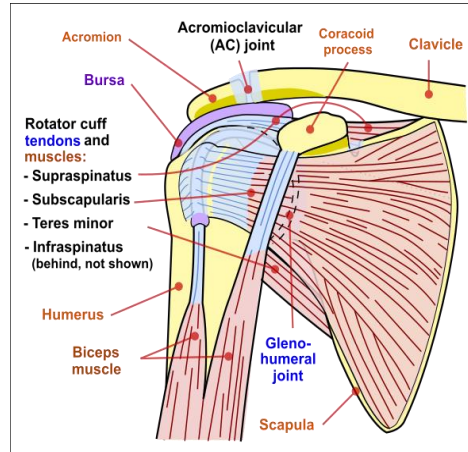


## REVERSE SHOULDER REPLACEMENT

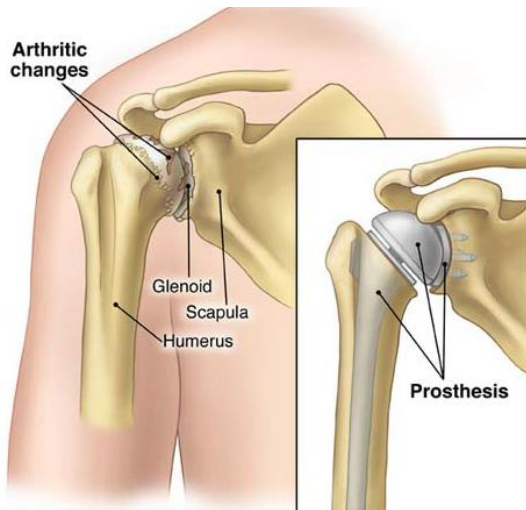
### Understanding the Shoulder

- 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

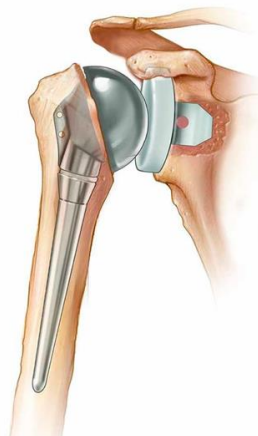


### What is a total shoulder replacement?

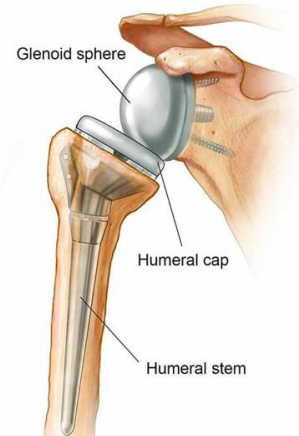
- Due to the diseased and loss of normal cartilage, the exposed bones, which have nerve endings, are under constant stress.
- This leads to loss of motion and pain
- In a total shoulder replacement, the diseased cartilage is removed and replaced with metal on the ball and socket.
- In addition, a plastic 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 (see below).



Total shoulder arthroplasty



Reverse shoulder arthroplasty



## SHOULDER ARTHROPLASTY- 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 saran wrap for showering</li> </ul>	<ul style="list-style-type: none"> <li>• Wash surgical site with Benzoyl Peroxide wash 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 wash 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 post-op 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 A- 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 5mg/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 operation.
  - 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 800mg (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 ARTHROPLASTY- 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 share 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 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
- Incisions need air to heal, do not keep steri-strips covered unless showering
- Begin gentle Range of Motion (ROM) 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**

## **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.

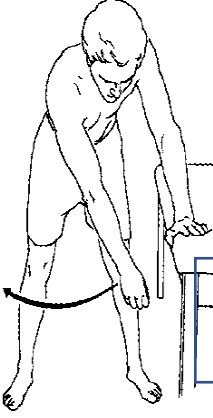
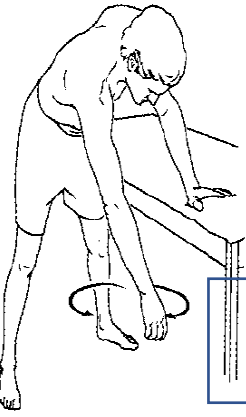


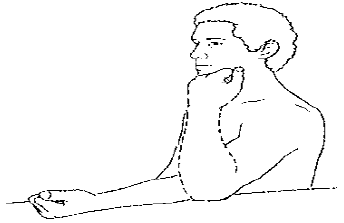
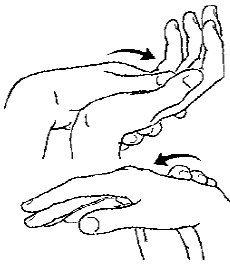
- **Wound care, Dressings/Bandages**

- 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 **OKAY**; 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 ARTHROPLASTY- 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.</p> <p>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)



## REVERSE TSA REHABILITATION

The purpose of this protocol is to provide a GUIDELINE for the postoperative management of patients with the RTSA. For any questions, the therapist should consult the referring surgeon.

- Deltoid function: The deltoid and periscapular muscles provide the stability and motion of the shoulder. This is the foundation of shoulder rehabilitation after this procedure.
- Range of motion: Patients and therapists must have a realistic goal of ROM gains. This is determined on a case by case basis. Normal or full ROM should not be expected.
- Joint protection: A higher risk of shoulder dislocation exists with the RTSA and therefore, the precautions must be followed.
  - No shoulder extension beyond neutral – avoid combination of adduction and IR for first three months postoperatively
  - Adduction and IR place the shoulder at risk for dislocation; therefore, avoiding these activities (i.e. tucking in a shirt, personal hygiene) in the postoperative phase should be stressed.

### **Phase I – Immediate Postoperative Surgical Phase (Day 1-6 weeks):**

#### **Goals:**

- *Joint protection, progressive PROM, family/independent living patient and family independent with:*
- *Progressive restoration active range of motion (AROM) of elbow/wrist/hand.*

#### **Precautions:**

- *Sling x 6 weeks. May be used for 8 weeks if revision surgery.*
- *In supine position, elbow must be supported with pillow to prevent shoulder extension. Patient should always see their elbow.*
- *NO shoulder AROM.*
- *NO lifting of objects with operative extremity.*
- *Keep incision clean and dry (no soaking/wetting for 2 weeks); No whirlpool, Jacuzzi, ocean/lake wading for 4 weeks.*

### **Immediate Care Therapy (Day 1 to 4):**

- Begin PROM in supine/bed after resolution of block:
  - FF to 90 degrees
  - ER to 20-30 degrees
  - **NO IR!**
- Start Active/Active Assisted ROM (A/AAROM) of cervical spine, elbow, wrist, and hand.
- Utilize continuous cryotherapy for the first 72 hours postoperatively, then frequent application (4-5 times a day for about 20 minutes).
- Gain patient independence in terms of bed mobility, transfers, and ambulation
- Give patient/ family home program

### **Day 5 to 21:**

- Start sub-maximal pain-free deltoid isometrics in scapular plane (avoid shoulder extension when isolating posterior deltoid.)
- Frequent (4-5 times a day for about 20 minutes) cryotherapy.

### **3 Weeks to 6 Weeks:**

- Continue with above exercises
- Progress PROM with goal of:
  - o FF 120, ER to tolerance respecting soft tissue constraints.

Progress to Phase II if criteria for progression to the next phase (Phase II):

- Satisfactory PROM, deltoid and periscapular isometrics.

### **Phase II –Active Range of Motion Phase (Week 6 to 10-12):**

#### **Goals:**

- *Progress PROM though full PROM is not expected*
- *Gradually restore AROM.*
- *Control pain and inflammation.*
- *Allow continued healing of soft tissue / do not overstress healing tissue.*
- *Re-establish dynamic shoulder and scapular stability.*

#### **Precautions:**

- *Continue to avoid shoulder hyperextension and internal rotation*
- *In patients with poor mechanics, avoid repetitive AROM and exercises.*
- *Restrict lifting of objects to no heavier than a coffee cup.*

#### **Week 6 to Week 8:**

- Continue with PROM program.
- At 6 weeks post op start PROM IR to tolerance (not to exceed 50 degrees) in the scapular plane.
- Start shoulder AA/AROM to tolerance, progress from supine to standing position.
- Start ER and IR isometrics (sub-maximal and pain free)
- Start scapulothoracic rhythmic stabilization and alternating isometrics in supine as appropriate
- Progress strengthening of elbow, wrist, and hand.
- Gentle glenohumeral and scapulothoracic joint mobilizations as indicated (Grade I and II).
- Continue use of cryotherapy as needed.
- Patient may begin to use hand of operative extremity for feeding and light activities of daily living including dressing, washing.

#### **Week 9 to Week 12:**

- Continue and progress above exercises.
- Begin AROM supine forward flexion and elevation in the plane of the scapula with light weights (1-3lbs. or .5-1.4 kg) at varying degrees of trunk elevation as appropriate. (i.e. supine lawn chair progression with progression to sitting/standing).
- Progress to gentle glenohumeral IR and ER isotonic strengthening exercises inside lying position with light weight (1-3lbs or .5-1.4kg) and/or with light resistance resistive bands or sport cords.

Criteria for progression to the next phase (Phase III):

- Improving function of shoulder.
- Patient demonstrates the ability to isotonicly activate all components of the deltoid and periscapular musculature and is gaining strength.

### **Phase III – Moderate strengthening (Week 12 +)**

#### **Goals:**

- *Enhance functional use of operative extremity and advance functional activities.*
- *Enhance shoulder mechanics, muscular strength and endurance.*

#### **Precautions:**

- *No lifting of objects heavier than 2.7 kg (6 lbs.) with the operative upper extremity*
- *No sudden lifting or pushing activities.*

#### **Week 12 to Week 16:**

- Continue with the previous program as indicated.
- Progress to gentle resisted flexion, elevation in standing as appropriate.

**Phase IV – Continued Home Program (Typically 4 + months postop):**

Typically, the patient is on a home exercise program at this stage to be performed 3-4 times per week with the focus on:

- Continued strength gains
- Continued progression toward a return to functional and recreational activities within limits as identified by progress made during rehabilitation and outlined by surgeon and physical therapist.

**Criteria for discharge from skilled therapy:**

- Patient is able to maintain pain free shoulder AROM demonstrating proper shoulder mechanics. (Typically, 80 – 120 degrees of elevation with functional ER of about 30 degrees.)
- Typically, able to complete light household and work activities.

Protocol modified and used with permission from BWH Sports/Shoulder Service.