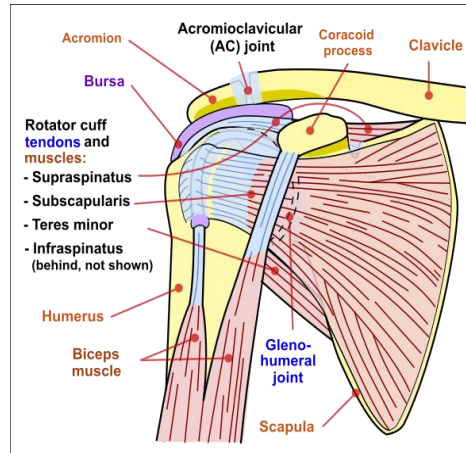


# TOTAL SHOULDER REPLACEMENT

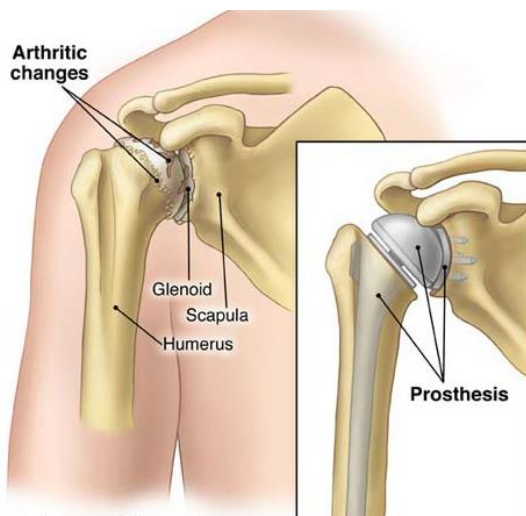
## Understanding the Shoulder

- The shoulder is composed of two bones: the socket (glenoid) and ball (humeral head).
- The Bones are covered by a very smooth layer composed of cartilage – this is the cartilage that is damaged leading to **osteoarthritis**
- Surrounding the socket (glenoid) is the labrum to help deepen the socket and provide stability
- The rotator cuff aids in motion of the joint as well as keep the ball centered in the socket.
- An important muscle for function is the deltoid which drapes over the outside of the shoulder

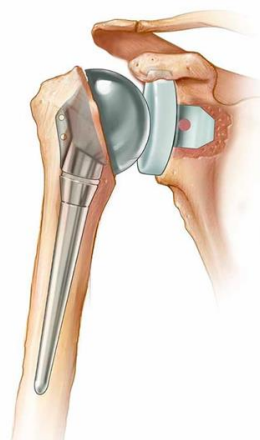


## What is a total shoulder replacement?

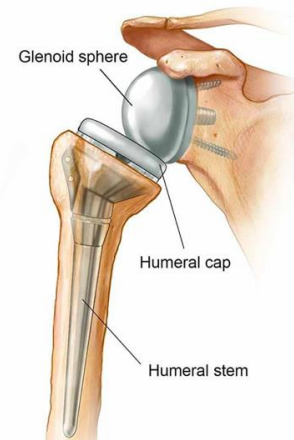
- Due to the diseased and loss of normal cartilage, the exposed bones, which have nerve endings, are under constant stress.
- This leads to loss of motion and pain
- In a total shoulder replacement, the diseased cartilage is removed and replaced with metal on the ball and socket.
- In addition, a plastic piece is placed between the ball and socket to allow smooth movement.
- In a **reverse shoulder replacement**, the ball and socket are flipped – this is necessary when the rotator cuff is no longer attached and functional



Total shoulder arthroplasty



Reverse shoulder arthroplasty



**SHOULDER REPLACEMENT - TIMELINE AND INSTRUCTIONS  
CALENDAR LAYOUT**

5 Days Before Surgery	2 Days Before Surgery	1 Day Before Surgery	Day of Surgery	Post-op Day 1	Post-op Day 2	Post-op Day 3+
<ul style="list-style-type: none"> <li>• Stop blood thinning medications (i.e. Advil, Aleve, Aspirin, Fish Oil, Vitamins, Supplements, etc.</li> <li>• Ensure you have attended your pre-operative clearance appointment with your primary care provider.</li> <li>• Do not shave surgical area.</li> </ul>	<ul style="list-style-type: none"> <li>• Begin cleansing the surgical site with Benzoyl Peroxide 10% wash. Apply wash to the surgical site and armpit region, allow to sit for 3 minutes, rinse off.</li> <li>• Place ice packs in freezer.</li> <li>• Ensure medications have been picked up from pharmacy. See attached sheet for medication instructions.</li> <li>• Purchase press &amp; stick saran wrap for showering</li> </ul>	<ul style="list-style-type: none"> <li>• Wash surgical site with Benzoyl Peroxide solution again. Follow same instructions.</li> <li>• <b>The surgical center will reach out to you today to relay your surgical time. Surgical times are subject to change, please keep your schedule open.</b></li> <li>• Ensure you have spoken to your transportation, a friend of family, regarding your transportation home. Patients will not be discharge to a Lyft, Uber or Taxi.</li> </ul>	<ul style="list-style-type: none"> <li>• Morning of: Wash surgical site with Benzoyl Peroxide solution again. Follow same instructions.</li> <li>• Stop all food and drink at midnight the day of surgery.</li> <li>• <b>BRING SLING TO SURGICAL CENTER</b></li> <li>• Wear a loose fitting, or button up shirt to surgery center.</li> <li>• Evening: Start medications. See attached sheet for medication instructions.</li> <li>• Begin icing shoulder.</li> <li>• Wear sling.</li> <li>• Have adult supervision for 24 hours after surgery</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to ice shoulder.</li> <li>• Take medications as instructed.</li> <li>• Wear sling.</li> <li>• No showering.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to ice shoulder.</li> <li>• Take medications as instructed.</li> <li>• Wear sling.</li> <li>• <b>BEGIN GENTLE RANGE OF MOTION EXERCISES.</b> Reference postop exercise sheet for instructions. Continue to do these twice daily.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to ice shoulder.</li> <li>• Take medications as needed.</li> <li>• Wear sling.</li> <li>• OK to shower – if dressings get wet, replace</li> <li>• <b>CONTINUE GENTLE RANGE OF MOTION EXERCISES.</b> Reference postop exercise sheet for instructions. Continue to do these twice daily.</li> <li>• See us for your scheduled post-operative appointment. We will remove your steri-strips at this visit.</li> <li>• Continue to wear sling, unless otherwise indicated.</li> </ul>

# SHOULDER REPLACEMENT - POSTOPERATIVE MEDICATIONS

Dr. Sean Robinson, M.D.

## Postoperative Pain Expectations

The aim of shoulder surgery is to decrease pain, improve shoulder motion, and result in a better quality of life. We do our best to minimize postoperative pain by prescribing the medications below, but it is important to note that some level of discomfort is to be expected the first few days following shoulder surgery. In most shoulder procedures, a **nerve block** is administered on the day of surgery. This block is very effective at decreasing pain however, when it wears off, usually 1-2 days following surgery, patients may notice an increase in pain. It is important to be proactive with regards to pain management during this time.

## Postoperative Pain Medications and Instructions

- **Percocet 5/325 mg (oxycodone 5 mg/acetaminophen 325 mg) \*\*\*Optional**
  - Take 1 or 2 tabs every 4-6 hours as needed for postoperative pain.
  - Percocet is a narcotic pain medication and may cause **constipation**. If constipation occurs, you may use **Miralax or Colace** which can be purchased over the counter at your local pharmacy.
  - Percocet should not be taken in combination with prescribed sleep medication.
  - **It is not safe to use more than 4,000 milligrams of acetaminophen in one day** (24 hours).
  - *If you are regularly prescribed pain medication from another provider, you will need to call your pain medication prescriber for postoperative narcotic pain medications.*
- **Aspirin 81 mg; an NSAID (Non-steroidal Anti-inflammatory) \*\*\*Necessary**
  - Take 1 tablet twice daily.
  - You should begin taking this medication the night of the surgery.
  - This medication **serves a primary purpose: decreases the possibility of blood clots.**
  - You are to take this medication for the first **30 days** post op.
  - If you have any difficulty using anti-inflammatory medications or aspirin or have a history of peptic ulcer disease, please let us know.
  - If you have a history of clotting disorders, please let us know
- **Ibuprofen 800 mg (Advil); an NSAID (Non-steroidal Anti-inflammatory)**
  - Take 1 tab by mouth, with food, every 8 hours as needed for postoperative pain.
  - If you have renal impairment or take blood thinners other than aspirin, please discuss the use of Ibuprofen with your primary care physician prior to its use.
  - Other NSAIDs (ex. Aleve, Motrin, Meloxicam, etc.) should not be taken with Ibuprofen.

### **Alternate Ibuprofen and Percocet every 4 hours**

- *Example: 8am- Ibuprofen, 12pm- Percocet, 4pm- Ibuprofen, 8pm- Percocet...*

- **Ice**

**Other Important Notes**

- We recommend that for the first night and day following shoulder surgery, patients take the Percocet and Ibuprofen (if tolerated). As pain improves you may stop the Percocet and take the Ibuprofen and Tylenol (acetaminophen) as needed.
- Many patients find they may have improved pain in the daytime hours following their operation, with continued pain at night. In these instances, pain medication (Percocet) may be used. If you have a history of sleep apnea or respiratory problems, you should discuss medications with your primary care provider prior to their use.
- Your pharmacist is a great resource for medication questions. You may also call our office with any questions preoperatively.

## SHOULDER REPLACEMENT - TIMELINE AND INSTRUCTIONS

Dr. Sean Robinson, M.D.

### • BEFORE SURGERY

#### ○ 5 days before surgery:

- Stop all blood thinning medications (Ibuprofen- Advil, Motrin, Naprosyn- Aleve, Aspirin, Fish oil, Vitamins (i.e. E, C), Supplements, St. John's Wort, Glucosamine, etc.)
- Ensure pre-operative clearance received
- Do not shave surgical area

#### ○ 2 days before surgery:

- **Cleanse the surgical site with Benzoyl Peroxide 10% Wash: (sold over the counter) use the solution over the operative shoulder and axilla/armpit for 3 consecutive mornings before surgery in the shower:**
  - **Start wash on preoperative day-2, followed by preoperative day-1 and again the morning of surgery.** Apply the solution to the rinsed shoulder for 3 minutes before washing it away. This will decrease your risk of surgical infection. Do not use this solution after the surgery.
- Place ice packs in freezer
- Purchase press & stick Saran Wrap.
- Ensure postop medications are picked up from pharmacy. See attached sheet for medication instructions.

#### ○ 1 days before surgery:

- **Ensure you have a family or friend driving you home from surgery. Patients will not be discharged to an Uber, Lyft, taxi, etc.**
- The surgery center will call you 1 day before surgery with your arrival time and surgical time.

#### ○ Day of surgery:

- Stop all food and drink at midnight. You are okay to brush your teeth.
- If you have high blood pressure, blood pressure medications need to be taken the morning of surgery.
- Wear a loose fitting or button up shirt to the surgical center
- Keep your schedule open, surgical times are subject to change
- **Remember to bring your sling to the surgical center.**

### • AFTER SURGERY

#### ○ Postop Day 1

- Ice the shoulder continuously for the first 24 hours, then every 20 minutes as needed.
- Start postop medications. Reference postop medication sheet for medication instructions.
- Wear your sling
- Have adult supervision for 24 hours postoperatively.

#### ○ Postop Day 2

- Continue icing as needed

- **Begin gentle Range of Motion exercises at 48 hours postop to help avoid a frozen shoulder. Instruction sheet attached, please reference for exercises.**
- **DO NOT EXTERNALLY ROTATE ARM PAST NEUTRAL POSITION**
- Incisions need air to heal, do not keep steri-strips covered unless showering

## POSTOPERATIVE INSTRUCTIONS

### • **Weight bearing**

- You are **NON** weight bearing after surgery
- Keep your sling on at all times until the follow up appointment

### • **Movement**

- It is beneficial to change positions often after shoulder arthroplasty.
- You may use the pillow portion of the sling for comfort if desired
- **DO NOT STAY IN BED.** We recommend at least 10 minutes of walking every hour.

### • **Sleep**

- Keep your sling on during sleep
- Many patients are most comfortable sleeping in a reclining chair for the first 1-2 weeks

### • **Ice**

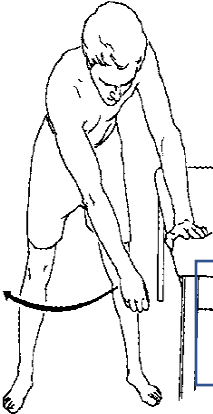
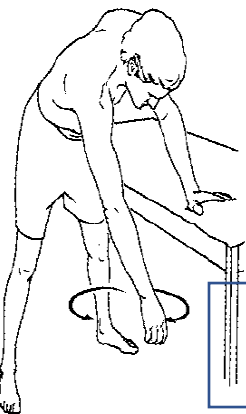


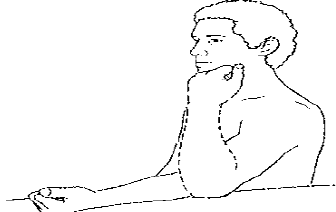
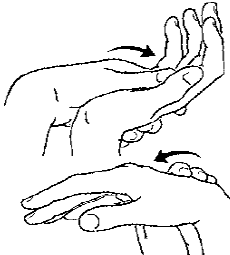
- Use bagged ice **as much as possible** when you get home at intervals of 30 minutes on and off. You should use ice for approximately two weeks. Do not use ice while you are sleeping.
  - Place the ice onto the shoulder over a thin layer of clothing or a towel, but never directly on the skin.

### • **Wound care, Dressings/Bandages**

- Leave surgical bandage on and do not shower for 3 days
- Its normal to see bloody soaked fluid on the bandages.
- Apply waterproof band-aide (i.e. shower shield) to each incision prior to showering. If wounds get wet while showering, this is OK; however, we prefer for keep the wounds dry during the first 5 days after surgery.
  - If your dressing gets wet, change it to a dry one.
- Do not apply lotions or ointments to the incisions.
- Do not soak incisions in any pool/spa/bath water until 3 weeks after postoperatively or until your incisions are completely closed.

**SHOULDER REPLACEMENT - POSTOPERATIVE EXERCISES**  
**Dr. Sean Robinson, M.D.**

**\*EXERCISES TO BEGIN 2 DAYS AFTER SURGERY\***

 <p><u>Pendulum (Side-to-Side)</u></p> <p>Let right arm swing freely from side to side</p> <p>Repeat 10 times per set. Do 2-3 sessions per day.</p>	 <p><u>Pendulum (Circular)</u></p> <p>Let right arm move in , circle clockwise, then counterclockwise.</p> <p>Circle 10 times each direction. Do 2-3 sessions per day</p>
 <p><u>Shoulder Rolls</u></p> <p>Roll shoulders in a backwards motion. First take shoulders up, then backwards and then down.</p> <p>Repeat 10 times every 8 hours.</p>	 <p><u>Shoulder Shrug</u></p> <p>Shrug shoulders up and down. Repeat 10 times every 8 hours.</p>
 <p><u>Elbow Flexion / Extension</u></p> <p>With right hand palm up, gently bend elbow as far as possible. Then straighten arm as far as possible. Hold for 5 seconds.</p> <p>Repeat 5 times per set. Do 1-2 sessions per day.</p>	 <p><u>Wrist Flexion / Extension</u></p> <p>Grasp right hand and slowly bend wrist until stretch is felt. Relax. Then stretch as far as possible in opposite direction. Hold for 5 seconds. Be sure to keep elbow bent.</p> <p>Repeat 5 times per set. Do 1-2 sessions per day.</p>



### Benzoyl Peroxide 10% Acne Medication Wash.

Wash shoulder and armpit region with this starting 2 days before surgery, 1 day before surgery and on the morning of surgery.

Apply the solution to the rinsed shoulder for 3 minutes before washing it away. This will decrease your risk of surgical infection.

Do not use this solution after the surgery.

# OR



If you cannot find Benzoyl Peroxide, use Hibiclens [ask pharmacist for location].

Wash shoulder and armpit region with this starting 2 days before surgery, 1 day before surgery and on the morning of surgery.

Follow instructions on the bottle.

Do not use after surgery.

### Pre-Op Shopping Checklist:

- Post-op Meds
- Cleansing solution
- Gel Packs
- Miralax (if needed)



# TOTAL SHOULDER ARTHROPLASTY REHABILITATION PROTOCOL

The following is a guideline for progression of post-operative treatment.

- The total shoulder arthroplasty (TSA) procedure is performed to improve function, increase active range of motion and reduce pain of the shoulder. The following is a guideline for progression of post-operative treatment.

## General Information

- Time required for full recovery is 9-12 months, but results vary considerably between different patients.
- Accelerating rehabilitation for “fast healers” may inhibit results and lead to recurrent problems or complications.
- Patients may never regain full, normal motion, but patients will be encouraged to reach their maximal level of function.

## Precautions

- In this procedure, the subscapularis is detached for exposure of the glenohumeral joint and then reattached after the surgery is complete. This reattachment must be protected for 6 weeks. During this time, strengthening activities involving internal and external rotation must be avoided.

## Immobilization

- Sling should be worn for the first 72 hours.
- After 3 days, sling can be removed for light activity such as desk work.
- Sling should be worn as needed during the day, whenever the patient is active or in an unprotected environment; it should always be worn at night for the first 6 weeks.
- Discontinue sling completely at 6 weeks.

## 1st Post-Op Visit

1) Wound inspection

2) Patient education

- **No active shoulder motion for 4 weeks, all planes**
- **No active internal rotation for 6 weeks**
- Sling use as directed by physician
- Keep wound dry
- Icing 3 times/day for 20 minutes

3) Exercise

- Pendulum exercise without weight (30 seconds each direction. 4x a day)
  - o Clockwise
  - o Counterclockwise
  - o Side-to-side
  - o Front & back • AAROM exercise – to patient tolerance – with cane and/or table slides
  - o Flexion
  - o Abduction
  - o External rotation to 20° only or as directed by physician
- AROM exercise
  - o Elbow flexion/extension
  - o Wrist flexion/extension and supination/pronation
  - o Shrugs/retractions

4) Ice

## 5) Modalities - PRN

### 1 Week Post-Op

- 1) Wound check
  - If wound is sealed, it is okay to shower but not soak
- 2) Exercise
  - Pendulum exercises
  - AAROM exercise – to patient tolerance – with cane
  - Isometric exercise
    - o Flexion/extension
    - o Abduction
    - o External rotation
  - Progressive resistive exercise
    - o Shoulder shrugs
    - o Triceps/shoulder extension
    - o Scapular retraction – prone
    - o Gripping exercises
    - o Wrist supination/pronation
    - o Wrist flexion/extension
- 3) Modalities – PRN
- 4) Ice

### 2-6 Weeks Post-Op

- 1) Exercise
  - AAROM
    - o All planes – **limit ER to 30° or as directed by physician**
    - o With cane – progress to finger ladder/wall climbs/pulley system
    - o Pulleys for home exercise program • Pendulum exercise with light weight
  - Isometrics - as previous
  - Progressive resistive exercise - continue as previous, adding:
    - o Serratus punch – supine, without weight
- 3) Modalities – PRN
- 4) Ice

### 6 Weeks Post-Op

- 1) Discontinue sling use
- 2) Exercise
  - AROM
    - o All planes – **limit external rotation to 45°**
    - o UBE (“arm bike”), forward/reverse and standing off to side clockwise and counterclockwise
  - Progressive resistive exercise – continue as previous, adding:
    - o -Shoulder internal/external rotation with low resistance Theraband (limit ER to 45°)
    - o Wall push-up plus, hand in neutral position
    - o Rhythmic stabilization
  - Body Blade
    - o One-handed grip in neutral position
    - o Two-handed grip in front
    - o Opposite hand diagonal pattern

3) Grade I/II glenohumeral joint mobilization - as indicated

4) Modalities – PRN

5) Ice

### **8 Weeks Post-Op**

1) Full PROM, ER to 60°, and advance to full AROM (ER 60°); able to add stretching in forward elevation (if lacking). Never stretch in abduction/ER.

2) Exercise

- Progressive resistive exercise - continue as previous, adding:
  - o *Low resistance/high repetition:*
    - Flexion
    - Abduction
    - Supraspinatus (limit to 70°)
    - Prone fly
    - Scapular retraction
    - Prone extension
  - o Wall push-up plus, hands in neutral position
- Body Blade
  - o One-handed grip, abduction to 90°
  - o Two-handed grip, flexion to 90°
- Plyoball
  - o Circles – CW and CCW, 1 minute each direction
  - o Squares – CW and CCW, 1 minute each direction

3) Grade I/II glenohumeral joint mobilization - as indicated

4) Modalities – PRN

5) Ice

### **10 Weeks Post-Op**

1) Full PROM, ER to 60°; continue stretching (forward elevation, abduction, IR, ER)

2) Exercise

Progressive resistive exercise - continue as previous, adding:

- o Kneeling push-up
- o Step-up push-up in quadruped position

Plyoball diagonal patterns

Fitter

- o Side-to-side
- o Front & back

Progress weight and range of motion as tolerated by patient, with closed- and open-chain exercises and proprioceptive activities

3) Glenohumeral joint mobilization - as indicated

4) Modalities – PRN

5) Ice

## **12 Weeks Post-Op**

1) Should have full AROM, ER to 60°; if not, begin passive stretch to achieve full ROM (forward elevation, abduction, IR, ER)

2) Exercise

- Progressive resistive exercise - continue as previous, adding:
  - Body Blade diagonals – progress to single-leg stance
  - Push-up plus in push-up position
  - Step-ups in push-up position

3) Glenohumeral joint mobilization - as indicated

4) Modalities – PRN

5) Ice

## **16 Weeks Post-Op**

1) Should have full AROM, ER to 75°; continue passive stretch to achieve full ROM

2) Exercise

Continue with exercise program, progressing with weight & endurance as tolerated

3) Grade I/II glenohumeral joint mobilization - as indicated

4) Modalities – PRN

5) Ice

6) Released to perform activities as tolerated

## **24 Weeks Post-Op**

Progression to full activity as directed by physician