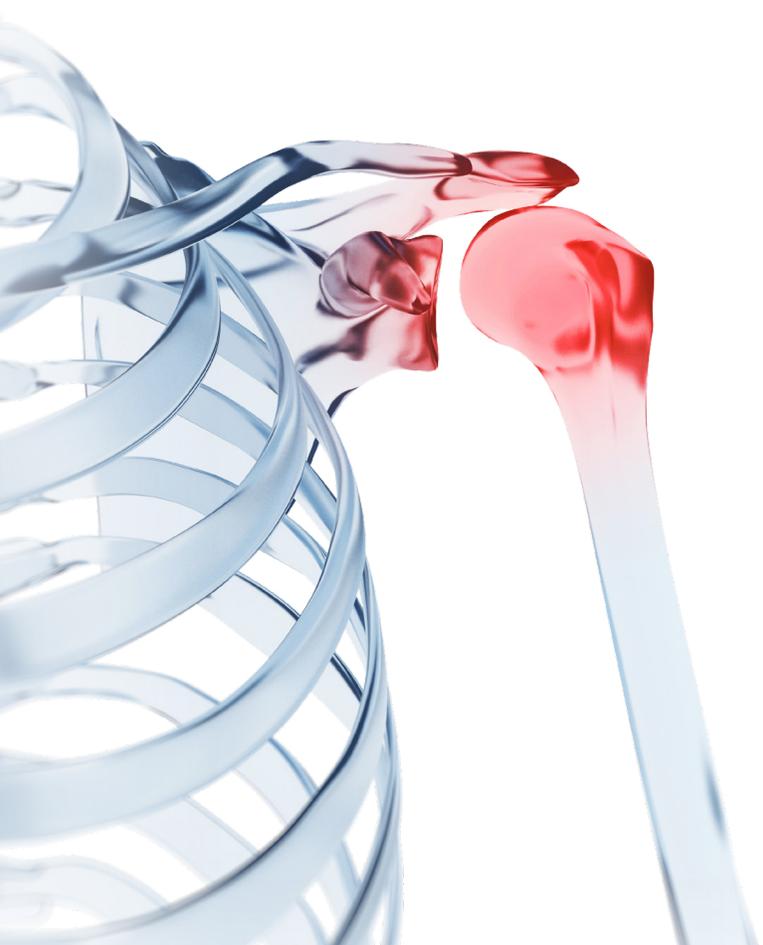


# What to Expect **Reverse Total Shoulder Replacement**

 COLUMBIA | ORTHOPEDICS

A patient's guide for pre-operative expectations and post-operative recovery and rehabilitation



 **New York-Presbyterian**

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# Welcome

## Dear Patient,

Welcome to NewYork-Presbyterian and Columbia Orthopedics. We have developed this guide to help you get the most out of your hospital experience, before, during, and after your hospital stay. The objectives of this guide are:

- To help prepare you for surgery and your hospital experience
- To optimize your recovery after shoulder replacement, both in the hospital and later at home

It is important to remember that this is only a general guide to recovery from your surgery. Keep in mind that not all patients have the same medical conditions or needs. Therefore, your physician or therapist may make changes from this book. **Their changes to this guide take precedence.**

As one of the top medical centers in the country, we offer reverse total shoulder replacement surgery to patients whose complex medical conditions have prevented them from undergoing surgery in other institutions. Our staff are committed to performing with excellence, and our primary goal is the help you achieve optimal success from your surgery. They complement and support the outstanding surgical and medical staff for which NewYork-Presbyterian and Columbia University Irving Medical Center are world-renowned.

You are the driving force toward a successful recovery! You can help achieve optimal results from this surgery by becoming an active, helpful part of the NYP/Columbia team before, during, and after your surgery. To a large degree, the long-range benefits of your surgery depend on the success of your continuing rehabilitation at home. Therefore, we hope you will continue what the team has taught you long after you have left our immediate care. This book will be your guide throughout the recovery process, so it is important for you and your home care helper(s) to read this book carefully, and refer to it throughout your hospitalization and recovery. Bring this book to the hospital with you, so you can refer to it as needed.

Sincerely,

Columbia Orthopedics Shoulder Team

## Your Clinical Care Team

Role	Name	Contact Information
Orthopedic Surgeon		
Physician / Internist		
Anesthesiologist		
Pre-Op Educator/ Orthopedic Coordinator		
Nurse Manager		
Social Worker or Case Manager		
Pharmacy		
Residents		
Nurse Practitioner		
Nurse		
Physical Therapist Occupational Therapist		
Others:		

## I. PREPARING FOR SURGERY

## What is Reverse Total Shoulder Replacement?

Every year, thousands of conventional total shoulder replacements are successfully done in the United States for patients with shoulder arthritis. This type of surgery, however, is not as beneficial for patients with large rotator cuff tears who have developed a complex type of shoulder arthritis called "cuff tear arthropathy." For these patients, conventional total shoulder replacement may result in pain and limited motion, and therefore reverse total shoulder replacement is a better option.

### How the Normal Shoulder Works

The shoulder is a ball-and-socket joint that permits the arm to be moved in many directions, especially overhead, and allows us to perform basic activities of daily living.

The shoulder is one of the most flexible joints in the body, and it can achieve a large range of motion. It is comprised of three bones: the upper arm bone (humerus), the shoulder blade (scapula), and the collarbone (clavicle). Two joints are responsible for shoulder movement: the scapulothoracic and the glenohumeral joint; which is the familiar ball-and-socket structure that in combination with the scapulothoracic joint allows normal range of motion.

Stability in the shoulder joint is provided by both static structures (ligaments, labrum and glenoid) and dynamic structures (rotator cuff muscles with their tendons attachments). Tendons are tough cords of tissue that attach the shoulder muscles to the bones and assist the muscles in moving the shoulder. Ligaments attach shoulder bones to each other, providing stability. The head of the upper arm bone (humeral head) rests in a shallow socket in the shoulder blade called the glenoid. A firm cartilage rim (labrum) surrounds the socket to help stabilize the joint and serves as an attachment site for several ligaments.

The deltoid muscle is a thick triangular muscle covering the shoulder joint and is used to raise the arm from the side. The rotator cuff is comprised of four tendons that attach to the top of the humerus and provide both mobility and stability to the shoulder. Tears in the rotator cuff muscles or tendon can lead to instability, and premature development of glenohumeral arthritis. The glenoid socket and humeral head are both cushioned by articular cartilage a smooth substance that cushions the bones and enables them to move easily.

All remaining surfaces of the shoulder joint are covered by a thin, smooth tissue called the synovial membrane. This membrane releases a fluid that lubricates the shoulder which significantly reduces friction in a healthy shoulder.

Normally, all of these structures work synergistically to produce pain free shoulder motion. However, disease or injury can disrupt this synergy (as with rotator cuff tears), resulting in pain, muscle weakness, and less function.

## I. PREPARING FOR SURGERY

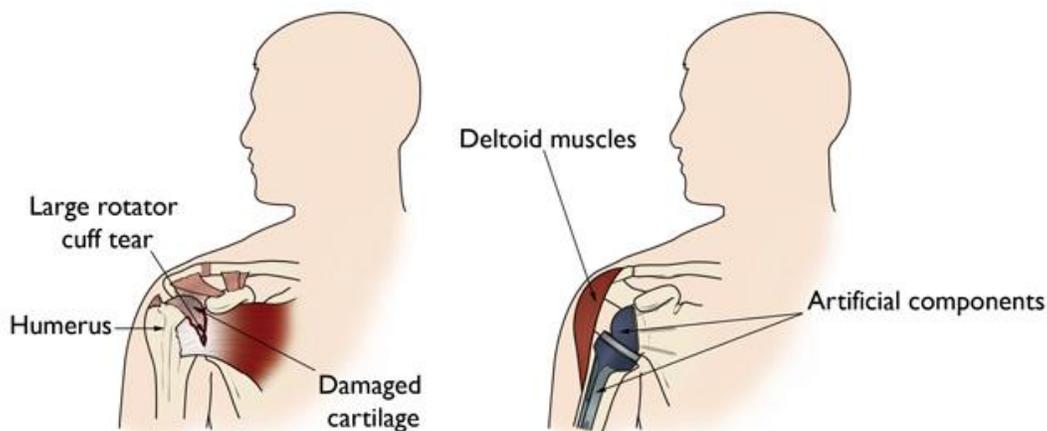
## What is Reverse Total Shoulder Replacement?

### What is Shoulder Arthritis

Arthritis is joint swelling and inflammation that leads to damage to the bony joint surfaces and the articular cartilage. These abnormal surfaces rubbing against each other causes tissue breakdown resulting in pain, stiffness, rubbing noises (crepitus), muscle weakness, and finally a loss of function.

### What is Rotator Cuff Arthropathy?

Rotator cuff arthropathy is clinical pattern of glenohumeral arthritis that results from rotator cuff tears that ultimately leads to joint surface wear, migration of the humeral head upwards, bony changes and eventually humeral head collapse.



### Attempt Non-Surgical Treatment First

Before patients with rotator cuff arthropathy are considered candidates for surgery, they must attempt non-surgical management. Non-surgical management usually consists of activity modifications, physical therapy to improve rotator cuff strength and range of motion, medications including NSAIDs (non-steroidal anti-inflammatory drugs: Ibuprofen and Naprosyn for example are often recommended to decrease inflammation and pain). Occasionally, cortisone injections into the shoulder joint may be used to treat acute pain from inflammation, but do not typically result in long-term benefits. No more than 3 injections are recommended prior to having surgery.

## I. PREPARING FOR SURGERY

## What is Reverse Total Shoulder Replacement?

### Indications for Surgery

A reverse total shoulder replacement works better than a typical shoulder replacement for people with cuff tear arthropathy because it relies on different muscles to move the arm. In a healthy shoulder, the rotator cuff muscles help position and power the arm during range of motion. A conventional shoulder replacement device uses the rotator cuff muscles to function properly. In a patient with a large rotator cuff tear and cuff tear arthropathy, these muscles no longer function. The reverse total shoulder replacement relies on the deltoid muscle, instead of the rotator cuff, to power and position the arm.

This surgery was originally designed in the 1980s in Europe. The Food and Drug Administration (FDA) approved its use in the United States in 2003.

Reverse total shoulder replacement may be recommended if you have:

- A completely torn rotator cuff that cannot be repaired
- Cuff tear arthropathy
- A previous shoulder replacement that was unsuccessful
- Severe shoulder pain and difficulty lifting your arm away from your side or over your head
- A complex fracture of the shoulder joint
- A chronic shoulder dislocation
- A tumor of the shoulder joint
- Tried other treatments, such as rest, medications, cortisone injections, and physical therapy, that have not relieved shoulder pain

### Realistic Expectations about Reverse Shoulder Replacement

An important factor in deciding whether or not to have reverse shoulder replacement surgery is understanding what the procedure can and can't do. After rehabilitation, most patients will be able lift their arms above shoulder height and bend your elbow to reach the top of your head or into a cupboard. Reverse total shoulder replacement primary purpose is pain relief and therefore patient satisfaction is typically quite high.

## I. PREPARING FOR SURGERY

## What is Reverse Total Shoulder Replacement?

### The Surgical Procedure

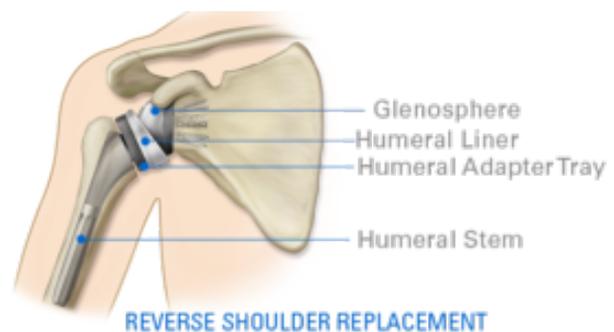
A reverse shoulder replacement surgery involves replacement of the head of the humerus with a humeral socket with stem and then the glenoid is resurfaced with a glenoid plate and a glenosphere attachment. The reverse shoulder replacement is called “Reverse” because the metal ball is placed on the original socket side while the plastic socket is placed on the arm side of the joint. Hence, the ball and socket are reversed from their original locations.

The surgery is performed through an incision in front of the shoulder that is approximately five to six inches in length and can take up to two and a half hours to perform, depending on the severity of shoulder damage, removal of bony spurs and scar tissue removal. The surgeon removes the humeral head due to the damaged cartilage and prepares the shaft so that it can accommodate the implant stem. Bone cement is applied to the prepared humeral shaft before the artificial stem and humeral socket is implanted. Bone cement and screws are typically used to implant the artificial glenoid plate. If necessary, the surgeon may adjust the ligaments that surround the shoulder to achieve the best possible shoulder function.

When the ligaments are properly adjusted, the surgeon sews the layers of tissue back into their proper position. A glenosphere is firmly attached to the glenoid which completes the instrumentation phase. A drain **MAY** be inserted into the wound to allow blood to drain from the surgical site during the first few hours after surgery. Finally, the edges of the skin are sewn together with sutures below the skin surface and sealed with Dermabond (a type of skin glue), followed by a sterile bandage. An x-ray is performed to assure proper position of the components and a sling applied to maintain the correct position. The patient is then taken to the recovery room to ensure that the patient is medically stable and comfortable before discharge to the floor or home depending on your individual surgical plan (be sure to discuss with your surgeon).

### The Prosthesis Components

- **Humeral Stem/humeral cup:**  
Usually made of cobalt chrome-based alloys or titanium which then replaces the head of the humerus (ball) and includes a shaft that is inserted into the humerus
- **Glenosphere:**  
Usually made of cobalt chrome
- **Humeral liner:**  
Made of high density polyethylene



## I. PREPARING FOR SURGERY

## What is Reverse Total Shoulder Replacement?

### After the Surgery

You may feel some numbness in the skin around your incision. This is entirely normal. Swelling may occur in the operative arm. You also may feel some stiffness, particularly with reaching activities. Long term improvement in pain after the replacement is the primary goal, but restoration of full motion is uncommon. Many people with rotator cuff arthropathy have limited shoulder motion before surgery and it is important to note that their final motion will improve, but will often never be as full as it was prior to the onset of arthritis.



*Arm Sling*

Most patients can expect to raise the hand overhead and out to the side but reaching behind the back may continue to be difficult. Occasionally, you may feel some soft clicking of the metal and plastic with shoulder motion— this is entirely normal. These differences often diminish with time and most patients find these are minor, compared to the pain and limited function they experienced prior to surgery. Your new shoulder may activate metal detectors required for security in airports and some buildings. Tell the security agent about your shoulder replacement if the alarm is activated.

### Long Term Expectations and Durability

The prosthesis itself can last for 15-20 years. But as time passes, with normal use and activity, every shoulder replacement may develop some wear in its plastic socket or loosening of the glenoid. Excessive activity or weight may accelerate this normal glenoid wear, causing the shoulder replacement to loosen and become painful. With appropriate activity modification, your replacement can last for many years. If further surgical intervention is necessary the old prosthesis can be replaced with new components.

## I. PREPARING FOR SURGERY

## Your Pre-Op Checklist

### Things to Discuss with Your Doctor

- The planned surgery and the anticipated recovery
- Obtaining ALL outside pre-op x-rays and scans prior to surgery
- Any allergies
- Minimizing opiate pain medication in the weeks prior to your surgery
- Any special concerns, including but not limited to:
  - Your planned living situation after surgery (your discharge plan)
  - Who will be staying with you for the first 24-72 hours after surgery
  - Return to work (timing and limitations)
- Key medications, specifically any blood thinning medications examples may include:
  - Aspirin
  - Plavix
  - Coumadin/Warfarin
  - Lovenox
  - Eliquis

You must discuss with your orthopedic surgeon and your internist/cardiologist if you should continue or stop these medications before surgery. Most patients on Aspirin should continue their Aspirin including the day of surgery. Most patients should discontinue their Plavix, Coumadin/Warfarin, Lovenox or Eliquis prior to surgery. Please discuss with your physicians for guidance.

- You must discontinue taking any anti-inflammatory medications **One Week** prior to surgery. Examples include:
  - Motrin
  - Ibuprofen
  - Aleve / Advil
  - Mobic / Meloxicam
- You may also be advised to stop taking these medications/supplements **One Week** prior to surgery:
  - Herbal supplements
  - Fish oil, Vitamin E / Omega-3 supplements

I. PREPARING FOR SURGERY

## Your Pre-Op Checklist

Pre-surgical Screening Appointments

Our Surgical Scheduling office will assist you in setting up surgery and discuss any necessary pre-op tests. You will undergo diagnostic testing (for example x-rays, EKG, blood tests, urine etc.) and medical evaluation to clear you for surgery

When these appointments have been arranged, enter them here:

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_

***BRING YOUR MEDICAL HISTORY INFORMATION AND A LIST OF YOUR CURRENT MEDICATIONS TO THESE PRE-OP TESTING APPOINTMENTS***

Pre-op testing is best done with a Columbia/NYPH affiliated provider. However, we understand that in some circumstances pre-op testing must be done outside of our system. In these situations, **your active participation** is crucial to make sure that all of the information needed to clear you for surgery is sent to us in a timely fashion

### Things To Do Before Surgery

Pre-surgical Questionnaire

You may receive a questionnaire in the mail or by email. Please complete this required form in a timely manner before your surgery. If you have any questions about this form call your physician’s office.

Contact your Pre-Op Educator

If your MD requires a Pre-Op Education, please be sure to schedule with the appropriate educator. Pre-Op education will help answer many frequently answered questions and is provided free of charge.

**NewYork-Presbyterian/Lawrence Hospital:** The ASU staff will contact you and provide you the date and time for your pre-op interview as well as your mandatory pre-op education session. Please contact 914.787.4993 with any questions.

**NewYork-Presbyterian/Columbia University Irving Medical Center:** Contact the patient educator by calling 212.305.3521 to arrange your pre-op education session, which can be done in-person or over the phone.

## I. PREPARING FOR SURGERY

## Your Pre-Op Checklist

 **Nutrition**

Your body will need to heal from surgery and the better your nutrition, the faster and better your recovery will be. Great nutrition starts with increasing your protein intake (fish, egg whites, chicken, and nuts) and decreasing carbohydrate intake (breads, rice, pasta and limit sugary snacks). Increasing vegetable and fiber intake will help you maintain normal stomach function after surgery.

 **Vitamins**

You will help your body by taking a multivitamin daily. In addition, it may be beneficial to start taking Iron, Vitamin D, and Calcium.

 **Diabetes**

If you have diabetes, it is critical to achieve tight control of your diabetes. In general, you are not eligible for surgery if your blood sugar is high.

 **Exercises**

The stronger you are before surgery, the better your recovery will be after surgery. Please do appropriate pre-op exercises as indicated by your surgeon. The more flexible you are the better.

 **Dental Examination**

Poor dental hygiene may contribute to the risk of infections related to joint replacement surgery. We recommend a visit to your dentist for any outstanding dental problems or procedures that need to be addressed at least 3 weeks prior to undergoing joint replacement surgery.

 **Smoking**

Smoking of any kind must be stopped prior to your joint replacement surgery.

## I. PREPARING FOR SURGERY

## Your Pre-Op Checklist

### On the Day Before Surgery

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#### Time and Place to Arrive at the Hospital

On the business day prior to surgery (this will be Friday for Monday surgeries) the hospital nurse will call the number you provided during the following timeframe:

NewYork-Presbyterian/Columbia University Irving Medical Center: between 3:30 - 6:00 pm

NewYork-Presbyterian/Lawrence Hospital: between 5:00 - 7:00 pm

If your physical condition changes in the days before surgery – cold, rash, cough, fever, or stomach upset please notify your doctor. He or she may want to reschedule your surgery.

#### Wash

Take a shower the night before surgery. Scrub your entire upper extremity, arm, hand, arm pit and under your fingernails. Do not shave the hair under your armpit. Use the Chlorhexidine (CHG) cleanser if instructed. (Please contact your physician's office if you have not received your CHG cleanser).

#### Bowel Preparation

The day prior to surgery, consume a SOFT diet, if possible. Soft foods may include: soups, sugar free Jell-O or custard, yogurt, oatmeal, cold cereals, etc. Drink plenty of water in the daytime so you are well hydrated.

#### When to Stop Eating and Drinking

Do not eat ANYTHING after midnight the night before surgery, unless otherwise instructed. You will receive instructions about pre-op hydration in your pre-op education session. If your internist instructs you to take any necessary medication the morning of surgery, do so with a small sip of water. If you have questions about this, confirm with your internist

Do not use alcohol or sedatives 24 hours before surgery.

## I. PREPARING FOR SURGERY

## Planning for Your Hospital Stay

*(for patients staying overnight at the hospital)*

Personal articles and clothing should be limited to those that fit into a single, small piece of luggage (the size of an airplane carry-on). There is very little storage space in your hospital room, so we suggest that you plan your packing in two phases:

### Phase 1: For the hospital

- Please bring in the items you will want during your hospital stay (toiletries, robe, magazines etc.). If you expect family or someone else to visit you soon as you go to your room, it may be most convenient for them to bring in the things you want in the hospital.
- Electric razors and battery-operated appliances are the only appliances you may bring to the hospital. This is to protect you and other patients.
- Women: Your surgery may trigger a change in your menstrual cycle. Sanitary pads are available and will be provided by the hospital.

### Phase 2: For your trip home

- Loose fitting shirt which opens in the front, non-skid shoes, jacket/coat (in season), etc.
- These items should be brought in by a family member or friend on the day you leave.

### Relaxation Items

Reading materials or personal articles may help you to relax. TV and telephone services are available in your room.

### Medications

Once you arrive at NYP, the hospital will usually supply your medications. However, we suggest that you bring your medications in case there are any issues with our pharmacy. If you bring your own supply, it will be deposited in the hospital pharmacy safe. Bring all prescription medications in their original containers so they can be identified by the hospital pharmacist. The nursing staff will keep the medications for you and administer them as prescribed.



## I. PREPARING FOR SURGERY

## What to Bring to the Hospital

*(for patients staying overnight at the hospital)*

### Item

- 
- Surgical Consent signed by you (if not previously provided), and Health Care Proxy
- 
- X-rays and lab reports (if requested)
- 
- Bring a written list of the medications you have been taking  
*(include any you may have stopped in anticipation of surgery and for medications you take only as needed please include the average number of times you do take the medicine each day or each week, if not every day)*
- 
- Flat supportive slip-on athletic or walking shoes that are non-skid, any orthotics if you use them, and a loose fitting shirt which opens in the front.
- 
- Short bathrobe *(Short clothing helps prevent tripping while walking)* If you prefer not to bring in a robe, the hospital does provide hospital gowns
- 
- Personal toiletries - The hospital provides basic toiletry articles  
If you prefer a special type of soap or lotion or deodorant, please bring them
- 
- Eyeglasses instead of contact lenses  
*(They are easier to take off and less likely to be lost in the hospital  
We cannot be responsible if you lose them)*
- 
- Dentures: we will provide a container which you must use  
*(When you remove them, make sure to keep the container on your bedside table or in a drawer, not on the bed or a food tray. As with glasses, we cannot be responsible for loss)*
- 
- Your “What To Expect: Reverse Total Shoulder Replacement” patient education book

## II. DAY OF SURGERY

## Day of Surgery

Please arrive at the time instructed. In the Admitting area you will be greeted by the nursing staff. Your clothes and possessions will be labeled and held securely by staff during your procedure and returned to you once you are in the recovery room or brought to your regular hospital room. The nursing staff will take your temperature, pulse, respiration, and blood pressure.

When you are ready for surgery, members of your surgical team will introduce themselves. Each person will have reviewed your medical record in light of their own role in your surgery. You will also see your Orthopedic surgeon in the pre-op area and your surgeon will sign the arm that is to be operated on. A nurse will start an IV which will be used to deliver fluids, sedatives, antibiotics, and other medications as needed.

### Anesthesia

You will meet your anesthesiologist just prior to your surgery. Your anesthesiologist is involved in all aspects of your care, including preoperative evaluation, monitoring your physical status during surgery, as well as postoperative care and pain control. When you meet the anesthesiologist, he/she will discuss the anesthetic options and insert an interscalene catheter which will be used for regional anesthesia. Please discuss all pain medications you have taken in the past as well as any significant alcohol consumption.

### Your Anesthesiologist in the Operating Room

While in the operating room, you are monitored constantly by your anesthesiologist. Many things are monitored, including blood pressure, heart rate, and temperature. After you are asleep various lines are placed to keep watch on your condition during surgery. Your anesthesiologist will discuss the use of these monitors.

### Blood Transfusions

Depending upon your surgery and medical conditions, you may require blood transfusion during surgery or post-operatively. Your anesthesiologist reduces the need for transfusion by lowering blood pressure during surgery, and occasionally using a blood recycling system.

We do not transfuse blood unless it is absolutely necessary.

## II. DAY OF SURGERY

# Post Anesthesia Care Unit (PACU)

## General Information

After surgery, you will need immediate, careful monitoring, while you recover from anesthesia and gradually awaken.

You will be moved directly from the Operating Room to a special Recovery Room, which we call the PACU (Post-Anesthesia Care Unit). In the PACU, you will be provided with oxygen, intravenous lines, and continuous cardiac and respiratory monitoring, while your anesthesia wears off.

The PACU is staffed by Registered Nurses who have advanced education and training in the post-operative care of patients undergoing orthopedic surgery. These nurses continuously monitor your condition and provide aid and comfort as you recover.

An anesthesiologist, a doctor who specializes in the care of patients undergoing surgery and who provides anesthesia, will also be in the PACU to monitor your recovery from anesthesia.

## Visitations while you are in PACU

Visitation in the PACU is limited in order to promote privacy for all patients, decrease the risk of infection, and to enhance the healing process.

Every effort will be made to provide your family with current information about your condition.

## Transfer to the Hospital Orthopedic Floor

Once you are medically stable and your post-surgical plan includes staying overnight, a room assignment will be confirmed, you will be transferred up to the regular hospital floor.

As a general rule, visitors are not allowed to stay overnight in patient rooms.

## III. INITIAL RECOVERY

## Pain Management Program

### Beginning your Pain Management Program

Pain management begins even before surgery. You will be given several medications that help with perioperative pain control and you may be given medicines that help prevent nausea before surgery in the preoperative area. Following your surgery, pain management begins in the PACU; the anesthesiologist and surgeon will take care of your pain. The Nurse Practitioner from Acute Pain Services may also visit you. We are aware that your surgery may be followed by pain, which may or may not begin to be felt in the PACU.

You will remain in the PACU until your recovery is stabilized. The anesthesiologist or medical doctor will determine your readiness to be transferred to your in-patient hospital room or home depending on your post-operative plan.

### The Patient's Rights

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The patient has the right to expect management of pain to include but not be limited to:

- A concerned staff committed to pain prevention, when possible and management when pain occurs
- Information about pain and pain relief measures
- His/hers reports of pain to be respected
- Health professionals responding appropriately to reports of pain
- Availability of pain relief specialists

### The Patient's Responsibilities

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In order for the patient to have his/her pain treated effectively, it is important for the patient to:

- Request pain relief on a timely basis
- Work with the doctor and nurses to develop a pain management plan
- Help the doctor and nurses assess his/her pain and report whether the pain relief measures were effective
- Talk to the doctor and nurse about worries concerning taking pain medication

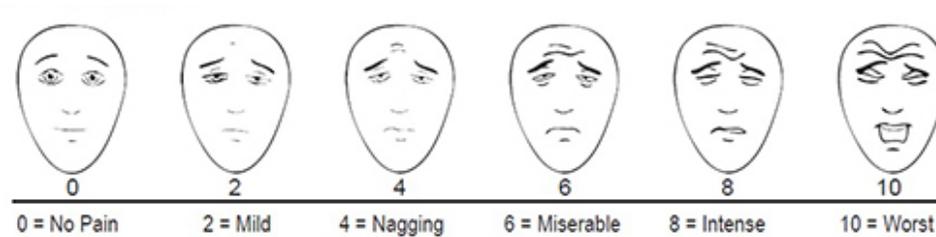
## III. INITIAL RECOVERY

## Pain Management Program

## Assessing Your Pain Level

Because there are no direct clinical tests or tools to measure pain, you must be ready to tell the staff what your pain feels like, where it is located, and if it changes at times. Sometimes pain is constant, other times it comes in bursts. Pain can be sharp, burning, tingling, or aching.

You will be asked to rate how much pain you have by using Pain Intensity Scales. Here is one example of a Pain Intensity Scale:



## Managing Your Pain

Even under your personal pain management program, your pain level may change at times. Be sure to tell your nurse if it becomes worse. Your pain is easier to control if you do not allow it to become severe before taking a pain medication. Please discuss the best schedule for you with your nurse.

Your need for pain control after surgery will be met immediately with an interscalene catheter, then by oral pain medications or rarely by Patient Controlled Analgesia (PCA).

With either method of pain medication, please notify your nurse or doctor if you are not getting enough pain relief. While it may not always be possible to get rid of all pain, we want you to be as comfortable as possible while you heal in order to help you be able to participate better in your recovery activities.

A day or two after surgery, your surgical pain will be less severe and you will be able to progress with various activities more readily. Oral pain medication helps patients resume daily activities with a minimum amount of discomfort. In addition, it is important to understand that oral medications can be prescribed in a way that makes them just as strong as other forms of medication.

## III. INITIAL RECOVERY

## Pain Management Program

### About Your Pain Medications

Several hours before your interscalene block begins to wear off, you will be switched to a pain medication given by mouth. By this time, your surgical pain will be less severe and you will be able to progress with various activities more readily. Oral pain medication helps patients resume daily activities with a minimum amount of discomfort. In addition, it is important to understand that oral medications can be prescribed in a way that makes them just as strong as other forms of medication.

Medications used to control pain are carefully prepared in order to assure quality and safety. Some of these medications include Morphine, Oxycodone, Hydromorphone (Dilaudid) and Fentanyl, which are opioids (Morphine like medications), and bupivacaine (Marcaine) or Ropivacaine, which are local anesthetics. Local anesthetics are a type of medication used to temporarily make a part of our body feel numb, so we do not feel pain. Novocaine, which you may have had at the dentist's office, is a type of local anesthetic.

Patients must inform their anesthesiologist and peri-operative nurse about any problems encountered with medications of any type in the past. You must also inform them of ANY medications you are taking or have taken in the last 30 days, including over the counter (OTC) medications and herbal supplements or medications.

For additional pain-relief we will provide you with ice packs or other cold therapy and introduce you to helpful relaxation exercises.

### Cold Therapy

Cold therapy in the form of ice packs or a cryotherapy method will also be provided as an intervention to reduce swelling and pain. Cold therapy produces an anesthetic (numbing) effect when placed on the surgical area.

We recommend that ice packs be applied to the surgery site with a barrier for 20 minute on / 20 minute off intervals throughout your hospitalization. **Don't hesitate to ask your nursing staff for ice packs between various activities.** Cold therapy may make the joint feel stiff at first. However, the pain relief usually outweighs the possibility for stiffness.

Cold therapy can be very helpful at home. If your arm and shoulder feels heavy, stiff and swollen, we recommend that you rest in bed with ice packs applied to the tender or swollen areas, and maintain elevation. It can be as simple as placing ice in 2 zippered bags, wrapping them in a pillow case, and using a thin towel as a barrier between the ice and the skin. And there are commercial cold packs available which you can keep cold, ready to use, in your refrigerator or freezer.

## III. INITIAL RECOVERY

## Pain Management Program

### Relaxation Exercises

Relaxation exercises, such as slow rhythmic breathing, can help with handling any pain you may be feeling, as well as providing overall comfort.

1. Breathe in slowly and deeply- in through your nose, out through your mouth.
2. As you breathe out slowly, feel yourself beginning to relax, feel the tension leaving your body.
3. Now breathe in and out slowly and regularly, at whatever rate is comfortable for you. You may wish to try abdominal breathing (using your diaphragm). If you do not know how to do abdominal breathing, ask your nurse for assistance.
4. To help you focus on your breathing, breathe slowly and rhythmically. Breathe in and say silently, “in, two, three”; then breathe out and say silently to yourself, “out, two, three.”
5. It may help you to imagine that you are doing this in a place that is very calming and relaxing for you, such as lying in the sun at the beach or in your own special place.
6. You may possibly relax by performing steps 1 through 4 only once. But it may help to repeat steps 3 and 4 for up to 20 minutes.
7. End with a slow, deep breath. As you breathe out, say to yourself, “I feel alert and relaxed.” Then concentrate on staying that way.

## IV. RECOVERY &amp; REHABILITATION

## Overview of Post-Operative Recovery

Once you are out of surgery, here are some things to expect:

**Vital signs:** Your vital signs, which consist of blood pressure, pulse, respiratory rate and temperature, are taken frequently after surgery.

**Breathing and exercise:** You will be asked to breathe deeply, to use your incentive spirometer (described on following pages) and to exercise your legs often in order to prevent complications.

**Surgical dressing and drainage:** You will have a waterproof dressing around the surgical site. Instructions for the care of your surgical dressing will vary depending on your surgeon's preference. Your physician's office will provide instructions for the care of your specific dressing.

**Constipation:** The combination of anesthesia, inactivity, and strong pain medications (opioids, also known as narcotics) will slow down your digestive system. You may not have a bowel movement for several days following surgery. You may need stool softeners and laxatives. We recommend that you drink lots of water, prune juice, eat fruits, vegetables, and high fiber foods, and avoid red meat and cheese. If you follow these instructions and do eat lots of food containing fiber, make sure to drink plenty of water. Eating fiber without drinking water will make the constipation worse, instead of better!

**Serial Compression Devices (SCDs) or Venodynes:** You will have special wraps (called SCDs or Venodynes) placed on your lower legs after surgery. Venodynes are to be worn after surgery while you are in the hospital to help prevent blood clots. These wraps attach to a pump that inflates and deflates them.

**Hospital Bed:** Your hospital bed has buttons to raise your back and legs. Most patients find that a semi-reclined position is most comfortable and allows for edema reduction in the upper arm and improved relaxation.

Some key procedures which will promote healing and help prevent complications are described on the following pages.

## IV. RECOVERY &amp; REHABILITATION

## Preventing Post-Operative Complications

### Preventing Circulation Problems

Soon after surgery, you will be asked to perform gentle exercises. These exercises, such as ankle pumps, will help prevent circulation problems. They will also strengthen your muscles. Other exercises appropriate for you (some are reviewed later in this section) will be taught by the physical therapist and nursing staff.

To enhance your circulation, YOU will be expected to perform these exercises 10 times each, every hour while awake.



#### Ankle Pumps

- Move your foot up and down rhythmically by contracting the calf and shin muscles
- Perform this exercise periodically for two to three minutes, two or three times an hour in the recovery room.
- Continue this exercise until you are fully recovered and all ankle and lower-leg swelling has subsided

### Preventing Lung Problems

After surgery, it is important to exercise your lungs by taking deep breaths. Normally, you may take deep breaths each hour, usually without being aware of it. They are spontaneous, automatic, and occur in the form of sighs and yawns.

However, when you are experiencing pain or drowsiness from the anesthesia, or from your pain medication, your normal breathing pattern can change. Therefore, you will be provided with an **incentive spirometer** by the nursing staff. A member of the staff will show you how to use your incentive spirometer.



Using the incentive spirometer will force you to take deep breaths which are necessary to expand the small air sacs of your lungs and help clear the air passages of mucous. This helps avoid fever post-op. We recommend that you use your incentive spirometer every hour while awake for the first several days following surgery.

## IV. RECOVERY &amp; REHABILITATION

## Preventing Post-Operative Complications

**Coughing:** another excellent way to help breathe and clear your lungs

Coughing is, of course, one of nature's important methods for clearing your lungs at any time...not just after surgery.

1. Breathe in deeply through your nose.
2. Hold your breath and count to 5.
3. Breathe out slowly through your mouth
4. On the 5<sup>th</sup> deep breath, cough vigorously 2-3 times from your abdomen as you breathe out.

Make a habit of doing this 2-3 times hourly, especially when it is inconvenient to use your incentive spirometer.

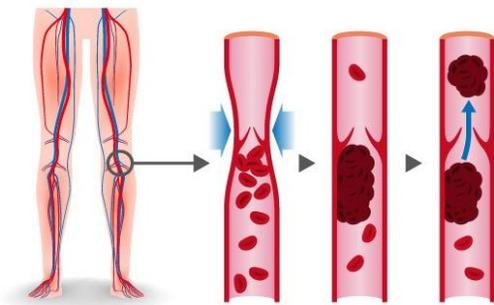
### Preventing Clotting Problems

**What is Deep Vein Thrombosis or DVT?**

A DVT is a blood clot in a deep vein in your leg. DVT can happen when your blood is flowing slowly because of illness, surgery, or just being in the hospital. DVT can cause leg swelling. DVT can also break off and go the lung (pulmonary embolism or PE). Blood clots that go to the lung can make it hard to breathe and are one of the main causes of death after operations.

All of these increase your risk for DVT:

- Surgery
- Smoking
- Staying in bed for long periods
- Chronic lung disease
- Heart failure
- Serious infection
- Cancer



**What are Serial Compression Devices or SCDs (Venodyne™ sleeves)?**

SCDs are soft sleeves that wrap around the lower legs and inflate with air to massage the legs. This gentle squeezing helps blood flow smoothly and decreases risk for DVT. The squeezing is on and off.

Your SCDs are ordered by your doctor and are part of your treatment especially after surgery. Your nurse will help set up your SCDs. You should always wear your SCDs any time you are in bed or sitting in a chair. Only, take them off before bathing or walking. If you feel pain or "pins and needles" in your legs, tell your nurse right away. This could be a sign of DVT.



## IV. RECOVERY &amp; REHABILITATION

## Anticoagulation Therapy & Thrombosis

Phlebitis (inflammation of the veins of the legs) or Deep Vein Thrombosis (DVT), which refers to blood clotting in the veins of the leg, is a possible risk after shoulder replacement surgery.

For the prevention for Deep Vein Thrombosis (DVT) after surgery, most patients will be prescribed an oral anticoagulant. The purpose of an oral anticoagulant is to prevent your blood from clotting.

### Type of medication

Depending on your medical condition and preference of your surgeon, you will likely be prescribed either buffered Aspirin or another agent depending on surgeon preference.

## IV. RECOVERY &amp; REHABILITATION

## Rehabilitation Therapy Overview

Physical therapy and occupational therapy are an important part of your post-operative care at NewYork-Presbyterian and after you return home.

### Your daily therapy sessions

You may be seen by therapy after surgery. A Physical Therapist may assist you with transfers, ambulation, don/doff of the sling and home exercise program. An Occupational Therapist helps you regain independence with your activities of daily living (ADL) which include dressing, bathing, and using the toilet.

### Looking Ahead: Planning for Recovery After Your Surgery

A Social Worker or Case Manager may see you after your surgery to help assess your post hospital needs. Depending on your physical condition and progress with therapy in the hospital, you may need additional services either at home or in another facility. The Social Worker or Case Manager will assist in making these referrals and contacting your insurance company for authorizations. We highly recommend that, before surgery, you contact your insurance company to learn about your benefits and limitations as insurance coverage benefits vary, and can change at any time.

To help you plan ahead, we recommend that before your surgery you ask your doctor if they expect that you will require any special medical care after discharge. Your insurance company will determine which services will be covered based on your current condition.

**Remember, you make the difference.** It is extremely important that you understand that **your** motivation and **your** participation in **your** therapy program is a vital element in the speed and success of your long-range rehabilitation, as well as getting ready to go home.

## IV. RECOVERY &amp; REHABILITATION

## Nutrition for the Surgery Patient

### Before Your Surgery

If you were following a physician-prescribed diet before hospitalization, it is important that this information be conveyed to the physician and registered dietitian. It is also essential that you let your doctor or nurse know if you have recently been taking any of the following: vitamins, minerals, herbals, and nutrition supplements. By letting them know what you are taking, they can avoid any possible problems with the medications and treatments you may be getting during your hospital stay.

Unless you have medical reasons not to, try to increase your protein intake the weeks prior to surgery and minimize your carbohydrate intake. This will help your body rebuild tissue and heal after surgery.

### Nutrition After Hospitalization

After you leave the hospital, your diet continues to be important for successful healing. Continue a well-balanced diet and follow any diet instructions given to you during your hospital stay. Increase your protein intake. If you are diabetic, maintain strict control of your glucose levels.

Continue to eat well for your health and well-being!

## IV. RECOVERY &amp; REHABILITATION

## Daily Goals After Reverse Total Shoulder Replacement

### General Guidelines

These items may vary based on instructions from your surgeon. Some patients go home the same day as surgery (outpatients), while some patients are admitted overnight to the hospital (inpatients).

#### Day 0 Post-Operative (day of surgery)

- Routine X-rays in Recovery Room
- Routine blood tests in Recovery Room
- Transfer from Recovery Room to Hospital bed(if your plan is to stay overnight)
- Pain medicine and cryotherapy for pain management
- Out of bed to chair and ambulation
- Clear liquid diet advancing to regular diet
- *Outpatients discharged to home:* please arrange to have someone pick you up and take you home

#### Day 1 Post-Operative

- Practice Don/Doff of Sling
- Preparation for discharge to home
- Physical Therapy: begin limited exercise program with PT
- If you have IV pain medications, you will switch to oral pain medications
- Routine blood tests (if required)
- Ambulation with assistance from Physical Therapy/Nursing
- Regular diet as tolerated
- Medication to prevent blood clots
- Patient Education
- *Discharge to home:* target discharge time is 10:00 a.m. At Lawrence Hospital, you will be discharged following your PT and OT sessions.

**NewYork-Presbyterian Columbia University Irving Medical Center:** discharge time is approximately 10:00 am. For those who are going home, please arrange for your ride to pick you up at 10:00 am.

**NewYork-Presbyterian Lawrence Hospital:** discharge time is following either your morning P.T. session or afternoon session. If you and your therapist plan only 1 session, please arrange for transportation home at 11:00 am. If you are staying for a second session, please arrange for your ride to pick you up at 3:00 pm.

## V. DISCHARGE INSTRUCTIONS

## Medication, Surgical Site Care, Pain Management

### Prescriptions & Personal Medication

Prior to your surgery, your doctor will electronically prescribe pain medication at your preferred pharmacy. Take these medications as directed on the bottle. If you have any questions please call your surgeon's office.

If any of your personal medications are with the nurses or stored at the hospital, make sure you get them back at this time.

### Surgical Site Care

Infections rarely happen after surgery, but you must remain alert to the possibility: Check the surgical site daily for signs of wound infection.

Symptoms are:

- Increased redness
- Increase in pain
- Any drainage
- Oral temperature greater than 101.5 F

*If any of the above symptoms occur, please contact your surgeon immediately.*

Most incisions are closed with dissolvable sutures and covered with a type of waterproof dressing. You may shower with a waterproof dressing, but **do not scrub the dressing or soak in a bath/pool.** After this, you may apply dry sterile gauze if there is any drainage.

### Pain Management

- Continue to apply ice packs to the operative area for 20-minute intervals several times a day, using a thin towel as a barrier between the cold pack and your skin. Especially after activity, cold therapy will continue to reduce post-operative swelling and provide you with greater comfort.
- Take your pain medication as prescribed by your doctor. Remember to take it before the pain becomes too severe. It will help reduce the pain sooner. Do not forget to take your stool softeners.
- In the event that the pain medication does not work, or you are experiencing unpleasant side effects, do not hesitate to call your orthopedic surgeon.
- If you are taking medication, please **AVOID** alcoholic beverages.

## V. DISCHARGE INSTRUCTIONS

## Protection Against Infection

### Antibiotic Prophylaxis: Long-range protection against infection

Although it is very rare, the bloodstream carrying infection from another part of the body can infect an artificial joint. Therefore, it is important that your medical doctor treat every bacterial infection (pneumonia, urinary tract infection, abscesses, etc.) promptly. Routine colds and flu, as well as cuts and bruises, do not need to be treated with antibiotics.

To prevent infection in the future, discuss with your surgeon if you should take Amoxicillin,\* 2 grams one hour before having any of the following procedures:

- Skin Biopsy
- Podiatry procedures which involve cutting into the skin
- Cystoscopy
- Colonoscopy/Endoscopy
- Dermatologic procedures which involve cutting into the skin
- Dental cleanings or dental procedures

*\* Note: If you are unable to take Amoxicillin, use Clindamycin: 600 milligrams one hour before the procedure. Amoxicillin is a form of Penicillin, so if you are allergic to Penicillin, you should take Clindamycin instead. Ask your surgeon about when/how long to follow these guidelines.*

You do not need to take antibiotics for the following procedures:

- Pedicures/Manicures
- Gynecologic exams
- Cataract Surgery
- Injections or Blood work

It is important that you tell your doctor and dentist that you have an artificial joint, so that they may remind you to take antibiotics, and to prescribe them, as appropriate. In addition, they may wish to consult with your Orthopedic Surgeon.

If you have any questions about germs or infections, or any type of procedure, you should call your Orthopedic Surgeon.

## V. DISCHARGE INSTRUCTIONS

## General Instructions

### Your Home Rehabilitation Program

This program will be an **extremely important** part of your continuing recovery. Please refer to the Home Recovery Section. If you have questions, ask your physical therapist for answers before you leave.

You will **NOT** begin formal physical therapy on your shoulder as an outpatient until your surgeon instructs you to start therapy. Some individuals may not need physical therapy and can regain shoulder function with home exercises as instructed by your doctor, while other patients benefit from a therapist's care.

During the first 4 weeks after surgery you must wear the sling as instructed by your surgeon to allow for healing. You may come out of the sling to shower, dress with your arm at your side, and periodically during the day to move your elbow, wrist and hand, but **NOT** your shoulder.

### When to begin driving your car

A variety of factors go into when you may resume driving. Before resuming driving you must check with your surgeon (usually at your first follow-up visit). Several factors are considered when making this important decision: strength, need for the sling, and you must be off narcotics.

### Sleep and Depression

Surgery is a major event in your life. It is common to have sleep problems after surgery. Minimize your caffeine intake and your daytime naps. Optimize your night routine to get the best sleep that you can. This may include having a warm glass of milk, taking melatonin, or taking a pain pill before you go to sleep so you do not wake up from soreness. Very rarely will you need a sleeping pill. Talk to your doctor if you are having difficulty sleeping.

Post-surgical blues can occur. You may not be used to taking it slow and being at home for such long periods of time. The medication may also affect your mood. Talk to your doctor if you are feeling blue. Your energy level may be decreased for at least a month after surgery.

### Follow-up Appointments with Your Orthopedic Surgeon

Regardless of how well you feel after you have been home for a while, follow-up appointments with your surgeon are necessary.

### Additional Instructions

Your surgeon may have additional instructions for you to follow upon discharge. You can record them here, and on the next pages as a reminder. This is also a good place to make notes about questions you may have related to your discharge.





## VI. HOME &amp; RECOVERY EXERCISE

## Recovery at Home

### Preparing your home for your recovery

During the first few weeks at home, you adapt what you learned at the hospital to your own setting. You will need to prepare your home for your recovery.

- A recliner type chair is recommended. These types of chairs provide more support and comfort during your recovery. Some patients choose to sleep in their recliners for up to several weeks after surgery.
- General safety Measures:
  - Be sure all walking areas are free of clutter
  - Be sure to remove throw rugs.
  - Watch for small pets and children (to avoid falling)
  - Make sure hallways/stairways and bathrooms are well lit
- Store frequently used items within easy reach, not in high or low cabinets.
- Prepare meals ahead of time and store in freezer. (Helpful hint: buy groceries/household items before surgery and have your favorite home delivery numbers handy).
- A bed height of approximately 18 inches high makes it easier to get up and down (as you will not be able to use your operated arm to push)
- Equip your tub/shower with a non-slip surface if needed (rubber bath mat).
- A handheld shower attachment makes showering easier as well.

## VI. HOME &amp; RECOVERY EXERCISE

## Recovery at Home

### Showering

You cannot take a shower until your surgeon gives permission (typically a few days after surgery). If you have any questions about this before you are discharged, please ask your nurse. Remove your sling and please be careful when entering or exiting a shower. You should consider having a non-slip surface (rubber bath mat). Please arrange for this prior to your hospitalization, if possible. Ideally, face the operated arm away from the shower head (or shower attachment) and allow your arm to hang naturally from your side. The warm water provide comfort and may help your shoulder feel less stiff. It is safe and appropriate to allow your arm to hang safely by your side. When attempting to wash your arm pit, bend slightly forward and allow the arm to move forward, wash as you would normally and stand straight up afterwards.

### Dressing

It is easier and more comfortable to wear loose fitting shirts that open in the front. When dressing, place the operated arm into the sleeve first, then reach around with the un-operated arm and pull the shirt over the shoulders. Place the un-operated arm into the opposite sleeve and button/zipper the shirt closed. Finally don the sling as you have been instructed.

### Sleeping

Many patients find sleeping in either a recliner chair, or with several pillows to form a “ramp” to elevate both the head and shoulders more comfortable. Wedge type pillows are available at many pharmaceutical stores. You are not permitted to sleep on your operated side; you can turn slightly towards your operated side, but may find sleeping on your back or turned to the opposite side (with a pillow to support the operated arm) more comfortable.

### Eating, Brushing Teeth, and Make-Up

You may use your operated arm to eat (avoid difficult to handle food items that require significant effort to cut or hold), use a toothbrush, and apply/remove make-up.



## VII. OTHER INFORMATION

## Additional Hospital Services

### Pastoral Care

The Pastoral Care Department has trained pastoral care providers: ecumenical chaplains, ordained ministers, priests, rabbis, Eucharistic ministers, who are available to you and your family upon request.

**Contact Numbers:**

NYP/Columbia University Medical Center: 212.305.5817, or ext. 55817

NYP/Lawrence Hospital: 914.787.3009



## What to Expect **Reverse Total Shoulder Replacement**

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