

Preparing for your Spine Surgery

A tool to help patients understand spine surgery

The Orthopaedic
Spine Surgery Service



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The Orthopaedic Spine Surgery Service
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Welcome

Dear Patient,

On behalf of the spine physicians and the staff at Newton-Wellesley Hospital, thank you for entrusting us with your care. We are proud of the care we provide and pleased to offer this Guide so you and your family can fully understand what to expect when you come to Newton-Wellesley Hospital for your spine surgery.

Preparing for any type of surgery is an undertaking for patients, as well as their families. Each patient, as an individual, assumes a very important role in planning his or her care. The material in this Guide describes the typical routines and practices associated with having and recovering from spine surgery.

This information and advice comes from the collective experience of Newton-Wellesley Hospital health care providers, patients and families. In no way is it intended to substitute for the dialogue you will have with your surgeon and other involved health care providers. We hope that the material will help in your conversations with those involved in your care. We encourage you to carry this Guide and refer to it throughout your experience. You will also find that it is a convenient place to file other information pertaining to your care.

We are committed to providing you with an excellent experience. Please let us know if there is anything else we can do to help achieve this – we welcome your comments and suggestions.

Thank you again for choosing Newton-Wellesley Hospital and for entrusting us with your care.

Newton Wellesley Hospital
Orthopaedic Spine Surgery Service

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Section 1: Spine Anatomy and Procedure Overview

As a patient considering spine surgery, you probably have many questions. This information will help prepare you for what to expect during your hospitalization.

The spine is made up of a series of vertebra. There are seven cervical (neck), 12 thoracic (chest) and five lumbar vertebrae. The vertebra is composed of a

solid section called the body that sits anteriorly and a ring of bone posteriorly (shown in *Figure 1*).

This ring of bone creates a canal through which the spinal column and nerve roots run.

The bony arch consists of the pedicle, paired transverse process, facet joints, lamina and spinous process (shown in *Figure 2*).

Between each vertebra is a disc that serves as a shock absorber and provides height between two vertebrae. The disc has circular bands of cartilage called the annulus, which encases a gelatinous center called the nucleus (shown in *Figure 3*).

The discs between the vertebrae allow the back to flex or bend. Discs also act as shock absorbers. Discs in the lumbar spine (low back) are composed of a thick outer ring of cartilage (annulus) and an inner gel-like substance (nucleus). In the cervical spine (neck), the discs are similar but smaller in size.

With aging and the wear and tear we put on our backs, degenerative changes in the spine can occur. The discs between the vertebrae (bones) may degenerate and lose some of their water content. The annulus may weaken, allowing the disc to protrude or become herniated (shown in *Figure 4*).

Figure 1: Spine Vertebrae

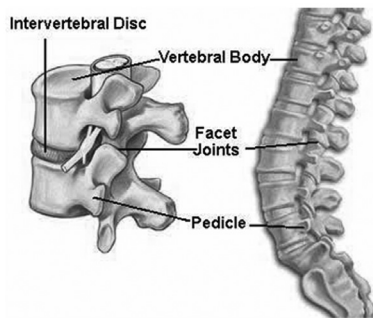
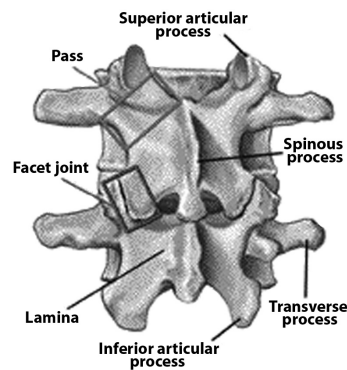


Figure 2: Superior Articular Process



The facet joints may develop bony overgrowth due to arthritis. These changes can also lead to narrowing, or stenosis, of the spinal canal. Spinal stenosis can cause the nerves to be pinched as they pass through the canal and foramina (shown in *Figure 5*). The nerves become inflamed, causing pain in the buttocks and/or legs. These changes can occur anywhere along the spine. We frequently see pathologies develop in the neck (cervical) or lower back (lumbar) spine.

Neck

As with pain in the lower back, neck pain is also common. When pressure is placed on a nerve in the neck, it causes pain in the muscles between your neck and shoulder (trapezius muscles). The pain may shoot down the arm. The pain may also cause headaches in the back of the head. Other symptoms include:

- Weakness in one arm
- Tingling (a "pins-and-needles" sensation) or numbness in one arm
- Burning pain in the shoulders, neck or arm

Over time, arthritis of the neck (cervical spondylosis) may result from bony spurs and problems with ligaments and disks. The spinal canal may narrow (stenosis) and compress the spinal cord and nerves to the arms.

Figure 3: Superior Articular Process

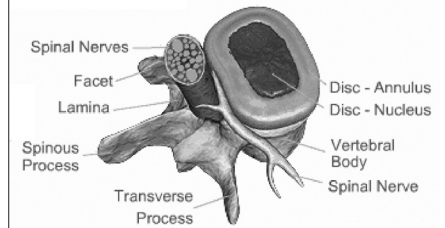


Figure 4: Osteoarthritic Facet Joints

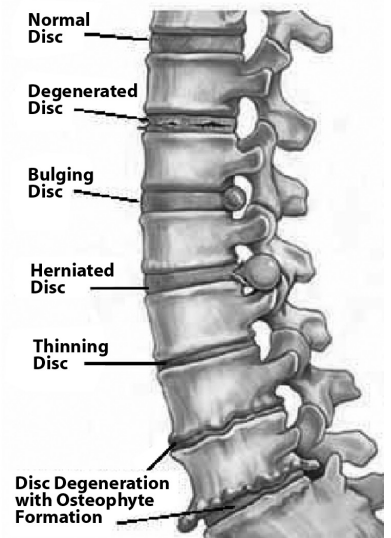
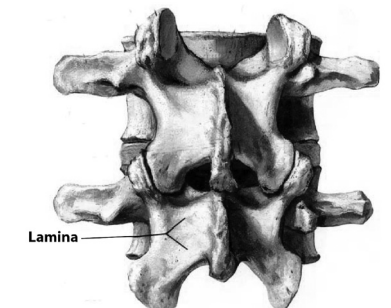


Figure 5: Lamina



Lower Back

Low back pain affects four out of five people. The most common symptom of a herniated disk is sciatica – a sharp, often shooting, pain that extends from the buttocks down the back of one leg. It is caused by pressure on the spinal nerve. Other symptoms include:

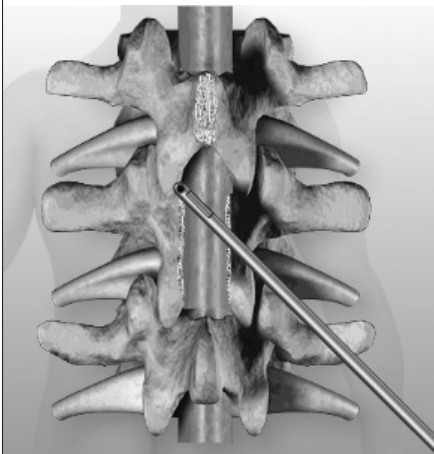
- Weakness in one leg
- Tingling (a “pins-and-needles” sensation) or numbness in one leg or buttock
- Loss of bladder or bowel control

(Significant weakness in both legs could indicate a serious problem and you should seek immediate attention).

Degenerative changes may also lead to abnormal motion between the vertebrae (instability). Degenerative changes in the lower back can lead to forward slippage of one vertebra on another, a painful condition called spondylolisthesis.

When conservative measures fail to relieve pain, your physician may recommend surgery.

Figure 6: Laminectomy



About the Procedures

A Laminectomy or decompression of the spine is done to eliminate pressure on the nerves from bone or soft tissue (often discs). A portion of the lamina is removed, this is often done with a spinal fusion (shown in *Figure 5* and *6*).

Spinal fusion surgery permanently fuses together bone segments (shown in *Figure 7*) and eliminates motion between vertebral segments using bone graft. Bone graft may be laid down between the vertebrae or along the posterior portion of the vertebrae. In addition, rods,

screws and cages are used to immobilize the spine in the area while the bony fusion is healing. Spinal fusion will take away some spinal flexibility. However, most spinal fusions involve only small segments of the spine and therefore, do not limit very much motion.

Kyphoplasty is a minimally invasive treatment for vertebral body compression fractures caused by osteoporosis and certain cancers. This procedure is usually performed under local anesthesia.

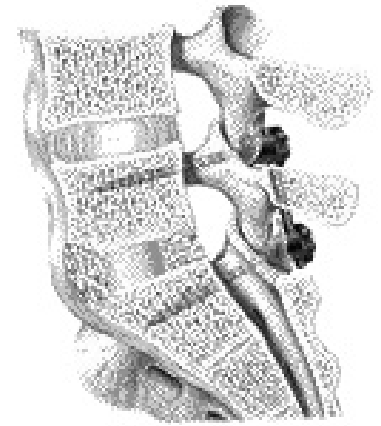
What You Can Expect

Surgical time for spinal procedures can vary depending on the number of vertebral levels addressed and the complexity of the case. Hospital stays vary on an individual basis. Patients are usually admitted on the morning of surgery. Routine care after spine surgery involves wound care, pain management, physical therapy and occupational therapy. These are described in greater detail later in this Guide.

Recovering from spine surgery depends on your general health before the procedure and your level of activity. The goal of recovery is to comfortably return to the activities of daily living that are important to you. While most spine surgery is successful in relieving pain and/or improving movement, recovery does take time. Nerve root discomfort may take time to heal and varies from patient to patient.

The soft tissues at the surgical site will take three to four months to completely heal, but the majority of the healing happens in the first six weeks. Muscle strength and reconditioning takes time, depending on how deconditioned you are preoperatively. Bone healing and fusion consolidation generally happen between six and twelve months after surgery. Nerves may continue to heal for one to two years after surgery. Depending upon the problem, most patients experience back pain improvement compared to preoperative pain three to six months after surgery.

Figure 7: Spinal Fusion



Section 2: Staff You Will Meet

Your Health Care Team

It takes many people to make a hospital run smoothly. Your health care team will work together to make your Hospital stay a positive, comfortable and successful experience. Please feel free to ask questions and share concerns with any member of your health care team. The following is a list of some staff members who will provide your Hospital care:

Attending Physician. This is your surgeon who will be primarily responsible for your care during your Hospital stay. He will work in conjunction with fellows, residents, physician assistants (PAs) and nurse practitioners (NPs) to provide comprehensive care.

- **Fellows.** Doctors who have completed residency training in orthopaedic surgery and are specializing in spine surgery.
- **Residents.** Doctors in their second through fifth year of specialized training in orthopaedic surgery.
- **Physician's Assistant.** A clinician with specialized training who may assist your surgeon in the Operating Room (OR), during your Hospital stay and at your follow-up appointment.
- **Nurse Practitioner.** A nurse with advanced training who may assist your surgeon in the Operating Room (OR), during your Hospital stay and at your follow-up appointment.

Anesthesiologist. A medical doctor with advanced training in anesthesiology.

- **Nurse Anesthetist (CRNA).** A nurse with advanced training who administers anesthetics under the supervision of an anesthesiologist.

Hospitalist. A medical doctor who may see you at the request of your surgeon.

Nursing Staff. A registered nurse (RN) will care for you throughout your Hospital stay. Your nurse will make sure you receive the appropriate medications, medical treatments and tests ordered by your physicians. Your nurse will also provide information and education to prepare you for discharge. A nurse is always available to answer questions or to discuss concerns you or your family may have. The name of the nurse caring for you on each shift will be available at the nurses' station or listed on a board in your room.

- **Patient Care Assistant (PCA).** The patient care assistant will assist your nurse in providing your daily care. He or she may help with bathing, taking vital signs or transporting you to and from tests.

Care Coordination Team

- **Case Manager.** This is a nurse who may assist with your discharge planning if you need services and/or equipment upon discharge. The case manager is familiar with resources in your community and may be able to help arrange homecare, or if necessary, an appropriate extended-care facility. He or she can also help with any questions or problems about what services and/or equipment your medical insurance covers, as well as financial issues that may impact your recovery and/or access to services/equipment.
- **Social Worker.** A social worker is always available to discuss any concerns that you or your family may have related to your disease and the associated stress it may have on you and your significant others, including what concerns you may have about planning for discharge. He or she may also assist with arranging homecare, placement in an extended-care facility, and/or facilitating equipment needed for home.

Rehabilitation Staff. These staff members have an important role in helping you recover from your spine surgery.

- **Physical Therapist (PT).** A PT may work with you during your hospital stay to get you moving around safely after your surgery. The PT will teach you how to safely get in and out of bed, walk with or without a device and walk up/down stairs (if needed). The PT will educate you regarding your surgeon's expectations for you upon leaving the hospital.
- **Occupational Therapist (OT).** The OT will address training you in how to perform activities of daily living including bathing, dressing, grooming, and toileting so that you are as safe and independent as possible, either with the use of adaptive equipment or with compensatory strategies focusing on body mechanics. The OT will address training with functional mobility and transfers to assess for any necessary equipment or DME you might need at your toilet or tub/shower stall area prior to your discharge home.
- **Physical Therapy Assistant (PTA).** A PTA may assist your physical therapist in exercises and mobility training. The PTA carries out the goals set by the PT. While we try to maintain consistency in care having your same therapist, it may be necessary to have a different therapist or PTA follow you after your initial evaluation.

Other Hospital Staff. Housekeepers, dietary workers, radiology technicians, chaplains, pharmacists, transporters and other staff members are all part of your health care team.

Section 3: Preparing For Surgery

Once you have scheduled your surgery, preparing yourself physically and mentally are important for a healthy recovery. Here are a few steps to help you get ready for your surgery.

Surgery Pre-Registration and Pre-Surgical Assessment

Before you come to the Hospital for surgery, you must complete your pre-registration. Your surgeon's administrative assistant will help you coordinate your pre-surgical appointments at Newton-Wellesley Hospital, as well as any required preoperative clearance or testing.

Insurance Co-Payments

Depending on the type of insurance you have, you may be responsible for a co-pay for your surgical procedure. The amount will vary depending on your insurance provider. A Newton-Wellesley Hospital staff member from the Admitting Department will be contacting you to determine the best way to take care of your co-payment.

Pre-Admission Visit

Once your surgery has been scheduled, your surgeon's office will arrange a pre-admission screening appointment. This visit will be scheduled as many as four weeks before your surgery. This is a separate appointment from your visit with your surgeon or PCP. During your appointment, you will meet staff from the Anesthesia department. The purpose of this visit is to make sure you are medically optimized for your surgery under general anesthesia. The average pre-admission visit is about two to three hours long. Please eat before this visit and take your regular medications.

On the day of your pre-admission visit, be sure to bring the following information:

- ☐ Questions you have about your surgery.
- ☐ A list of your allergies.
- ☐ A list of medications and dosages you take on a regular basis, including vitamins, herbs and other over-the-counter medications.
- ☐ Results of any recent tests at other hospitals.
- ☐ Names, addresses, phone numbers of all your doctors, including specialists.
- ☐ Any previous problems or reactions to anesthesia.

The nurse will:

- ☐ Confirm your surgical procedure.
- ☐ Conduct a nursing assessment, which includes past medical conditions, previous hospitalizations and a complete list of medications including prescriptions, over-the-counter and any dietary supplements.
- ☐ Confirm any allergies you have to drugs, food or latex.
- ☐ Review arrival time for the day of surgery.
- ☐ Recommend a special soap to wash the area the day before surgery.

You will also have any testing your physician has ordered. This may include lab tests, an EKG and a chest x-ray.

Anesthesia

A member of the Anesthesia Department is available to speak with you before surgery and let you know if any medications need to be stopped before surgery (see medication list in this Section).

Informed Consent

Before surgery you will be asked to sign consent forms. You have the right to understand your health problem and treatment options in words you can understand. Your doctor should also tell you about the risks and benefits of each treatment. Please feel free to ask questions.

Preparing Yourself Physically

Here are some tips that will help you focus on a smooth recovery.

- Stay as active as possible.
- It is important to share with staff any pain medication you are currently taking. This will better allow us to plan for your comfort after surgery.
- Continue your normal activity and exercise programs.
- Stop smoking. If you smoke, try to stop or cut back on the number of cigarettes you smoke every day. Smoking can cause complications with the anesthesia you receive for your surgery. Smoking also inhibits wound healing and bone healing. There is a 50% chance your fusion will not heal if you continue to smoke. Smoking decreases blood flow to healing tissues by 25% and accelerates arthritic changes. People who smoke have more back and neck pain than non-smokers. Stopping even for a short time can be helpful. For help, you may contact the Quit Smoking Programs at:

Brigham and Women's Hospital (617-732-8983)
Massachusetts General Hospital (617-726-7443)

For further information, contact

1-800-TRY-TO-STOP or visit www.trytostop.org

1-800-QUIT-NOW or visit cdc.gov/tobacco

- Watch your weight. Your doctor may ask you to lose weight before surgery. You may want to contact a dietitian for help losing weight or maintaining a lower weight after surgery. Resources are available by contacting our Nutrition Department at 617-243-6617.
- Discuss the need for a routine dental exam prior to surgery with your surgeon.
- If you have a fever, flu symptoms or other medical issues, please contact your surgeon's office.

Preparing Yourself Mentally

Having surgery can be stressful. It is important to be an informed patient. Learn as much as you can about the surgery and discuss realistic expectations with your surgeon and staff. Share this information with family members and friends who will be involved in helping you with recovery. Don't hesitate to ask for help from others during your recovery. It is important to plan for help in place during your recovery period.

Case Management

If needed, you will meet with a case manager during your hospital stay. At this time, he or she will discuss options for services after discharge. Many patients are able to return directly home after hospitalization. Some may qualify for services from a home-care agency. However, some patients may need additional time in an extended-care facility to achieve their goals. Your eligibility for care in an extended-care facility and/or home-care services is determined by a number of factors, including physical need and insurance coverage. Your insurance company must authorize any services. Your health care team will work with you to make the decision that is right for you.

If you have any questions or concerns regarding your post-rehabilitation options, please call the Department of Health Care Quality at 617-243-6695.

Planning for Your Return Home

It is important to begin planning for your return home before your surgical procedure. Arrange for transportation home from the Hospital. After surgery, your surgeon and other members of the health care team will assist in planning for your discharge. Have family and friends available to assist you with activities such as wound/dressing care, household tasks, driving, and picking up prescriptions from the pharmacy.

Physical Therapy and/or Occupational Therapy goals to achieve prior to returning home include:

1. Getting in and out of bed while the bed is in the flattened position without the use of a rail, using the logroll technique.
2. Being able to come to a standing position with or without the help of an assistive device such as a walker or cane.
3. Being able to walk at least 150 feet with or without the help of an assistive device such as a walker or cane.
4. Successful full body bathing and dressing with or without the use of adaptive equipment and incorporation of good body mechanics.
5. Review of any precautions you may have prior to going home.
6. Being able to negotiate the stairs with or without a rail (if used at home.) You may or may not require use of a cane to perform.
7. Understanding that your only initial exercise at home may be to walk.
8. Successful entry and exit from a tub or shower stall.
9. Ability to sit and stand from a standard toilet or commode.

The Rehabilitation staff will help you plan for any equipment you may need at home, such as:

- | | |
|-----------------------------------|---|
| • Bedside commode | • Knee immobilizer |
| • Raised toilet seat | • Ankle foot orthosis (AFO) |
| • Shower chair/bench | • Neck or low back brace (as recommended by your surgeon) |
| • Long handled adaptive equipment | • Cane |
| • Hand held shower hose | • Rolling walker |
| • Safety bars/hand rails | |

This equipment is not always covered by your insurance.

Medication Guidelines

Seven to 10 days before surgery, you should stop taking aspirin and other anti-inflammatory agents (Ibuprofen, Motrin, Advil, Aleve) to prevent excessive bleeding peri-operatively. Other drugs that should also be stopped seven to 10 days before surgery include Plavix, Coumadin or other similar anticoagulation drugs. A complete list of medications and substances that should be stopped before surgery is provided in this Section. Anesthesia will review this with you.

- Do not take vitamins, fish oil, or other herbal supplements for one week before surgery.
- If aspirin is prescribed, please check with your primary care doctor or cardiologist before stopping this. You may take acetaminophen (Tylenol).
- You may not be aware of the many medicines that contain aspirin or acetaminophen. Most medicines that help to relieve the symptoms of cold or sinus congestion contain aspirin or acetaminophen. Look at the ingredients on the label to ensure your safety.
- Notify your surgeon if you are on Warfarin (Coumadin), Plavix, Xarelto, or another anticoagulation medication.

The following is a partial list of other over-the-counter products that contain aspirin or aspirin-like medicine. These may affect bleeding during and after surgery. If you are taking any of these medicines, check with the Anesthesia Department about discontinuing use.

Advil	Bufferin	Four-Way Cold Tabs	Plavix
Aleve	Cephalgesic	Ibuprofen	Phenergan
Alka-seltzer	Children's Aspirin	Indocin	Robaxisol
Aluprin	Congesprin	Ketorolac	Sine-Aid
Anacin	Cope	Magnesium	Sine-Off
Arthritis-Strength	Coricidin	Salicylate	Soma
Bufferin	Coumadin	Midol	Talwin
A.S.A. and Codeine	Darvon	Motrin	Tolectin
Compounds	Dristan	Nardil	Triaminic
Aspergum	Ecotrin	Naprosyn	Trigesic
Aspirin	Empirin	Norgesic Products	Vanquish
Aspirin-containing	Excedrin	Pepto Bismol	Voltaren
medications	Fiorinal	Percodan	Zactrin
Bayer Aspirin	Flurbiprofen	Piroxicam	

Home Safety Checklist

The Occupational Therapy Department has compiled the checklist below to help you prepare your home for your recovery. We encourage you to review this list with family and friends and make any needed changes BEFORE your surgery. These recommendations can help you safely manage at home during your recovery period.

- ☐ Remove all loose rugs and electrical cords from areas where you walk in your home, as they can easily become caught under canes/walkers.
- ☐ Make sure carpet edges are tacked down to reduce potential falls.
- ☐ Be sure all walking areas are free of clutter.
- ☐ You will need a stable chair with a firm back and seat cushion that allows your knees to be lower than your hips when sitting during the day. Seat height can be built up with a firm pillow or folded linens. A chair with arms is recommended.
- ☐ Also make sure that your bed height is 18 inches or more, in order to keep your hips above your knees when you sit on the edge. Inexpensive bed risers can be placed under bed legs.
- ☐ Place needed items in the bathroom, bedroom, kitchen and living areas within easy reach (not too high, and not too low).
 - ☐ Keep a cordless phone or cell phone with you during the day.
- ☐ Place rubber mats or non-slip decals in the tub/shower.
- ☐ If you have equipment, such as a commode or tub seat, take it out before your surgery to make sure it is in good working order.
- ☐ Consider having grab bars installed in the tub/shower wall and near the toilet to optimize safety when toileting or bathing. If planning on using suction cup grab bars, be aware that there are safety concerns and precautions to consider. Properly installed grab bars are always preferable.
- ☐ A hand-held showerhead can be helpful when sitting on a tub seat to shower.
- ☐ Put nightlights in your bathroom and in the hallway leading from your bedroom to bathroom.
- ☐ Ensure that stair handrails are securely fastened and extend the full length of the stairs.
- ☐ Be sure that outdoor walkways, steps and porches are free of rocks, loose boards and other tripping hazards.

Feel free to contact the Occupational Therapy Department at 617-243-6172 if you have questions about these recommendations.

Section 4: Anesthesia

Anesthesiologists and nurse anesthetists are responsible for your safety and comfort during surgery. A member of the Anesthesia Department will be with you at all times in the Operating Room. Nearly all spine surgeries are performed under general anesthesia.

General anesthesia involves medications that keep you completely asleep during surgery. These medications are given intravenously

(IV) and by inhalation. Some of the most common side effects of general anesthesia include nausea, vomiting and sore throat. You will be given medication to prevent nausea. The anesthesiologist will describe these risks to you when you sign a consent form for anesthesia. This consent is separate from your consent for surgery.

Section 5: Surgery

Day Before Surgery

On the day before your surgery, make sure to follow these specific instructions:

- ☐ Shower and wash your body thoroughly with soap recommended by pre-test staff.
- ☐ Follow the instructions you received at your pre-admission visit about all your medications.
- ☐ Do not eat solids after midnight including food of any kind, milk or coffee lightener, orange juice, alcohol, gum, candy and mints.
- ☐ Clear liquids are allowed up to four hours before surgery including water, black coffee, clear tea, apple juice (no cider) and cranberry juice.
- ☐ Absolutely nothing by mouth within four hours of surgery.

What To Take To The Hospital

- ☐ Asthma inhalers and any eye drops
- ☐ Any non-formulary medications that are not stocked in the hospital pharmacy (please check with Anesthesia Department or your surgeon's office)
- ☐ Personal toiletries
- ☐ Short robe and loose pajamas
- ☐ Personal toiletries
- ☐ Flat comfortable shoes/sneakers and socks
- ☐ Glasses for reading (leave contact lenses at home)
- ☐ Dentures and case
- ☐ Cell phone or prepaid phone card for long distance calls
- ☐ Small amount of cash (no more than \$20 in case you want to buy newspapers).
- ☐ Completed Health Care Proxy form

Do Not Bring

- ☒ Pocketbook, wallet or other valuables including watches, earrings and other jewelry

Arriving at the Hospital

Hospital admission usually occurs on the day of your surgery. You will be asked to arrive at the Hospital one and a half hours before surgery. After checking in at the Surgical Center

Registration, you will be taken to the preoperative holding area. Your belongings will be stored and delivered to your room later in the day. A nurse in the pre-operative area will coordinate your preparation for surgery, which includes:

- Meeting your perioperative team who will assist your surgeon. Your team may include:

Nurses	Orthopaedic resident
Anesthesiologist	Physician Assistant (PA)
Nurse Anesthetist (CRNA)	Nurse Practitioner (NP)
Orthopaedic spine fellow	

- Checking your vital signs (temperature, blood pressure, pulse, respirations and pain score).

- Placing an intravenous (IV) tube in your arm so that you can receive fluids, medications and blood transfusion if necessary.

Your family is welcome to stay with you until it is time to go to the Operating Room (OR). When you are taken to the OR, your family will be directed to the family waiting area where they can wait during your surgery.

Surgery

In the OR, the surgical team will work to ensure your procedure goes smoothly. They will be continuously watching your heart rate, blood pressure and breathing. A catheter (small tube) may be placed in your bladder to keep track of fluids during surgery. Your surgeon will speak with your family when surgery is completed.

After Surgery – Post Anesthesia Care Unit

After surgery, you will wake up in your bed in the recovery room known as the Post Anesthesia Care Unit (PACU). You may not remember much of this part of your stay. Here are some of the routine activities that will be happening as you wake up from your surgery.

- Your vital signs will be taken frequently.
- You will have oxygen and cardiac monitoring while you wake up from the anesthesia.
- You will be wearing TEDS stocking and compression boots to promote circulation. Compression boots are wraps that are placed on your legs. The wraps are attached to a machine that automatically inflates and deflates.
- You may have a small drain from your incision that drains extra fluid from under the skin.
- You may have a catheter (tube) from your bladder.
- The nurse will check on IV fluids and antibiotics you receive.
- You will be asked to cough and breathe deeply every hour while you are awake.
- Your nurse will check to make sure you are as comfortable as possible. The nurse will frequently ask you to rate your pain using a pain scale from zero to 10, with zero being no pain and 10 being severe pain. Your pain will be managed in one of several ways:
 - Patient controlled analgesia (PCA). A pump that releases pain medication in small doses through your IV. Your physician will order the amount and type of medication for you.
 - Narcotic pain medication. Medication taken by injection or by mouth.

Section 6: Your Hospital Stay

During your recovery, the focus of your care will be on managing your pain, caring for your incision and getting you moving again. It is difficult to describe a typical day in the Hospital because each patient's care depends on his or her specific needs. One thing is fairly certain: you will be busy.

Day of Surgery

Vital signs. A nurse or patient care assistant will take your vital signs several times a day. This may include your temperature, blood pressure, heart rate, oxygen level and pain levels.

Medications. Your physician will order your medications. If you have any questions about your medicines, please be sure to ask your nurse.

Managing your pain. Your pain will be managed with either oral or IV medication the first postoperative night. Almost all patients are on oral pain medication the day after surgery. Some pain is expected after surgery. The

Hospital staff will make every effort to keep you comfortable. If you ever feel that your pain is not well controlled, you should tell your nurse as soon as possible.

- If your pain is being controlled by a PCA (Patient Controlled Analgesia) pump, you can give yourself a dose of pain medication by pushing the button that controls the pump. In all cases, the pump is set with individual limits ordered by your physician to prevent overdose or respiratory depression.
- Pain medication, both narcotic and non-narcotic, can also be taken by mouth. Keep in mind that it is important to take pain medicine when you are having pain. This will help you get up and move around in a shorter amount of time, which aids in your recovery.

Ice. You may receive ice to apply to your surgical site to decrease pain and swelling.

Care of your incision. Your incision will be covered with a bandage (dressing) for the first few days after surgery. If you have a wound drain, your surgeon will remove the drain within a few days after surgery.

Foley catheter. If you have a bladder catheter, your nurse will check the drainage from the catheter (tube.) Foley catheters are most often removed the day after surgery.

IV (Intravenous catheter). Your nurse will also check on IV fluids and antibiotics you receive.

Incentive Spirometer (IS). Patients often take shallow breaths when lying in bed, or in pain, after surgery. Deep breathing exercises keep the bases of your lungs open; this helps to prevent respiratory infection such as pneumonia. You will be asked to cough and breathe deeply every hour while you are awake and use an incentive spirometer (clear plastic device to assist with deep breathing, shown at right).



Diet. Your diet will go from liquids to solids as your stomach settles down in the days after surgery. Meal service is provided three times daily. You will be given menus to choose foods that you like. Snacks and beverages are almost always available at the Nursing Station.

Tests. You may have more tests including lab work or X-rays.

Rounds. Your surgeon is the leader of your health care team. During your Hospital stay various members of your health care team may visit you.

Rehabilitation. The rehabilitation staff includes the physical and occupational therapist as well as the physical therapy assistant. Depending on your surgery and your individual needs, the team of your MD, PA, NP and RN will determine the appropriate therapy to consult to evaluate you and work on regaining your mobility. You may only need one service, both PT and OT, or possibly neither.

Discharge planning. Early in your stay, your health care team will work with you and your family to plan for your needs after leaving the Hospital.

Activity Progression throughout Your Hospital Stay

“When will I be able to get out of bed and start walking?”

Getting out of bed and walking will be one of your main goals after surgery. These tasks may begin as soon as the day after surgery after your surgical procedure is complete. It is anticipated that on a daily basis you will be getting out of bed and walking.

“How difficult will it be for me to get out of bed and start walking?”

That depends on many factors. The most important things to consider: the complexity of the surgery you have, your level of pain after surgery, and how mobile you were just prior to surgery. In some cases, you may require a walking aid like a cane or a walker with wheels on it. Many patients are able to walk without having to use a walking aid after surgery.

“If I feel pain when I try to get out of bed or walk (especially the first time), is that a bad thing? Does it mean I have done something wrong?”

Pain after surgery is expected, and it is normal to have pain when trying to get out of bed and walk. If you have pain when trying to get out of bed and walk, it DOES NOT mean have done anything wrong. One of the main goals of the healthcare team that is taking care of you is to make sure your pain is well controlled and tolerable, especially in anticipation and prior to having you attempt getting out of bed and walking.

“Who will help me to get out of bed and start walking?”

Many of the members of your healthcare team are responsible for, and participate in, helping you begin to get out of bed and walking. A combination of nurses, nursing assistants, and in some cases, physical and/or occupational therapists will help you with this. Many patients, after some initial help, are able to get themselves out of bed and walking prior to leaving the Hospital.

“Will I need an assistive device to walk when I get home?”

Even if you were walking without an assistive device, it is not uncommon to begin walking with an assistive device such as a rolling walker immediately after surgery. Progression to a cane or no device is expected before you leave the hospital, if applicable (unless you were using an assistive device prior to surgery).

“How soon will I not require any help to get out of bed and take a walk?”

That depends on many factors as well. Some patients are able to get out of bed and walk without assist within a few hours after their surgical procedure

is finished. Some patients require assistance to help get out of bed and walk throughout their Hospital stay. In cases where patients need assistance of another person to get out of bed and walk throughout their entire Hospital stay, it may be recommended for that patient (at the time of discharge from the Hospital) to transition to an extended-care facility before going home. The goal after surgery is to have you walk several times a day on the floor with help, as needed. If you are independently walking, you may likely not require rehabilitation services to evaluate you.

“Is there a situation where it would be recommended that I NOT get out of bed and take a walk?”

On very rare occasions, your surgeon may want to keep you in bed for a short time after surgery (24-48 hours) for medical reasons. Outside of that situation, you will be encouraged to get out of bed and walk every day you are in the Hospital.

Daily Plan of Care

Everyone progresses at his or her own pace. The activities listed below are a guideline for what to expect during your Hospital stay.

Post-Operative Day One

- Continue with incentive spirometer to exercise your lungs.
- Continue with oral pain medications or a pain pump (PCA, Patient Controlled Analgesia) that you control. Most patients are switched from a PCA pump to oral pain medications within 24 hours after surgery. It is important to communicate with staff how well your pain is being relieved.
- A blood thinning (anticoagulant) medication may be used, depending on recommendation of your surgeon.
- The nursing staff will assist you with bathing, changing positions in bed, and ambulating.
- Your doctor (resident, PA or NP) will remove the drain tube (if applicable) from your incision and may change the bandage.
- An orthopaedic resident, PA and/or NP will make rounds daily.
- You will continue to have an IV access.
- Additional blood may be administered if needed.
- You may continue to have a bladder catheter if needed.

- Compression boots will be worn to promote circulation and prevent blood clots. You may also have elastic (TEDS) stockings.
- Blood tests will be done for routine monitoring.
- You will begin taking liquids and solid foods in your diet as tolerated.

Case Management

Your case manager or social worker will meet with you to discuss your discharge plans, expected length of stay and make referrals to extended day-care facilities or visiting nurses as needed.

Post-Operative Day Two

- You will continue with incentive spirometer to exercise your lungs.
- Pain medicines will continue, as you need them.
- A blood thinning (anticoagulant) medication may continue if recommended.
- An orthopaedic resident, PA and/or NP will continue to make rounds daily
- IV fluids and antibiotics may be discontinued.
- Dressing bandage will be monitored and changed as needed.
- You will be given laxatives twice daily as needed. Narcotic pain medication and anesthesia will make you constipated, so all patients are on a bowel regimen postoperatively.
- Compression boots will be worn to promote circulation and prevent blood clots. You may also have elastic (TEDS) stockings.
- The bladder catheter may be removed.
- Lab tests may be done.
- Your diet will be advanced as tolerated and fluids increased to prevent constipation.
- If you have not already done so, encourage a family member or friend to come to the Hospital to review the discharge planning with a member of your health care team. Staff will provide a tentative discharge date and time so you can arrange for transportation home.

Case Management

Case manager or social worker may be in to further discuss discharge plan

- Arrange for home services if needed.

Post-Operative Day 3

- You will continue with incentive spirometer to exercise your lungs.
- A blood thinning (anticoagulant) medication may continue if recommended.
- An orthopaedic resident, PA and/or NP will continue to make rounds daily
- Pain medicines will continue, as you need them.
- Dressing bandage will be monitored and changed as needed.
- Lab tests may be done.
- You will continue with a bowel regimen.
- Your nurse will review your discharge instructions, which includes any medications you will be taking at home, as well as any new prescriptions.
- You will resume your usual diet as tolerated, increasing fluids to prevent constipation.

Case Management

A case manager or social worker may be in to confirm your discharge plan and address any outstanding questions you may have.

Section 7: Leaving the Hospital

Leaving the Hospital can sometimes be scary because your recovery is not complete. Some days you will feel that you have made great progress and other days will be harder.

Daily Guidelines

In general, the guidelines below will apply whether you are going directly home or to an extended-care facility. Your healthcare team will also provide you with additional instructions, depending on the type of surgery.

In the first week after leaving the Hospital, please follow these daily guidelines:

- Take all your medications.
- Continue increasing your walking distance.
- Take pain medicine as needed. Set your alarm overnight to remind you to take scheduled pain medication; this will make morning pain more manageable.
- Apply ice to surgical area (with a protective barrier, i.e. pillow case) when you take pain medication, or after increased activity such as walking. Ice for 20-30 minutes at a time. Do not ice more often than every two hours, as this could increase risk of developing a mild frostbite.
- Follow instructions for wound care.
- Drink plenty of liquids and eat healthy foods. If you are diabetic, keep your blood sugars under tight control.
- You may be advised to take daily doses of iron to build up your blood because it is common to be somewhat anemic after surgery.
- You will need a bowel regimen to prevent constipation related to pain medications and iron supplementation. (Please refer to Section 8 for more information.)

Signs and Symptoms to Report

Any of the signals listed below can be of concern. If you experience any of the following when you go home, call your surgeon.

- Temperature greater than 101° for several hours duration
- Signs of infection (redness, swelling, draining wound, increasing pain)

- Arm, leg or calf tenderness or pain
- Chest pain, shortness of breath, rapid heart beat
- Persistent nausea and vomiting
- Bruising easily

Intermittent pain in the arms and legs is very common after spine surgery. Your surgeon will discuss with you which symptoms are concerning and when to notify their office.

Getting Back to Your Usual Activities

During the first few weeks at home, you can adapt what you learned at the Hospital to your own setting. You should continue to increase your walking distance. Staff from a home-care agency, such as a nurse or therapist, may visit as you make the transition to home. Most people feel very tired when they leave the Hospital. For this reason, it is best to pace yourself as you return to your daily routine. If you feel tired, take a short morning or afternoon nap. As you recover, your energy will increase. You cannot do everything yourself. Don't be afraid to ask for help with daily tasks such as grocery shopping, laundry and housecleaning if needed. Take care of yourself. Try to find ways to be good to yourself during this time.

Outpatient Rehabilitation Services

Once you return home after surgery, outpatient Physical Therapy or Occupational Therapy will be discussed with your surgeon at follow-up. This is the setting when formal exercise, strengthening, and flexibility will be addressed. Should your surgeon recommend outpatient therapy, you may choose to continue your rehabilitation at Newton-Wellesley's Outpatient Rehabilitation Services Department, now located at our new Ambulatory Care Center at 159 Wells Ave in Newton. You can also look up more information on our website at www.nwh.org/rehab.

Our physical and occupational therapists are experienced in treating patients with functional limitations following surgery. Many of our therapists have specialty certifications and more than 15 years of experience in orthopaedic rehabilitation. They are highly skilled in all areas of postoperative care and will create your therapy program to best meet your needs. By choosing Newton-Wellesley Hospital for your outpatient therapy, you ensure a good continuity of care from the time of your preoperative visits through meeting your rehabilitation goals.

Outpatient services include:

- **Physical Therapy:** members of the Physical Therapy staff work with you to decrease pain and swelling, and help you regain range of motion, strength, balance, and mobility. The primary focus is to assist you in recovery from surgery and regaining functional independence.
- **Occupational Therapy:** the Occupational Therapy staff can help you to better perform important activities of daily living including self-care, homemaking, work and leisure. Therapy might include teaching you ways to conserve energy and use good body mechanics, recommendations for adaptive equipment and suggestions to improve your ability to safely function at home and in the community.

An appointment for physical and/or occupation therapy can be scheduled by calling the Department of Rehabilitation Services at 617-243-6172 Monday through Friday between 7:00 am and 8:00 pm.

Household Tips from the Occupational Therapy Department

Keep these helpful tips in mind when doing activities around the house. It is important to share this information with family or friends who might be assisting you. These tips are in addition to the Home Safety Checklist provided in Section 3.

General Tips

- If you are using a walker or cane, wear an apron with pockets or a belt pack. Remember, you will not be able to carry things in your hands while using these devices.
- If you are using a walker, consider buying a walker bag or basket for use in transporting items.
- Store frequently used items between waist and shoulder level. Do not stand on your tiptoes or bend excessively to reach for things. Use your reacher to do this whenever possible.
- Arrange for help with child or pet care.
- Always use your assistive device if prescribed when walking. It is not safe to hold onto furniture, even for a few steps.
- Ground floor bedrooms and bathrooms are ideal, but if your bedroom or bathroom is upstairs, you will be taught to negotiate stairs.
- Save a new book or project to tackle once you are home.

Kitchen Tips

- If possible, move your kitchen table close enough to the counter so you can easily pass food items back and forth without twisting.
- To move an item from one part of the counter to the other, simply slide it along the countertop. If the item is hot, place a potholder underneath it.
- If you must set your cane aside temporarily while preparing food at the counter, make sure it is in a safe place where it will not fall to the floor. You may rest your hips or stomach against the counter for support.
- Frequently used refrigerated items should be within easy reach (between waist and shoulder level).
- Keep your freezer stocked with ready-to-eat foods.
- Lighter weight and single serving items are easier to handle than large containers.
- Arrange kitchen cabinets so that frequently used items are within easy reach to avoid excessive bending or reaching.
- Use only stovetop or counter-level appliances to prepare food. Do not use low ovens or attempt to load or unload the bottom rack of the dishwasher.
- Keep your trashcan accessible.

Bathroom Tips

- If you are more than five feet tall, you may need a raised toilet seat or commode.
- Do not use towel bars, soap dish handles, shower curtain rods or toilet paper dispensers for support with getting out of the shower, or on and off the toilet.
- Use a tub or shower chair as recommended by your occupational therapist.
- It is important that you are able to reach your soap, shampoo, washcloth and long-handled sponge in the shower without excessive bending. Consider the use of a shower caddy for easy reach. Consider using liquid soap in lieu of a bar of soap to avoid dropping the soap out of reach.
- For a homemade "soap on a rope," put a bar of soap in the leg of a pair of pantyhose. Tie the other end to a tub seat or soap dish.
- Always make sure there is no water on the floor when stepping in and out of the tub or shower. If necessary, seek help to dry the area before attempting to enter or exit the shower.
- Place an anti-skid rug outside of the tub or shower stall.

- Use a towel to dry self before exiting the shower or tub, or consider using a terry cloth robe to dry self.
- Sit down to complete drying and dressing.
- Store long-handled equipment in an easy-to-reach location when doing activities of daily living, especially dressing the lower body.

If you have any questions about these suggestions once you are home, do not hesitate to contact the Newton-Wellesley Hospital Occupation Therapy Department at 617-219-1662. An occupational therapist will be happy to talk with you.

Section 8: Frequently Asked Questions after Back Surgery

What is the recovery time?

Everyone heals from surgery at a different pace. It usually takes about three months to gradually return to normal function without using any devices; however, it could take longer.

How long do I need a bandage?

You should use a bandage for about one week until your incision is closed and there is no fluid oozing from your wound. Starting five days after surgery, it should be changed daily to a new, dry, sterile gauze until there is no more drainage. You may continue to wear a bandage to protect the incision from the irritation of clothing.

How long should I use elastic stockings (TEDS)?

These should be used for the first few weeks in order to help reduce swelling and improve circulation. You may wear them longer, especially if you find that your ankles swell without them. You may take them off at night. TEDS can be hand washed or machine washed, but do not place them in the dryer as they may likely shrink.

Should I use ice or heat?

Ice should be used for the first several days, particularly if you have a lot of swelling or discomfort. Ice should also be used after activity (such as walking.) Once the initial swelling has gone down, you may use ice and/or heat. The staff will help you with this while you are in the Hospital.

When can I shower (get incision wet)?

You may start showering with the incision covered 48 hours after surgery. Initially, try to keep the incision dry with a clear plastic dressing or plastic wrap. If it gets wet, pat it dry. It is usually advised that you wait to shower with the incision uncovered until the wound is closed and there has been no drainage for seven days. If no drainage is present at the incision, your surgeon may agree that you can shower earlier. Stay out of tubs and pools until you have clearance to do so from your surgeon's office.

How long will I be on pain medicine?

You may need some form of pain medicine for about two to three months. At first, you will take a strong medicine, such as a narcotic. Most people are able to stop narcotics within one month after surgery. You can then change to an over-the-counter pain medicine such as Tylenol.

What activities can I do after surgery?

You may return to most activities when you feel up to it. You should avoid high impact activities such as running, downhill skiing, and vigorous racket sports such as singles tennis or squash. Please discuss this with your physician at your follow-up visit.

What exercises should I do?

Walking is the preferred exercise until you see your surgeon at follow-up. You may be instructed by your physical therapist on appropriate exercises and given a list to follow. Be sure to talk with your surgeon and your therapists about when you can begin new activities.

Can I have sex?

For the most part, you can gradually resume sexual activity when you are comfortable.

When can I drive?

You should not drive until you can manage your pain without narcotics.

When can I return to work?

This depends on the type of work you do. You may return to work after about one month if your work involves mostly sitting. If your work is more rigorous, you may require up to three months before you can return to full work. In some cases, more time may be needed. Check with your surgeon.

When can I travel?

You may travel as soon as you feel comfortable, but avoid long-distance travel for four to six weeks or until after seeing your surgeon. We advise you to get up to stretch or walk at least once an hour when taking long trips. This is important to help prevent blood clots.

Will my spinal implants set off the machines at airport security?

The increasing sensitivity of security detectors at airports and public buildings may cause your implants to trigger an alert. We recommend you alert airport security that you have spinal implants. In some situations, security guards may also move a wand up and down your back to locate your fusion instrumentation. They may also pad you down on the area that triggers the wand.

How long should I take iron supplements?

Four weeks is usually enough time to build up blood after surgery.

What should I do about constipation after surgery?

It is very common to have constipation after surgery, especially when taking narcotic pain medication. A simple over-the-counter stool softener (such as Colace) taken with a laxative (such as Senokot) is the best way to prevent this

problem. Increasing fruits and vegetables in your diet will also help. In some instances, you may require additional bowel medication (i.e. MiraLAX or Milk of Magnesia) and a suppository or enema.

Can I drink alcohol?

It can be very dangerous to ingest narcotic pain medication with alcohol.

Alcohol use is not advised until you have stopped your narcotic pain medication and are walking steadily.

I feel depressed. Is this normal?

It is common to have feelings of depression or trouble sleeping after your surgery. This may be due to a variety of factors such as difficulty getting around, discomfort or increased dependency on others. These feelings will typically fade as you begin to return to your regular activities. If they continue, consult your primary care doctor.

When do I need to follow up with my surgeon?

Follow-up appointments are usually made at four to six weeks, six months and yearly. In some cases, there will be a follow-up appointment two weeks after surgery. Check with your surgeon's office for specifics.

When do my stitches come out?

If your stitches are absorbable, they do not need to be removed. The steri-strips can be kept in place until they fall off on their own. They will help keep the skin edges together. If they have not fallen off by three weeks post-op, it is okay to peel them off. If your stitches are not absorbable, they will need to be removed after 14 days. Nonabsorbable stitches can be removed by a visiting nurse, PCP, or your surgeon's office; instructions may be clarified in your discharge paperwork.

Recommended Websites

American Academy of Orthopedic Surgeons

www.orthoinfo.aaos.org

Spine Health

www.spine-health.com

Pain Management

www.painaction.com

Wishing You a Healthy Recovery

In the months after your surgery, you will gradually move toward greater independence in all your activities. Continuing to exercise will help you build stamina and endurance. You may find it challenging at times. Sometimes you may need to find a new way to do things. As you recover from your surgery, try to be active and stay healthy. Keep your weight at a level that is appropriate for your height and body type. Adding pounds can put extra stress on your body. As your muscles get stronger, it is important to stick with a regular exercise program to maintain total body fitness. No one is too old to exercise. If you have questions on how to keep active and stay healthy, talk to your primary care physician, surgeon, physician assistant, nurse practitioner, nurse, physical therapist, occupational therapist or case manager.

We hope this Guide has answered many of your questions about spine surgery and what to expect after surgery. We believe that the most satisfied patients are those who are well informed. If you have any other questions, please do not hesitate to contact your surgeon.

Thank you for entrusting your care to the orthopaedic spine surgeons at Newton-Wellesley Hospital. Best wishes for success and continued health.