GUIDEBOOK FOR
LUMBAR SPINE SURGERY

ADVANCED SPINE
& JOINT INSTITUTE
ALVARADO HOSPITAL
MEDICAL CENTER
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Section One:

General Information
Welcome

Thank you for choosing the Advanced Spine & Joint Institute at Alvarado Hospital. We are proud to be ranked among America’s 100 Best Hospitals for Spine Surgery™ (Healthgrades, 2014-2015). We follow a patient-focused clinical pathway, which accounts for our high levels of patient satisfaction. We also are ranked among the Top 5% in the Nation for Patient Safety Excellence (2015).

Our spine unit is a specialized unit staffed by physicians, physician’s assistants, nurses and other professionals trained in the care of patients undergoing spine surgery.

More than 200,000 people undergo spine surgery each year due to pain that they no longer wish to tolerate. Surgery aims to relieve pain, restore independence, and return patients to work or daily activities.

The Advanced Spine & Joint Institute has developed a comprehensive planned course of treatment. We believe that patients play a key role in ensuring a successful recovery. Our goal is to involve patients in their treatment through each step of the program. This guidebook provides the information needed to maximize a safe and successful surgical experience.

Features of the institute’s program include:
- Nurses and therapists who specialize in the care of spine surgery patients
- Private rooms
- Emphasis on individual care
- Family and friends participating as “coaches” in the recovery process
- A spine care coordinator who follows the patient through the surgery process
- A comprehensive patient guidebook to follow pre-op and beyond

Using the Guidebook

Preparation, education, continuity of care, and a pre-planned discharge are essential for optimum results in spine surgery. The guidebook is a communication tool for patients, physicians, physical and occupational therapists, and nurses. It is designed to educate you so that you know:
• What to expect every step of the way
• What you need to do before surgery
• How to care for yourself after spine surgery

Remember, this is just a guide. Your physician, physician’s assistant, or therapist may add to or change any of the recommendations. Always use their recommendations first and ask questions if you are unsure of any information. Bring your guidebook with you to the hospital and keep it as a handy reference for at least the first year after your surgery.

Role of the Spine Care Coordinator

The care coordinator is available to answer any questions you may have about your surgery or the recovery process.

The care coordinator will:
• Act as your liaison throughout the course of treatment
• Answer questions and coordinate your hospital care with spine center team members
• Conduct a pre-operative class for patients undergoing lumbar fusion surgery
• Call you one to two days after you are discharged to see how you are doing.

You may call the care coordinator at any time before your surgery to ask questions or discuss concerns. The care coordinators can be reached between the hours of 8 a.m.-4 p.m. Monday - Friday at (619) 229-4548 or 229-4569.

MAKE YOUR STAY A VIP AFFAIR!

Alvarado Hospital offers a free loyalty program called the Alvarado Advantage Club. Members receive several benefits and perks, including prioritized parking, newspaper delivery with breakfast tray when hospitalized, 10% discount at Alvarado Café, Gift Shop and Medical Plaza Pharmacy, area hotel discounts and more! Sign up with your care coordinator or online at AlvaradoHospital.com today!
Surgical Procedures

**Lumbar Laminectomy:** The lamina is a part of each vertebra. A lumbar laminectomy is the surgical removal of the lamina or part of the lamina on one or more of the vertebrae in the lower back. This is usually done to relieve pressure on the nerves that may become inflamed from pressure caused by a narrowed spinal canal, bone spurs, or a herniated disc.

Once the lamina is removed, the surgeon can then access the spinal canal and remove the source of irritation or pressure.

**Hemilaminectomy (Minimally Invasive Lumbar Laminectomy):** Laminectomy treats severe stenosis or herniation due to spinal degeneration. The stenosis or herniation can cause compression on the spinal nerve which causes pain to radiate down the nerve into the hand or foot.

A hemilaminectomy is minimally invasive, so the incision is very small and the muscles along the spine are left intact. During surgery, a small incision is made and the muscles are retracted (moved aside). The lamina is removed to free the nerve roots and relieve nerve pain.

**Lumbar Fusion:** A lumbar fusion is an operation to stabilize the lower back by creating bridges between at least two vertebrae and eliminating motion between them. It can be done by fusing the vertebral bodies in front (anterior) or by fusing the facet joints and lamina in the back (posterior). Bone or bone substitutes can be placed on and between the lamina and the facet joints.

Metal screws and rods or plates may be attached to the bones to secure the fixation while the bony bridge heals.

**Minimally Invasive Surgical Transforaminal Lumbar Interbody Fusion (MIS TLIF):** MIS TLIF is used to treat back and/or leg pain, usually caused by degenerative disc disease and spinal stenosis. This procedure is minimally invasive, using two small incisions instead of one larger incision in the middle. This decreases trauma to the muscles that provide stability to the spine.

The spinal disc is removed and replaced with a spacer containing bone graft. The vertebrae adjacent to the replaced disc are joined together with rods and screws to hold them in place while the bones fuse. The graft helps new bone growth, fusing the two vertebrae into one solid piece.

**Minimally Invasive Surgical Lateral Lumbar Interbody Fusion (MIS LLIF/XLIF):** MIS LLIF (also called XLIF) is used to treat advanced degeneration most commonly from arthritis and disc
degenerative disease. Entering from the side rather than the front or back avoids operating around the muscles that stabilize the spinal column.

A small incision is made in the side of the patient and then the disc is removed and replaced with a spacer containing bone graft, which allows the two vertebrae adjacent to the replaced disc to fuse together. Screws and plates/rods may be used to hold the bones in place while healing occurs.

**Anterior Lumbar Interbody Fusion (ALIF):** An ALIF is used to treat low back pain caused by pinching of the nerve roots or spinal cord. This is achieved by removing the painful disc and replacing it with a spacer that allows for the bones on either side of the disc to fuse together, which eliminates the painful motion. The incision is small and the muscles are left intact, since this is a minimally invasive procedure.

**Microdiscectomy (Microscopic Decompression):** A microdiscectomy is used to treat a herniated disc that was not sufficiently treated by physical therapy and pain medications. Since the joints, ligaments and muscles are left intact, the procedure does not change the mechanical structure of the patient’s lower (lumbar) spine.

During the surgery, a small incision is made on the lower back. The muscles are moved aside and a small portion of the bone over the nerve root and/or disc material from under the nerve root is removed to relieve neural impingement and provide more room for the nerve to heal.

**Sacroiliac Joint Fusion (SI-Fusion):** The S1 joint is responsible for up to 25% of low back pain complaints. This pain may be due to hyper-mobility caused by pregnancy or injury or degenerative pain such as arthritis or reduced motion after lumbar fusion. It is used to treat low back and hip pain from the sacroiliac joint. The procedure fuses the iliac bone (in the pelvis) to the base of the sacrum.

The surgery starts with a single small incision on the lower back. The guide wires are then inserted and used to place the dilation tubes, which will allow the surgeon to drill and insert the implant. Since the procedure is minimally invasive, the incision is very small and the muscles that cover the spine and pelvis are left intact.

**Kyphoplasty:** Kyphoplasty is a minimally invasive surgical procedure for people suffering with compression fractures of the spine. The procedure involves the insertion of a balloon into the collapsed vertebra followed by injection of a special material. The material hardens and stabilizes the vertebra, preventing further movement and may reduce the pain caused by bone rubbing against bone.
Frequently Asked Questions

Q. How long will I be in the hospital?
A. Your hospital stay will depend on your individual condition and the extent of your surgery. Most patients go home between one and three days.

Q. Will I need a blood transfusion?
A. Transfusions are rarely needed after spine surgery. We do not recommend pre-operative donation of your own blood.

Q. What risks are there?
A. There are general risks with any type of surgery. These include, but are not limited to, the possibility of wound infection, uncontrollable bleeding, collections of blood clots in the wound or in the veins of the leg, abdominal problems, pulmonary embolism (a blood clot to the lungs), or heart attack. The chances of any of these happening, particularly to a healthy patient, are low, along with the chance of neurologic injury. The possibility of catastrophic injury, such as paralysis, impotence, or loss of bowel or bladder control, is rare. Injury to a nerve root with isolated numbness and/or weakness in the leg is possible, but unlikely. Rarely, death may occur during or after any surgical procedure.

Q. What is the likelihood that I will be relieved of my pain?
A. Approximately, 90% to 95% of patients get relief of their leg pain. Some patients (about 15%) will continue to have noticeable back pain in some situations and may require additional treatment.

Q. Will my back be normal after surgery?
A. No. Even if you have excellent relief of pain, your back will never be completely normal. If you had a fusion, stiffening one segment of the spine may put additional strain on other areas. This could cause other discs to start to wear out. Even if those discs aren’t causing you pain now, they may do so in the future. For these reasons, you may have more back pain than a healthy person. However, most people can resume many of their normal activities after recovering from surgery.

Q. What can I do after surgery?
A. Following surgery, you may get up and move around as soon as you feel like it. You should change positions frequently throughout the day to help control pain, prevent blood clots, and improve circulation. It is helpful to sit for a while, lie down for a while, and then take short walks throughout the day. For most patients, sexual activity can be resumed in three to four weeks post-operatively (as tolerated).
Q. What shouldn’t I do after surgery?
A. In general, you should limit heavy lifting, bending, twisting, pulling, pushing, and high impact physical activities, including contact sports, until instructed otherwise by your surgeon. You should only lift objects that can be easily lifted with one hand and do not lift above your elbows. If you are a smoker, it is important that you do not smoke because it interferes with bone healing.

Q. Should I avoid physical activity?
A. No. Exercise is good for you! You should get some sort of low-impact aerobic exercise at least three times a week. Walking either outside or on a treadmill, using an exercise bike and swimming (when cleared by your surgeon) are all examples of exercise that is appropriate for spine patients.

Q. How do I manage my surgical discomfort?
A. The best ways to manage your discomfort include:
   - Taking your pain medication as directed
   - Applying ice packs for 15 minutes several times a day
   - Resting in positions that protect your spine
   - Staying active throughout the day, taking frequent breaks

Q. How long will my pain last?
A. The amount of pain varies by the extent of surgery and your tolerance to pain medications. You may need to take prescription pain medications for a few weeks to months after the surgery. Pain pills are most effective when taken before the pain becomes severe or before increased activity such as exercise or long walks.

Q. When can I go back to work?
A. This should be discussed individually with your surgeon. It depends on the kind of work you do and how long you have to drive to get there. Surgical patients can usually return to sedentary jobs (usually two or three weeks) when they can comfortably sit. If your job requires physical labor, it will take longer before you are able to return to work. If you need to take time off from work, contact your employer for FMLA forms or visit www.dol.gov/esa/whd/fmla/.

Q: How soon can I drive?
A: This will depend on the type of surgery you had and your recovery process. Your pain must be managed so that you no longer need any pain medication (for example, narcotic medications such as Vicodin, Norco or Percocet). These medications can affect your ability to drive. You will need to consult with your doctor regarding your specific situation.
Q: Will I need assistance at home?
A: Most people need a caregiver for the first week or two at home. If you required help at home before your surgery, you may need help for a longer time.

Q. What is home health and how will I know if I need it?
A. These services include nursing care, physical therapy, and occupational therapy. The surgeon and the case manager from the hospital will determine if you will need help from any of these services at home.

Q. Will I need physical therapy?
A. Physical therapy will most likely start four to six weeks after surgery. The goal is to develop a long-term, home exercise program that can be continued on consistent basis. This program will focus on core strengthening, non-impact aerobic exercises, coordination and overall conditioning.

Q: Will I need a special bed or chair at home?
A: No special bed is needed. However, select an armchair with a firm back and seat support that allows you to sit comfortably. Change positions if you start to be uncomfortable.

Q: Will I need any special equipment when I go home?
A: If you need equipment such as a walker, cane or commode (toilet seat), the case manager will order it for you while you are in the hospital. If you leave the hospital with a walker, you should use it until you are able to walk confidently without pain or weakness. If you will need a back brace, the surgeon usually orders it for you prior to surgery, otherwise it will be ordered while you are in the hospital.

Q: What is the best position for sleeping?
A: It is best to avoid positions that twist your body. Use pillows to support your head, shoulders, trunk and legs. Stay away from soft sofas and beds.

Q: When should I call my doctor?
A: If you experience any or all of the symptoms listed here:
- Persistent, severe, uncontrolled pain
- Weakness or numbness in your spine or extremities
- Increased drainage, swelling, or redness around the incision
- Difficulty breathing
- Problems controlling your bladder or bowel
Q: What are some things I need to do at home after surgery?
A: Once at home, it is important to walk several times a day (as tolerated) and use proper body mechanics. Control your discomfort by resting, icing your incision, and taking your pain medication.

Q: Why should I maintain a normal weight?
A: Excessive body weight may cause body posture changes that place increased stress on the spine. This may place you at a greater risk for injury and pain.

Questions to Ask My Care Team:

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Section Two:

Pre-operative Checklist
Four to Six Weeks before Surgery

**Insurance Authorization**
Usually, someone from your surgeon’s office will call to receive authorization for the surgery. This is necessary to find out if pre-authorization, a second opinion, or a referral form is needed. This is especially important if your spine problem is due to an injury at work.

**Pre-anesthesia Evaluation and Pre-registration**
To ensure a smooth surgery and recovery process, please call (619) 229-5207 to schedule a comprehensive pre-anesthesia evaluation with a nurse (unless your doctor’s office set an appointment up for you already).

During this visit, your pre-registration information also will be taken to expedite your admission process on the day of surgery. Please be prepared to provide the following information:

- Your full legal name and address, including county
- Home phone number
- Religion
- Marital status
- Social Security number
- Name of insurance holder, home address and phone number, and work address and phone number
- Name of insurance company, mailing address, policy and group number
- Your employer, address, phone number and occupation
- Name, address and phone number of nearest relative
- Name, address and phone number of someone to notify in case of emergency. This can be the same as the nearest relative

**Pre-operative Class**
Alvarado’s care coordinator will call you to schedule your appointment for the spine surgery pre-operative class. This class is held most Mondays at Alvarado Hospital. *Please bring your coach and guidebook with you to class.*

**Obtain Medical and Anesthesia Clearance**
When you were scheduled for surgery, you should have received a medical clearance letter from your surgeon. This will tell you whether you need to see your primary care physician and/or a specialist. Please follow the instructions in this letter.
Obtain Laboratory Tests
When you were scheduled for surgery, you should have received a lab-testing letter from your surgeon. Follow the instructions in this letter. Usually, you will have the testing done before you see your primary care physician to be cleared for surgery. Your primary care physician may order additional testing.

Stop Taking 30 Days Prior to Surgery
Discontinue fish oil, Gingko, Vitamin E, omega fatty acid supplements and garlic supplements that could increase your bleeding risk.

Review “Exercise Your Right”
The law requires that everyone being admitted to a medical facility have the opportunity to complete Advance Directives forms concerning future decisions of your medical care. To review information about Advance Directives or to find out how to get the necessary forms, please refer to the Appendix on page 70. Although Advance Directives are not required for hospital admission, we encourage you to consider completing the forms for the directives you desire. If you do have Advance Directives, please bring copies to the hospital on the day of surgery.

Become Smoke Free
If you are a smoker, you should stop using tobacco products. The tar, nicotine and carbon monoxide found in tobacco products have serious adverse effects on your blood vessels, and thus impair the healing of wounds and bone grafts. In addition, continued tobacco use damages the other discs in your spine, leading to disease at other levels. Finally, we have found that smokers experience a greater degree of pain post-surgery than non-smokers.

Read “Anesthesia and You”
Spinal surgery does require the use of general anesthesia. Please review “Anesthesia and You” (see Appendix on page 70). If you have questions, please call your surgeon’s office.

Ten Days before Surgery
Pre-operative Visit to Surgeon
You should have an appointment in your surgeon’s office seven to 10 days prior to your surgery. This will serve as a final checkup and a time to ask any remaining questions. Your surgeon may prescribe pain medication for you to take after surgery. You should schedule your 10-day and six-week post-op visits at this time.
Stop Medications that Increase Bleeding

- Seven days before surgery stop all medications containing aspirin and anti-inflammatories; such as, Aspirin, Motrin, Naproxen, Ibuprofen, Advil, Celebrex, Voltaren, etc. These medications may cause increased bleeding.
- If you are on Coumadin or any other blood thinner, you will need special instructions on stopping this medication. Please contact the prescribing physician for these instructions.
- Your physician will provide instructions regarding any other medications that you take that may cause increased bleeding.

Planning Ahead to Ease Transition Back Home

- Declutter your home. Put away area rugs that may be a tripping hazard.
- Shop ahead! Have frozen dinners available to pop into the microwave and paper plates to minimize washing. Also, have plenty of liquids available.
- Complete needed yard work and mowing or arrange to have this done for you.
- Arrange for neighbors or family to collect mail and newspapers.
- Change the linens on your bed.
- Strategically place nightlights in bedrooms, hallways and bathrooms.
- Place essential and frequently used items at counter level in the kitchen. Take out necessary items from the lower or very upper cabinets and store them on the counter.
- Pay current bills so you do not have to worry about these immediately after the surgery.
- Coordinate support, especially if you live alone. Arrange for friends to call on certain days or stop by to make sure you don't need any extra assistance.
- No special chair is needed, but you want one that offers you support and comfort.
- If you have pets, arrange help for the first few days to keep food and water available for pets.
- Hire a dog walker for at least the first week after surgery. You will not want to chance losing your balance or being jerked by your excited canine friend!
- If you have cats, place the litter box up on a high table or counter to avoid bending down to clean it.
The Night before Surgery

Chlorhexidene Shower
Please follow the instructions as provided by the nurse at your pre-surgical evaluation, which is usually one chlorhexidene shower the night before and the morning of surgery. If you have not received this soap, please use regular bar soap to take a good “scrubbing” shower the evening before the surgery. Be sure to pay special attention to skin folds.

NPO - Do Not Eat or Drink
- Do not eat or drink anything, even water, after midnight unless otherwise instructed to do so.
- If you must take medication the morning of surgery, do so with a small sip of water.
- You will be instructed by your physician or the nurse at your pre-surgical evaluation on which of your daily medications to take or omit the morning of surgery.

Other Instructions
- Remove makeup before procedure
- You may leave on nail polish

What to Bring to the Hospital
- Patient guidebook
- Advance Directives and Living Will
- Insurance card and co-pay (if applicable)
- Personal hygiene items (toothbrush, powder, deodorant, razor, etc.)
- Shorts, tops, well-fitting slippers or flat shoes
- Loose-fitting clothes for the ride home
- Battery-operated items
- For safety reasons do not bring electrical items
- A favorite pillow with a pillowcase in a pattern or color so it will not end up in the hospital laundry. You can use the pillow during your stay and in the car for the ride home
- Any braces for your back or for walking – you will need the brace to help you get out of bed and to walk around during your hospital stay
- A cane or walker if you already have one; a family member should bring any equipment to the hospital room the day after surgery for proper adjustment
- You may want to bring extra pillows for the ride home to maximize your comfort
- Leave jewelry, valuables, and large amounts of money at home
Section Three:
Hospital Care
Day of Surgery and Alvarado Hospital Stay

Arrival
Arrive at Alvarado Hospital two hours before the scheduled time of your surgery. Park in the hospital’s parking structure. Then, enter the main lobby of the hospital and sign in at the desk. You will then be taken to the Same Day Surgery area on the second floor. Let the person at the desk know that you have arrived. A nurse will take you back to prepare you for surgery.

Your family can wait in the second-floor family waiting room. The surgeon will speak to your family in the family waiting room after the surgery is complete.

What to Expect
You will be prepared for surgery in the Same Day Surgery area on the second floor. This includes starting an IV and fitting you with compression stockings. The operating room nurse and your anesthesiologist will interview you and your surgeon will mark the operative site. You then will be taken to the operating room.

Following surgery, you will be taken to a recovery area where you will remain for one to two hours. During this time, pain control will be established and your vital signs will be monitored. Then you will be taken to the Advanced Spine & Joint Institute patient unit on the sixth floor, where our specialized staff will care for you. Friends and family can see you at this time.

For the remainder of this day, you may rest in bed, eat soft foods, and drink what you like. We will instruct you on breathing exercises, ankle pumps, compression stockings, and the benefits of ambulation. Initially, your pain may be managed with IV medication. When able, the nurse will transition you to oral medication. There will be a dressing over your incision. You may have a catheter in your bladder that will be removed in the morning.

If you arrive to the floor by 2 p.m., you may have physical therapy the day of surgery.
Post-op Routine through Discharge
Early morning around 5 a.m., the lab will draw your blood. A post-op X-ray of your lumbar spine will be taken for your surgeon to review. You will receive physical therapy twice a day until discharge.

Understanding Pain Management
It is our goal to make your surgery as comfortable as possible. However, some mild-moderate pain is expected as part of the normal recovery process. The amount of pain varies by the extent of the surgery and some other related factors. The first factor involves the side effects of pain medications. These include respiratory depression (decreased ability to breathe normally), hypotension (low blood pressure), nausea and constipation. Other less common side effects include itching, urinary retention and abdominal distention (collection of gas within the intestines).

These side effects may require that the amount of medication will have to be reduced at times, to avoid creating dangerous or uncomfortable conditions. Tolerance also plays a role in eliminating pain. This is the body’s tendency to become less responsive to the pain-reducing action of narcotics, after being exposed to them for periods of time. In other words, your body can become used to having these drugs.

Patients who have taken large doses of narcotics for months or years have a much harder time keeping comfortable after surgery. For this reason, it is very important for you to provide accurate information to your surgeon about the amount of pain medication you have been taking. Inaccurate information could result in a needlessly painful and stressful post-operative course. It may be necessary to taper or discontinue your use of narcotics prior to surgery.

During your hospital stay, we will rely heavily on your own assessment of your pain and work with you to relieve it. Some patients will receive intermittent low-doses of pain medication into their IV, which they control with a small pump called a patient-controlled anesthesia (PCA).

After 12 to 24 hours you will transition to oral pain medications. Generally, these are the same medications you will take at home once you are discharged from the hospital. Throughout your hospital stay, your surgeon and your bedside nurses will assess your physical condition and look for signs of pain and side effects.
Pain Scale
Using a number to rate your pain can help the spine team understand the severity of your pain and help them make the best decision in managing symptoms.

![Pain Scale Image]

Discharge Plans and Expectations

Going Directly Home
Certain criteria generally need to be met before patients are ready for discharge. Patients should be ambulating independently with a walker, eating and drinking well, and taking oral medication to control discomfort. We suggest that you do not go home alone and instead have someone with you to be your caregiver for the next two to three days. This can be a friend or family member who can change your dressing and help you with your compression stockings, along with helping out with meals and household activities.

We want you to concentrate on your recovery, during these first few days at home. If equipment is needed, please inform your case manager or physical therapist.

Post-Hospitalization Rehabilitation
While most patients go directly home, some patients need home physical therapy services. If so, the case manager will make these referrals for you.

Patients who desire inpatient rehabilitation (e.g., at a skilled nursing facility) prior to returning home must meet their insurance company’s specific criteria before approval can be granted. If you do not meet these criteria, but strongly wish to pursue inpatient rehabilitation, you may have the option to pay privately for your stay.
Section Four:

Post-operative Care
Caring for Yourself at Home

When you go home, you need to know how to ensure your safety, your steady recovery, and your comfort.

Controlling Your Discomfort

Medication Management
- Take your pain medicine at least 30 minutes before activity to control incisional pain.
- Gradually wean yourself from prescription medication to Tylenol. You may take two Extra-strength Tylenol in place of your prescription medication up to four times per day.
- During the first 3 months after surgery (if you had lumbar fusion), do not take over the counter anti-inflammatory medication such as ibuprofen (Motrin, Advil) or Aleve. This type of medication can interfere with bone healing and thus jeopardize the success of your surgery. If you have prescription anti-inflammatory medication at home, consult your physician before taking these.

Use of Ice/Heat
- Use ice for pain control. Applying ice to your wound will decrease discomfort. Do not use ice for more than 15 minutes at a time each hour.
- Apply heat to areas of muscle spasm only. Do not use heat around your incision; this will cause swelling.

Positioning
- Change your position every 30 minutes throughout the day.
- Muscle strain and spasm can often be reduced by elevating the arms with pillows.
- Remember to avoid the BLTs (bending, lifting and twisting), along with pulling or pushing. Don’t forget to practice good body mechanics and maintain proper posture.
- When sitting, use a chair with good back support.
- Use low-heeled footwear with traction and wear comfortable clothing.

Muscle Spasm
- If your doctor has prescribed a muscle relaxer, take this to help muscle spasms.
- Gentle stretching may ease muscle spasm.
- Gentle massage applied to the muscle spasm may help to reduce discomfort.
Breathing

- Take slow, controlled, deep breaths to assist in relaxing your muscles and body. Cough deeply and use your Incentive Spirometer several times each hour. This helps to expand your lungs after surgery and prevent pneumonia or respiratory complications.

Body Changes

Please pay attention to any of the following body changes:

- Initially, you will have a poor appetite, but your desire for solid food will return. Drink plenty of fluids to prevent dehydration.
- Pain medications contain narcotics, which promote constipation. Eat fresh fruits and vegetables high in fiber. Also, use stool softeners like Senokot or laxatives (such as Milk of Magnesia) if necessary while using narcotics. Do not let constipation continue. If the stool softener and Milk of Magnesia do not relieve your discomfort, contact your pharmacist, primary care physician or surgeon for advice.
- It is normal to have difficulty sleeping at night. To improve this problem, try not to sleep or nap too much during the day.
- Your energy level will be decreased for the first month.

Caring for Your Incision

Tips for caring for incision are as follows:

- You may shower (not tub bathe), as instructed by your surgeon.
- Remove dressing before shower, pat incision dry after shower, and replace dressing as instructed.
- Notify your surgeon if there is increased drainage, redness, pain, odor or heat around the incision.
- Your incision may have medical glue that dries with a puckered crusty appearance. Let it flake over the next one to three weeks; do not pick at the flakes.
- Take your temperature if you feel warm or sick. Call your surgeon if it exceeds 100.5 degrees.
Signs of Infection

- Increased swelling, redness at incision site.
- Change in color, amount, and odor of drainage.
- Increased pain around the incision.
- Fever greater than 100.5 degrees.

Prevention of Infection

- Take proper care of your incision as explained above.
- You may shower as instructed by your surgeon, as long as your wound is clean, dry, and not red. Avoid tub bathing until directed by your surgeon. Keep your wound clean and dry as much as possible to avoid potential infection until it fully heals.

Dressing Change Procedure

(May vary with surgeon)

Dry Dressing

1. Wash hands.
2. Prepare all dressing change materials (open gauze pad and tape).
3. Remove old dressing.
4. Inspect incision and notify your physician of the following:
   - increased redness
   - an increase in clear drainage
   - any yellow/green drainage
   - odor
   - surrounding skin is hot to touch
5. Pick up gauze pad by one corner and lay over incision. Be careful not to touch the inside of the dressing that will lay over the incision.
6. Place the dressing over the incision and tape it in place.

Occlusive Dressing

If the incision has the clear, occlusive dressing, please follow these instructions:

- If dressing remains dry, remove occlusive dressing on post-op day two or three. You may leave the incision open to air or redress as described above. Continue to inspect the incision daily.
- If dressing becomes wet with a collection of fluid or blood, remove promptly and follow the instructions at the top of this page. Change dressing daily or as needed until incision remains dry.
Dermabond
If the incision has been treated with Dermabond (skin glue), please follow these instructions:

- If dressing remains dry, remove occlusive dressing on post op day two or three. Carefully, try to lift gauze from the incision. If the gauze adheres to the incision, do not pull it loose. Instead, just trim away the loosened gauze as needed. The gauze should come free, after a few days.
- If dressing becomes wet with a collection of fluid or blood, remove promptly and follow the dressing change instructions for "dry dressing." Change dressing daily or as needed until incision remains dry.

Compression Stockings

You will be asked to wear T.E.D. stockings while in the hospital. These stockings are used to help compress the veins and decrease the chance of blood clots. You will wear the stockings most of the day, taking them off for one hour in the morning and one hour in the evening. You will continue to wear these stockings for two weeks after surgery until seen by your surgeon at your first post-op visit, unless instructed otherwise. Ask your surgeon when you can stop wearing the stockings.

Blood Clots in Legs

Surgery may cause the flow of blood to slow and clot in the veins of your legs. If a clot develops, you may need to be admitted to the hospital to receive intravenous blood thinners.

Signs of Blood Clots in Legs

- Swelling in thigh, calf or ankle that does not go down with elevation of the legs
- Pain or tenderness in calf

These signs are not 100% certain, but are warnings. If they are present, promptly notify your surgeon.

Prevention of Blood Clots

- Frequent foot and ankle pumps
- Walking
- Elevating your feet/legs
Pulmonary Embolus

An unrecognized blood clot could break off in the vein and go to the lungs. This is an emergency and you should call 911 if suspected.

**Signs of an Embolus**
- Sudden chest pain
- Difficult and/or rapid breathing
- Shortness of breath
- Sweating
- Confusion

**Prevention of Embolus**
- Prevent blood clot in legs
- Recognize a blood clot in leg and call physician promptly.

**Notes:**
Section Five:
Post-operative Activity Guidelines
Lumbar Spinal Precautions: No "BLT"

**No Bending**
- Keep your shoulders in line with your hips. Avoid leaning forward while standing up and avoid reaching down to the floor while you sit down.
- Practice optimal body mechanics by keeping your chest up, shoulders back and abdominal muscles tight.

**No Lifting**
- Do not lift more than 10 pounds for one to two months after surgery.
- To lift an object, keep chest upright, bend at the knees and hips, and hold the object close to the body.

**No Twisting**
- Keep your shoulders and hips pointed in the same direction.
- To look behind you or to either side, you must turn your entire body.
- Do not just turn your head and shoulders.
Bed Positioning

Lying on Your Back
- Keep a pillow under your knees or thighs and under your neck when lying on your back.
- When you change positions, tighten your abdominal muscles and “log roll” keeping your hips and shoulders together.

Lying on Your Side
- With your knees slightly bent up toward your chest, place a pillow between your knees and another one under your neck.
- Remember to tighten the abdominal muscles and “log roll” when changing positions.
- Adding a pillow under your arm will increase comfort and further reduce stress on your spine.

Lying on Your Stomach
- Avoid lying on your stomach because it places too much strain on your lower back.
- If you absolutely cannot avoid this position, place a pillow under your stomach to provide support for your back.
Bed Mobility

Getting Out of Bed
To move in and out of bed, you must "log roll" to prevent bending or twisting of your spine. Start by bending your knees up while lying on your back and then roll onto your side keeping your hips, shoulders, and ears in alignment (i.e., roll like a log).

As you slide your feet off the bed, use your arms to push up into a sitting position. Then, use your arms to scoot your hips forward until your feet are on the floor and you feel stable.

Scoot far enough forward so your feet are flat on the floor (heels included) to support your lower back.
Returning Back to Bed:
Reverse the technique for returning to bed. Back up to the bed until you feel the bed at the back of your legs. Reach for the bed with your hands as you lower to a sitting position on the bed. Scoot your hips back on the bed. The further back you scoot, the easier it will be for you to lay down onto your side. As you lean down on your arm, bring your feet up onto the bed until you are lying down on your side. Then, roll onto your back keeping your shoulders, hips and ears in alignment.

Transfers

Into a Chair
Back up to the chair until you feel it touch the back of your legs. With your hands, reach behind you to grasp the armrests of the chair. Using your arms and legs, begin to squat and lower yourself into the chair.

Special Instructions:
- Tighten your stomach muscles to provide support for the lower spine.
- Firmly rest your feet on the floor or a foot stool. Do not let your feet dangle as this will place additional stress on your spine.

Out of a Chair
Scoot forward until you are sitting near the edge of the chair. With your hands on the armrests push yourself up into the standing position. Straighten your legs and shift your weight forward over your feet. Bring your hands to the walker, as you are moving into the standing position.
Helpful Tips with Sitting

- Do not let your feet dangle when sitting. Have your feet firmly supported to prevent pulling at your back.
- Protect your back by sitting in a chair with a back support. You can use a pillow or a towel as a lumbar roll.

From Bed

It is important to stand by pushing on the bed with your arms and not by pulling on the walker. Place your hands on the bed and push up to standing. Focus on straightening your legs and shifting your weight forward over your feet. As you start to straighten, bring one hand forward to the walker then the other hand. When sitting back down, be sure to reach for the bed one hand at a time to control your body.
Getting Into the Car
Back up to the seat of the car until you feel it at the back of your legs. Reach a hand behind you for the back of the seat and the other hand to a secure a spot either on the door frame or dashboard. (The door and walker are not secure options. If you need to use them, have someone hold the “unsteady” objects.)

Lower yourself slowly to sitting. Scoot your hips back until you are securely on the seat.

Leading with your hips, bring one foot at a time into the car, until you are facing forward. Prevent twisting by keeping your shoulders, hips, and ears pointing in the same direction. You may want to recline the seat to increase the ease of lifting your legs. While riding, you can keep your seat slightly reclined to support your back from the “bumps” in the road.
Getting Out of the Car
When getting out of the car, bring your legs out one at a time. Make sure to lead with your hips and shoulders and do not twist your back. Place one hand on the back of the seat and one hand on the door frame or dashboard. Use your arms and legs to push up to standing. Reach for the walker when you are stable.

Helpful tips with car transfers:
- Have an empty plastic bag on the seat to help you slide in and out.
- Have the seat positioned all the way back for maximum leg clearance.
- If you have to have one hand on the walker for leverage, have someone hold the walker down on the front bar for stability.

Your surgeon will determine when you can return to driving. You need to have full neurologic function and minimal pain or discomfort before driving. You will also need to discontinue taking medications that may affect your driving skills and safety.

Getting Onto the Commode
Back up to the commode like you would a chair. Without twisting to look, reach back for the handles of the commode or toilet seat and squat using your arms to help slowly lower you down to a sitting position. Your feet should be flat on the floor for support while you are sitting.

Getting Off of the Commode
Use your arms to lift your body and scoot your hips forward to the edge of the commode seat. With your knees bent and your feet placed underneath you, push up through your legs and arms into a standing position. As you come to stand, maintain your support by reaching for the walker one hand at a time.
Using a Walker

When using a walker, it is important to remember the following:

- Push up from the surface you are sitting on (e.g., the bed or chair). Avoid pulling on the walker to come to a standing position because the walker could easily tip backwards and will not offer you optimal support to stand.
- It is easiest to stand up from chairs with armrests and from a bedside commode with armrests. The armrests give you better leverage and control to stand up and sit down safely.
- The walker takes pressure off your back. Push down through the walker with your arms as needed, without raising your shoulders or leaning too far forward.
- Keep your feet near the back of the walker frame or rear legs, while staying inside the walker.
- Stand up straight when walking. Keep your shoulders back, head up, chest up, and stomach muscles tight.
- If you have wheels on your walker, there is no need to lift the walker – just push the walker forward as you walk.
- Move at your own pace and at your own comfort level. Increase your pace and stride to what feels normal to you. Typically, taking smaller steps and walking slower does not necessarily make it easier to walk and you may end up expending more energy than necessary. Move at your own pace and at your own comfort level.
- Each day, increase the frequency and distance you walk. Frequent walks are very important to help keep you moving and decrease your stiffness and pain. By six weeks, the goal is to walk 3 miles, unless otherwise instructed by your physician or therapist.
- Take six to eight walks per day. During at least one of the walks, increase the distance as tolerated.
Using Stairs

Negotiating consecutive steps:
- Use a handrail for assistance.
- If one leg feels weaker than the other, go up the steps with your stronger leg first and down the steps with your weaker leg first, “Up with the Good and Down with the Bad.”
- If you feel unsteady, pause between each step. This will make negotiating steps easier and safer for you.
- Concentrate on what you are doing and do not hurry.
- Since you cannot bend your neck to look down, feel the next step with your foot.
- Have someone assist or spot you as you feel necessary or indicated by your therapist. This person should stand behind and slightly to the side of you when going up the steps. When going down the steps, the person should be in front of you.

Helpful Stair Tips
- Keep the steps clear of objects or loose items.
- Plan ahead. Right after surgery, keep items in areas where you need them so that you can limit stair use.
- Install one or two handrails. Two handrails will increase the ease and safety with steps.

Negotiating a Curb or Single Platform Step
- You can use the rolling walker.
- Move close to the step.
- Place the entire walker over the curb onto the sidewalk. Make sure all four prongs/wheels are on the curb.
- Push down through the walker toward the ground.
- Step up with the stronger leg first, then follow with the other leg.
- Reverse this process for going down the step. Place your walker below the step, then step down leading with the weak leg first.
Back Brace

There are several types of back braces that help provide support and/or limit motion to your back. Your physician may or may not require a brace.

One of the more popular braces used after a spinal fusion is a lumbosacral brace. This brace is a soft brace with Velcro closures and is adjusted on the sides. It’s worn down over your hips and centered low over the abdomen. Make sure the two Velcro panels fasten on either side, not in the front. Pull the "rip cord" to tighten the brace. It is best to do this last part while standing to ensure a snug fit.

To remove the brace, unfasten the "rip cord" and secure it to one side of the brace. Now, undo the Velcro closure on the other side of the brace and remove the brace. There is no recoil mechanism so the strings must be "reset" by pulling either end of the brace lightly until the cords are fully extended.

Another type of back brace is the “TLSO” (thoracic lumbar sacral orthosis). This brace is commonly referred to as a body jacket or “clam shell” brace. Patients undergoing thoracic or high lumbar surgery may need to wear this type of brace.

A back brace is often recommended for patients to wear during the post-operative period so that motion is limited at the surgical site. Wearing the back brace as instructed (whenever out of bed) will aid in optimal healing. Some patients may need to wear their brace for as little as four weeks or as long as three months. Your surgeon can give you the best idea of your personal timeframe.

Activities of Daily Living

Using a Reacher
Using a reacher limits the amount of bending required to dress. Sit in a chair with your back supported. Use the reacher to hold the front of your undergarments or pants. Bring the garment over one foot at a time. Then, pull the underwear and pants up to your thighs. Stand up, squat to reach your clothing and pull up both garments at the same time. Reverse the process to remove your clothing.
Using a Reacher to Pick Up Items
A reacher helps you obtain those countless items that fall while you are under "no bending" restrictions. Use it as an arm extension to reach to the floor.

Using a Sock Aid
Using a sock aid helps you reach your feet without bending. Sit in a supportive chair and hold the sock aid between your knees. Slide the sock onto the plastic cuff making sure to pull the toes of the sock all the way onto the sock aid. Hold the ropes and then drop the sock aid down to your foot and then place your foot into the cuff. Next, pull up on the ropes as you point your toes down until the sock is on your foot. Let go of one rope and pull the cuff back onto your lap to don the other sock.

Removing a Sock with the Reacher
Use the black hook on your reacher to push your sock over the back of your heel. You can continue pushing the sock completely off your foot or use the jaw of the reacher to pull the sock completely off your foot.

STAY MOTIVATED!
Ability is what you're capable of doing. Motivation determines what you do. Attitude determines how well you do it.
- Lou Holtz
Stepping In/Out of the Tub

- If your shower is part of the tub, you should hold onto the front wall of the shower and step in or out sideways versus stepping in forward. This side-step places much less stress and motion on your lower spine.
- If you have a walk-in shower stall, step in as usual making sure not to twist as you turn to the controls.
- You may want to have a bathtub or shower seat available for the first few days that you shower. You can borrow these types of items or buy them inexpensively at most drug stores or medical supply stores. A smaller patio resin/plastic chair can work for this if you have one already.
- You are not allowed to take a tub bath or swim for at least three weeks until your doctor clears you to do this.

Notes:
Section Six:

Post-operative Exercise Guidelines
Post-Operative Exercise Program

A post-operative exercise program is an important component of a successful spine surgery. Patients should work with their physical therapists to develop a maintenance program that is enjoyable and specific to their needs. The ultimate goal for each patient is to restore strength, flexibility and mobility through a progressive and safe exercise program. The goals and guidelines for exercise are noted on the next few pages.

- These exercises help to stabilize your spine and improve the strength and flexibility in your legs, and thus optimizing your surgical outcome and functional mobility.

- Whenever comfortable, you may start more low-impact exercises, such as using a recumbent bike or walking on a treadmill. At three weeks, once your incision heals and your doctor approves, you may start water exercises. These are good low-impact exercises for your entire body.

- Exercises are best done on a firm surface such as a firm bed. Protect your back and keep good posture when exercising. Make sure to move slowly and stop if you have excessive pain or discomfort.

- Read your body. If you notice increased discomfort or fatigue, recall what you did earlier that day or the day before. Chances are you overdid things and need to scale back until tolerated. Continue to slowly advance yourself as you tolerate the activity.

- Whenever you are performing an exercise, try to keep your abdominal muscles tight by "pulling your belly button in toward your spine." Make sure you are breathing continuously when performing the exercises. Try counting out loud to keep from holding your breath.

**Notes:**
Principles of Posture/Body Mechanics with Exercise

When Standing
1. Keep your head level with your chin slightly tucked in.
2. Stand tall by looking forward and keeping your shoulders over your hips.
3. Relax your shoulders.
4. Tighten your stomach muscles by pulling in your stomach. This will relieve undo stress on your spine.

When Sitting
1. Keep your head level and chin up.
2. Place your buttocks all the way to the back of the chair. A rolled towel in the small of the back provides lumbar support. Do not slouch.
3. Keep your feet flat on the floor to support your back. When your feet dangle, it pulls at your lower back. If your feet don't firmly touch the ground place your feet on a stool and put a pillow behind your back.

When Lying
1. Use a firm mattress.
2. Lie on your side with your hips and knees slightly bent and with a pillow between your legs.
3. Lie on your back with a pillow under your head and one under your knees to take the strain off your lower back.
4. Avoid lying on your stomach.

When Lifting
1. Keep your head level and chin up.
2. Keep your back straight, bend your knees and hips and squat as low as possible, keeping your feet apart and chest up.
3. Lift with the strength of your legs.
4. Never twist or turn while lifting.
5. Hold objects close to your body.
6. Use a partner whenever necessary, especially if it is heavy or an awkward size.
When Walking

1. Your goal is to advance the distance you walk each day.
2. For the first few days at home, do multiple short walks throughout the day.
3. This approach is better for reducing stiffness. As you can tolerate it, advance your walking distance. Frequency is better than pushing yourself to walk a certain distance initially.
4. Keep your head up, chest up, shoulders back and relaxed, buttocks and stomach tucked in and use the walker as needed. Typically, people use the walker for distance ambulation to keep the pressure off the back. As you can tolerate, wean yourself off the walker, unless otherwise indicated by your surgeon or therapist.

Whether you think you can or you think you can’t, you’re right.

– Henry Ford
Weeks 1-2

(1) Ankle Pumps
Move ankles up and down as far as possible in each direction. To prevent back strain, perform this exercise while lying flat.
Perform 1 set of 20 reps two times a day

(2) Quad Sets
Lie flat on back with one leg straight. Tighten quadriceps muscles (front thigh muscles), by pressing back of knee into mat, and hold as indicated. Do not hold breath.
Perform 1 set of 20 reps (hold for 5 seconds) two times a day
(3) Gluteal Sets (bottom squeezes)
Sit, lie or stand. Squeeze bottom together. Do not hold breath.
Perform 1 set of 20 reps (hold for 5 seconds) two times a day

(4) Abdominal Sets (tummy tucks)
Lie flat on back with knees bent. Tighten your stomach (abdominal) muscles by drawing your belly button toward your spine. You should feel your abdominal muscles tighten across the front. Hold that position and continue to breathe comfortably. If you can't breathe comfortably, then you are trying to tighten the muscles too much. As you practice this exercise, you will learn how to engage your abdominal muscles without affecting your ability to breathe.
Perform 1 set of 20 reps (hold for 5 seconds) two times a day

**NOTE:** This exercise is just the beginning of a lifelong challenge of being able to keep your abdominal muscles tightened all day long. The strengthened muscles provide continuous support for your spine.
(5) **Hip Abduction and Adduction**

Lie on back. Bend one leg at the knee and perform the exercise with the opposite leg. Slowly slide the straight leg out to the side and then back to the center. Always keep toes pointed toward the ceiling. Repeat steps with other leg. Do not hold your breath.

**Perform 1 set of 20 reps two times a day**

![Hip Abduction and Adduction](image)

(6) **Heel Slides (slide heel up and down)**

Lie flat on back. Slide heel toward your bottom. Keep your opposite knee bent to support your back and repeat with other leg.

**Perform 1 set of 20 reps two times a day**

![Heel Slides](image)
(7) Long Arc Quads (knee extensions)
Sit in chair with knees bent (place buttocks at back of chair). Slowly extend one leg until knee is straight and hold. Return to starting position. Repeat exercise as indicated with other leg.
**Perform 1 set of 20 reps (hold for 5 seconds) two times a day**

*Special instructions:* Focus on tightening your thigh muscle. Do not hold your breath and remember to stabilize your back by tightening your abdominal muscles.

(8) Walking
Walk as far as possible, taking rest breaks as needed. Increase distance each day.
**Goal: At least 3 miles per day by six weeks post-operation.**
**Weeks 3-6**

(1) **Wall Squat**

Keep head, shoulders and back against wall with feet shoulders width apart. Slowly lower buttocks by sliding down the wall until thighs are parallel to floor. Keep back flat. Do not let your knees pass in front of your toes (this will protect the knees from excess strain). Do not hold your breath.

**Perform 1 set of 20 reps two times a day**

(2) **Heel Raises**

Stand next to a counter and slowly raise up onto your toes. Maintain this position for 5-10 seconds then lower yourself to standing. To help with balance, you may hold onto the countertop for support.

**Perform 1 set of 20 reps one to two times a day**
(3) Abdominal Bracing with Arms and Legs (alternating)
Lying on your back, tighten your abdominal muscles while keeping your back flat on the bed. Bend one leg at the knee and slowly pull it up toward your chest. As you do this, raise the opposite arm over your head. To continue this exercise, lower this arm and leg and repeat this sequence with the other arm and leg. You should feel tightness in the abdominal muscles, not your back.
Repeat 20 times

(4) Abdominal Crunches
Lying on your back with hands folded across your chest and the small of your back against the bed, raise your head and shoulders from the surface. Move slowly, and focus on tightening the abdominal muscles. Do not arch your back. If you start to arch your back, this is a sign that your abdominal muscles are tired. Do not continue – instead, rest and try it again later.
Repeat 10-20 times or until you can no longer keep from arching your back.
(5) **Hamstring Stretch**
Lying on your back with a sheet wrapped around your foot, slowly lift your leg while straightening the knee until a stretch is felt in the back of the thigh. Have your opposite leg bent to protect your back. Do not bounce.  
**Perform 1 set of 3 leg reps (on each leg) holding for 20 seconds**

(6) **Calf Stretch**
Stand with one leg straight and one foot back. Keep your heel on the floor. Gently lean into the wall keeping your back straight until a stretch is felt in the calf. Do not bounce.  
**Perform 1 set of 3 reps (on each leg) holding for 20 to 30 seconds**
Section Seven:

Body Mechanics
Body Mechanics General Rules

This section will give you some general tips on how to practice and adapt safe body mechanics to your everyday work activities.

NOTE: There is not only one correct way to do a task. It depends on your abilities. You may need to alter ways of moving based on your strength, flexibility, pain level, and/or other medical conditions.

Standing
- Do not lock your knees. A bent knee takes stress off your lower back.
- Wear shoes that support your feet to help align your spine.
- If you must stand for long periods of time, raise one foot up slightly on a step or inside the frame of a cabinet. Resting a foot on a low shelf or stool and shifting feet often can help reduce the pressure and constant forces placed on your spine.
- Keep shoulders back so that they do not roll forward.
- Keep back as upright as possible and keep your head and shoulders aligned with your hips.

Shaving
- Stay upright with one foot on ledge of cabinet under sink.

Showering
When showering, try not to let your head bend forward or backwards. (i.e., washing hair)
If you have enough strength, squat down with knees or use a tub bench and/or a hand-held shower spout, so your neck remains straight.

Brushing Teeth
- While brushing teeth, stand up straight and keep knee bent with foot on cabinet lip.
- To avoid bending forward, spit into a cup and use a cup for rinsing you mouth with water. You can also support your back by leaning one arm on the sink/counter as you spit into the sink. Bend at your knees, not your back.
Ironing
- While ironing, keep ironing board waist level to avoid leaning forward at your back.

Sink
- When standing over sink for prolonged periods of time, keep one foot propped on lip of cabinet to reduce the stress on your back.

Sweeping/Mopping
- Use the full length of the broom to sweep.
- Do not hold broom handle close to floor.
- Try to keep your spine as straight as possible.
- Sweep with the motion coming from your hips instead of your shoulders.
- Do not get down on your knees to scrub floors, instead use a mop.

Holding a Child
- To maintain good posture and decrease stress on back, hold the baby/child to the center of your body, not propped on a hip.

Raking
- When raking, keep back straight by bending at the hip.
- Rake close to body using arms and shifting legs to perform rake motion.
- Take frequent breaks.
Sitting

- Sit in chairs that support your back. Keep your ears in line with your hips. If needed, support your lumbar curve with a rolled-up towel or lumbar roll.
- Your knees should be level with your hips. Your feet should be well supported on the floor to support your spine. If needed, place your feet up on a footrest.
- Do not slouch. This puts your back out of alignment and adds extra stress to your lumbar curve. Don’t sit too far away from the steering wheel when you drive.
- Keep your shoulders back and head centered over hips.
- Do not let shoulders roll forward.
Computer Ergonomics

- Keep the computer screen at eye level.
- Have a lumbar support for your chair.
- Armrests need to be placed at a level that supports the forearms and keeps them at waist level. Forearms should not be pushing up into your shoulders.
- Adjust the height of the chair so that the keyboard is level with forearms.
- Maintain a good upright sitting posture.
- Take frequent standing/rest breaks while working (every 20 to 30 minutes).

Bending

- Bend at your knees and hips instead of at your waist/back. Keep your chest and shoulders upright, centered over hips. This maintains your three natural spinal curves and keeps stress off your back.
- Hold objects close to your body to limit strain on your back.
- Do not bend over with legs straight. This motion puts great pressure on your lower back and can cause serious injury.
Refrigerator
- Bend at knees and hips to get things out of the lower portion of the refrigerator. It is better to squat or kneel instead of bending.

Dishwasher
- To get objects out of the dishwasher, squat or kneel down by door.
- Try sitting on a swiveling office chair to unload the dishwasher. You can place the items up onto the counter by pivoting around with your feet.
- Then stand and put items into the cupboard.

Tub Cleaning
- Do not overextend yourself when cleaning low places such as bathtubs.
- Try to move lower by squatting and brace yourself with a fixed object.

Wiping Lower Surfaces
- When wiping or dusting low objects, do not bend the lower back.
- Try to kneel or squat next to object.

Bathroom
- Do not get down on your knees to scrub bathtub. Use mop or other long-handled brushes.
- Always use non-slip adhesive or rubber mats in tub or "aqua/water shoes."

Making Bed
- Do not to bend over too far when making a bed.
- Try to move sheet to corners and kneel or squat to pull them around mattress.
Lower Shelf
- When placing an object on a low shelf, always bend down on one knee.
- Use other leg to support.
- Never bend over from waist to place item on shelf.

Digging
- When digging, place blade end into soil with handle straight up and down.
- Step on top of blade then step off and angle shovel upward.

Planting
- When weeding or planting, do not bend over from a standing position.
- Kneel or squat in the area you are working. It is recommended that you maintain a squat position for only a short period of time since this places stress on the knees.
- You can also sit on a chair or stool to reduce stress on your knees instead of kneeling.

Lifting
- Lift your body and the load at the same time. Let your leg do most of the lifting.
- Squat to pick up a heavy object and let your leg muscles do the work. Hold heavy objects close to your body to keep your back aligned. Lift objects only to chest height.
- Do not bend over at the waist to lift anything or twist while lifting. Avoid trying to lift above shoulder level.
Laundry - Unloading Wash
- To unload small items at bottom of washer, lift up one leg when reaching down into the washer.
- Do not bend at the waist to reach into washer when loading/unloading.

Laundry - Loading Washer
- Place laundry basket so that bending and twisting can be avoided.
- Place basket on top of washer or dryer instead of bending down with your back.

Unload - Dryer
- Do not bend at lower back when removing laundry from dryer.
- Set basket on floor and squat or kneel next to basket when unloading dryer or front-load washer.
- You could try a "golfer's bend" to unload the washer/dryer by supporting with one hand on the unit and holding the opposite leg straight out as you bend forward. This allows you to keep your back straight and take some of the pressure off your back with your arm supporting you.

Lifting Laundry
- Pick up laundry basket by squatting near it. Do not bend over to lift.

Kneeling Lift
- With awkward objects, kneel and move object onto one knee.
- Bring it close to your body and stand up.

Carrying Luggage
- Carry bags on both sides of body instead of on one side. Try to keep weight equal on both sides.

Lifting Object from Floor
- Stand with box between feet, grasping both handles while squatting. Keeping back straight, extend knees and lift box.
- Return to original position in same manner.
Childcare - Lift from Floor
- Do not bend over at your back to pick up a child. Instead, squat down, bring child close to chest and lift with legs.

Childcare - In/Out of Car
- When placing infant or child in car seat, always support yourself. Place knee on the seat of the car to unload the stress placed on your back.
- Never bend over at the waist.

Child Carry
- Hold baby by cradling in arms.
- Keep the baby close to body.
- Keep the head as upright as possible.
Unload Car Trunk

- Place leg on bumper and bring objects close to you.
- Bend at your hips and lift object out of trunk.
- Keep abdominal muscles tight during the entire process.

Shoveling

- Grab shovel close to end.
- Shovel by leaning forward and shifting weight.
- Use your legs, not your back.

 Turning

- Think of your upper body as one straight unit, from your shoulders to your buttocks.
- Turn with your feet, not your back or knees. Point your feet in the direction you want to go. Then step around and turn. Maintain your spine’s three curves.
- Do not keep your feet and hips fixed in one position; do not twist from your back. The joints in your back aren’t designed for twisting; this kind of motion increases the risk of injuring your discs and joints.

In/Out Car

- Back up to seat and sit down while facing away from car.
- Scoot back and swing legs into vehicle.
- Perform in opposite manner to get out.
- Do not twist. Keep shoulders in line with hips. Lead with your hips.
Reaching
- Store common items between shoulder and hip level.
- Get close to the item. Use a stool or special reaching tool, if you need to.
- Tighten your abdominal muscles to support your back. Use the muscles in your arms and legs (not your back) to lift the item.

Dusting
- Use dusting implements that reach distances so you don't have to reach far or lean your head backwards.

Cleaning
- To clean overhead or tall objects, use a step stool so that you don't have to over-reach.

Reaching Out
- When getting objects that are low, but not low enough to kneel or squat, brace yourself by placing your hand on a fixed object such as a counter.

Overhead Cabinets
- Do not over-reach to high positions.
- Step up on a stool so that overhead objects are lower.
**Avoid Twisting**
- Avoid twisting trunk to reach things.
- Step in the direction of the object you are trying to reach.

**Pushing vs. Pulling**
- Push rather than pull large or heavy objects.
- Make sure to lower your hips and keep back stabilized by tightening abdominal muscles.

**Moving Objects**
- Keep elbows close at sides and use total body weight and legs to push or pull.

**Mowing**
- When pushing or pulling a mower, do not bend forward.
- Keep your back straight. Bend at your knees and hips. Push or pull with legs.

**Vacuuming (type of pushing/pulling task)**
- Use your legs, not your back, when vacuuming.
- Do not vacuum by reaching out away from body.
- Try to work for small intervals of time with frequent breaks.
- Keep the vacuum close to body.
- Use a lightweight vacuum.
Sleeping
- Sleep on your side or back. If you sleep on your side, bend your knees to take some pressure off your back, and put a pillow between your knees to keep your curves aligned.
- Do not sleep on a soft bed or couch. This takes your three spinal curves out of alignment and adds extra stress to your back. **Avoid sleeping on your stomach, which can strain your neck and back.**

**Household Chores**

**Kitchen**
- Do not get down on your knees to scrub floors. Use a mop and long-handled brushes.
- Plan ahead! Gather all your cooking supplies at one time. Then, sit to prepare your meal. This cuts down on excessive trips to the refrigerator, cupboards, etc.
- Place cooking supplies and utensils in a convenient position so they can be obtained without too much bending over or stretching.
- Raise up your chair by putting cushions on the seat or using a high stool when working.

**Bathroom**
- Do not get down on your knees to scrub bathtub. Use mop or other long-handled brushes.
- Always use non-slip adhesive or rubber mats in tub.
- Attach soap-on-a-rope so it is within easy reach.

**All Areas**
- Remove throw rugs. Cover slippery surfaces with carpets that are firmly anchored to the floor with no edges to trip over.
- Be aware of all floor hazards such as pets, small objects or uneven surfaces.
- Provide good lighting throughout. Leave a light on at night in the bathroom.
- Keep extension cords and telephone cords out of pathways.
- Avoid slippers without covered toes or shoes without backs. They tend to cause slips and falls.
- Sit in chairs with arms. It makes it easier to get up.
- Rise slowly from either a sitting or lying position to avoid becoming light-headed.
- No heavy lifting for the first three months after your surgery and then only with your surgeon's permission.
- Stop and think and always use good judgment.
Do's and Don'ts for the Rest of Your Life

Whether or not you have reached all the recommended goals in three months, all spine surgery patients need to participate in a regular exercise program to maintain their fitness and the strength of the muscles around their spine. With both your surgeon and primary care physicians’ permission, you should be on a regular exercise program three to four times per week lasting 20 to 30 minutes.

In general, the aim of spine surgery is to return the patient to a full activity level, but the conditions leading to spine surgery cannot be completely corrected by even the most successful operation, so certain precautions should be taken.

What to do in general
- Avoid bending, lifting and twisting as much as possible. It may be possible to return to strenuous physical activity, including heavy lifting, but discuss this with your surgeon.
- Maintain ideal body weight.
- Do not smoke!
- Maintain proper posture.
- When traveling, change positions every one to two hours to keep your neck and back from tightening up.

What to do for exercise: choose a low-impact activity
- Follow the home program as outlined in this guidebook.
- Take regular one- to three- mile walks.
- Use home treadmill and/or stationary bike.
- Exercise regularly at a fitness center.
- Engage in low-impact sports, such as bowling, walking, gardening, dancing, etc.

What not to do for exercise:
- Do not run or engage in high-impact activities or activities that require a lot of starts, stops, turns, and twisting motions.
- Do not participate in high-risk activities, such as contact sports.
- Do not take up new sports requiring strength and agility, until you discuss it with your surgeon or physical therapist.
Section Eight:

Discharge Instructions
Lumbar Laminectomy

1. **Immediate post-op to discharge from hospital:**
   - You may get out of bed as soon as comfortable.
   - Keep wound clean and dry.
   - Change positions every 30 minutes.

2. **Discharge to first office visit:**
   - If you were given a back brace, wear as directed by your surgeon.
   - Continue to walk as desired, gradually increasing the distance.
   - Shower only if instructed by your surgeon. Remove dressings, shower, dry off incision and replace dressing if desired. Do not tub bathe or swim.
   - Ask your surgeon when you can drive short distances.
   - For the next week, you should rest at home. Avoid strenuous activity.
   - Avoid bending, lifting and twisting for the next month. Do not lift more than 10 pounds for four weeks (a gallon of milk is 9 pounds).
   - You can walk as much as is comfortable, but no other exercise is advisable for now.
   - Call if there is any incision drainage, redness or fever. It is not unusual to have some leg pain and/or numbness.
   - Please contact your surgeon if these symptoms are severe.

3. **First visit (approximately 10 days post-op) to 6 weeks:**
   - Gradually increase activities, remaining on feet for longer periods and increasing walking distances.
   - May return to sedentary job at two weeks, if commute is less than 20 minutes and you are pain free (if approved by your surgeon).
   - May tub bathe between three and six weeks, depending on your surgeon.
   - No bending, twisting, lifting, pulling or pushing.
• Sit only in chairs with good lumbar support.
• Sexual intercourse, if desired, (patients on bottom or side) can be resumed two to three weeks, as tolerated
• Wear back brace as directed by your surgeon.

4. 6-12 weeks:
• Start tapering off of pain medications.
• Returning to work will depend on your job demands and your recovery.
• No bending or twisting, avoid activities involving heavy lifting, jumping, running and any contact sports.
• You may drive if instructed by your surgeon and are not taking narcotics for pain.
• You will likely start rehabilitative physical therapy at four to six weeks after surgery.
• Continue walking and posture exercises.

5. 12-24 weeks:
• Normally at this time, you should be off narcotic pain medication.
• Avoid heavy lifting (greater than 10 pounds) or repetitive bending and twisting of the back.
• Depending on your progress, sporting activities might be added to your regiment.
• Refrain from pool activity that causes repetitive twisting of the head and neck. Walking in the water can be therapeutic during this time of recovery.

Lumbar Fusion

1. Immediate post-op to discharge from hospital:
• You may get out of bed as soon as comfortable.
• Keep wound clean and dry

2. Discharge to first office visit:
• If you were given a back brace, wear this when out of bed, if required by your surgeon.
• Continue to walk as desired. Gradually increase your distance.
• You should change positions every 30 minutes when awake to help prevent blood clots, improve circulation, and help control pain.
• You may shower only per your physician's instruction. Remove dressing, shower, pat incision dry and replace dressing if desired. Do not tub bathe or swim.
• Avoid riding in a car.
• When sitting, you should use a chair with good back support.
3. **First visit (approximately 10 days to 6 weeks, post-op):**
   - Gradually increase activities. Remain on feet for longer periods of time and increase walking distances.
   - You may drive short distances for necessities at three weeks, if instructed by surgeon and are not taking narcotics for pain.
   - You may tub bathe three to six weeks after surgery, depending on your surgeon.
   - Do not participate in sports or activities that require bending, stopping, twisting, pushing, or pulling, such as gardening, vacuuming, cleaning, etc.
   - Limit sitting and use good lumbar support to avoid placing undue pressure on the spine.
   - Avoid lifting more than 10 pounds for four weeks (a gallon of milk is 9 pounds) and do not lift above your elbows.
   - Sexual intercourse if desired (patient on bottom) may be resumed at two to three weeks.
   - Wear back brace, as directed by your surgeon.

4. **6-12 weeks:**
   - You will likely start rehabilitative physical therapy four to six weeks after surgery.
   - Continue walking and posture exercises.
   - Avoid activities involving heavy lifting, jumping, running and any contact sports.
   - Returning to work will depend on your job demands and your recovery.
   - Avoid bending, twisting, pulling, pushing or lifting anything over 10 pounds (a gallon of milk equals 9 pounds).
   - Start tapering off your pain medications.
   - Continue wearing brace, as directed by your surgeon.

5. **12-24 weeks:**
   - Normally, at this time you should be off of narcotic medication.
   - Continue to avoid lifting (less than 10 pounds) or any repetitive bending or twisting of back.
   - Based on your progress, we will start adding sporting activities to your regiment.
   - Wear back brace until your physician advises you further.
   - Continue these restrictions until advised that fusion has healed.
   - Refrain from pool activity that causes repetitive twisting of the head and neck. Walking in the water can be therapeutic during this time of recovery.
Appendix, Glossary and Other Important Information
Exercise Your Right

*Put Your Healthcare Decisions in Writing*

It is the policy of the Advanced Spine & Joint Institute at Alvarado Hospital to place patients’ wishes and individual considerations at the forefront of their care and to respect and uphold those wishes.

**What are Advance Medical Directives?**

Advance Directives are a means of communicating to all caregivers the patient’s wishes regarding healthcare. If a patient has a Living Will or has appointed a healthcare agent and is no longer able to express his or her wishes to the physician, family or hospital staff, Alvarado Hospital is committed to honoring the wishes of the patient, as they are documented at the time the patient was able to make that determination.

There are different types of advance directives:

- *Living Wills* are written instructions that explain your wishes for healthcare if you *have a terminal condition or irreversible coma and are unable to communicate*.
- *Appointment of a healthcare agent (sometimes called a medical power of attorney)* is a document that lets you name a person (your agent) to make medical decisions for you, if you become unable to do so.
- *Healthcare instructions* are your specific choices regarding use of life-sustaining equipment, hydration, nutrition and use of pain medications.

On admission to the hospital, you will be asked if you have an Advance Directive. If you do, please bring copies of the documents to the hospital with you, so they can become part of your medical record. Advance Directives are not a requirement for hospital admission.

**Anesthesia and You**

**Who are the anesthesiologists?**

The operating room, post-anesthesia care unit (PACU) and intensive care units (ICU) are staffed by board-certified and board-eligible physician anesthesiologists. Each member of the service is an individual practitioner with privileges to practice at the Advanced Spine & Joint Institute.

**What type of anesthesia will be used?**

Spine surgery requires the use of general anesthesia, which provides loss of consciousness and requires the use of an endotracheal tube.
Will I have side effects?
Your anesthesiologist will discuss the risks and benefits associated with this anesthetic option, as well as any complications or side effects that may occur.

Nausea or vomiting may be related to anesthesia or the type of surgical procedure. Although less of a problem today because of improved anesthetic agents and techniques, these side effects continue to occur for some patients. Medications to treat nausea and vomiting will be given, if needed.

The amount of discomfort you experience will depend on several factors, especially the type of surgery. Your doctors and nurses can relieve pain with medications. Your discomfort should be tolerable, but do not expect to be totally pain-free. The staff will teach you the pain scale (0-10) to assess your pain level.

What will happen before my surgery?
You will meet your anesthesiologist immediately before your surgery.

Your anesthesiologist will review all information on the medical record to evaluate your general health. This will include your medical history, laboratory test results, allergies, and current medications. He or she will also answer any questions you may have.

You will also meet your surgical nurses. Intravenous (IV) fluids will be started and pre-operative medications may be given, if needed. Once in the operating room, monitoring devices will be attached such as blood pressure cuff, EKG and other devices for your safety. At this point, you will be ready for anesthesia.

What does my anesthesiologist do during surgery?
Your anesthesiologist is responsible for your comfort and well-being before, during and immediately after your surgical procedure. In the operating room, the anesthesiologist will manage vital functions, including heart rate and rhythm, blood pressure, body temperature and breathing. The anesthesiologist is also responsible for fluid and blood replacement when necessary.
What can I expect after the operation?
After surgery, you will be taken to the post-anesthesia care unit (PACU). You will be watched closely by specially trained nurses. During this period, you may be given extra oxygen and your breathing and heart functions will be closely observed. Your pain level will be assessed and medication will be given to obtain an acceptable level of comfort. An anesthesiologist is available to provide care as needed for your safe recovery.

Notes:
Glossary of Terms

**Annulus** – The outer rings of rigid fibrous tissue surrounding the nucleus in the disc.

**Anterior** – A relative term indicating the front of the body.

**Bone Spur** – An abnormal growth of bone, usually present in degenerative arthritis or degenerative disk disease.

**Cartilage** – A smooth material that covers bone ends of a joint to cushion the bone and allow the joint to move easily without pain.

**Computed tomography scan (also called a CT or CAT scan)** – A diagnostic imaging procedure that uses a combination of X-rays and computer technology to produce cross-sectional images, both horizontally and vertically, of the body. A CT scan shows detailed images of any part of the body, including the bones, muscles, fat and organs. CT scans are more detailed than general X-rays.

**Congenital** – Present at birth.

**Contusion** – A bruise.

**Cervical Spine** – The part of the spine that is made up of seven vertebrae and forms the flexible part of the spinal column. The cervical spine is often referred to as the neck.

**Corticosteroids** – Potent anti-inflammatory hormones that are made naturally in the body or synthetically for use as drugs; most commonly prescribed drug of this type is prednisone.

**Degenerative Arthritis** – The inflammatory process that causes gradual impairment and loss of use of a joint.

**Degenerative Disc Disease** – The loss of water from the discs that reduces elasticity and causes flattening of the disks.

**Disc** – The complex of fibrous and gelatinous connective tissues that separate the vertebrae in the spine. They act as shock absorbers to limit trauma to the bony vertebrae.

**Discectomy** – The complete or partial removal of the ruptured disc.
Dura – The outer covering of the spinal cord.

Dural Tear – A laceration or tear of the dura that can occur during surgery. Leakage of spinal fluid occurs at this site. This is often treated with bed rest for 24-48 hours thus allowing the tear to heal.

Facet – The small joint located on the back of the vertebra.

Foramina – Plural form of foramen (a natural opening or passage through a bone).

Foraminotomy – The surgical procedure that removes part or all of the foramen. This is done for relief of nerve root compression.

Fracture – A break in a bone.

Fusion – The surgical procedure that joins or “fuses” two or more vertebrae together to reduce movement at this joint space. As a result, pain is lessened.

Herniated Disc – The abnormal protrusion of soft disc material that may impinge on nerve roots. Also referred to as a ruptured or protruding disc.

Inflammation – A normal reaction to injury or disease which results in swelling, pain and stiffness.

Joint – Where the ends of two or more bones meet.

Lamina – The bone that covers the back of the vertebrae.

Laminotomy – The removal of a small portion of the lamina.

Laminectomy – The removal of the entire lamina.

Ligaments – Flexible band of fibrous tissue that binds joints together and connects various bones.

Lumbar Spine – The portion of the spine lying below the thoracic spine and above the pelvis. This part of the spine is made up of 5 vertebrae. Also called the lower back.
Magnetic Resonance Imaging (MRI) – A diagnostic procedure that uses a combination of large magnets, radiofrequencies, and a computer to produce detailed images of organs and structures within the body. It is best for viewing soft tissues, such as discs, nerves, muscles and ligaments.

Myelopathy – A condition that is characterized by functional disturbances due to compression of the spinal cord.

NSAID – An abbreviation for non-steroidal anti-inflammatory drugs, which do not contain corticosteroids and are used to reduce pain and inflammation; aspirin and ibuprofen are two types of NSAIDs.

Nerve Root – The portion of a spinal nerve that lies closest to its origin from the spinal cord.

Neuropathy – A functional disturbance of a peripheral nerve.

Nucleus Pulposis or Nucleus – The relatively soft center of the disc that is protected by the rigid fibrous outer rings.

Osteoporosis – A condition that develops when bone is lost with age, causing a weakening of the spine.

Osteophyte – A bony outgrowth.

Paresthesia – An abnormal touch sensation, such as burning or tingling.

Posterior – A relative term indicating that an object is to the rear of or behind the body.

Radiculopathy – A condition involving the nerve root that can be described as numbness, tingling or pain that travels along the course of a nerve.

Sacral Spine – The last section of the spinal column located below the lumbar spine. It is made up of several semi-fused pieces of bone.

Sciatica (also called lumbar radiculopathy) – A pain that originates along the sciatic nerve.

Scoliosis – A lateral (or sideways) curvature and rotation of the back bones (vertebrae), giving the appearance that the person is leaning to one side.
**Spinal Stenosis** – A narrowing of the vertebral canal, nerve root canals, or intervertebral foramina of the spine caused by encroachment of bone upon the space. Symptoms are caused by compression of the nerves and include pain, numbness and/or tingling.

**Spinous Process** – The part of the vertebrae that you can feel through your skin.

**Spondylosis (spinal osteoarthritis)** – A degenerative disorder that may cause loss of normal spinal structure and function. Although aging is the primary cause, the location and rate of degeneration is individual. The degenerative process of spondylosis may impact the entire spine creating over growth of bone and affecting the intervertebral discs and facet joints.

**Spondylolisthesis** – A forward displacement of one vertebra over another.

**Sprain** – A partial or complete tear of a ligament.

**Strain** – A partial or complete tear of a muscle of tendon.

**Stress fracture** – A bone injury caused by overuse.

**Tendon** – The tough cords of tissue that connect muscles to bones.

**Thoracic Spine** – The portion of the spine lying below the cervical spine and above the lumbar spine. This part of the spine is made up of 12 vertebrae.

**Transverse Process** – The wing of bone on either side of each vertebra.

**Trigger Point** – Hypersensitive area of muscle or connective tissue, usually associated with myofascial pain syndromes.

**Ultrasound** – A diagnostic technique which uses high-frequency sound waves to create an image on the internal organs.

**Vertebra (e)** – The bone or bones that form the spine.

**X-ray** – A diagnostic test which uses invisible electromagnetic energy beams to produce images of internal tissues, bones and organs onto film.
National Distinctions

Thank you for choosing Alvarado Hospital’s Advanced Spine & Joint Institute for your care! We already know we offer high-quality and safe care—but it means more when it is recognized by national advocacy organizations, such as Healthgrades!

The Healthgrades 2015 Distinguished Hospital Award for Clinical Excellence™ places Alvarado Hospital in the top 5% of the more than 4,500 hospitals evaluated nationwide and based solely on our outstanding clinical performance as measured by Healthgrades, the leading online resource for comprehensive information about physicians and hospitals. Visit our website for more information.

**Healthgrades™ Spine Surgery Recognition**
- America’s 100 Best Hospitals™ for Spine Surgery (2014, 2015)

**Healthgrades™ Orthopedic Surgery Recognition**
- America’s 100 Best Hospitals™ for Orthopedic Surgery (2014, 2015)
- Five-Star Recipient for Total Knee Replacement (2015)

**Healthgrades™ Clinical Care and Patient Safety Recognition**
- Distinguished Hospital for Clinical Excellence – Top 5% in Nation (2014, 2015)
- Patient Safety Excellence Award – Top 5% in Nation (2015)