

## **SHOULDER ACROMIOCLAVICULAR (AC) JOINT RECONSTRUCTION POST-OPERATIVE GUIDELINES**

The following Acromioclavicular Joint Reconstruction Guidelines were developed by HSS Rehabilitation and are categorized into 4 phases with the ultimate goal of maximizing the patient's level of activity. Progression is criteria-based, time-based and patient specific. The early phases are focused on protection of the surgical site to allow for soft tissue healing without overstressing the repaired tissue. Phases and time frames are designed to give the clinician a general sense of progression but do not replace clinical judgement. The program should balance the aspects of tissue healing and appropriate interventions to maximize flexibility, strength, and pain-free performance of functional activities

**FOLLOW SURGEON MODIFICATIONS AS PRESCRIBED**

## SHOULDER AC JOINT RECONSTRUCTION POST-OPERATIVE GUIDELINES

### Phase 1: Weeks 0-2 (Recovery)

#### PRECAUTIONS

- Use sling at all times except when bathing, dressing, icing or performing a home exercise program (HEP)
- Avoid weight bearing on the operative upper extremity, including lying on the operative side
- Limit shoulder active assistive range of motion (AAROM)/passive range of motion (PROM) to 90 degrees elevation (or per surgeon's guidelines)
- Avoid shoulder elevation active range of motion (AROM)
- Avoid pain with therapeutic exercise and functional activities
- Avoid lifting or carrying
- Avoid shoulder horizontal adduction, internal rotation (IR) behind the back, scapular protraction/retraction
- Use pillows to support operative arm when sitting or sleeping

#### ASSESSMENT

- Quick Disabilities of Arm, Shoulder and Hand (Quick DASH)
- American Shoulder and Elbow Surgeons Shoulder Score (ASES)
- Numeric Pain Rating Scale (NPRS)
- Mental status
- Wound status
- Swelling
- Atrophy
- Neurovascular screening
- Posture assessment
- Static scapular assessment (Kibler grading)
- Palpation
- Cervical mobility
- Shoulder PROM within limits
- AROM distal upper extremity
- Functional status: activities of daily living (ADL) and mobility (independent or caregiver independent with sling management)

#### TREATMENT RECOMMENDATIONS

- Education on don/doff sling
- ADL training

- Dressing and bathing
- Transfer training in and out of bed, sit to stand, and stair training while maintaining non-weight bearing on the operative upper extremity
- Instruct in semi-reclined sleeping position, avoid lying on operative side
- Codman's pendulum in sling supported by opposite arm
- PROM & AAROM to 90 degrees elevation in the plane of the scapula (POS)
- PROM & AAROM shoulder external rotation (ER)/IR in neutral
- Distal ROM
- Initiate submaximal rotator cuff isometrics in modified neutral as range of motion (ROM) allows
- Rhythmic stabilization IR/ER
- Cryotherapy to address swelling

### **CRITERIA FOR ADVANCEMENT**

- Understanding of precautions and activity modifications
- Independence with sling management
- Control of pain and swelling
- PROM shoulder elevation to 90 degrees

### **EMPHASIZE**

- ROM within surgeon's guidelines

## **SHOULDER AC JOINT RECONSTRUCTION POST-OPERATIVE GUIDELINES**

### Phase 2: Weeks 3-6

#### **PRECAUTIONS**

- Use sling at all times except when bathing, dressing, icing or performing HEP
- Avoid weight bearing on operative upper extremity, including lying on the operative side
- Avoid shoulder elevation AROM
- Avoid pain with therapeutic exercise and functional activities
- Avoid lifting or carrying
- Avoid shoulder horizontal adduction, IR behind the back
- Avoid extreme ranges of motion in scapular protraction/retraction
- Use pillows to support operative arm when sitting or sleeping

#### **ASSESSMENT**

- Quick DASH
- ASES
- NPRS
- Mental status
- Wound status/scar mobility
- Swelling
- Atrophy
- Neurovascular screening
- Posture assessment
- Static scapular assessment (Kibler grading)
- Palpation
- Joint mobility (except acromioclavicular joint)
- Cervical and thoracic mobility
- Shoulder PROM within limits
- AROM distal upper extremity
- Functional status – ADLs and mobility (independence or caregiver independence with sling management)

#### **TREATMENT RECOMMENDATIONS**

- Patient education: activity modification, don/ doff sling, postural training
- ADL training
  - Dressing and bathing
  - Transfer training in and out of bed and sit to stand

- Stair training while maintaining non-weight bearing on operative upper extremity
- Instruct in semi-reclined sleeping position, avoid lying on operative side
- Soft tissue: pectorals, upper trapezius, levator scapulae
- Scar mobilizations with healed incision
- Codman's pendulum in sling supported by opposite arm
- ROM:
  - PROM & AAROM shoulder elevation in POS
  - PROM & AAROM shoulder ER/IR
  - Distal ROM
- T-towel for thoracic extension
- Rhythmic stabilization IR/ER
- Strengthening:
  - Rotator cuff strengthening below shoulder height (isometrics to isotonic)
  - Periscapular muscle strengthening below shoulder height, mid ranges of motion, no resistance
- Lower extremity & core strengthening in protective positioning of the surgical shoulder
- Hydrotherapy with surgeon clearance & healed incision
- Cryotherapy to address swelling
- Cardiovascular endurance training lower extremity: stationary bicycle
- Upper extremity ergometer (UBE): as ROM permits; gentle/no resistance; mid-range; below shoulder height, as tolerated

### **CRITERIA FOR ADVANCEMENT**

- Understanding of precautions and activity modifications
- Independence with sling management
- Control of pain & swelling
- PROM shoulder elevation to 90-120 degrees

### **EMPHASIZE**

- Adherence to precautions to protect surgical site
- Edema & pain management

### **MODIFICATIONS TO PHASE 2**

- ROM within surgeon guidelines

## SHOULDER AC JOINT RECONSTRUCTION POST-OPERATIVE GUIDELINES

### Phase 3: Weeks 7-12

#### PRECAUTIONS

- Avoid pain with therapeutic exercise and functional activities
- Progress weight carrying at the side and overhead activity per physical therapist guidance

#### ASSESSMENT

- Quick DASH
- ASES
- NPRS
- Mental status
- Wound status/scar mobility
- Swelling
- Atrophy
- Neurovascular screening
- Static scapular assessment (Kibler grading)
- Scapulohumeral rhythm
- Palpation
- Joint mobility: GH joint, sternoclavicular (SC) joint, acromioclavicular (AC) joint, scapulothoracic (ST) joint
- Flexibility: i.e. pectorals, posterior rotator cuff, subscapularis
- Cervical and thoracic mobility
- Scapular mobility
- Glenohumeral (GH) joint AROM & PROM
- Strength
- Functional status – ADL and mobility

#### TREATMENT RECOMMENDATIONS

- Patient education: activity modification, postural training, increasing workload
- Soft tissue as needed: pectorals, upper trapezius, levator scapulae, etc.
- Scar mobilizations with healed incision
- Flexibility as needed
- ROM all planes: PROM & AROM
- Scapulohumeral rhythm: initiate scaption
- T-towel for thoracic extension
- Rhythmic stabilization

- Closed kinetic chain scapular stability in POS (e.g., UE weight shift on wall, exercise ball against plyoback)
- Strengthening:
  - Periscapular muscles (initiate resistance): rows, serratus punch, prone shoulder extension
  - Rotator cuff progression
- Cryotherapy to address swelling
- Hydrotherapy
- Cardiovascular endurance training lower extremity: stationary bicycle
- Upper extremity ergometer (UBE): as ROM permits and as tolerated

### **CRITERIA FOR ADVANCEMENT**

- PROM within normal limits
- Normalized scapulohumeral rhythm

### **EMPHASIZE**

- Wean from sling
- Restoration of full PROM
- Progression towards full AROM
- Scapular control
- Scapulohumeral rhythm

## SHOULDER AC JOINT RECONSTRUCTION POST-OPERATIVE GUIDELINES

### Phase 4: Weeks 13+

#### PRECAUTIONS

- Avoid pain with therapeutic exercise and functional activities
- Avoid sport activity until adequate strength development and surgeon clearance

#### ASSESSMENT

- Quick DASH
- ASES
- NPRS
- Mental status
- Wound status/scar mobility
- Functional status – ADLs and mobility
- Swelling
- Atrophy
- Neurovascular screening
- Static scapular assessment (Kibler grading)
- Scapulohumeral rhythm
- Palpation
- Joint mobility including: GH joint, SC joint, AC joint, ST joint
- Flexibility: i.e. pectorals, posterior cuff, subscapularis
- Cervical and thoracic mobility
- GH joint AROM & PROM
- Strength

#### TREATMENT RECOMMENDATIONS

- Patient education: postural training, understanding progression within ability
- Soft tissue, as needed: pectorals, upper trapezius, levator scapulae
- Scar mobilizations
- Joint mobility, as needed
- Flexibility, as needed
- ROM all planes: PROM & AROM
- T-towel for thoracic extension
- Rhythmic stabilization
- Strengthening:
  - Periscapular muscles: prone I's, T's , Y's



- Rotator cuff muscles: advance rotator cuff strengthening at 90/90 shoulder position
- Initiate overhead strengthening
- Progress UE weight-bearing activity: push-up progression
- GH Joint: biceps, triceps
- Neuromuscular facilitation: PNF patterns
- Closed kinetic chain scapular stability in POS and progress
- Cryotherapy prn
- Cardiovascular endurance
- Return to throwing progression
- Return to sport specific activity training

### **CRITERIA FOR DISCHARGE**

- Pain free ADL and/or sport specific training
- Full return to sport
- Independent with comprehensive HEP

### **EMPHASIZE**

- Gradual return to activities/sports

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### References

1. Cheema SG, Hermanns C, Coda RG, et al. Publicly accessible rehabilitation protocols for acromioclavicular joint reconstruction are widely variable. *Arthrosc Sports Med Rehabil.* 2021;3(2):e427-e433. <https://dx.doi.org/10.1016/j.asmr.2020.10.007>. doi: 10.1016/j.asmr.2020.10.007.
2. Cote, M, Wojcik, KE, Gomlinski, G, et al. Rehabilitation of acromioclavicular joint separations: operative and nonoperative considerations. *Clin Sports Med.* 2010;29(2):213-228. <https://www.clinicalkey.es/playcontent/1-s2.0-S0278591909000957>. doi: 10.1016/j.csm.2009.12.002.
3. Frank R, Cotter E, Leroux T, et al. Acromioclavicular joint injuries: evidence-based treatment. *J Am Acad Orthop Surg.* 2019;27(17):e775-e788. <https://www.ncbi.nlm.nih.gov/pubmed/31008872>. doi: 10.5435/JAAOS-D-17-00105.
4. Hashiguchi H, Iwashita S, Abe K, et al. Arthroscopic coracoclavicular ligament reconstruction for acromioclavicular joint dislocation. *J Nippon Med Sch; Nippon Ika Daigaku zasshi.* 2018;85(3):166-171. [https://www.jstage.jst.go.jp/article/jnms/85/3/85\\_JNMS.2018\\_85-24/\\_article/-char/en](https://www.jstage.jst.go.jp/article/jnms/85/3/85_JNMS.2018_85-24/_article/-char/en). doi: 10.1272/jnms.JNMS.2018\_85-24.
5. Kay J, Memon M, Alolabi B. Return to sport and clinical outcomes after surgical management of acromioclavicular joint dislocation: A systematic review. *Arthroscopy.* 2018;34(10):2910-2924.e1. <https://dx.doi.org/10.1016/j.arthro.2018.04.027>. doi: 10.1016/j.arthro.2018.04.027.
6. LeVasseur MR, Mancini MR, Berthold DP, et al. Acromioclavicular joint injuries: Effective rehabilitation. *Open Access J Sports Med.* 2021;12:73-85. <https://search.proquest.com/docview/2542109606>. doi: 10.2147/OAJSM.S244283.
7. Lim TK. Editorial commentary: Return to sport after surgical treatments of the acromioclavicular joint dislocation seems to be almost perfect in the literature. *Arthroscopy.* 2018;34:2925-2926. <https://dx.doi.org/10.1016/j.arthro.2018.07.038>. doi: 10.1016/j.arthro.2018.07.038.
8. Moatshe G, Bøe B, LaPrade RF. Editorial commentary: Early surgery and restricted rehabilitation are recommended for high-grade acromioclavicular joint dislocation. *Arthroscopy.* 2020;36(10):2642-2644. <https://dx.doi.org/10.1016/j.arthro.2020.07.039>. doi: 10.1016/j.arthro.2020.07.039.
9. Toft F, Scheibel M. Simultaneous posterior shoulder dislocation and acromioclavicular joint separation: single-stage arthroscopic treatment of combined injuries: a case report. *JBJS case connector.* 2020;10:e0467. <https://www.ncbi.nlm.nih.gov/pubmed/32649138>. doi: 10.2106/JBJS.CC.19.00467.