

Spine Surgery

Guidebook



This guidebook belongs to

My surgery date is

This guidebook is designed to educate you and your family about what to expect throughout your surgical experience. It seeks to prepare you for what's ahead and to help you understand some of the steps that can be taken to improve your odds for a successful recovery. We encourage you and your caregivers to use this book as a source for pre-surgical preparedness and post-surgical rehabilitation.

Please keep this guidebook with you during education classes and bring it with you to the hospital on the day of your surgery.

If you have any questions before or after your surgery, please call one of our spine care coordinators.

Orange/Seminole Counties: 407-303-9102

Osceola County: 407-303-4545

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Welcome



On behalf of our entire care team, I would like to welcome you to AdventHealth. For more than 100 years, we have dedicated ourselves to improving the lives of others by delivering advanced health care to the communities we serve. Our mission — to extend the healing ministry of Christ — has inspired us to build a unique health network dedicated to providing comfort, healing, and the discovery of new treatments and cures.

We're honored that you have entrusted us with your health. We look forward to caring for you.

Sincerely,

Daryl Tol
President and CEO
AdventHealth Central Florida Region



About the AdventHealth Spine Center

We use a multidisciplinary approach to spine care that includes a team of experts specializing in neurosurgery, orthopedic surgery, pain management, rehabilitation and care coordination. We participate with a national database to achieve quality metrics. We're here to make your road to recovery as easy and pleasant as possible.

Every patient is unique. That's why our surgeons provide care specific to each individual person's needs. What is recommended for one patient may not be what is best for another. This material will give you general information about your planned surgery, but is not intended to replace what your surgeon has already explained to you. If you have specific questions regarding your surgical procedure, contact your surgeon's office.

The Role of the Spine Care Coordinator

The spine care coordinator will walk you and your family through each step of the treatment process.

The spine care coordinator will:

- Provide a central point of patient access
- Educate you on your diagnosis and treatment options
- Facilitate scheduling of additional testing as needed
- Ensure coordination of scheduling and treatment
- Communicate with referring physicians
- Refer you to the appropriate provider based on your individual circumstances
- Help you navigate through the surgical process
- Provide pre-operative education to prepare you for surgery
- Follow up with you after discharge from the hospital

You may contact the spine care coordinator at any time before or after your surgery to ask questions or share concerns.



Frequently Asked Questions

Below is a list of some of the most frequently asked questions concerning spinal surgery. If you need more information, ask your surgeon or spine care coordinator.

Why do I have to stop taking my arthritis medicine or NSAIDs?

These medicines can affect blood clotting and may cause excess bleeding during surgery. They can also adversely affect bone healing and fusion results after your surgery. Do not resume anti-inflammatory medication until approved by your surgeon.

Why is my activity restricted and why can't I drive after my surgery?

With any spinal fusion, there is a risk of it not healing properly. Restriction of activity takes stress off the implants and improves the healing process. Sometimes individuals feel like they are ready to perform certain tasks before their bodies are ready. For your safety do not exceed the recommendations regarding activity — no matter how well you feel. Driving is not a safe activity before the first post-operative visit (10-14 days after surgery). In addition, many individuals are still taking narcotic medication, which cannot be taken while driving.

How will my pain be managed?

Most patients will be placed on oral narcotics and muscle relaxers. These medications will be given on a schedule to ensure adequate pain management during your hospital stay. You will be educated on how to manage your pain once you return home.

Will I get addicted to the pain medication?

Our team takes every precaution to ensure you receive adequate pain medicine and slowly reduces the amount you take to prevent addiction.

What about nutritional and calcium supplements?

Nutrition is an important part of healing. Patients usually experience a poor appetite after surgery for some time, but it is very important to eat as much as you can tolerate. A diet high in protein and calcium is best. If you are not getting the recommended, daily amount of protein and calcium, a supplement may be required.

I have terrible constipation from the narcotics. What can I do?

Constipation is a normal side effect of many pain medications. Drink plenty of fluids, eat a high-fiber diet and use over-the-counter remedies if needed.

Can I call on the weekend?

There is someone available 24-hours-a-day for emergencies. If you have a non-emergent question, call your surgeon's office during normal office hours.

Should I exercise before the surgery?

Yes, consult your surgeon about exercises appropriate for you.

How long will I be in the hospital?

There are goals that need to be met prior to you being discharged from the hospital. You will need to be cleared by your surgeon and physical therapist for safety, and your pain will need to be managed.

Will I need a walker or cane once I am discharged?

Some patients need additional assistance once they return home. If this is the case for you, we will make sure you have all the appropriate equipment for your home prior to discharge.

I've heard certain metal implants are better. How do I choose?

This is dependent upon what your surgeon feels is best for your individual case. All metal implants have their inherent advantages and disadvantages. Some have slightly better strength characteristics and better imaging qualities, while others have much better characteristics to correct deformity. Any implant can adequately do the job it was designed to do.

Where will I go after I am discharged from the hospital?

Most patients are able to go home directly after discharge. Some patients may transfer to a sub-acute facility, where they will stay for three to five days or until it is safe to go home. The spine care coordinator and case manager will help you with this decision and make necessary arrangements for you. You should check with your insurance company to see if you have sub-acute rehab benefits.

Will I need 24-hour home care?

Each person has unique circumstances to consider. Upon returning home, our patients are fully independent and able to walk, dress, bathe and fix a light meal. However, for the first several days or weeks — depending on your progress — we recommend asking someone to assist you with meal preparation and daily activities.

Will I need physical therapy when I go home?

Yes. Your best therapy will be walking. Your Spine Center team will decide if in-home physical therapy is needed. Until your first post-operative appointment, you should try to increase your general activity and walking distance each day.

How often will I need to be seen by my surgeon following surgery?

You will be seen for your first post-operative visit 10-14 days after discharge. Your surgeon will assess your need for future visits at that time.

Will my implants set off alarms at the airport?

Possibly. Depending on how high the sensitivity is set on the machine. You can request to use the body-scan machine, which will reveal your implants and avoid a pat down.

Should I put antibiotic cream on my incision?

No. Most over-the-counter antibiotic creams contain neomycin, which 15 percent of the general population is allergic to. A nasty dermatitis can potentially occur, making the incision look red and irritated. No creams are needed.

What if I wake up in terrible pain?

Everyone has a bad day. Generally, if you look back on your activities from the day before, you may find that you substantially increased your activities or did something you probably should not have done. If this is the case, decrease some of your activities, then slowly work back up to them. If your pain is excessive or you have several bad days in a row, call your surgeon.

When will I be able to return to work after surgery?

The date you return to work will depend on your specific job duties. Most return between three weeks to three months following surgery. Speak with your surgeon regarding the specifics of your occupation and your rate of healing.

Why can't I smoke?

Science has clearly shown that smoking slows or prevents bone healing.

Why is my throat sore? How long will it last?

Sore throat, hoarseness and difficulty swallowing are common side effects that are experienced the first few days following surgery. Hoarseness should improve over time. If you had a cervical fusion, swallowing will improve as inflammation decreases. It is best to eat a diet consisting of soft food for the first week or two following surgery to avoid difficulty. If breathing becomes difficult or swallowing becomes more difficult, proceed to the emergency room. If you have any questions, call the office number and ask to speak to the on-call provider.

What does N2QOD mean?

Because we are committed to our patients receiving the highest quality of care, we have chosen to participate in NeuroPoint Alliance's (NPA) Quality Outcomes Database (N2QOD).

Critical variables on patient outcomes are recorded and submitted to the nationwide database for analysis and comparison to national benchmarks, ensuring patients receive the most valid and evidence-based care available. Because of this tracking, you may receive calls during the course of treatment to record your progress.



Preparing for Spine Surgery

There are a number of steps you must take to prepare for your spinal surgery.

1-2 Weeks Prior to Surgery

- Stop all medications that can increase bleeding unless otherwise instructed by your physician.
- Attend your pre-operative appointment with pre-admission testing.
- Complete pre-operative education.
- Complete pre-operative exercises.
- Prepare your home for your return from the hospital.

The Day Before Surgery

- Avoid alcoholic beverages.
- Pack clothes and items you will need during your hospitalization such as shorts, shirts and deodorant.

The Night Before Surgery

- Do not eat or drink anything after midnight (or at least eight hours before your operation) unless instructed to do so. Even water is not allowed. Failing to adhere to this may cause your surgery to be cancelled.
- Wash with the chlorhexadine prep using the instructions provided at your pre-admission testing appointment.
- Do not chew gum.

The Day of Surgery

- Wash with the chlorhexadine prep as instructed.
- Arrive at the hospital on time, and report to the surgical check-in desk.
- You will be asked to come to the hospital two or three hours before the scheduled surgery to give the nursing staff sufficient time to start IV's, prep for your procedure and answer questions. It is important that you arrive on time to the hospital because sometimes the surgical time is moved up at the last minute, and your surgery could start earlier. If you are late, it may create a significant problem with starting your surgery on time. In some cases, lateness could result in moving your surgery to a much later time.

What to Bring to the Hospital

Your surgeon will decide if you are going to be staying in the hospital or going home the day of surgery.

You must bring the following to the hospital.

- Your insurance card and prescription card
- Your license or photo ID
- Your X-rays, MRI and CT images, if your surgeon requires them. Failure to bring these images may result in your surgery being cancelled
- Your collar, if your physician prescribed one for you
- Your patient guidebook
- A copy of your advance directives

You may want to bring the following items to the hospital.

- Comfortable clothing such as shorts, t-shirts and pajamas
- Well-fitted slippers or tennis shoes
- A list of medications you are currently taking
- A laptop or tablet (we are WIFI compatible)

Additional Details

- You will be instructed by your surgeon about medications, skin care, showering, etc.
- Do not take medication for diabetes on the day of surgery. You will receive special instructions from the pre-op nurse.
- Please leave jewelry, valuables and large amounts of money at home.
- Makeup and nail polish must be removed before your procedure.
- Do not smoke or drink alcohol a week before surgery.
- If you develop a cold, fever, persistent cough, infection or become ill within 48 hours of your procedure, notify your surgeon immediately.

Appointments & Paperwork

Obtaining Medical Clearances

Prior to being scheduled for surgery, you may receive a medical-clearance letter from your surgeon. The letter will tell you whether you need to see your primary-care physician and/or a specialist. Please follow the instructions in the letter.

You can fax the medical clearance, recent electrocardiogram and labs to your surgeon's office. Call the spine care coordinator if you have any questions.

Pre-Operative Education

It is very important that you understand each step in the surgical process. We provide education to inform you of what will happen before, during and after surgery. Pre-operative education should be completed prior to the surgical day. Please refer to the education insert and ask your care coordinator if you have any questions.

Pre-Operative Visit to Surgeon

You may have an appointment in your surgeon's office seven to 10 days before surgery. This will serve as a final check-up and a time to ask any questions you may have.

Pre-Registration

After your surgery has been scheduled, you will be asked to provide some pre-registration information including:

- Full legal name, address and phone number
- Marital status
- Insurance card information
- Driver's license or photo identification

Pre-Operative Testing

You should have an appointment for pre-admission testing prior to your surgery. At this appointment the staff will draw your labs and follow up with any additional testing ordered by your surgeon. They will also initiate the paperwork necessary for your admission to the hospital.

Days Prior to Surgery

Days before your surgery, all medications that may cause thinning of the blood should be stopped. This includes prescription and non-prescription drugs such as:

- Blood thinners (as directed)
- Non-steroidal anti-inflammatories (NSAIDs)
- Over-the-counter supplements

These medications may cause increased bleeding. If you are taking a blood thinner, you will need special instructions from your physician on how to stop taking the medication.

** Always check with your doctor before stopping or starting any medications, or over-the-counter drugs or supplements. Special instructions will be given to you at your doctor's appointment if you are taking any of the above medications.*

Narcotic pain-medications, muscle relaxants, and Tylenol (acetaminophen) are okay to take until midnight unless otherwise directed by your doctor. Most multivitamins, vitamins A, B, C and D, and calcium may be continued. Always check with your surgeon if you have questions.

Pain Management

If you are being treated by a pain-management physician, discuss your current chronic-pain medication with your surgeon. If you are taking long-acting pain medication, your surgeon will need to plan for effective pain management for you during your hospitalization. It is vitally important for you to share this information ahead of your surgery so your surgeon can effectively manage your post-operative pain.



Arranging for a Caregiver and Driver

After your spinal surgery, you will need someone to help you during your recovery period. Arrange for someone to drive you home from the hospital. Once home, you will need to have someone available to assist you until you are strong enough to care for yourself. You will need a caregiver to help you get in and out of bed, exercise and manage your overall care. Your surgery may be cancelled if these arrangements are not made.



If you live alone or do not have a driver or caregiver that can bring you home on discharge day and be there for you until you get back on your feet, let the spine care coordinator know. We can help you make alternative arrangements for discharge.

Quitting Smoking

An overwhelming amount of research shows that smoking increases the risk of post-operative complications. In addition, research shows smoking interferes with the fusion process. This includes nicotine gum, patches, and vaporizers; these should be stopped as well. Smoking is not allowed in the hospital or anywhere on the hospital property. If you are a smoker, now is the time to stop to ensure the best possible outcome from your surgery.



Tips for Quitting Smoking

- Make a list of reasons why you want to quit smoking. Keep it handy and look at it often.
- Stick to the date you decide to quit smoking.
- Make a list of things that make you want to smoke.
- Think of ways to change the triggers that make you smoke.
- Set goals for yourself such as going for a day, a week or more without smoking. Reward yourself when you are successful.
- Join a quit smoking group.
- The state of Florida has many tips to help you quit smoking at TobaccoFreeFlorida.com.

If you do not quit the first time, keep trying. Many people have to try more than once before they stop smoking for good.



Tips to Prepare Your Home for Your Return From the Hospital

- Remove all clutter.
- Clean, do the laundry and put it away.
- Put clean linens on the bed.
- Arrange drawers and closets so that most-frequently worn items can be reached easily.
- Prepare meals and freeze them in single-serving containers.
- Cut the grass, tend to the garden and finish other yard work.
- Pick up throw rugs and tack down loose carpeting.
- Remove electrical cords and other obstructions from walkways.
- Install night-lights in bathrooms, bedrooms and hallways.
- Arrange to have someone collect your mail and take care of pets or loved ones, if necessary.
- Purchase any required medical equipment — such as bathtub grab-bars, elevated toilet seats, and bath or shower benches — and have it installed. Our case-management staff can help with these arrangements when you are in the hospital if needed.
- Avoid walking on uneven surfaces such as lawns, sidewalks and driveways.

Pre-Operative Exercises

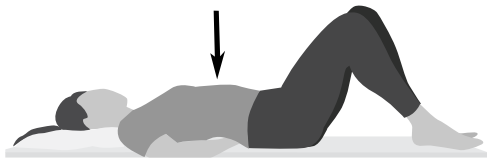
It is very important that you begin to strengthen and stretch your muscles prior to your surgery. Remember that you need to strengthen your entire body, not just your legs. It is very important that you strengthen your arms as well, because you will be relying on them to help you get in and out of bed, in and out of a chair, walk, and to do your exercises post-operatively.

Sit to Stand



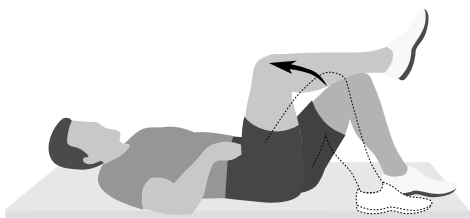
1. Sit on the edge of the chair with your feet flat on the floor.
2. Stand upright with minimal to no assist or upper extremities.
3. Complete 2 sets of 10 repetitions each, 2 times per day.

Abdominal Bracing



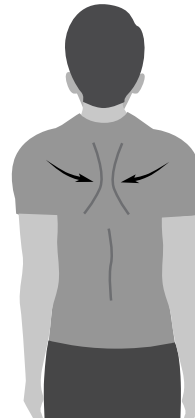
1. Lie on your back with both knees bent.
2. Put one hand under the small of your back.
3. Tighten your abdominal muscles to push against your hand. Do not tilt your pelvis.
4. Hold for approximately 10 seconds each time. Complete 10 reps, 2 times per day.

Abdominal Bracing with Marching



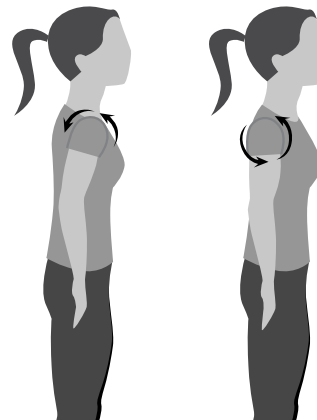
1. Lie on your back with both knees bent.
2. Tighten your abdominal muscles. Then, lift one leg about 3 inches off the floor.
3. Repeat with opposite leg.
4. Complete 2 sets of 20 steps each, 2 times per day.

Scapular Squeeze



1. Stand with both arms at your side.
2. Pinch your shoulder blades together.
3. Hold for 10 seconds.
4. Repeat 10 times, twice per day.

Posterior Shoulder Roll



1. Begin with your shoulders relaxed.
2. Stand or sit upright with proper posture.
3. Complete 2 sets of 20 reps, 2 times per day.

Log Rolling Sequence

The most important technique you will be taught is the “log roll.” This technique involves bending your knees and keeping your spine straight (shoulders in line with your knees at all times) as you roll side to side and get out of bed.



To begin your log roll, bend your knees one at a time.



Once both knees are bent, you can continue. Keep knees and shoulders in alignment at all times.



As you reach across your body, turn your head toward the side you are turning towards and begin to roll your legs.



Continue to reach with your “crossing” arm as you roll your legs. Remember to keep knees and shoulders in alignment.



Once on your side, position your “crossing” arm to begin using it for pushing yourself up onto the side of the bed.

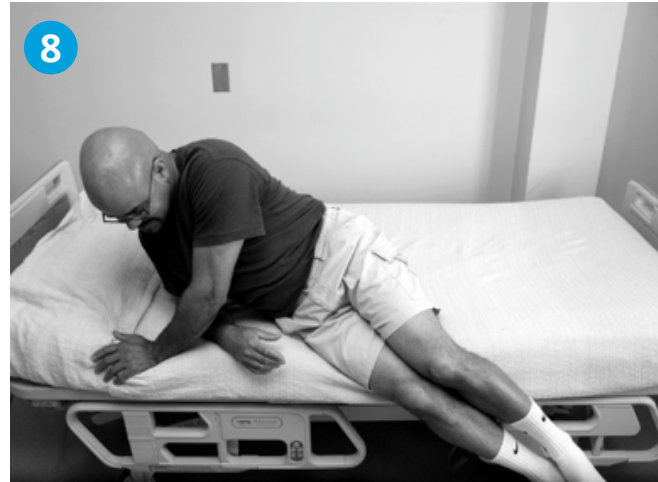


Begin to slide your legs off the bed, keeping your knees and shoulders in alignment.

This is taught pre-operatively, but is used to get in and out of bed after surgery for lumbar patients.



As you push up, begin to straighten your bottom area so it can also assist you to sit up.



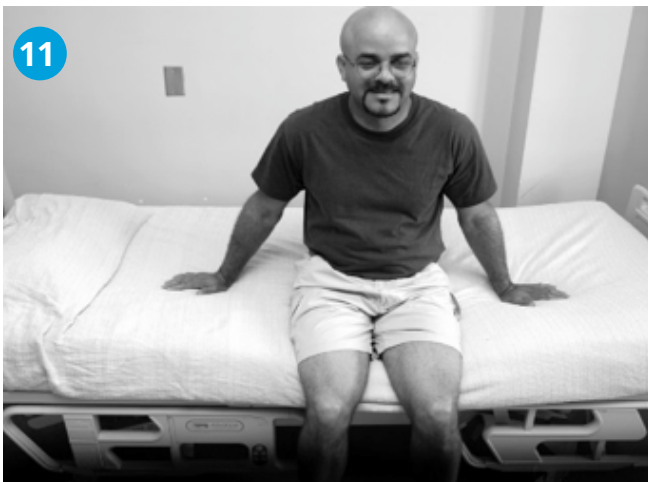
Once your legs are off the edge of the bed, push up with your "crossing" arm.



Keep your shoulders and knees aligned as you continue to slide your legs off the bed and push to sitting.



Return your "crossing" arm to your side, use your arms to support your back.



Move your legs and arms so you are sitting squarely on the side of the bed.



You did it! You may need to continue to use your arms to support your back while sitting.



Pre-Surgery Diet

It is important to eat properly before and after surgery so your body has the optimal nutrition to heal. A proper diet will give you more strength to move, sit up and walk after surgery, and will increase your ability to resist any potential infection.

Follow these guidelines to prepare yourself nutritionally for surgery.

- Eat balanced meals using the Food Guide Pyramid as a reference for choosing a healthy diet. The Food Guide Pyramid recommends the following:
 - 6-11 servings from the bread, cereal, rice and pasta group
 - 3-5 servings from the vegetable group
 - 2-4 servings from the fruit group
 - 2-3 servings from the meat, poultry, fish, dry beans, eggs, and nuts group
 - Limit the use of fats, oils and sweets.
- Be sure you get enough calories and protein. If necessary, use a supplement such as Ensure, Boost or Carnation Instant Breakfast to add to your caloric and protein intake.
- If you are on a special diet — such as a low-fat diet for heart disease or a calculated-calorie diet for diabetes — continue to follow it. Please be sure to inform your nurse of any dietary needs.
- Do not try to lose weight in the weeks immediately prior to surgery. If you have been instructed by your surgeon to lose weight, please make an appointment with the dietitian to get information about the best way to lose weight without putting yourself at risk.
- In the days prior to your surgery, eat a well-balanced diet. The day before your surgery, eat light, low-fat meals during the day, but be sure to get enough calories. Avoid foods that can cause constipation or those that can produce gas.
- To help minimize discomfort or constipation after surgery, try to have a bowel movement on the day prior to your surgery.

Avoid common, gas-forming foods including:

- | | | |
|-------------------------------|-----------------------------|--------------|
| • Apples | • Cucumbers | • Rutabagas |
| • Avocados | • Honeydew melon | • Sauerkraut |
| • Kidney, lima and navy beans | • Leeks | • Shallots |
| • Broccoli | • Lentils | • Soybeans |
| • Brussel sprouts | • Onions | • Turnips |
| • Cabbage | • Split and black-eyed peas | |
| • Cantaloupe | • Green peppers | |
| • Cauliflower | • Pimentos | |
| • Corn | • Radishes | |

Combating Anxiety and Depression Before Surgery

From a psychological perspective, it makes sense to take an active role in preparing for your surgery. This includes addressing any anxiety, depression or stress you might have and preparing your mind and body for what is to come through other psychological measures.

Clinical Depression

Clinical depression differs from normal sadness, and it involves a number of classic symptoms such as:

- A persistent sad mood
- Poor concentration and memory
- A feeling of hopelessness
- Feeling agitated
- Excessively fatigued
- Sleep and appetite disturbances
- Loss of sex drive
- Loss of interest in normal activities
- Withdrawal from others
- Feelings of guilt or worthlessness
- Thoughts of death or suicide

You may have depression if you feel sad and/or have a loss of interest in normal activities, and you have a number of other symptoms from the list above. Treatment of depression should be considered because it can sometimes help surgical outcomes. It will likely involve medications and/or psychotherapy. Talking with your primary-care doctor or surgeon about this issue is the first step.

Clinical Anxiety

Clinical anxiety differs from nervousness or stress, and it can include persistent and pervasive problems with symptoms such as:

- Worry
- Apprehension
- Irritability
- Muscle tension
- Restlessness
- Sleep disturbances
- Poor concentration

Some people experience spontaneous anxiety attacks (sometimes called panic attacks), which include hyperventilation, a sense of impending doom, and feelings of dizziness or feeling faint. These problems can be addressed with psychological methods such as relaxation training and/or medications. Getting control over anxiety can help one approach the surgical experience with more confidence and reduce recovery time.

Relaxation Tools

Preparing your body for surgery and the recovery period through the use of relaxation, music or spiritual awareness can be very helpful. Surgery is physically stressful and you can have some influence or control over this by learning the skills of relaxation or other ways of slowing nervous-system activity.

Diaphragmatic Breathing

Learning how to breathe diaphragmatically is a powerful yet simple way of relaxing at almost any time and place. This involves breathing with the diaphragm muscle — a sheet-like muscle that forms the floor of your chest cavity and separates it from the abdominal cavity. When this muscle contracts, it pulls downward — pulling air in through the nose and mouth into the chest cavity — and pushes the stomach outward. When we breathe diaphragmatically, our stomach rises when we inhale and falls when we exhale. It is best if done gently and easily. The exhale should be slightly longer than the inhale. This allows the exhale to have time to finish, which helps prevent a common tendency to breathe too fast.

Block Negative Thinking

Prepare your mind for surgery by suppressing unnecessary negative or frightening thoughts. There are some specific styles of negative thinking or internal dialogue that are common and usually lead to unpleasant emotions and stressful physical responses. This negative self-talk can become worse when confronted with any difficult situation including surgery and recovery from surgery. These types of thoughts include:

- **Catastrophizing**

This involves over-focusing on and expecting the worst possible scenario or playing the "what if" game such as "what if something goes wrong" or "what if I can't be helped." Try asking yourself the real likelihood of the feared outcome and focus on workable battle-plans for what you are worried about, as opposed to simply picturing the worst-case scenario over and over.

- **Awfulizing**
This involves getting mental "tunnel vision" — focusing only on the worst elements of the situation and excluding some of the positives. For example, dwelling on the loss of some ability to do certain future activities while ignoring the expected improvements in overall functioning and reduction in pain. Try to keep the big picture in mind. Including the positives is an important part of preparing for and coping after surgery.
- **All or Nothing Thinking**
This is when you think only in terms of opposites or extremes — "Either I'm fixed or I am not." This type of thinking typically leads to more stress or disappointment. If people or situations are only all good or all bad, it makes it hard to appreciate positives and developing progress. Try to think in terms of percentages of success to combat this problem.
- **Shoulds**
This way of thinking is defined by a feeling of being stuck operating from rigid rules regarding how we or others should act, or how situations should go. For example, "I should've been more careful." or "They should be more supportive." Feelings of anger arise when people, situations or your own actions are not how they should/must/ought to be. To alleviate anger and distress, try to think in terms of "better ifs" or preferences rather than demands.

Affirmations

Affirmations can be used to help combat depressing and anxiety-producing thinking. These are short, simple, coping-oriented statements that remind ourselves of our long-term ability to cope with adversity.

They reaffirm our value as a human being and as being separate and above externals like physical appearance and financial success such as:

- I've been through a lot, and I can handle this too.
- It is okay to have these feelings.
- I can do it.
- I am acceptable and worthy just as I am.

Make a list of affirmations in advance, practice them daily, and even take them to the hospital to help in the preparation and recovery from surgery.

Prioritize Your Time

Prioritizing how you will spend your time, making sure you set aside time for rest/relaxation/rehabilitation and not expecting too much of yourself in the post-surgical period will help you cope successfully with the challenges ahead.

Be Assertive

Taking control of your environment by using time management and effective communication can reduce your overall stress. Don't be afraid to assert yourself when needed — firmly, but in a way that respects the other person. The following techniques can make you feel more in control, reduce stress, and help maximize your recovery.

- Set limits on the number of or timing of visitors.
- Ask for help with getting things ready at home or the office before surgery.
- Insist that staff wash/sterilize their hands upon entering your room.
- Keep requests specific and simple.
- Don't apologize for your requests.
- Using "I" statements ("I feel frustrated that this has to be rescheduled again") rather than blaming or becoming aggressive with "you" type statements ("you make me so mad when you screw up like this") causes less defensiveness on the other persons part.

Remember you have the right to say what you feel, change your mind, say "no", be happy, not be responsible for other's actions or feelings and follow your own values.

Anesthesia

Spinal surgery requires the use of anesthesia. The type of anesthesia used is dictated by the type of surgery you are having. The following information will give you a general idea of what to expect in regards to anesthesia. If you have further questions, please contact the spine care coordinator or your surgeon's office.

Types of Anesthesia

Decisions regarding your anesthesia are tailored to your personal needs. The types available for you are:

- **General anesthesia**
Provides loss of consciousness.

Side Effects of Anesthesia

Your anesthesiologist will discuss the risks and benefits associated with the different anesthetic options, as well as any complications or side effects that can occur with each type. Nausea or vomiting may occur as a result of anesthesia or the type of surgical procedure. Medications to treat nausea and vomiting will be given if needed. The amount of discomfort you experience will depend on several factors, particularly the type of surgery you are having. Your pain discomfort should be minimal, but do not expect to be totally pain-free. The staff will teach you the pain scale, so you can properly communicate your pain level.

Before Surgery

You will meet your anesthesiologist immediately before your surgery. They will review all information needed to evaluate your general health. This will include your medical history, laboratory test results, allergies and current medications. With this information, the anesthesiologist will determine the type of anesthesia best suited for you. If a regional anesthetic is to be used, it will be done in the pre-operative area. He or she will also answer any further questions you may have.

During Surgery

An anesthesia care team will provide your anesthesia. An anesthesiologist with a certified registered nurse anesthetist (CRNA) will provide your care while in the operating room. They will monitor your vital signs (blood pressure, heart rate, and oxygen level) during surgery and administer any medications necessary to provide you a safe surgical procedure.

After Surgery

You will be taken to the Post Anesthesia Care Unit (PACU) immediately following your surgery where specially trained nurses will watch you closely until the anesthesia has worn off.



Patient's Rights

It is our policy to place patient's wishes and individual considerations at the forefront of their care and to respect and uphold those wishes. We encourage every patient to put their health care decisions in writing.

Advance Medical Directives

Advance medical directives are a means of communicating to all caregivers the patient's wishes regarding health care. If a patient has a living will or has appointed a health care agent and is no longer able to express his or her wishes to a physician or family, the hospital staff is committed to honoring the wishes of the patient as they are documented at the time the patient was able to make that decision. There are different types of advance directives and you may wish to consult your attorney concerning the legal implications of each.

Upon 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 a part of your medical records. Advance directives are not a requirement for hospital admission.

Appointment of a Health care Agent

Sometimes called a medical power of attorney, this document lets a patient name a person (an agent) to make medical decisions for them, if they become unable to do so.

Health care Instructions

These are specific choices regarding use of life-sustaining equipment, hydration and nutrition, and use of pain medications.

What to Expect on the Day of Spine Surgery

Please arrive at the surgery check-in desk on time. You will be checked in and brought back to the pre-operative waiting area. The operating-room nurse and the anesthesiologist will ask you a series of questions. Then you will be escorted to the operating room. Following surgery, you will be taken to a recovery area where you will remain until you are fully recovered. During this time, pain control is typically established and your vital signs are monitored.

- If you are having an outpatient surgery, you will be moved to a recovery area and a close family member will be able to join you.
- If you are having an inpatient surgery and are staying in the hospital, you will then be taken to the Spine Unit where a nurse will care for you. Only one or two very close family members or friends should visit on this day. Most of the discomfort you will experience occurs in the first 12 hours following surgery.

You may see some of the following devices or equipment after surgery.

- A brace, if ordered by your physician
- Sequential compression devices (SCDs) that help to prevent blood clots
- Compression stockings that help to prevent blood clots and minimizes swelling
- Surgical dressing and drains that a nurse will check frequently
- A Foley catheter in your bladder to drain urine



After Spine Surgery

What to Expect During Your Hospital Stay

In the immediate days after your surgery, there are a number of steps taken by your care team to get you on the right path to recovery. The following is a list of some of what to expect while you're recovering in the hospital.

- You will require assistance getting out of bed and with bathing.
- A nurse will draw your blood for testing and record your vital signs periodically.
- You will receive visits during the day from your surgeon or the physician's assistant.
- Your surgeon will order initial physical and/or occupational therapy evaluations. You will be seen by therapy during your stay.
- You will be required to exercise your lungs with an incentive spirometer ten times per hour.
- Your pain will be managed by oral pain medications and muscle relaxants.
- You may experience a sore throat, and can ask your nurse for throat lozenges if necessary.
- No smoking or nicotine patches are allowed because it decreases the fusion process and slows healing.

Activity

Early activity is extremely important after surgery to prevent complications such as pneumonia, blood clots and fever. It also relieves muscle stiffness and decreases the amount of time needed in the hospital.

Make sure you have a spine center team member assist you with getting out of bed until you are steady on your feet.

Physical therapy usually begins the first day after surgery. Your physical therapist will review spinal precautions with you and will start teaching you how to move safely in bed, how to get out of bed and begin walking. Physical therapy will educate your caregiver on how to assist you safely at home; therefore, it is helpful to arrange for your caregiver to be present for physical therapy sessions.

Physical therapy will make appropriate discharge recommendations and equipment needs based on your individual progress and discuss these recommendations with you. If your surgeon orders a brace for you to wear, your therapist will teach you how to apply and remove the brace. You will need to wear your brace whenever you get out of bed. Your physical therapy will focus on promotion of your independence with your daily activities.

Respiratory Health

Deep breathing is important after surgery to maintain lung expansion and to reduce the risk of respiratory infections. You will be provided with a breathing exerciser called an incentive spirometer and instructed how to use it. You should use the incentive spirometer 10 times an hour while in bed.

Exercises While in the Hospital

Ankle Pump Exercises

Simple leg exercises called ankle pump exercises help prevent blood clots. It is helpful to practice these exercises at home before surgery.



Ankle Pumps:

Bend your ankles up and down.



Quad sets:

Keep your leg straight and tighten your thigh muscle slowly while counting to five — then relax.



Heel slides:

Bend knee and pull heel toward buttocks. Hold for two seconds and return. Repeat using other leg.



Gluteal squeezes:

Squeeze your buttocks, while counting to five, then relax slowly.

Log-Rolling Sequence

This technique involves bending your knees and keeping your spine straight (shoulders in line with your knees at all times) as you roll side to side and get out of bed. *Refer to pages 10-11 for step-by-step photos.*

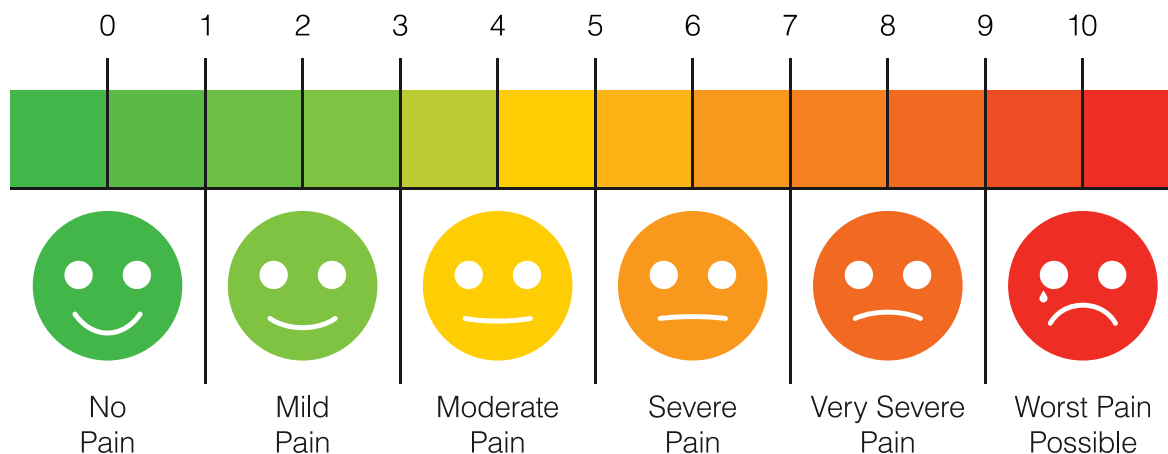
You will be asked to perform these exercises 10 times each, three times per day. Do them slowly and do not hold your breath. It may be best to perform these exercises every time your position is changed.

Assessing and Controlling Pain

Successful management of your post-operative pain is important to facilitate your recovery from surgery. You have been informed about the importance of deep breathing, turning, and participating in exercises and physical therapy in the post-operative period to promote recovery from surgery and prevent complications. Adequate pain-control helps to allow you to perform these activities.

Our goal in the post-operative period is to minimize your pain while avoiding side effects that can be associated with pain medications. Side effects from these medications include nausea, itching, constipation and excessive drowsiness or sedation. If you experience side effects from pain medication, you should inform your spine-care team so adjustments or changes in your medication regimen can be considered.

Use the numerical pain rating scale below to communicate your level of pain to your care team.



You play an integral part in managing your pain after surgery. Be prepared to:

- Notify your spine care team of any pain medications that you were taking previously
- Ask your spine-care team what to expect regarding pain and pain management
- Ask for pain relief when pain first begins
- Inform your spine-care team about any concerns you have about taking pain medications
- Be specific when describing your pain (throbbing, aching, shooting, cramping, etc.)
- Understand that you will not be totally pain-free after surgery and during the recovery period

You may also be prescribed muscle relaxants along with your pain medicine. Muscle relaxants are used to treat muscle spasms.

In addition to medications, there are many other methods that can be used to reduce pain. Some examples of these treatments include cold packs, music therapy, relaxation techniques, distraction, and imagery.

Controlling Your Discomfort and Pain Medication

- Take your pain medication at least 30 minutes before physical activity.
- Change your position every 45 minutes throughout the day.
- Upon discharge, you will be given pain and/or muscle relaxant prescriptions. Take them as needed and directed. Do not begin taking non-steroidal, anti-inflammatory drugs (NSAIDs) — such as Advil, Motrin, Ibuprofen, Nuprin, Aleve, Celebrex, Bextra — until your surgeon says it is ok to do so (usually 8-12 weeks after surgery).

Diet After Surgery

Your diet will start with ice chips, then liquids, and will gradually include solid foods. Your bowel (intestines) has been put to sleep along with the rest of your body. Allowing enough time to pass after the surgery will give the intestines time to “wake up” and recover its normal function. Your nurse will listen to your bowel sounds to determine when it will be safe for you to eat. Eating solid foods too soon after surgery can cause nausea, abdominal pain, or other abdominal problems and increase your time spent in the hospital. Check with your nurse before starting to eat solid foods to determine if your intestines have recovered from the anesthesia.

Bowel and Bladder Function

During your surgery, a Foley catheter may be placed to drain urine. After the surgery this will be removed. It is important that you are able to urinate prior to discharge from the hospital.

Constipation almost always occurs after surgery because of the effects of anesthesia, medication and inactivity. Your nurse will provide you with laxatives or stool softeners to help return your bowel function to normal. If you have a specific bowel routine you follow at home, discuss this with your nurse. Use of constipation medication is highly recommended prior to surgery.

Post-Operative Symptoms

After surgery, you will experience pain in the area of your incision. You may also have a sore throat, which is from the tube inserted in your throat to help you breathe during surgery. Your nurse will frequently ask about your throat pain and ability to swallow. You will be thirsty after surgery. The nurse will first give you ice chips until the threat of nausea has passed. You will then progress to clear liquids. Most people return to a full diet the morning after surgery.

There may be some pain associated with the incision site. Your physician will discuss what you can expect regarding relief of your symptoms such as numbness and tingling. If you experience weakness prior to surgery, it may take weeks, or even months, to get better.

Home-Care Management

Make plans for someone to assist you when you return home after surgery. Whether it is family, friends, neighbors or hired help, decide what each person can do to help you. Find out when and how long they will be available to help you.

Even if you are having outpatient, same-day surgery, you will not be allowed to drive home on your own. Your surgery will be cancelled if these arrangements are not made. Your caregiver will learn how to assist you with your self-care, exercise programs, getting in and out of bed and moving around.

Discharge Plans

The decision to go home or to a sub-acute rehab facility after your hospital stay will be made collectively by you, the spine-care team, your surgeon, the physical therapist and your insurance company.

If you are going directly home:

- Decide who will be driving you home
- Make sure you have your written, discharge instructions concerning medication, physical therapy, activity, etc.
- We will arrange for any medical equipment that you need at home
- Take this guidebook with you
- The care manager will arrange home-health services for you if required

If you are going to a sub-acute rehab facility:

- Arrange for someone to drive you, or the hospital can arrange for paid transportation
- Your transfer papers will be completed by the spine-center staff
- Expect to stay three to seven days, based upon your progress
- Take this guidebook with you

Caring for Yourself at Home

Caring for Your Incision

Watch for redness, swelling and drainage from your incision site. Report any changes to your surgeon's office. Follow your surgeon's instructions for dressing changes and incision care given to you at discharge from the hospital.

- Take your temperature if you feel warm or sick. Call your surgeon if it exceeds 101.5° Fahrenheit.
- Report any redness or persistent drainage to your surgeon's office.
- You may shower according to the physician's specific discharge instructions.
- Do not apply ointments or solutions to the incision. Mild soap and water will suffice.
- If you develop blisters, redness or irritation from the tape, discontinue use. If you develop blisters, do not pop them. If they pop, keep them covered and guard against infection.
- When in doubt, call the surgeon's office with any concerns.

Recognizing and Preventing Potential Complications

Call your surgeon's office immediately if you experience any of the following symptoms.

- Increased swelling and redness at incision site
- Change in color, amount or odor of drainage
- Fever greater than 101.5° Fahrenheit
- Swelling in thigh, calf or ankle that does not go down with elevation
- Pain in excess of your pre-operative pain
- Pain, heat and tenderness in calf, back of knee or groin area
- Any loss of bladder or bowel function
- Any weakness or painful swelling in your legs

Call 911 immediately if you have loss of bowel or bladder function, chest pain, difficulty breathing, shortness of breath, or pain when breathing.

Home Care at a Glance

Reasons to Call Your Doctor's Office

- Significant drainage or change in color, amount and odor at the incision site (this indicates an infection)
- Temperature greater than 101.5° Fahrenheit
- Uncontrolled pain
- **New** development of tingling or numbness in your arms or legs
- Calf pain that is tender with pressure or warm to the touch

Follow-Up Appointment

- If you do not already have an appointment before discharge from the hospital, please call your surgeon's office to make a follow-up appointment (usually 10-14 days after surgery).

Activities

- Do not drive until you are cleared by your doctor and you are no longer taking narcotics.
- Do not lift anything greater than five pounds.
- Ask your doctor when you can return to work.
- Walk as much as possible. You may walk up and down steps as tolerated.
- Follow your doctor's instructions in regards to wearing your collar or brace.
- Do not soak in water (bath, pool or spa) until cleared by your surgeon to do so.
- Do not do any repetitive bending, pushing, pulling or twisting.

Additional Instructions

- Arrange your house to keep frequently used items within reach.
- Move things that may cause you to fall, such as electrical cords and throw rugs.
- If you smoke, please quit. It has been proven that smoking slows the healing of bone — putting you at risk for malunion and further surgeries.
- Take pain medications exactly as directed.
- Perform ankle pumps.
- Avoid sitting or lying in bed for extended periods of time.
- Do your deep breathing exercises 10 times an hour while awake using your incentive spirometer.
- Do not take anti-inflammatory medications, such as Motrin and Advil, until your surgeon gives you permission.

Recovery Timeline

Week One After Surgery

Your goals for this period are to:

- Increase activity
- Walk two to three times per day for 10-20 minutes per session. Increase as tolerated.
- Exercise at home for 20 minutes, twice a day according to the program given to you — with or without the therapist.

Weeks Two to Four After Surgery

At weeks two to four, you will gain a little more independence. Even if you are receiving outpatient therapy, you will need to be very faithful to your home exercise program in order to achieve the best outcome.

Your goals for this period are to:

- Walk at least one quarter mile per day.
- Climb and descend a flight of stairs (12–14 steps) more than once daily.
- Independently shower and dress.
- Slowly resume homemaking tasks.
- Exercise at home for 20 minutes, twice a day according to the program given to you — with or without the therapist.

Weeks Four to Six After Surgery

At weeks four to six, you will nearly regain full independence. Your home exercise program will be even more important as you receive less supervised therapy.

Your goals for this period are to:

- Walk one quarter to one half mile per day.
- Begin progressing on stairs from one foot at a time to regular stair climbing (foot over foot).
- Continue with your home exercise program twice a day.

Weeks Six to Twelve After Surgery

At weeks six to twelve, you should be able to begin resuming all of your normal activities.

Your goals for this period are to:

- Walk one half to one mile.
- Walk around your home frequently — at least six times per day.

Use an exercise logbook to track your progress.

Simple Do's and Don'ts for a Successful Recovery

In general, if any activity increases discomfort, don't do it. Your first post-operative visit will be scheduled 10-14 days after surgery.

- Wear your collar/brace at all times unless instructed otherwise.
- Do not use time at home as an excuse to do physically demanding work.
- Do not stay confined to bed during the day. Walk as much as you comfortably can. You may climb stairs. If you sit or stand for more than 20-30 minutes, you should walk for a few minutes.
- Avoid exaggerated bending or twisting, or lifting more than five pounds until your follow-up appointment with your surgeon.
- Avoid pulling, pushing or quick jerky movements.
- Do not start any exercise program until you are released by your surgeon to do so.
- Do not drive until cleared by your surgeon. You may ride in a car as a passenger. Minimize long trips for a week or two.

- It is okay to sleep on your side, back, or in a reclining position.
- Use the log roll technique to get in and out of bed. Keep both knees bent when rolling. Refer to the section in this guidebook for the proper log roll technique on pages 14-15.
- Do not sit at a computer for more than 20 minutes at a time. Take frequent breaks by walking for a few minutes.

Everyday Positions and Activities After Surgery

Getting Into a Chair

- Sit in chair
- Position yourself with:
 - Hip above knees
 - Feet planted on floor
 - Buttock back into chair
- Slide forward with buttock to edge of chair

Getting Out of a Chair

- Feet should be behind your knees, pressing down into floor about shoulder width apart, feet one in front of the other.
- Place hands on arm of chair. If no armrests, place hands on your thighs.
- Hip Hinge = Bend forward slightly higher at your hips — NOT AT YOUR SPINE.
- Keep your back straight, with head and chest up while moving forward over your feet.
- Push feet into floor. Straighten your knees. Squeeze buttocks together. Push down with hands and stand up.

Do not allow yourself to drop down into the chair, which can jar your back.

Standing Up From Chair If You Have a Walker

Do not pull up on the walker to stand. Sit in a chair with arm rests when possible.

1. Scoot to the front edge of the chair.
2. Push up with both hands on the armrests. If sitting in a chair without armrests, place one hand on the walker while pushing off the side of the chair with the other.
3. Balance yourself before grabbing for the walker.



Correct Sitting Posture

- Whenever possible, sit in a chair that has armrests with your hips higher than your knees (or at least hips level with knees)
- Move your hips all the way back in the chair seat, making certain that your hips are higher than your knees.
- Place a lumbar roll or small pillow in the small of your back, just above your hips.
- Lift your sternum while relaxing your shoulders and avoid rounding your shoulders.
- Rest your feet firmly on the ground.
- Use pillows on your lap to rest arms if armrests are not available.
- Avoid recliners and soft, low couches when possible.

Transfer to an Automobile

- Push the car seat all the way back; recline it if possible, but return it to the upright position for traveling.
- Place a plastic trash bag on the seat of the car to help you slide and turn frontward.
- Back up to the car until you feel it touch the back of your legs.
- Reach back for the car seat and lower yourself down. Duck your head so that you do not hit it on the doorframe.
- Turn frontward, leaning back as you lift your legs into the car.

Walking With a Walker

- Move the walker forward one arm length away at a time.
- With all four walker legs firmly on the ground, step forward with your weaker leg. Place the foot in the middle of the walker area. Do not move it past the front feet of the walker.
- Step forward with the stronger leg.
- NOTE: Take small steps. DO NOT take a step until all four walker legs are flat on the floor.

Climbing Stairs With a Walker

- Ascend with the stronger leg first (Up with the good).
- Descend with the weaker leg first (Down with the bad).

Proper Sleep or Resting Positions

If you are having difficulty getting comfortable lying down, one or more of the following positions may be helpful.

On Your Side

Body Position

- Bring your hips and knees into a slight bent position (don't curl up into the fetal position) and place a pillow between your legs from your groin to your feet. This prevents you from dropping one knee forward and twisting your spine as you sleep.
- If your pelvis is considerably wider than your waist, you may want to fill in the space between your pelvis and ribs with a folded towel or soft foam. This keeps your spine from bending to one side.

Pillow

- The size of your pillow should be adequate to support your head so that your neck is aligned with the rest of your spine and your head does not tilt to one side.

On Your Back

Body Position

- Reduce the curve in your lower back (if needed) by propping pillows under your upper thighs so that your knees are bent. This should relax your back.

Pillow

- Use a pillow that keeps your neck in alignment with the rest of your spine. Be sure your head is not bent forward or tilted back.

- If you cannot achieve this position with your pillow, try a smaller or larger one. Use the pillow or a rolled-up towel or foam to fill in the gap where your neck curves in.
- Ideally, do not pull the pillow under your shoulders.
- If you can pull the pillow up and into your neck, your shoulders can relax back instead of being pushed forward.

Semi-Stomach

Body Position

- To learn this position, begin on your stomach with your arms down along your sides.
- Turn a quarter of the way to the right or left, leaving your back or bottom arm at your side and your bottom leg straight.
- To keep your spine supported, bend your top leg and arm, and put a pillow under your thigh, lower leg and torso.
- A body pillow is optimal. You should not twist your spine. Instead, your whole body is turned. Your bottom arm should not have weight on it as the pillow supports your body weight.

Pillow

- Use a very thin pillow or no pillow under your head.

Getting Dressed and Undressed Using a Reacher or Dressing Stick

Putting Pants and Underwear On

- Sit down.
- Put your surgical leg in first and then your non-surgical leg. Use a reacher or dressing stick to guide the waistband over your foot.
- Pull your pants up over your knees, within easy reach.
- Stand with the walker in front of you to pull your pants up the rest of the way.

Taking Pants and Underwear Off

- Back up to the chair or bed where you will be undressing.
- Unfasten your pants and let them drop to the floor. Push your underwear down to your knees.
- Lower yourself down, using your upper extremities to lower yourself.
- Use a reacher or dressing stick to remove the garment from your feet.



How to Use a Sock Aid

- Slide the sock onto the sock aid, an assistive dressing device.
- Hold the cord and drop the sock aid in front of your foot. It is easier to do this if your knee is bent.
- Slip your foot into the sock aid.
- Straighten your knee, point your toe and pull the sock on. Keep pulling until the sock aid pulls out.

If using a long-handled shoehorn:

- Use your reacher, dressing stick, or long-handled shoehorn to slide your shoe in front of your foot.
- Place the shoehorn inside the shoe against the back of the heel. Have the curve of the shoehorn match the curve of your shoe.
- Lean back, if necessary, as you lift your leg and place your toes in your shoe.
- Step down into your shoe, sliding your heel down the shoehorn.

NOTE: Wear sturdy slip-on shoes or shoes with Velcro closures or elastic shoe laces. DO NOT wear high-heeled shoes or shoes without backs.

Cleaning and Cooking

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.
- Place frequently used cooking supplies and utensils where they can be reached without too much bending or stretching.
- To provide a better working height, use a high stool or put cushions on your chair when preparing meals.
- Avoid lifting or carrying heavy items. Slide them across a countertop as much as possible before you have to pick them up.

Bathroom

- Do not get down on your knees to scrub the bathtub, floor or toilet.
- Use a mop or other long-handled brushes to assist in completing tasks.

Bathing at Home

- When washing your hair and other body parts, use both hands together to keep balance in your upper body.
- Dry your hair and the front of your body as you normally would. Be careful not to twist when drying your hair.
- Sit down to dry legs or get assistance.
- Place soap in nylon stocking and tie to soap dish. This prevents it from dropping to the shower floor.
- Do not sit in the tub.
- Trim toenails or shave legs while sitting with one foot propped up or ask for assistance.



The following is a list of items needed to increase ease and safety while bathing.

- Long-handled bath brush
- Soap-on-a-rope or liquid soap in a hanging bottle
- Shower caddy that hangs over the shower head
- Non-skid mat in tub
- Non-skid rubber mat on tile floor outside the shower
- Grab bars inside the shower
- Hand-held shower head
- Shower chair or 3-in-1 Commode

Getting In and Out of the Bathtub

Use a step-in shower if one is available. Otherwise, stand next to the bathtub and step in sideways one leg at a time.

- Take off your t-shirt and brace/collar and hand it to your caregiver or hang on a nearby hook.
- Use a shower chair if you feel you need more support.
- A hand-held showerhead may also be helpful.
- Use a bath brush or sponge to reach your feet.
- Keep soap and other hygiene items in an easy-to-reach shower caddy.
- Dry off in the shower.
- Put your t-shirt and brace/collar on.
- Exit the shower.

Getting Into the Tub Using a Bath Seat

- Place the bath seat in the tub facing the faucets.
- Back up to the tub until you can feel it at the back of your knees. Be sure you are in front of the bath seat.
- Reach back with one hand for the bath seat. Keep the other hand in the center of the walker.
- Slowly lower yourself onto the bath seat, keeping the surgical leg out straight.
- Move the walker out of the way, but keep it within reach.
- Lift your legs over the edge of the tub.
- Hold onto the back of the shower seat.

Note: Although bath seats, grab bars, long-handled bath brushes and hand-held showerheads make bathing easier and safer, they are typically not covered by insurance. Always use a rubber mat or non-skid adhesive on the bottom of the rug or shower. To keep soap within easy reach, make a soap-on-a-rope by placing a bar of soap in the toe of an old pair of pantyhose and attach it to the bath seat.

Getting Out of the Tub Using a Bath Seat

- Be sure your feet are dry before standing up. You may need to ask for assistance. Or, you can hold a long towel at both ends using two hands. Then, slowly move the towel back and forth across the soles of your feet.
- Lift your legs over the outside of the tub.
- Scoot to the edge of the bath seat.
- Push up with one hand on the back of the bath seat while holding onto the center of the walker with the other hand.
- Balance yourself before grabbing the walker.

Sink Safety

- Do not bend to look into a mirror or get closer to the sink.
- Place foot on ledge of cupboard under sink or use a small step to help relieve lower back strain when standing in one place for a while.

Post-Surgery Exercise

Rest was the old-fashioned treatment of choice for back pain. We now know that bed rest can harm the spine in the following ways.

- Bones, muscles and ligaments weaken
- The spine stiffens and loses control and coordination
- General physical fitness declines
- Inactivity can lead to depression and pain

Generally speaking, you should try to keep active after surgery. You will have good days and bad days. This is a normal part of the rehab process. The following tips will help you recover.

- Choose a low-impact activity
- Utilize the home program as outlined in this guidebook
- Take regular, one-to-three mile walks
- Use a home treadmill (for walking)
- Use a stationary bike
- Exercise regularly at a fitness center
- Choose low-impact activities such as walking, gardening, and dancing.

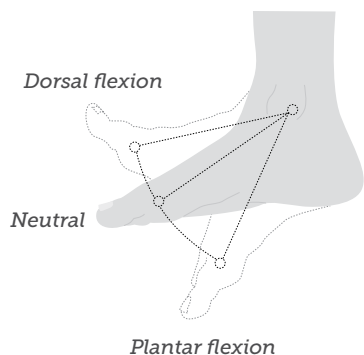


Common Exercises After Lumbar Spinal Fusion

The following exercises are usually recommended after lumbar spinal fusion surgery. Consult your surgeon before beginning any home-exercise program.

Dorsiflexion & Plantar Flexion of the Ankle

20 reps, 2 times a day



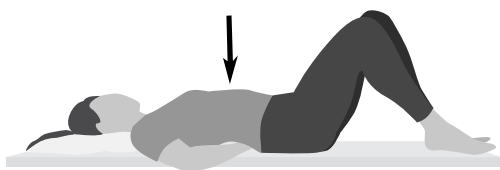
1. Stand while holding onto a firm surface.
2. Raise up on your toes.
3. Come back to a flat standing position.
4. Go back on your heels.
5. Come back to a flat standing position.
6. Repeat.

Hip Flexion

20 reps, 2 times a day

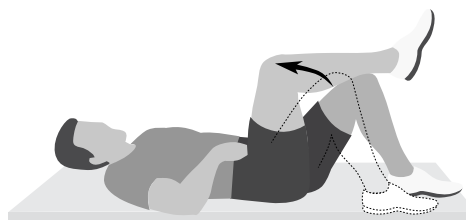
1. Stand while holding onto a firm surface.
2. March in place.

Abdominal Bracing



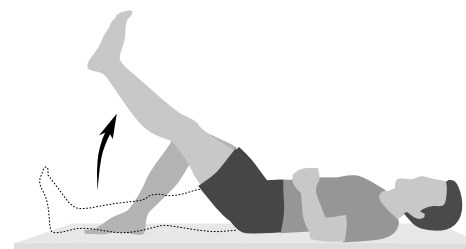
1. Lie on your back with both knees bent.
2. Put one hand under the small of your back.
3. Tighten your abdominal muscles to push against your hand. Do not tilt your pelvis.
4. Hold for approximately 10 seconds each time. Complete 10 reps, 2 times per day.

Abdominal Bracing with Marching



1. Lie on your back with both knees bent.
2. Tighten your abdominal muscles. Then, lift one leg about 3 inches off the floor.
3. Repeat with opposite leg.
4. Complete 2 sets of 20 steps each, 2 times per day.

Straight Leg Raise



1. Lie on back with one leg straight and the other knee bent, keeping that foot flat on the floor.
2. Keeping the leg completely straight, raise it about 8 inches off the floor.
3. Hold for 2 seconds and then slowly lower to the floor.
4. Perform 2 sets of 10 reps, 2 times per day.
5. Repeat on the other side for 2 sets of 10 reps, 2 times per day.

Note: You can begin to do this exercise six weeks after surgery.

Sit to Stand

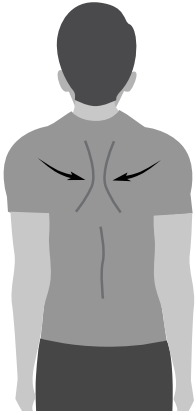


1. Sit on the edge of the chair with your feet flat on the floor.
2. Stand upright with minimal to no assist or upper extremities.
3. Complete 2 sets of 10 repetitions each, 2 times per day.

Common Exercises After Cervical Spinal Fusion

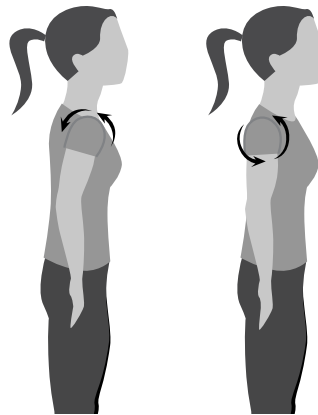
The following exercises are usually recommended after cervical spinal fusion surgery. Consult your surgeon before beginning any home-exercise program.

Scapular Squeeze



1. Stand with both arms at your side.
2. Pinch your shoulder blades together
3. Hold for 10 seconds.
4. Repeat 10 times, twice per day.

Posterior Shoulder Roll



1. Begin with your shoulders relaxed.
2. Stand or sit upright with proper posture.
3. Roll shoulders forward and then back; repeat.
4. Complete 2 sets of 20 reps, 2 times per day.

Patient Resource Materials

Activity Chart

Activities are guidelines and may be modified for individual variations.

Activity	7-10 Days	3 Weeks	6 Weeks	3 Months	6 Months	1 Year
Shower	Yes					
Lifting 5-15 lbs	No					
Walking Outdoors	Yes					
Climbing Stairs	Yes					
Light Upper Extremity Exercises	No	No	Yes			
Car Rides (short) 15-20 Minutes	Yes					
Cooking, Dusting, Light Chores	No	Varies	Yes			
Short Outings (i.e. church, visits)	No	Yes				
School	No	No	Varies	Yes		
Air Travel (short distance)	No	Varies	Varies	Yes		
Stationary Bike	No	No	Varies	Yes		
Driving a Car	No	Yes				
Swimming (no diving)	No	No	Varies	Yes		
Slow Dancing	No	No	Varies	Yes		
Vacuuming, Laundry, Cleaning Floors	No	No	No	Varies	Yes	
Light Jogging	No	No	Varies	Varies	Yes	
Lifting 15-50 lbs	No	No	Varies	Varies	Yes	
Aerobic Dance (low impact)	No	No	No	Varies	Varies	Yes
Non-Contact Sports (tennis, bowling)	No	No	No	Varies	Varies	Yes
Air Travel (long distance, frequently)	No	No	No	Varies	Varies	Yes
Downhill Skiing (experienced)	No	No	No	No	Varies	Yes
Off-Road Bicycling	No	No	No	Varies	Yes	
Cross Country Skiing	No	No	No	Varies	Yes	
Downhill Skiing (novice)	No	No	No	No	Varies	Yes
Gardening, House Repairs	No	No	No	Varies	Yes	
Horseback Riding, Water Skiing, etc.	No	No	No	No	Varies	Yes

Putting Good Posture in Motion

Poor posture starts as a comfortable habit, but eventually it hurts not just your back, but your entire body. Those aches and pains may even be signs of a serious posture-related problem. While learning good posture may feel strange at first, you will be surprised at how quickly it becomes a comfortable habit and how good it looks and feels.

Putting good posture in motion means maintaining your spine's three curves in their neutral alignment. To achieve this, keep your ears in line with your shoulders, your shoulders in line with your hips and don't slouch. When you are standing, lifting or bending, good posture in motion is the safest, most efficient and most comfortable way to move. You will have more energy and less chance of backaches, stiffness or injury.

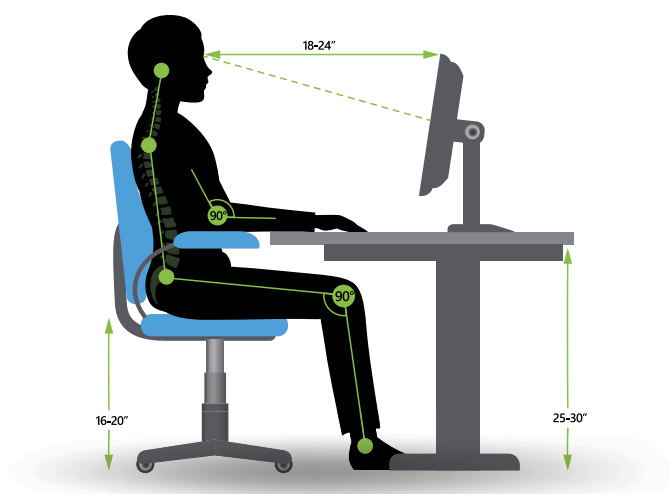
Lifting	<ul style="list-style-type: none"> • Think about what you are doing. • Know your strength. Lift what you can control. Always lift and carry close to your body and tighten your abdominal muscles. • Keep your back and neck in line, bend at the hips and lift with your buttocks and legs. 	<ul style="list-style-type: none"> • Lifting without thinking can cause you to hurt yourself.
Sitting	<ul style="list-style-type: none"> • Use an upright chair that supports your spine. • Get up and stretch every 20-30 minutes. 	<ul style="list-style-type: none"> • A low, soft chair • Lack of back support • Sitting for a long period • Sitting with head dropping
Bending	<ul style="list-style-type: none"> • Using your legs, keep your back and neck in line as you bend at the hips and knees. • Remember to tighten your abdominal muscles to protect your lower back. 	<ul style="list-style-type: none"> • Reaching and curving your back while bending
Walking	<ul style="list-style-type: none"> • Walk tall, pull your abdominal muscles in and hold your shoulders back. 	<ul style="list-style-type: none"> • Slouching
Computer Work	<ul style="list-style-type: none"> • Adjust the screen so that your sight is slanted slightly downward. • Adjust the keyboard in such a way to ensure that you have support for your wrists and forearms. 	<ul style="list-style-type: none"> • Poor adjustments of the keyboard and screen
Standing	<ul style="list-style-type: none"> • Vary your positions. • Adjust your working surface to a comfortable height. 	<ul style="list-style-type: none"> • Long periods in one position
Sleeping	<ul style="list-style-type: none"> • Many prefer a firm mattress. 	<ul style="list-style-type: none"> • Staying in bed too long • Too little sleep
Driving	<ul style="list-style-type: none"> • Adjust your seat from time to time. • Take frequent breaks. 	<ul style="list-style-type: none"> • Long drives without a break
Physical Activity	<ul style="list-style-type: none"> • Include aerobic (walking, cycling, etc.) and muscle activity in your daily program. • Gradually increase physical activity. 	<ul style="list-style-type: none"> • Not exercising • Sitting around all day
Relaxation	<ul style="list-style-type: none"> • Learn how to avoid or reduce stress. • Use relaxation techniques. 	<ul style="list-style-type: none"> • Worrying • Being tense
Turning	<ul style="list-style-type: none"> • Pivot your feet toward the direction you are lifting and placing the item. Make sure not to twist. 	
Overhead Reaching	<ul style="list-style-type: none"> • Use a step stool in order to reach items at shoulder height. 	

Creating an Ergonomically Positioned Workstation

Slouching, slumping or bending forward at the waist in a chair can lead to discomfort, fatigue and backache. Follow these guidelines to help prevent problems from occurring when sitting at your workstation.

- A. Top one-third of the screen at or below eye level.
Distance from operator a minimum of 18", typically at arm's length. Head should be straight forward with neck and spine aligned.
- B. Wrists should be a natural extension of the forearm, not angled up or down. Upper arm should be vertical.
- C. Elbow relaxed. Lower arm open at least 90 -100° in relation to upper arm.
- D. Adjustable backrest to accommodate the normal curve of the lower spine.
- E. Keyboard flat at elbow level with wrists supported.
- F. Thighs approximately parallel to the floor.
- G. Easily adjustable seat height.
- H. Seat pan short enough (front to back) for knee clearance and with a waterfall front edge so there is no pressure against the upper leg at the seat edge.
- I. Swivel chair with five-point base and casters.
- J. Feet resting firmly on floor. Use footrest if feet are not supported by the floor.

Note: Do not sit at a computer for more than 20 minutes at a time. Get up, walk for a few minutes, then you may resume computer work.



Glossary of Terms

Anterior: A relative term indicating the front of the body

Allograft: Graft derived from another person

Annulus: The outer rings of rigid fibrous tissue surrounding the nucleus in the disc

Autograft: Graft derived from a patient

Bone Spur: An abnormal growth of bone, usually present in degenerative arthritis or degenerative disc disease

Cervical Spine: The group of seven bones (vertebrae) that form the upper and most flexible part of the spinal column. It is located between the skull and the thoracic spine

Computed Tomography Scan (CT Scan): A computer technique in which a computer reads X-rays to create a three-dimensional map of bones and soft tissue

Disc: A cushion of cartilage found between the vertebrae of the spine. It acts as a shock absorber and when damaged, may bulge the vertebrae and compress a nerve root causing pain.

Degenerative Arthritis: The inflammatory process that causes gradual impairment and loss of use of a joint

Disk: The complex 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: Removal of a portion of the disc

Electromyography (EMG): A method of recording the electrical currents generated in a muscle during contraction

Extension: Backward arching

Facet: Where two vertebrae meet

Flexion: Forward bending

Foramen: A small opening between vertebrae where the nerve exits

Fusion: The joining of vertebrae by bone, rods, screws, etc.

Instrumentation: The use of rods, screws, plates and wires to provide stability to the spine

Lamina: The flattened or arched part of the vertebral arch that forms the roof of the spinal canal

Laminectomy: Excision of one or more laminae of the vertebrae

Laminotomy: An opening made in the laminae

Ligaments: Bands of tissue that connect vertebrae

Lumbar: The portion of the spine lying below the thoracic spine and above the pelvis

Lumbar Discectomy: The removal of a protruding or free fragment of intra-vertebral disc material

Magnetic Resonance Imaging (MRI): A diagnostic test that produces a three-dimensional image of body structure by using powerful magnets and computer technology rather than X-rays

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

Nucleus Pulposus or Nucleus: The relatively soft center of the disc that is protected by the rigid fibrous outer rings

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

Radiculopathy: Pain, motor or sensory symptoms from nerve compression

Sciatica: Term used to describe pain down the leg and buttocks

Spine: The flexible column of 24 vertebrae, disks, ligaments and muscle that lie between the head and pelvis and behind the rib cage. Also referred to as the spinal column.

Spondylolisthesis: Forward displacement of one vertebrae on another

Spondylosis: Degenerative bone changes in the spine usually marked at the vertebral joints

Stenosis: Narrowing

Vertebra(e): The bone or bones that form the spine

About the AdventHealth Neuroscience Institute

The AdventHealth Neuroscience Institute is one of the largest programs of its kind in the United States — providing comprehensive, multidisciplinary care to more neuroscience patients than any other hospital in the nation.* The institute's team of elite physicians specializes in a variety of treatments and conditions including minimally invasive brain surgery, spine disorders, epilepsy, stroke, sleep disorders and interventional neuroradiology. Our integrated, interdisciplinary, team approach combines state-of-the-art, minimally invasive technology with innovative research to provide patients with exceptional, multi-faceted care. From detection and treatment to rehabilitation, the institute is dedicated to achieving superior patient outcomes in a compassionate environment for both adult and pediatric patients.

AdventHealth: Then & Now

Established 1866: Today:

30 DOCTORS	MORE THAN 80,000 PHYSICIANS AND STAFF
1 UNIQUE FACILITY	47 AWARD-WINNING HOSPITALS IN NINE STATES
106 PATIENTS SERVED	5 MILLION+ PATIENTS SERVED ANNUALLY



**Source: Based on MedPar & ACHA data*

CREATION Health: Our Philosophy of Health and Wellness

CREATION Health is a whole-person lifestyle that helps people live a healthier, happier life, no matter what stage of life they might be in. Each letter of the word CREATION stands for one of the eight principles of health found in the Bible's creation story — Choice, Rest, Environment, Activity, Trust, Interpersonal Relationships, Outlook and Nutrition. You can use this philosophy as a guide to personal fulfillment and recovery.

Choice

Choice inspires personal fulfillment and well-being. Establishing control over your life through conscious decision-making leads to improved health and longevity. Choose the most important thing for you each day and share it with friends and loved ones

Rest

Rest rejuvenates the mind, body and spirit, empowering you to function at your best. Proper sleep and relaxation can lower blood pressure and reduce stress. Rest is important to your recovery. Take time to relax. Listen to soothing music, read and meditate.

Environment

Environment influences your overall health. Creating pleasant surroundings that energize the senses can lead to inner peace and happiness. Keep things around you that make you feel comfortable. Adjust lighting and temperature as needed.

Activity

Activity strengthens the body, sharpens the mind and invigorates the spirit. Regular physical and mental exercise can greatly improve your quality of life. Maintain the level of activity that your healthcare team recommends. Puzzles, word searches and other games are a fun way to stimulate your mind.

Trust

Trust promotes healing and security in your relationship with God or a higher power, family, friends and coworkers. Nurturing trust in all your relationships creates inner stability and confidence, which leads to wellness. Talk to your pastor, friends and family about your spiritual and emotional needs. Pray, read scripture or journal about your experiences.

Interpersonal Relationships

Interpersonal relationships can spark health and healing. Social connection fortifies resolve and nourishes the mind, body and spirit. Stay connected through emails, blogs, letters and phone calls. Encourage friends and family to visit.

Outlook

Outlook creates your reality. A positive attitude can strengthen the health of your mind, body and spiritual life. Begin a gratitude journal and write down what you are thankful for each day. Keep a list of how you are integrating CREATION Health principles into your life.

Nutrition

Nutrition is the fuel that drives you. Small changes to your diet can produce profound improvements to your overall health. Follow your diet plan to feel better and more energized.



Our Health Equity Promise

Patient Protection and Affordable Care Act: Section 1557

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- Qualified sign language interpreters
- Written information in other formats (large print, audio, accessible electronic formats, other formats)

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- Qualified interpreters
- Information written in other languages

If you need these services, please call 407-303-5600 x1106707

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You can also file a civil rights complaint with the U.S. Department of Health and Human Services, Office for Civil Rights, electronically, through the Office for Civil Rights Complaint Portal, available at ocrportal.hhs.gov/ocr/portal/lobby.jsf, or by mail or phone at:

U.S. Department of Health and Human Services
200 Independence Avenue, SW
Room 509F, HHH Building Washington, D.C. 20201
1-800-368-1019, 800-537-7697 (TDD)

Complaint forms are available at hhs.gov/ocr/office/file/index.html.

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