About this guide

This booklet provides valuable information for you and your family regarding your shoulder replacement surgery.

You can expect the best results if you read and discuss this guide with your family before your surgery. The goals of our staff are to restore your shoulder to a painless, functional status and to make your hospital stay as beneficial, informative, and comfortable as possible. Please feel free to ask questions or share concerns with any of your caregivers.

Contents

Preparing for your surgery .................................................. 4
   The day before your surgery ............................................. 6
   The day of your surgery .................................................. 7
Getting the most out of your surgery ................................. 12
   Resuming your normal activities ...................................... 16
Risk factors and complications ........................................... 18

Special topics

About blood transfusions ................................................. 4
Readying your home .......................................................... 5
Planning ahead for your discharge ............................... 6
Getting to the hospital ..................................................... 7
Anesthesia ............................................................... 8
What and what not to bring to the hospital .................... 9
Surgery preparation checklist ........................................... 9
Arthritis of the shoulder .................................................. 10
Pain management .......................................................... 12
Your care team .............................................................. 13
Exercises after surgery ................................................... 14
Taking care of your surgical incision ............................. 17
Preparing for your surgery

Preparation for your shoulder replacement surgery begins several weeks before the date of the surgery itself. To begin with, you will be asked to keep the following appointments:

- **Pre-Admission Testing**: This is a physical examination and a series of tests (x-rays, blood work, etc.) in preparation for your surgery. During Pre-Admission Testing you will also meet with an anesthesiology staff member to discuss the type of anesthesia you will undergo.

- **Medical Clearance for Surgery**: Approval for you to undergo surgery is required from your primary doctor—or we can arrange for you to be examined by one of our doctors. This examination, along with Pre-Admission Testing, is necessary to review your overall health and identify any medical condition that could interfere with your surgery or recovery.

In the weeks before your surgery you may also be asked to:

- **Have a dental examination**: Although infections in joint replacements are not common, one can occur if bacteria enter the bloodstream somewhere else in your body. Therefore, you should plan to have dental procedures such as extractions and periodontal work done before your surgery.

- **Stop taking certain medications**: Your surgeon can advise you which medications to stop taking before your surgery. Be certain to tell your physician *all* the medications that you are taking, including over-the-counter medications, because some of these may increase your bleeding during surgery.

- **Stop smoking**: This is a good idea at any time, but particularly before major surgery in order to help reduce the risk of postoperative lung problems and improve healing.

**About blood transfusions**

Unlike other joint replacement surgery, most patients who undergo shoulder replacement do *not* require a blood transfusion. For most patients, then, donating blood before surgery will not be necessary. In patients with certain risk factors for bleeding or whose surgery is more complicated, additional blood loss may be anticipated. In these special circumstances, your surgeon will discuss the possibility of blood transfusion before the surgery.

- **Evaluate your needs for at-home care after discharge from the hospital**: Most shoulder replacement patients will need help at home for the first few weeks, including assistance with preparing meals and transportation.

- **Tell your surgeon about your current support services/devices**: If you are now using a home service, bring the name and phone number of the service to the hospital. If you have medical equipment such as a wheelchair, crutches, or walker at home, ask your surgeon if you should make arrangements to have the equipment brought to the hospital for the physical therapist to make adjustments.

- **Review your insurance**: Contact your insurance company well ahead of time to familiarize yourself with the benefits available to you. For example, different insurance providers have different rules for determining the medical necessity of rehabilitation, and most do not provide a benefit for your transportation home. Also be aware that you will be billed separately by the hospital, your surgeon, and your anesthesiologist and that different insurance plans have different formulas for determining payments for these services.

**Readying your home**

There are several things that you (or a friend or family member) can do before entering the hospital to make your home safer and more comfortable upon your return:

- **In the kitchen and elsewhere, place items that you use regularly at arm level so you do not have to reach up or bend down.**

- **As you will be wearing a sling, rearrange furniture if necessary to give yourself enough room to maneuver.**

- **Get a good, firm chair, preferably one that allows you to recline.**

- **Remove loose carpets and rearrange electrical cords in the areas where you will be walking.**

- **Set up a “recovery center” in your home, with the phone, television remote control, radio, facial tissues, wastebasket, pitcher and glass, reading materials, and medications within reach.**
Keeping track of all this information can be overwhelming. Please feel free to ask questions or share concerns with any of your caregivers at any time. You can contact your surgeon or your surgeon’s office manager at any time.

**The day before your surgery**

You will receive a telephone call from the hospital after 5:00 PM on the weekday before your surgery telling you when to come to the hospital and exactly where to go. For example, if your surgery is on Tuesday, the hospital will call you on Monday night; if your surgery is on Monday, the call will be on Friday night. Your arrival may be scheduled for as early as 6:00 AM, so be sure to get a good night’s sleep. It is important that you arrive on time because if you are late, your surgery will have to be rescheduled.

**About diet:** You may eat normally on the day before your surgery, but do not drink alcohol. **DO NOT EAT OR DRINK ANYTHING AFTER MIDNIGHT.** This is important so that it will not interfere with your anesthesia. The only exception is if your doctor specifically instructs you to take medication with a sip of water. Shower and shampoo either the night before or the morning of your surgery.

**The day of your surgery**

On the day of surgery:

- You may brush your teeth and rinse your mouth—without swallowing any water.
- Wear comfortable, loose-fitting clothing and flat, non-slip, walking or athletic shoes.
- Leave valuable possessions at home or give them to a family member for safekeeping. (See “What and what not to bring to the hospital,” page 9.)

Once you arrive at the hospital:

- You will be provided with a gown and disposable undergarments for your comfort. Your own clothing and personal belongings will be safely stored.
- You will be asked to fill out an operative consent form, to review it, and to sign it along with your surgeon and a third-party witness. (If this was done previously, your surgeon will review the form with you again.) Your surgeon will also place his/her initials on the shoulder to be replaced as an extra precaution.

**Planning ahead for your discharge**

Whether or not you require “rehab” following your surgery depends on several factors, including your general state of health. Most patients can be safely discharged directly home. If your surgeon determines otherwise, a member of our Social Service Department will visit you a day or two after your surgery to give advice and help prepare the necessary paperwork for entry into a rehabilitation facility.

Every patient is visited by a case manager who works with you, your surgeon, and your insurance provider to make your discharge from the hospital as smooth as possible. Patients who are admitted to acute (in-house) rehabilitation will additionally be helped by a discharge planner. If you have any concerns about your ability to manage your personal care, mobility, medications, or other recovery needs once you return home, bring them up with your case manager and/or discharge planner: they are trained to help you in these matters.

Please note that discharge time is 11:00 AM.

Once you are home, we continue to provide care. Depending on your needs, a member of our Social Service Department can arrange for a visiting nurse, a home therapist, or in some cases a home health aide to check on you several times during the week for the first few weeks after your surgery.

**Getting to the hospital**

**If your surgery is at the NYU Hospital for Joint Diseases:**
Go to the NYU Hospital for Joint Diseases at 301 East 17th Street, which is on the corner of Second Avenue, and proceed to the location you were told the night before.

**If your surgery is at Tisch Hospital–NYU Langone Medical Center:**
Go to Tisch Hospital at 530 First Avenue, which is between East 30th and 31st Streets, and proceed to the location you were told the night before.
• Your anesthesiologist will go over with you the type of anesthesia to be used for your surgery. After that explanation, you will be asked to complete, review, and sign a consent form specifically for the anesthesia. When the operating room is ready, you will be escorted there by a nurse.

During your surgery, your family and friends may wait in any of several comfortable hospital locations, including the NYU Hospital for Joint Diseases’ waiting room (C1 level), Tisch Hospital’s solarium (15th floor), and the cafeteria (13th floor at NYU HJD, ground floor at Tisch). With your permission, your surgeon will speak with them after your surgery.

Anesthesia
Anesthesia is the process of inducing a pain-free, tranquil, sleep-like state for your surgery. Your anesthesiologist has several techniques to carry you through surgery comfortably and without pain. Some medical conditions may make one technique preferable. You should discuss this with both your surgeon and your anesthesiologist. Whichever technique is chosen, be assured that your operating room experience will be a painless and tranquil one.

**General anesthesia.** First you are given medication to induce a sleep-like state, followed by a gas anesthetic agent administered via a mask into your lungs. Throughout the operation you will be attached to monitors that display information on your heart rhythm and rate, oxygen level in your bloodstream, body temperature, and blood pressure. Your anesthesiologist continually checks these monitors.

**Regional Anesthesia.** Some patients reject regional anesthesia because they think that they will be awake during the procedure. This is not true. In regional anesthesia, you also receive medications that allow you to sleep peacefully throughout the operation. Unlike general anesthesia, when regional anesthesia is discontinued you will awaken almost immediately and without pain (because the anesthesia is still working). Most often for shoulder surgery an intrascalen block is used in combination with light sedation. When this type of anesthesia is used, you are monitored as described above for general anesthesia.

What and what not to bring to the hospital

**DO bring to the hospital**
- Toiletries (toothbrush etc.)
- Your cane or crutches, if needed
- Eyeglasses—not contact lenses
- Dentures/hearing aid.
  A container will be provided for these, which you should keep on your bedside table or in a drawer—not on the bed or a food tray.
- A list of your medications, including the ones you have recently stopped taking at your surgeon’s request
- Important telephone numbers
- Small amount of cash—for newspapers, etc.
- Credit card or 2-3 checks—for TV and telephone services
- A book, magazine, or hobby item for relaxation
- This Guide.

**DO NOT bring to the hospital**
- Medications—unless asked by your surgeon
- Valuables—jewelry, large amounts of cash, credit cards (other than for the TV etc.—see other column), wallet, watch

All hospital staff members respect your property rights, but we cannot guarantee security for your personal property.

Surgery preparation checklist

**The night before your surgery:**
- Shower (may be done day of surgery if time permits).
- Nothing to eat or drink after midnight.
- Review this Guide.
- Get a good night’s rest.

**The day of your surgery:**
- Take routine medications with only a sip of water—*as instructed by your doctor*.
- Brush your teeth and rinse—*without swallowing*.
- Wear comfortable clothing.
- Leave valuables at home or with a family member.
Arthritis of the shoulder

In a normal shoulder, the humeral head ("ball") at the top of the arm bone rotates smoothly inside the glenoid cavity ("socket"). Arthritis of the shoulder develops when the normally smooth, gliding surfaces of the ball and socket are damaged.

The most common form of shoulder arthritis, osteoarthritis, typically develops in older patients after a lifetime of wear and tear. Less common forms of arthritis include posttraumatic arthritis (arthritis that occurs after a broken bone or other injury) and inflammatory arthritis (an autoimmune disease that destroys the joint). If the muscles surrounding the shoulder are severely damaged, the altered shoulder motion can wear out the gliding surfaces and lead to another form of arthritis called rotator cuff arthropathy.

In shoulder replacement surgery, the damaged joint is replaced with biocompatible devices that provide a smooth and painless range of motion. Your surgeon will make every effort to restore your shoulder to a condition that resembles its previous healthy status. You should discuss what realistic outcome to expect with your surgeon.
Getting the most out of your surgery

When your surgery is complete you will be taken to a recovery room, where you will wake to find your operated arm protected in a sling. Nursing staff in the recovery room will make sure that you are comfortable and get you ready for your recovery.

After surgery, you will be admitted into the hospital for in-patient monitoring. Most patients require about two days of hospital stay, but this will ultimately depend on how fast you are recovering from the surgery. While you are in the hospital, you will receive medication to control your pain, and your health will be carefully monitored. In addition, you will likely begin exercises to regain shoulder motion with the help of our therapists.

Once you are home, contact your surgeon’s office to make a follow-up appointment (usually about 1-2 weeks after surgery). At this visit, your surgeon will check your surgical incision and plan your continued rehabilitation, including beginning shoulder exercises if you have not already instructed to do so. Shoulder exercises can be performed at home or on an outpatient basis at the hospital with supervised therapy. The specifics of your rehabilitation will be determined by your surgeon based on your condition.

Pain management

Many patients are understandably concerned about postoperative pain. Pain control has become very sophisticated. Usually the level of discomfort is easily manageable with oral or injected pain medication.

Some patients receive IV-PCA—intravenous patient-controlled analgesia—for a day or two following surgery: this allows the patient to self-administer a safe and effective amount of pain medication through an IV tube by pressing a button.

Exercise is crucial for proper rehabilitation (see pages 14-15). Therapy may continue for four to six months after your surgery. Proper rehabilitation under your surgeon’s guidance will result in a more successful recovery. Most patients are able to resume waist-level activities—actions, such as typing and writing, that do not require you to raise your arm—in the first week following surgery. Driving may begin three to four weeks after the surgery depending on your condition. Activities such as golf can usually be eventually resumed, but only after a thorough evaluation by your surgeon. It is important to remember that recovery time varies for each patient.

After recovery, your surgeon will likely continue to evaluate your progress on a yearly basis. These evaluations may or may not require x-rays. In order to prevent catastrophic complications, it is important to see your surgeon if you notice any unusual changes associated with your new joint.

Your care team

- Your surgeon
- Nurses
- Nurse practitioners
- Physical therapist or occupational therapist
- Fellows and residents: licensed physicians undergoing specialized postgraduate training in orthopaedic surgery
- Internist: a specialized physician selected by your surgeon to assist in the medical management of your postoperative care
- Pain specialists: a physician and a nurse practitioner who specialize in pain management
- Rehabilitation specialist: a physician trained to determine the level of care you will require once you leave the hospital

One or more of the above care team physicians, depending on your needs, will visit you “on rounds” every day that you are in the hospital.
Exercises after surgery

Most patients will begin exercising in the hospital shortly after surgery, under the supervision of our therapists. A few patients will be asked to wait until the surgeon gives them the go-ahead, usually after the first office visit following surgery. In either case, it is important that you continue doing these exercises at home.

The following exercises will help maintain and increase motion of the replaced shoulder. They are best performed while lying down with the operated shoulder completely relaxed. Once your sutures have been removed, you can take a warm shower or apply a moist heating pad to the operated shoulder beforehand to “loosen” it before starting the exercises.

In each exercise, the arm with the replaced shoulder should be moved by the other (“normal”) arm, by gravity, or by another person. In other words, do not move the arm with your replaced shoulder on its own. This is necessary to avoid excessive strain on the tendons and muscles that were repaired during your surgery. Finally, it is important that you perform all exercises SLOWLY.

If you have any questions regarding exercises, contact your surgeon’s office.

Passive external rotation exercise

Note: Your therapist will provide you with a tube or stick for this exercise.

Lie on your back and relax your shoulders. With your arms close to your sides, bend your elbows so that they are at a right angle to your body. Grasp the tube/stick with both hands. With the normal arm, slowly push the arm with the replaced shoulder outward. Always use your normal arm to supply the power to move the operated shoulder. Relaxing the shoulder muscles is key to minimizing pain during the exercise.

- Do this exercise 5 times in a row.
- Perform 1-2 sets of these 5 repetitions every day.

Additional exercises

The following exercises are important for preventing stiffness in your elbow, wrist, and hands. They can be performed almost continuously. At a minimum, you should perform five sets of 10 repetitions of each exercise every day. As with all exercises, they should be performed slowly.

On your operated side:

1. Bend and straighten your elbow.
2. Twist your wrist so that your palm turns up and down.
3. Bend your wrist up and down.
4. Open and close your hand.
Resuming your normal activities

After surgery most shoulder replacement patients experience a dramatic reduction in joint pain and a significant improvement in their ability to participate in the activities of daily living. Be aware, however, that recovery takes time. Expect to feel a bit more tired than usual for a few weeks. Your surgery is a major event. Give yourself time to regain your strength and self-confidence. Stay active—just don’t overdo it! You will notice a gradual improvement over time in your strength and endurance.

Once you are home, you will want to keep track of the state of your new shoulder as well as your general health for several weeks. In particular:

- Take your temperature twice daily and notify your doctor if it exceeds 100.5°F.
- Take all medications as directed.
- Notify your doctor immediately if you notice tenderness, redness, or pain in your calf, chest pain, and/or shortness of breath. These are all signs of a possible blood clot.

Because you have an artificial joint, it is especially important to prevent bacteria from entering your bloodstream that could settle in your joint implant. You should take antibiotics whenever there is the possibility of a bacterial infection, such as when you have dental work. Be sure to notify your dentist that you have a joint implant; they are trained to prescribe antibiotics for you to take by mouth prior to an extraction, periodontal work, dental implant, or root canal work.

- Diet: By the time you come home from the hospital, you should be eating a normal diet. Your physician may recommend that you take iron and vitamin supplements. Continue to drink plenty of fluids. Try to limit your coffee intake, and avoid alcoholic beverages altogether. You should continue to watch your weight to avoid putting more stress on the joint.

- Return to work: In your first follow-up visit (usually about two weeks after surgery), your surgeon will determine whether you can return to work. As long as your shoulder can be protected in the sling, you may be able to return to work as early as two to four weeks after surgery—but don’t push yourself too hard! If your work is physically demanding, it may take more time to return to full capacity.

- Showering: After surgery you may shower as soon and as often as you wish so long as you:
  — Cover the incision site with plastic wrap taped into place to prevent the incision and dressing from getting wet; and
  — Do nothing with the arm on your operated side—just let it hang at your side.

  The key here is to keep the incision and dressing dry and not to move your operated shoulder. If your dressing becomes wet, remove it and replace it with a clean, dry dressing.

- Driving: How long after surgery you can resume driving a car can vary widely depending on your surgery, pain level, and recovery process. In general, your pain has to be minimal so that you are no longer taking any pain medication (such as Vicodin or Percocet) that can impair your ability to drive. In addition, for up to three months, the arm with the replaced shoulder will need to be at your side to only stabilize the steering wheel. You will have to do most steering with the hand on your nonoperated side. To be safe, speak with your surgeon specifically about this issue and obtain your surgeon’s permission before returning to driving.

- Airport security screening: The amount of metal in a typical shoulder replacement is not enough to set off metal detectors in airports or other high-security areas. Nevertheless, to be on the safe side, your surgeon will provide you with signed documentation, which you can present to a security agent, certifying that you have metal-containing implants in your body.

Taking care of your surgical incision

Your surgical incision will be closed using sutures or staples that will be removed about two weeks after your surgery. (In some cases resorbable sutures are used that do not need be removed.) The following apply to taking care of your wound:

- Keep the area clean and dry. A dressing will be applied to the site in the hospital and should be changed as necessary. Ask for instructions on how to change the dressing if you are not sure.
- Notify your doctor if the wound appears red or begins to drain.
- Some swelling is normal for the first threee to six months after surgery.
Risk factors and complications

There are risks in any type of surgery, not just shoulder replacement surgery. The general risks of shoulder replacement surgery—such as a bad reaction to anesthesia, stroke, or heart attack—are no greater than in most other types of surgery.

The following are among the possible complications following shoulder replacement surgery. While this list is not complete, it includes some of the more concerning complications that require your attention.

**Dislocation.** Any shoulder replacement can dislocate (“pop out”) in the first few months after the surgery. Fortunately, this is one complication that you can do much to prevent. Most surgeons recommend wearing a sling to protect the shoulder. Even in the sling, however, the shoulder can dislocate if the arm is brought backwards. Make sure to keep your operated arm either in front of you or at your side. While lying down to sleep or rest, it will help to place a pillow under the elbow of the operated arm to maintain this position.

If you do dislocate your shoulder, notify your surgeon at once. Your surgeon will instruct you on how to get help immediately—either at his/her hospital or the nearest emergency room. Every orthopaedic surgeon knows how to reduce a dislocated shoulder replacement (“pop it back in”).

**Implant loosening and wear.** The typical shoulder replacement has a 90-95% probability of lasting more than 10 years. Over time, however, the implant may wear out enough to require a second replacement. To slow down this wear, avoid all strenuous or repetitive overhead activities. Your surgeon will give you general guidelines of how the shoulder can be used after the surgery. Be sure to ask your surgeon for recommendations about any specific activity.

**Infection.** Although infection in a shoulder replacement is relatively rare, it is a serious complication that requires immediate treatment. In some cases, the implants have to be removed in order to eradicate the infection. Many infections can be avoided. For example, most dental procedures, including routine cleaning, carry the risk of bacteria entering the bloodstream to infect the shoulder implants. Taking an oral antibiotic, prescribed by your dentist, an hour before your procedure can greatly reduce or even eliminate this risk. The same rule applies to other medical procedures, such as colonoscopy.

**Nerve or blood vessel injury.** Similar to other surgeries, there is a risk of damage to nerves or blood vessels during shoulder replacement surgery, although this risk is extremely low. In addition, while you are in the hospital after the surgery, you will be regularly monitored for such injuries. If you experience severe numbness or weakness in your hand, notify your nurse or doctor immediately.
WE KEEP YOU MOVING

Patient Guide to Total Shoulder Replacement

NYU Hospital for Joint Diseases
Joint Replacement Center of NYC