Healthy Driven
Edward-Elmhurst
MEDICAL GROUPS

Orthopedics

POST-OPERATIVE ROTATOR CUFF REPAIR GUIDELINES

The following post-operative rotator cuff repair guidelines were developed by Hospital for Special Surgery Rehabilitation and are categorized into five phases with the ultimate goal for returning the patient back to their desired activities. They can be used for patients undergoing rotator cuff repair with attention given to exact location and size of repair as well as any concomitant procedures. It is important that full range of motion (ROM) is restored while respecting soft tissue healing. Classification and progression are both criteria-based and time based due to the healing constraints of the human body.

The first phase is focused on soft tissue healing and maintenance of pain-free ROM. Phases two and three are focused on building foundational strength and stability which will allow the patient to progress to phase four which includes advanced strengthening. With the completion of phase four the patient will be able to start the final phase which includes return to previous recreational activities. Cardiovascular endurance, hip and core strengthening should be addressed through the rehabilitation process. The clinician should use their skilled judgment and decision making as progressions may not be linear.

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Phase 1: MAXIMUM PROTECTION PHASE (Weeks 0-2)

PRECAUTIONS	▪ Avoid weight bearing on operative upper extremity ▪ No shoulder active range of motion (AROM) ▪ Avoid pain during ROM exercises ▪ Avoid lying on operative side ▪ Use sling at all times except when bathing, dressing, icing or performing HEP ▪ Use pillows to support operative arm when sitting or sleeping ▪ If combined with biceps tenodesis, no biceps strengthening for 6 weeks
SPECIAL CONSIDERATIONS	▪ **Biceps tenodesis:** AROM with neutral wrist, no resisted biceps activity for 6 weeks ▪ **Massive cuff tear:** Delay protocol by 2 weeks unless otherwise directed by surgeon ▪ **Subscapularis repair:** PROM flex and scaption as tolerated. PROM ER with arm at side 0-30 degrees only for 4 weeks. PROM ER with abduction 45-50 degrees as tolerated
ASSESSMENT	▪ Pain ▪ Wound status ▪ Passive range of motion (PROM) ▪ Static scapular assessment (Kibler grading) ▪ Cervical mobility ▪ Swelling ▪ Post-anesthesia neurovascular screening ▪ Functional status – ADLs and mobility
TREATMENT RECOMMENDATIONS	▪ Transfer training in and out of bed and sit to stand, and stair training while maintaining non-weight bearing on operative upper extremity ▪ Pain-free distal AROM: Okay for active elbow flexion after biceps tenodesis. ▪ Shoulder PROM exercises: Codman's, Functional positioning for bathing and dressing ▪ Instruct in semi-reclined sleeping position, avoiding lying on operative side ▪ Educate on donning/doffing and proper positioning in sling ADL training Cryotherapy and elevation of upper extremity to prevent swelling Initiate and emphasize importance of HEP to be continued
CRITERIA FOR ADVANCEMENT	▪ Safely transfers unassisted ▪ Independent with sling management, or caregiver independent in assisting ▪ Independent with ADLs ▪ Independent with home exercise program (HEP) ▪ Decreasing discomfort at rest
EMPHASIZE	▪ Pain and edema control ▪ Proper sling positioning and compliance ▪ Protection of repair ▪ Independent transfers, ambulation and stair negotiation ▪ Pain-free HEP

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Phase 2: MODERATE PROTECTION PHASE (Weeks 2-6)

PRECAUTIONS	▪ Sling no longer required between 3-6 weeks based on size and number of tendons repaired, as specified by MD ▪ Limit shoulder PROM based on pain and MD guidelines, with emphasis on limiting ER to protect subscapularis repair (If performed) ▪ Gradual transition to AAROM as patient is transitioning out of sling ▪ Avoid severe pain with therapeutic exercise and functional activities ▪ Avoid weight bearing through operative upper extremity ▪ Avoid holding items greater than 2 lb.
SPECIAL CONSIDERATIONS	▪ **Biceps tenodesis:** active ROM with neutral wrist, no resisted biceps activity for 6 weeks ▪ **Massive cuff tear:** delay protocol by 2 weeks unless otherwise directed by surgeon ▪ **Subscapularis repair**: Gradual gain in ER in abducted position, 60-75 degrees at 4-5 weeks post op, 90 degrees ER at 6 weeks within patient tolerance. Do not force PROM.
ASSESSMENT	▪ Cervical mobility ▪ Shoulder PROM ▪ Static scapular assessment (Kibler grading) ▪
TREATMENT RECOMMENDATIONS	▪ PROM shoulder elevation in scapular plane ▪ AAROM shoulder ER with wand in scapular plane within prescribed limits ▪ Scapular mobility and stability exercises progression to manual resistance o Manual scapular clocks ▪ Codman's pendulum exercises ▪ Distal AROM exercises (unless PROM specified by MD for elbow) ▪ Core strengthening ▪ Deltoid isometrics ▪ ROM Goals (DO NOT FORCE BUT ASSESS FOR STIFFNESS) Goal is to return to full symmetric PROM by 6 weeks. ▪ Week 6: Rotator cuff (RC) isometrics o Submaximal rhythmic stabilization ER/IR with PT - PAIN FREE ONLY Submaximal ER/IR isometrics
MINIMUM CRITERIA FOR ADVANCEMENT	▪ Swelling and pain controlled ▪ Passive shoulder ER to 45° in scapular plane ▪ Passive shoulder elevation to 120° in scapular plane ▪ Tolerance of scapular and RC exercises without discomfort

EMPHASIZE	▪ Control swelling ▪ Proper donning/doffing of sling and use per MD instruction ▪ Protect surgical repair ▪ Importance of patient compliance with HEP and protection during ADLs

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Post-Operative Phase 3: EARLY STRENGTHENING PHASE (Weeks 6-12)

PRECAUTIONS	▪ Avoid pain with ADLs and therapeutic exercise ▪ No lifting greater than 5 lb. ▪ Avoid supporting full body weight on operative upper extremity
SPECIAL CONSIDERATIONS	▪ **Biceps tenodesis**: active ROM with neutral wrist, no resisted biceps activity for 6 weeks ▪ **Massive cuff tear**: delay protocol by 2 weeks unless otherwise directed by surgeon
ASSESSMENT	▪ Shoulder PROM ▪ Static scapular assessment (Kibler grading) ▪ Cervical mobility
TREATMENT RECOMMENDATIONS	▪ D/C sling if still in use ▪ Shoulder ROM exercises ○ AA/PROM using wand: forward flexion and ER, abduction, extension ○ Initiate AROM in all planes as tolerated without pain, begin supine and progress to standing. Use tactile and visual feedback to avoid shoulder hiking and compensatory movement patterns ○ Posterior capsule stretch and instruct on sleeper stretch for home ▪ Stabilization exercises ○ Humeral head control exercises ○ Closed kinetic chain exercises, e.g. ball stabilization begin week 10 ○ Scapular stabilization ▪ Strengthening exercises ○ Sub-maximal shoulder isometrics, e.g. flexion, extension, external and internal rotation ○ Multi-planar deltoid strengthening ○ General upper extremity strengthening ▪ Prone rows, extension ○ Core strengthening ▪ Cervical AROM and upper trapezius stretching ▪ Upper body ergometry if motion allows ▪ Reeducation of movement patterns ▪ Manual therapy as needed, e.g. scapular mobilization, soft tissue mobilization ▪ Functional mobility training ▪ Modalities for pain and edema ▪ Pool therapy if available ▪ Progression of HEP
CRITERIA FOR ADVANCEMENT	▪ Pain controlled ▪ Shoulder AROM in plane of scapula: elevation to 150°, ER to 45° ▪ Independent with HEP ▪ Restore forward flexion in scapular plane to full ▪ ER in scapular plane to 70°-90°
EMPHASIZE	▪ Gradually restore shoulder AROM ▪ Restore scapular and rotator cuff muscle balance and endurance ▪ Reduce compensatory movements, e.g. overuse of upper trapezius

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Post-Operative Phase 4: LATE STRENGTHENING PHASE (Weeks 12-16)

PRECAUTIONS	▪ Avoid scapular compensations with AROM ▪ No painful activities
SPECIAL CONSIDERATIONS	▪ Massive cuff tear- delay protocol by 2 weeks unless otherwise directed by surgeon
ASSESSMENT	▪ QuickDASH ▪ Shoulder AROM and PROM ▪ Static/dynamic scapular assessment ▪ Cervical and thoracic spine mobility ▪ Clavicular mobility ▪ UE and periscapular strength – MMT ▪ Grip strength (Kibler grading)
TREATMENT RECOMMENDATIONS	▪ Progress shoulder ROM and flexibility to WNL ▪ Manual therapy to restore shoulder girdle ROM ▪ Address flexibility of thoracic spine ▪ PNF patterning ▪ Progressive resistive exercises for UE, shoulder girdle and core o Latissimus pull downs, serratus strengthening, side lying ER ▪ Initiate banded ER/IR - at 12-14 week post op this should be pain free ▪ Initiate closed chain upper body exercises with gradual loading (avoid full body weight) ▪ Progress humeral head rhythmic stabilization exercises, e.g. closed chain, upright position, overhead ▪ Upper body ergometry and general conditioning ▪ Functional training to address patient's goals ▪ Progress to more advanced long term HEP
CRITERIA FOR ADVANCEMENT (OR ADVANCEMENT TO PHASE 5 IF RETURNING TO SPORT)	▪ Normal/near normal shoulder motion and flexibility over 90° ▪ UE and periscapular muscle strength 4+/5 for control with functional movements ▪ Fully independent with ADLs with minimal pain ▪ Tolerance to all exercises without discomfort
EMPHASIZE	▪ Restore normal ROM and flexibility ▪ Restore strength ▪ Posterior capsule mobility ▪ Reduce compensatory patterning

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Phase 5 Return to Activity (Weeks 16+)

PRECAUTIONS	▪ Avoid high impact, e.g. contact sports ▪ Avoid too much too soon- monitor exercise dosing ▪ Note that expert opinion varies widely on allowable sports- consult with MD
ASSESSMENT	▪ QuickDASH ▪ Shoulder AROM and PROM ▪ Static/dynamic scapular assessment (Kibler grading) ▪ Cervical and thoracic spine mobility ▪ Clavicular mobility ▪ UE and periscapular strength – MMT ▪ Grip Strength
TREATMENT RECOMMENDATIONS	▪ Progress humeral head control exercises in a variety of overhead positions ▪ Progress isotonic exercises to higher loads as indicated ▪ Sustained single arm holds with perturbations ▪ Closed kinetic chain progression exercises ▪ Progress cardiovascular conditioning ▪ Sport-specific multidirectional core retraining ▪ Dynamic balance activities ▪ Neuromuscular shoulder reeducation for control with dynamic sports-specific exercises ▪ Progress total body multidirectional motor control exercises to meet sport-specific demands at 6 months if appropriate ▪ Collaboration with trainer, coach or performance specialist
CRITERIA FOR RETURN TO SPORT	▪ Independent in long-term sport-specific exercise program ▪ Movement patterns, strength, flexibility, motion, power and accuracy to meet demands of sport symptom free
EMPHASIZE	▪ Monitor load progression and volume of exercise ▪ Monitor for loss of strength and flexibility ▪ Improve muscle strength and flexibility ▪ Neuromuscular patterning ▪ Collaboration with appropriate Sports Performance expert