

## ValleyOrtho Rehabilitation Playbook Series

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**Surgical Procedure:** Total Shoulder Arthroplasty (TSA) without rotator cuff repair

*The intent of this information is to inform the treating clinician on the evidence-based considerations to be used as a guideline regarding the surgery noted above. This is not a substitute for appropriate clinical decision making, but a supplement to that effect. If at any time a clinician feels uncertain about a given phase discrepancy or patient presentation they are strongly encouraged to discuss this with the referring physician and his/her team. \*It is the responsibility of the therapist to read the operative report before providing care to the patient to improve treatment communication\*.*

**Therapeutic Activity Progression Disclaimer:** Phase progression should be strongly based on meeting clinical criteria (not solely based on the post-operative timeframes) and in collaboration with the referring surgeon. Patient progress is variable and should be individualized while ROM restrictions provide upper limits, not absolute goals. Exercise prescription should be clinically directed by pain and performance absent of detrimental compensation with respect to proper arthrokinematics at the glenohumeral joint (GHJ).

### Communication Recommendations from Therapist to Surgical

**Team:** When a treating therapist feels the need to reach out to the physician, and his/her team, at any point for any reason they are strongly encouraged to do so. All concerns are not explicitly written and clinical judgement is paramount. Below is a handful of reasons and suggested methods of contact to promote communication:

#### Urgent Red Flag Communication: the patient is in clinic and an action is required as directed by referring staff office

- Uncontrollable and unremitting pain
- Signs of infection at incision or treated limb
- Severe palpation tenderness, swelling, tachycardia (UE or LE DVT)
- Labored breathing (PE)
- Drastic improvement or decline in ROM (failed subscapularis/component or dislocation concern)
- Excessive muscle guarding/motion phobia after the first 1-2 visits
- After a fall/trauma, or near fall/trauma, resulting in a clinical change

**Preferred Contact Method:** 1. Immediate call to MD or PA Cell.  
2. Office phone call to request consult with MD/PA/MA/ATC until answer.

### Administrative Needs

- Rehabilitation Prescription needed or prescription change requests.
- Appointment needed with the physician office, or medication refill.

**Preferred Contact Method:** Office phone call to MA/ATC.

### Other Patient Concerns During Clinic Hours M-TH 9am-5pm F 9-3pm

- Abnormal pain, comorbidities, complications or compliance to program that may prevent attainment of established discharge criteria
- Excessive muscle guarding/motion phobia after 1-2 outpatient visits
- Adverse work or home practices negatively impacting recovery
- Patient expresses discontent or concerns with the current POC established by PT/OT and/or by MD/PA

**Preferred Contact Method:** Phone call to MD &/or PA

### Preferred Updates before checkup visits with MD

During Clinic Hours M-TH 9am-5pm F 9-3pm

- Information regarding adherence/participation in rehab process
- Comments on progress and trends of the patient's rehab course

**Preferred Contact Method:** Phone call MD and/or PA. Or Fax update.



## **Phase 0: Post-Op Healing and Inpatient Education** (Day 1 to 7)

### **Goals:**

- Ensure optimized healing environment, sling position and postures
- Pain control, swelling control, exercises, precautions and ADL strategies understood by the patient
- Identify and discuss any clinical concerns of excessive muscle guarding to PROM or motion phobia after the first 1-2 outpatient visits with the physician

### **Precautions:**

- Sling use: Situations of fall risk and while sleeping (for 4 weeks)
- Limit extension to neutral in all positions (for 6 weeks)
- Protect loading on subscapularis reattachment if involved (for 6 weeks)
- No lifting, pushing, pulling or RROM on involved UE
- AROM allowed only anterior to the frontal plane below  $\approx 100^\circ$  elevation

### **Phase 0 Therapeutic Activities:**

- GHJ protected PROM without tissue deformation of surgically involved tissue
- P/AA/AROM within restrictions expressed in prescription
- Postural exercises for kinetic chain facilitation
- ADL safety strategies for UE/LE dressing, toileting, and showering
- Sling and cooling device don/doffing education and training

### **Criteria for Progression to Phase 1:**

- Pain reduced at rest
- Discharge to home with outpatient services initiated
- Patient is able to return demonstration of precautions and self ROM

### **Progression Note:**

- To proceed, the patient should have a fuller understanding and appreciation of the recovery process at this point to ensure a more complete recovery

## **Phase 1: Healing and ROM Recovery** (weeks 1 to 4-6)

### **Goals:**

- Progressive improvement in P/AAROM with decreasing pain and inflammation
- Improve scapula-humeral disassociation
- Establish cardiovascular exercise program

### **Precautions:**

- Protect loading on subscapularis reattachment if involved
- Restricted positions and P/AA/AROM carried through from phase 0
- No CKC >10 percent body weight, RROM or uncontrolled active movements

### **Phase 1 Therapeutic Activities:**

- Continue GHJ protected PROM without tissue deformation of surgically involved tissue
- AAROM (Respect subscapularis reattachment if involved)
- Cervical, thoracic and scapular manual treatment and postural exercises to promote healing environment and decrease potentially prolonged effects from interscalene block
- Scar mobilizations on healed incisions (approximately 2 weeks)

### **Criteria for Progression to Phase 2:**

- Tolerates therapeutic progressions without undue discomfort, compensation or guarding

### **Progression Note:**

- If the patient has not reached the above ROM criteria, forceful stretching and mobilization without respect for soft tissue restraints is not indicated in this phase. Continue with the current phase approach unless specific comorbidities create unattainable goals for phase progression, discuss this with the treating physician group before progressing to the next phase



## **Phase 2: ROM and Early Strengthening** (weeks 4 to 8)

### **Goals:**

- Restore full PROM and Initiate AROM program
- Appropriate A/PROM that promotes mild tissue deformation without over stressing surgically involved tissue for proper collagen regulation

### **Precautions:**

- Protect loading on subscapularis reattachment if involved until cleared by X-ray
- Restricted ROM until week 6: Limit extension to neutral in all positions
- No CKC >10 percent body weight, RROM or uncontrolled active movements

### **Phase 2 Therapeutic Activities:**

- AROM (Respect subscapularis/lesser tuberosity healing)
- Sub max shoulder isometrics in neutral posture (No IR before cleared)
- Gentle GHJ and scapular mobilizations, emphasis on posterior capsular mobility
- Non weight bearing Rhythmic stabilization

### **Criteria for Progression to Phase 3:**

- Tolerates therapeutic progressions
- **PROM to Achieve without exceeding:**  
(Flexion = 140<sup>0</sup>) (ER in RP = 60<sup>0</sup>) (IR in RP = 70<sup>0</sup>)
- AROM elevation to 100<sup>0</sup> with good mechanics

### **Progression Note:**

- If the patient has not reached the above ROM criteria, forceful stretching and mobilization without respect for soft tissue restraints is not indicated in this phase. Continue with the current phase approach unless specific comorbidities create unattainable goals for phase progression, discuss this with the treating physician group before progressing to the next phase

## **Phase 3: AROM & Intermediate Strengthening** (weeks 6 to 12)

### **Goals:**

- Gradual restoration of shoulder strength power and endurance
- Improve neuromuscular control of scapula/thoracic spine/GHJ
- Return to ADLs in front of body with involved limb

### **Precautions:**

- No heavy lifting (<10# below 90<sup>0</sup>), jerking or sudden lifting or pushing
- No aggressive IR and Extension actively or passively
- Lesser tuberosity healing will be assessed by X-Ray at 6 week follow up which will help determine progression of subscapularis activities

### **Phase 3 Therapeutic Activities:**

- GHJ protected PROM with moderate tissue deformation focused activity as necessary to maintain/gain ROM
- Progress AROM activity without feeding excessive compensatory strategies
- Begin IR progressing AAROM to AROM and from the scapular plane to GHJ extended positions
- Slow progression of low elevation RROM IR/ER *followed by RROM* flexion, scaption and extension
- CKC to 50% WB

### **Criteria for Progression to Phase 4:**

- Tolerates AA>A>RROM without undue soreness
- **Supine AROM to Achieve without exceeding:**  
(ER = 60<sup>0</sup>) (IR in RP = 70<sup>0</sup>) (Flexion = 140<sup>0</sup>) (Scaption = 140<sup>0</sup>)
- Seated AROM elevation to 120<sup>0</sup> with good mechanics

### **Progression Note:**

- If the patient is having difficulties attaining the above mentioned functional ROM at 12 weeks, more forceful short lever mobilizations and stretching with GHJ protection may be used with respect to the patient's pain tolerance at the discretion of the therapist
- If the patient hasn't made progress in ROM for 1.5 - 2 weeks and/or has persistent pain complaints beyond recovery expectations; Dr. Liotta requests more information to decide whether injections, surgical release or revision may need to be provided during the 12-16 week timeframe
- Continue with the current phase approach unless specific comorbidities create unattainable goals for phase progression, discuss this with the treating physician group before progressing to the next phase



## **Phase 4: Advanced Strength & Final HEP** (week 12 to D/C)

### **Goals:**

- Maintain near full non-painful AROM
- Gradual return to more advanced functional activities in all planes
- Return to full duty work and recreational activity absent of forceful repetitive overhead tasks

### **Precautions:**

- No undue stress on anterior capsule with exercise (example: ER in ABD > 90 degrees)
- Discourage quick return to exercise and activity
- All ROM and weight bearing restrictions lifted on surgical extremity

### **Phase 4 Therapeutic Activities:**

- Home program maintenance and progression education
- Return to work and recreation specific exercise

### **Criteria for Discharge/Expected Outcomes:**

- Pain free AROM to 90% of uninvolved extremity with normal mechanics
- Pain free muscle strength to 85% of uninvolved extremity
  - Obtain clearance from surgical team before initial dynamometer test or manual muscle test
- Compliant with prescribed HEP and understanding of lifetime commitment to shoulder care

### **Progression Note:**

- More forceful short lever mobilizations and stretching with GHJ protection may be used in this phase if the patient is having difficulties attaining the above mentioned functional ROM at the discretion of the therapist with respect to the patient's pain tolerance

### **Physician Alert Recommended:**

- If the patient hasn't made progress in ROM for 1.5 - 2 weeks and/or has persistent pain complaints beyond recovery expectations; Dr. Liotta requests more information to decide whether injections, surgical release or revision may need to be provided during the 12-16 week timeframe
- If comorbidities create unattainable goals for discharge, discuss this with the treating physician group

## **Abbreviation List:**

**AAROM:** Active assisted range of motion

**ABD:** Abduction

**ADD:** Adduction

**ADL:** Activity of daily Living

**AROM:** Active range of motion

**BT:** Biceps tenodesis

**BW:** Body Weight

**CKC:** Closed kinetic chain

**DVT:** Deep vein thrombosis

**ER:** External rotation

**EXT:** Extension

**FWB:** Full weight bearing

**GHJ:** Gleno-humeral joint

**HEP:** Home exercise program

**IR:** Internal rotation

**LE:** Lower extremity

**MA:** Medical assistant

**MD:** Medical doctor

**NWB:** Non weight bearing

**PA:** Physician assistant

**PE:** Pulmonary embolism

**PROM:** Passive range of motion

**ROM:** Range of motion

**RP:** Resting position

**RROM:** Resisted range of motion

**UE:** Upper extremity

**WB:** Weight bearing

**#:** Pounds

**≈:** Approximately



## References

1. Brigham and Women's Hospital Department of Rehabilitation Services, Total shoulder protocol.  
[http://www.brighamandwomens.org/Patients\\_Visitors/pcs/rehabilitation/services/Physical-Therapy-Standards-of-Care-and-Protocols/Shoulder%20-%20Total%20Shoulder%20Arthroplasty%20protocol.pdf](http://www.brighamandwomens.org/Patients_Visitors/pcs/rehabilitation/services/Physical-Therapy-Standards-of-Care-and-Protocols/Shoulder%20-%20Total%20Shoulder%20Arthroplasty%20protocol.pdf)
2. Gobeze, Reuben. Department of Orthopedic Surgery Case Western Reserve University. Total shoulder Arthroplasty/Hemiarthroplasty Protocol.  
<http://www.clevelandshoulder.com/pdf/tsaRehabInstructions.pdf>
3. Liotta, F. Expert Opinion and Consultation.
4. University of Alberta. Edmonton Region Shoulder Rehabilitation Guidelines – Total Shoulder Arthroplasty.  
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