



Align yourself with world-class spine care.

Spine Pre-Op Patient Education Guide

Welcome to Sky Ridge Medical Center

We are pleased that you and your physician have selected Sky Ridge Medical Center for your care. We are committed to providing the highest quality healthcare to you through a team that specializes in spine services and believes in creating “beyond your expectations” experiences.

This guide, in addition to the pre-op Spine Class, will provide you with education and information about your upcoming spine surgery. If you have any questions or concerns during your stay, please don't hesitate to ask your physician, nurse practitioner, nurses, physical/occupational therapists or other staff members for assistance.



We look forward to helping you return to a healthier, more active lifestyle. A few of our amenities are listed below:

Complimentary Valet Parking – patients and visitors may use our complimentary valet service at the main entrance of the hospital. Hours are Monday through Friday, from 8 a.m. to 5 p.m. We also have plenty of parking adjacent to our Spine & Total Joint Center.

Guest Information – The main entrance of the hospital is open from 5:30 a.m. to 8:00 p.m. weekdays and from 8:00 a.m. to 8:00 p.m. on weekends. Our Spine & Total Joint Center lobby is open from 5:30 a.m. to 7:00 p.m., Monday through Friday. After those hours, visitors may enter through the Emergency Department. We do not have set visiting hours, but ask that your friends and family be sensitive to your recovery needs. Each patient room includes a futon, so that your guest may spend the night or relax while visiting with you.

Pre-Admission Testing Nurse – Have you scheduled your appointment with our Pre-Admission Testing Nurse? If not, here are a few tips that will help us have timely, accurate information for your surgery:

- Please schedule your appointment within two weeks of your surgery date, and at least three days prior to the surgery.
- Allow at least one hour for your appointment.
- Call 720-225-1667 to schedule your appointment.
- Bring a list of your current medications and your health/surgical history to the appointment. If your physician has provided you with orders, please bring those with you as well.
- For your convenience, consider scheduling this appointment adjacent to another time you are on the Sky Ridge campus.

Surgical Waiting and Hospitality Pagers – While you are in surgery, your family members and/or friends are invited to enjoy our spacious, relaxing surgery waiting area in the Spine & Total Joint Center. We have two flat screen televisions and wireless internet access.

In addition, our “patient tracker” system will enable them to follow you through your procedure. The Sky Ridge Café, our coffee shop with Starbucks brewed coffee and the Healing Garden are just a short walk from the waiting area. And, we offer hospitality pagers, similar to what you might find in a restaurant, to let your loved ones know that the surgeon has completed the procedure. If they need to leave the campus, we are happy to ask for a cell phone number so that we can update you following the surgery.



Tobacco Free Campus – To promote a healthy lifestyle, Sky Ridge is a tobacco free campus and there are no designated smoking areas. Studies have shown that smoking negatively impacts bone health, including the healing of spinal fusions. If you or a loved one smoke, you might want to consider stopping prior to your surgery. In addition to talking to your doctor about options, resources include the Colorado Quitline at www.quitline.org or 1-800-QUIT-NOW (1-800-784-8669) and www.co.quitnet.com or 1-800-639-QUIT (1-800-639-7848).

Dining – While a patient of Sky Ridge, you may order your meals from our Skylight interactive television or simply call the DINE line at x3463. Your family members may purchase vouchers in the Sky Ridge Café and place meal orders along with you.

Wireless Internet Access/Website – Keeping in touch with family and friends can be an important part of the healing process. In addition to wireless internet access throughout the hospital, you may use your cell phone in virtually any area. Reputable websites you may wish to access to learn more about your surgery include:

www.back.com
www.orthoinfo.org
www.spine-health.com
www.spineuniverse.com

Skylight Interactive Television – Our Skylight interactive television system provides you with not only television choices, but a wealth of information on your medical condition, health education, relaxation ideas, food choices and more. You can also enjoy a selection of great Hollywood movies and games for free. Simply use the control buttons on your pillow speaker to navigate your television.

Sincerely,
Your Spine Team

Table of Contents

Your Spine Surgery Team	5
Getting to Know Your Spine	6-8
What is a Fusion?	9
Nutrition During Hospitalization	10
Nutrition Suppliments and Other Medicines.....	11
Consent and Risks of Spine Surgery	12
Packing for the Hospital	12
Night Before Surgery and Day of Surgery.....	13
Pain Management	14-18
Protecting Yourself from Surgical Site Infections	19
What You Can Expect After Surgery	20-23
The Brace and Precautions	24
Body Mechanics Principles	25
Mobility and Using a Walker.....	26
Using a Cane	27-28
Going Home After Surgery.....	29-30
Adaptive Equipment Purchase Guide.....	31
How Well Do You Know Your Limits Quiz.....	32-33





The Sky Ridge Spine and Total Joint team specializes in these procedures, creating a continuum of care to help patients return to an active, healthy lifestyle.

Your Spine Surgery Team

Before, during and after your surgery, you will meet several members of our spine team. You are the most important part of that team! Sky Ridge staff members wear color-coded uniforms so that you may easily identify your caregivers. Some of the professionals involved on our team, in collaboration with your spine surgeon, are:

Internal Medicine Specialist/Hospitalist (MD): This medical doctor may be consulted to follow your care and manage the current medical conditions that you have during your hospital stay such as blood pressure, diabetes, thyroid problems, etc.

Spine/Orthopedic Nurse Practitioner (NP): The NP works with you and other members of your healthcare team to coordinate pre-operative education, facilitate care during your hospitalization and discharge planning. The NP wears business attire or blue scrubs and a lab coat.

Surgical Staff (RNs and Assistants): All staff who work with your surgeon during the immediate pre-operative, intra-operative and post-operative periods wear light blue scrubs.

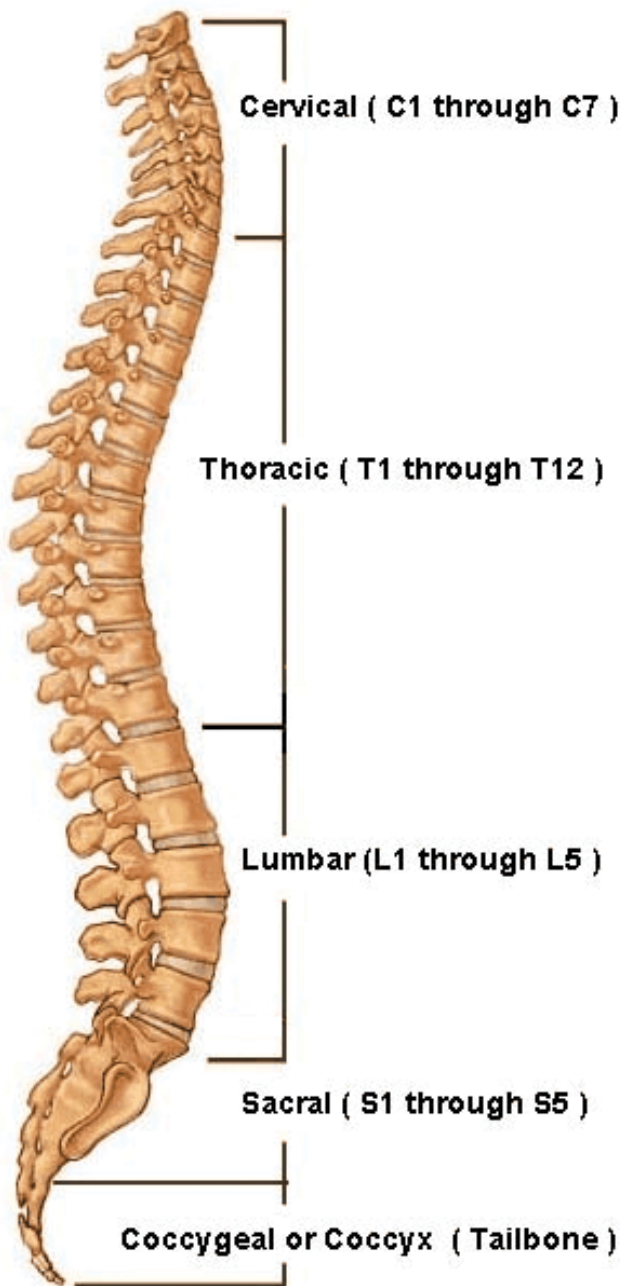
Registered Nurse (RN): An RN provides much of your care while you are on our dedicated Spine & Total Joint floor. Your RN will deliver the care specified by your surgeon, including monitoring your condition and providing medications/treatments. RNs wear royal blue scrubs.

Certified Nursing Assistant (CNA): A CNA is under the direction of an RN and assists with taking your vital signs, and assisting you with activities such as bathing and getting to the bathroom. CNAs wear maroon scrubs.

Physical Therapy (PT): Physical Therapists are responsible for working with you after surgery to make sure you are walking and exercising correctly. Therapists help you regain upper and lower body strength as well as give you “spine precautions” to follow after you leave the hospital. PTs wear polo shirts with the Sky Ridge logo.

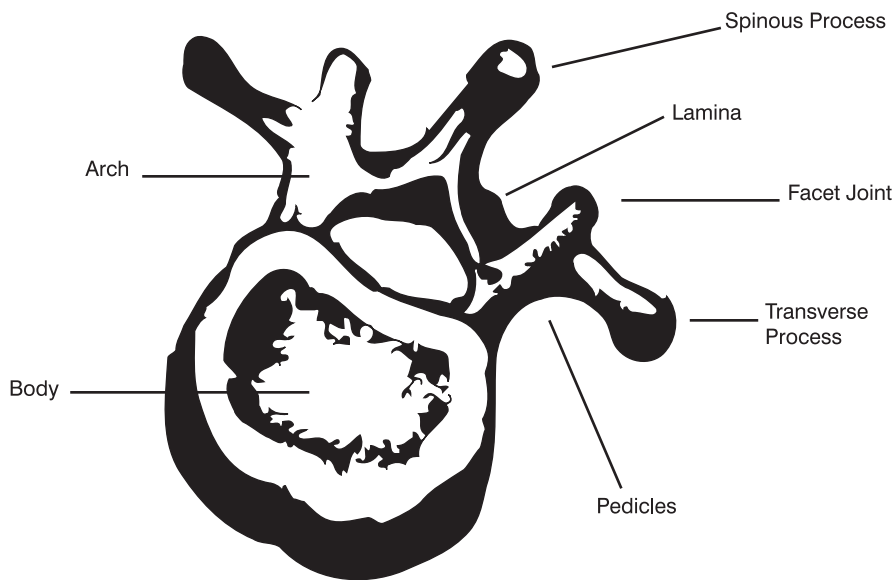
Occupational Therapy (OT): Occupational Therapists are responsible for teaching you how to perform daily activities such as bathing or dressing without hurting your back following surgery. These therapists will also demonstrate how to use adaptive equipment such as reachers, shower benches, raised toilets. Like PTs, OTs also wear polo shirts.

Getting to Know Your Spine



- It is important to understand how your neck and back function so you can protect your spine before and after surgery.
- A healthy spine shelters the spinal cord and supports the body while allowing it to move freely.
- It does this with the help of the three natural curves, strong and flexible muscles, and soft cushioning discs.
- The spine is composed of 24 bones called vertebrae.
- The vertebrae are separated by a shock absorber called a disc, and flexible joints that slide to allow movement.
- Cervical vertebrae: 7
- Thoracic vertebrae: 12
- Lumbar vertebrae: 5
- The base of the spine is called the sacrum.
- The tailbone or coccyx is attached to the bottom of the sacrum.

Vertebra

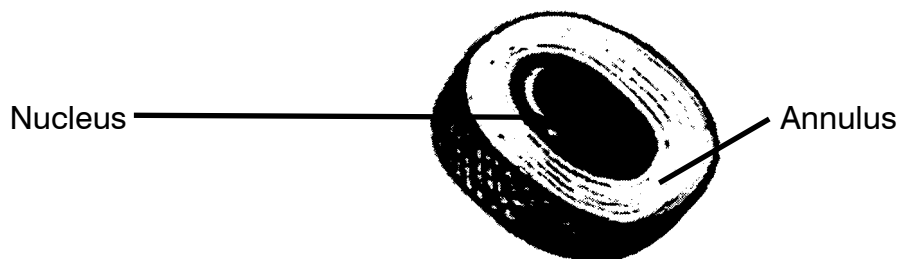


- The smallest vertebrae are in the neck (cervical spine), and the largest are in the lower back (lumbar spine).

How is it injured?

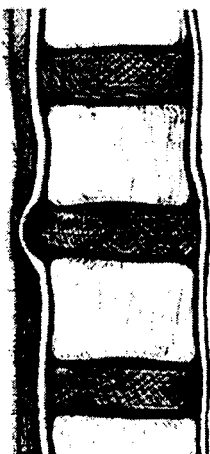
- Strong forces such as a fall or blunt trauma can cause fractures.
- Acute, repetitive, prolonged stresses or disease may weaken it.

Intervertebral Disc



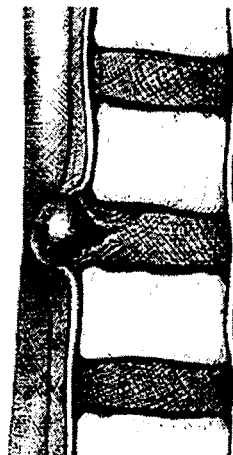
- The disc has a spongy, jelly-like center (nucleus) and tougher outer ring (annulus) with nerve endings. The discs are located between the vertebrae and act as a soft cushion to absorb shock, it is the major joint through which movement occurs.

Herniated Disc



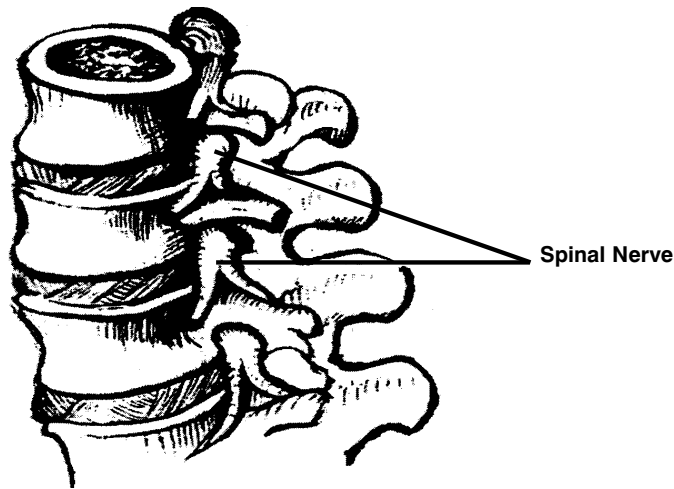
- As a disc degenerates, it loses its flexibility and causes the nucleus and outer ring to bulge.

Ruptured Disc



- Too much pressure on the outer rings of the disc causes the nucleus to squeeze through.

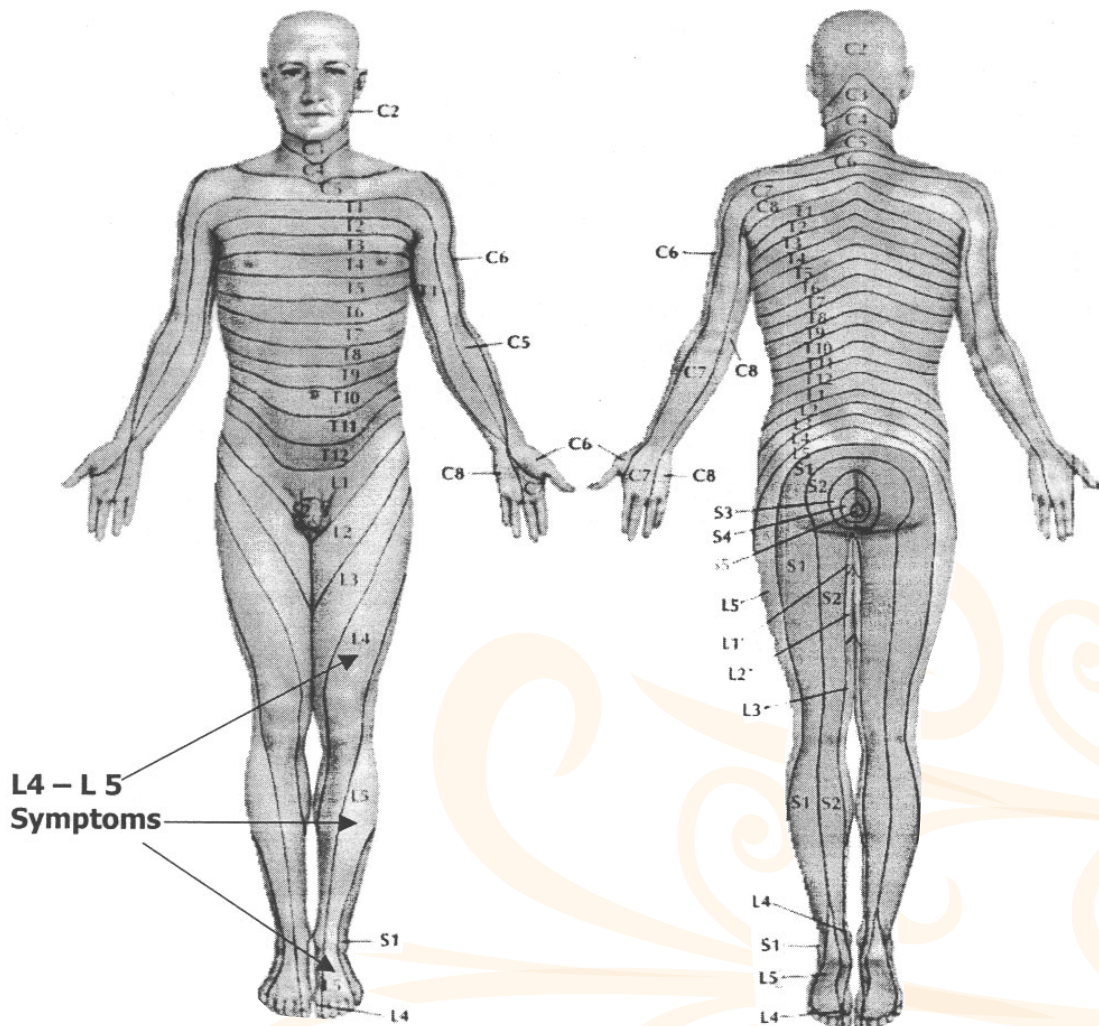
Spinal Nerve



- The spinal nerves are fibers coming to and from the spinal cord, and pass through a space between the vertebrae. The nerve fibers carry messages between the spinal cord and all parts of the body. Pressure (from any source) on a nerve can produce symptoms throughout the body. These symptoms include numbness, pain and/or weakness.

Muscles and Nerves

- Flexibility in the back and leg muscles is important for proper function of the spine. Abdominal and back muscles must be balanced for good posture. Certain nerves go to specific areas on the arms and legs. These same nerves work with specific muscle groups in the extremities.



What is a Fusion?

Your surgeon has determined that the most appropriate type of surgery for you, and it is important that you understand the procedure.

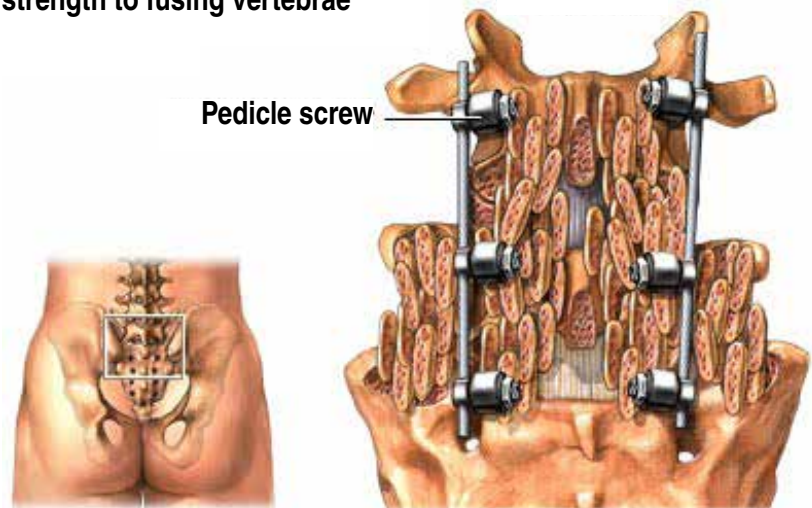
A fusion is performed to relieve the pressure off of the spinal nerves, while restoring spinal stability and alignment. Your surgery may be listed as “PLIF” or “TLIF” followed by the levels involved in the procedure, for instance, TLIF, L3-5. The LIF stands for Lumbar Interbody Fusion. The P means the surgeon will take a posterior approach and the T means he or she will use a transforaminal approach to your spine once an incision is made on your back. In either case, you will enter and leave the operating room lying on your back. During surgery, you will most likely be positioned on your abdomen with padding to protect other parts of your body. It is common for patients to experience some numbness, tingling and discomfort in the front of their thighs during their hospitalization due to positioning in the operating room. This should slowly resolve.

Bone graft is placed between two or more vertebrae after the disc is removed so that disc height can be restored, pressure can be relieved from nerve roots and fusion can begin. The type of bone grafting material used is determined by individual circumstances and surgeon preference. Some examples of bone graft material placed in the spacer include bone chips from the patient (removed in relieving pressure from the spinal nerves), cadaver bone and bony paste comprised of materials such as bone morphogenic proteins to “jump start” the fusion.

Rods and screws help to fixate the fusion; bone graft material may also be placed around these devices in the back of the spine to promote the fusion. This hardware is titanium and therefore it is not likely to “set off” security alarms in airports or other venues. However, depending upon the level of security sensitivity or if you have other hardware in your body (such as a total knee replacement), security agents may need to perform a further examination to verify that you have had surgery.

Pedicle screws are added to give strength to fusing vertebrae

Pedicle screw placement



Nutrition During Hospitalization

Soon after surgery, you will be given small sips of water and a few ice chips. Once you can tolerate clear fluids without nausea and/or vomiting you can begin to eat.

A menu is available in your room for you to order your meals. Once you are allowed to eat solid foods, you may order anything from the menu that fits into your dietary plan ordered by your physician. We encourage family members to bring in your favorite foods if nothing sounds good on the menu. It is important to eat foods high in protein and carbohydrates to promote the healing process.



In Room Dining

Our meals are ordered and served similar to what you might find in a hotel. You may place your request any time between 7 a.m. and 7 p.m. either by calling the DINE (x3463) Line or using Skylight interactive television. A menu is available in your room as well as on Skylight. Your meal is typically delivered within 45 minutes. Our dietitians are available to answer any of your dietary questions. And, if you want something that is not on our menu, please ask! We will try to accommodate your requests.

Preventing Constipation

Prior to surgery, during your hospitalization and post-operatively, you will be prone to constipation. The first way to prevent constipation is to eat a high fiber diet and drink at least six, 8 oz. glasses of water each day. Walking is an important part of your recovery and will also help you avoid constipation. During hospitalization, you will be given stool softeners daily. Again, it is important to continue your fluid intake to help the stool softeners work effectively. We also advise that you continue to take stool softeners following your discharge (you can buy these over the counter) until you are weaned off the narcotics.

Nutrition After Hospitalization

After you leave the hospital, your diet will continue to be one of the most important factors in the healing process. Three balanced meals with healthy snacks will enhance tissue regeneration.

Nutrition Supplements and Other Medicines

Preventing Excessive Bleeding and Helping Fusion Healing

A healthy diet is an important part of promoting strong bones and fusion healing. A multivitamin tablet daily, along with calcium plus vitamin D (500 mg. tablet three times a day) is also recommended to help accomplish this goal.

There are medications and herbal supplements that you need to **AVOID** for at least one week prior to surgery and after surgery, until your surgeon approves their use. These medications/supplements may cause excessive bleeding prior to surgery and prevent a fusion from effectively healing after surgery.



Medications (classified as non-steroidal, anti-inflammatory drugs) to avoid include:

- Advil
- Aleve
- Anacin
- Aspirin
- Feldene
- Daypro
- Ibuprofen
- Indocin
- Mobic
- Motrin
- Naprosyn
- Toradol
- Voltaren
- Certain cold medicines

Check with your pharmacist if you have any questions about whether or not a medication includes non-steroidal, anti-inflammatory drugs and follow any directions from your surgeon about medications to avoid.

Also, avoid all herbal supplements one week prior to surgery, including green tea, fish oil, Omega-3 supplements, etc. If you are not taking Coumadin or Aspirin, you may restart these herbal supplements when you return home unless otherwise noted by your surgeon.

If you are taking Coumadin, please talk to your primary care doctor, cardiologist or surgeon as to the appropriate time to stop and restart this medication.

Consent and Risks of Spine Surgery

As with any type of surgical procedure, there are certain risks associated with spine surgery. Though complications are rare and extensive measures are taken to minimize these risks, it is important that you are aware of possible problems. Your surgeon will discuss these risks with you and answer any questions you may have. When you have discussed the operation with your surgeon, you will be asked to sign a consent form to confirm that you understand the risks and complications that could occur with spine surgery. Some of the potential complications include, but are not limited to:

- **Nerve Damage**
- **Spinal Fluid Leak**
- **Infection**
- **Bleeding**
- **Blood Clots in the Legs or Lungs**
- **Failure to Fuse (Pseudarthrosis), or Hardware problems**
- **Heart Attack, Stroke, or Death**

The consent forms also include an area that allows you to receive a blood transfusion if needed during your hospitalization. If you do not want to consent to a blood transfusion due to religious or other reasons, please discuss this with your surgeon as soon as possible.

Packing for the Hospital

What to bring to the hospital:

- Comfortable slippers that you can wear to the bathroom and in the halls with Physical Therapy.
- Pajamas or loose-fitting athletic clothing that is easy to put on. Hospital gowns are provided during hospitalization.
- Comfortable short robe (please do not bring one that needs to be “stepped into”).
- Walker or cane if you are currently using one at home.
- Personal hygiene items including deodorant, toothbrush, shampoo, comb, brush etc.
- Your favorite relaxation CDs or DVDs (our patient rooms have access to high-speed internet should you choose to bring a Laptop computer).
- A list of your regular medications.
- Your insurance card.
- This educational booklet.
- **Confidence in yourself!**
- Your CPAP machine if you are currently using one at home.



What you should leave at home:

- Jewelry.
- Large amounts of money.
- Other personal valuables.

The Night Before Surgery

Most spine patients' surgery is scheduled early in the morning. Therefore eat a healthy, light dinner the night before your operation avoiding alcoholic beverages. Do not drink or eat anything after midnight or early in the morning of surgery.

You may take essential medications that you normally take daily (heart, thyroid, blood pressure, or anti-depressants) with a **small sip** of water the morning of the surgery. However, do not take the medication if you get sick to your stomach when taking it without food. If you routinely take vitamins, do not take them the morning of surgery as this is considered non-essential medication.

Some patients are on pain pills before the operation. It is okay to take this medicine with a **small sip** of water before coming to the hospital the morning of surgery if you are experiencing severe pain.

If you take pills or insulin for diabetes, do not take this medication the morning of your surgery unless advised otherwise by your physician.

The Day of Surgery

Please arrive at the hospital 2 1/2 hours before your surgery is scheduled to start. The packet you receive from your surgeon's office will have the exact time you should arrive; **please remember to bring this packet with you. You will register at our Spine and Total Joint Center.**

A nurse will escort you to the "Surgical Prep Area" and finish any paperwork that may not be complete. You will change into a hospital gown and cap. Your family will be asked to stay in the "Surgical Waiting Area" until the nurse is finished talking with you. Two adult family members may visit with you until you go to the operating room.

When you are taken to surgery, your family may wait in the lobby of the Spine and Total Joint Center. Your family and friends will find the waiting area a convenient, comfortable place to await news. A volunteer will be at the information desk to provide your family with hospitality pagers, answer questions and direct them to the dining area, etc.

After surgery, you will go to the PACU (recovery area) until you begin to wake up and your vital signs are stable. Your physician may meet with your family to discuss your condition in one of our private consultation rooms. Please let your family know that you may be in recovery on the average of two hours.

Keeping You Safe

Keeping you safe is our top priority. We will regularly ask you to identify yourself by stating your name and birth date and comparing it to your identification armband. This assures we provide the right treatment, tests and medications during your stay with us.

One of our goals is to prevent the spread of infection to our patients. Your healthcare team will wash hands with soap and water or use alcohol gel before and after each patient encounter. If you have concerns that your healthcare provider has not washed his or her hands, please speak up and ask them. Your physician will also order IV antibiotics during and/or following your surgery to help prevent surgical site infections.

At Sky Ridge Medical Center, we want to perform the right procedure, on the right patient, at the right site every time. We will ask you to be involved in the process by identifying your surgical site and confirming the site that your surgeon marks.

Pain Management

As a patient at this hospital, we expect that you will:

- Assist your healthcare professional in assessing your pain. Your nurses will ask you to “rate” your pain on the scale noted below in addition to assessing your level sedation (sleepiness) vital signs, etc.
- Discuss pain relief options with your healthcare professional to develop a pain management plan.
- Ask for pain relief when pain first begins.
- Tell your healthcare professional about any worries you have about taking pain medications.

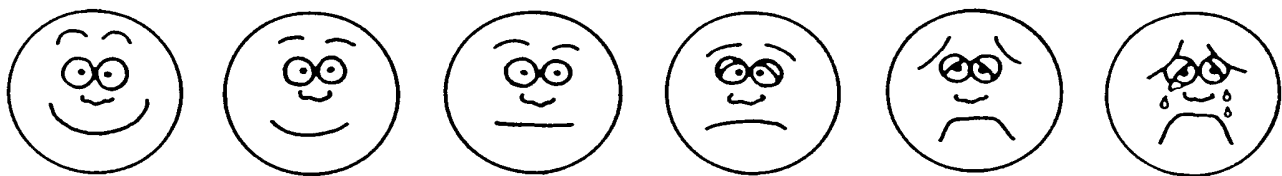
Pain Assessment Scale

The standard pain scale used in this hospital is a 0 - 10 scale. A score of 0 means “no pain” and a score of 10 means “worst pain.”

Standard Pain Scale

0	1	2	3	4	5	6	7	8	9	10
No pain		Mild Pain		Moderate Pain		Severe Pain		Very Severe Pain		Worst Possible Pain
Nada de Dolor		Poco Dolor		Dolor Moderado		Mucho Dolor				Peor Dolor

Modified Wong-Baker Faces




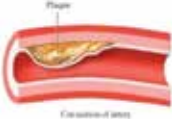










0	2	4	6	8	10
Very happy, no hurt	Hurts just a little bit	Hurts a little more	Hurts even more	Hurts a whole lot	Hurts as much as you can imagine
Nada de Dolor	Poquito Dolor	Poquito Mas de Dolor	Mas Dolor Dolor	Mucho Dolor	Peor Dolor

Medication Side Effects Fact Sheet

This will provide you with information about the most common side effects of the medicines you may take during your hospital stay. If you have more questions or concerns, please ask your nurse.



REASON FOR MEDICINE	MEDICINE NAMES: GENERIC (BRAND)	MOST COMMON SIDE EFFECTS
<p>PAIN RELIEF</p> 	<p>EXAMPLES:</p> <ul style="list-style-type: none"> • Fentanyl • Hydrocodone/Acetaminophen (Vicodin®, Lortab®) • Hydromorphone (Dilaudid®) • Morphine • Oxycodone/Acetaminophen (Percocet®) • Tramadol (Ultram®) 	<p>MAY CAUSE:</p> <p>Dizziness / Drowsiness Constipation Queasiness / Throwing Up Rash Confusion</p>
<p>QUEASINESS OR THROWING UP</p> 	<p>EXAMPLES:</p> <ul style="list-style-type: none"> • Ondansetron (Zofran®) • Promethazine (Phenergan®) • Scopolamine patch 	<p>MAY CAUSE:</p> <p>Headache Constipation Tiredness / Drowsiness</p>
<p>HEARTBURN OR REFLUX</p> 	<p>EXAMPLES:</p> <ul style="list-style-type: none"> • Esomeprazole (Nexium®) • Famotidine (Pepcid®) • Lansoprazole (Prevacid®) • Omeprazole (Prilosec®) • Pantoprazole (Protonix®) • Ranitidine (Zantac®) 	<p>MAY CAUSE:</p> <p>Headache Diarrhea</p>
<p>LOWERS CHOLESTEROL</p> 	<p>EXAMPLES:</p> <ul style="list-style-type: none"> • Atorvastatin (Lipitor®) • Lovastatin (Mevacor®) • Pravastatin (Pravachol®) • Rosuvastatin (Crestor®) • Simvastatin (Zocor®) 	<p>MAY CAUSE:</p> <p>Headache Muscle Pain Stomach Upset</p>
 <p>BLOOD THINNER TO STOP OR BREAKDOWN BLOOD CLOTS</p>	<p>EXAMPLES:</p> <ul style="list-style-type: none"> • Enoxaparin (Lovenox®) • Dalteparin (Fragmin®) • Heparin • Warfarin (Coumadin®) 	<p>Risk of Bleeding</p>
 <p>STOPS BLOOD CLOTS FROM BEING MADE</p>	<p>EXAMPLES:</p> <ul style="list-style-type: none"> • Aspirin • Clopidogrel (Plavix®) 	<p>MAY CAUSE:</p> <p>Stomach Upset Risk of Bleeding</p>

REASON FOR MEDICINE	MEDICINE NAMES: GENERIC (BRAND)	MOST COMMON SIDE EFFECTS
 <p>HEART RHYTHM PROBLEMS</p>	<p>Examples:</p> <ul style="list-style-type: none"> • Amiodarone (Pacerone®) • Digoxin (Digitek®) 	<p>MAY CAUSE:</p> <p>Dizziness Headache</p>
<p>LOWERS BLOOD PRESSURE & HEART RATE</p> 	<p>Examples:</p> <p>Calcium Channel Blockers</p> <ul style="list-style-type: none"> • Diltiazem (Cardizem (CD)®), Cartia XT®, Tiazac®, Dilacor XR®) <p>Beta Blockers</p> <ul style="list-style-type: none"> • Atenolol (Tenormin®) • Carvedilol (Coreg®) • Metoprolol (Lopressor®, Toprol XL®) 	<p>MAY CAUSE:</p> <p>Headache Dizziness / Drowsiness</p>
<p>LOWERS BLOOD PRESSURE</p> 	<p>Examples:</p> <p>ACE Inhibitors, Angiotensin Receptor Blockers</p> <ul style="list-style-type: none"> • Benzapril, Captopril, Enalapril, Lisinopril, Quinapril, Ramipril • Irbesartan (Avapro®), Olmesartan (Benicar®), Valsartan (Diovan®) 	<p>MAY CAUSE:</p> <p>Dizziness Cough</p>
<p>ANTIBIOTIC FOR BACTERIAL INFECTIONS</p> 	<p>Examples:</p> <ul style="list-style-type: none"> • Amoxicillin/Clavulanate (Augmentin®) • Cefazolin (Ceftin®) • Ceftriaxone (Rocephin®) • Cefotetan or Cefoxitin • Clindamycin (Cleocin®) • Ertapenem (Invanz®) • Levofloxacin (Levaquin®) • Metronidazole (Flagyl®) • Piperacillin/Tazobactam (Zosyn®) • Vancomycin (Vancocin®) 	<p>MAY CAUSE:</p> <p>Stomach Upset Diarrhea Rash / Flushing Headache</p>
<p>HELPS WITH INFLAMMATION</p> 	<p>Examples:</p> <ul style="list-style-type: none"> • Celecoxib (Celebrex®) • Dexamethasone (Decadron®) • Hydrocortisone (Cortef®) • Ibuprofen (Motrin®) • Ketorolac (Toradol®) • Prednisone 	<p>MAY CAUSE:</p> <p>Stomach Upset Sleeplessness</p>
<p>CALMS NERVES OR MAKES YOU SLEEPY</p> 	<p>Examples:</p> <ul style="list-style-type: none"> • Diazepam (Valium®) • Lorazepam (Ativan®) • Midazolam (Versed®) • Oxazepam (Serax®) • Temazepam (Restoril®) • Zolpidem (Ambien®) 	<p>MAY CAUSE:</p> <p>Dizziness / Drowsiness Headache Confusion</p>

Pain Management Medications

We are committed to treating and managing each patient's pain after spine surgery. There are different methods in which we give the medications to treat your pain.

IV: Dilaudid, Morphine and Fentanyl are the most common pain medications used immediately after surgery. For the first 12-24 hours post-operatively, you will receive narcotics given IV through the PCA pump. Additionally, you may receive muscle relaxants that will increase your comfort level.

Oral: The first day after surgery, we will turn your IV pain pump off and start oral medications. The most commonly used pain pills for spine surgery are Norco (Hydrocodone), and Percocet (Oxycodone).

The most common side effects associated with narcotics used for pain include: decreased respirations/breathing, drowsiness, nausea, vomiting, dizziness, constipation, rash, itching, dry mouth and decreased appetite.

The most common side effects associated with muscle relaxants used for muscle spasms include: drowsiness, headache, confusion, dizziness, nausea and vomiting.

Pain Management Feedback

People experience pain in different ways; therefore it is important that you give members of your healthcare team feedback on how you rate your pain before and after being medicated. Important points to remember include:

- Our goal is to reduce your pain and make it manageable so you can effectively work with Physical and Occupational Therapy to regain some independence during your hospital stay.
- Be specific when describing the pain (throbbing, aching, shooting, cramping, etc.).
- You will not be totally pain-free after surgery and the recovery period.
- A reasonable goal for your pain level after surgery with pain medication is four to six on the pain scale.

Other Pain Management Treatments

Non-Drug Measures to Treat Pain

While medications may help control some of your pain there are other methods you will find helpful to assist in making you more relaxed and comfortable, including:

Ice: Ice serves several purposes after surgery including reducing the swelling and helping to control pain. You may request an ice pack for icing near the surgical area, using it 20 minutes on and 20 minutes off.

Exercise: To increase blood flow and prevent increased pain, swelling and blood clots, you will be encouraged to do simple exercises such as ankle pumps, (move ankles up and down in circles in both directions.) You will be up walking with the Physical Therapy and Nursing staff each day during your recovery which will help decrease your pain. Also, remember to take slow, deep breaths as you change your position and get out of a bed or chair.

Progressive Relaxation: Progressive relaxation involves tensing and relaxing each part of your body. Following progressing relaxation, engage your mind into imagining a pleasant or happy scene. Or, you can tune into our Skylight channel on TV where you will find pleasant scenes and music to help with your relaxation exercise. As the mind is occupied by the scene, stress levels diminish as your muscles and mind relax. This has been proven to greatly reduce pain.

Music: The use of medication is often accompanied with unwanted side effects. Research has proven that music can be used to decrease the pain response. While studies found that medication was number one for pain reduction, music came in a solid second. It was found that music reduces intensity of pain as well as the amount of medication needed in acute post surgical pain. It is certainly non-invasive, so give it a try! Please feel free to bring your favorite music in and listen as you recover.

Pet Therapy: Pet Therapy has been shown to increase pain tolerance, reduce stress, lower blood pressure, and brings a happy and relaxed feeling to those experiencing pain (see hospital pet visitation policy).

Distraction: No, the pain is not in your head. However YOU are still in control. Focusing on your pain alone may make the sensation seem more intense. Instead, try to focus on something else, like reading a book, or watching television.

Importance of Controlling Pain

One of the myths that exist about pain is that it should not be treated but experienced. However, pain offers no known benefits. If it is not treated, pain can affect many different areas of your body, such as the heart, stomach and lungs.

Sometimes patients try to deal with pain after surgery by taking short breaths, or by holding back coughs to prevent hurting their incision sites. These actions can cause postoperative complications such as pneumonia. Also, under-treated pain may result in increased fear, anxiety or lack of sleep.

Remember: Pain prevention and control brings short and long-term relief and healing benefits.



Protecting Yourself from Surgical Site Infections

Your safety is our top priority and we want to provide you with the information you need to manage your journey to recovery. From time to time, patients may acquire a surgical site infection (SSI) after a procedure. Most patients who have surgery do not develop infections, but we want to alert you to the possible symptoms:

- Redness and pain around the surgical area
- Drainage of cloudy fluid from your surgical wound
- Fever

If you have any of these signs, please be sure to alert a member of your healthcare team. Most of these infections are treated with antibiotics.

What Can I do to Prevent a SSI?

Before Surgery

- Tell your physician about other medical problems/conditions you may have. Allergies, diabetes or obesity may affect your surgery and treatment.
- Quit smoking. Research has shown that patients who smoke acquire more infections. Talk to your physician about smoking cessation strategies before surgery.
- Do not shave near the site of your surgery. Shaving with a razor can irritate the skin and make it easier to develop an infection.
- Shower prior to arrival at the hospital.
- Wash/change your bed linens.

How Can I Protect Myself When I Return Home?

- Your physician or nurse will explain how to care for your wound when you return home. Make sure you fully understand how to care for your wound prior to leaving the hospital.
- Before you leave the hospital, make sure you know who to contact if you have questions about your wound when you return home.
- Always wash your hands before and after caring for your wound.
- If you have any symptoms of an infection, such as redness and pain at the surgery site, drainage or fever, call your physician immediately.
- Keep your pets away from the incision.

What is Sky Ridge Doing to Prevent SSIs?

- Healthcare providers clean their hands before and after caring for each patient.
- Our team wears protective hair covers, masks, gowns, foot covers and gloves during surgery.
- Our surgical teams clean their hands and arms up to their elbows with an antiseptic agent before every surgery.
- We administer antibiotics before your surgery starts. In most cases, you will receive a dose 60 minutes before the surgery starts. The antibiotics are typically stopped within 24 hours of surgery.
- We clean the skin at the site of the surgery with a special soap that kills germs.

What You Can Expect After Surgery

You will most likely be discharged from the hospital on the second or third day after surgery and/or if you are medically stable, have met all PT and OT goals and all tubes have been removed. To help you better plan your return home, you can expect to be discharged around 11 a.m.

Lumbar Spinal Fusion Surgery Clinical Pathway **Day of Surgery**

To help you during your recovery from lumbar spinal fusion surgery, this “Clinical Pathway” outlines the usual course of events to meet your goals for a successful recovery. Depending on the type of surgery and your individual needs and progress, you may meet your goals sooner or later than noted on the Pathway. Together, we will review your progress daily to help you reach your goals as quickly as possible. Please let us know of any questions or concerns you may have about your hospitalization, medications, treatment or recovery.

Activity and Diet:

- Your doctor may order you to sit on the edge of the bed and perhaps even get up out of bed to walk with your nurses the night of surgery. Let your nurse or nursing assistant know if need help or pillows while repositioning in bed; you can lay on your back, side or abdomen and should change your position hourly while awake.
- You will start on a clear liquid diet and progress to a regular diet; please let your nurse know if you have any nausea.

Pain Management:

We will ask you about your pain level and discuss measures to safely keep you comfortable as possible. Side effects of pain medications and muscle relaxants are that you may breathe less deeply and become too sleepy, so the nurses will be monitoring you, including your temperature, respiratory rate, blood pressure and oxygen levels.

Measures you can take to help control your pain include:

- You will start on IV pain medications and as soon as you are tolerating food, you will start taking oral pain medications and muscle relaxants
- Work with your nurse to know what pain medications, muscle relaxants or other measures have worked best for you in the past
- Control your breathing; concentrate on deep breathing throughout your position changes and avoid holding your breath
- Turn on Skylight TV to listen to relaxing music or watch a favorite show or movie; bring in your own iPod or computer
- Request ice to decrease swelling near your incision; use ice for 20 minutes on, 20 minutes off

Other equipment in your room or attached to your body may include:

- An IV for fluids and other ordered medications
- A Patient Controlled Analgesia (PCA) pump for IV pain medication
- A drain (Hemovac) to help prevent blood clots near your wound
- A Foley Catheter to drain your bladder
- Oxygen in your nose to assist your recovery from anesthesia and related medications
- Leg “wraps” while in bed (SCDs) and support stockings (TEDs) to help prevent blood clots
- An Incentive Spirometer to use hourly for exercising your lungs and helping prevent complications such as pneumonia

Lumbar Spinal Fusion Surgery Clinical Pathway

Post Op Day #1

Activity and Diet:

- Physical/Occupational Therapy or Nursing will assist you in getting up and out of bed and into the chair, begin teaching you about your brace (if your doctor has ordered it) and walking at least 25 feet. They will ask you questions about your home situation to help plan for discharge.
- You will be on a regular diet, please let your nurse know if you have any nausea. A side effect of your pain medication is constipation; you are encouraged to eat small, frequent amounts of food and up to six glasses of water daily in addition to stool softeners and a mild laxative to facilitate bowel activity.
- Your doctor may have blood samples drawn by lab, and/or order a post-operative X-ray of your spine.

Pain Management:

You will transition from the PCA pump to oral pain medications and muscle relaxants. We will ask you about your pain level and discuss measures to keep you as comfortable as possible, while keeping you safe. You will need to request this medicine as needed to prepare you for taking them at home. Generally, you can request pain medicines every 4 hours and muscle relaxants every 6-8 hours. Utilize measures to help control your pain as mentioned earlier, including:

- Control your breathing; concentrate on deep breathing throughout your position changes and avoid holding your breath
- Turn on Skylight TV to listen to relaxing music or watch a favorite show or movie; bring in your own iPod or computer
- Request ice to decrease swelling near your incision; use ice for 20 minutes on, 20 minutes off

Other equipment in your room or attached to your body may include:

- If you are taking fluids adequately, your IV will be “capped”, and used only if necessary
- A drain (Hemovac) to your incision
- Your foley catheter will be removed; ask for assistance when getting up to the bathroom
- Oxygen in your nose
- Leg “wraps” while in bed (SCDs) and support stockings (TEDs) to help prevent blood clots
- An Incentive Spirometer to use hourly for exercising your lungs and helping prevent complications such as pneumonia



Lumbar Spinal Fusion Surgery Clinical Pathway

Post Op Day #2

Activity and Diet:

- Physical/Occupational Therapy or Nursing will help you become more independent in getting up and out of bed and into the chair for meals, putting your brace on and taking it off. Your goal will be to walk at least 75 feet and will be asked to discuss your spine precautions. Although many spine patients are able to go home after discharge, a Case Manager will evaluate your progress as a part of our team and consult with you if needed regarding inpatient rehabilitation or Home Health Care options if needed.
- You will continue to eat regular food. If you had not had a bowel movement by the afternoon of Day #2, it will be recommended for you to take a suppository, stronger laxative and/or enema.



Pain Management:

- You will continue taking oral pain medications and muscle relaxants; request this medicine as needed to prepare you for taking them at home
- Continue to use non-drug measures to help control your pain
- Common *side effects* of narcotics include nausea, vomiting, dizziness, constipation, rash, itching, dry mouth, decrease in appetite and decreased respirations/breathing
- Common *side effects* of muscle relaxants include drowsiness, headache, confusion, dizziness, nausea and vomiting

Other equipment in your room or attached to your body may include:

- A drain (Hemovac) to your incision will most likely be removed and your dressing changed
- Ask for assistance when getting up to the bathroom.
- Oxygen in your nose will be removed if not needed
- Leg “wraps” while in bed (SCDs) and support stockings (TEDs) to help prevent blood clots
- An Incentive Spirometer to use hourly for exercising your lungs and helping prevent complications such as pneumonia

Lumbar Spinal Fusion Surgery Clinical Pathway

Post Op Day #3

Activity and Diet:

- Physical/Occupational Therapy will work with you to meet your goals today, which include walking at least 150 feet, taking a shower and walking up/down stairs. They will also work with you to help you obtain any adaptive equipment you may need at home (i.e. walker, cane). If you already have these items at home, you may bring them in so Physical Therapy can make sure they work for you if needed.
- During your car trip home, you are encouraged to take pressure off of your back by sitting in a seat that is slightly reclined, and getting out of the car every hour to stretch
- If possible, your goal will be to walk up to two miles over the course of the day by two weeks following your surgery
- At home, continuing stool softeners with six 8 oz. glasses of water daily, a high fiber diet and walking will help you prevent the *side effect* of constipation

Pain Management:

- You will be provided with pain medication and muscle relaxant prescriptions as needed for home
- Manage your medications so that you will be comfortable during transportation
- Continue to use other non –drug methods to control your pain



Other Considerations for Discharge:

- Oxygen in your nose will be removed if not needed. If you are sent home with oxygen, continue to use your Incentive Spirometer and follow up with your Primary Care Physician (not your Spine Surgeon) to determine when oxygen can be discontinued.
- If you are meeting your walking goals, you may have someone remove your TEDs after your shower in preparation for going home
- Your wound care will be discussed with you prior to discharge in preparation for home and will be included as part of your written discharge instructions
- Your IV “cap” will be removed prior to discharge, unless you need IV antibiotics at home
- If all of your goals are met, plan for discharge at 11 am on the day that you go home

The Brace

Your physician may have prescribed a brace for you because you have had a spinal fusion. The brace is designed to protect your spine while healing takes place. The brace can be fitted before admission, or the first day after your spine surgery; it is usually worn for a minimum of four weeks at all times when out of bed (except while in the shower). You will need to wear a fitted T-shirt, camisole or sleeveless shirt under the brace. When you return for your post-operative appointment, your surgeon will determine if you need to continue to wear the brace.

Your physician will decide which of the following braces you need based on your specific case:

The Lumbosacral Corset Brace is an elastic corset type brace with a velcro attachment in the front. Most patients learn to put on and remove this brace independently, while some may require assistance from a caregiver. This brace may be applied while sitting on the edge of the bed.

The Flexiform Brace is designed as one or two plastic molded pieces with straps on each side. It has a soft foam lining with plastic overlay. This can be applied while sitting on the edge of the bed.

The Thoracic-Lumbo-Sacral-Orthosis (TLSO) Brace is designed as two molded plastic pieces (front and back) with straps on each side. Most patients will require assistance to place and remove the TLSO brace. Your Physical Therapist and Occupational Therapist will work closely with you and your caregivers on proper procedures for placing the brace or taking it off. If you are experiencing problems with your customized TLSO, notify the company that made your brace. In the meantime, pad any pressure areas with gauze or cotton. However, do not delay.

Spine Precautions

No Bending, Lifting, Twisting (B, L, T)

- **Do not** bend at the waist; do bend at the hips and knees.
- **Do not** lift objects heavier than a gallon of milk (10 pounds).
- **Do not** twist your trunk.

The only aerobic exercise prescribed by your surgeon immediately after surgery is walking. You will be expected to TRY and walk up to one mile OVER THE COURSE OF THE DAY at one week, and two miles over the course of the day within two weeks, if you are able. When using a step pedometer, know that approximately 2,100 steps = 1 mile and 4,200 steps = 2 miles.

Body Mechanics Principles (After Surgery)

Sleeping

- Use a firm mattress
- Use pillows for positioning
 - Under knees when lying on back
 - Between legs and pillow/wedge behind back when side-lying
- May sleep on back, side or stomach

Sitting

- Avoid chaise lounges, soft sofas, chairs on wheels or with moveable supports
- Avoid low, deep chairs; it is difficult to rise from this type of furniture without forward bending
- Adjust chair for proper height
- Use a chair with arm rests and back support

Standing

- Maintain toned abdominal and buttock muscles
- Change position by weight shifting, walking or putting foot on low stool
- Wear comfortable shoes with good support
- Adjust work heights to avoid bending and reaching



Pushing/Pulling

- Push, rather than pull
- Keep back straight and head up
- Knees and elbows slightly bent
- Have center of gravity below mid-mass of load

Sexual Activity

- No intercourse until one month after surgery
- Back pain may limit sexuality
- Focus on increasing sensuality, the romance and excitement of the relationship
- Increase foreplay, have patience and avoid frustration. Pain and frustration can inhibit pleasure and orgasm
- Must have open communication and planning by both partners
- Try massage, touching, and erotic play

Mobility

Bed Mobility

When rolling to your side, move as a unit, with hips and shoulders moving simultaneously to avoid twisting. You will hear your patient care team refer to this as a “Log Roll.” You will also be asked to tuck your chin down and brace your abdominal muscles for added stability.

Getting In and Out of Beds and Chairs

To get into bed, sit on the edge then lower your upper body sideways, using your arms for support. At the same time you are lowering your upper body, bring your legs and feet up onto the bed.

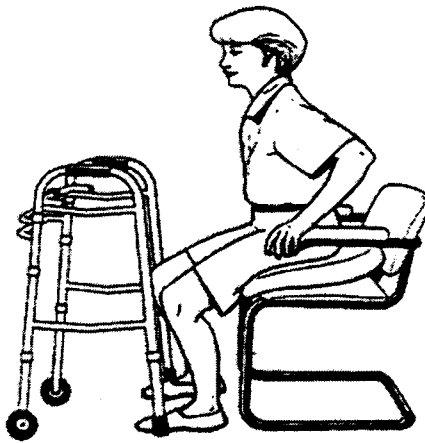
To get out of bed, the process is reversed. Avoid twisting by using the arm closest to the bed for support, eliminating the need to reach across your body. Before standing, scoot as close as possible to the edge of the bed and place your feet on the floor. If you are sitting on a chair without arms, push with your hands against your thighs, keeping your head up and your back straight. **Move slowly to avoid injuring your back.**

Using a Walker

Standing with a Walker

Slide your hips forward to the edge of the bed, chair or toilet seat.

Use your arms to push down on the edge of the object you are sitting on and lift yourself up.



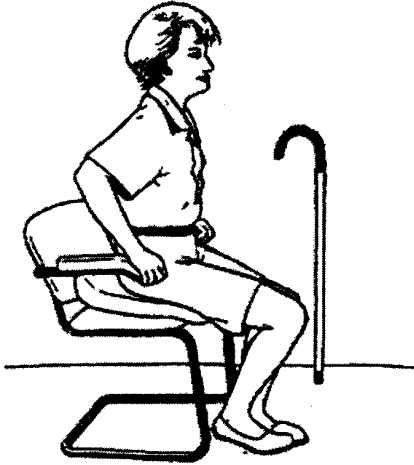
Move your hands to the handgrips of the walker and stand straight up.



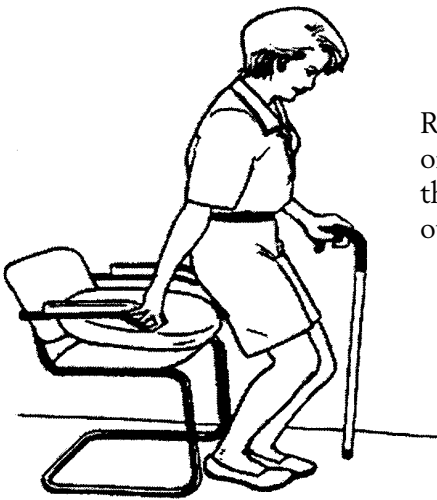
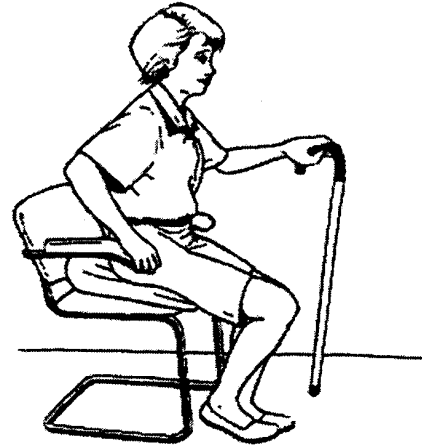
Using a Cane

Standing with a cane

Slide your hips forward to the edge of the bed, chair or toilet seat.



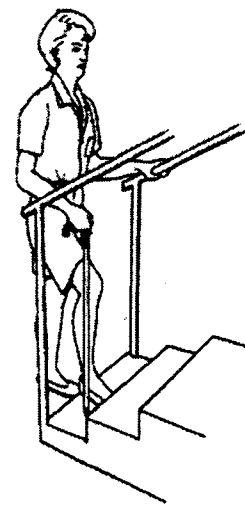
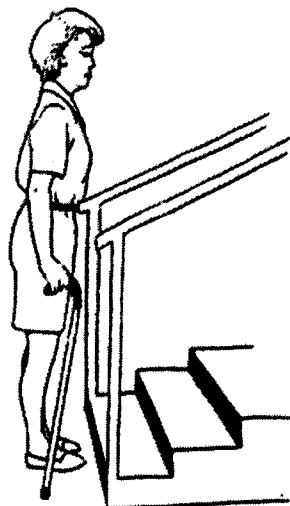
Place cane in one hand by grasping the handle with your palm turned downward.



Raise yourself up by pushing down on the cane in one hand and down on the object you are sitting on with the other hand.

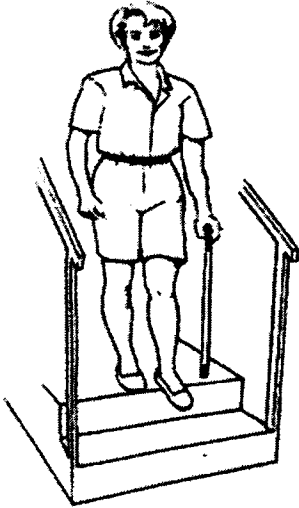
Walking Up Stairs

Head up stairs with your stronger leg. Bring your cane and sore/weak leg up to that step. Take a minute to get your balance and continue up steps, leading with your stonger leg.

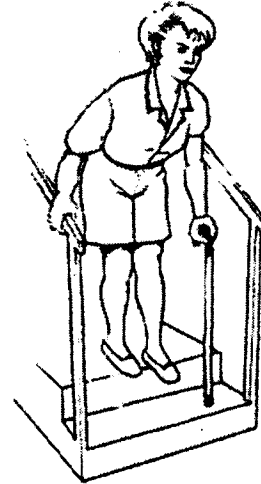


Walking Down Stairs With a Cane

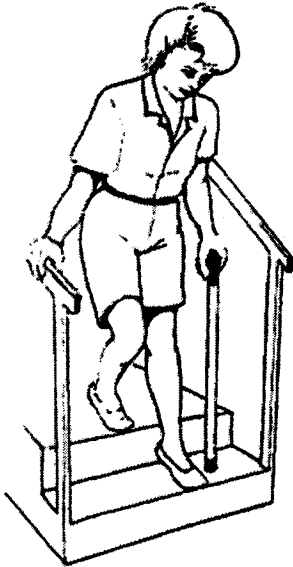
On the upstairs landing, rest your weaker leg forward on the edge of the step.



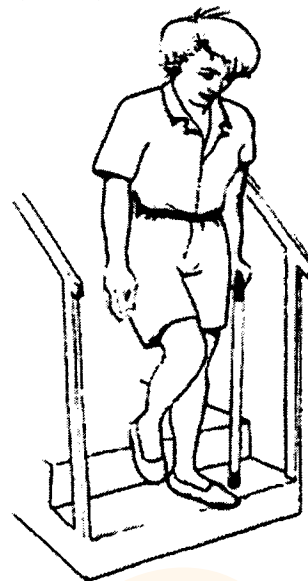
Put cane on the step below. Place the cane near the front edge of the step to help you keep your balance.



Bring your weaker leg down to the next step.



Push down on your cane and slowly lower your stronger leg.



Going Home After Surgery

Dressing: Upper Body

You will be instructed by an Occupational Therapist on dressing techniques. These approaches are designed to follow the spinal fusion precautions, which help to protect your back during the healing process. Remember to follow these same procedures while at home. If you have a warm and form flexiform brace, you may put your T-shirt on while sitting on the edge of the bed. Fasten bras in front and the turn them around to back.

Dressing: Lower Body

You should put your pants, shoes and socks on while sitting in a chair with back support. If you are unable to sit, you will receive special instructions for dressing. Your Occupational Therapist will determine what equipment you need. You will use the equipment at home until your doctor discontinues your spine precautions (generally not covered by insurance carriers).

Using Adaptive Equipment for Dressing

- Use a reacher to put pants over your feet and pull them past your knees. Stand up to pull them over your hips. Wear clothing that is easy to put on and is not tight fitting around the waist. Pants with elastic waistbands or drawstrings work well. Underwear and pants must go over your brace.
- Use your sock-aide to put on your socks. It is important to pull equally on both straps at the same time. Socks that are loose fitting or stretchy will go on much easier than tight tube socks.
- Use your long-handled shoehorn to put on shoes. Slip-on shoes, canvas tennis shoes, or loafers are easier to get on and take off. If you will be wearing tennis shoes, you may need to have someone tie your laces for you or you could purchase elastic shoe laces.

Toileting

- Use your raised toilet seat to avoid bending when trying to sit on the toilet. Bend at your knees and use safety grab bars or use a cane/walker for balance.
- Don't let yourself fall to the seat.
- Be sure toilet paper is easy to reach and doesn't require a twisting motion to grasp it.
- If you have trouble reaching for hygiene after toileting, a toilet tissue aide may be needed that will extend to your reach.

Increasing ease and safety for bathing:

- Until you feel safe showering have someone close by
- Brace may be removed for showering
- Long-handled bath brush
- Soap-on-a-rope or liquid soap in a hanging bottle
- Shower caddy that hangs over the shower head
- Non-skid mat in the tub
- Non-skid rug/mat on tile floor outside the shower
- Grab bars (home building supply stores)
- Hand-held shower
- Shower chair



Getting in and out of the Tub

- Use a step-in shower if one is available. Otherwise, stand next to bathtub and step in sideways one leg at a time
- Do not use soap dish, towel bar or other bathroom fixtures as a grab bar
- Install grab bars if you have poor balance or feel unsafe getting into the shower/tub
- Do not sit in the bottom of tub

Sink Hygiene

- Do not bend to look in mirror or get to the sink

Getting into a Vehicle

- You may sit in the front passenger seat when riding in the car; recline the seat for comfort.
- Use pillows behind your back for comfort.
 - To sit down, have your back to the seat.
 - Use the back of the seat and the door for support as you **slowly** lower yourself to the seat.
 - Bring legs into the vehicle one at a time as you rotate your head and shoulders toward the front.
 - Move your shoulders and hips as a unit.
 - If you have a high vehicle, use a small step stool or have the vehicle pulled up to the curb to increase stability of getting in and out.
 - Riding in the car should be limited to essential travel over short distances and may be more comfortable with the seat slightly reclined.
 - On long trips, you should get out of the vehicle and stretch at least every hour to relieve the stress of prolonged sitting.
 - Check with your physician regarding when you may drive.

Organizing Your Home Environment

Housekeeping

- Avoid housekeeping duties for the first two months.
- Do not carry anything heavier than a gallon of milk.
- Cook foods that can be frozen and used during your recovery or purchase prepared foods from the grocery store to ease cooking tasks.

Childcare

- Do not lift and carry children weighing more than ten pounds.
- Children can climb up and sit on your lap.
- Use highchairs, elevated changing tables and strollers.
- Do not carry heavy diaper bags.

Energy Conservation and Work Simplification

- Pacing
- Change in position
- Planning
- Prioritizing
- Alternating light and heavy activities

Adaptive Equipment Purchase Guide

Adaptive equipment is recommended by your therapist to be used after surgery, illness or injury. Adaptive equipment allows increased independence with functional activities and promotes compliance with your post-operative precautions.

You are responsible for purchasing equipment that you and your therapist determine is necessary. Insurance companies typically do not pay for adaptive equipment for self-care. However, it is a good idea to save your receipts and submit them as an insurance claim. If your insurance company does cover self-care equipment, you must contact your insurance company to determine if they have a preferred provider for equipment that you are required to use.

Suggested Places to Purchase Equipment

Major Medical

7000 North Broadway, Suite 412
Denver, CO 80221
303-403-4655
www.majormedicalsupply.com



Youcan Toocan

6460 East Yale Avenue
Denver, CO 80222
303-759-9525
www.youcantoocan.com

Thank you for choosing Sky Ridge Medical Center. We hope our therapists have met your needs. If you require further assistance please contact the Sports Medicine/Rehabilitation Department at 720-225-1030.

How Well Do You Know Your Limits?

1. It is safe to cross legs and use both hands to put on socks and shoes? T F
2. Name four things to remember when log rolling: _____

3. When and how long should you use body mechanics? _____
4. Name three things to remember when sitting to ensure good posture.

5. Walking is the only aerobic exercise to be done after surgery? T F
6. What is pacing, and why should you do it? _____

7. When should you put on your brace and when can you take it off? _____

8. Name three post-op spine precautions _____

9. Name three things to ensure safety in the bathroom _____

10. Name four things to remember when lifting _____

11. When sitting or standing, how often should you change your position?

12. Name two standing exercises _____
13. How many miles should you walk two weeks after surgery? _____
14. Explain why you have precautions after surgery _____
15. Name three pieces of equipment you should purchase before surgery.

16. What does B, L, T mean? _____

Quiz Answers

1. False
2. Bend knees, cross arms, tighten stomach, roll
3. All the time, for the rest of your life
4. Hips back in chair, shoulders over hips, feet flat on the floor
5. True
6. Stop before you are tired, plan the day, prevent pain and over fatigue
7. In bed, shower
8. Bending, lifting, twisting
9. Tub bench/shower chair, non-slip mat, shower caddy, person close by
10. Lift with knees, keep item close to you, move your feet to the object, do not lift more than 10 pounds.
11. 30 minutes
12. Mini squats, heel to toe exercises, high stepping, hip abduction
13. Up to two miles each day (4,200 steps)
14. Protect the fusion
15. Reacher, sock-aid, elevated toilet seat, shower chair
16. Bending, lifting, twisting



Sky Ridge Medical Center®

The Spine & Total Joint Center

10101 RidgeGate Parkway
Lone Tree, Colorado 80124

Phone: 720-225-1000
Find a Physician: 720-225-5DOC

www.skyridgemedcenter.com