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Section One:

General Information
Welcome

Thank you for choosing the Advanced Spine & Joint Institute at Alvarado Hospital. We follow a patient-focused clinical pathway, which accounts for our high levels of patient satisfaction. Our dedicated unit is staffed by physicians, physician’s assistants, nurses and other professionals trained in the care of patients undergoing spine surgery.

Our program is ranked among America’s 100 Best Hospitals in the Nation for Spine Surgery™, which means you are in the best of hands for your surgery and recovery!

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.

Our team includes nurses, physical and occupational therapists, orthopedic and neurosurgeons specializing in spine care. Every detail, from pre-operative teaching to post-operative exercising, is considered and reviewed with each patient. The care coordinator will guide patients through the surgical experience and help develop individualized discharge plans.

Features of the Advanced Spine & Joint 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 you 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 Care Coordinator

- The care coordinator is available during the pre-operative time period as well as post-discharge to answer any questions you may have about your surgery or the recovery process.
- Call you one to two days after you are discharged to see how you are doing.
- The care coordinator can be reached between 8 a.m.-4 p.m. Monday-Friday at (619) 229-4548 or 229-4569.

Cervical Surgical Procedures

**Cervical Laminectomy:** A cervical laminectomy is a surgical procedure in which the ruptured part of a disc or a bone spur is removed to relieve pressure on the nerve. In most cases, a small incision is made in the back (posterior) part of the neck.

**Cervical Fusion:** A cervical fusion is a surgical procedure where surgeons build a bony bridge between the vertebrae, using pieces of bone, which we call a bone graft. The bone graft may be obtained from the patient (usually from the pelvis), from a bone bank, or it can be synthetic. The bone graft has to heal and unite to the adjacent bones before the fusion becomes solid.

Spine surgeons often use plates to protect the bone graft and stabilize the spine during the healing period, attaching them to the spine using screws.
Cervical Discectomy and Fusion: A cervical discectomy and fusion is a surgical procedure performed on the cervical (neck) region of the spine to help relieve pressure on the nerves and, perhaps, even the spinal cord itself. During the operation, a small incision is made, usually in the front of the neck, and the surgeon removes the bony material or disc that is causing the problem. In most cases, the surgeon then fuses or joins together the affected vertebrae using bone graft or bone graft and a metal plate.

Notes:
Frequently Asked Questions

Q. How long will I be in the hospital?
A. How long you will stay in the hospital will depend on your individual condition and the extent of your surgery. Usually, patients go home between 1-3 days.

Q. Will I need a blood transfusion?
A. There is very little blood loss with this operation and transfusions are rarely needed.

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 3-4 weeks post-operatively, as tolerated.

Q. What shouldn’t I do after surgery?
A. In general, you should limit heavy lifting (no more than 10 pounds), 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. Tilting your head back to look overhead is also stressful to the neck. If you are a smoker, it is imperative that you do not smoke because it interferes with bone healing.

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. What are my chances of being relieved of my pain?
A. Approximately, 80%-95% of patients get relief from their nerve symptoms or arm pain. Neck and shoulder pain are less predictably relieved by disc surgery. Up to 15% of patients may have some neck and shoulder aching after surgery; this percentage may be higher in patients who have a substantial amount of neck and shoulder pain before surgery.
Q. Will my neck be normal after surgery?
A. No. Even if you have excellent relief of pain, the disc has still been damaged. Most patients with a one or two-level fusion will not notice significant loss of motion, but the stiffened segment of your spine does put additional stress on adjacent discs, which may already be abnormal to some extent. These other discs may cause symptoms. However, most people can resume many of their normal activities after disc surgery.

People who do heavy work generally take longer to recover and may not be able to do everything they could do before their injury.

Q. What other 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, collection of blood clots in the wound or in the veins of the leg, pulmonary embolism (movement of a blood clot to the lung), heart attack, stroke and death. The chances of any of these events happening, particularly to a generally healthy patient, are low. The chances of neurologic injury with disc surgery are very low and the possibility of catastrophic injury, such as paralysis, is rare. Injury to a nerve root with isolated numbness and/or weakness in the arm is unlikely.

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 and using an exercise bike are all examples of the type of exercise which is appropriate for spine patients.

Always remember your spine precautions when exercising.

Q. Will I need to wear a neck brace?
A. Your surgeon will determine if you need a brace and the length of time you will need to wear it. Usually, if a brace is needed, your surgeon will order it for you before surgery.

Q. Could I have difficulty swallowing?
A. Most patients after a cervical fusion report mild discomfort with swallowing for a few days after surgery. Occasionally, swallowing difficulties may be more significant and last for longer periods of time. If swallowing difficulty persists longer, notify your physician.
Q. Will my voice be affected?
A. Some patients may be hoarse after anterior cervical spine surgery. Usually this goes away within a few days or weeks. Rarely, the hoarseness may be persistent for a longer period of time or even be permanent.

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. If you are wearing a brace, driving is not recommended.

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 neck 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
- Temperature greater than 100.5

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 doctor and spine care team:
Section Two:

Pre-operative Checklist
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 laboratory-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.

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 regarding 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 61. 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.

Four Weeks before Surgery

Read “Anesthesia and You”
Spinal surgery does require the use of general anesthesia. Please review “Anesthesia and You” (page 62). If you have questions, please call your surgeon’s office.

Thirty days prior to surgery discontinue fish oil, Gingko, Vitamin E, omega fatty acid supplements and garlic supplements that could increase your bleeding risk.

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 check-up and a time to ask any remaining questions. Some patients with acute disc herniations may have a shorter time between the visit and surgery. At this time you should schedule your 10-day and six-week post-op visits.
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
Home:
- Declutter your home. Temporarily 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 limit washing. Also have plenty of liquids available. Pain medications can give you a very dry mouth.
- Complete needed yard work and mowing or arrange to have this done for you.
- Arrange for neighbors/family to collect mail and newspapers for a few days.
- Change your bed and have fresh linens prepared.
- Strategically place nightlights in bedrooms, hallways and bathrooms you may need to access at night.
- Place essential and frequently used items at counter level in the kitchen. This may mean taking out necessary items from the lower or very upper cabinets out and storing them on the counter temporarily.
- 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.

Pets:
- Arrange 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, have the litter box up on a high table or counter to avoid bending down to clean it.
The Night before Surgery

Chlorhexidine Shower
Please follow the instructions as provided by the nurse at your pre-anesthesia evaluation, usually once the night before and once the morning of surgery. If you have not received this soap, please take a good “scrubbing” shower the evening before the surgery with regular bar soap. 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.

Special Instructions:
- You will be instructed by your physician or the nurse at your pre-anesthesia evaluation on which of your daily medications to take or omit the morning of surgery.
- Remove makeup before procedure.
- You may leave on nail polish.

What to Bring to the Hospital
- Leave jewelry, valuables, and large amount of money at home.
- 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
- Any braces for your neck or for walking (you may need a brace to get out of bed)
- Cane or walker if you already have one – have a family member bring 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.
Section Three:
Alvarado Hospital Care
Day of Surgery

Arrival
Arrive at Alvarado Hospital two hours before your surgery is scheduled. Park in the hospital’s parking structure and then enter the main lobby of the hospital. Sign in at the desk in the lobby and then you will be taken to the second floor Same Day Surgery area. Let the person at the desk know that you have arrived and a nurse will take you back to prepare you for surgery. Your family can wait in the second floor waiting room. The surgeon will speak to your family in the family waiting room after the surgery is completed.

What to Expect
In the Same Day Surgery area you will be prepared for surgery, including starting an IV and fitting you with compression stockings. The operating room nurse and anesthesiologist will interview you, and your surgeon will mark the operative site. You will then 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. You will then be taken to the Advanced Spine & Joint Institute 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 the 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
Each morning around 5 a.m., the lab will draw your blood. A post-op X-ray of your cervical spine will be taken for your surgeon to review. You will receive physical therapy twice a day until discharged.
Understanding Pain Management

It is our aim to make your surgery as comfortable as possible. Having said that, we realize pain management is not perfect and you will have some discomfort after your operation. Mild to moderate pain is normal and a part of the healing process.

There are several factors that limit our ability to completely eliminate pain after surgery. The first is that pain medications have side effects. 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 mean that the amount of medication will have to be reduced at times, to avoid creating dangerous or uncomfortable conditions.

Another factor is tolerance. 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 use to having these drugs. Unfortunately, the side effects can still be present. 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.

Your Role in Pain Management

During your hospital stay, we will rely heavily on your own assessment of your pain and work with you to relieve it. Many patients will receive intermittent low-doses of pain medication into their IV, which they control with a small pump. After 12-24 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 it.

Discharge Plans and Expectations
When patients are ready for discharge from the hospital, certain criteria are generally met. Patients are 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 T.E.D. stockings. This caregiver will also help out with meals and household activities. During these first few days at home, we want you to concentrate on your recovery.

Post-Hospitalization Rehabilitation
The general length of hospital stay for cervical laminectomy and anterior cervical fusion is one to two days. Posterior cervical fusion patients generally stay one to three days, while anterior/posterior patients can be at the hospital for two to three days. 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 rehab, 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 there are several things you need to know to ensure your safety, steady recovery and comfort.

Control Your Discomfort

1. 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 three months after surgery (if you had cervical 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.

2. 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.

3. Positioning
   - Change your position every 30 minutes throughout the day.
   - Muscle strain and spasm can often be reduced by elevating the arms with pillows. Using this positioning technique, along with pain medication, will optimize your comfort.

4. Muscle Spasm
   - If your doctor has prescribed a muscle relaxer, take this to help muscle spasms.
   - Gentle stretching may ease muscle spasms. Remember to avoid the B.L.T.’s (bending, lifting, and twisting), pushing and pulling, and to use proper posture and body mechanics.
   - Gentle massage applied to the muscle spasm may help to reduce discomfort.
5. Breathing
- Good breathing is an important part of controlling pain and spasms. Take slow, controlled, deep breaths. 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.
- Deep breathing can also assist in relaxing your muscles and body. Breathing and relaxing while you move will help reduce muscle tension.

Body Changes
You can expect some or all of the following:
- Initially, you will have a poor appetite, but your desire for solid food will return. Drink plenty of fluids to prevent dehydration.
- It is normal to have difficulty sleeping at night. Try not to sleep or nap too much during the day.
- Your energy level will be decreased for the first month.
- Pain medications contain narcotics, which promote constipation. 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.

Caring for Your Incision
Here are some tips for caring for your incision:
- 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.
- Call your surgeon if your temperature exceeds 100.5 degrees.

Signs of Infection
- Increased swelling, redness at incision site
- Change in color, amount, 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 when directed by your surgeon, as long as your wound is clean, dry and not red. **Avoid** tub bathing until instructed 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* - *This procedure is the same for the neck and hip bone graft incision*

1. Wash hands.
2. Prepare all dressing change materials (open gauze pad and tape).
3. Remove old dressing.
4. Inspect incision for the following:
   - increased redness
   - increase in clear drainage
   - 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. Continue to inspect the incision daily.
- If dressing becomes wet with a collection of fluid and blood, remove promptly and follow the instructions at the top of the page. Change dressing daily and 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 the second day post-op day. Carefully try to lift gauze from the incision. If the gauze adheres to the incision, do not pull it loose. Just trim away the loosened gauze as needed. After a few days, the gauze should come free.
- If dressing becomes wet with a collection of fluid or blood, remove promptly and follow the dressing change instructions for "gauze dressing." Change dressing daily and as needed until incision remains dry.
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. Prompt treatment usually prevents the more serious complication of pulmonary embolus. Moving around throughout the day, especially walking will reduce the chance of a blood clot.

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

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

Prevention of Blood Clots
- Frequent foot and ankle pumps
- Walking
- Stockings/T.E.D. hose
- 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.
Section Five:

Post-operative Activity Guidelines
Cervical Spinal Precautions: No "B.L.T."

No Bending
- Keep head straight and facing forward. Do not tilt the head side to side, forward or backwards.
- Practice optimal body mechanics by keeping your chest up, shoulders back and abdominal muscles tight. This helps maintain a neutral spine position and reduce stress on the spine.

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 ears and shoulders pointing in the same direction.
- To look behind you or to either side, you must turn your entire body. Do not just turn your head.
Bed Positioning

Lying on Your Back
- Place a pillow under your knees or thighs, under your neck, and under your arms. This positioning reduces stress on your spine.
- When you change positions, tighten your abdominal muscles and log roll keeping your hips, shoulders, and ears lined up together.

Additional Notes: To place a pillow behind your head, make sure it is supporting both your shoulders and head. Avoid large pillows as they can push your head and neck forward. The goal is to choose a pillow that will keep your neck straight, not bent forward, backward or to the side. Wear your cervical brace at all times for support, as directed by your doctor.

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

Lying on Your Stomach
- Avoid lying on your stomach. 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. Now roll onto your side keeping your hips, shoulders, and ears moving together to avoid twisting (i.e., roll like a log).

As you slide your feet off the bed, use your arms to push up into a sitting position. Scoot your hips forward until your feet are on the floor and you feel stable. Using your arms to help scoot typically helps minimize your surgical pain. 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 on 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.

Sitting Posture
Many times, patients choose to sleep in a recliner chair for a few days after neck surgery. The adjustable back position of the recliner offers comfortable upright positioning for the head and neck, as well as armrests that support the arms. Additionally, it may be easier to stand up from a chair instead of the bed.

Position of Comfort: Immediately after surgery, patients complain of neck and shoulder pain and have trouble finding a comfortable resting position. Placing pillows under your forearms and elbows may help to reduce the pull on your neck and shoulder muscles (while sitting in the recliner or lying in bed). Additionally, your therapist may suggest placing gel ice-packs over your shoulder muscles to reduce soreness.
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.
- Your feet should be firmly resting 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 move 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.
Into the Car
Back up to the car seat 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 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 into the car at a time, 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. You can keep your seat slightly reclined while riding to support your back from the “bumps” in the road.

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 frame or dashboard. 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/out.
- Have the seat positioned all the way back so you have maximum leg clearance.
- If you need to have one hand on the walker for leverage, have someone hold the walker down on the front bar for stability.
- Your doctor 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.
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.

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 a few key rules.

- 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. 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. You don’t want to be too close or too far away from the walker. Stay 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.
- Your pace of walking is up to you. Think about increasing 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. 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. Go at your own pace. Frequent walks are very important to help keep you moving and decrease your stiffness and pain. By six weeks, a goal is to walk 3 miles, unless otherwise instructed by your physician or therapist.
- Take six to eight walks per day at home. During at least one of the walks, you want to increase the distance as tolerated.
Using Stairs

**Negotiating consecutive steps:**
- Use a handrail and/or 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, take one step at a time. This will make negotiating steps easier and safer for you.
- Concentrate on what you are doing. Do not hurry.
- Since you cannot bend your neck to look down, feel the step with your feet.
- 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. 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 stairs. Place your walker below the step, then step down leading with the weak leg first.
Neck Brace

Soft Collar
The least restrictive and least supportive of all cervical braces is the soft collar. Patients may be instructed to wear the soft collar at all times or only when out of bed. The soft collar is simple to put on and only requires fastening a Velcro strap at the back of the neck. Your chin should rest at a small divot in the front of the collar. Be careful not to turn your head side to side in this brace, as it will not prevent you from performing this motion.

Aspen Vista Collar
A more supportive brace is the Aspen Vista. This brace is a two piece cervical spine collar that is designed to give support and prevent motion that may be detrimental to your healing or surgery. This brace is composed of a back and front portion made of rigid plastic, fastened with Velcro straps and lined with foam pads. The foam pads are removable for cleaning and air drying.

This collar also has a unique dial adjustment mechanism to adjust the front depth of the brace for size and comfort. An orthotist, doctor or therapist should make sure this brace is adjusted correctly to your size. If you are told to wear the brace when out of bed, please do so to protect your surgery.

Activities of Daily Living

Using a Reacher
Using a reacher limits the amount of bending required to dress. Sit down 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 pulling the underwear, then 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 (see illustrations A and B below)
Using a sock aid helps you reach your feet without bending. Sit supported in a 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 drop the sock aid down to your foot. Place your foot into the cuff and 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 (see illustration C)
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.

Bathing
Stepping in/out of the tub (see illustration to right):
- 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. A smaller patio resin/plastic chair can work for this (if you have one already). Small tub/shower benches can be purchased at most drug stores or medical supply stores.
- You are not allowed to take a tub bath or swim for at least three weeks until your doctor clears you to do this.
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 specific to their needs and is one that they enjoy. The ultimate goal for each patient is that strength, flexibility and mobility are restored through a progressive and safe exercise program. The goals and guidelines for exercise are noted on the next few pages.

- 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 aerobics. These are good low-impact exercises for your entire body.
- Exercises are best done on a firm surface such as the floor or a firm bed. Protect your back. Keep good posture when exercising and move slowly. 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.

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.
Home Exercise Program

Weeks 1-2
After one to three days, you will be ready for discharge from the hospital. During weeks one and two your recovery goals are to:

- Continue to walk, using the walker as needed. The walker typically reduces the stress placed on your spine and can help with balance. As your pain and discomfort lessen, increase your walking distance and wean yourself from the walker, as you feel comfortable or as your physical therapist indicates.
- Walk frequently, slowly increasing your distance by 500-1,000 feet as tolerated.
- Gradually resume daily activities and household tasks, keeping in mind to always adhere to your spinal precautions (no bending, lifting, twisting).

Post-op Exercises Prescription Plan for the Spine Patient
1. Shoulder shrugs: 1 set, 20 reps, two times a day
2. Scapular retraction – Initial phase: 1 set, 20 reps, 5-second hold, two times a day
3. Horizontal shoulder stretch: 1 set, 20 reps, 30 second hold, two times a day
4. Walking

1) Shoulder shrugs
Raise and lower shoulders using a circular motion
**Perform 1 set of 20 reps twice a day**

2) Scapular Retraction – Initial Phase
Pinch your shoulder blades together. Do not shrug your shoulders.
**Perform 1 set of 20 reps (hold for 5 seconds) two times a day**
3) Horizontal Shoulder Stretch
Place one arm across your chest with your opposite hand on the elbow; pull your arm across your chest. The stretch is felt in the back of the arm, shoulder, and neck.
Perform 1 set of 20 reps (hold for 30 seconds) twice a day

4) Walking
**Goal (Weeks 1-2):** Walk as far as possible, taking rest breaks as needed. Increase distance each day.
**Goal (Weeks 3-6):** Walk one to 3 miles a day by six weeks post-operation.

Home Exercise Program

3-12 Weeks
The following are general goals for weeks three through 12:
- Continue to walk daily, steadily increasing your distance and endurance.
- Continue weaning yourself from the walker as indicated by your doctor or therapist.
- Walk frequently, slowly increasing your distance one to three miles as tolerated.
- Gradually resume community tasks. Give yourself frequent rest breaks. Do not do ongoing activity for more than 30 minutes without resting.
- Always adhere to your spinal precautions (no bending, lifting, twisting).

Post-op Exercises Prescription Plan for the Spine Patient
1. **Scapular retraction** – progressive phase: 1 set, 20 reps, 5 second hold, two times a day
2. **Active shoulder flexion:** 1 set, 20 reps, two times a day
3. **Active shoulder abduction:** 1 set, 20 reps, two times a day
4. **Chair push-ups:** 1 set, 20 reps, 5-second hold, one to two times a day
5. **Wall push-ups:** 1 set, 20 reps, two times a day
6. **Corner stretch:** 1 set, 20 reps, 30-second hold, two times a day
7. **Tricep stretch:** 1 set, 20 reps, 30-second hold, two times a day
8. **Horizontal shoulder stretch:** 1 set, 20 reps, 30-second hold, two times a day
9. **Walking**
3-12 Weeks (continued)

1) Scapular Retraction- Progressive Phase
Start with elbows positioned at shoulder level. Pull your arms back while squeezing your shoulder blades together as if rowing a boat.
Perform 1 set of 20 reps (hold for 5 seconds) twice a day

2) Active Shoulder Flexion
Standing or sitting, alternately raise one arm forward over your head with thumb up and elbow straight. Lower arm slowly. Note: Before progressing with hand weights, consult your physician or therapist.
Perform 1 set of 20 reps twice a day
3) Active Shoulder Abduction
Place arm directly to side. Leading with thumb raised, straighten arm over your head. Lower arm slowly. Note: Before progressing with hand weights, consult your physician or therapist. Repeat with other arm.  
Perform 1 set of 20 reps (on each arm) twice a day

4) Chair Push-ups
Sit in chair and use your arms to push your body up from chair. Keep elbows slightly bent and feet on the floor. Return to the chair slowly. Focus using your arms instead of your legs.  
Perform 1-2 sets of 10 reps (hold for 5 seconds) twice a day

5) Wall Push-ups
With your arms shoulder width apart and your feet about three feet from the wall, gently lean your body in toward the wall allowing your elbows to bend. Then straighten your elbows while still leaning into the wall. To repeat, bend the elbows to the starting position.  
Perform 1 set of 20 reps twice a day
6) **Corner Stretch**
Standing in the corner of a room with both arms out to the side and one leg forward, gently shift your weight forward toward the corner. The stretch is felt across the front of your chest. Hold for 10 seconds and repeat five times.
**Perform 1 set of 20 reps (hold for 30 seconds) twice a day**

7) **Triceps Stretch**
Place one arm behind your head, keeping your neck straight. Put your opposite hand on the elbow. Pull your arm to the opposite side. The stretch is felt on your side and shoulder. Hold for 10 seconds; repeat 5 times with both arms.
**Perform 1 set of 20 reps on each arm (hold for 30 seconds) twice a day**

8) **Horizontal Shoulder Stretch**
Place one arm across your chest with your opposite hand on the elbow; pull your arm across your chest. The stretch is felt in the back of the arm, shoulder, and neck.
**Perform 1 set of 20 reps (hold for 30 seconds) twice a day**

9) **Walking**
Walk as far as possible, taking rest breaks as needed. Increase distance each day.
**Goal: Walk at least 3 miles a day by six weeks post-operation**
Section Seven:

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. This helps to 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 can help reduce the pressure and constant forces placed on your spine. Shift feet often.
- While standing, 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.

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.

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 and 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.

**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.

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

**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.

**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.

**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.

**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.

Sleeping

- Sleep on your side or back. If you sleep on your side, bend your knees to take some pressure off your back, 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.
Around the House

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.

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.

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

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.

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.

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.

Ironing
- While ironing, keep ironing board waist level to avoid leaning forward at your back.

Kitchen Miscellaneous
- 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.

Kitchen 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.

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.

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."
- Attach soap-on-a-robe for easy reach.

Personal

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 your 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.

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

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)

**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.
Overhead Cabinets

- Do not over-reach to high positions.
- Step up on a stool so that overhead objects are lower.

Children

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.

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.

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.
Carrying Child

- Hold baby by cradling in arms.
- Keep the baby close to body.
- Keep the head as upright as possible.

Car

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.

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.
Safety Tips

- 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.

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Sign up with your care coordinator or online at AlvaradoHospital.com today!
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 20-30 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

- 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

- Enroll in recommended exercise classes.
- Follow the home program as outlined in this Guidebook.
- Take regular 1- to 3-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 take up new sports requiring strength and agility, until you discuss it with your surgeon or physical therapist.
Section Eight:

Discharge Instructions
Cervical Laminectomy

1. **Immediate post-op to discharge from hospital**: You may get out of bed as soon as comfortable. Walk as desired. Change positions frequently throughout the day to help control pain, prevent blood clots and improve circulation. Keep wound clean and dry. Wear brace or collar as instructed.

2. **Discharge to first office visit**: If you were given a brace or rigid collar, wear this when you’re out of bed, soft collar at rest. Continue to walk as desired. Gradually increase distance. Depending on your surgeon’s instructions, you may shower, but do not bathe in tub or swim. You should remove any dressings from surgical incision before showering. If you are not wearing a brace, you may drive short distances when comfortable. Driving is not advisable while wearing a neck brace. You should plan to take it easy and rest for the next week at home and then gradually increase your activity as tolerated.

3. **First visit (approximately 10 days post-op) to six weeks**: Gradually increase activities. Remain on feet for longer periods of time and increase your walking distances. You may tub bathe when instructed by your surgeon, usually between 3-6 weeks after surgery. No bending, twisting or lifting more than 10 pounds (a gallon of milk is 9 pounds). Try to lift objects that can be lifted with one hand and do not lift above your elbows. Sexual activity may be resumed 2-3 weeks post-operatively as tolerated.

4. **6-12 weeks**: You will probably start rehabilitative physical therapy 4-6 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 recovery and work demands.

5. **12-24 weeks**: Continue to avoid heavy lifting or repetitive bending and twisting of the neck. Based on your progress, sporting activities may be added to your routine. Normally, you should be off of narcotic pain medication at this time. Your work status will be updated based on your overall recovery and work demands.

Cervical Fusion, Cervical Discectomy and Fusion

1. **Immediate Post-op to discharge from hospital**: You may get up as desired wearing rigid collar/brace. Use soft collar in bed. You should change positions frequently throughout the day to help control pain, prevent blood clots, and improve circulation. When sitting, use a
chair with good back support. Keep your incision clean and dry; do not swim or soak in a bathtub or hot tub. You may sleep in any position you find comfortable.

2. **Discharge to first office visit:** Try to be up as much as possible, using hard brace when up and soft collar when in bed, if ordered by your surgeon. You may shower, as instructed by your surgeon, but do not tub bathe or swim. You should remove any dressings from the surgical sites before showering and replace if desired after shower. You should avoid driving at this time. You may be a passenger. Avoid sports or activities that require frequent, stopping, bending, twisting, pushing or pulling (gardening, vacuuming, cleaning, etc.). Also, avoid lifting more than 10 pounds (a gallon of milk is 9 pounds). Try to only lift objects that can be easily lifted with one hand. Do not lift above your elbows.

3. **First visit (approximately 10 days to six weeks, post-op):** Gradually increase activities using brace/collar as before. You may shower as instructed by your surgeon (usually between three to six weeks after surgery). Returning to work will depend on your recovery and work demands, as instructed by your physician. Do not drive if you are still wearing a brace. Continue to avoid lifting anything over 10 pounds, jumping, running and any contact sports. You will probably start rehabilitative physical therapy around four to six weeks after surgery.

4. **6-12 weeks:** You may be weaned from brace/collar depending upon your X-rays. If out of brace, you may drive, otherwise continue as before. Use the soft collar as desired for comfort. Continue walking and posture exercises. No running, contact sports or heavy lifting. You should start tapering off your pain medications. Your work status will be updated by your recovery and work demands.

5. **12-24 weeks:** Continue to avoid heavy lifting, repetitive bending and twisting of the neck. Continue these restrictions until your X-rays indicate that you are completely healed and your physician releases you to full activity. Based on your progress, sporting activities may be added to your regiment. Your ability to return to work will be determined by your recovery and job demands. Normally, you should be off of narcotic pain medication at this time.
Appendix, Glossary and Other Important Information
Exercise Your Right
*Put your Health-care 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 appointed a healthcare agent and is no longer able to express his or her wishes to the physician, family or hospital staff, the 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 health care 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 Alvarado 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, PACU (post-anesthesia care unit), and intensive care units 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 at Alvarado Hospital.

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.

STAY MOTIVATED!
Ability is what you're capable of doing. Motivation determines what you do. Attitude determines how well you do it.
- Lou Holtz
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.

**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 to allow 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 the 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 five 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, which 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 formina 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 connects 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)