

Understanding spine surgery

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Welcome

Thank you for choosing Legacy Spine Centers. Preparing and planning for your spine surgery is vital for a successful result. Our Spine Centers provide complete care before and after your surgery. Our Spine Center team is there to support you all along the way. The team is excited to be your partner.

This notebook is for you and your family to use before, during and after your hospital stay. It will help you take part in your care. The information is split into three parts:

- Preparing for surgery
- During your hospital stay
- Recovering at home

Remember to bring this notebook with you to the hospital and any office visits about your surgery.

We want to make your recovery and healing as easy and pleasant as possible. Our goal is to help you during your upcoming surgery, along with returning home with the knowledge and confidence for a successful recovery.

— Your Legacy Spine Center Team

Preparing for surgery

Spine surgery is a big life event. Before coming to the hospital, you will have several calls from and appointments with hospital staff and your surgeon's office to help you get ready for surgery.

There are things that you can do to make sure you are ready for surgery and for your return home. Further information about each of these steps can be found on the next pages.

Presurgical appointments

Your presurgical appointments are important to prepare you for the best possible result. We will gather important information about your health so we can safely care for you. Completing these visits as scheduled will help avoid any delays or cancellations on the day of surgery.

Preadmission services

- Legacy Patient Access will call you to verify your address, contact information and insurance.
- A nurse from the preadmission office will also call you to check your health history and current medicines. The nurse will also go over information about your hospital stay and how you can take part in your recovery.
- If you are in the Bloodless Surgery Program and have not already done so, please call the program at 503-413-8396.

Medical clearance

You may need a medical clearance workup. It should take place about three weeks before your surgery. To schedule, you will hear from your surgeon's office or Legacy preadmission.

A medical clearance workup may include:

- A review of your health history and current medicines
- A physical exam
- Blood draw
- Urine sample
- EKG — (electrocardiogram — a test to check your heart). Wear comfortable clothing.

There are medications that you need to avoid before surgery. Please discuss all of your medications with your preadmission nurse and with the provider performing your medical clearance.

- Fill out the form on the next page with all your medications, including any vitamin or herbal supplements you take. Share the information with your preadmission nurse and your surgeon. There are medications you may need to stop before surgery.
- Ask your doctor or surgeon to write down any instructions about what medicines to stop before surgery and when and what medicines can be taken the morning of surgery.

Prepare your supporters

Legacy Health is dedicated to family-centered care. However you define family, their involvement is an important part of your experience.

The best place for you after surgery is your home, with people to help you. Every patient gets better at different speeds. How much care and extra support you need will depend on how you feel and how well you are moving.

- We encourage a family member or friend to come with you to your office visits.
- Share this notebook and any other information you receive with your support person.
- You will need someone to drive you home from the hospital and to therapy and doctors' appointments.

- You may need someone to help care for you the week or two after surgery. Your support person can help you with laundry, cleaning, shopping, taking care of a pet, etc.
- It is helpful to have your support person there during your therapy in the hospital. Our therapists will teach the person how to provide the support you need at home.

If needed, our staff will look for more support or another facility for you after surgery.

Prepare your body

What you eat and drink before and after surgery is vital in the healing process.

- Eat a well-balanced diet with fruits, veggies and lean protein. See "Nutrition before surgery," below.

Nutrition before surgery

Your diet plays a very important role in your recovery. What you eat becomes the building blocks to help rebuild muscle and tissues after surgery. Following a well-balanced diet before surgery can help prepare you for quick healing. Include these nutrients in your diet:

Protein helps to build blood, muscle, skin and organs in the body. Eat high-quality proteins such as fish, poultry, lean cuts of pork or beef, eggs and dairy to help build up tissue strength. Include protein with all your meals and snacks.

Recommended foods	Foods not recommended
Baked, boiled or grilled lean cuts of pork or beef, skinless poultry, fresh or canned seafood, fish, eggs, low-fat milk and yogurts	Fatty meats such as ribs, poultry with skin, fried meats or fish, sausages, hot dogs, pastrami, bologna or salami

Antioxidants are vitamins and minerals and other nutrients that protect and repair cells and that can boost your immune system. Antioxidants are found in colorful fruits and vegetables. Aim for 5–10 servings of fruits and vegetables daily.

Fruits	Vegetables
A serving of fruit is a tennis-ball size, ½ cup of canned fruit or 1 cup of fresh fruits. Fruits include apples, apricots, cantaloupe, honeydew, all berries, mangoes, nectarines, oranges, tangerines, kiwi, plums, red grapes, raisins, peaches, papaya and watermelon.	A serving of vegetables is 1 cup raw or ½ cup of cooked. Vegetables include asparagus, broccoli, beets, Brussels sprouts, cauliflower, kale, red/green/yellow peppers, tomatoes, sweet potatoes, spinach, eggplant and onions.

Additional nutritional supplements

If you are having trouble eating adequately, you may want to try an oral supplement such as Boost, Ensure, Carnation Instant Breakfast or similar products to help. You can also use powdered protein supplements to increase protein intake.

- Be sure to drink at least six 8-ounce glasses of fluid each day — water, juice or non-caffeinated soda.
- Keep your bowels regular. This will help prevent constipation (a common side effect of pain medication) after surgery.
- If you are diabetic, do your best to keep your blood sugar under control before surgery. High blood sugar puts you at a higher risk for an infection after surgery.
- If you drink more than two servings of alcohol per day (one serving is 12 ounces of beer, 5 ounces of wine, 1½ ounces of 80 proof liquor), talk with your doctor about how to safely lower your alcohol use before surgery. Not lowering your alcohol use before surgery can be very risky.
- Quit smoking. Patients who smoke get more infections after surgery. If you or a loved one smoke, talk with your doctor about options for quitting. Another resource is the free Tobacco Quit Line at 800-QUIT-NOW (800-784-8669), or visit www.quitnow.net.

Bowel care before surgery

Constipation, not having a bowel movement, is a common side effect of many medications, especially pain medications. Here are some general tips to help with bowel care before surgery. It is important to not be constipated before surgery.

- Try drinking prune juice or hot lemon water before bed or first thing in the morning.
- Drink 8–10 cups of non-caffeinated, nonalcoholic fluid every day.
- Exercise regularly.
- Set a regular time for a daily bowel movement when you do not feel rushed and have privacy.
- You may want to take a stool softener before surgery. This may include Colace, 100 mg twice a day.

If you are taking a stool softener before surgery, make sure your stools are not loose. If you are having loose stools, stop taking the softener until it improves. If you continue to take the stool softener after it improves, take only half the dose.

You can ask your pharmacist or doctor about which over-the-counter medications are best for you.

Prepare your home for safety

When you return home, you will not be moving about as easily as you did before surgery. A few things you can do to prevent falls and to make daily life easier:

- Remove loose rugs and bathmats.
- Pick up any clutter and clear pathways.
- Put a nonslip rubber mat or other surface on the floor of your tub or shower.
- Make sure you have a sturdy handrail by any stairs.
- Make some meals ahead of time and have them in the freezer.
- Fill prescriptions to give you plenty for many weeks.
- Store commonly used items in an easy-to-reach place.

You may need a raised toilet seat. If it is hard for you to stand up from the toilet now, it will be hard after surgery. A seat with armrests is nice if you do not have a counter close by to steady yourself. You can also have grab bars put in.

What to take to the hospital

Please come to the hospital at the instructed time and bring these items with you:

- This notebook
- Freshly washed, comfortable, loose-fitting clothing. If you will be using a back brace, you will need a cotton T-shirt and stretchy pants/sweatpants.
- Shoes with non-slip soles and offer support, comfort and stability; no high heels
- Toiletries
- Glasses, contact lenses, hearing aids and/or dentures with the storage containers
- Any inhalers, eye drops, medicated creams or CPAP machine. Please alert the staff if you bring these items to the hospital.
- For Admitting, you will need a driver's license or some other legal photo ID.
- Make every attempt to remove all jewelry, including wedding rings. In the event of an emergency, all rings will need to be removed.
- Please do not bring any other valuables with you, including credit cards or cash.
- Brace, if instructed by surgeon

Patient checklist: How to prepare for surgery

Follow these instructions to prepare for surgery and lower the risk of infection. Please read them at least two days before your surgery and follow them with care.

Note: These are general instructions for all spine surgery patients. The preadmission nurse may give you more exact information about these instructions, including the use of chlorhexidine gluconate (CHG) wipes or Hibiclens to reduce the risk of infection.

Two days before surgery

- Stop shaving. Men may continue to shave the face as long as the area shaved is not in the surgical area.
- Limit alcohol intake and do not smoke for 24 hours before surgery.

The night before surgery

- Take a warm shower or bath. Clean your skin with an antibacterial soap such as Dial, Lever 2000 or Safeguard. Your partner should also shower with antibacterial soap to help keep germs from spreading to you.
- Do not put on body products such as lotion or powder after bathing.
- Dry off with a freshly washed towel and dress in freshly washed sleep wear.
- Your bed sheets should be freshly washed. Do not let your pet sleep with you.
- Do not eat or drink anything after midnight unless told otherwise by your doctor. This includes water, gum, hard candy, lozenges and chewing tobacco.
- Tell your surgeon if you get a sore throat or fever.
- Get a good night's sleep. Set your alarm!

The morning of surgery

- Take a warm shower or bath. Clean your skin with an antibacterial soap such as Dial, Lever 2000 or Safeguard.
- Do not put on body products, lotion, deodorant or makeup, or wear contact lenses.
- Dry off with a freshly washed towel.
- Dress in freshly washed clothes for your trip to the hospital.

During your hospital stay

This section explains what you can expect during your hospital stay.

Day of surgery

Please check in at the admitting desk as explained. From there, you will be taken to your presurgical room. A friend or family member is welcome to go with you.

Before surgery you will:

- Meet the nurse who will coordinate your preoperative care.
- Change into a hospital gown.
- Have an IV (intravenous catheter) started to give you fluids and antibiotics.
- Have your surgical site marked and prepared.
- Confirm your surgery with your surgeon.
- Speak with the anesthesia provider and surgical nurse about your surgery.

During surgery

The time spent in surgery and surgical recovery varies per patient. While you are in surgery, friends and family can wait in our waiting areas. The surgeon will want to talk with them when your surgery is finished.

After surgery

After surgery you will be transported to the recovery room. The specially trained staff will care for you as you wake up from anesthesia.

- Your heart rate, blood pressure, breathing status and temperature will be checked closely.

- Nurses will assess and treat your pain and any nausea you may feel.
- You may have a tube (Foley catheter) that collects your urine.
- Your surgical site will be covered with a dressing.
- You may have a tube for drainage from your surgical site.
- You will have sequential compression devices (SCDs) on your legs to prevent blood clots.

When you are ready to leave the recovery room, we will transport you to your hospital room. Your friend or family member will be able to join you.

Your care team and your care after surgery

While you are in the hospital after surgery, your care team consists of you and a number of rehab experts. The first day and night after your surgery is an important time for us provide close care. This means we will assess your heart rate, breathing, moving around and pain. We may wake you during your rest time; it is important to let us know how you are doing. Please press the call button at any time to ask your care team any questions.

What happens to your belongings?

Your belongings will be locked up until you have been given a room. Our staff will transport your belongings to your new room. If you wish, your family member can keep your belongings and take them to your room.

What is Legacy doing to prevent surgical site infections?

To prevent surgical site infections, all health workers are taking these steps:

- Washing their hands with either soap and water or an alcohol-based hand rub before and after caring for you
- Using an electric clipper to remove any hair that needs to be removed before your surgery, instead of using a razor
- Making sure that you are warmed before, during and after surgery. Patients with a cooler skin temperature are at higher risk for developing an infection after surgery.
- Giving you antibiotics before your surgery starts. In most cases, you will get an antibiotic within the 60 minutes before surgery, and the antibiotic will be stopped within 24 hours after surgery. If you already have an infection of some kind before surgery, your antibiotics may be continued longer than 24 hours.
- Cleaning the skin at the site of your surgery with a special germ-free wipe that kills germs and prevents infection, before you go to your surgery

The road to recovery

This section introduces key steps in your healing. While these steps start in the hospital, you will continue them at home.

Pain management

The pain you have before surgery is the result of a problem such as a bulging disk, a pinched nerve or instability in your spine. Movements like regular walking, lifting or bending may have caused more injury and were painful, so you likely avoided them.

After surgery, you can be confident that these problems have been repaired and that normal movement within your surgeon's restrictions will not cause further injury.

Your pain after surgery may be different than beforehand. This is the result of the surgery itself and is normal. As the incision heals, and with time, it will get better. Getting out of bed and walking after surgery will help increase blood flow to your spine, lubricate your joints, improve flexibility and speed up the process of healing.

When pain prevents you from doing what is needed to get up and move or rest comfortably, we want to know. As you progress, the pain should be less. Tell us how you feel, and how well the pain medications are working. After surgery, you may need both IV medications and pain pills at first. By the time you leave the hospital, you will be taking only pain pills.

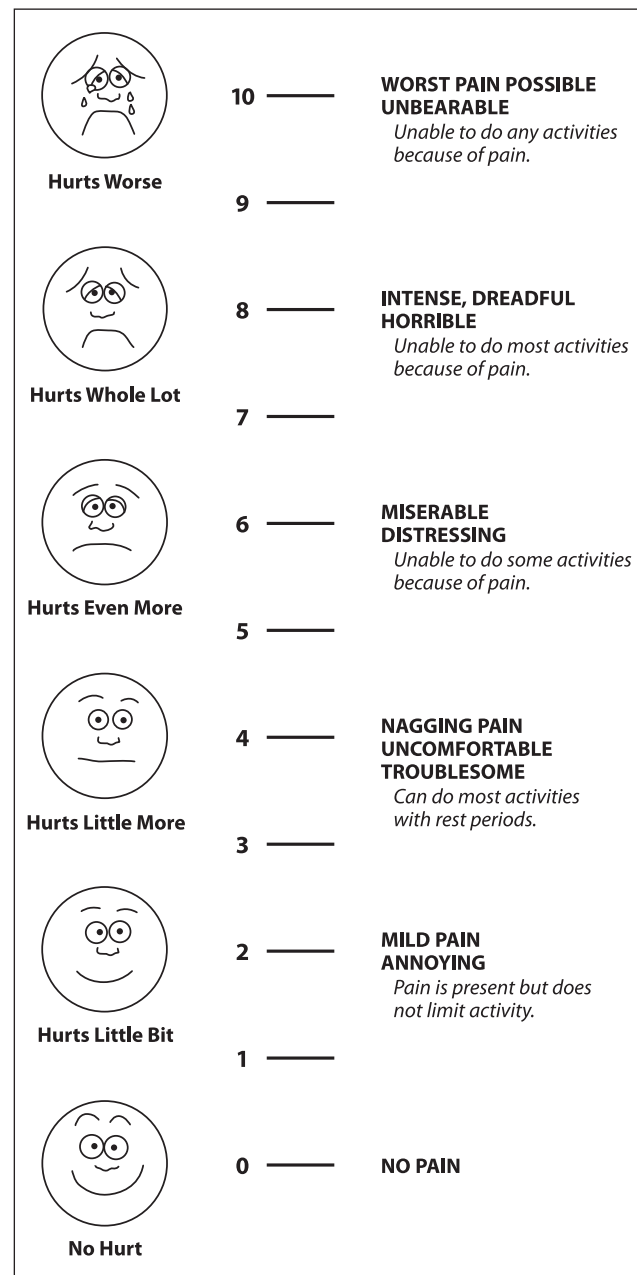
Here are some ways that you can help control your pain after surgery:

- Let your nurse know as soon as you start to feel discomfort so we can continue to provide pain control.
- Try to move and change your position. (Pictures of what to do are on pages 13–21.)
- Use relaxation techniques. By practicing slow focused breathing *before* surgery, you can learn how to make breathing an effective tool during your healing.
- Applying an ice pack to your surgical area for 15–20 minutes from time to time throughout the day often will help with pain control and help to decrease swelling. Check with your nurse before applying ice; it is not advised in all cases. Ice should

never be applied directly to the skin. Wrap the ice pack in a pillowcase or towel to protect skin.

Get up and move

Getting up and moving is the most important part of your recovery. It is the best way to decrease pain and reduce the risks of bad side effects. Moving helps digestion, blood flow and lung health. Each



This is one tool your nurse may use to better understand your pain.

time you get up will be easier, and you will be one step closer to recovery.

After your back surgery, you may need a walker or a cane to move around. Wear shoes or slippers with nonslip soles. Stand up straight and look ahead when walking. Slowly increase the distance you walk. It is important for your recovery to walk at least four to six times daily.

Nursing and therapy staff will help you when you are first getting up and walking. Until you are given a go-ahead by staff, always have a member of your health care team help with activity.

Braces

If you are going to have a spinal fusion, your surgeon may order a neck or back brace to protect your spine while it heals. You will wear the brace at all times, except for showering and in bed, for six to 12 weeks, or as ordered by your surgeon.

Keeping lungs healthy

Following surgery, some patients get congested, which can lead to pneumonia. To prevent pneumonia, your nurse will instruct you on coughing and deep breathing, as well as using a tool called an incentive spirometer (IS). Getting out of bed also helps your lungs work the right way.

Getting rest

It is important to get rest during most of your recovery. Create a balance between hard work and downtime. Resting in bed without distractions is the best way to recharge. We encourage you to limit your visitors during your initial recovery.

Preventing blood clots

Blood clots in the legs can form after surgery as a result of patients being less active. Clots may occur in a vein in the leg, pelvis or arm or in the lungs; a blood clot is a very serious condition. There are many things you and your health care team will do to help prevent blood clots:

- You will wear sequential compression devices (SCDs). They provide gentle, intermittent (turning on and off) compression to your calves. SCDs should be worn at all times except when you are walking or exercising.

- Exercise about every two hours (see examples on pages 22–23):
 - Start by wiggling your toes.
 - Next, pump your ankles up and down.
 - Tighten your thigh muscles (quad sets).
 - Tighten the muscles in your bottom (gluteal sets).

Tell your surgeon if you or anyone in your family has a history of blood clots.

These may be signs of a blood clot and should be immediately reported to your doctor:

- Swelling, warmth, redness, calf pain or tenderness in either leg
- Problem breathing or chest pain

Bladder care

If you have a urine catheter, we will remove it the day after your surgery to cut the risk of getting a bladder infection. While you may be nervous about getting up and going to the bathroom, this is actually a big step in your healing. Our staff will help you to the bathroom, or we can supply a bedside commode until you are able to walk.

Bowel care

You will be on a stool softener to try to avoid constipation while you are in the hospital, which can come from the pain medicine and not moving around after surgery. See page 7 for general tips.

Here are some more ways to keep your bowels regular when you leave the hospital and during recovery:

- Continue to get up and move around frequently.
- Stay hydrated.
- You may need a laxative, along with your stool softener. We recommend one that includes senna, e.g., Senokot-S. Follow the dosing instructions on the label.
- If you have not had a bowel movement in two days, try taking two additional laxative tablets at noon. If you still have no bowel movement, try milk of magnesia before bed. Follow the dosing instructions on the label.
- If no results, try a suppository, e.g., Ducolax.

Contact your surgeon if you are still constipated after changing your diet and taking stool softeners, laxatives or suppositories.

Leaving the hospital

Together we will make a plan to allow you to leave the hospital safely. This will include helping you get any equipment or other support you may need. To go home you need to meet these standards:

- Be able to get in and out of bed with a little help.
- Show safety with movement and walk a distance to make you safe at home. Be able to navigate stairs if you have them.
- Have your help at home trained to help you.
- Be able to take food and fluids without nausea or vomiting.
- Have no signs of infection.
- Understand your discharge instructions.

When you go home, you will continue to walk often and do the exercises from this guide. Your surgeon may order home health physical therapy or outpatient physical therapy after your follow-up appointment.

Before you leave the hospital, your doctor will write a prescription for pain medication. This will be determined by which medication has been helpful for your pain and recovery.

Spine precautions

These are general guidelines for activity after spine surgery. Be sure to follow any specific instructions given to you by your surgeon or therapist.

- Minimize bending and twisting.
- No lifting more than five pounds
- Avoid sleeping on your stomach. Lie on your side or back with a pillow between your knees.
- Change positions often, if a certain position causes you discomfort.
- You may sit in a supportive chair for a short amount of time. Do not sit for longer than 30 minutes. You will gradually increase this time as you build up strength and tolerance.

- Do not start any new exercise program, except walking, without first talking with your doctor.
- Do not drive without consent from your doctor.
- No soaking in bathtubs, hot tubs or swimming pools without talking with your doctor. Normally you are able to do this after your incision is completely healed, which is around three weeks.
- If your surgeon ordered a brace for you, wear it as prescribed.

In addition to the above spine precautions, neck precautions also include:

- Minimize bending or twisting of the neck.
- No overhead lifting without talking to your doctor. This includes lifting your arms and hands above your head.
- Your throat may be sore. Start with a liquid diet and soft foods. If you have increased hoarseness or difficulty swallowing, contact your surgeon.

Remember: no BLTs

- **No Bending**
- **No Lifting**
- **No Twisting**
- **Limited Sitting**

Stairs

Patients will often have one leg that is stronger than the other, often before surgery and then lasting for a while after surgery.

- When using stairs, use the handrail if one is available.
- Step up with your stronger leg first, then follow with your weaker leg.
- When going down stairs, step down with your weaker leg first, then follow with your stronger leg.

You may be asked to show you can walk on stairs safely before leaving the hospital.

Correct body movement

The pictures on the following pages show how you can move and position your body during activity in ways that will help you keep your spine healthy, not only after surgery but for life.

Sleeping positions

- Use a firm mattress.
- Use pillows for positioning.
- You may sleep on your back or side.

On back



Place pillow under knees. A pillow with neck support and a roll around waist are also helpful.

On side



Place pillow between knees. Use support under neck and a roll around waist as needed.

Log roll / bed mobility



On your back, bend your knees and place your arm across your chest.



In one movement, roll to your side, keeping your hips and shoulders in line.



To sit up, use your arms to help, moving without twisting. Keep your upper body in line with your legs. Always move as one unit. To lie down, use the same move in reverse.



Back care

Posture: standing



Good posture is important. Try not to slouch or push your head forward. Keep your back straight, your ears over your shoulders and your hips over your ankles.



When standing to do things like brushing your teeth, place one foot on a ledge, and if needed, one hand on the counter. If needed, bend your other knee slightly to keep your back straight.

Avoid twisting



Turn around by moving your feet, and bend at the knees if needed when reaching for things.



Try not to twist or bend your back.

Posture: sitting

- Avoid slouching or slumping.
- Avoid chaise lounges, soft sofas, chairs on wheels or chairs with moveable supports.
- Avoid deep, low chairs. They are difficult to get up from.
- Adjust chairs for proper height. Knees and hips should be at a 90-degree angle.
- Use chairs with armrests and back support.



Stairs

Go up stairs stepping with your stronger leg first. Bring your sore/weaker leg up to that step. Take a moment to get your balance, then continue up steps, leading with your stronger leg.

Go down stairs by placing your sore/weaker leg on the step first. Take a moment to get your balance. Then bring your stronger leg down to that step.

Remember to go up stairs with the good leg first and down stairs with the bad leg first.



Going up stairs



Going down stairs

Daily living



Stand close to the work area. Bend your knees, not your back.



Use a reacher to pick up light items.

Keep everyday items between waist and shoulder level to avoid bending, twisting or reaching. Ideal work height is no more than two to four inches below elbow level when standing and at elbow level when sitting. Do not reach for items that are more than an arm's length away. When you reach, keep your elbows slightly bent.



Dressing your lower body



Lie on your back to pull socks or slacks over your feet, or sit and bend your leg while keeping your back straight. If you lie on your back, remember to keep your other leg bent to avoid pressure on your back. Avoid this if it is painful, and have someone help you.

Dressing your lower body with adaptive equipment



You may need to use adaptive equipment to dress yourself. A reacher can help with putting on pants and underpants. A sock aid, a long shoehorn and a long-handled bath sponge may also be required.

Getting into and out of a car



Lower yourself onto the seat, scoot back and then turn to face forward. Avoid twisting. Then bring in one leg at a time. Reverse the movements to get out.



Working at a desk or computer

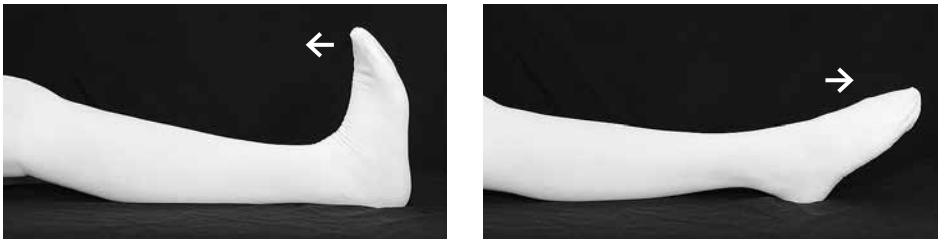
Position your work so you can face forward. Use proper work and seat height. Keep your shoulders back and down, your wrists straight and your elbows at right angles. Use a chair that provides full back support. Add a footrest and back roll as needed. Set a timer or place a sticky note on the monitor to remind yourself to change position every 30–40 minutes.



Exercises

Ankle pumps

Point and pull back toes to flex/extend ankle, alternating feet. Repeat 10–15 times, periodically throughout the day.



Gluteal squeeze

Squeeze gluteal (bottom) muscles, hold for five seconds and release. Repeat 10–15 times, two or three times a day.



Quad sets

Tighten muscles on top of thigh by gently pushing knee down into the surface, hold for five seconds and release. Repeat 10–15 times, two to three times a day.



Core stability

Lying on your back with knees bent, tighten stomach and hold for five seconds. Repeat 10–15 times, two or three times a day.



Heel slide

Bend knee and slide heel toward your bottom. Straighten out knee and relax. Repeat 10–15 times, two to three times a day.



Recovering at home

This section has information about things that you can do at home to continue the path of recovery.

Regular follow-up office visits with your surgeon

It is very important over the weeks to come that you keep in touch with your surgeon. Your surgeon will decide how often you need to be seen; you are responsible for making those appointments..

Pain medication

Make sure you have all the medicine at home when you get there and take it as ordered by your doctor. Some pain medications need a written prescription and cannot be refilled over the phone or fax. Plan for plenty of time to refill your medications.

Do not expect to be fully free of pain. However, you can expect to have your pain reduced to allow you to move, breathe deeply and rest. Remember, moving your body is important for faster healing. But, if the pain is too bad, stop. Breathe and be more gentle with how you move.

Here are more tips that may help with pain:

- Take pain medicine regularly.
- Keep a log sheet with doses and activity.
- Treat your pain early, before it gets worse.
- Keep your pain medicine in a safe place near you at night in case you wake up needing more.
- Take a little pain medication before activity or physical therapy. This will help with moving and working with the activity or physical therapy.
- Use an ice pack and find a comfortable position and take your mind off the pain with TV or music.

Pain medicine will help your recovery but can also have some side effects. Always follow instructions. In addition, keep the following in mind:

- Make sure you have a ride to and from any appointments while you are taking pain medicine.
- Taking pain medication with food in your stomach and plenty of water helps to prevent an upset stomach.

- Increase your intake of fluids, fiber and fruits, which help prevent constipation. See page 11 for more tips.
- Call your doctor if you develop a rash, itching, swelling or repeated nausea while taking pain medicine.
- Do not drink alcohol while taking pain medicine.
- Do not stop taking your pain medication suddenly, especially if you have been taking it consistently for three to four weeks. Stopping pain medications suddenly can lead to pain and withdrawal symptoms such as nausea, vomiting, sweating, depression, abdominal cramping, irritability, chills, weakness, insomnia, increased blood pressure and palpitations (abnormal heartbeats). These symptoms can be life-threatening. All narcotic pain medicine needs to be slowly discontinued under the direction of a doctor.

When to call your doctor

Most people recover from spine surgery without complications. The most serious complications:

- Surgical site infection
- Blood clots

Preventing surgical site infection

A surgical site infection (SSI) can occur after surgery in the part of the body where the surgery took place. Most patients who have surgery do not develop an infection.

This notebook gave information on page 8 on how to prevent infection before surgery. After returning home you can do the following to prevent infection:

- Ask family and friends to clean their hands before visiting.
- Family and friends should not touch your surgical site or dressing.
- Follow your doctor's instructions for caring for your incision.
- Always clean your hands before and after caring for your surgical site.
- Always use fresh clean towels after showering and put on freshly cleaned clothes. Use a fresh sheet or towel over your chair before sitting.

If you have any concerns about infections, we recommend that you have someone check your wound area and check your temperature.

Call your doctor if have any of these signs of infection:

- **Increased redness and pain around the area where you had surgery**
- **Drainage of cloudy fluid from your surgical site**
- **Fever**
- **Bad odor from your surgical site**

Most surgical site infections can be treated with antibiotics, though some patients with a surgical site infection may need additional surgery to treat the infection.

Preventing blood clots

When you are home, it is important to follow some of the same steps you used in the hospital to prevent blood clots:

- Change positions and move frequently.
- Pump your ankles up and down.
- Tighten and release your thigh muscles and muscles in your bottom.
- Avoid crossing your legs.
- Reduce salt in your diet.
- Take medications to decrease risk of blood clots, if your doctor prescribed them.

Call your doctor or go to the emergency department if you experience any of these symptoms in your arms and legs:

- **Swelling**
- **Increased warmth**
- **Pain or tenderness**
- **Changes in skin color (redness)**

Go to the emergency department or call 911 if you have these symptoms:

- **Chest pain**
- **Difficulty breathing (shortness of breath)**
- **Coughing up blood**
- **Loss of consciousness**
- **Dizziness or fainting**
- **Rapid heart rate**

Mobility and rehabilitation services

While this notebook provides some guidance on moving around after surgery, your surgeon may recommend you have additional rehabilitation. Legacy Rehabilitation Services provides expert help in recovering after surgery. Our physical therapists will provide you with personalized care in 45-minute to one-hour appointments. We can help you:

- Get back to moving and walking again.
- Learn strategies to help manage pain.
- Regain strength that has been lost due to decreased activity.

Call 503-413-3707 today to set up your outpatient appointment. We accept most insurance plans and provide assistance in insurance verification and authorization.

Our locations

- Legacy Emanuel Medical Center, Northeast Portland
- Legacy Good Samaritan Medical Center, Northwest Portland
- Legacy Meridian Park Medical Center, Tualatin
- Legacy Mount Hood Medical Center, Gresham
- Legacy Salmon Creek Medical Center, Vancouver, Wash.
- Legacy Silverton Medical Center, Silverton, Ore.

Thank you for choosing a Legacy Spine Center as your partner for your upcoming spine surgery.

Anatomy overview

Your spine is made of 33 bones (vertebrae), discs, facets, ligaments and nerves. The bones are the building blocks that provide the basic structure of your spine and protect the nerves. The discs are located between the bones and work as shock absorbers. They also allow flexibility of the spine.

The facets are small joints located between and behind the vertebrae that help stabilize the spine.

The neck is known as the cervical spine, the mid back as the thoracic spine and the low back as the lumbar spine. The cervical spine has seven bones, the thoracic spine has 12 bones (with ribs attached) and the lumbar spine has five bones.

If your symptoms are only in the middle of your neck or back, they are referred to as axial symptoms (pain, numbness, tingling). If your symptoms radiate into the upper and/or lower extremities, these symptoms are referred to as radicular symptoms. Axial symptoms are usually caused by a problem with the disc. Radicular symptoms are usually caused by irritation or compression of the nerve.

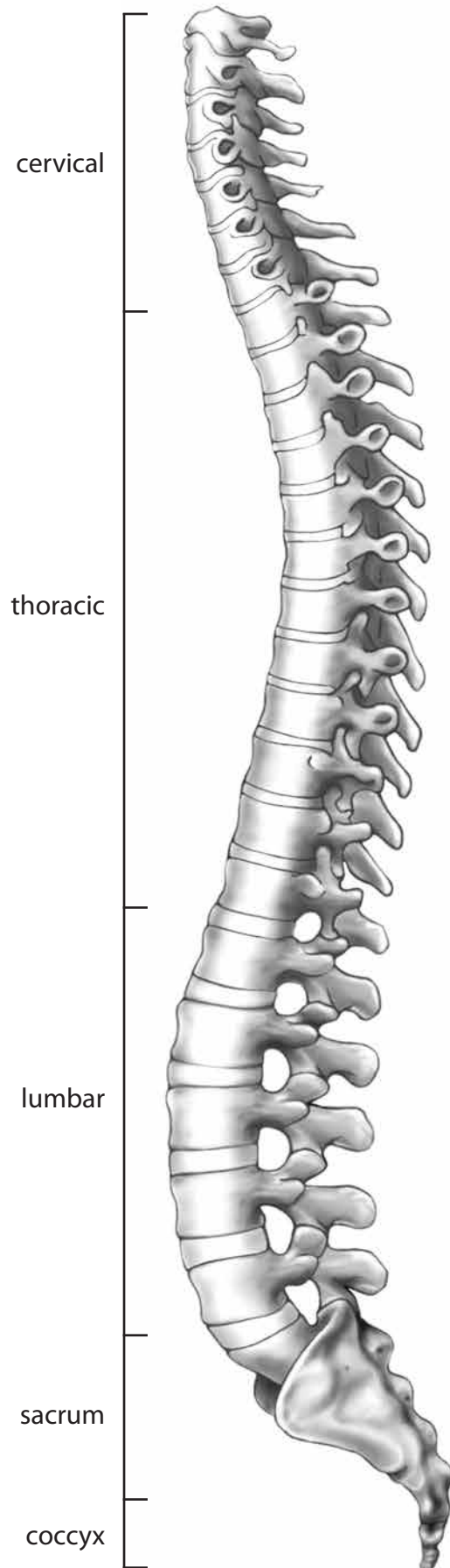
Disc disease

Many conditions in the spine are the result of the disc failing to work as a shock absorber. The center portion of the disc is a fluid-saturated material that allows stable motion of the spine. The disc can lose fluid because of one single injury or many smaller injuries. It can also lose fluid for unknown reasons in an otherwise healthy person and as part of the aging process.

As the disc weakens, it can result in internal disc disease, disc herniation, stenosis or spondylolisthesis. This typically results in a combination of axial (neck/back) symptoms and radicular (upper/lower extremity) symptoms.

Internal disc disease results in neck or back pain with or without extremity symptoms. The disc develops cracks and tears in the center and the outer walls that result in irritation of the nearby nerves.

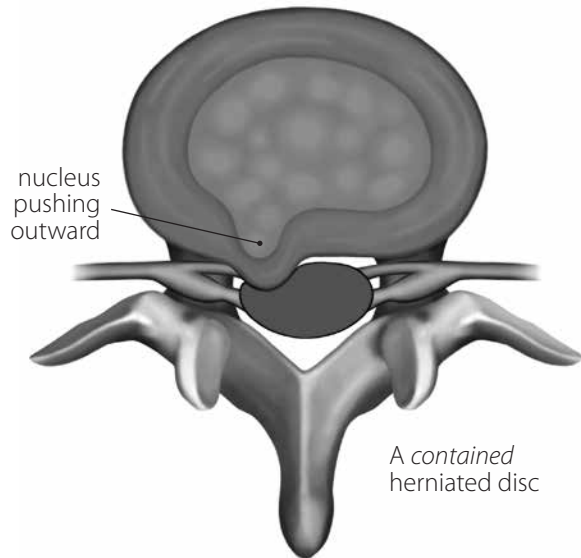
A disc herniation is known as an HNP (herniated nucleus pulposus) and occurs when the outside wall of the disc weakens. The weakened wall expands and compresses the nearby nerve.



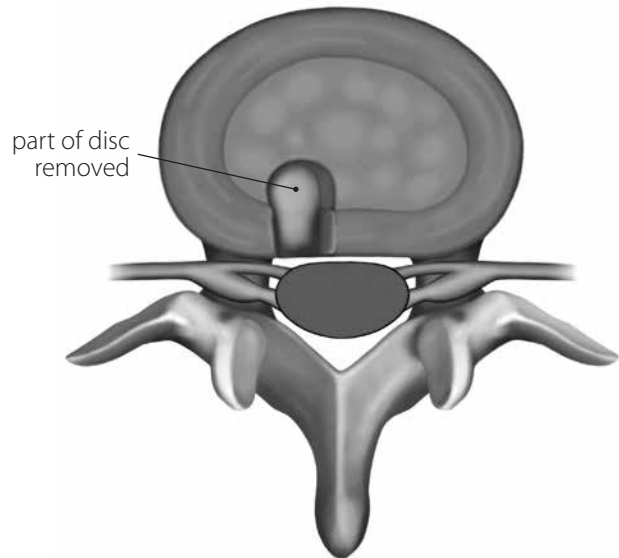
Stenosis and spondylolisthesis occur when the disc fails as a shock absorber and allows too much motion. The body responds by making bone spurs to fuse or stiffen the spine. The bone spurs work as spot welds to stop the spine from moving. When the spurs from each side meet, the spine is fused

and is less painful. If the spurs grow too large, the room for the nerves is narrowed. The narrowing is referred to as stenosis. If the disc becomes unstable, one bone shifts forward on another and is known as a spondylolisthesis.

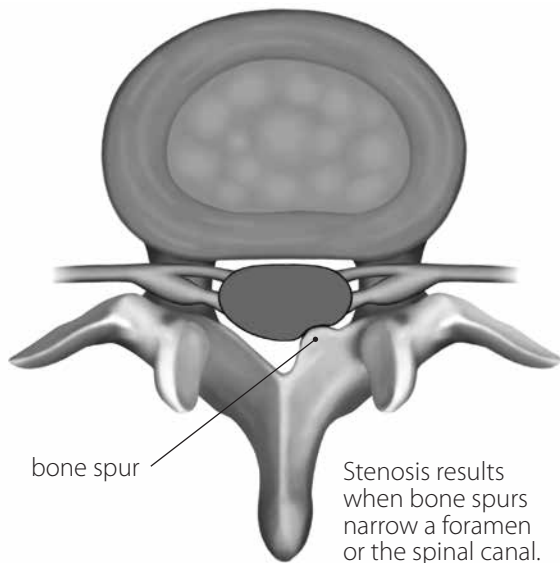
Herniated disc before treatment



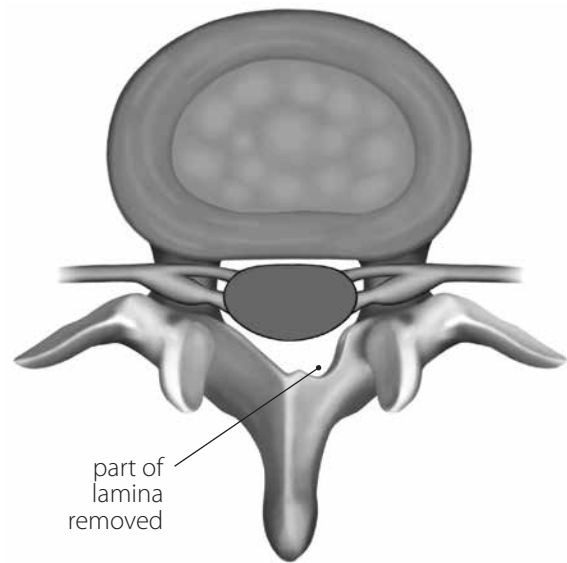
Herniated disc after treatment



Stenosis before treatment



Stenosis after treatment



Surgical treatment

Surgical treatment is considered when nonsurgical treatment has not worked. The three types of surgery on either the neck or the back include decompression, fusion and motion preservation.

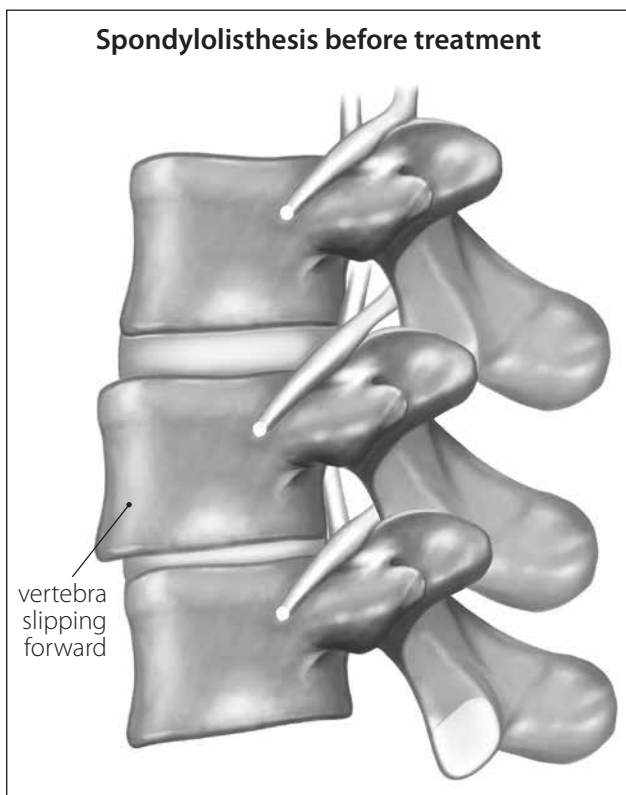
Decompression includes any procedure where either bone or disc is removed to relieve compression on a nerve. This is described medically as either discectomy, laminotomy, foraminotomy or laminectomy.

Fusion includes any procedure where spine segments with excessive painful motion are operated on so that they join together with bone and no longer move.

Motion preservation includes any procedure where spine segments with excessive painful motion are stabilized while preserving motion. An artificial disc is an example of this.



Cervical spine fusion



Spondylolisthesis can occur when a worn disc allows the vertebra above it to slip forward.

Ask your surgeon which procedure is planned for you:

Fusion surgery

Before undergoing fusion surgery, you may want to understand more about the procedure. In fusion surgery, your surgeon links together two or more vertebrae into a single, solid bone to relieve pressure off of the spinal nerves.

Spinal fusions use some type of bone material, called a bone graft, to help promote the fusion. Generally, small pieces of bone are placed into the space between the vertebrae to be fused. The type of material used is determined by the condition of the bone and the surgeon.

Rods and screws help hold the fusion in place while it heals. The hardware is titanium and not likely to trigger security alarms or airport security.

The procedure describes the approach and location of the surgery. Here are a few examples:

- ACDF — Anterior approach, done from the front, cervical decompression and fusion
- PCF — Posterior approach, done from the back, cervical fusion
- PLIF — Posterior approach, done from the back, lumbar interbody fusion
- TLIF — Transforaminal approach, from the side and from the back, lumbar interbody fusion
- XLIF — Extreme approach, performed from the side, lumbar interbody fusion

Nine for spine: Nine back-to-basics tips

While your back is a complex system of bones, nerves, discs, muscles and other tissues, keeping it healthy actually is fairly straightforward. A survey of North American Spine Society members revealed the top nine “back-to-basics” tips spine experts wish their patients followed. For more information on keeping your back healthy, visit www.knowyourback.org.

1 Exercise regularly to improve overall health and reduce the chance of back pain. To stay healthy, your spine needs a regular regimen of stretching, strengthening and aerobic conditioning exercises such as swimming, yoga, light weights and walking. Without exercise, your muscles can become weak and deconditioned, which can lead to back pain and injury. Work with a spine specialist to find the right exercises to help you stay healthy, strong, stress- and pain-free.

2 Do not smoke! Many spine experts report that smokers are prone to more back pain than nonsmokers. It is believed that smoking restricts blood flow to the discs that cushion your vertebrae, reduces calcium absorption and prevents new bone growth. Many spine surgeons are reluctant to perform certain surgeries, such as fusion, on patients who smoke because it can prevent or slow healing.

3 Maintain a healthy body weight. Extra weight, particularly in the mid-section or belly, shifts your body’s center of gravity forward and places unneeded strain on your back muscles and the surrounding tissues. It also is possible to be too thin, as extreme thinness can be accompanied by low bone mass and place you at risk for osteoporosis. Working with your doctor, determine your ideal body weight and try and stay within 10 pounds of that weight.

4 Keep your core muscles strong. Weak or tight core (back and abdominal) muscles cannot support your back properly, leading to pain and injury risk. Work with a spine specialist to find exercises that stretch and strengthen your back and abdominal muscles, such as yoga or Pilates.

5 Use proper body mechanics when you lift, bend or stretch. If you must lift or move something heavy, do it safely. Find a partner to share the load. Instead of pulling or lifting a heavy object, push it. To reduce stress on the lower spine and reduce injuries, squat close to the object, keep its

weight close to your body and keep your back straight and head up — do not bend over to lift.

6 Check and alter your posture frequently while using your laptop, smartphone or tablet. Thanks to technology, injuring our backs has never been easier. Hunching over tablets, smartphones and laptops can cause painful neck and back strain. Being connected 24 hours a day can actually add stress to our lives, which can lead to back pain. If you want to limit your back pain, limit your electronic gadget usage. If you must use your gadgets, keep a neutral posture, with the screen at eye level whenever possible. Get up, stretch and take a walk every 30 minutes or so.

7 Reduce stress. There is a strong connection between stress and back pain. The “fight or flight” response our body has to stress can cause back muscles to tighten or spasm painfully. It’s critical to reduce stress as much as possible, even if it means turning off the smartphone, seeing a therapist, learning relaxation techniques or exercising more regularly. By managing stress well, we can help prevent back pain from occurring in the first place.

8 Keep your bones healthy and strong by taking calcium, vitamin D and doing weight-bearing exercises. Because our spine has 33 of our body’s 206 bones, our back’s health is linked to our overall bone health. To reduce the chance of your bones thinning (osteoporosis), check with your health provider or spine specialist about how much bone-building calcium and vitamin D you need. Weight-bearing exercises such as walking, yoga and lifting light weights will create forces on the bone that will trigger increased bone density, which is beneficial.

9 Moderation! Minimize the intense “weekend warrior” sports or housework activities. If you work hard Monday through Friday, do not declare war on your back by doing intense exercise or household chores on the weekend. You’re likely to end up calling in sick on Monday due to painful muscle strain. Your best bet to stay healthy and pain-free is to pace yourself throughout the week on your chores and exercise. A regular regimen of stretching, strengthening and aerobic conditioning is better for your back than a single burst of intense exercise.

