yes		
Stationary bike	No	Yes			
Driving a car	No	Varies	Yes		
Air travel	No	Yes			
School	No	Yes			
Light upper extremity exercises	No	Varies	Yes		
Swimming	No	Varies	Yes		
Dance, slow	No	Yes			
Light jogging	No	No	Yes		
Vacuuming, laundry	No	Varies	Yes		
Low-impact exercise	No	Varies	Yes		
Non-contact sports (tennis, bowling)	No	No	Varies	Yes	
Lifting 15-50 pounds	No	No	Varies	Yes	
Road bicycle	No	Varies	Yes		
Sex (lying on back)	No	Yes			
Golfing	No	No	Varies	Yes	
Gardening, home repairs	No	No	Varies	Yes	
Downhill skiing	No	No	No	Yes	
Cross country skiing	No	No	No	Yes	
Horseback riding	No	No	Varies	Yes	

*After the first 48 hours, unless directed otherwise.

Guide to returning to daily activities

Activity chart following cervical fusion

	Immediate	2 weeks	2-3 months	6 months	1 year
Shower	Yes*				
Lifting 10-15 pounds	Varies	Yes			
Walking outside	Yes				
Cooking	Varies	Yes			
Light housework	No	Yes			
Climbing stairs	Yes				
Short car rides 15-20 minutes	Varies	Varies	Yes		
Long car rides (>30 minutes)	No	Varies	Yes		
Short outings	No	Varies	Yes		
Stationary bike	No	No	Yes		
Driving a car	No	Varies	Yes		
Air travel	No	No	Yes		
School	No	No	Yes		
Light upper extremity exercises	No	Varies	Yes		
Swimming	No	No	Yes		
Dance, slow	No	No	Varies	Yes	
Light jogging	No	No	Varies	Yes	
Vacuuming, laundry	No	No	Varies	Yes	
Low-impact exercise	No	No	Varies	Yes	
Non-contact sports (tennis, bowling)	No	No	No	Varies	Yes
Lifting 15-50 pounds	No	No	No	Yes	
Road bicycle	No	No	No	Yes	
Sex (lying on back)	No	Varies	Yes		
Golfing	No	No	No	No	Yes
Gardening, home repairs	No	No	Varies	Yes	
Downhill skiing	No	No	No	No	Yes
Cross country skiing	No	No	No	No	Yes
Horseback riding	No	No	No	No	Yes

*After the first 48 hours, unless directed otherwise.

Guide to returning to daily activities

Lumbar

This activity guide is a general guideline only. Please discuss with your surgeon before starting activities.

Activity chart following lumbar discectomy or laminectomy

	Immediate	2 weeks	2-3 months	6 months	1 year
Shower	Yes*				
Lifting 10-15 pounds	Varies	Yes			
Walking outside	Yes				
Cooking	Varies	Yes			
Light housework	No	Yes			
Climbing stairs	Yes				
Short car rides 15-20 minutes	Yes				
Long car rides (>30 minutes)	No	Varies	Yes		
Short outings	No	Varies	Yes		
Stationary bike	No	Yes			
Driving a car	No	Varies	Yes		
Air travel	No	Yes			
School	No	Yes			
Light upper extremity exercises	No	Varies	Yes		
Swimming	No	Varies	Yes		
Dance, slow	No	Yes			
Light jogging	No	No	Yes		
Vacuuming, laundry	No	Varies	Yes		
Low-impact exercise	No	Varies	Yes		
Non-contact sports (tennis, bowling)	No	No	Varies	Yes	
Lifting 15-50 pounds	No	No	Varies	Yes	
Road bicycle	No	Varies	Yes		
Sex (lying on back)	No	Yes			
Golfing	No	No	Varies	Yes	
Gardening, home repairs	No	No	Varies	Yes	
Downhill skiing	No	No	No	Yes	
Cross country skiing	No	No	No	Yes	
Horseback riding	No	No	Varies	Yes	

*After the first 48 hours, unless directed otherwise.

Activity chart following lumbar fusion

	Immediate	2 weeks	2-3 months	6 months	1 year
Shower	Yes*				
Lifting 10-15 pounds	Varies	Yes			
Walking outside	Yes				
Cooking	Varies	Yes			
Light housework	No	Yes			
Climbing stairs	Yes				
Short car rides 15-20 minutes	Varies	Varies	Yes		
Long car rides (>30 minutes)	No	Varies	Yes		
Short outings	No	Varies	Yes		
Stationary bike	No	No	Yes		
Driving a car	No	Varies	Yes		
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Non-contact sports (tennis, bowling)	No	No	No	Varies	Yes
Lifting 15-50 pounds	No	No	No	Yes	
Road bicycle	No	No	No	Yes	
Sex (lying on back)	No	Varies	Yes		
Golfing	No	No	No	No	Yes
Gardening, home repairs	No	No	Varies	Yes	
Downhill skiing	No	No	No	No	Yes
Cross country skiing	No	No	No	No	Yes
Horseback riding	No	No	No	No	Yes

*After the first 48 hours, unless directed otherwise.

Postoperative walking program

Purpose: A guide for patients, rehab facilities and coaches to monitor their walking program.

- Walking is highly encouraged by your surgeon for your postoperative recovery.
- Along with helping manage postoperative pain and tissue healing, walking can help manage potential complications such as blood clots and pneumonia.

Tips: Start small and manageable. We would like you going on short walks several times a day. Monitor your pain both during and after. A common rule of thumb is to rest if your pain increases by two points. Take a break, sit and relax. Use the tracker below to monitor your progress. Track your total minutes (or steps) per day. Try to increase your total minutes each week if your pain is improving.

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							
Week 7							

Self-care equipment

Your therapists will recommend the type of equipment you will need. Care management staff can assist you in ordering equipment during your hospital stay. Borrowing equipment from family or friends is also an option to consider to make your transition home smoother and safer.

BATHROOM EQUIPMENT



Tub transfer bench



Hand-held shower



Grab bars: Toilet and/or shower



Shower chair



Raised toilet seat



Bedside commode



Versa frame

DRESSING EQUIPMENT/SELF-CARE AIDS



Dressing stick



Reacher



Sock aid



Long-handled shoe horn



Elastic shoe laces



Toilet aid



Long-handled sponge

Please check with your insurance company prior to admission if you have any concerns about equipment coverage policies.

Equipment

Some surgeries will require you to wear a brace afterward for a short time. Your surgeon will tell you if you require a brace. These braces are specially fitted and can be purchased at:

Hanger Prosthetics and Orthotics

675 12th St SE, Salem, OR 97301
503-581-9191 | www.hanger.com

Pacific Medical Supply

1090 Commercial St. NE, Salem, OR 97301
503-585-2027

Equipment you may need when you leave the hospital

Your therapists will assist you in evaluating the type of equipment you will need following your surgery. Equipment recommendations are based on the individual needs of each patient. Care management staff can assist you in ordering equipment during your hospital stay. It is recommended that you contact your insurance company and find out what your Durable Medical Equipment coverage is. We have included a list of resources for your needs. Borrowing equipment from family or friends is also an option to consider.

Salem Health Pharmacy

875 Oak St. SE, Suite 1090, Salem, OR 97302
503-814-0412

Open 7 days a week, excluding holidays. Please call for specific hours.

This equipment may also be available at the following community providers. We recommend you call to determine availability.

Access Technologies Assistive Technologies

2225 Lancaster Dr. NE, Salem, OR 97305
1-800-677-7512

Apria

2050 Vista Ave. SE, Suite 100-110, Salem, OR 97302
503-480-1100 | 1-800-422-7005 (Portland)

Foothills Medical Supply

304 N. First St., Silverton, OR 97381
503-873-4083 | 1-800-871-4083

Linn Care Inc.

3535 Del Webb Ave. NE, Suite 130, Salem, OR 97303
503-566-8763 | 1-800-362-8122

Norco Medical

2685 Commercial St. NE, Salem, OR 97301
503-378-1756 (24-hour number) | 1-800-785-7756

Pacific Medical Supply

1090 Commercial St. NE, Salem, OR 97301
503-585-2027

Providence Medical

2508 Pringle Rd. SE, Salem, OR 97302
503-585-4027

Other options:

Your local Walgreens

The above list may not include all community vendors. Salem Health does not have a financial relationship with any of the listed providers, nor do we recommend any provider over another.

Going home



You will be ready to go home once you are able to walk short distances and are making consistent progress. We will use the following checklist to help assess when you can be safely transitioned back to your home. You should be able to go home when you are able to:

- Manage pain with oral medications.
- Urinate without any difficulties. Occasionally patients are not able to do this before they leave. These patients will be discharged with a catheter and will receive follow-up instructions through outpatient services with an urologist.

- Maintain spinal precautions with minimal cues.
- Safely manage brace, if needed.
- Walk short distances either independently or with the use of a walker.
- Change from lying to sitting positions and from sitting to standing with minimal or no assistance while maintaining your proper body mechanics.
- Get in and out of bed independently or with the assistance of your care provider, while maintaining your precautions.
- Get up and down from the chair and toilet independently or with the assistance of a care provider.
- Get dressed independently or with the assistance of a care provider.
- Use the stairs if you have them at home.
- Dress self or dress with minimal assistance.
- Safely transfer in and out of the car that will transport you home.
- Have a bowel movement if required by your surgeon.

Before you go home, we will make sure that all your discharge needs are met. You can expect:

- A prescription for pain medication.
- Typed instructions from your surgeon.
- An appointment for a follow-up visit with your surgeon.
- A friend or family member will be taught how and when to change your dressing.

Potential rehabilitation services after surgery

Transition to a skilled nursing facility

Because everyone heals differently, it may not be possible for some patients to return directly home after surgery. Sometimes, the support provided in a skilled nursing facility is needed to help patients with their rehabilitation before they can transition home. If your therapy team believes a skilled nursing facility would be appropriate for you, a case manager will discuss appropriate options for you.

Transition to an inpatient rehabilitation facility

Inpatient rehabilitation after surgery is appropriate for a very specific population. If your therapy team believes this is appropriate for you, a case manager will discuss options with you and your family.

Outpatient physical therapy

Your surgeon may refer you to outpatient physical therapy (PT) to help you meet your postoperative goals. A physical therapist will work to improve your pain, strength and endurance, and reinforce body mechanics to help you reach your goals after surgery. Most patients will start outpatient physical therapy six to 10 weeks after surgery. Your surgeon will let you know when to start at your postoperative follow-up appointment.



Your recovery continues at home

Congratulations!

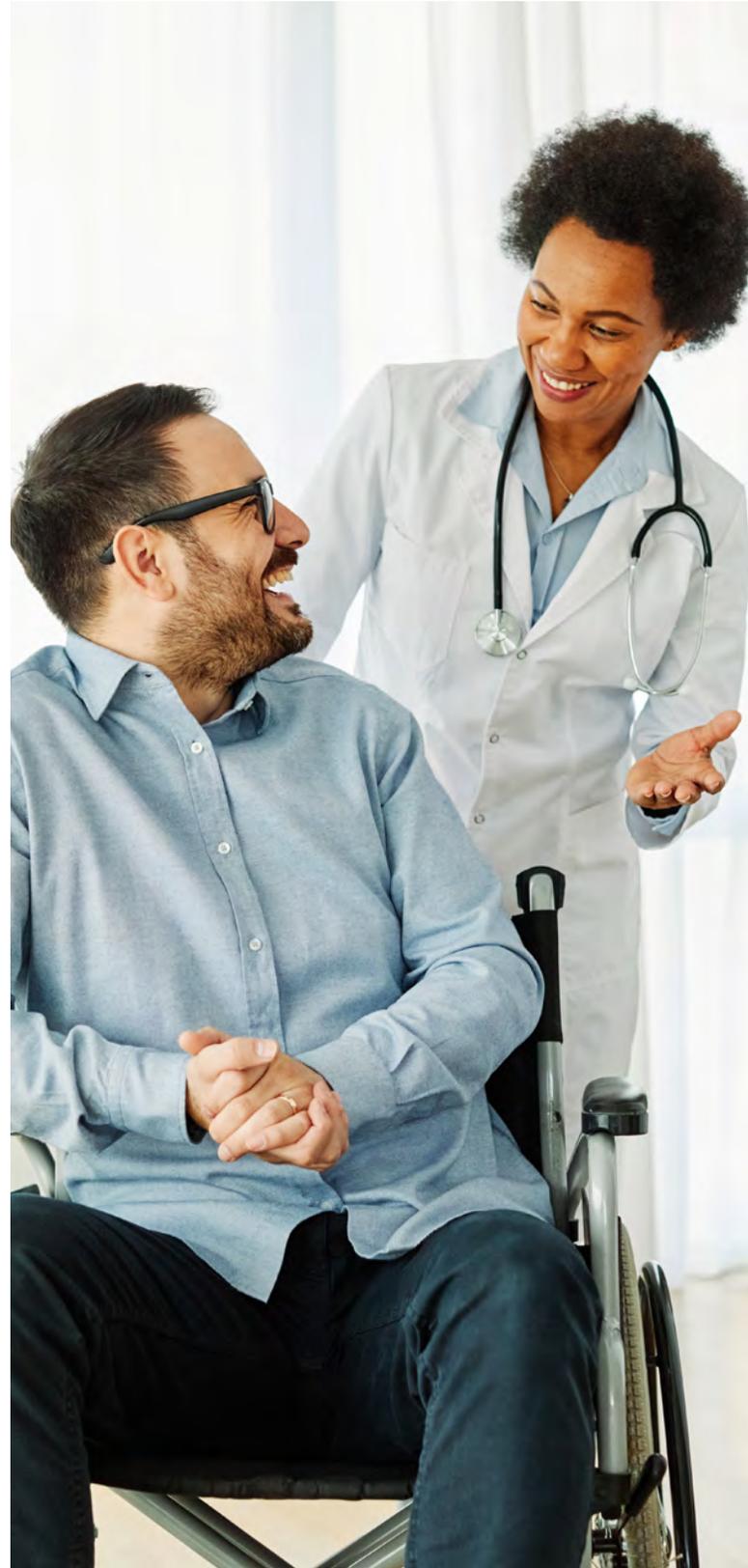
You've achieved an important milestone on your road to recovery — you're headed home! A big part of your journey is now behind you, although another is just beginning. There are some important considerations for you to keep in mind as you enter this next phase of recovery.

Contact your surgeon, if you notice any of the following signs or symptoms:

- A fever greater than 101.5 degrees Fahrenheit that lasts more than a day
- Chest congestion that lasts more than one day
- Thick, dark yellow or bad smelling drainage from the incision
- Pain and redness around your incision
- An incision that is hot to the touch
- Increased swelling around the incision
- Nausea
- Vomiting
- Constipation
- Medication refills (please allow two business days)

Call 911 or go immediately to the nearest emergency room if you experience the following:

- Calf pain or swelling to either or both of your legs
- Problems breathing
- Chest pains, especially when you cough or take deep breaths



After your surgery, you will receive questionnaires every six months for a year, then again, two years after surgery asking about your progress. We strongly encourage you to complete these surveys and send them back to us. Your experiences and feedback are very valuable to us. This information will be used to help Salem Health Spine Center continue to improve the care we provide and assist us in our ongoing commitment to excellence.

Salem Health Spine Center will communicate all our recommendations to your primary care provider as they are a partner in your care and may need to see you for other medical problems.

Important reminders for your safety and success

- Continue to do ankle pumps.
- Be cautious and use spinal precautions while healing until your surgeon releases you.
- Take walks and gradually increase the distance.
- Avoid surfaces like gravel and grass that may cause you to lose your balance.
- If a walker or a cane is recommended continue to use it until cleared by your physician to walk without it.
- Follow your provided discharge instructions.



Frequently asked questions

Will I set off metal detectors?

Most patients do not have a problem with this. On rare occasions, when the security wand is waved over the location of a patient's fusion, a slight alarm may result. Then, the surgical scar will have to be shown to the officer.

How long until I can return to work?

This is very individualized to you, the patient, and the type of work you do. Discuss this with your surgeon. Patients recovering from cervical fusions that have sedentary employment — jobs where they are basically sitting behind a desk — usually require two to four weeks of recovery before returning to work. For jobs that require light lifting, six to eight weeks recovery is common. For jobs that require heavy lifting, three months of recovery and rehabilitation before returning to work is the rule of thumb.

In generally, lumbar fusions take longer to get back to work. For sedentary work, it usually takes four to six weeks. For physical labor with light weight lifting, it takes three months. Most patients with jobs requiring heavy lifting can return to work after six months.

How long before I can travel?

Like many aspects of this journey, this too is very individualized. Traveling will depend on your ability to sit for an extended period of time and/or how much movement is required in your travel plans. We encourage you to not sit longer than two hours at a time without getting up and moving around, and to take frequent rest breaks, if needed.

What will my pain be like after surgery?

You will have some pain after surgery, but this should be manageable with oral pain medication. Pain is a very

individualized feeling. Your health care team will create a pain management plan in order to address your pain medication needs and help you feel as comfortable as possible.

Do I continue my physical therapy exercises up until my surgery? What about after surgery?

The best activity for your back is walking both before and after surgery. After your surgery, you should gradually increase the time and distance you walk. As you heal, your surgeon will order physical therapy after surgery only if it is needed. This varies for every patient. Again, every patient is an individual, but GENERALLY speaking, patients can begin exercising five weeks after microsectomy or laminectomy. Patients with spinal lumbar fusion usually need to wait three months postsurgery to begin an exercise program. Usually about six months following your surgery, you can participate in demanding sports like golf and skiing, but only after being cleared by your surgeon.

For patients with cervical surgeries, no push or strenuous upper arm exercises are recommended for two months. Non-pounding, cardiovascular exercise, such as an elliptical machine, can be used as tolerated keeping the heart rate below 100 beats per minute. Again, do not begin any exercise program more strenuous than walking without getting your surgeon's approval.

What if I live alone or my family is not able to assist me after surgery?

Rest assured that you will not be discharged from the hospital unless there is a proper care plan in place that will allow you to remain safe. Most of these problems can be foreseen and addressed prior to your surgery.

Glossary of terms

CBGs — Capillary blood glucose test. With a poke on the tip of your finger, we retrieve a dot of blood to check the sugar levels in your blood stream. A healthy range is 70-120 and helps promote healing.

Foley — A device used for several days that has a tube (catheter) inserted through your urethra to help drain your bladder.

IS — Incentive spirometer. This device encourages patients to take deep breaths after surgery. It helps to prevent an infection in the lungs.

JP drain — A surgical drainage device used to pull excess fluid from the body by constant suction.

Log roll — Turning a patient as a single unit while maintaining straight body alignment at all times. The procedure is used for patients with surgeries to the spine who must avoid twisting.

NTCU — Neuro/trauma care unit. At Salem Hospital, the NTCU is located on the seventh floor of Building A and is where your room is located during your recovery at the Salem Health Spine Center.

OT — Occupational therapy

Ortho or orthostatic BPs — A simple test that measures a person's blood pressure while lying in bed, seated or reclining at rest, and again upon standing up. This is very standard procedure among post-surgical patients.

Oximeter or pulse ox — A medical device that monitors the oxygen saturation of a patient's blood through a sticker placed over the fingernail or toenail. It is often attached to a medical monitor so staff can see a patient's oxygenation at all times. Most monitors also display the heart rate.

PACU — Post anesthesia care unit. This is where patients recover for a brief period after surgery and before going to their room. You may not remember your time in this unit.

PCP — Primary care provider. This health care provider manages your medications and any illnesses you may have. This is probably the health care provider who referred you to the Salem Health Spine Center.

PRN meds — PRN is a Latin acronym that means take medication as needed. Because the nurses cannot tell what your level of pain is, you will have to ask for PRN pain medications as necessary.

PT — Physical therapy

PVRs — Post void (urinate) residual. This study, to determine the amount of urine remaining in the bladder after normal urination, is done with an ultrasound. You will be asked to lie flat. The surface of your lower abdomen and pelvis will need to be exposed. A towel will be placed along the waistband of your clothing to protect it from the gel that is used for the study. Gel is placed on the skin on your abdomen over your bladder. The ultrasound probe will be placed over this area and a recording will be made. Your care provider will review the image and measurement with you.

Sequential Compression Devices (SCDs *Pronounced SCUDS*) — These pumps limit the development of Deep Vein Thrombosis (DVT) and Peripheral Edema in immobile patients. When a patient is immobile for long periods of time, as in recuperation from an injury, blood tends to pool in the calf area of the lower leg. To combat this tendency, clinicians use the Sequential Compression Device. This consists of an air pump connected to a disposable sleeve by a series of air tubes. The sleeve is placed around the patient's leg. Air is then forced into different parts of the sleeve in sequence, creating pressure around the calves and improving venous return.

Straight cath — A temporary tube (catheter) inserted to help empty your bladder.

Telemetry or Tele — This technology provides remote measurement and reporting of information. In the hospital, some doctors like to remotely monitor your heart. You are hooked up to a tele box by five stickers that are placed on your chest. Your heart rate and rhythm are then transmitted and displayed at the nurses' station. This gives the nurses a good look at any changes.

Vitals — Vitals are your blood pressure, heart rate and temperature. They will be checked frequently while you are in the hospital.

Pain medication schedule

Medication Name	Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1.								
2.								
3.								
4.								
5.								
6.								

Dispose of unused prescriptions

The U.S. Food and Drug Administration (FDA) has launched *Remove the Risk*, an education and outreach campaign to raise awareness about the serious risks of keeping unused prescription opioids in the home and to provide information about safe disposal of these drugs. A study published in the *Journal of the American Medical Association* found that up to 71 percent of opioid tablets prescribed after surgery went unused.

The United States is experiencing a devastating opioid crisis. More than 100 Americans die every day from overdoses involving opioids, and millions are addicted to opioids.

Unused opioids—such as hydrocodone, morphine, and oxycodone—are dangerous to have in your home when they are no longer needed. Children or pets can accidentally take unused opioids or visitors might search for them in your drawers and medicine cabinets.



Remove the risk of your unused opioids and help address the devastating opioid crisis affecting so many American families. Proper disposal of unused prescription opioids can save lives.

Find out more about safe disposal of opioids and other medications including how to find a location nearest to you. Go to <https://www.fda.gov/drugdisposal> and find some great information or scan the QR code below to go directly to the website.



Campus map



See back cover for important phone numbers.



Appendix

Living situation after surgery

Use this form to better prepare for your return home.

After surgery, I will be:

- Home with family
- At a relative's or friend's home
- Home alone
- I don't know

Is assistance available/are they willing to assist with care? Yes No

If yes, who: _____

Stairs you will use at home after surgery

Please mark all that apply to your living situation.

Number of stairs to enter/exit home: _____

Do these stairs have railings? None Yes No

Number of stairs inside home: _____

Do these stairs have railings? None Yes No

Bathroom access (mark what you use)

Bathroom has:

- Walk-in shower
- Tub only
- Combination tub/shower
- Fixed showerhead
- Hand-held showerhead
- Shower door
- Shower curtain
- Bar or support near shower
- Tub grab bar
- Bath/bench seat
- Non-skid bathmat or decals
- Standard toilet
- Tall toilet/raised toilet seat

Bar or support near toilet? Yes No

Do you currently need assistance to bathe/shower?

Yes No

Equipment (mark all equipment you have access to)

- Commode
- Elevated toilet seat
- Long-handled sponge
- Reacher
- Long shoehorn
- Sock aid
- Cane
- Four-wheeled walker
- Two-wheeled walker
- Toilet aide

Equipment you think you may need after surgery:

Home preparation

Are you able to get in/out of chairs on your own? Yes No

Are you able to get in/out of bed on your own? Yes No

Do you have a chair with good support? Yes No

When lying down in bed, which side do you exit from?

Right side Left Side

Could you use the other side? Yes No

Will walker fit in your home? Yes No

Have you removed items blocking pathways at home?

Yes No

Have throw rugs been picked up? Yes No

Have the most used dishes been placed at counter height or a location that is easy to reach? Yes No

Postoperative opioid use and tapering

There have been many advancements in pain management after surgery due to the use of multimodal analgesic strategies (combination of opioids and non-opioid medications). While opioids help with pain reduction during the recovery process, many patients struggle to know how to taper (or reduce) their opioid use during their recovery.

Patients who require higher doses of opioids or patients who have a history of opioid use can greatly benefit from gradually reducing their opioid dose after surgery. Tapering in this way can take longer (weeks to months) and works best when partnering with a provider. If you have been on opioids long-term, you should discuss a taper plan with your primary care provider or prescribing provider after the immediate surgical recovery phase.

Effects of long-term opioid use to consider:

- Opioid-induced hyperalgesia (altered pain sensitivity from long-term opioid use).
- Physical dependence (addiction).
- Constipation and nausea.
- Drowsiness and fatigue (can lead to falls).
- Depressed mood, low energy, poor appetite, poor sleep, reduced activity.
- Sleep apnea.
- Lower testosterone in men, lower estrogen in women.
- Respiratory health issues.

Some patients may feel withdrawal symptoms if they taper off opioids too quickly, particularly if you are on opioids long-term before surgery or were on a high dose after surgery. While these symptoms can be uncomfortable, they are generally not life-threatening. If you experience any of these symptoms, please contact your provider.

Withdrawal symptoms may include:

- Fatigue, restlessness, anxiety, hallucinations, sleep troubles.
- Nausea/vomiting, abdominal cramps, diarrhea.
- Increased heart rate and blood pressure.
- Flu-like symptoms (sweats, chills, goose bumps, headache, body aches).

Example opioid taper

Generally, it is better to start by changing the dose of medication first and then the interval (time between doses). If your surgeon prescribes three oxycodone every four hours, it would be best to go from three pills to two pills then one pill and keep the timing the same. Once you've reached this, then you can increase the time between doses. See below for a few tapering examples.

Prior 24 hour oxycodone (mg)	Days 1-3	Days 4-6	Days 7-9	Days 10-12	Days 13-15	Days 15-17	Days 18-21
40mg (10mg every six hours)	10mg 4x/day	5mg 4x/day	5mg 3x/day	5mg 2x/day	5mg 2x/day	None	
60mg (15mg every six hours)	15mg 4x/day	10mg 4x/day	5mg 4x/day	5mg 3x/day	5mg 2x/day	5mg 1x/day	None
90mg (15mg every four hours)	15mg 6x/day	15mg 5x/day	15mg 4x/day	10mg 4x/day	5mg 4x/day	5mg 3x/day	
120mg (20mg every four hours)	20mg 6x/day	20mg 5x/day	15mg 5x/day	15mg 4x/day	10mg 4x/day	5mg 4x/day	

Appendix

Nutrition and spine surgery



Nutrition plays an important role in your spine surgery recovery. Your body needs nutrients such as carbohydrates, protein, fat, vitamins, minerals and water to help repair and recover.

Many people are fearful of gaining weight after surgery as they are less active. Your surgical recovery is not the time to limit your food intake. Your body will increase its energy requirements (up to 2.5 times as much) to help aid in the healing process. Not eating, or limiting your eating, will reduce your overall energy and also delay your recovery. You should focus on eating fruits, vegetables, legumes, protein and whole grains to help boost your immune system and help with wound healing.

Protein should be a focus in your diet before and after surgery. Protein is the key nutrient required for healing. Generally, individuals should target around 100 grams per day of protein. This is dependent on your overall size (weight) and can be higher in many cases. If you have

questions, ask your surgeon or a dietitian for advice. Higher protein diets after surgery have been shown to help limit surgery site infections as well as minimize muscle loss in the recovery phase. Whey protein (protein powder) or protein drinks are widely available and offer high amounts of protein at a reasonable cost. They are easy to mix with your favorite smoothie or beverage. See the following pages for a list of foods and their protein content.

Many people find eating smaller meals more often (four to six times/day) can make it easier on your digestive system. Try to get up to 20 to 40 grams of protein per meal.

Water and fiber are also very important to consider after spine surgery. Drinking plenty of water can help alleviate painful constipation and dehydration (which can cause fatigue and headaches). Eating plenty of fiber with whole grains, fruits and vegetables can help minimize constipation as well.

Fiber content of foods

How much do you need?

The daily recommendations for most healthy adults:

- Men ages 50 years and younger: 38 grams fiber per day
- Men ages 51 years and older: 30 grams fiber per day
- Women ages 50 years/younger: 25 grams fiber per day
- Women ages 51 years and older: 21 grams fiber per day



Foods high in zinc	Serving	Fiber (g)
Bran cereal	1/3 cup	8.6
Cooked kidney beans	1/2 cup	7.9
Cooked lentils	1/2 cup	7.8
Cooked black beans	1/2 cup	7.6
Canned chickpeas	1/2 cup	5.3
Baked beans	1/2 cup	5.2
Pear	1	5.1
Soybeans	1/2 cup	5.1
Quinoa	1/2 cup	5
Baked sweet potato, with skin	1 medium	4.8
Baked potato, with skin	1 medium	4.4
Cooked frozen green peas	1/2 cup	4.4
Bulgur	1/2 cup	4.1
Cooked frozen mixed vegetables	1/2 cup	4
Raspberries	1/2 cup	4
Blackberries	1/2 cup	3.8
Almonds	1 ounce	3.5
Cooked frozen spinach	1/2 cup	3.5
Vegetable or soy patty	1 each	3.4
Apple	1 medium	3.3
Dried dates	5 pieces	3.3

Appendix

Protein content of foods



Foods	Serving	Protein (g)
High protein (more than 4 grams)		
Bacon	2 slice	6
Bagel, 4": egg, raisin, or onion	1 each	9
Beans: lima, kidney, baked or garbanzo, canned	½ cup	6 to 7
Beans: white, navy or great northern, canned	½ cup	9
Beef, ground sirloin	1 ounce	9
Beef, top round	1 ounce	10
Cereal, breakfast, higher protein	½ cup	4 to 6
Cheese, most types	1 ounce	7
Cheese, cottage, lowfat	½ cup	15.5
Cheese, parmesan	2 tablespoon	4
Cheese, ricotta	½ cup	14
Chicken breast	1 ounce	9
Dried beans and peas	½ cup	6 to 9
Egg substitute	¼ cup	7.5
Egg, whole or hard boiled, large	1 each	6
Fish, fillet or steak	1 ounce	6.5 to 7.5
Frankfurter, beef or pork	1 each	6

Foods	Serving	Protein (g)
Ice cream	½ cup	3 to 4
Lamb	1 ounce	8
Lentils	½ cup	9
Lunch meat: ham, turkey, chicken	1 ounce	3 to 4
Milk, all types	1 cup	8
Milk, evaporated, canned	½ cup	8.5
Milk, nonfat dry solids	⅓ cup	8
Muffin, English	1 each	5
Nuts: cashews, walnuts, mixed	1 ounce	4 to 5
Nuts: peanuts, pistachios, almonds	1 ounce	6
Peanut butter	2 tablespoons	8
Pork tenderloin	1 ounce	9
Pudding, prepared w/milk	½ cup	4.5
Roll, hamburger or hotdog	1 each	4
Sardines	1 ounce	7
Sausage, patty	1 ounce	5
Seeds, pumpkin	1 ounce	9.5
Seeds, sunflower	1 ounce	5.5
Shellfish or crab	1 ounce	5.5

Foods	Serving	Protein (g)
Soy milk	1 cup	8 to 11
Soybeans	½ cup	14
Tofu, firm	¼ cup	5
Tuna, canned, drained	1 ounce	7
Turkey	1 ounce	8
Veggie or soy patty	1 each	11
Yogurt	8 ounces	8 to 13
Low protein (3 grams or less)		
Beans, green or yellow	½ cup	1
Beets	½ cup	1.5
Bread, pita, 4”	1 each	2.5
Bread: white, rye, white	1 slice	2.5
Broccoli	½ cup	2
Brussels sprouts	½ cup	2
Cauliflower	½ cup	2
Cereal, bran or wheat	½ cup	2 to 3
Cheese, cream	1 ounce	2
Corn	½ cup	2
Cream of wheat	½ cup	3
Cream, light or half-and-half	2 tablespoons	1
Greens: collard, beet, mustard and kale	½ cup	2
Muffin	2 ounces	3
Mushrooms, canned	½ cup	1.5
Oatmeal	½ cup	3
Pancake or waffle, 4”	1 each	2
Peas, green, canned	½ cup	3.5
Potato, baked w/skin	1 medium	3
Rice, white or brown	½ cup	2.5

Foods	Serving	Protein (g)
Rice, wild	½ cup	3.5
Sour cream	½ cup	2.5
Spaghetti, whole wheat	½ cup	3.5
Spinach	½ cup	3
Squash	½ cup	1.5
Tomato sauce	½ cup	2
Tortilla, flour	1 each	2.5
Yogurt, frozen	½ cup	3
Fats and oils	1 tablespoon	0
Fruit and fruit juices not previously listed	1 piece or ½ cup	<1
Vegetables and vegetable juice not previously listed	½ cup	1 to 2

Vegetarian protein	Serving	Protein (g)
Tempeh	1 cup	31
Edamame	1 cup	29
Seitan	3 ounces	21
Lentils	1 cup	18
Beans	1 cup	15
Veggie burger	1 patty	13
Tofu	4 ounces	10
Peas	1 cup	8
Quinoa	1 cup	8
TVP	½ cup	8
Nut butters	2 tablespoons	8
Soy milk	1 cup	7
Seeds	¼ cup	6
Soy yogurt	1 cup	6
Nuts	¼ cup	4

Appendix

Cervical spine postoperative care

0 to 2 weeks (immediate postoperative)

- Heightened concern for wound cleanliness
- Stay hydrated
 - Continue to increase water/fluids
- Follow bowel protocol
 - Stool softeners/laxatives as long as you are taking opioids
 - See your After Visit Summary
- Continue incentive spirometer
 - Slow inhale for 3 to 5 seconds
 - 5 to 10 breaths, at least three to five times per day
- Pain management
 - Pain medications as prescribed by your surgeon
 - Breathing exercises
 - Mindfulness/relaxation strategies
 - Sleep positions (pillows for support)
 - Positional changes (don't spend too much time in one place, 60 minutes should be your limit)
- **Avoid** overhead movements
 - Washing hair/face OK
- **Avoid** lifting and carrying in your arms if it strains your neck or shoulder.
- **Avoid** any fast or excessive neck twisting or rotation
 - Slow, controlled, pain-free movements are safe and OK
 - Think conversation head movements (unless in collar)
- Walking program
 - Short, frequent walks to limit flare ups

2 to 4 weeks

- Lift and carry no more than 5 pounds until surgeon allows
- Promote and reinforce good posture and body mechanics
- Progress walking program
- Practice safe car transfers

Cervical spine fusion

Bracing

- Your surgeon may consider a brace/collar for your surgical recovery based on the surgery type and/or bone quality. It is used to help provide support to the area and limit motion, which can allow for healing and minimize complications.
- It is OK to take your collar off to shower, check incision site, change clothes.

Driving

- **If you have to wear a collar, no driving until collar is off per surgeon.**
- Driving is allowed once the patient is off of prescription pain medicine.
- Driving is allowed once the patient is able to get in and out of the car as a passenger comfortably.
- Avoid driving longer than 20 minutes for the first four weeks. Do not drive longer than your sitting tolerance allows.

Physical therapy (skilled nursing facility, home care or patient-directed)

- Promote general lower extremity strengthening, general mobility that includes walking as tolerated, good body mechanics with movement, proper log rolling and good sleeping postures.

Outpatient physical therapy

- Goal is to improve range of motion and strengthen in the neck and shoulder girdle musculature.
- Promote a progressive walking exercise program. Increase time, distance, or frequency slowly, as tolerated.
- Promote good sleeping postures and tips for better sleep.
- Promote and reinforce good posture and body mechanics.
- Promote pacing strategies.
- General lower extremity strengthening.
- Modalities if needed for pain.
- Avoid stationary bike and upper body ergometer (UBE).

Appendix

Lower back surgery postoperative care

0 to 2 weeks

- Heightened concern for wound cleanliness
- Stay hydrated
 - Continue to increase water/fluids
- Follow bowel protocol
 - Stool softeners/laxatives as long as you are taking opioids
 - See your After Visit Summary
- Continue incentive spirometer
 - Slow inhale for 3 to 5 seconds
 - 5 to 10 breaths, at least three to five times per day
- Pain management
 - Pain medications as prescribed by your surgeon
 - Breathing exercises
 - Mindfulness/relaxation strategies
 - Sleep positions (pillows for support)
 - Positional changes (don't spend too much time in one place)
- Focus on safe mobility, increase walking tolerance
- **NO bending, lifting more than 5 pounds, or twisting** to minimize strain on surgery site
- Walking program
 - Short, frequent walks to limit flare ups

0 to 4 weeks

- Avoid lifting more than 5 pounds, bending or twisting activities.
- Avoid walking up or down steep inclines.
- Avoid sitting longer than 60 minutes.
- Avoid stationary bikes or Upper Body Ergometer (UBEs).
- Promote and reinforce good posture and body mechanics.
- Increase walking tolerance. Start low and increase as tolerated by time or distance.
- Practice safe car transfers.

Lumbar fusion

Bracing

- The surgeon may consider a brace for your surgical recovery based on the surgery type and/or bone quality. It is used to help provide support to the area and limit motion, which can allow for healing and minimize complications. When bracing is being used, it is to be used when out of bed. **Any exceptions** to this would be **clearly defined** upon discharge.
- It is OK to take your brace off to change clothes, shower or check incision site.

Driving

- Driving is allowed once the patient is off prescription pain medicine.
- Driving is allowed once the patient can get in and out of the car as a passenger comfortably.
- Keep trips to **30 min or less (in-town)** for the first four weeks. Do not drive longer than your sitting tolerance allows.

Physical therapy (skilled nursing facility, home care or patient-directed)

- Promote general lower extremity and postural strengthening. Suggested exercises include: ankle pumps, quad sets, glute sets, heel slides, hip abduction, shoulder rolls, mini-squats and short arc quads based on patients safe tolerance.

Outpatient physical therapy

- Start physical therapy at 10 to 12 weeks after surgery for lumbar fusions to allow healing.

0 to 12 weeks:

- Promote a progressive walking exercise program. Increase time, distance or frequency slowly, as tolerated.
- Promote good sleeping positions and tips for better sleep.
- Promote and reinforce good posture and body mechanics.
- Promote pacing strategies.
- General lower extremity strengthening.
- Modalities if needed for pain.
- Avoid stationary bike and upper body ergometer (UBE).

After 10 to 12 weeks:

- Focus on improving range of motion.
- Progressively strengthen the lumbar and core musculature.
- Promote a progressive aerobic exercise program.
- Safely return to home, work and recreational activities based on surgeon recommendations.

Important numbers

If you're unsure who to contact, please call the switchboard at 503-561-5200 or 1-800-876-1718.

Salem Health Spine Center main number: 503-814-2225

Salem Health Spine Center navigator: 503-814-1199

Capital Neurosurgery Specialists: 503-399-1386

Community Health Education Center	503-814-2432
Computed tomography (CT)	503-814-1359
Diagnostic radiology	503-814-1234
Foundation office	503-814-1990
Hospital switchboard	503-561-5200
Imaging scheduling	503-814-5293
Laboratory services	503-561-5390
MRI scanning	503-814-1349

Nursing departments

Ask for a specific department	503-561-5200
Neuro Trauma Care Unit	503-814-7140
Occupational medicine	503-814-5352
Patient advocacy	503-561-5765
Patient financial services	503-814-2455
Pharmacy	503-814-0412
Rehabilitation Center	503-561-5986
Social services	503-814-1808
Spiritual care	503-561-5562
TDD (Hearing Impaired)	503-814-1076
Urgent Care	503-814-5554

Thank you for choosing the Salem Health Spine Center for your spine care. We know you have many choices in health care and appreciate you choosing us to care for you.



Salem Health Spine Center