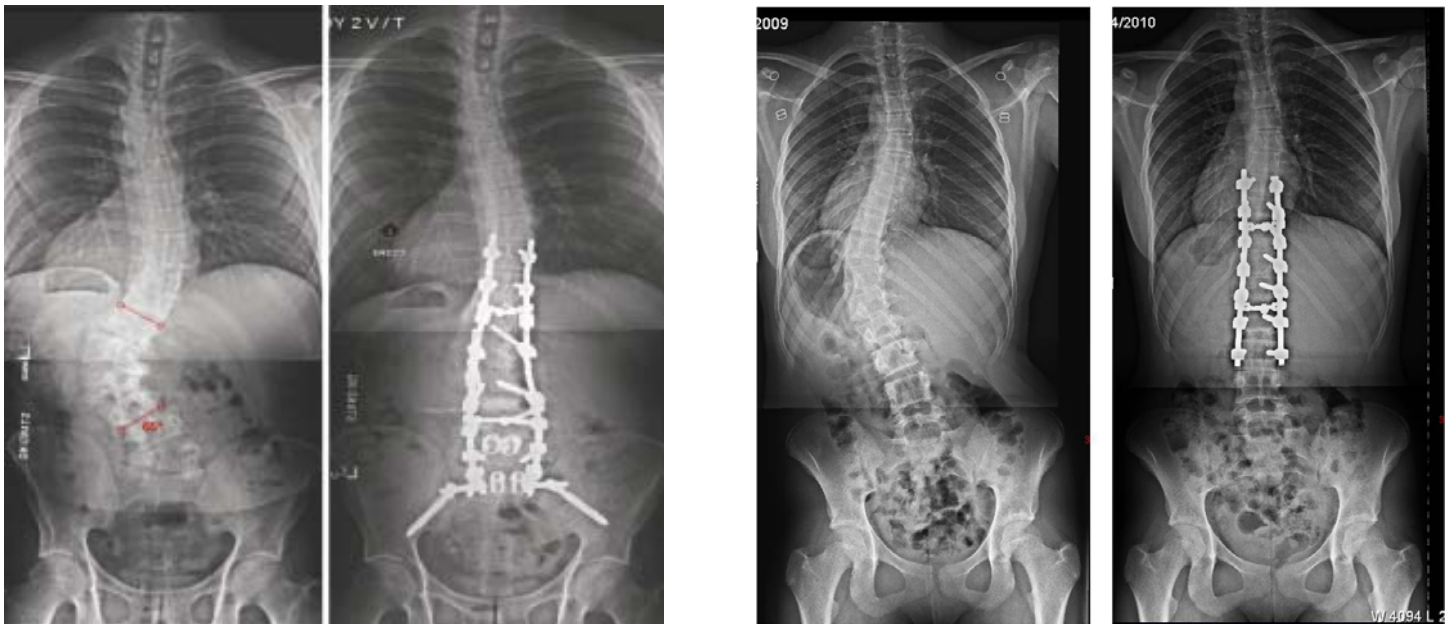


# Spinal Reconstruction: Preparing for Surgery



Note: The information in this booklet applies to Dr. Good's patients who are having spinal reconstructive surgery for the correction of scoliosis, kyphosis, flat back syndrome, spinal tumors or spine fractures. This information does NOT apply to other Virginia Spine Institute patients who are having surgery for other conditions.

## **INTRODUCTION & GLOSSARY OF TERMS**

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## **IMPORTANT PHONE NUMBERS**

### **Virginia Spine Institute**

1831 Wiehle Avenue  
Second Floor  
Reston, VA 20190

Office        703.709.1114  
Fax            703.709.1117  
Billing        703.709.6512  
Rx Refills    703.709.1114  
[www.spinemd.com](http://www.spinemd.com)

### **Reston Hospital Center**

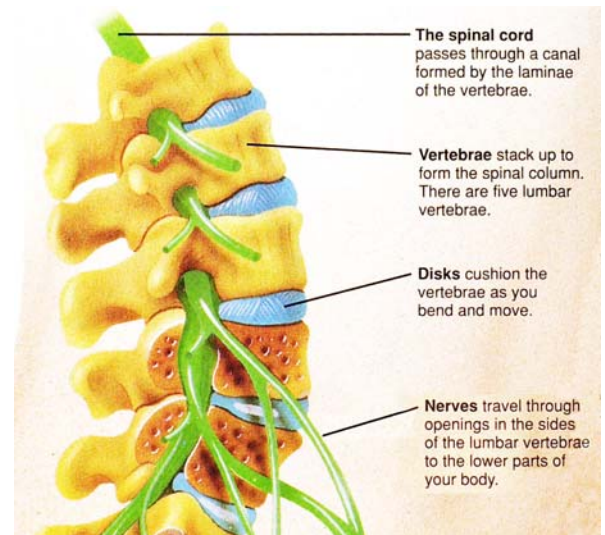
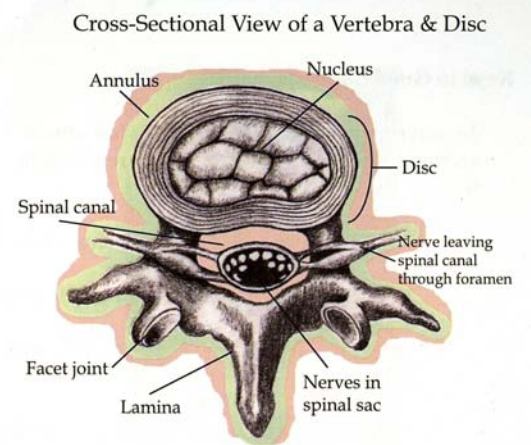
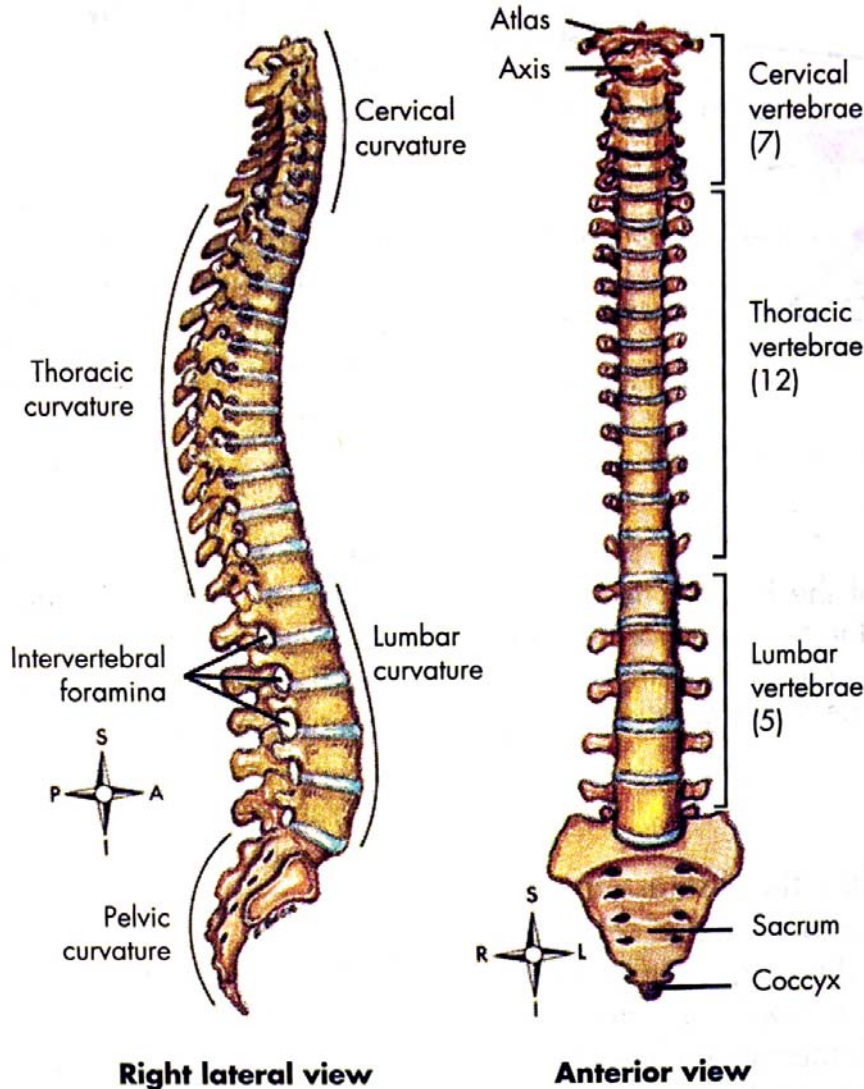
1850 Town Center Parkway  
Reston, VA 20190  
[www.hcavirginia.com](http://www.hcavirginia.com)  
(703) 689-9000

# INTRODUCTION

You are going to have spinal surgery (a spinal fusion). This is a decision reached by you and your doctor after careful consideration.

Your spine is made of 26 bones known as vertebrae (7 cervical, 12 thoracic, 5 lumbar, the sacrum and coccyx). Each vertebra is separated (except the top two neck vertebrae) by a disc. Each disc has a soft, jelly-like center surrounded by a tough outer layer of fibers known as the annulus. Discs, bony structures, ligaments and strong muscles stabilize the spine. The spinal cord passes through the bony spine.

The spinal cord is composed of nerves leading to and from the brain. It controls and transmits all muscle movement and sensation for the trunk, arms and legs. Nerve roots come from the spinal cord and carry electrical impulses to and from muscles, organs and other structures. These nerve roots can become pinched or irritated by abnormal conditions.



With some injuries you can have compression to your back causing a disc to rupture. This can create spinal instability and/or nerve symptoms (numbness, tingling and changes in sensation). Spinal curvatures called scoliosis and kyphosis can be due to degenerative changes, instability, or an unknown cause. These conditions can also be corrected by a spinal fusion. Some degenerative conditions such as spinal stenosis may also be treated with a spinal fusion.

Your doctor will make an incision down the middle of your back for a posterior spinal fusion. You may have an anterior spinal fusion through a lateral (side) or lower abdominal approach. Your doctor will discuss your specific bone grafting options with you. The bone graft will be used to fuse and stabilize the spine. He will then put in rods, screws, hooks, and/or wires to stabilize the affected area while the bone graft is healing or fusing. Your doctor will choose the best instrumentation and procedure for your individual needs. Hip pain from the bone graft donor site is expected and may sometimes cause more discomfort than the surgical site itself. This fades over time.

After your surgery, you will be asked to participate in clearing your lungs, turning by the “logrolling” method, and slowly increasing your activities while following the activity limitations. These issues will be discussed in the next chapters.

Certainly there are risks associated with any surgery. Your surgeon would not recommend this procedure for you unless the expected benefits far outweighed the risks. We tell you about these risks not to scare you, but to make sure you have all the information you need to make an informed decision. Keep in mind that for every risk, steps are taken to minimize and/or prevent it from occurring.

Some risks/complications are minor and can be easily treated. Consider these a “bump in the road” but nothing that will affect your ultimate recovery. We can’t list, nor can we predict every possible thing that may happen. Following are some of the more common minor complications that may occur.

- Muscle soreness/pressure areas from positioning in surgery – padding/special tables used
- Superficial wound infection – antibiotics/sterile technique used
- Bladder infection – possible from having a Foley catheter. A urine culture will be checked when the catheter is removed.
- Excessive Pain – controlled with pain medication
  
- Constipation – due to anesthesia and narcotics. Stool softeners with a laxative should be taken until you feel “regular”. Suppositories or enemas can be also used.
- Ileus – Slowing of the abdominal tract with bloating and constipation caused by the surgery, anesthetics, pain medicine and postoperative inactivity. The use of laxatives and suppositories may help this to resolve – usually the key is patience while Mother Nature runs her course.
- Transient nerve irritation (pain/numbness/weakness) – from manipulating/moving nerves during surgery. Spinal cord monitoring is done during surgery to warn the surgeon of any problems.
- Blood clot in your leg – TED hose and sequential compression devices used
- Spinal fluid leak/dural tear – if this occurs, the dura is repaired during surgery and you will be kept on bed rest for 1-2 days.
- Postoperative pulmonary problems – fluid in the lung/collapsed lung – chest tube used for anterior thoracic surgeries, incentive spirometer and other pulmonary treatments used

postoperatively.

- Postoperative confusion/dementia from anesthesia/narcotics – normally clears up when narcotic medication is discontinued. Very rare in children. More common in elderly patients.

The possibility of you experiencing a minor complication is 5-30% depending on the situation.

Other more significant complications are luckily very rare but still need to be mentioned. Again, steps are taken to reduce the possibility of any risks. Some of the major risks of spine surgery are:

- Neurologic deficit, up to and including paralysis – Spinal cord monitoring is utilized during surgery to pick up nerve irritation/problems. Wake-up tests are also sometimes performed during surgery (see page 10).
- Pulmonary Embolism – again, measures are taken to prevent blood clots in your legs that could break free and travel to your heart or lungs
- Deep wound infection necessitating surgery to clean out your wound and long term antibiotic treatment – again, sterile technique and antibiotics are used
- Pseudarthrosis or instrumentation breakage/pullout – these cannot be predicted but postoperative restrictions help decrease stress on the spine while the fusion is healing/consolidating.
- Major medical problems – stroke, heart attack, etc. up to and including death cannot be predicted. We obtain preoperative lab work to screen you medically and if necessary have you cleared for surgery by your primary care physician.

The possibility of you experiencing a major complication is 1-10% depending on the situation.

Again, please understand that we are not listing these possible occurrences to frighten you. Discuss with your doctor or nurse any questions or concerns you may have.

## GLOSSARY OF TERMS

**Anterior** - The front portion of the body. It is often used to indicate the position of one structure relative to another.

**BMP** – Bone morphogenetic protein. A genetically engineered bone substitute that helps your bone fuse. Used in addition to or instead of your own bone. BMP is not yet FDA-approved for all types of surgery, but surgeons may use the medicine for whatever application they feel is appropriate for the patient. This is called using it “off-label”. We are actively studying this medicine to see how effectively it works. Currently BMP is FDA-approved for use in the anterior spine with cages. Use of the product posteriorly is “off-label”.

**Bone Graft** – Bone, which is harvested from one location in an individual and placed in another individual (allograft bone) or in a different location in the same individual (autogenous bone)

**Cervical Spine** – Seven spinal segments (C1-C7) between the base of the skull (occiput) and the thoracic spine.

**Coccyx** - The region of the spine below the sacrum, also known as the tailbone.

**Corpectomy** – the surgical removal of all or part of the vertebral body.

**Decompression** – This procedure is carried out to relieve pressure on the spinal cord or nerve roots. The pressure may result from fracture fragments, disc fragments, bone spurs, tumors or infections.

**Decompression Laminectomy** – A posterior approach decompression done by removing the lamina and spinous process.

**Disc Degeneration** – The loss of the fluid content, structure and functional integrity of the disc.

**Discectomy** – The excision of the intervertebral disc material that may be described as herniated, implying “bulging” or “ruptured” through the ligaments. If the central fragment of disc material has torn through a hole in the ligament, it is called an extruded fragment or extruded disc. The term herniated nucleus pulposus (HNP) is a catchall phrase for all of these conditions.

**Distal** – Situated away from or farther from a point of reference; opposite of proximal

**Facet** – A posterior structure of a vertebra which articulates with a facet of an adjacent vertebra to form a facet joint that allows motion in the spinal column. Each vertebra has two superior and two inferior facets.

**Flatback Syndrome/Fixed Sagittal Imbalance Syndrome** – forward posture usually due to a flattened lumbar spine from postoperative or degenerative changes. When viewed from the side, the patient’s head may be several centimeters in front of their hips.

**Foramen** – An opening allowing for the emerging of spinal nerve roots between two vertebrae.

**Foraminotomy** – A procedure carried out in conjunction with disc surgery. The foramen (openings for the individual nerve roots to pass from the spine) may become narrowed because of disc impingement, intervertebral collapse, and spondylolisthesis. The surgical widening of the foramen is an attempt to relieve the pressure on the nerve roots.

**Fusion** – The uniting of two bony segments.

**Gardner-Wells tongs** – a device used to position the head or apply traction to the neck during surgery. The tongs are attached to your skull with a screw above each ear after you are asleep in surgery.

**Hemivertebra** – a congenital abnormality of a vertebral body. Usually a wedge shape which causes scoliosis or kyphosis.

**Idiopathic** – unknown cause. No evidence of underlying physical or radiographic pathology. The most common type of scoliosis.

**Iliac Bone** – A part of the pelvic bone that is above the hip joint and from which autogenous bone grafts are frequently obtained.

**Internal Fixation** – The immobilization of bone fragments or joints with implants (metal screws, rods, etc.) in order to promote healing or fusion.

**Interspinal or intervertebral disc** – The structure that normally occupies the space between two moving vertebrae. It is more prominent in the cervical and lumbar spines. It is much like a radial tire. The centermost portion of the disc (nucleus pulposus) is normally composed of a clear gelatinous material that varies in consistency from a firm jelly material to a very thick and less pliable substance. This core is then surrounded by numerous layers of fibrous (fibrocartilaginous) material called the annulus fibrosus. That structure goes to the normal margins of the vertebral body. There is a thick ligament (approximately 2mm) that covers the anterior part of the vertebral body called the anterior longitudinal ligament, and on the spinal canal side posteriorly is the posterior longitudinal ligament.

**Kyphosis** – The normal forward curvature of the thoracic spine. The condition “kyphosis” refers to an abnormal increase in this forward curvature.

**Lamina** – An anatomical portion of a vertebra. For each vertebra, two lamina connect the pedicles to the spinous process as part of the neural arch.

**Laminectomy** – An operation for removal of part or all of the lamina of a vertebra commonly performed in order to be able to remove an intervertebral disc protrusion or to decompress a nerve root.

**Lateral** – Situated away from the midline of the body.

**Lordosis** – The normal mild “swayback” curve of the lumbar spine.

**Lumbar spine** – Five mobile segments of the lower back (L1 to L5). These are the largest of the vertebral segments and provide most of the bending and turning ability of the back, in addition to bearing most of the weight of the body.

**Medial** – Situated closer to the midline of the body.

**Nerve Root** – The portion of a spinal nerve in close proximity to its origin from the spinal cord.

**Osteotomy** – the surgical removal of a wedge or piece of vertebral bone to alter the alignment of the spine.

**Pedicle** – The part of each side of the neural arch of a vertebra. It connects the lamina with the vertebral body.

**Posterior** – Located behind a structure, such as relating to the back side of the body

**Proximal** – Nearer or closer to a point of reference; opposite of distal.

**Pseudarthrosis** – an area of the spinal fusion where the bone did not heal (fuse). Often found with broken instrumentation and, in some instances increased pain, although not always.

**Sacral spine – (sacrum)** - The five fused segments of the lower spine that connect to the pelvis and have four foramen on each side.

**Sciatica** – A lay term indicating pain along the course of a sciatic nerve, especially noted in the back of the thigh and below the knee.

**Scoliosis** – Lateral (sideways) curvature of the spine. Rotation of the vertebrae also occurs which produces the rib cage asymmetry.

**Spinal Canal** – The long canal between the vertebral bodies anteriorly and the lamina and spinous processes posteriorly through which the spinal cord passes. The spinal cord and nerve roots extend to the level of the second lumbar segment in adults. Below this level are numerous nerve roots from the spinal cord that resemble a horse's tail and is referred to as such (cauda equina). The thick outer covering of the spinal cord is called the dura.

**Spinal Fusion** – A surgical procedure to permanently join bone by interconnecting two or more vertebrae in order to prevent motion.

**Spinal Stenosis** – Reduction in the diameter of the spinal canal due to arthritic overgrowth of bone and soft tissue, which may result in pressure on the spinal cord or nerve roots.

**Spinous Process** – The portion of the vertebrae that protrudes posteriorly from the spinal column. The spinous processes create the "bumps" felt on the midline of the back.

**Spondylolisthesis** – A defect in the construct of bone between the superior and inferior facets with varying degrees of displacement so the vertebra with the defect and the spine above that vertebra are displaced forward in relationship to the vertebrae below. It is usually due to a developmental defect or the result of a fracture.

**Spondylolysis** – (also referred to as a stress fracture or a pars fracture) - Fracture of a posterior portion of the vertebra. A defect in the neural arch between the superior and inferior facets of vertebrae without separation at the defect and therefore no displacement of the vertebrae. It may be unilateral or bilateral and is usually due to a developmental defect but may be secondary to a fracture.

**Thoracic (dorsal) spine** - Twelve spinal segments (T1-T12) incorporating the 12 ribs of the thorax. Other than a slight increase in size from top to bottom, they are fairly uniform in appearance.

**TLIF** – Transforaminal Lumbar Interbody Fusion – a way to do an anterior fusion (front of the spine) from a posterior approach.

**Transition Syndrome** – a degenerative change with bony instability above or below a previous fusion.

**Vertebra** – One of the 33 bones of the spinal column. A cervical, thoracic, or lumbar vertebra has a cylindrically shaped body anteriorly and a neural arch posteriorly (composed primarily of the laminae and pedicles as well as the other structures in the posterior aspect of the vertebra) that protect the spinal cord. The plural of vertebra is vertebrae.

# WAKE-UP TEST FOR SPINAL DEFORMITY SURGERY

During and/or after your surgery, you MAY be asked to perform several maneuvers that will test your neurological function. **IF** this is done during surgery, you should not feel any pain and most patients do not remember it. As you will be under the influence of anesthesia, it is important that you are familiar with what will be requested of you prior to your surgery. A week before your surgery you need to practice this at least **ten** times. The day before your surgery you need to practice this at least **five** times. Please practice the following with the assistance of a family member (repeat steps with both legs):

- With someone holding under your foot, push down as if you are stepping on the gas pedal.
- With someone holding on the top of your foot, pull up against their hand.
- Hold your leg straight. Have someone try to bend it at the knee – don't let them bend it.
- Have someone hold their hands outside your knees and gently push in. Try to push your knees out against them.
- Have someone hold their hands inside your knees and gently push out. Try to push your knees in against them.
- Have someone hold their hand on your knee and gently push down. Try to bend your knee up against them.

## KEY PHRASES THAT YOU WILL HEAR IN THE OPERATING ROOM ARE:

1. "MOVE YOUR FEET AND TOES UP AND DOWN"
2. "TOES TO THE NOSE"
3. "PUSH DOWN ON THE GAS PEDAL"
4. "STRAIGHTEN YOUR KNEES"
5. "PUSH OUT WITH YOUR KNEES"
6. "PUSH IN WITH YOUR KNEES"



Supine – Toes to the nose



Supine – Foot on the gas pedal



Supine – Push knees in



Supine – Push knees out



Supine – Straighten Knee

## **INSURANCE PREAUTHORIZATION**

We will take care of pre-certifying your admission and surgery with your insurance company.

## **PATIENTS TRAVELING LONG DISTANCE FOR SURGERY (more than 4-6 hours away)**

We encourage you to plan on staying in Virginia at a local hotel/motel for a few days after discharge – possibly even 1-2 weeks depending on the size of your surgery and how you are doing. (Time spent in a rehab facility counts as time spent in Virginia after discharge from the hospital.) This makes it much easier for us to help you if problems occur in the early postoperative period and you do not live within easy driving distance.

# CHAPTER 1

## PREPARING FOR SURGERY

### BEFORE YOUR OPERATION

There are several things you must do to prepare for your surgery. It is often recommended that the patient donate all or part of the blood required for surgery. If you are unable to donate all the blood needed, you can obtain donors that have a compatible blood type. The doctor will discuss this with you further.

During the time prior to your admission, you can also be getting your home “ready”. **No bending, twisting, stooping or heavy lifting is permitted** during your recovery period. It is advisable to place frequently used objects at an easily obtainable height. For example, have dishes most often used in upper cabinets. You may want to “stock-up” on prepared meals such as frozen entrees and TV dinners. Make arrangements prior to admission for someone to help with house cleaning, laundry and groceries.

If you are to wear a brace postoperatively, you will need snug t-shirts to wear under your brace. The t-shirt helps absorb some of the body’s perspiration and prevents skin breakdown. The t-shirt must cover the buttocks. Putting the brace on usually requires the help of another person.

Patients often need adaptive equipment (a wheeled walker, an elevated toilet seat) after surgery. Hospital beds are generally not required after discharge for most spinal procedures. You will be able to sleep in your regular bed as long as it is not too low to the ground or a waterbed. An occupational and physical therapist will see you during your hospitalization and help you obtain any equipment you will need at home.

Before your operation it will be necessary to have blood tests, a chest x-ray and/or an EKG performed to evaluate your general condition before undergoing anesthesia. Sometimes a heart or lung evaluation is required. Most adults will need to have a medical evaluation by their internist prior to surgery. If your doctor is not on staff at Reston Hospital, we may have you see an internist here who can follow you in the hospital if you have any medical problems.

A checklist is provided on the following page for planning purposes.

# YOUR SURGERY PLANNING CHECKLIST

- PFTs (Breathing Test)  Bone Density Test
- Pre-admission Testing (Chest X-ray, EKG, blood and urine tests)
- Pulmonary or Cardiology Consult
- Anesthesia Consult
- Medical clearance from Internist: \_\_\_\_\_ your doctor \_\_\_\_\_ =
- Blood Donations: total units needed: \_\_\_\_\_; # of yours \_\_\_\_\_ # of directed \_\_\_\_\_

## PREPARING YOUR HOME

- Make or have made single servings of food to freeze (larger meals for you and your family).
- You cannot sleep on a mattress on the floor or on a free float waterbed. If you have a waterbed with baffles, check with your doctor to see if you can use it.
- Arrange your kitchen for convenience (frequently used items placed in easy to reach places - consider your precautions)
- Plan an "indoor track" cleared of obstacles. Plan to walk your "track" twice every morning, afternoon and evening. Remove throw rugs.
- Have a chair with armrests and a firm seat available (not too low).
- Install adjustable height hand held shower head (optional). Apply non-skid stickers/mat to bath tub/shower

## PLANNING FOR YOUR POSSIBLE DISCHARGE NEEDS:

- Adjustable wheeled walker  Home Tutoring
- Shower Chair/Bench  2nd Set of School Books
- Raised Toilet Seat/3-in-1 Commode

**Please note:** Your occupational and physical therapist will help obtain needed equipment prior to discharge from the hospital.

## **HELP YOU MAY NEED:**

- \_\_\_ Arrange for someone to pick you up from the hospital in a reasonable vehicle.
- \_\_\_ Arrange for someone to stay with you for **at least** a few days after you go home from the hospital. May be as long as 1-2 weeks depending on the size of your surgery.
- \_\_\_ Arrange for someone to assist you with household chores (cleaning, laundry, etc.)
- \_\_\_ Arrange for someone to do the grocery shopping.
- \_\_\_ Arrange for transportation for several weeks (you will not be able to drive for approximately 4 weeks).
- \_\_\_ Arrange for assistance w/ brace application if necessary as well as t-shirts for under the brace.

## **DO NOT FORGET!!**

**The night prior to your surgery do not eat or drink anything after midnight.**

## **ITEMS TO BRING WITH YOU TO THE HOSPITAL:**

### **WHAT TO PACK???**

Please leave all valuables at home. You will need to bring any personal toiletry items you feel you will need during your hospital stay (toothbrush, toothpaste, comb, brush, deodorant, lotions, etc.).

**Clothing:**

- 1 robe
- t-shirts if you are going to wear a brace after surgery

Hospital gowns are available for you to wear. It is usually easier to wear the hospital gown due to all the various IV lines and tubes. You may want to bring slippers and a robe for out-of-bed activities. You could wear the clothes you wore to the hospital home unless you are to wear a body brace after surgery. If you are to wear a body brace, clothing a larger size may be needed. You will also need to pack 1-2 snug fitting t-shirts to wear under the body brace. The t-shirts will help absorb body perspiration and prevent skin breakdown under the brace.

If transfer to a rehabilitation facility is planned, please refer to that section for clothing needs and other information.

# GENERAL INFORMATION PRIOR TO THE DAY OF SURGERY

**Nothing to eat or drink after midnight the night before your surgery.** You can brush your teeth, just do not swallow any water.

**ASPIRIN products and BLOOD THINNERS (Coumadin, Persantine) need to be stopped 1-2 WEEKS prior to surgery.**

Stop all **NON-STEROIDAL ANTI-INFLAMMATORY** medications/arthritis medicines (such as Advil, Aleve, ibuprofen, Motrin, Clinoril, Indocin, Daypro, Naprosyn, Celebrex, Vioxx, etc.) **ONE WEEK** before surgery. Tylenol products are suggested.

Some **ANTIDEPRESSANTS** will need to be stopped a few days to one week prior to surgery.

Some medications such as **Insulin** and **Prednisone** have specific instructions that may need to be adjusted prior to your surgery. Please let your surgeon know all medications you are on.

Medications for **blood pressure**, **heart** and **breathing** may need to be taken with a small sip of water the morning of surgery. **The anesthesia staff will let you know what medications, if any, you should take.**

Patients with **pacemakers** will need to check with their cardiologist to see if the pacemaker settings need to be reset 1-2 days prior to surgery. The electrical currents in the operating room could alter pacemaker rhythm if the settings are not adjusted.

**If your family members will not be at the hospital on the day of your surgery**, please let your doctor's office know the number where they can be reached. The surgeon will want to call and speak to them as soon as the surgery is over.

We will let you know where your family should wait during your surgery. Please ask them to stay in the specified waiting room so your doctor can speak to them after your surgery.

# CHAPTER 2

## IMMEDIATELY AFTER SURGERY

After surgery at Reston Hospital, you will be taken to the Recovery Room. After your stay in the recovery room, you will be transferred to the Orthopaedic floor. Occasionally, patients will go the ICU for 1-2 days before going to the regular hospital floor.

**IT IS NOT UNCOMMON FOR PATIENTS TO RETURN FROM SURGERY WITH FACIAL AND BODY SWELLING. THIS IS DUE TO POSITIONING IN SURGERY AND THE IV FLUIDS THT ARE GIVEN DURING SURGERY.** This swelling generally resolves in 1-2 days.

During the first 1-3 days of your recovery you will be monitored closely. You may have a cardiac monitor on to watch your heart rate and rhythm. You will have oxygen to make breathing easier. You will wear elastic, thigh-high stockings (TED hose) as well as inflatable plastic wraps (sequential pumps) on your legs. Both the TED hose and sequential pumps are used to help prevent blood clots.

You will have a Foley catheter. This is a tube that is placed into the bladder to drain urine. The catheter will be inserted after you are asleep in surgery. Your nurse will monitor the amount and color of your urine to make sure you are getting enough fluids. The Foley catheter will be removed once you are able to get out of bed fairly easily.

You will have one or more drains (Hemovacs) near your back, front, and/or side incision(s). These drains collect excess bleeding and drainage from under the skin. This keeps your wound from swelling and helps the doctors estimate your blood loss.

Your nurse will be monitoring your intake and output for a few days. You will have 1-2 IVs in your arms (unless you have a central line inserted). You might have a Naso-gastric (NG) tube (a tube inserted from your nose to your stomach). This is to keep your stomach drained and prevent you from getting sick after surgery. (Most times this is removed before you wake up from surgery.)

You won't be able to eat or drink until your stomach and intestines "wake up". Within 1-2 days of surgery, you will begin with ice chips & sips of water, then slowly advance to a regular diet.

If you have an anterior spinal fusion (an incision along the rib cage) you may have a chest tube after surgery. The chest tube is usually in for 2-3 days and will keep fluid from accumulating and compressing your lung. You will have a chest x-ray every day while the chest tube is in place.

Nurses will be listening to your lungs and helping you take deep breaths and cough. An Incentive Spirometer is also used to help you measure how deeply you breathe. In some cases, you will be instructed to practice with the incentive spirometer before surgery.



You will be turned by the **LOGROLLING** method. A sheet will be placed from your shoulders to your knees to help the nurses turn you as a unit. **Hips and shoulders must move together.** All of these exercises: turning, deep breathing and coughing help loosen the secretions in your lungs. Turning also prevents pressure sores. Generally you will sit or stand at the side of the bed the day after surgery.



# PAIN MANAGEMENT FOLLOWING ORTHOPEDIC SURGERY

Pain is an uncomfortable feeling that tells your body something has happened. Receptor nerve cells in and beneath your skin sense pain and send the “message” of pain to your brain. Pain medicine blocks these messages or reduces their effect on your brain.

After your surgery, you will be on special pain medicines to help keep you comfortable. Morphine and Dilaudid are most commonly used. Please be sure to tell your doctors and nurses if you know you are allergic to one of these medications.

A special pump, called a Patient-Controlled Analgesia pump or PCA, will administer your pain medicine. This pump is at your bedside and **you will be able to control the pain medicine.** Shortly after you wake up from your operation, the PCA pump will be hooked up for you to use. The medicine will go right into your “IV” line only when you want it to. This way you don’t have to call the nurse to get a shot. The PCA pump has a special button you push when you think you need more pain medicine. The button is only for your use, not usually pushed by the nurse or your family. We make sure your PCA is set up so you don’t give yourself too much medicine.

Because we think pain relief is so important, there is a special group of doctors and nurses, called the “Pain Team” to help you feel comfortable. The Pain Team is part of the Department of Anesthesia.



# CHAPTER 3

## POSTOPERATIVE ACTIVITIES AND PRECAUTIONS

### **TURNING IN BED:**

- Tighten your stomach muscles. Bend your knees slightly toward your chest.
- Roll to one side, keeping your ears, shoulders and hips in line. Be careful not to bend or twist at the waist.

### **GETTING OUT OF BED:**

- Tighten your stomach muscles. Turn onto your side.
- Push your body up with one elbow and the other hand. At the same time, gently lower both legs to the floor. Keep your stomach muscles tight.

Sitting puts more pressure on your spine than lying down or standing. For the first several weeks, avoid sitting for long periods as much as possible. When you do sit, use a firm, upright chair and change your position frequently. Stand up whenever your back feels tired or begins to hurt.

### **To Stand Up**

Scoot to the front of the chair. Brace your abdominal muscles and place one foot slightly in front of the other. Grasp the sides of the chair or the armrests for support. Push up with your arms and use your leg muscles to bring your body up. Keep your ears, shoulders, and hips in line.

### **To Sit Down**

Back up to the chair until you feel the chair on the back of your legs. Brace your abdominal muscles, bend at the hips **keeping your back straight** and use your leg muscles to lower yourself onto the front of the chair. Then scoot back.

### **Standing and Turning**

To help keep your spine balanced when you stand, imagine a cord running from your head to your hips. Keeping your ears, shoulders and hips in line keeps this “cord” taut and the three curves of your spine balanced. If you stand for a long time, change your position frequently by shifting your weight from one foot to the other. **DON'T TWIST.** Turn your whole body as a unit.

### **Bending and Lifting**

During the first four months, avoid bending or lifting anything weighing more than 10 pounds. When you lift something, keep it close to your body so that your leg and arm muscles do the work. Remember to brace your abdominal muscles, stoop at the hips and knees keeping your back straight and the three curves of your spine balanced. This will help prevent pain and further injury to your spine.

## Other Tips to Protect Your Spine

- Bend your knees and stoop if you need to pick something up below hip level (preferably not for the first 6-8 weeks). Keep your back straight. Use your reacher if possible.
- You may find it easier to dress and undress sitting in a supportive chair with armrests. Follow instructions given by the Occupational Therapist using long-handled tools.
- Avoid pushing, pulling or twisting. Avoid lifting anything over 10 lbs.
- Walk to stay in shape and keep your spine healthy.

Walking is **EXCELLENT** exercise. Walking helps your cardiovascular and digestive systems. It also increases muscle strength and endurance. Your **physical therapist** will instruct you specifically on distance and frequency of walking. A wheeled walker will be used initially in the hospital to improve your balance. By the time you go home you will be walking independently with or without the aid of an assistive device. Once you are home it is important to continue walking activities. Clear a “path” in your home for an imaginary track. Walk this “track” 6-8 times/day.

Your physical therapist will practice stairs with you before you go home. You should use a handrail when possible. Never use a walker on the stairs. Your therapist may have special instructions for you depending on your home environment and physical abilities.



**Getting in and out of the car:** The car should be mid-size or larger. **DO NOT attempt to get into the back seat of a compact car (2 doors).** The patient should sit in the front passenger seat slightly reclined and as far back as possible.

**To enter the car:** Walk up to the passenger door, turn and back up until you feel the car behind your legs. Reach back and place your left hand on the dashboard or car door and place your right hand on the back of the front seat. Bend your legs and gently sit down. Scoot hips back and slowly turn your body as you put your legs inside the car.

**To exit the car:** Gently turn your body while placing your legs outside the car. Scoot forward until your feet are on the ground. Push up to a standing position by placing your arms on the dashboard or car door and back of the seat. **You should not drive while taking strong pain medication.**

Driving is generally permitted approximately 4 weeks after surgery, depending on the magnitude of your surgery.

1.



2.



3.



4.



Postoperative precautions and wearing a brace can make some self-care activities and activities of daily living difficult. For this reason, your doctor may prescribe occupational therapy to assist you in learning alternate methods to perform these tasks. The **occupational therapist** will work with you and address any concerns of how to perform bathing, dressing, toileting, cooking, or light chores safely and independently at home. Training in compensatory techniques and assistive equipment may be included in your treatment. Adaptive equipment needed will depend on your ability to transfer out of bed, your mobility, your home environment and your ability to use the equipment safely and correctly at home as well as the hospital.

**Dressing:** Due to decreased flexibility and postoperative restrictions of back movement, it may be necessary to use some of the following aids for putting on underwear, pants, shoes and socks. It is easier to dress sitting in a supportive chair using adaptive equipment to reach your legs. Wear loose-fitting clothes and slip-on shoes for the first several weeks.

- long handled reacher
- long handled sponge
- long handled shoe horn
- elastic shoe laces
- sock donner



**Toileting:** Low toilet seats can make regular toileting very difficult and unsafe for patients who have had back surgery. Depending on the type, location and surrounding area of your toilet, you may be instructed in using a raised toilet seat and/or toilet rails. Your therapist will discuss with you which type of seat and rails are easiest and safest for you to install at home. (Installation requires no permanent changes in your home or bathroom fixtures.)



Patients wearing a brace may experience difficulty reaching themselves to clean after toileting. The therapist may show you different techniques or adaptive equipment to assist with this task.

**Incision(s):** Generally, patients are sent home with steri-strips (small tape strips) on their incision(s). Occasionally, staples are used. Family members/caregivers will not need to apply anything to the incision(s) at home, they just need to check them a couple times a day to observe for wound problems.



It is not uncommon for the patient to report numbness around the incision(s) after surgery. This is expected with any skin incision and the area of numbness gradually shrinks with time.

Adult patients may also notice a protrusion of their abdomen around an anterior incision. This laxity of the muscles and tissues after repair, especially anteriorly, is very common. Muscle tissue simply does not close as tightly as other tissues. This should not represent great concern and does not necessarily mean you have a hernia. Some adults may feel that their abdomen sticks out more than it did preoperatively since they are standing up straighter.

After an anterior lumbar fusion, some patients may notice temperature changes in their legs. Performing an anterior approach to the spine increases the blood flow to the leg on the side of the incision. The cold leg is actually the normal temperature and the warm leg is on the side of the anterior surgery. This is expected and should not concern you.

Occasionally, patients may have intermittent, non-neurologic pain or burning in the leg on the side of the incision. These are again due to the anterior approach and muscle retraction during surgery. This is not due to a pinched nerve or sciatica and will go away over time.

**Bathing:** Most patients will be able to shower **2 weeks** after surgery. Whether staples or steri-strips are used on the outside of the incision, the stitches underneath the skin dissolve on their own and if they get wet, they dissolve too quickly and wound problems may develop. The area **around** (not over) the incision may be gently washed but no showers for the first 2 weeks after surgery. Once the incision can get wet, you may stand in the shower or use a shower bench. **Tub baths are not allowed.** The bathtub and/or shower stall are potential sites for accidents because of wet surfaces. Transferring safely to these areas while adhering to postoperative precautions may require safety equipment including bath rails or bath chairs depending on your bath area at home. To make washing easier, long handled bath sponges and hand held shower hoses are available. Your therapist will instruct you in proper transfer techniques and equipment to increase independence in bathing.

For some patients it may be difficult to determine the safest equipment due to architectural barriers or environmental structures at home. Discuss these issues with your occupational therapist while you are still in the hospital.

**Working in Your Kitchen:** Before surgery, store cooking utensils and dishes you use regularly on counters. Put the foods you use most at waist level in the refrigerator or on a counter. Keep everything within easy reach. If your counters are low, work on a cutting board or other raised surface so you're not bending over.

For those patients who live alone or who are left alone, certain activities in the kitchen and the home need to be performed independently. Those can include independent light meal preparation and some light chores. Your occupational therapist will also instruct you in energy conservation techniques to make these tasks simpler. Simple modifications to your kitchen at home during the recovery period may be suggested to increase the patient's independence. The goal of occupational therapy is to work with you to provide the training and equipment to perform all of your daily activities as independently as possible while maintaining your spine precautions. Occupational therapy will be closely coordinated with physical therapy and nursing to allow you to return home as quickly as possible.

# SUMMARY OF ACTIVITIES

## **Your First Few Weeks**

Expect to feel weak and tired when you first get home. You should feel a little stronger each day. Keep moving as much as you can without increased pain. Walking is the best and only exercise you will perform. Usually you are able to return to desk-type work at 4 to 6 weeks postoperatively. School-age patients are usually ready to return to school approximately 3-4 weeks after surgery. Some patients have reported that keeping a diary was helpful to them to record their progress, pain medication, activities, etc.

## **Preventing Setbacks**

Increased pain for more than two hours after an activity usually means you've done too much too soon. Don't just reach for the pain pills. Take pain as a warning sign to slow down and pay attention to your posture and movements. Make sure you're bracing your abdominal muscles and keeping your ears, shoulders and hips in line.

## **Your Walking Program**

Walking is the best exercise after back surgery. It strengthens your back and leg muscles and increases your endurance. It also relieves stress, which can cause the muscles in your back to tighten. Begin walking around the house. Build up to taking several (4-6) walks a day. Brace your abdominal muscles and take medium strides.

## **Six Weeks and After**

By about the sixth week, your back is well on the way to healing. If you're using correct posture and movements and exercising regularly, you should feel better and be able to do more each week. Continue to let pain be a warning to slow down.

## **Sexual Relations**

You should generally wait until about six weeks after your surgery. Lying on your back so you have the support of the mattress is preferable. Side-lying positions may be more comfortable since you won't bear any weight. Avoid arching your back. Avoid a lot of back motion or stress on your spine.

# CONCLUSION

The purpose of a spinal fusion is to reduce pain, correct deformity and provide stability for the spinal column and spinal cord. You may be molded for a body brace to help provide protection for your back while it is healing. Braces may be worn anywhere from 2-3 months depending on the nature of the surgery. Your physician will determine the total time.

We really, in many cases, can not tell you that you can do this or that. We can only provide reasonable guidelines and you have to use a lot of common sense. Avoid things that put pressure or stress on your spine. Remember, with all activities, to keep your spine in good alignment.

The average length of stay in the hospital is 5 to 7 days, depending on the type and amount of spinal surgery done. If you are having staged surgeries during the same hospitalization, then a two week stay may be anticipated. Your nurse, the social worker, physical therapist and occupational therapist will help you prepare for discharge. Length of stay in the hospital is greatly influenced by insurance restrictions. Due to shortened hospitalizations, your doctor may recommend that you be transferred to a rehabilitation unit 4-5 days after your surgery. This allows patients a slightly longer hospital stay with an emphasis on Physical and Occupational therapy. Please refer to the following section on Rehabilitation.

## POST-OP ACTIVITY SCHEDULE TEENAGE IDIOPATHIC SCOLIOSIS

**PLEASE NOTE:** This is a **general** time schedule for when a patient can return to normal activities. Each patient is different so there may be some exceptions to the schedule below. The type of surgery you have will influence your return to activities. Check with your doctor when you come for your postop visits to see what you can do.

	2 wks	1 mo	4 mos	6-7 mos	1 yr
Shower	Yes				
Walking	Yes				
Lifting 5-10 lbs	Yes				
Driving	No	Yes			
School / work	No	Yes			
Light upper extremity exercise	No	Yes			
Stationary bicycling*	No	No	Yes		
Swimming – no diving*	No	No	Yes		
Non-contact sports – no competitive play	No	No	No	Yes	
Shooting free throws**	No	No	No	Yes	
Gentle tennis**	No	No	No	Yes	
Volleyball***	No	No	No	No	Yes
Light jogging on even surface	No	No	No	Yes	
Competitive sports / contact sports	No	No	No	No	Yes/No
Skating (ice and roller)	No	No	No	Yes	
Skiing (snow and water)	No	No	No	No	Yes
Bowling	No	No	No	No	Yes
Horseback riding (no jumping)	No	No	No	No	Yes
Roller coasters	No	No	No	No	Yes
Gymnastics	No	No	No	No	No

\* We will occasionally let patients stationary bicycle and swim as early as 6 weeks after the surgery

\*\* We will occasionally let patients shoot free throws and do gentle tennis as early as 4 months after the surgery

\*\*\* We will occasionally let patients start volleyball as early as 6-7 months after the surgery

## POST-OP ACTIVITY SCHEDULE YOUNG ADULT FUSION (NOT TO SACRUM)

**PLEASE NOTE:** This is a **general** time schedule for when a patient can return to normal activities. Each patient is different so there may be some exceptions to the schedule below. The type of surgery you have will influence your return to activities. Check with your doctor when you come for your postop visits to see what you can do.

	2 wks	1 mo	4 mos	6-7 mos	1 yr
Shower	Yes				
Walking	Yes				
Lifting 5-10 lbs	Yes				
Driving	No	Yes			
School / work	No	Yes			
Light upper extremity exercise	No	Yes			
Stationary bicycling	No	No	Yes		
Swimming – no diving	No	No	Yes		
Non-contact sports – no competitive play	No	No	No	No	Yes
Shooting free throw	No	No	No	Yes	
Gentle tennis	No	No	No	No	Yes
Volleyball	No	No	No	No	No
Light jogging on even surface	No	No	No	Yes	
Competitive sports / contact sports	No	No	No	No	Yes/No
Skating (ice and roller)	No	No	No	Yes	
Skiing (snow)	No	No	No	No	Yes
Skiing (water)	No	No	No	No	No
Bowling	No	No	No	No	Yes
Horseback riding (no jumping)	No	No	No	No	Yes
Golf	No	No	No	No	Yes
Gymnastics	No	No	No	No	No

- At one year postop you will be started on an exercise program. It will involve aerobic conditioning and a certain component of weight lifting. Any weight lifting that either axially loads or flexes your spine is probably not a good idea.
- Walking long distances is the best exercise and best aerobic activity. At one month postop you should be walking at least one mile per day. At two months postop you should be walking at least two miles per day. At three months postop you should be walking at least three miles per day and should continue this indefinitely up to at least the one year point if not beyond.
- For the first year postop you need to be very careful to limit the amount of flexing forward and bending over. It is critical that you keep your spine as straight, erect and vertical as possible. Probably after the one year point it is okay to start bending, but this will be individualized.

## POST-OP ACTIVITY SCHEDULE ADULT LONG FUSION TO THE SACRUM

**PLEASE NOTE:** This is a **general** time schedule for when a patient can return to normal activities. Each patient is different so there may be some exceptions to the schedule below. The type of surgery you have will influence your return to activities. Check with your doctor when you come for your postop visits to see what you can do.

	2 wks	1 mo	4 mos	6-7 mos	1 yr
Shower	Yes				
Walking	Yes				
Lifting 5-10 lbs	Yes				
Driving	No	Yes			
School / work	No	Yes			
Light upper extremity exercise	No	Yes			
Stationary bicycling	No	No	No	Yes	
Swimming – no diving	No	No	No	Yes	
Non-contact sports – no competitive play	No	No	No	No	No
Shooting free throws	No	No	No	Yes	
Gentle tennis	No	No	No	No	Yes
Volleyball	No	No	No	No	No
Light jogging on even surface	No	No	No	No	Yes/No
Competitive sports / contact sports	No	No	No	No	No
Skating (ice and roller)	No	No	No	Yes	
Skiing (snow)	No	No	No	No	Yes/No
Skiing (water)	No	No	No	No	No
Bowling	No	No	No	No	Yes/No
Horseback riding (no jumping)	No	No	No	No	Yes/No
Golf	No	No	No	No	Yes/No
Household duties (dusting, vacuuming, laundry, cooking meals, stairs)	No	No	Yes		

- At one year postop you will be started on an exercise program. It will involve aerobic conditioning and a certain component of weight lifting. Any weight lifting that either axially loads or flexes your spine is probably not a good idea.
- Walking long distances is the best exercise and best aerobic activity. At one month postop you should be walking at least one mile per day. At two months postop you should be walking at least two miles per day. At three months postop you should be walking at least three miles per day and should continue this indefinitely up to at least the one year point if not beyond.
- It is absolutely imperative that you keep your spine straight, erect and vertical the first year after surgery. Very, very important to avoid any bending over at all. At one year postop we may let you do a little bit of very limited bending over, but probably for a good two years after surgery we will stress staying very erect and vertical and trying to avoid things that involve bending at the waist or hips at all.

# CHAPTER 4

## SPINE REHABILITATION PROGRAM

A Spine Rehabilitation Team consists of: physiatrists (physicians specially trained in rehabilitation medicine); rehabilitation nurses; physical, occupational, speech and recreational therapists; and social workers.

The Spine Rehabilitation Program works very closely with the referring orthopedic surgeons. This relationship insures continuity of medical care and allows the orthopedic surgeon to review the patient's rehabilitation progress.

After some spinal surgeries, rehabilitation is important and essential for a successful recovery and return to a productive lifestyle. The Spine Rehabilitation Program is individually designed. It is goal oriented to meet the specific needs of each patient. Program goals are usually accomplished within 3 to 14 days. The length of stay is mostly determined by the patient's progress.

### Program Goals

- Achieve satisfactory postoperative pain control.
- Teach and insure the patient's understanding and compliance with body mechanics and spine precautions during activities of daily living skills such as dressing, bathing, toileting, bed mobility, transferring and walking.
- Teach the patient and family to correctly apply the brace (if indicated). Instruct the family or designated caregiver on assisted personal care or mobility skills.
- Improve general strength and endurance so that the patient can return to his or her previous living arrangement either independently or with the help of the family.
- Assist with arrangement of post-discharge care that might include outpatient rehabilitation therapy, home care services, long-term care or skilled nursing facility placement.
- Provide the patient with appropriate adaptive equipment and assistive devices to optimize functional independence and insure safety.

# WHAT TO EXPECT AT REHAB

A rehab program emphasizes progressive levels of the patient's activity.

After an initial evaluation the patient is scheduled for occupational and physical therapy each day. Therapeutic recreation is done on an individual and group basis to include leisure activities and community out-trips. Social work services are available during the rehabilitation stay.

A team of rehabilitation physicians makes rounds to check on incisions, monitor pain control, evaluate progress and observe patients during therapy sessions. Any changes in the patient's condition and rehabilitation progress are regularly communicated to the patient's orthopedic surgeon.

Throughout the rehabilitation stay, the patient practices brace applications, self-care skills, transfers and ambulation with the spine rehabilitation staff. Family members should get involved in assisting as applicable while the patient is in Rehab to increase comfort with these activities after discharge. If there is a problem with a brace, the adjustment is arranged in the shortest possible time.

To reinforce a patient's learning and compliance with spine precautions, a written copy of precautions is posted on the wall in the patient's room to serve as a constant reminder.

The Social Worker/Case Manager makes all the necessary discharge arrangements based on recommendations of the physician and Spine Rehabilitation Team. Prescribed equipment such as a wheelchair, walker or cane is delivered to the patient prior to discharge. If a special bed or toileting/bathroom equipment is needed, it is delivered to the patient's home the day before or on the day of discharge.

## **What to Bring:**

- Long cotton t-shirts if you are to be braced (3-5)
- Loose fitting washable slacks or shorts (preferably with an elastic waistline) and other casual clothes
- Laundry detergent in case clothes need to be washed
- Comfortable walking shoes with non-slip soles and no heels

The Spine Rehabilitation Team will do everything possible to facilitate the patient's functional recovery and assist with a smooth transition to the home and community.

# SPINAL FUSION DISCHARGE INSTRUCTIONS FOR THE FIRST FOUR MONTHS

## I. **LOGROLLING** (This term describes how to turn as a unit. Here are a few pointers):

1. Hips and shoulders need to be in alignment
2. Hips and shoulders should turn together as a unit
3. No twisting
4. A draw sheet (a sheet FROM SHOULDERS TO THIGHS) can be used to help you turn.
5. Placing a pillow between your knees will help maintain alignment and provide comfort when lying on your side.

## II. **BRACE APPLICATION (If you are to wear a brace after surgery, it is recommended that you and your family members practice brace application before discharge!)**

### **Type 1: TLSO (Thoracic Lumbar Sacral Orthosis) = Body Brace**

1. Put on a long T-shirt while lying in bed by rolling from side to side to adjust shirt.
2. Log roll to your side and have a helper place the back of the brace in place.
  - \*Make sure to tuck the side of the brace under as far as possible so when the patient rolls onto their back the brace is underneath them. The patient will have to roll to the opposite side to get the brace properly centered.
  - \*The hip arches at the lower end of the brace should fit smoothly over the patient's hip bones/pelvis.
  - \***Do not arch your hips to adjust brace.**
  - \*Some braces will have a midline mark on the side that should line up with the navel/belly button.
3. Place the top shell over the torso. The sides of the top shell should fit **inside** the back shell.
4. Pull the side straps snugly. First tighten the middle straps, pulling both straps at the same time. As body swelling goes down or weight is lost, the brace may require trimming/adjustments.
5. Adjust/tighten shoulder straps (if applicable) when sitting.

### **Type 2: Front opening TLSO (1 piece)**

#### **To put brace on:**

1. Assist patient to sit on the edge of the bed while adhering to precautions.
2. Patient pulls brace apart and applies brace around their torso. **NO** twisting, turning or arching of back.
3. Fasten straps
4. Patient **must** return to a lying position on their back to tighten Velcro straps snugly.

#### **To remove front opening brace:**

1. Unfasten Velcro straps while sitting.
2. Pull brace apart while sitting **without** twisting, turning, or arching back.

### **Type 3: TLSO with Thigh Cuff**

1. Put on a long T-shirt while lying in bed by rolling from side to side to adjust shirt.  
\*A stockinet or your TED hose (elastic stocking) should be used over the thigh for comfort.
2. Log roll to your side so that the thigh that fits into the cuff is on top or in the air.  
Example: If the right leg is braced, you will be turning to your left side.
3. Apply the back of the brace, tucking the side of the brace under the body so when the patient rolls onto their back, the brace is underneath them. The patient will have to roll to the opposite side to get the brace properly centered.
4. Fit the thigh into the thigh cuff of the brace.
5. Apply the top of the brace. The sides of the top shell should fit snugly **inside** the back shell.
6. Pull the side straps snugly. First tighten the middle straps, pulling both straps at the same time. As body swelling goes down or weight is lost, the brace may require trimming/adjustments.
7. Adjust/tighten shoulder straps (if applicable) when up.

### **III. BRACE WEAR**

- You must wear a T-shirt under your brace. The T-shirt must be put on while you are lying down by rolling from side to side.
- Loose fitting clothing with elastic waists can be easily worn over your brace (wearing underwear and pants on the OUTSIDE of your brace will make it easier when using the bathroom).
- You **do / do not** have to sleep in your brace.
- You **do / do not** have to wear the brace when showering
- You **may / may not** get up at night to go to the bathroom without the brace.

### **IV. WOUND CARE**

Once you are home, painting your incision with Betadine is no longer necessary. **Keep your incision dry for 2 weeks after surgery.** The tape steri-strips may fall off on their own once you start to shower. If they have not fallen off after one week of showering, you may have someone remove them. Once the tape strips have been removed, the incision can be gently washed.

If you have staples closing your skin, arrangements will be made for your family doctor or a visiting nurse to remove them or for you to return to the office.

**If any drainage, redness or increased pain develops at the incision site, CONTACT YOUR DOCTOR.**

**\*\*\* ANY DRAINAGE requires a call to the doctor. \*\*\***

## V. ACTIVITY

### Sitting

Log roll to your side. As you lower your feet over the bed, push up on the bed with your arms to an upright position. If you have a back brace, you must have your brace on before you sit up. You are not to get out of bed without your brace on.

- \* Do not sit for long periods of time without getting up and walking around.
- \* A bar stool can be used for sitting if you are placed in a brace with a thigh cuff.

### Walking

Your doctor encourages walking! It is excellent exercise for your cardiovascular and digestive systems. Walking will help prevent blood clots and will increase/maintain muscle strength. Be aware that the hip/pelvis area where the bone graft was taken may bother you more and longer than your back incision. You may ambulate with an assistive device such as a wheeled walker or cane.

### Bathing

If your incision(s) look okay, you will be able to shower 2 weeks after surgery. Shower like a wooden doll. No bending or stooping. Generally tub baths are not permitted after surgery.

If you are wearing a brace postoperatively, a second brace may be made for showering. You will change from the daily brace to the shower brace while lying down. No t-shirt is needed with the shower brace. After showering with the brace on, dry off as much as possible. Then you should lie down (put a towel on your bed), remove the shower brace and finish drying off. You may want to “air dry” an additional 10-15 minutes before putting on a clean t-shirt and the daily brace. (For this reason, some people prefer to shower at night).

**You cannot get your incision wet until two weeks after surgery.** This creates a problem for hair shampooing. You may wash your hair at any time by taking a LARGE trash bag and making a slit in the bottom of the bag. Pull the bag over your head to make a trash bag “dress”. You can either stand or sit on a chair in the shower while someone shampoos your hair. With your arms **inside** of the bag, you will need to hold the bag tightly around your neck to prevent water from running down your body onto the incision. Other options for hair washing are shampoo caps or going to your hair salon and using the reclining chairs at their sinks.

### Driving

You may ride as a passenger whenever you feel you can tolerate this activity. You should sit in the front passenger seat, slightly reclined if possible. It is suggested that you start with short distances, or on longer trips allow breaks to stop and walk around. Driving is generally permitted approximately 4-6 weeks after surgery if you are off of the stronger pain medication.

- \*Ambulance transportation may be required for patients wearing a TLSO with a thigh cuff until your brace is modified.

## VI. PRECAUTIONS AND SPECIFIC INSTRUCTIONS

- **YOU MAY DISCONTINUE WEARING YOUR SUPPORT STOCKINGS (TED HOSE) WHEN YOU GO HOME.**
- A pair of slip-on, rubber-soled shoes will allow you to put on shoes independently.
- No bending, stooping or heavy lifting
  - Do not bend forward any further than to brush your teeth
- Do not carry more than 10 pounds (1 gallon of milk weighs 8-9 pounds)
- You may go up and down stairs
- You may return to school 3-4 weeks after surgery. You may want to try half days the first 1-2 weeks.
- No P.E. or gym until approved by your doctor (generally not for 6-12 months).
- You may return to sedentary / desk type jobs 4-6 weeks after surgery. We suggest half days the first 1-2 weeks. Anticipate 8-hour workdays by 6 weeks after surgery depending on the magnitude of surgery you have had.
- You may sit with your legs crossed

## VII. MEDICATIONS

- You will be given several prescriptions for pain medication when you are discharged.
- **IF** you donated your own blood prior to surgery, please begin your iron pills again 2 weeks after surgery. Take 1 pill twice a day with meals until the bottle is finished.
- **Do not use any non-steroidal anti-inflammatory medications (ibuprofen, Advil, Aleve, Celebrex, Aspirin, etc.) until your doctor authorizes it.** These medications slow the fusion healing process. Tylenol is suggested once narcotics are no longer needed.

## VIII. GOING HOME

1. Remember to take small, frequent walks on your imaginary home track.
2. Move items frequently used to lower shelves in cabinets where they can be easily reached without bending, stooping or reaching.
3. Your first postoperative visit is listed below. Please call the office at 703-709-1114 if this is not good for you.

**Feel free to call 703-709-1114 if you have any questions or concerns!**