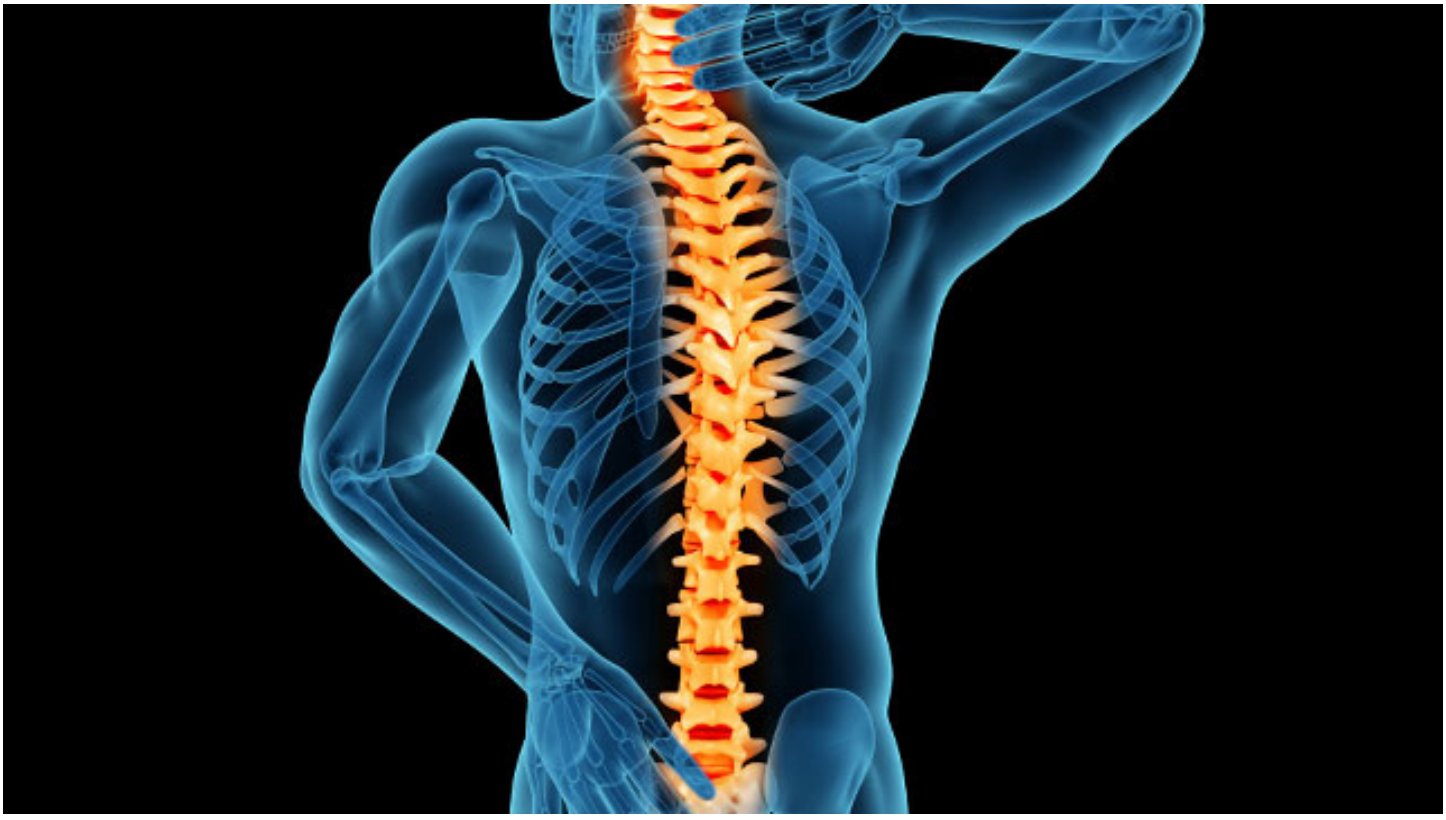
St. Joseph Health
Santa Rosa Memorial

Center for Bone & Joint Health

Spine Surgery:
A Patient's Guide to Recovery



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Spine Surgery

Patient Education Booklet

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INTRODUCTION

WELCOME

Welcome to the Santa Rosa Memorial Hospital's Center for Bone and Joint Health. We are very pleased that you have chosen us for your spine surgery, and our team is committed to making your recovery a comfortable and successful one. Please feel free to reach out to your Spine Patient Navigator at 707-523-BONE at any time during this process to help answer questions that you may have. Our patients and families have found it helpful to learn as much as they can before surgery. Our goals are for you to feel confident with your decision to have surgery, and to become better educated about your procedure so that you have the best possible outcome. This informational booklet has been prepared as a resource to help you understand your procedure. It will explain what to plan for and expect before, during, and after your hospital stay. You will learn about your daily routine while in the hospital, as well as exercises, medications, precautions, incision care, and much more. We encourage you to read and refer to this resource frequently as well as to share it with your family or caregiver. Please bring this booklet with you each time you are scheduled to see your surgeon, as well as when you come to the hospital for surgery.

YOUR HEALTHCARE TEAM

During your stay in the hospital, a team will work with your surgeon to help you through your recovery. The team has been specifically trained for spine care and includes the following members:

Anesthesiologist

You will meet your anesthesiologist prior to your surgery. Your anesthesiologist is responsible for performing your anesthesia, which for all patients having spine surgery, will be general anesthesia. Depending on your specific surgery, you may be positioned on your back, stomach, or side during the procedure.

Hospitalist

Our hospitalists support the medical needs of our spine patients. If your primary care physician does not have privileges at Santa Rosa Memorial Hospital and you have other health issues such as diabetes, hypertension, or heart disease, it is likely that your surgeon will request a hospitalist consultation.

Nursing Staff

Our nursing staff will educate, support, and guide you. They will coordinate your daily activities and help you with mobility, treatments, personal care, pain management and discharge planning.

Physical Therapists

Physical therapists will tailor an exercise program to meet your specific needs. They will work with you to help you regain your independence with mobility and to provide you with education on proper body mechanics and spinal precautions.

Occupational Therapists

Occupational therapists will teach you how to do daily tasks as independently as possible, following the spinal precautions outlined by your surgeon. Examples of these tasks include dressing, personal hygiene, and kitchen chores.

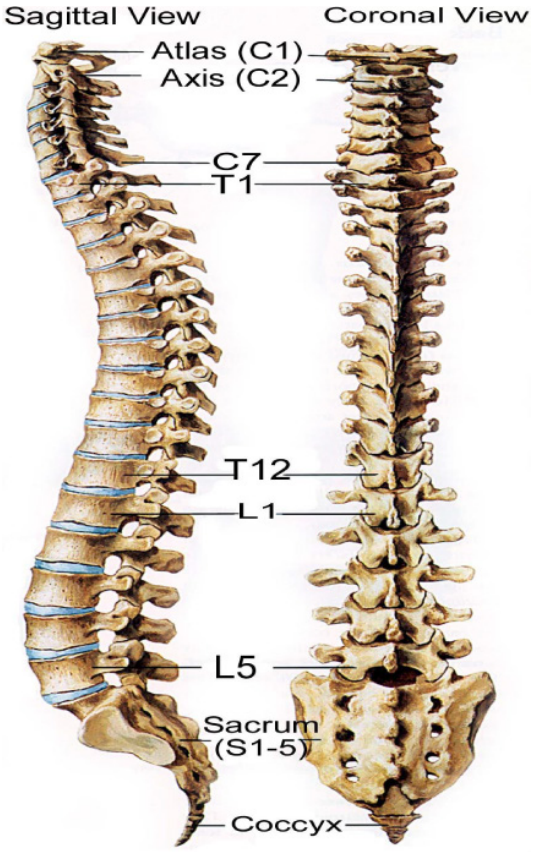
Case Managers and Home Care Liaison

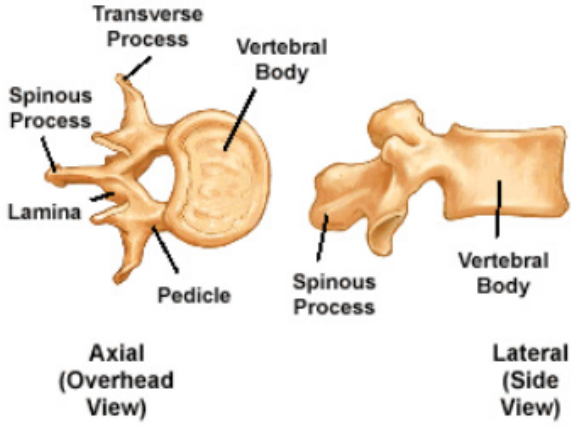
A Case Manager or Home Care Liaison will visit you during your hospital stay if you need extra assistance in planning your discharge. They can provide you with information on available community resources and help you meet your discharge care needs.

You may also come into contact with other healthcare professionals, including dietary, pastoral care, and respiratory care.

UNDERSTANDING YOUR SPINE

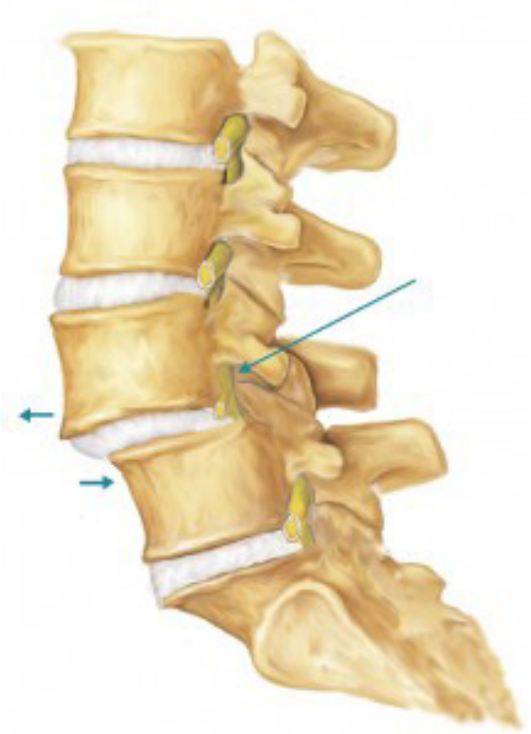
The Healthy Spine: Your spine is made up of bones called vertebrae, the spinal cord, fluid, and discs. The vertebrae, which are stacked upon each other, support the entire body. There are 7 cervical vertebrae located in your neck, 12 thoracic vertebrae located in your chest area, and 5 lumbar vertebrae located in your lower back. In addition, there are 5 fused sacral vertebrae and the coccygeal vertebrae located in your buttock region (also known as your tailbone). Between the vertebrae are intervertebral discs, which absorb shock and allow for movement and flexibility. Collectively, the spine is a highly complex system that provides structure and stability to the body, protects the spinal cord, provides a pathway for the distribution of the nervous system, and facilitates locomotion, movement, and range of motion.





TYPICAL SPINAL PROBLEMS

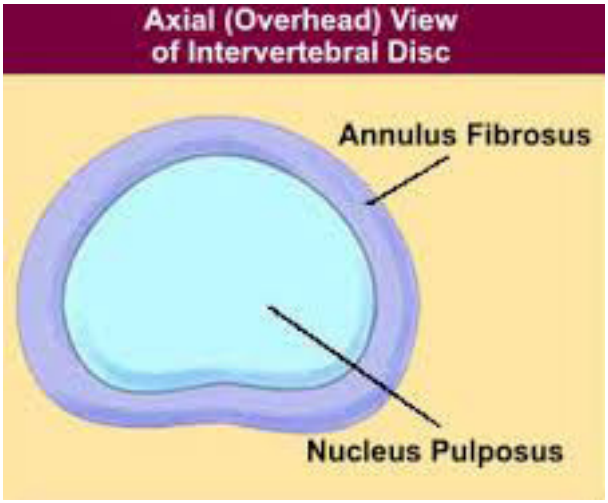
Spondylolisthesis: Spondylolisthesis is the forward displacement of a vertebra, often resulting in back pain, numbness, or weakness of one or both legs. Another common symptom of this condition is sciatica, which is a pain that radiates from the buttocks down the leg. Additionally, a patient may suffer from the symptoms of spinal stenosis.

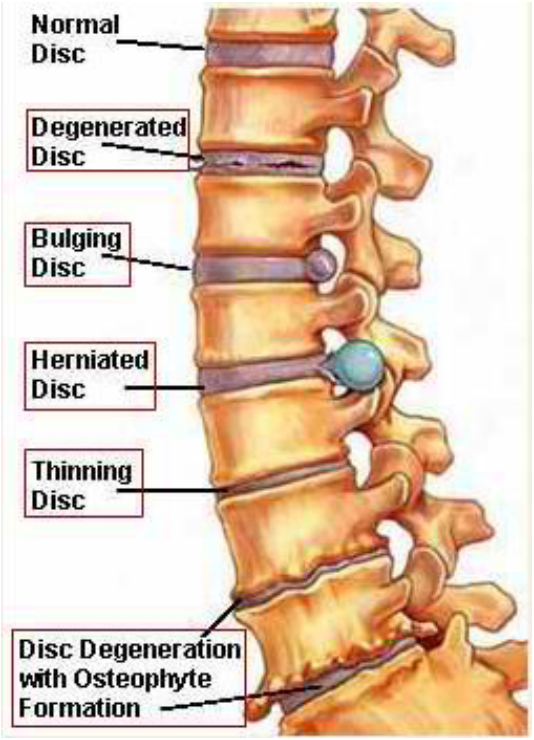


Bulging Disc: For most people, this is a normal part of the aging process; however, in certain cases, a bulging disc can contribute to spinal stenosis.

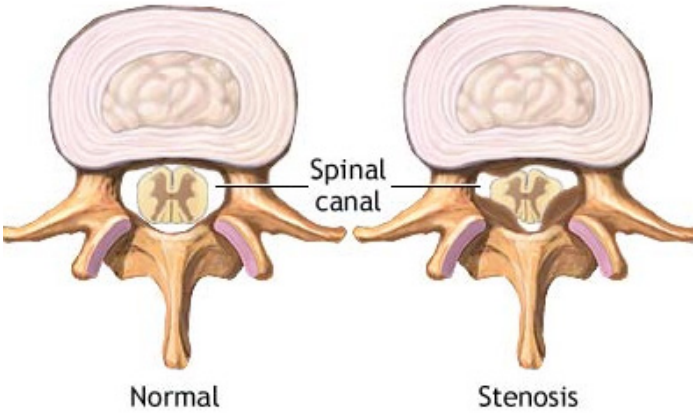
Ruptured or Herniated Disc: Pressure causes the outer ring of the disc (annulus fibrosus) to rupture and the soft center (nucleus pulposus) to squeeze through. This can compress and irritate the spinal nerve root.

Degenerative Disc Disease (DDD): This represents a natural part of the aging process. A person may have DDD and have no symptoms. In certain individuals, DDD can contribute to back pain, spondylolisthesis, and/or spinal stenosis.

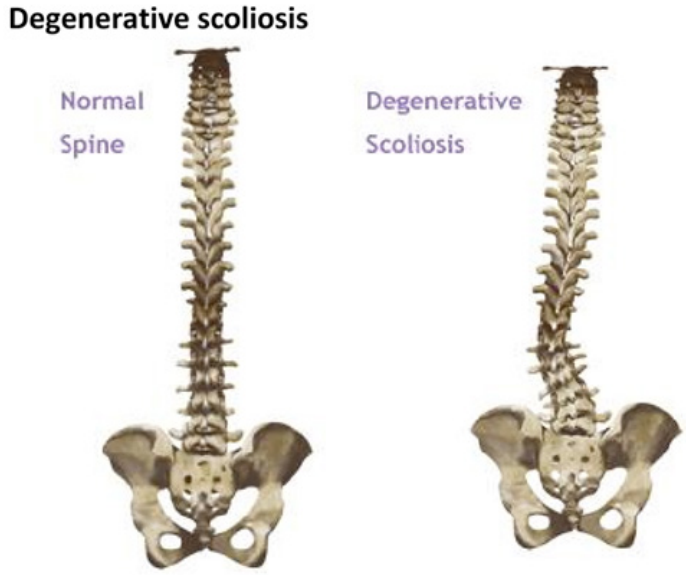




Spinal Stenosis: This is a condition that arises due to narrowing in and around the spinal canal, resulting in nerve pinching. Spinal stenosis may cause persistent pain in the buttocks/legs, weakness, and sensory changes in the lower extremities. The result may be decreased physical activity.



Degenerative Scoliosis: Scoliosis is curvature of the spine. "Degenerative" scoliosis develops when the discs narrow assymetrically. This causes the spinal column to collapse more to one side, resulting in curvature.



Why is Surgery Needed?

Surgery may be recommended for many reasons, the most common of which are:

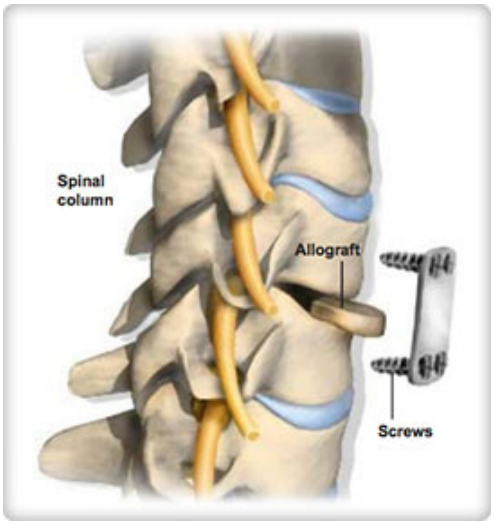
- To alleviate pain
- To restore lost function
- To correct instability
- To correct deformity
- To improve quality of life

TYPICAL SPINAL SURGERIES

The following are some of the surgical procedures in which our surgeons specialize:

Cervical:

Anterior Cervical Discectomy Fusion (ACDF) – A surgical procedure performed on the cervical (neck) region of the spine to relieve pressure on the spinal cord or nerve roots. It involves the removal of a damaged disc (discectomy) through the front (anterior) of the neck. After the disc is removed, an implant is placed into the empty disc space created by the discectomy. The implant acts to restore disc height and to promote the fusion process. Fusion is similar to glue that hardens over time to create a solid construct. Because the fusion process takes time, your surgeon will use metal screws and a metal plate to act as an internal splint to stabilize your spine until fusion has occurred.



Anterior Cervical Corpectomy – A corpectomy involves the same surgical approach as the ACDF procedure, except that the entire vertebral body and adjoining discs are removed. For this surgery, your surgeon will use a larger implant to reconstruct the spinal column and maintain alignment.

Cervical Foraminotomy - A cervical foraminotomy is a surgery that is performed to enlarge the passageway where a spinal nerve root exits the spinal canal. During a foraminotomy, your spine surgeon will remove bone or tissue that obstructs the passageway (known as the foramen) and compresses (pinches) the spinal nerve root, which can cause inflammation and pain.

Cervical Laminectomy - A cervical laminectomy is a surgical procedure to treat cervical spinal stenosis. Your surgeon will remove the portion of the vertebra known as the lamina. The goal of a laminectomy is to relieve any pressure that is being placed on either the spinal cord or the nerve roots. The idea is that when decompression has been achieved, the symptoms of impingement (including neck and arm pain, numbness, tingling, and weakness) will resolve.

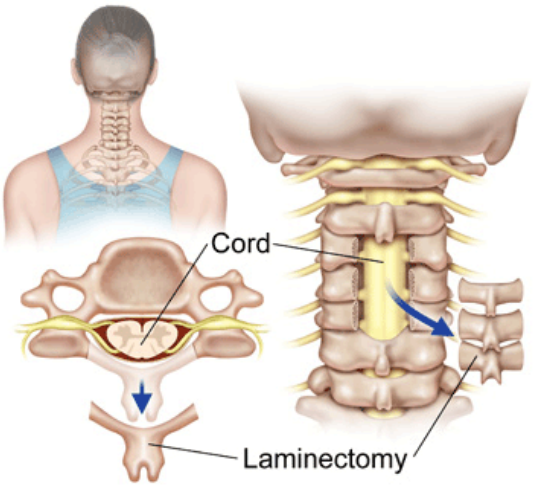
Cervical Disc Replacement – Rather than fusing and eliminating movement in the joint space of the spine, an artificial disc is placed in the disc space. This preserves range of motion to the cervical spine.

Thoracic:

Thoracic Laminectomy - A thoracic laminectomy is a surgical procedure to treat spinal stenosis. Your surgeon will remove the portion of the vertebra known as the lamina. The goal of a laminectomy is to relieve any pressure that is being placed on either the spinal cord or the nerve roots.

Lumbar:

Lumbar Laminectomy – A lumbar laminectomy is a surgical procedure to treat lumbar spinal stenosis. Your surgeon will remove the portion of the vertebra known as the lamina. The goal of a laminectomy is to relieve any pressure that is being placed on either the spinal cord or the nerve roots. The idea is that when decompression has been achieved, the symptoms of impingement (including back and leg pain, numbness, tingling, and weakness) will resolve.



Lumbar Discectomy – A lumbar discectomy is a surgical procedure to remove a herniated or damaged portion of your disc in your lumbar spine. The purpose of the surgery is to relieve symptoms caused by the pressure that a bulging or herniated disc places on the spinal cord or nerve roots.

Lumbar Fusion – Lumbar Fusion surgery is designed to treat pain caused by misalignment or instability of the vertebrae. There are many different approaches to lumbar fusion; your surgeon will decide what the best approach is for you. Many lumbar fusions involve the placement of an implant, filled with bone graft, into the disc space. This serves to both restore disc height and to promote the fusion process. Over time, two or more of your vertebrae will fuse together to form one solid bone. The fusion process happens gradually. It is for this reason that your surgeon will use metal rods and screws to act as an internal splint that maintains proper spine alignment. There are several

different lumbar fusion techniques currently being performed at Santa Rosa Memorial Hospital:

- Anterior Lumbar Interbody Fusion (ALIF) – The anterior (or frontal) approach provides excellent access to the lumbar spine. An incision is made in the lower region of the abdomen and a portion of the disc is removed and replaced with an implant. This approach allows for the placement of a larger implant, which provides a large surface area for the fusion process to occur, and allows for restoration of disc height.

- Lateral Interbody Fusion – The lateral (or side) approach allows the surgeon to access the spine while avoiding any major nerves in the area. This also allows for the placement of a larger implant which gives a large surface area for the fusion process to occur and provides for restoration of disc height.

- Midline Lumbar Fusion (MIDLF) – This minimally invasive lumbar fusion surgery involves a midline posterior (backside) approach. Because it is considered to be minimally invasive, the length of the incision is shorter than the traditional posterior approach.

- Posterior Lumbar Interbody Fusion (PLIF) – The posterior (backside) approach allows for excellent visualization of the spinal nerve roots.

- Transforaminal Lumbar Interbody Fusion (TLIF) – This approach is an adaptation of the PLIF. TLIF surgery provides direct access to the disc space through the intervertebral foramen, which is the opening between vertebrae through which nerve roots travel.

Tumor Resection: Resection, or partial removal, of a spinal tumor may become necessary when the tumor is causing pain and/or neurologic dysfunction.

NEUROMONITORING

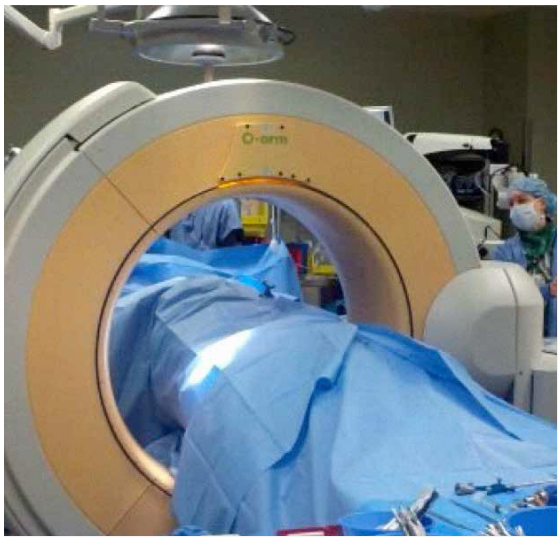
Intraoperative neuromonitoring is a tool that may be used to measure the health and function of your nerves and/or muscles during surgery. Many spinal surgeries do not require neuromonitoring. The role of neuromonitoring is to provide your surgeon with immediate feedback about any change in the activity in your nerves. The monitoring will alert him or her of a stimulated nerve. It can show nerve stress or damage, and can even pinpoint the location of the irritation. If your surgeon determines that you are a candidate, you will be prepared for neuromonitoring in the pre-op area the day of your surgery. Preparation includes the placement of adhesive electrodes on the skin overlying your leg or arm muscles (for lumbar or cervical surgery, respectively). If needle electrodes are used, these will be placed in the operating room after anesthesia is given to minimize any discomfort.

NAVIGATED SPINAL SURGERIES

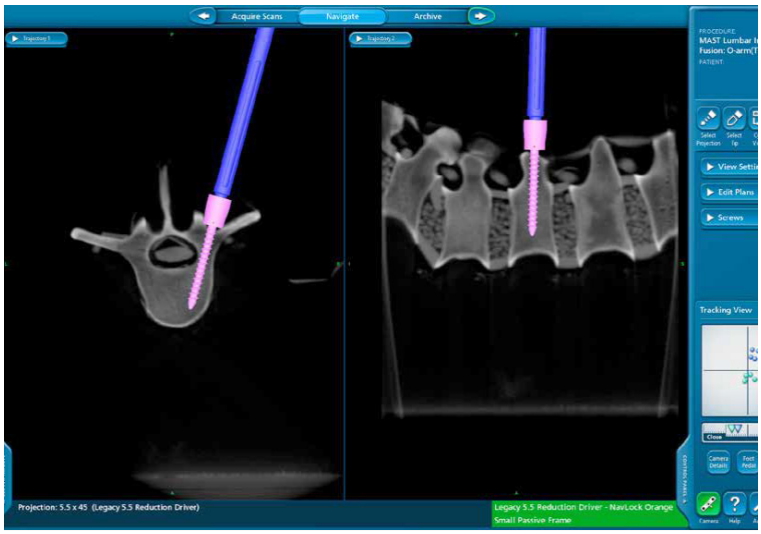
The use of navigation is used in certain spinal surgeries. This state-of-the-art technology provides your surgeon with real-time guidance in placing implants and hardware in the spine. Many spine surgeries do not require navigation.

A Navigation System With Monitor

In navigation-assisted surgery, images from an intra-operative CT (the O-Arm) are downloaded into the navigation computer, and through the use of specialized software, are used to build a virtual, 3-D model of your spine. This 3-D model acts like a blueprint to guide your surgeon in the placement of spinal hardware. During your surgery, your surgeon matches your actual spine to the computer's virtual model displayed on the monitor in the operating room. Much like a GPS system in an automobile, your surgeon can track in real time the position of surgical instruments and implants in relation to your true anatomy.



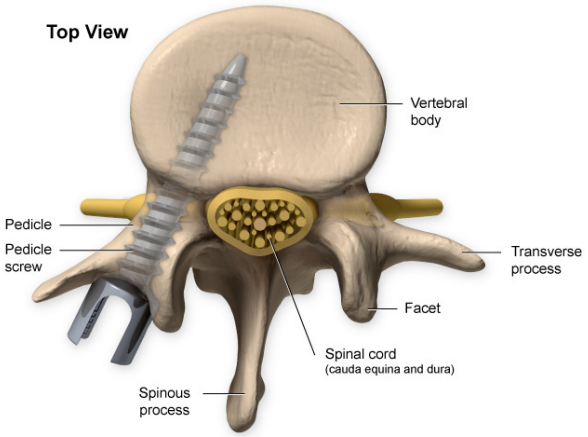
The O-Arm intra-operative imaging system can be opened or closed back into an “O” shape, which allows the surgical team to position it during surgery without having to move you.



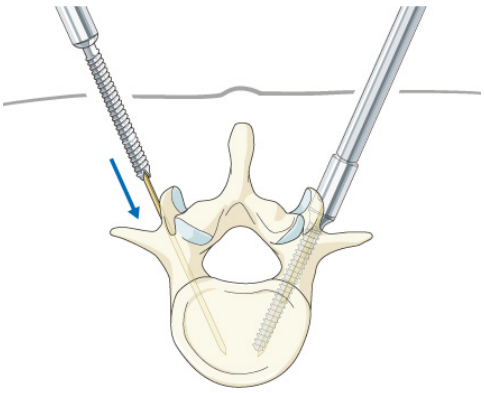
3-D navigation assisting in the accurate placement of screws.

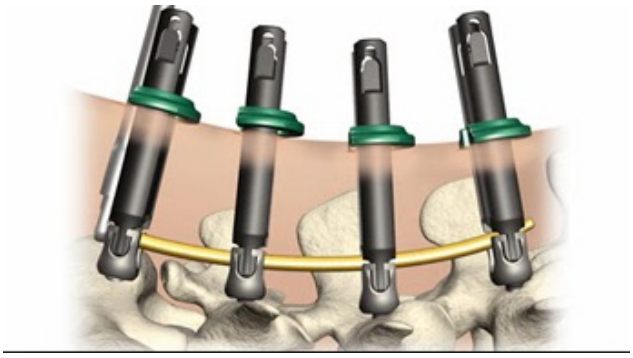
PERCUTANEOUS PEDICLE SCREW FIXATION

Percutaneous pedicle screw fixation is a minimally-invasive surgical technique that your surgeon may use during your spinal fusion surgery to attach stabilizing metal rods to vertebrae. The procedure gets its name from the placement, or fixation, of the screws for these rods in the part of the vertebra known as the pedicle.



At the start of a percutaneous pedicle screw fixation procedure, your surgeon will use live X-ray imagery, known as fluoroscopy, to locate the pedicles on neighboring vertebrae in your spine. Next, your surgeon will make small incisions in your back on both sides of your spinal column, using these openings to insert small metal rods that run between the vertebrae and are attached to them at each end by screws anchored into the targeted pedicles.





Like other minimally-invasive procedures, percutaneous pedicle screw fixation can achieve its goals with relatively minor disruption of muscle and other tissues surrounding the site of the procedure.

BEFORE YOU COME TO THE HOSPITAL

PREPARING FOR SURGERY (WEEKS IN ADVANCE)

After you and your surgeon agree that surgery is the best option for your condition, your surgeon's office will schedule your surgery and provide instructions.

In some cases, your surgeon will require you to obtain medical clearance prior to your surgery. Your primary care physician may perform this clearance and/or you may need clearance from your cardiologist or other medical specialist. You will also be asked to complete lab work, and possibly undergo other diagnostic tests such as an EKG, prior to surgery. Your surgeon may also request that you get dental clearance.

After you are scheduled for surgery, please contact the Spine Patient Navigator at **707-523-BONE** to reserve a seat in Santa Rosa Memorial Hospital's **Spine Pre-Operative Class**. This class will provide you and your family a clear explanation of what will happen during your hospital stay. Knowing what is going on will make the process run more smoothly. You will learn many helpful hints to speed your recovery. The class always provides an opportunity to ask any questions that you may have.

Additional Preparations:

- Preparing mentally and physically for surgery is an important step towards a successful result. A positive mental attitude will help your recovery process.

- The use of nicotine products (i.e., cigarettes, cigars, gums, or patches) has been shown to increase complications after surgery. Nicotine inhibits bone fusion and wound healing. Nicotine products can also increase the risk of blood clots (DVT's); thus, you should stop using them at least 3 weeks prior to surgery. You should continue to avoid these products after your surgery.

- Please reduce or stop your alcohol consumption prior to surgery.
- Excellent nutritional and hydration status before and after surgery is important for good health and progress. Good nutrition is a balance of calories, protein, fiber, and iron. Each of these is very important. In particular, protein is important because it helps to build muscles, repair tissues, fight infection, and aids healing.
- Unless you are told otherwise, continue to take medications already prescribed by your physician, except for the following:
    - Fish Oils should be discontinued 2 weeks prior to surgery.
    - Anti-inflammatory medications (Advil, Ibuprofen, Motrin, Feldene, Naprosyn or Aleve) should be stopped **7 days prior to surgery.**
    - Your physician or cardiologist should also discuss plans to stop any blood thinners you take regularly (Plavix, Aspirin, Coumadin, Xarelto, etc.) They should provide a specific stop date and any other special instructions (e.g. need for blood thinning injections once pills have stopped).
- Constipation is oftentimes a problem following surgery, for a variety of reasons. Increasing fiber and fluid intake will help to eliminate this problem. It is recommended that you purchase stool softeners and/or laxatives prior to surgery so that they are on hand when you get home from the hospital. Do not arrive to the hospital for your surgery constipated – practice good bowel care in the weeks leading up to your surgery.
- Iron helps carry oxygen to blood cells, so it is recommended that you increase your iron intake prior to surgery. Foods high in iron include leafy green vegetables, beef, chicken, and dried fruits.
- Minimize eating foods high in sugar, such as sugary drinks, candy, pastries, and processed foods, especially if you have diabetes. High blood sugar levels, both before and after surgery, can slow healing and increase your risk of developing an infection.

- You may wish to review and plan your post-hospital care with your Spine Patient Navigator (707-523-BONE) prior to admission. If you have specific needs while hospitalized or once discharged, please reach out to your Patient Navigator. We are here to help facilitate your options and assist you in making decisions in a more informed way.

- Arrange your transport to and from the hospital – remember, you will not be able to drive yourself home. **Patients are discharged from the hospital at 10:30am**.

- Before your admission, please complete the Advance Health Care Directive form authorizing a person of your choice to make decisions with your physician about your care, should this become necessary.

- 1 to 2 days prior to your surgery, the E.A.S.E. (Early Admission Surgical Evaluation) nurse will call and talk to you about your surgery date and time, review your lab work, allergies, medications, and follow-up with any questions that you may have. The E.A.S.E nurse will also inform you of when and where to arrive at the hospital the morning of your surgery. You will be told when to stop eating and drinking and what medications you should take on the morning of your surgery. If you do take any medications on the day of surgery, do so with only a couple of sips of water.

- You will be provided antimicrobial cleansing scrubs called Chlorhexidine Gluconate cloths (CHG) at the Spine Pre-Operative Class. If you are not able to attend the class, please contact your Patient Navigator, and a set of CHG cloths will be mailed to you. Use the cloths ***the night before surgery***. The cleansing process will be repeated in the pre-operative area of the hospital on the day of your surgery.

- If you are having neck surgery, you will also be provided with a liquid form of CHG to use on your hair when you shower the night before surgery. Use this wash instead of your regular shampoo, and do not use any conditioner or hair products (i.e. hair gel, hair spray) afterwards. Take care to avoid getting the CHG wash in your eyes, ears, nose, or mouth.

- Durable Medical Equipment (DME): Although many people do not require DME (i.e. walker, cane, shower chair, elevated toilet seat) after spine surgery, some will find it beneficial during the immediate recovery period. If you decide to purchase any DME, it is best to do so prior to your surgery. Your surgeon's office can assist you with obtaining this equipment. Unfortunately, most insurances do not cover DME, so you should expect to pay out of pocket for anything you buy.

- Adaptive Equipment: You will likely need to make modifications in the manner in which you perform certain activities to ensure that you are being compliant with your spinal precautions. Adaptive equipment (i.e. reacher, sock-aid, long-handled bath sponge) can help you to maximize your independence while helping you maintain your precautions. Adaptive equipment can be purchased prior to surgery (see page 42 for suggested supply stores), or post-operatively at the hospital gift shop.

PREPARING YOUR HOME

You will find it helpful to prepare your home prior to surgery so that it is safe when you return. The following information is designed to assist you with this.

- Remove throw rugs from the floor. These can cause you to trip and fall.

- Remove or relocate electrical cords which are in walking paths.

- Wear shoes with non-skid soles.

- Put frequently used items where they can be reached easily. You will want to avoiding bending, lifting, and twisting while you recover from your surgery.

- Use a long-handled reacher to pick things up off the floor.

- Before surgery, prepare and freeze meals that can be easily re-heated.
- Check stair railings to make sure they are secure.
- If you have an upstairs bedroom, you might want to consider temporarily sleeping on the first level to avoid climbing stairs. Most people find that stair climbing is no more challenging than it may have been prior to their surgery, but some feel more comfortable staying on the ground floor.
- Pick out a chair to sit in for when you come home. A good chair is one that is firm, has arms, and has a seat height that is at least 18 inches from the floor but that still allows your feet to be flat on the floor.
- **Walkways**
- Remove throw rugs whenever possible to avoid tripping.
- If you can't remove throw rugs, use rugs with non-skid backing to avoid slipping.
- Make the transition between types of flooring (such as wood floor to carpeted floor) as even and secure as possible to prevent tripping.

Stairs

- Make sure handrails are well anchored (or install handrails) on both sides of the stairway.
- Non-skid treads can be placed on wooden stairs to prevent slipping.
- Make sure carpeting on stairs is secure.

Furniture Layout

- Arrange furniture so that pathways are not cluttered.
- Chairs and tables need to be sturdy and stable enough to support a person leaning on them.
- Chairs with arm rests and high backs provide more support when sitting and more leverage when getting in and out of a chair.

Lighting

- Light switches should be immediately accessible upon entering a room.
- Good lighting for hallways, stairs, and bathrooms is especially important. Keep a nightlight on in your bathroom.
- Be sure that your lighting is sufficient to prevent falls.

Toilet

- Use an elevated toilet seat or commode to ease getting on and off the toilet (if needed, please purchase your elevated toilet seat or commode prior to surgery).
- Install grab bars around the toilet if you need more support getting on and off the toilet.

Bathtub

- Install skid-resistant strips or a rubber mat.
- Use a shower chair or bench if it is difficult to stand during a shower, or too difficult to get up out of the tub.
- Install grab bars on the side of the tub or shower for balance, if needed.

Doors

- Avoid locking bathroom doors, or only use locks that can be opened from both sides, when you may need assistance in the bathroom.

Kitchen Safety

- Store frequently used items at waist level. Use a reacher or grabber to get items that are not at waist level.
- Before surgery, consider preparing and freezing meals that can be easily re-heated.

YOUR SURGERY AND HOSPITAL STAY

DAY OF SURGERY AND ADMISSION TO THE HOSPITAL

- At Home: Take your medications as previously instructed by the E.A.S.E. nurse, with a couple sips of water only.
- Arrival Time: 2 hours before surgery, or the time told to you by the E.A.S.E. nurse.
- What to Wear: Wear simple, loose and comfortable clothing. Do not wear any jewelry. Also leave money and other valuable possessions at home. We cannot be responsible for lost possessions.
- What to Bring: Loose fitted clothing, bathrobe, and toiletries, if desired (toothbrush/paste, hairbrush, deodorant, etc.). Your occupational therapist will be giving you tips on how to dress yourself while maintaining spinal precautions, so it is recommended that you bring pajama bottoms or sweatpants to practice with, as well as socks and shoes. If you wear hearing aids, dentures, glasses, or contact lenses, please bring them (as well as their containers) with you. If you have sleep apnea, please bring your CPAP machine and distilled water. Do not bring any of your home medications EXCEPT for eye drops and inhalers.
- When you arrive at the hospital: Park in the front parking lot or in the visitor area in the parking garage and proceed to the admitting office (to the left of the main lobby). Sign your name in the admissions sign-in binder and indicate that you are present for surgery. Your support person can assist in checking you in, and may remain with you until you go to surgery.
- Your family may wait in the surgery waiting room, if they wish. After your procedure, the surgeon will contact your family in this waiting area to discuss your surgery and your condition.

PRE-OPERATIVE AREA

This area is designed to prepare patients before they enter the operating room. An intravenous (IV) infusion of fluid may be started. In this procedure, a tiny plastic tube or "catheter" is placed in your vein (usually in the arm) as a means to administer fluid and medication. Your nurse will complete the admission process.

Your surgical team will take your latest information and perform some additional safety checks and tasks. They will review the surgical consent with you and have you sign the actual consent for surgery paperwork.

Your anesthesiologist will ask questions about pertinent medical history, allergies, and any previous experiences that you have had with anesthesia. If you have questions or concerns, do not hesitate to address them with your anesthesiologist. This is also the time when your anesthesiologist will speak to you about general anesthesia. General anesthesia involves being put to sleep with medications delivered through your IV line. A breathing tube will also be inserted after you have gone to sleep in order to protect your airway during surgery.

Your surgeon will greet you in the pre-operative area and answer any questions that you may have. He or she will confirm your identity, evaluate your surgical site, and then sign the site with a surgical marker. These steps are an important part of the process designed to increase patient safety. Members of the operating room staff will reconfirm that all of the appropriate paperwork and tasks have been performed. They will then escort you down the hall on a gurney and into one of the operating rooms.

OPERATING ROOM

The length of your surgery depends upon what specific type of spine surgery you are having. Your surgeon will speak with your family in the surgical waiting room upon completion of your procedure.

POST ANESTHESIA CARE UNIT (PACU)

After surgery you will be transferred to the PACU, where you will be closely monitored until you are ready to be transferred to the nursing unit. Here, your vital signs (blood pressure, respirations, heart rate, and tempature) will be checked frequently, you will receive pain medication if needed, you may receive oxygen, and your incisional bandage will be checked. You can expect to remain in the PACU for 60 to 90 minutes. When the PACU nurse determines that you are sufficiently recovered, you will be transferred to the nursing unit. Family and friends are not allowed into the PACU; however, they can gather your belongings and take them to the nursing unit where they will meet you in your room.

TRANSFER TO THE NURSING UNIT

Once you arrive to your room on the nursing unit, your vital signs will continue to be monitored, an assessment will be completed by your nurse, and you will begin post-surgery exercises. These post-surgery exercises include:

1) Deep Breathing/Incentive Spirometry - This exercise involves taking 10 slow, deep breaths in a row, and should be performed every hour while you are awake. It is important to perform deep breathing exercises after surgery to rid your airway and lung passages of mucus.

2) Foot Pumping - This exercise involves moving your feet up and down vertically 10 times in a row every 30 minutes while you are awake. Early movement can help prevent blood clots from forming.

DIET

Your surgeon likely will not put any restrictions on your diet after surgery. That being said, to minimize the risk of nausea, it is recommended that you start with foods like Jell-O, pudding, and broth. Once you tolerate these foods, you can transition to a regular diet. You will be provided a daily menu to fill out. We have many diets that can be ordered (diabetic, low salt, gluten free, cardiac, and vegetarian/vegan). If you need assistance with completing the menu selections, or have any specific dietary needs, please let us know.

PAIN MANAGEMENT

After surgery, you will experience varying degrees of pain and discomfort. This is normal and should improve each day. Keeping your pain under control is very important to your recovery. Effective pain management will help you to eat better, sleep better and get around more easily. We ask that you pay close attention to your level of pain and use the following pain scale to communicate with your nurse:

0	1	2	3	4	5	6	7	8	9	10
No Pain					Moderate Pain					Worst Possible Pain

Your care team will help you with your pain management. However, pain management begins with you! Please do not hesitate to request pain medication as you need it. Do your best to describe the pain and pinpoint its location and intensity. Your surgeon will select the most appropriate pain medication for you. It is best to "stay ahead" of the pain, by taking your pain medication at consistent intervals throughout the day and night. Pain management is a multifaceted approach. The methods of pain management following spine surgery may include:

- Oral Pain Medications – Oral pain pills will be your primary source of pain relief following spine surgery, and can be very effective in managing post-operative pain. While you may find that you also require IV pain medication as part of your pain management routine, the goal will be to transition you to oral pain medication alone as soon as possible. Remember that you will not have the option to receive IV pain medication at home.
- Patient Controlled Analgesic (PCA) – Please remember that even if you do have a PCA pump following your surgery, it is important to think of it as a complement to your oral pain medications – NOT a replacement for them. If you are still experiencing pain after receiving oral pain meds, you can use your PCA. With a PCA, you can push a button, and IV pain medication is instantly delivered to you through your IV line. The advantage of the PCA is that it allows for a more constant level of pain relief. It is important to remember that only you, and not family or friends, push the PCA button. This ensures that you will only receive pain medication when you truly need it. PCA pumps have several safety features built-in that are designed to prevent over-medication. If you do have a PCA following your surgery, it will be on a short-term basis only. Ideally, you will transition to oral pain medication on the day following your surgery.
- Muscle Relaxants – Muscle spasms around the incision are common following spine surgery, and can be relieved through the use of muscle relaxants.
- Cold Therapy - The application of cold has been shown to reduce swelling and pain associated with inflammation around the surgical site. Apply an ice pack for 15-20 minute intervals, making sure to wait at least one hour in between icing sessions. Be sure to place a protective barrier (i.e. thin towel) between your skin and the ice pack, and perform periodic skin checks.
- Repositioning and Ambulation- Sometimes turning and repositioning alone can relieve pain. Additionally, the act of getting out of bed and walking can be a source of pain relief. Let your care team know what makes you more comfortable.

HOME MEDICATIONS

Any medications that you have been taking prior to coming to the hospital may be resumed with an order from your surgeon or physician. It is important that you provide the hospital with a comprehensive list of your home medications for your surgeon to review when ordering post-operative medications. You will not be allowed to take any medications brought from home during your hospital stay, as your nurse can only administer medications dispensed from the hospital pharmacy.

REHABILITATION IN THE HOSPITAL– PHYSICAL THERAPY

Per your surgeon's request, you may be seen by a physical therapist on the day of surgery, generally a few hours after you arrive on the nursing unit. For the remainder of your hospital stay, you should expect to have one to two physical therapy sessions per day. Your physical therapist will instruct you in how to perform exercises geared at promoting strength, flexibility, and enhancing the healing process, while at the same time protecting the surgical repair. They will also educate you on spinal precautions, safety with transfers, and gait training. You will learn during your therapy that walking is the best form of exercise that you can do while you rehabilitate. Your support team or "coach" is welcome to be present during the physical therapy sessions to learn how to assist you at home. Ultimately, your motivation and participation with physical therapy is a vital element in the speed and success of your long-term rehabilitation.

EXERCISE PROGRAM

Your physical therapist will instruct you on your post-operative home exercise program. Your exercise program will be specific to you and will depend upon:

- Your particular surgery
- Your surgeon's protocol
- Your own limitations and restrictions

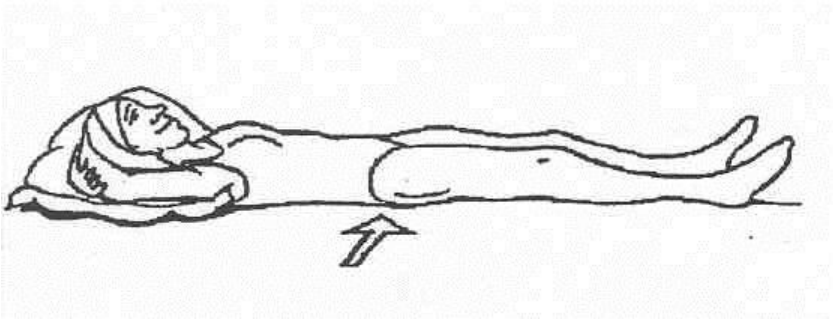
In order to tolerate your exercise program and gain the greatest benefit from your therapy sessions, it is important that your pain be adequately controlled. Therefore, it is recommended that you plan on taking your pain medication 30-45 minutes before doing your exercises. Refer to the exercises presented on pages 29-30 to continue performing post-operatively.

Exercises:

Quad Sets - You can perform quad sets while in bed. It is recommended that you do 10 repetitions every hour. The purpose of this exercise is to help strengthen the front of the thigh muscle (quadriceps). To perform a quad set, you will lie on your back and slowly tighten your thigh muscle by pushing the back of your knee down into the bed. Do not let your heel come off of the bed. Keep your thigh muscle tightened, or contracted, for a count of 5 seconds before relaxing.

Foot Pumping - This exercise involves moving your feet up and down vertically 10 times in a row every 30 minutes while you are awake. Early movement can help prevent blood clots from forming.

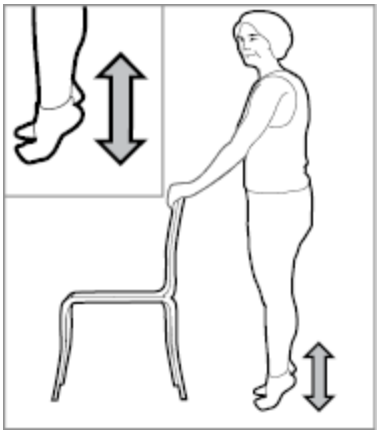
Gluteal Sets (buttock squeezes) - This exercise strengthens the gluteus maximus, which is a very important muscle for walking. This is done by squeezing your buttocks together and holding the contraction for a count of 5 seconds.



Heel Slides – This exercise is done by sliding your heel, one leg at a time, up under your buttock until your ankle is beside your knee.

Your physical therapist may incorporate this next exercise into your program based on how you are progressing:

Standing Calf Raises – While holding onto a supportive surface, rise up onto the toes lifting both heels off of the ground. Hold for 5 seconds. Slowly return to the starting position. Repeat 10 times.

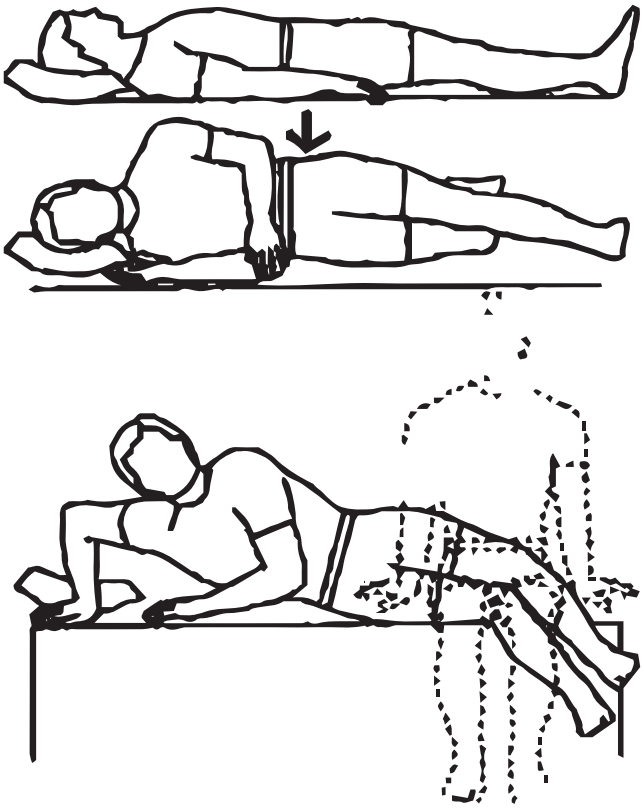


TRANSFER TRAINING:

The purpose of transfer training is to teach you how to safely get into and out of bed, chairs, and commodes. Your physical therapist will instruct you on transfer training and will teach your family or "coach" how to assist. You will use a technique called log-rolling to both get into and out of bed.

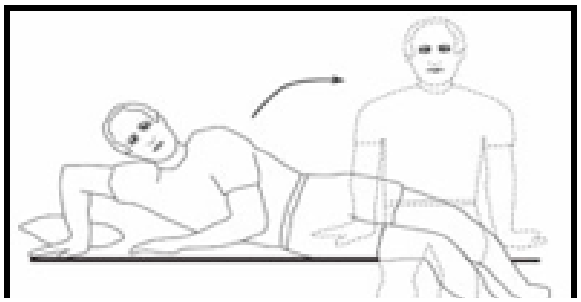
Getting out of Bed

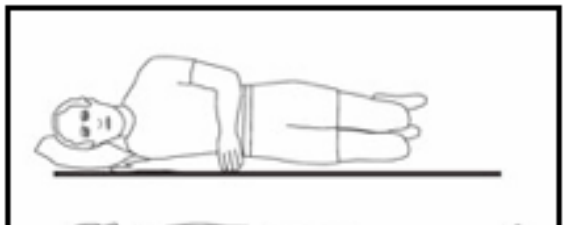
- While lying on your back, bend your knees.
- Roll onto your side.
- Keep your shoulders and hips together as a unit as you roll.
- Place your bottom hand underneath your shoulder and place your top hand in front of you at chest level.
- Slowly raise your body as you lower your legs toward the floor.



Getting into Bed

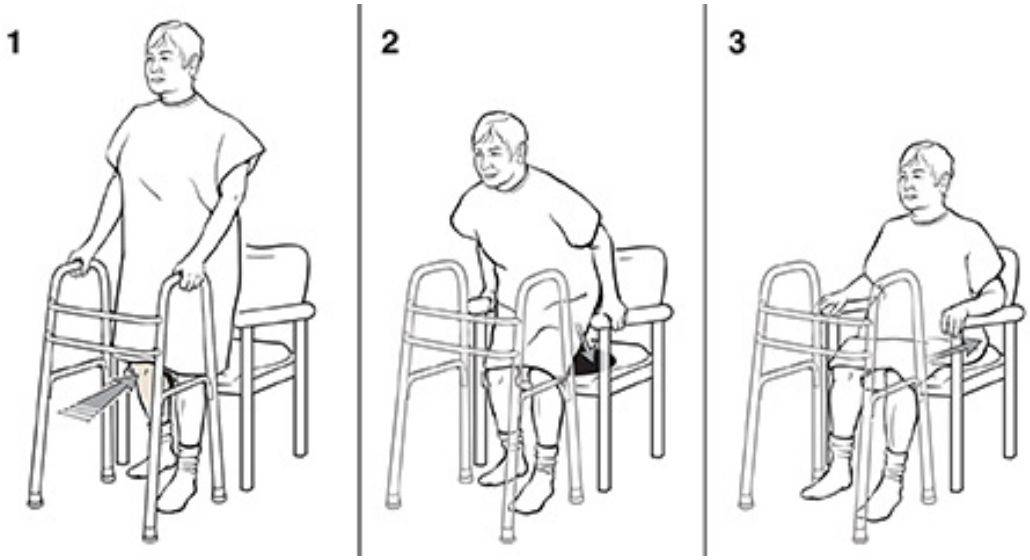
- Scoot back onto the bed as far as you can.
- Lower yourself onto your side, using your arms to help guide your body. At the same time, bend your knees and pull your legs onto the bed.
- Keep your knees bent and roll onto your back, keeping your shoulders and hips together as a unit as you roll.





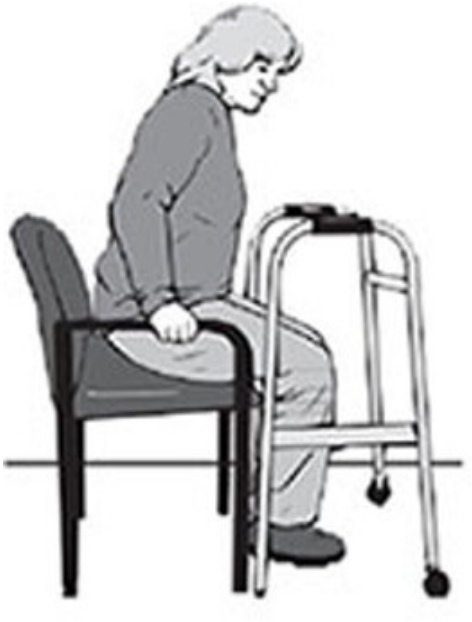
Getting into a Chair, Wheelchair or Commode

- When sitting down, slowly walk back towards the chair or commode until you feel the back of your legs against it.
- Reach back for the arm rests and slowly lower yourself into the chair (move slowly to avoid “plopping” onto the chair).
- Do not hold onto the walker while you are slowly lowering yourself down.



Getting out of a Chair, Wheelchair, or Commode

- When attempting to stand from a sitting position, scoot your hips forward to the edge of the bed or chair.
- Using your arms, push down on the armrest of the chair to push yourself up.
- Do not pull yourself up with the walker; this may cause you to fall.
- Once you are standing, reach for the handles of the walker and take a few moments to get your balance before taking a step.



GAIT TRAINING

Your physical therapist will assist you out of bed and onto your feet, possibly with the use of a walker or cane. The rehab department has walkers and canes for patients to use while in the hospital. If you have a personal walker or cane that you would like to have sized appropriately, have a family member bring it in on the day of discharge and your physical therapist will do so. Your physical therapist will also instruct you on stair climbing (if necessary).

Walking on Level Terrain

- Pick up or roll the walker and place it a comfortable distance in front of you with all four legs on the floor. This is usually at arm's length ahead of you.

- Do not take such big steps that you are too close to the walker. There should be a space between you and the walker at all times. If you are too close to the walker, it may cause you to tip and fall backwards.
- Hold your head up and look straight ahead. It is tempting to watch your feet, but this is more tiring, and you may run into something.

Stair Negotiating/Climbing

- If you have stairs at home, you will be instructed how to negotiate them using the handrails, and possibly a walker or cane.

REHABILITATION IN THE HOSPITAL– OCCUPATIONAL THERAPY

You will be seen by an occupational therapist after your surgery. Your occupational therapist will educate you on safety in the home, and instruct you in activities of daily living (bathing, dressing, etc.). Your support team or "coach" is welcome to be present during the occupational therapy sessions to learn how to assist you at home.

SPINAL PRECAUTION GUIDELINES

Spinal precautions should be maintained during your recovery period, which is approximately 6 weeks. Follow these precautions until your surgeon tells you otherwise.

Do's

- ✓ Do listen to your body when performing activities. Pace yourself by gradually increasing your activity level. Listen to your body and rest as needed during the day.
- ✓ Do walk on level surfaces, and progress the distance and frequency walked as tolerated. Walking is the #1 exercise following any spinal surgery.
- ✓ Do wear your collar or brace if prescribed by your surgeon.
- ✓ Do sit in a sturdy chair with a straight back and arms to help you maintain good posture.
- ✓ Do go up and down steps, unless your surgeon tells you otherwise. Go slowly, and hold onto the hand rails.

Don'ts

- ⦸ Do not lift heavy objects. Follow the weight restriction limit told to you by your surgeon.
- ⦸ Do not reach, stoop, or bend forward at the waist or from side to side.
- ⦸ Do not twist your spine when turning; turn your whole body.
- ⦸ Do not spend a prolonged time in any one position during the day. Change positions frequently to avoid both discomfort and back strain.
- ⦸ Do not sit in low or soft chairs. A good rule to remember when sitting is "always sit with your hips higher than your knees." This will reduce the amount of stress on your back as you stand up.

DISCHARGING FROM THE HOSPITAL

The majority of patients who have undergone spine surgery go directly home after a 1 to 3 day hospital stay, sometimes with either in-home or outpatient physical therapy. Some patients who undergo certain spine surgeries do not even spend the night in the hospital.

HOME CARE REHABILITATION

Your surgeon may prescribe home care rehabilitation after you are discharged from the hospital. Most patients do not require this type of rehabilitation. For the patients who are not prescribed home care rehabilitation, it is very important to continue to perform the exercises that were taught in the hospital, as they help to achieve the best outcome following your spinal surgery. Gentle exercise is important because it improves circulation, promotes healing, and decreases pain.

- Walking – this is main exercise after spine surgery. It is recommended that you avoid hills, ramps, and uneven surfaces.
- Foot Pumping – continue these 10 times several times a day for six weeks or until your doctor tells you to stop.
- Breathing exercises with your incentive spirometer – continue to use this several times a day until your doctor tells you to stop.

OUTPATIENT PHYSICAL THERAPY

In the majority of instances, patients will not need homecare rehabilitation, and will instead go home and begin outpatient physical therapy if their surgeon deems it appropriate. If your surgeon recommends outpatient physical therapy for you, you will typically be prescribed 2-3 sessions per week. Depending on your particular surgery, these therapy sessions may not begin for 2 to 6 weeks post-operatively. Your surgeon's office can assist you with selecting a therapy clinic and making your first appointment.

INCISION CARE

- Keep the surgical area clean and dry at all times. Do not put tight clothing over it.
- If you still have a dressing over your incision upon discharge, keep it in place, but change it if it gets wet, or as directed by your surgeon.
- If your surgeon chose to close your incision with sutures or staples, they will be removed during your first post-operative visit with your surgeon, 10-14 days after the surgery.
- Leave steri-strips in place (they will eventually fall off on their own).
- Showering: Follow the instructions you receive upon discharge to see if there are any special instructions regarding showering.
- Do not take tub baths, soak in a hot tub or swimming pool, or use a sauna for 4 to 6 weeks after your surgery. Your surgeon wants your incision to be completely healed before you submerge it in water, so consult with him or her first.
- Do not apply creams, lotions, ointments, or powders to incision.

COLLAR/BRACE WEAR

Your surgeon may require you to wear a cervical collar or lumbar brace after surgery. During your hospital stay, you will be shown how to apply and take off the collar or brace, as well as how to care for both it and your skin. There are some cases in which a collar/brace is not needed.

MEDICATIONS

Your surgeon will prescribe medications for you to take after your surgery. In some cases, the prescription can be electronically transmitted to your preferred pharmacy, and your medications will be ready for you to pick up when you leave the hospital. Alternatively, you may be given a paper prescription upon discharge, which you will need to bring to your pharmacy to be filled.

- Narcotics (pain medication) - It is important to take your prescription pain medication as directed by your surgeon. You may find that in the first few days following your surgery, you will need to take your pain medication at the prescribed intervals (for example, every 4 hours). However, once you notice a decrease in your pain, you should begin to take your pain medication at less frequent intervals. The goal is to taper you off of the pain medication as quickly as your physical, mental and emotional status allows. Remember, if you are taking pain medication, you should avoid alcoholic beverages. You should also avoid taking medication on an empty stomach - have something to eat first. In the event that the pain medication does not work, or if you begin to experience unpleasant side effects (nausea/vomiting, constipation), contact your surgeon's office.

- Home medications: Resume your home medications as detailed in your discharge instructions.

MANAGING CONSTIPATION

Constipation is a common issue that must be addressed following any surgery. This is due to the combined effect of taking narcotics (the most common side effect of narcotics is constipation), along with decreased physical activity following spine surgery. Follow these guidelines to prevent constipation:

- Increase your fluid intake. Set a goal of drinking 8 glasses of fluid daily.

- Increase your fiber intake. Choose whole grain breads and cereals, fresh fruits, vegetables, and beans.

- Take stool softeners twice daily. Stop the stool softener if you start to experience loose or watery stools. If you continue to have symptoms of constipation, you can take Milk of Magnesia, which is a mild oral laxative, or Magnesium Citrate, which is a much stronger oral laxative. Dulcolax suppositories are also an option. All of these medications are available over-the-counter.

WHEN TO CALL OR SEE YOUR DOCTOR

Contact your surgeon sooner if you experience any of the following symptoms:

- Low-grade fevers are not unusual after surgery, and typically do not indicate a problem. However, a temperature greater than 101.5° F warrants a call to your surgeon's office.
- Drainage from your incision. A small amount of yellowish or pinkish drainage is normal. Contact your surgeon if you have a large amount of drainage that has saturated through your bandage and/or clothing, if the drainage is bloody or yellowish/cloudy, or has an odor.
- Any NEW neurologic deficits, such as new arm or leg numbness, tingling or weakness.
- Redness, swelling or warmth around your incision.
- Increased swelling in thigh, calf or ankle that does not go down with elevation.
- Increased pain/tenderness in the calf.
- Chest pain and/or problems with breathing - call "911" or go to the nearest hospital ER.

YOUR REPAIRED SPINE IS DIFFERENT...

Recovery from surgery takes time. You will likely feel tired and fatigued for several weeks, which is a normal response. It is also not uncommon to have a poor appetite. It is important to plan periods of rest throughout the day, in between continuing your physical therapy sessions or walking program, taking your medications, and following your surgeon's instructions.

If you live alone, you may want to make arrangements for someone to help during your initial recovery for 1-2 weeks after surgery.

Some helpful hints:

- Organize your daily routine so things are easily accessible, like cookware.
- Your surgeon will suggest how much time you should take off of work.
- You will need clearance from your surgeon before you can resume driving.
- Your surgeon will tell you when you are able to resume physical activities such as golf, tennis, and swimming.

Hard work and a positive attitude will help your recovery from surgery be a successful one!

PROVIDING FEEDBACK…

On behalf of Santa Rosa Memorial Hospital, your surgeon, and care team, we would like to thank you for choosing to have your surgery at the Center for Bone and Joint Health. We hope that you find this educational booklet helpful during your journey to recovery. If, at any time, you have questions regarding any step of this process, please feel free to reach out to your Spine Patient Navigator at 707-523-BONE. Feedback from our patients has been a critical component in building our Center for Bone and Joint Health. We listen, respond and seek to constantly improve so that we can achieve a positive experience and excellent outcomes. We look forward to hearing your feedback in a variety of manners…

- Patient satisfaction written survey mailed to you by Press Ganey Associates.
- Phone consultation with the Spine Patient Navigator, 707-523-BONE.
- Written correspondence to Santa Rosa Memorial Hospital's President.

Santa Rosa Memorial Hospital
Attn: President
1165 Montgomery Drive
Santa Rosa, CA 95405

Thank you!

ADAPTIVE EQUIPMENT SUPPLIERS

Apria Healthcare
3636 North Laughlin Road, #190
Santa Rosa, CA 95403
(707) 543-0979
Fort Bragg (707) 961-1770
Ukiah (707) 468-9242
Lakeport (707) 994-1236

Pacific Medical
Anthony DeAlcuaz, Rehab Consultant
(209) 480-6964 cell
(707) 546-3045 fax

R A Medical Company
407 East Perkins Street
Ukiah, CA 95482
(707) 463-0160

Redwood Empire Medical Supply
6620 Redwood Drive
Rohnert Park, CA 94928
(707) 585-6800

Ron Andrews Medical Company
117 Carlos Drive
San Rafael, CA 94903
(707) 575-1840

Sonoma Surgical
4975 Sonoma Highway 12
Santa Rosa, CA 95409
(707) 539-5151

North Coast Medical
Functional Solutions Catalog
(800) 235-7054 (www.ncmedical.com)

SPINAL SURGERY WEBSITE REFERENCES

American Academy of Orthopaedic Surgeons
www.orthoinfo.aaos.org

American Association of Neurological Surgeons
www.aans.org

The Arthritis Foundation
www.arthritis.org

Blood Guys: Blood Autotransfusion Process
www.bloodguys.com

Medtronic
www.medtronic.com

North American Spine Society
www.knowyourback.org

Nuvasive
www.nuvasive.com

Serving All of Sonoma County

Spine Services Are Provided at the Following Locations:

Santa Rosa Memorial Hospital
1165 Montgomery Drive
Santa Rosa, CA 95405
707-523-BONE (2663)

Santa Rosa Memorial Hospital Outpatient Rehabilitation
131 B Stony Circle, Suite 2000
Santa Rosa, CA 95401
707-542-4704

St. Joseph Orthopedic & Sports Medicine Clinic
1255 North Dutton Ave., Suite B
Santa Rosa, CA 95401
707-547-4618

West Sonoma County Hand and Physical Therapy Clinic
968 Gravenstein Hwy South
Sebastopol, CA 95472
(707) 824-8018