



Spine Guide

LEARN ABOUT YOUR SPINE, COMMON SPINE PROBLEMS, AND THE CARE YOU CAN EXPECT



WHEN YOU COME TO INTERMOUNTAIN FOR SPINE CARE, YOU WILL BECOME PART OF A TEAM OF SPINE CARE EXPERTS. You and your team will consider all treatment options, including surgical and non-surgical treatment.

Together, we will work to understand your condition, weigh treatment options, and design a personalized treatment plan. We always strive to provide healing with a human touch.



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Spine Basics

Learning about your spine, its parts, and what can go wrong can help you understand your diagnosis and treatment options. It can also help you learn to protect your spine in the future.

Your spine

Your spine is made up of vertebrae [VUR-tuh-bray], discs, ligaments, muscles, the spinal cord, and nerves.

Vertebrae

Your spine contains 24 bones called vertebrae that are stacked on top of each other. As shown below, the spinal column is divided into 4 sections — or regions — and the vertebrae within each region are numbered.

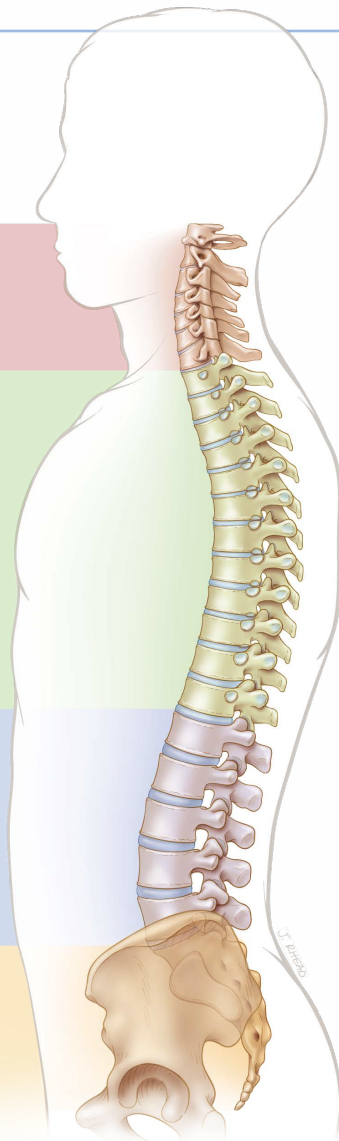
Viewed from the side, the 4 regions all have natural curves. These curves help balance and distribute your body's weight.

Cervical [SUR-veh-kuhl]. This is your neck area. The cervical vertebrae are numbered from C1 to C7.

Thoracic [tho-RASS-ik]. This region runs from your chest to your waist. The thoracic vertebrae attach to the ribs and are numbered from T1 to T12.

Lumbar [LUM-bar]. This is your lower back area. The lumbar vertebrae are numbered from L1 to L5.

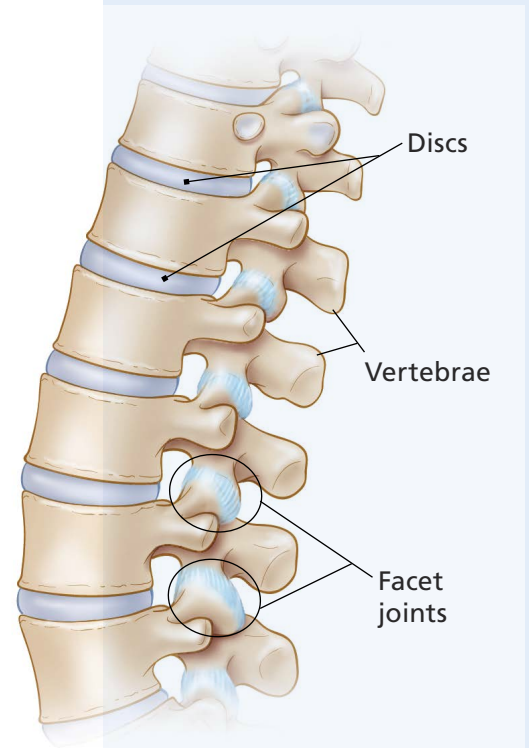
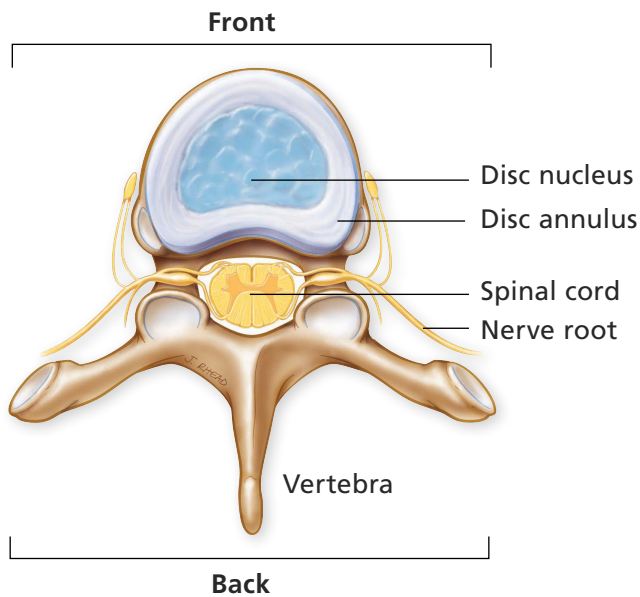
Sacral [SAY-krull]. This is your buttock and “tailbone” area. It includes the sacrum and the 4 very small coccygeal [kok-SI-jee-uhl] vertebrae below that. The sacrum is made up of 5 vertebrae that have naturally grown together to form a single, triangular-shaped bone.



Discs

The vertebrae are separated by **discs** that cushion the vertebrae and allow them to move. Each disc is a small, circular capsule with a tough outer wall (the **annulus**) and a softer core (the **nucleus**). In children, this core is gel-like, but with age, the core tends to harden and become less elastic.

Vertebra and disc: Top view (cross-section)

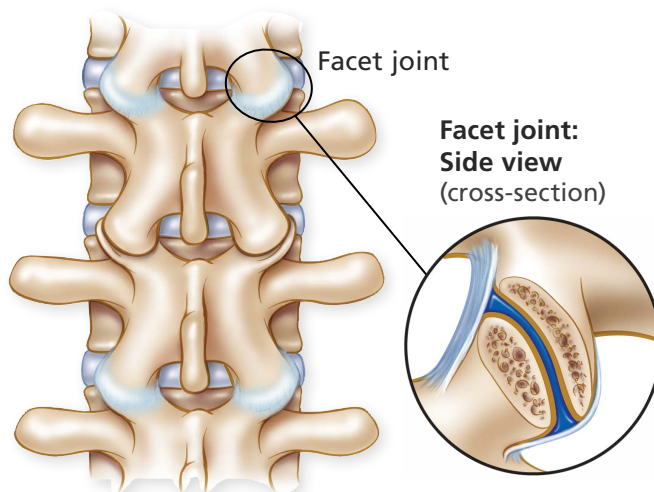


Spine section showing vertebrae, discs, and facet joints (side view)

Facet joints

Each vertebra has 2 pairs of **facet** [fas-seht] **joints**. These joints link the vertebrae together at the back of your spine. They stabilize the spine and allow you to bend and twist. The joint surfaces are covered by **cartilage** [CAR-teh-lej], and the entire joint is covered by a fluid-filled capsule made of ligaments and other connective tissue. The cartilage and fluid help the joints glide smoothly against each other as you move.

Spine and facet joints: View from the back



Ligaments

The vertebrae are connected and supported by **ligaments**. The 2 main spinal ligaments run the length of the spinal column.

Muscles

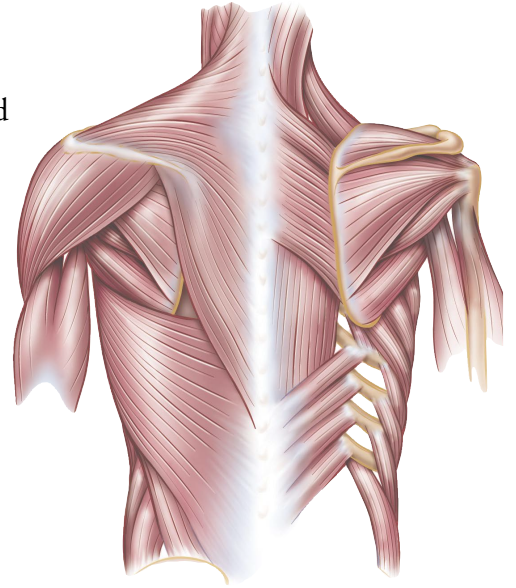
The entire spinal column is stabilized by muscles in your back, sides, and abdomen (belly area). These muscles maintain your posture and help you bend, twist, and move your back.

Outer muscles

(shown on the left side)

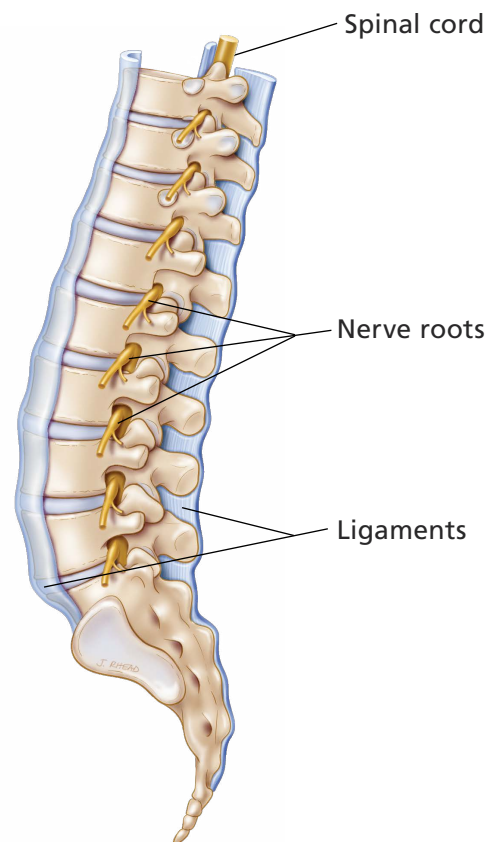
Inner muscles

(shown on the right side)



Spinal cord and nerves

Besides supporting the weight of your body, the vertebrae also house and protect your **spinal cord**. The spinal cord is a network of nerves that extends from the base of your brain to your lower back. The spinal cord passes through a tubular space—the **spinal canal**—formed by the ring-shaped openings of the vertebrae. Smaller **spinal nerves** branch off of the spinal cord, exiting through smaller spaces between your vertebrae to reach all areas of your body.





Common Problems

Back and neck pain is common. Most pain is temporary, but it can come and go. It is often caused by a strained muscle or sprained ligament due to an activity you are not used to doing, such as yard work, moving furniture, or sitting for a long time.

Less often, pain comes from damage to part of your spine or from a condition with which you were born. The pain may come with other symptoms, such as stiffness, numbness, or weakness in your arms and legs. Rarely, spine problems can cause bowel and bladder problems, but are not usually the primary cause. We describe some common problems in the following pages.

Who gets back and neck pain?

Anyone can have back or neck pain. Still, some things increase your chance of having it, such as:

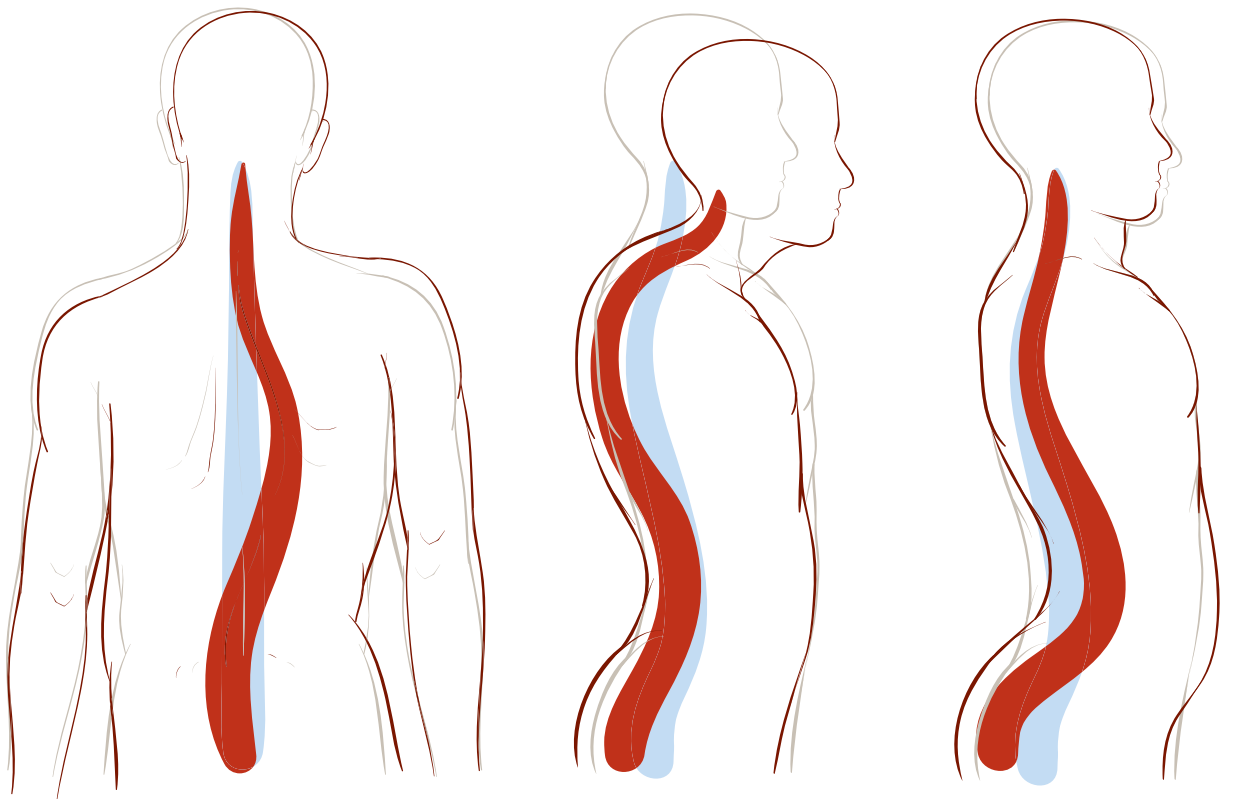
- **Getting older.** The older you are, the more likely you are to have back or neck pain.
- **Poor physical fitness.** Lack of exercise and poor posture increase your risk of back pain.
- **Being overweight.** Extra weight puts extra stress on your spine.
- **Your job or hobby.** A job or activity that requires you to bend, lift, twist, push, or pull can be risky. But desk work can also be hard on your back, especially if you do not sit up straight or get up very often.
- **Smoking.** Studies show that smokers have more back pain and spinal conditions than non-smokers.
- **Previous injury.** An injury you had months or years ago may put you at risk for back problems later on.
- **Diseases.** Arthritis, osteoporosis, and other diseases can increase your chance of having back pain.
- **Family history and genetics.** Some conditions run in families.

SOURCE OF SYMPTOMS?

Although your spine care team will provide a thorough assessment, it is not always possible to pinpoint the source of symptoms. Studies show many cases of back pain have no known cause.

ABNORMAL CURVATURE

The natural curve of your spine helps balance your body. If the curves become too pronounced, or if your spine develops a twist or an extra curve, it puts extra pressure on the vertebrae and discs. This can cause instability, pain, and bulging or herniated discs. Abnormal curvatures include those shown below in **red**.



Scoliosis [skoh-lee-OH-sis]

A side-to-side curve
in your back

Kyphosis [kie-FOH-sis]

Increased curve ("hump")
in your upper back

Lordosis [lor-DOH-sis]

Increased curve in your
lower back ("swayback")

Normal curvature (in blue)

FRACTURES

Like any bones, your vertebrae can crack or break. Reasons for a spine fracture include an injury, repeated stress, or a condition like **osteoporosis** [os-tee-oh-puh-ROH-sis], which can make bones weak and brittle (breakable).

DEGENERATED DISC

Degenerative disc disease (DDD) is a catch-all term to describe changes in your spinal discs, including thinning, hardening, and drying out of the discs. Disc degeneration is part of the natural process of aging. It is simply wear-and-tear of the spine and often does not cause any symptoms. This process sometimes begins or speeds up with injury, disease, or unusual stress. Degenerated discs can irritate the spinal nerves and cause instability. They can be painful.

BULGING DISC

If the outer wall of a spinal disc weakens, it may push out (bulge) toward the nerves. This can cause nerve pain.

HERNIATED DISC (also called ruptured disc)

If the outer wall of a spinal disc ruptures (tears), the soft material inside the disc can squeeze out and press on nearby nerves. This can cause pain, numbness, or weakness in your back, neck, legs, or arms.

INSTABILITY

Spinal instability is when adjoining vertebrae slip back and forth, or have permanently shifted out of position. This instability can be caused by a damaged spinal disc, a bone injury, arthritis in the facet joints, or just something with which you were born. The slippage can irritate the bone, disc, spinal cord, and nerves.

STENOSIS

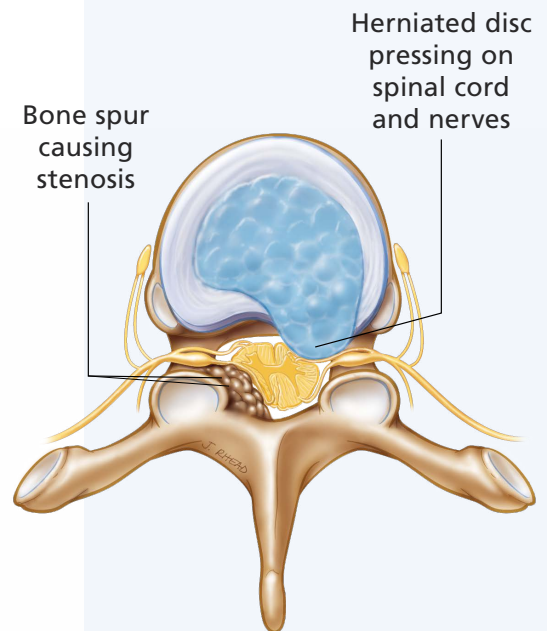
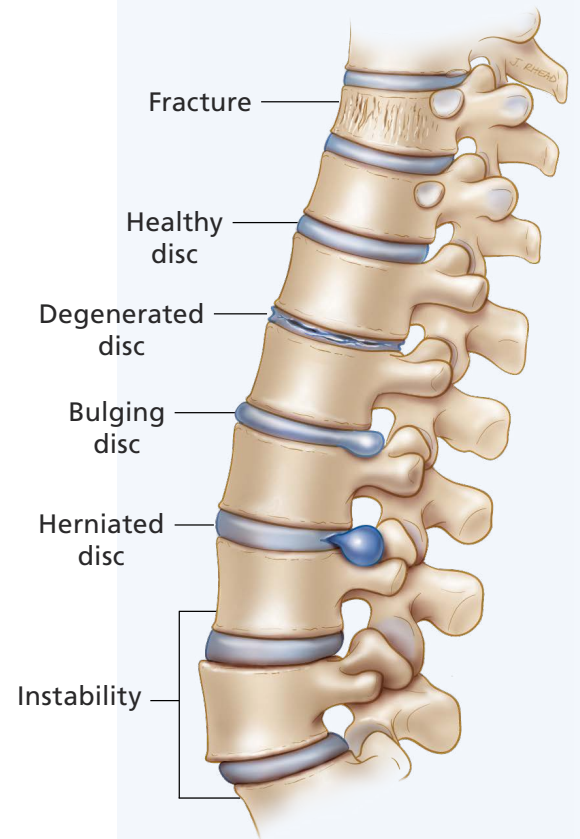
Stenosis is a narrowing of the spinal canal. Stenosis can cause pressure on the spinal cord and nerves, causing pain and other symptoms. Stenosis can be caused by enlarged ligaments, facets, or other abnormal bone growth such as bone spurs.

NERVE PROBLEMS

All of the conditions described above can irritate or press on (pinch) the spinal cord or nerves. This can cause pain, numbness, weakness, and other problems throughout your body. Common examples are **lumbar radiculopathy** [ruh-DIK-yoo-LOP-uh-thee] or **sciatica** [sy-AT-i-kuh] (nerve problems in your lower spine, causing leg pain) and **cervical radiculopathy** (nerve problems in your neck, causing arm pain).

SYNOVIAL CYSTS

Synovial cysts are abnormal fluid-filled sacs which can rise from the facet joints and develop as a result of degenerative changes. They do not cause cancer. While they can occur anywhere in the spine, they are most common in the lumbar region (lower back). If they grow large enough, they can pinch a nerve and cause pain.





Spine Care at Intermountain

Spine treatment isn't one size fits all. Your provider will evaluate your situation and assemble a team suited to your needs. Your provider may consult with your primary care provider or other medical professionals to build a complete picture of your problem and medical history. Together, we will create a treatment plan that meets your needs and lifestyle.

Your team

During your treatment, you may see more than one provider from our team. Here are a few of the people who may be on your spine care team:

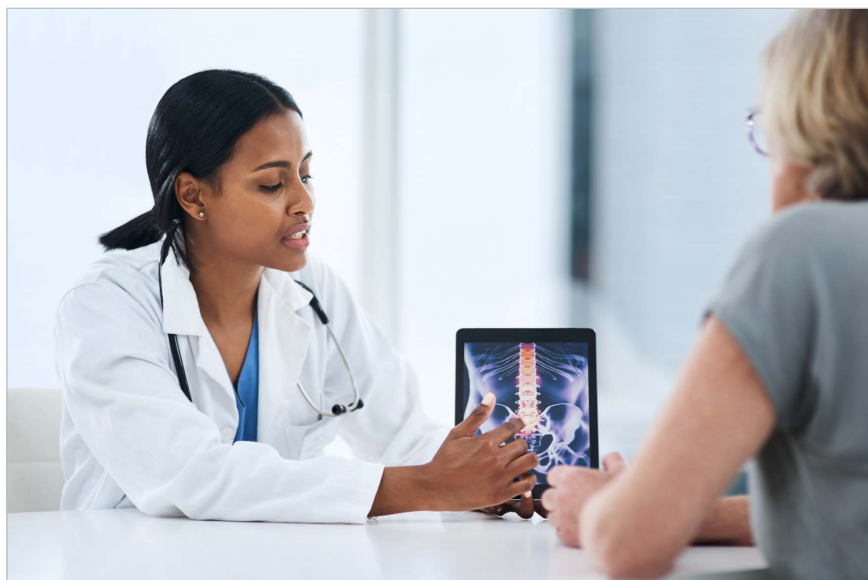
- **Doctors.** Your team may include doctors specializing in physical medicine and rehabilitation, radiology, or interventional and medical pain management. If it looks like surgery might be right for you, your team will also include a neurosurgeon or orthopedic spine surgeon.
- **Nurses, Nurse Practitioners, Physician Assistants.** Together with your doctor, these experts assess your condition and coordinate your treatment plan.
- **Therapists.** The treatment of spine and pain conditions often includes physical, occupational and speech therapists. These experts help create individualized programs to improve or restore strength, flexibility, movement, swallowing, and function.

- **Registered Nurses and Patient Care Technicians.** If you are in the hospital, nurses and care technicians will directly provide much of the care you'll receive. Your nurse will coordinate with everyone on your spine care team—including you—so each person can do their part efficiently and effectively.
- **Case management.** If you are admitted to the hospital, you will have a case manager, social worker, or nurse to coordinate what needs to happen as you prepare to leave the hospital. This person will be your guide as you prepare to go home, to inpatient rehabilitation, or to a skilled nursing facility.



Communication

You are the most important person on your spine care team. During your treatment at Intermountain, we will do our best to keep you informed and involved. We will provide the information you need to make decisions and teach you how to care for yourself. We welcome your questions and suggestions—in fact, we depend on them to help us work well with you and your loved ones.



Assessment and Treatment Options

This section describes the common techniques used for the diagnosis and treatment of spinal conditions.

Assessment

To learn about you and your condition, your spine team will discuss your symptoms with you, examine you, and order relevant diagnostic tests. Over the course of your care, these evaluations and tests may be repeated as part of follow-up care, or as other clinicians become involved in your care. Here are some of the evaluations and tests your team may use.

Patient history

Your care team will ask questions as part of their assessment. Possible topics are:

- **Pain and other symptoms.** Your provider may ask, "Where is your pain? How bad is it? How long have you had it? When did you first notice it? What makes it better or worse? How is your life affected by your symptoms? Have your symptoms changed your sleep habits, your work life, your recreation?"

Patient history (continued)

- **Previous spine care.** Your team will need to see any prior imaging and medical records. Please bring them to your first appointment. The place where your tests were done can help you get copies. What tests or treatments have you already had? What were the results? Have you had spine surgery previously? If so, can you provide the details of the surgery?
- **Previous medical care.** Your provider may ask, "Do you have any chronic conditions such as arthritis or osteoporosis? Have you had cancer, depression, or a recent infection? What medications do you take? How would you rate your recent and current stress levels? What do you do for fun and relaxation?"
- **Lifestyle and daily habits.** Your provider may ask, "Do you smoke? Do you exercise? What kind of work do you do? How do you usually sleep, sit, or stand?"
- **Family history.** Your provider may ask, "Does anyone else in your family have back problems or chronic pain?"



PAIN IS NOT THE ONLY SYMPTOM WE CARE ABOUT

Your medical assessment should cover a range of symptoms—not just pain. Consider the following:

- Numbness, tingling, “pins and needles”
- Weakness, slow reflexes
- Night pain
- Fever, chills, sweating
- Recent infections
- Associated trauma
- Stress or emotional issues
- Unusual weight gain or loss
- Bowel or bladder problems
- Headaches
- Sexual dysfunction

Mention these or any other unusual changes or symptoms to your care team. Even if it seems unrelated to your spine or doesn't bother you, it will help your providers get a complete picture of your health.



Physical exam

As part of a physical exam, your doctor will assess your physical body and its movement. Below are some things your doctor may note:

- **Weakness.** Simple exercises can help test your strength.
- **Range of motion.** Your doctor may check your flexibility or watch you bend and twist.
- **Tenderness.** Your doctor may assess areas of soreness by touching parts of your body.
- **Sensation and sensitivity.** Your doctor may check to see if you can feel heat, cold, or a pinprick on parts of your body.
- **Reflexes and motor skills.** Your doctor may ask you to walk on your heels or toes, or do tests to check your body's reactions.
- **Shape, tone, and position** of the spinal bones and muscles.

Laboratory tests

Sometimes back and neck symptoms can be caused—or made worse—by a systemic illness (an illness throughout your body, not just in your spine). To check for illness, your doctor may have a sample of your blood or urine tested. In addition, if surgery or other interventions will be part of your treatment, routine laboratory tests are usually ordered first.

Imaging studies

There are several technologies that allow your spine team to take pictures of the inside of your body. Depending on what they see, they may suggest one or more of the following:

- **X-ray.** Beams of low-dose radiation create pictures of tissues, bones, and organs on film.
- **MRI.** Magnetic resonance imaging (MRI) uses a magnetic field and radio waves to create images. MRI is very useful for evaluating details of soft-tissue structures, like nerves, in and around your spine.
- **CT scan.** Computed tomography (CT) uses a computer and x-rays to create cross-section views (“slices”) of areas of the body. It is especially good at highlighting abnormal tissue and clearly showing bone detail.
- **Bone density scan.** This scan uses x-ray or ultrasound to measure the amount of bone in a particular area. It can detect and assess osteoporosis (thinning bones).

Electrodiagnostic testing

The term “electrodiagnostic testing” covers a range of tests that measure electrical activity in nerves and muscles. Two common electrodiagnostic tests are the **electromyogram** [eh-lek-troh-MY-oh-gram] (EMG) and the **nerve conduction study** (NCS). Results from these tests help your doctor assess nerve and muscle function and locate any damage.

Other procedures

Other procedures, such as diagnostic **spinal injections**, may be useful in evaluating sources of back pain that cannot be seen in other common imaging studies. Your care team will provide information on these procedures if needed.



If the assessment shows a problem in your spine, it doesn't necessarily mean that you will not get better. Many people with arthritis, disc degeneration, and other problems may have less pain when treated appropriately.

Treatment options

Your care may include one or more of the treatments described below.

Physical therapy

Physical therapy encompasses a variety of treatments to promote healing, relieve pain, build strength, increase flexibility, and help prevent future injuries. For example, your physical therapist may create and supervise a program of exercises and make suggestions to help improve body mechanics (how to sit, sleep, lift, and move). Other physical therapies include spinal manipulation (applying force to a spinal joint) and traction.

Traction

Traction is a non-surgical way to decompress (relieve pressure on) the vertebrae. It can be done in these 2 ways:

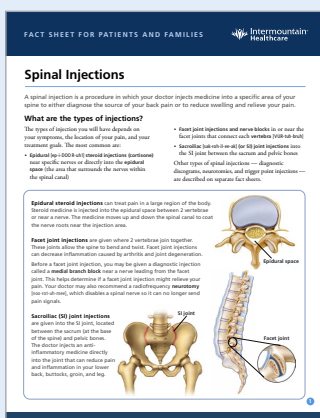
- Manually, by a specially trained provider
- Mechanically, with braces or devices that gently stretch the spine

Spinal injection

Your doctor may recommend a spinal injection to treat inflammation or ease pain. An injection can deliver medication directly to the source of your symptoms. Common injections include:

- **Epidural steroid (cortisone) injections.** Medication is injected near specific nerves or directly into the area around the nerves within the spinal canal (the epidural space) to help diagnose and treat pain.
- **Facet joint injections and nerve branch blocks.** Medication is injected in or near the facet joints to treat arthritic joint pain.
- **Sacroiliac (SI) joint injections.** Injections at the SI joint (where the spine and pelvis join) can help diagnose and treat pain in that area.
- **Trigger point injections.** Injections into tight, irritated muscle areas (trigger points) may help the muscle relax and ease the pain.
- **Selective nerve root block.** Medication is injected around the nerve root to reduce inflammation and pain caused by pressure on the nerve.

For more information about your spinal injections, ask your provider for the patient handout, *Spinal Injections*.



Oral medication (pills)

Your doctor may prescribe medication to reduce inflammation, relax muscles, and ease pain. Take your medication exactly as your doctor or pharmacist advises. **Let your doctor know about all other prescription and over-the-counter medications you take.** Include all pills, liquids, injections, inhalers, herbs, and vitamin supplements.

Opioids

Prescription opioids (also called narcotics) are medications used to help relieve severe pain. They may be prescribed temporarily after surgery or injury. Other health conditions may require long-term pain management, which is best treated by your primary care provider or a pain specialist. Some common opioid medications are codeine, hydrocodone, methadone, morphine, and oxycodone. **If you are prescribed opioids for pain:**

- Take it exactly as directed. Do not take more pain medication or take it more often than prescribed.
- Ask your doctor or pharmacist for a naloxone kit. This can save your life if you have an accidental overdose.
- Keep your prescription in the bottle it came in.
- Lock your prescription in a safe place and out of reach of others.
- Follow up with your primary care provider or pain specialist.

Know your options

Talk to your healthcare provider about ways to manage your pain without opioids. Other methods may actually work better and have fewer risks and side effects. Options may include:

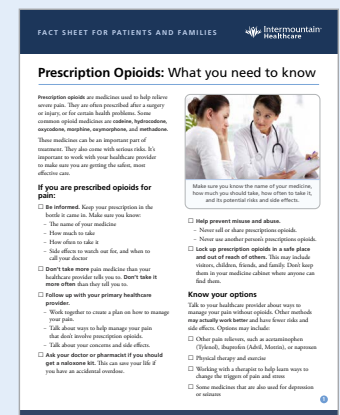
- Other pain relievers, such as acetaminophen (Tylenol or others), ibuprofen (Advil, Motrin), or naproxen (Aleve).
- Physical therapy and exercise.
- Working with a therapist to help learn ways to change triggers from pain and stress.
- Other medications.
- Alternative pain treatments, such as massage therapy, acupuncture, aromatherapy, chiropractic therapy, and meditation.

Non-surgical procedures

Other procedures—such as radiofrequency ablation—use heat, cold, chemicals, or radiofrequency energy to destroy nerves near a problem joint. This relieves symptoms by preventing pain signals from traveling to the brain.

Additional treatments for chronic pain include spinal pumps and stimulators that are implanted under the skin. A pump can put medication directly into the spinal fluid at just the right place in your spine. A spinal stimulator delivers a small electric pulse on the surface of the spinal cord to help mask pain.

For more information about your opioid prescription, ask your provider for the patient handout, **Prescription Opioids: What you need to know.**



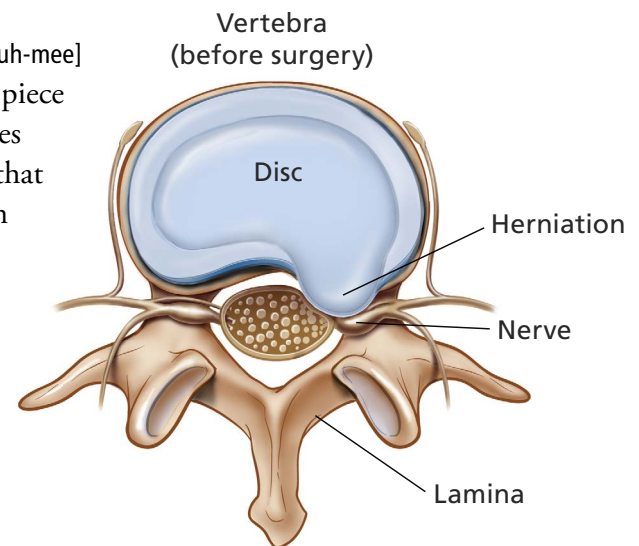
Surgical Treatment and Your Hospital Stay

You and your care team may decide that surgery is your best treatment plan. Your surgeon and care team will help you understand the specifics of your procedure. The following pages will help you know how to prepare for surgery and what to expect as you recover afterward.

Common spine surgeries

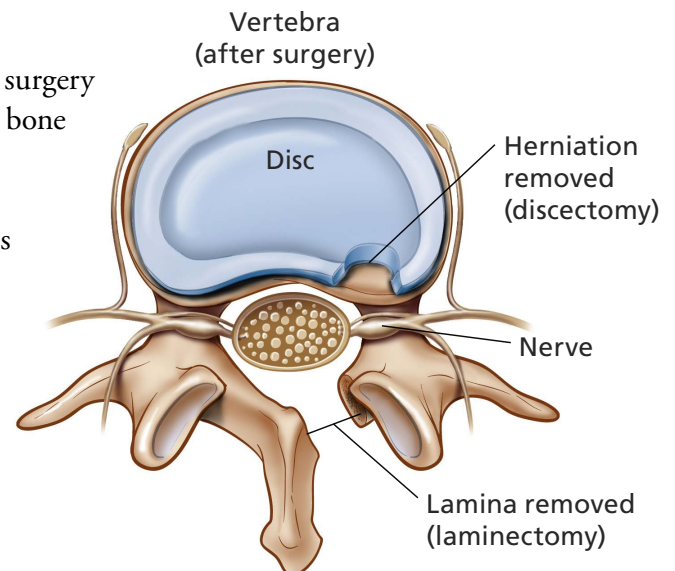
Discectomy

A discectomy [disk-EK-tuh-mee] is surgery to remove a piece of the disc. This relieves pressure on the nerve that may be causing pain in your leg.



Laminectomy

A laminectomy [lam-uh-NEK-tuh-mee] is surgery to remove part of the bone from the back of the vertebra. This takes pressure off the nerves or spinal cord.



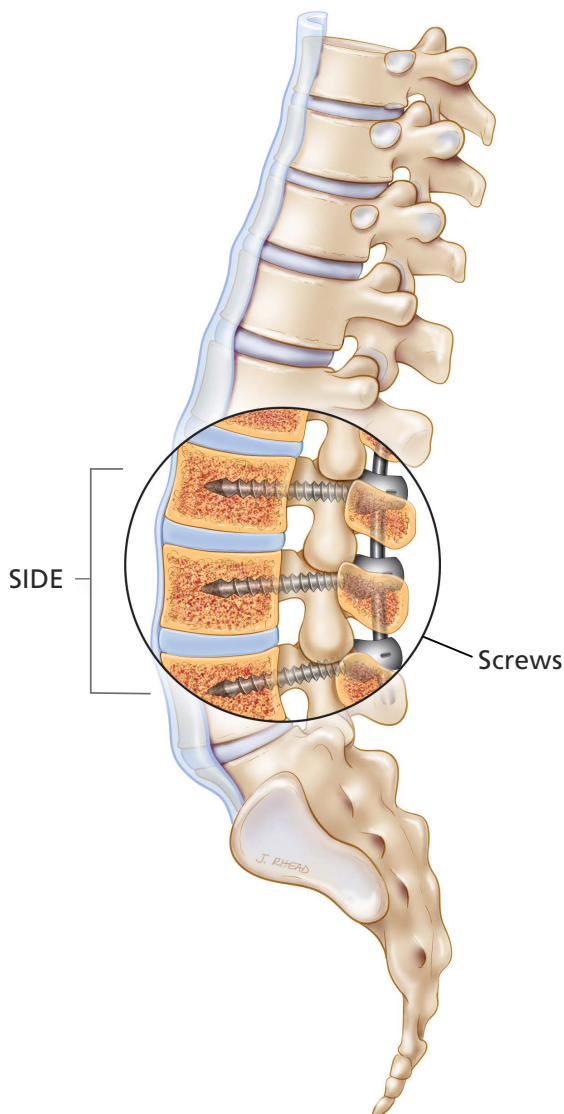
Common spine surgeries (continued)

Fusion

A fusion [FY00-zhun] is when 2 or more vertebrae are surgically joined (fused) together to become 1 bone. Plates, screws, and other implants may be used to help hold the bones in place as they fuse.

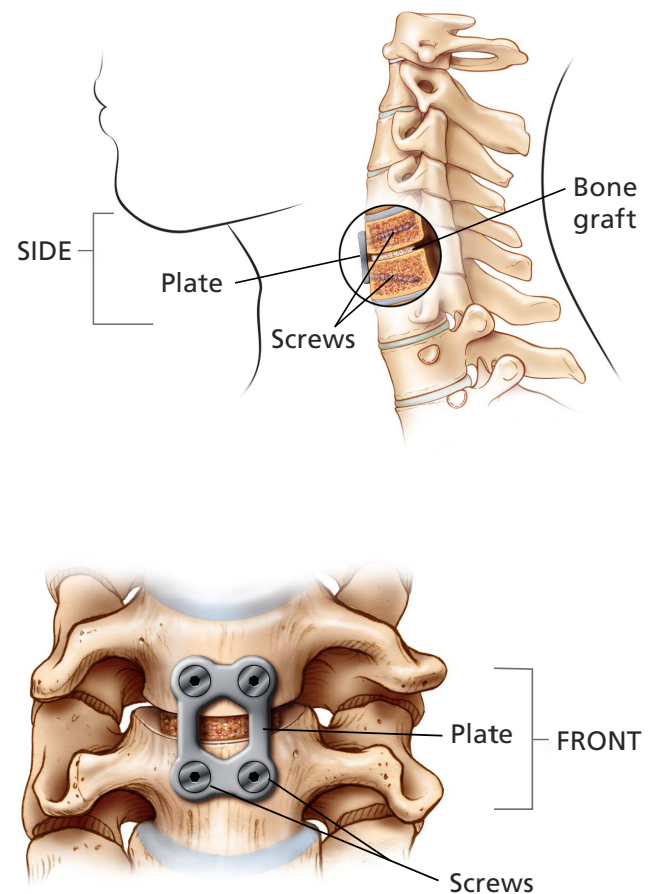
Lumbar fusion

Lumbar fusion is surgery to stabilize the lower spine to eliminate pain in your back and legs called sciatica [si-AT-eh-kuh] or radiculopathy [ruh-dik-yoo-LAH-puh-thee].



Cervical fusion

Cervical [SERV-eh-kuhl] fusion treats damaged or worn discs in your neck, relieving pressure on pinched nerves that can cause numbness or weakness in your arms or legs.



Getting your body ready for surgery

It will make it easier for your body to come out of anesthesia and heal faster after surgery if you do the following:

A PARTNER IN HEALING

It is important to find someone who will be a committed partner in healing, long before your surgery. Your partner in healing should be able to stay with you for a few days after you go home. Talk to your family and friends about getting the support you need at home.

For information about body mass index (BMI) and surgery, ask your provider for the patient handout, **Body Mass Index and Surgery**.

FACT SHEET FOR PATIENTS AND FAMILIES Intermountain Healthcare

Body Mass Index and Surgery

What is BMI?
Body mass index (BMI) is a formula that uses your height and weight to assess risk for related diseases. Health does not just depend on the size you or your body, but also on other factors. It's not perfect, however, and should be the only measure considered. For example, people with high muscle density (such as athletes) may be perfectly healthy at a higher BMI.

Standard BMI measures

Weight status	BMI range
Underweight	BMI is less than 18.5
Normal weight	BMI is 18.5 to 24.9
Overweight	BMI is 25 to 29.9
Obese	BMI is 30 to 34.9
Severely obese	BMI is 35 to 39.9
Morbidly obese	BMI is 40 or greater

Why does BMI matter when having surgery?
People who have a BMI of 40 or greater are known to have more complications during surgery. These complications include the following:

- Increased risk of mortality (death)
- Longer operating times
- Increased blood loss
- Higher rates of medication
- Higher rates of surgical site infections

Where can I find more information?

- Intermountain Health has BMI resources including: [IntermountainHealthCare.org/intermountainhealthcare/patient-education/self-care/healthy-living/healthy-living/bmi](#)
- Intermountain Live Well educational support: [IntermountainHealthCare.org/intermountainhealthcare/live-well/education/intermountain-live-well-centers/healthy-living/healthy-living/bmi](#)

- If you smoke, chew tobacco, or vape, QUIT!** Smoking can slow down the healing process. Unless you are having emergency surgery, quit smoking at least 4 weeks before surgery. For fusion surgeries, you should not smoke until the bones have fused, which is generally 1 year. People who smoke have less success with fusion surgery compared to those who do not smoke.
- Get control of any other health conditions you have.** This means managing your blood pressure, blood sugar, obstructive sleep apnea, and other long-term health conditions. Studies show that people with well-controlled blood glucose have fewer problems during and after surgery.
- DO NOT USE alcohol or street drugs, including marijuana.** These substances can seriously impact how you react to anesthesia and medications. If you use alcohol regularly, you should get medical advice on how to gradually stop. Quitting suddenly, or "going cold turkey," can lead to alcohol withdrawal, which can be dangerous.
- Do daily strengthening exercises for your body to give your muscles a head start on your recovery.** Try walking, water aerobics, or swimming for about 30 minutes a day, 5 days a week.
- If you are overweight, try to lose a few pounds.** Every pound you lose takes some pressure off of your spine. This will make it easier to get around after surgery. Eat more fresh vegetables, fruits, whole grains, fish, chicken, and healthy fats to help speed up your recovery. Avoid red meat and foods with saturated fats or added sugars.
- If you need any invasive medical or dental procedures, schedule them in advance.** Check with your surgeon to know what timeline is best.
- Talk to your surgeon BEFORE getting a steroid injection in the spine.** Injections can increase the risk of infection and related complications.
- If you take opioid pain medications, try to cut back as much as possible.** This will help your care team better control your pain after surgery. If your body is used to high doses of pain medication, discuss this with your surgeon. Your pain may be more difficult to control.

Preparing your home

After surgery, you will need to be extra careful at home to prevent falls and injuries while you recover. There are a lot of small changes you can make at home now to make your recovery as safe and speedy as possible. These changes mostly apply to major surgeries and fusions.

Set up your recovery space

- Leave space around furniture for using a walker.
- Place a sturdy chair with arms near a table.
- Make sure chair seats are high enough to get into and out of easily. Add cushions if necessary.
- Plan on using a front-wheeled walker. You may also want a raised toilet seat or toilet safety frame and a shower chair.

Reduce tripping hazards

- Remove throw rugs and small objects on the floor.
- Tack down or tape carpet edges.
- Remove clutter.
- Clear pathways of furniture and electrical cords.

Improve lighting

- Use night lights and add lamps if necessary.
- Make sure your stairs and hallways are well-lit.

Manage pets

- Make a plan to keep your pets from tripping you once you are home. For example, you could keep pets in a different area of the house or put a bell on each pet's collar to alert you when they are near.
- Consider boarding your pets or having them stay with a friend or family member when you first come home.

Prepare your kitchen and bathroom

- Stock up on supplies and groceries. Prepare and freeze meals ahead of time to warm up while you are recovering.
- Store commonly used items on countertops in your kitchen and bathroom.
- Place items where you can reach them without bending below your waist, reaching, or lifting.
- DO NOT USE step stools.

ARRANGE FOR ASSISTIVE EQUIPMENT

DO NOT expect people to lift or move you— they could get injured. Use the prescribed assistive equipment instead.

What to bring to the hospital

WHAT NOT TO BRING TO THE HOSPITAL

DO NOT bring valuables such as:

- Cash or jewelry
- Medications or supplements (unless otherwise directed)

THINGS THAT MAY DELAY YOUR SURGERY

Several things may cause your surgery to be rescheduled.

They include:

- Eating or drinking after a specified time
- Any respiratory (airway or lung) illness
- Any open wounds or breaks in the skin near where your surgery will take place
- Fever of 101° F (38.3° C) or higher
- Failure to stop taking medication as directed by your surgeon before surgery (for example, aspirin or other blood-thinning medications)

- This *Spine Guide* booklet.
- A partner in healing who can stay with you until the time of surgery. Leave your belongings and personal items with your partner in healing until after surgery, and you get to your room. They will be responsible for taking you home afterward.
- A small bag of personal items with:
 - A list of questions or new concerns you want to discuss with your surgeon or anesthesia provider.
 - A list of all medications you take, including herbal supplements, over-the-counter medicines, and anything on the list at the top of **page 17**.
 - A copy of your advance directive form.
 - Your picture ID and insurance card.
 - Your cell phone, e-reader, or book if you choose. Do not forget the charger for your electronic devices.
 - Personal care items, such as a toothbrush, dentures, and deodorant.
 - A case for glasses, contacts, or hearing aids.
 - Your CPAP and mask if you use one.
 - Loose, lightweight clothing, such as T-shirts and shorts or sweat pants that will fit easily over bulky dressings (bandages).
 - A pair of fully-fitted, non-skid shoes or slippers. You'll need these during physical therapy.





Understanding the daily hospital routine

If you need to stay in the hospital after surgery, your goal will be to build your strength and independence enough to be able to continue your recovery outside of the hospital. Our goal is to help you become more mobile, prevent complications, and keep you safe.

Physician or provider rounding

Your surgeon or their assistant will visit you each day you are in the hospital. Most providers start their “rounds” in the mornings, but depending on their schedules, they may not come until later in the afternoon. In addition to seeing you, they will review your clinical notes, physical therapy progress, laboratory information, and imaging studies, and coordinate a plan for your discharge from the hospital.

Hourly rounding

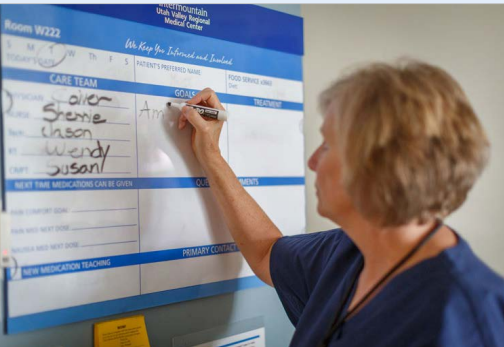
A care team member will check on you in your room every hour. Please take advantage of this time to have them help with any needs, especially when you think you may need to go to the bathroom.

Bedside reporting

When a nurse transfers your care to another nurse, both nurses will generally meet at your bedside to discuss your progress and needs. You can participate in this conversation to help make the best plan for your recovery.

Daily care

Your nurses will regularly check your vital signs, how much fluid you drink, and how much you eat. They will monitor your incision for drainage, increased pain, and swelling. Please tell your nurse about any neurological [nu-ruh-LAH-jeh-kuhl] changes (such as numbness and tingling). In addition to your home medications, you will receive other medications to prevent blood clots, control pain, and prevent infection. You may have your blood drawn to ensure you are recovering well. Your care team will also offer help with getting dressed, changing your linens, ordering food, preparing you for physical therapy, and any nighttime care you may need.



Getting out of bed

Building strength also involves getting up and out of bed as soon as possible after surgery. **However, you MUST NOT get up without a staff member to help you.** Your care team will help you go to the bathroom, do your physical therapy, and start moving on your own. Remember: Your care team wants to help you get out of bed and become more mobile. You are never “bothering” your care team by asking for help!

- **DO NOT:**

- Get up by yourself.
- Have family members help you up.

- **DO:**

- Call staff at least 15 to 20 minutes before your urge to go to the bathroom is immediate.
- Expect a staff member to accompany you to the bathroom. We place safety as our first priority, while doing our best to maintain privacy.

Communication

There are 2 very important ways that you and the hospital staff will be able to communicate during your stay:

- 1 The communication board.** Your caregivers will help you understand this board located in your room. It will include the names of those caring for you and other information depending on the facility and your needs.
- 2 The call button.** The nursing call button at your bedside is an important communication tool for you when you need assistance. **Do not forget: You MUST HAVE a staff member with you EVERY time you get up** unless therapy has cleared you to be independent in your room.

Physical and occupational therapy

The goal at Intermountain is to have you **out of bed on the day of your surgery.** A physical therapist will evaluate your mobility as soon as you are able.

The therapist will have you sit on the edge of the bed, move to a chair, walk in your room, or walk in the hallway. You will learn a series of exercises prescribed just for you. These will help with your recovery in the hospital and when you go home. If you need to use stairs at home, the therapist will teach you how to go up and down them safely. Plan on 1 or 2 daily sessions of physical therapy. Your partner in healing is encouraged to attend at least 1 inpatient physical therapy session.

You may have an occupational therapist visit you to make sure you can complete activities of daily living (such as dressing and personal hygiene tasks). The therapist will teach you how to use adaptive equipment safely for getting on and off the bed and toilet, and into and out of tubs and showers.

After working with physical and occupational therapy, a therapist may recommend to your team that you can be independent in your room. This means you are safe to walk in your room without supervision from staff. If you feel unstable or would prefer help, please use your call button to ask for assistance.

Preventing complications

To prevent complications, you will be asked to get up out of bed soon after your surgery. Movement and pain management will let your mind and body focus on healing.

Blood clots

Blood needs to be pumped through the vessels in your legs to prevent blood clots from forming. This is called **deep vein thrombosis (DVT)**.

To keep blood clots from forming:

- Do ankle pumps and physical therapy. Use the devices that are designed to help prevent clots, such as sequential compression devices (SCDs) and the TED hose.
- Walk as often as recommended.

Respiratory precautions

To prevent low oxygen levels and pneumonia:

- Use incentive spirometry [spuh-ROM-eh-tree] to exercise your lungs.
- Cough and take deep breaths.
- Eat meals sitting up.
- Avoid using sleep medication (unless it is approved by your doctor).
- Report any difficulty with breathing or awakening from sleep.
- Understand that some pain medications can slow your breathing.

Wound infection

To prevent infection:

- Keep dressings on your incisions as ordered by your doctor.
- Keep your incision site and dressings as clean and dry as possible. Tell your nurse if the dressing appears soiled or is coming off.
- Avoid touching your incisions.
- If necessary, wash your hands with soap and water before touching on or around your incision sites. Make sure your care team and your partner in healing do this too.
- Keep pets away from your incision.



FALL PREVENTION

After surgery, you are at a higher risk of falling. You may be taking medications that make you dizzy. Or, you may be attached to tripping hazards, such as IV lines, oxygen tubing, sensors, and SCDs. To reduce your risk of injury and a longer hospital stay:

- **Do not get up without assistance.** Use your call light and only get up with the help of a caregiver. Tell your nurse if you cannot use the call light.
- **Use non-slip footwear and a walker, if needed.**
- **Use grab bars and assistive devices.**

WHAT CAUSES PAIN AFTER SURGERY?

Many things can contribute to pain. These include:

- The surgical cut.
- Muscle spasms or cramps near the site of the procedure.
- Tubes inserted into the body during your surgery or that remain after the procedure.
- Muscle pain as a result of the position you were in during the procedure, or lying in bed for a long time after the procedure.
- Constipation.

BEFORE TAKING MORE PAIN MEDICATION

- Re-position yourself in the bed or sit in the bedside chair.
- Get up and walk or exercise.
- Apply ice.

Recognizing and controlling your pain

Why is pain management important?

You will have pain after surgery. The goal is to reduce your pain enough that you can rest and do activities that will help you recover. To best manage pain, your healthcare providers will consider 3 things:

- 1 What recovery activities you need to do.** These include coughing or breathing deeply to prevent complications, taking part in physical therapy exercises, and managing self-care activities.
- 2 What level of pain you can manage and still do needed activities.** Everyone's ability to tolerate pain is different. You will rate your pain on a scale of 0 to 10 and identify the level of pain you can manage and still do your recovery activities.
- 3 What will help you to be comfortable.** Being comfortable may include listening to music, staying warm, sleeping without interruption, or quickly managing feelings of nausea. When you are uncomfortable, your pain can feel even worse.

Each of these 3 things can affect your ability to manage your pain effectively. You and your healthcare providers will work together to find your best level of pain control. **This is your pain management goal.**



Pain control without medication

Without medication, pain is best controlled by using the **B.R.I.N.E.** method:

Breathing. Use incentive spirometry at least 10 times per hour for deep, controlled breathing. Deep breathing will help you feel more relaxed.

Rest. Getting enough rest will help your body heal and reduce swelling.

Ice. Use an ice pack to help with swelling.

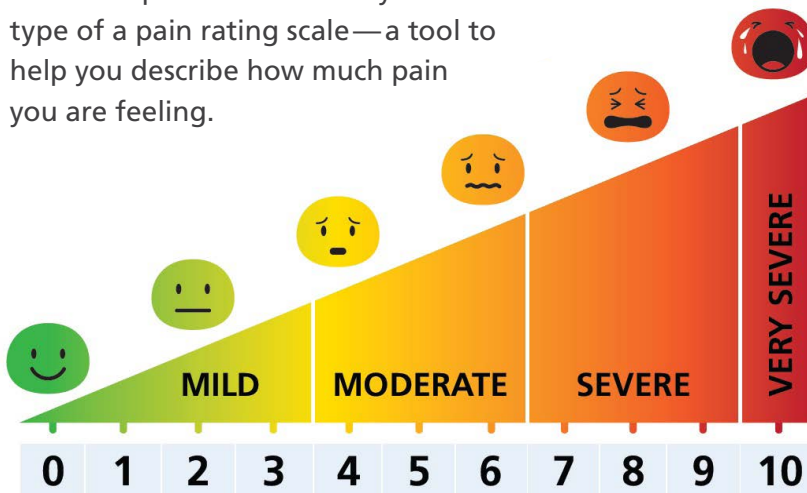
Nutrition. Be sure to eat healthy foods and drink plenty of fluids. Proper nutrition promotes healing.

Exercise. Do simple physical activity, like walking.

How do I talk about pain to my nurse?

It is not always easy to describe pain.

Your care providers will likely use some type of a pain rating scale—a tool to help you describe how much pain you are feeling.



WAYS TO CONTROL PAIN WITHOUT MEDICATION

Cold therapy (ice)



Massage or therapeutic touch



Spiritual or emotional counseling



Distraction (music, TV, games)



Relaxation or meditation techniques



How is my pain controlled?

Your pain may be controlled using the **multimodal** [mull-tye-MODE-uhl] approach or other methods. The multimodal approach means using different types of medications that all work to manage pain. It may include the use of one or more of the following medications:

- **Pain relievers**, such as acetaminophen (Tylenol).
- **Non-steroidal anti-inflammatory drugs (NSAIDs)**, including ibuprofen (Motrin, Advil), naproxen (Aleve, Naprosyn), Celebrex, Meloxicam, or Toradol.
- **Nerve pain treatments**, including gabapentin (Neurontin) or pregabalin (Lyrica).
- **Muscle relaxants**, including cyclobenzaprine (Flexeril), methocarbamol (Robaxin), or diazepam (Valium).
- **Opioids**, including tramadol (Ultram), hydrocodone (Norco), oxycodone (Percocet, Roxicodone, Oxycontin), and hydromorphone (Dilaudid).

How can I stay ahead of the pain?

If your pain starts to increase, let your healthcare providers know. It is easier to control the pain before it gets too strong. If you wait until it is severe, it may be harder to get under control. Also, if you use opioids to manage pain before your surgery, it may make it more difficult to manage your pain afterward.



Understanding potential complications

Talk to your caregivers if you are experiencing side effects so they can treat them appropriately.

Nausea

Nausea can be a problem with any surgery. It can be caused by anesthesia or pain medication. To prevent nausea:

- Avoid taking pain medication on an empty stomach. While you may not feel like eating, it is important to refuel your body.
- Drink small amounts of 100% fruit juice or broth. Eat or drink something small every few hours.
- Alert your nurse when you are feeling nauseated. Nausea medication is generally available as ordered by your healthcare provider.

Constipation

You need to have regular bowel movements (poops). However, inactivity and certain pain medications may cause constipation.

To prevent constipation:

- Stop taking opioids as soon as possible.
- Walk! Be sure to have a caregiver with you at all times.
- Drink plenty of fluids unless your doctor says otherwise.
- Eat more whole grains, fruits, and vegetables as they contain higher levels of fiber.
- Use stool softeners.



Opioids and constipation: What you need to know

Opioids are usually safe when used exactly as ordered by your doctor, but they have many side effects. One major side effect is **constipation**. This is caused by opioids slowing down the muscles that move poop out of your bowels. About 6 out of every 10 people who take opioids after surgery have constipation.

It is important to prevent constipation after surgery so that you don't have to go back to the hospital or the emergency room. Follow the steps on the next page to help trigger a bowel movement (BM) and stay regular while taking opioids. Continue to follow your bowel care plan until you are done taking opioids, have regular BMs without treatment, or get diarrhea.

Getting things moving

Follow these steps to find relief and prevent constipation while taking opioids following surgery. The medications for constipation on this list are available over-the-counter at most drug or grocery stores.

STEP 1

GET THINGS MOVING

TAKE 1 capful or packet of **Miralax** (polyethylene glycol) mixed with at least 8 ounces of water or juice **2 times** daily, **AND/OR**

TAKE 1 tablet of **Senna-S** (sennosides / docusate) **2 times** daily.

- Once you are regular, you can adjust as needed (for example, stop Senna-S and continue Miralax).
- If you do not have a BM for a total of 3 days, move to Step 2.

STEP 2

KEEP THINGS MOVING

INCREASE Senna-S to 2 tablets **2 times** daily, **AND CONTINUE Miralax**, taking 1 capful or packet mixed with at least 8 ounces of water or juice **2 times** daily.

- Once you are regular, you may adjust as needed.
- If you do not have a BM for a total of 5 days, begin Step 3.

STEP 3

REALLY GET THINGS MOVING

ADD 1 dose (30 milliliters [ml]), of **Milk of Magnesia** (magnesium hydroxide).

- If you are able to have a BM, return to Step 2 until you are done using opioids or you have constipation or diarrhea. If you do not have a BM within 8 hours,

ADD 1 tablet (10 milligrams [mg]) of **Dulcolax** (bisacodyl) **OR 1** rectal suppository.

- If you are able to have a BM, return to Step 2.
- If you do not have a BM,

TAKE another dose of **Milk of Magnesia** and **1** tablet of **Dulcolax**.

- If you are able to have a BM, return to Step 2.
- If you do not have a BM or have continued symptoms, move to Step 4.

STEP 4

REALLY, REALLY GET THINGS MOVING

Take ½ to 1 bottle of **magnesium citrate**.

- Once you finally have a BM, return to Step 2.
- If you do not have a BM while you are using opioids or have continued symptoms of constipation, call your doctor.

Preparing to go home

Surgery patients usually recover best at home. For some patients, a stay at a rehabilitation center or skilled nursing facility may be necessary for their recovery.

You and your care team will decide when it is safe for you to recover at home. You will receive specific guidelines from your care providers about your surgery, including precautions and rehab exercises. Talk to your family and friends about getting the support you will need when you go home.

Your surgeon may recommend that you continue with outpatient physical therapy once you go home. If you are unable to leave home to go to outpatient physical therapy, or if you go home with medications that require assistance or monitoring, you may need to have home health services come to you.

Before you can go home from the hospital, you must:

- Be medically healthy.
- Have achieved your personal goals for discharge.
- Have completed your home health arrangements (as needed).
- Have a family member or partner in healing to take you home. (Your partner in healing or another responsible adult should be able to stay with you for a few days after you go home.)

When you have accomplished all this, your surgeon will send you home with:

- Prescriptions for the medications you need. Some medications may be new to you, so be sure to ask any questions you have about them or know who to call later with any questions.
- Any orders for home health or outpatient physical therapy based on the type of spine surgery you had and your individual needs.
- Medical equipment, such as a brace or a walker.

Before you are discharged, your nurse will meet with you to review your discharge instructions, discuss your medications, and answer your questions.

You may be discharged to a skilled nursing facility or rehabilitation center instead of going home. These locations can provide additional support and resources to help you recover. The guidelines for these facilities are different than going home and can be discussed with your care team if needed.

GOALS GOING HOME

- Eat and drink without difficulty.
- Be able to get into and out of bed, up from a chair, into and out of the shower, and on and off the toilet without assistance.
- Manage pain without intravenous (IV) medications.
- Be able to put on socks and shoes and safely walk at least 50 to 100 feet with or without a walker.
- Go up and down stairs safely.
- Perform therapy exercises on my own or with help from my partner in healing.
- Have necessary support and equipment at home.



Taking care of your spine at home

For the first 6 to 12 weeks after your surgery, or until your healthcare team tells you otherwise, follow these guidelines:

- No bending, twisting, pushing, pulling, or jarring.
- No lifting items that weigh more than 8 to 10 pounds.
- No heavy exercise for the next 12 weeks or until cleared by your doctor.

To help you remember these guidelines, we use the abbreviation **BLT**:

B – **No Bending** forward at your waist; sit up straight and do not round your back.

L – **No Lifting** more than 8 to 10 pounds, or as directed by your surgeon.

T – **No Twisting** at the waist.

Notes:

Notes:

Lined area for notes.

To find this booklet and other patient education, go to:
intermountainhealthcare.org



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