Altru Advanced Orthopedics

Small to Medium Arthroscopic Rotator Cuff Repair Protocol

The intent of this protocol is to provide the therapist with a guideline for the post-op rehab of a patient who has had an arthroscopic RTC repair for a small to medium tear (<1cm-3cm). It is not intended to be a substitute for appropriate clinical decision making regarding the progression of a patient's rehab. The actual therapy plan of care must be based on the mechanism of injury, surgical approach, physical exam and findings, individual progress, any post-op complications, and/or co-morbidities. If a therapist needs assistance or has questions regarding the progression of a patient post surgically they should consult the referring surgeon.

- If **subscapularis repair**: limit ER to neutral for 4 weeks then to patient tolerance until 6 weeks, gentle stretching for ER at 6 weeks, limit extension to neutral for 6 weeks, no isolated resistance to IR for 12 weeks.
- If associated **subscapularis repair with supraspinatus or infraspinatus repair** follow ER restrictions and other subscapularis restrictions in combination with this protocol
    - If there was >30% subscapularis involvement/complete subscapularis repair (2 anchors) in RTC repair then delay ER ROM past neutral (0°) until 6 weeks post-op. After 6 weeks begin ER to 30°
    - If there was <30% subscapularis involvement/partial (superior) subscapularis repair (1 anchor) in RTC repair then allow ER to 30° immediately post-op until 6 weeks post-op. After 6 weeks, ER past 30° to tolerance.
- If associated **biceps tenodesis with supraspinatus or infraspinatus repair,** follow biceps tenodesis restrictions in combination with this protocol
    - No active elbow flexion for 6 weeks
    - Delay strengthening until 12 weeks to avoid biceps activity
- If an **open repair**: no active flexion for 6-8 weeks, limit extension and ER ROM to neutral for 6 weeks, no resistance to IR for 6-8 weeks d/t deltoid detachment and reattachment.

General Considerations:

- When progressing through protocol consider:
    - Quality of tissue and integrity of the repair (affected by age, smoking, diabetes, fatty infiltrate)
    - Acute vs chronic tears (traumatic vs degenerative tears)
    - Tear size (large/massive tear or >1 tendon repair may not achieve full ROM, use caution with AROM and strengthening with chronic/large tears)
    - Amount of tendon retraction prior to surgery
    - First vs revision surgery
    - Pain (should decrease over time)
    - Focus on ROM before strength

- Tissue Healing: soft tissue-to-bone healing is a slow and gradual process that requires at least 12 weeks of healing to allow adequate pull-out strength of repair (Ghodadra et al, JOSPT, 2009).

PHASE I: 0-6 weeks

Goals:

- Maintain integrity of the repair
- Decrease pain and inflammation
- Educate patient regarding posture, joint protection, positioning, hygiene, incision care, etc.
- Gradually increase PROM to decrease negative effects of immobilization

Precautions:

- Keep arm supported when out of sling
- No lifting of objects or sudden movements
- No supporting of body weight or pushing/pulling by hands
- No bimanual activities (pulling on socks or pants, etc.)
- No shoulder motion behind back

Immobilization:

- Sling with/without pillow for 6 weeks, remove only for exercises and hygiene

Therapeutic Exercise:

1. PROM:
    - In supine range as tolerated
    - Flexion and abduction
    - ER and IR in scapular plane
    - Pendulum exercises
2. AAROM:
    - At 2-4 weeks:
        - Cane for ER/IR in scapular plane
        - Cane or pulleys for flexion
3. AROM:
    - Elbow, wrist, and hand
        - Avoid elbow flexion if biceps repair or tenodesis
        - Arm supported bicep/triceps isotonic strengthening at week 6
    - Cervical and thoracic spine
        - Cervical retraction, flex, side bending with overpressure, rotation
        - Thoracic AROM, seated self-mobilization
4. Gentle hand gripping exercises
5. At 4-6 weeks submax pain-free shoulder isometrics
6. Postural Education- avoid forward head and rounded shoulders
7. Scapular Stabilization

- Begin with sling on: elevation/depression, retraction/protraction

8. At 4-6 weeks supine rhythmic stabilization:
   - ER/IR in neutral
   - Flex/ext in 90-100° flex

Manual Therapy:

- Scar mobilization prn

Modalities:

- Cryotherapy/ice for pain and inflammation
  - 15-20 minutes every 2 hours for first week
- IFC/TENs for pain relief prn
- NMES prn

Goals to Achieve for ROM by 4-6 weeks post-op:

Flexion/scaption	0-120°
Abduction	0-90°
ER in scapular plane	0-60°
IR in scapular plane	0-30°
ER at 60° ABD	0-60°
ER at 90° ABD	0-45°
IR at 90° ABD	none
Extension	0-30°

<u>PHASE II: 7-12 weeks</u>

Goals:

- Allow healing of soft tissue, do not overstress tissues
- Decrease pain and inflammation
- Gradually restore full passive ROM
- AAROM progressing to AROM to restore motion without compensation
- Initiate light functional activities/ADLs and proprioception activities starting below shoulder height

Precautions:

- No loading, lifting, pushing, pulling, or sudden movements with affected arm
- No excessive behind the back movements or shoulder extension with IR
- No aggressive strengthening
- Light ADLs up to shoulder height, limit overhead use

Immobilization:

- Discontinue sling at 6 weeks
  - Use sling in crowds or at night as needed

Therapeutic Exercise:

1. Progress PROM all planes as tolerated
2. AAROM:
    - Pulleys- flex, scap, abd
    - Cane/wand- flex, scap, abd, ER, ext
    - Begin behind the back IR stretching at 8
    - Begin extension past neutral at 6 weeks
    - Thoracic extension
3. AROM
    - Shoulder flex and abd 90-120° degrees as tolerated
        - Should be pain-free and without compensation
4. Strengthening:
    - Beginning with weight of the arm, gradually add weights as tolerated
    - Sidelying ER with scap setting
    - Sidelying flexion with scap setting
    - Prone horiz abd with ER (W)
    - Prone extension (I)
    - Biceps/Triceps isotonic
5. Progress rhythmic stabilization
    - 8-10 weeks: supine flex at 90°, standing low load closed chain (ball on table)
    - 10 weeks: supine flex at 120°, standing flexion at 90° bilat progress to unilateral
6. Dynamic stabilization drills- balance boards, steps
7. May start to use arm for light ADL's

Manual Therapy:

- Scar/soft tissue mobilization prn
- Mobilization to capsule, scapula, clavicle prn

Modalities:

- Cryotherapy/ice for pain and inflammation
- IFC/TENs for pain relief prn
- NMES prn

Goals to achieve for ROM by 6-12 weeks post-op:

	6-8 weeks	8-10 weeks	10-12 weeks
Flexion/Scaption	0-140°	0-160°	0-170/180°
Abduction	0-120°	0-120°	0-170/180°
ER in scapular plane	0-70°	0-80°	0-80/90°
IR in scpular plane	0-45°	0-60°	0-70°
ER at 60° ABD	0-70°	0-80°	0-80/90°
ER at 90° ABD	0-45°	0-60°	0-70°
Extension	0-45°	0-50°	0-60°

PHASE III: 13-24 weeks

Goals:

- Full active pain-free ROM with good scapulohumeral rhythm

- Dynamic shoulder stability
- Gradual restoration of shoulder strength, power, and endurance
- Gradual return to functional activities and ADLs

Precautions:

- Avoid overhead loads with affected arm
- Avoid increased pain
- Avoid full and empty can exercises

Therapeutic Exercise:

1. PROM and stretching as needed to maintain full ROM
    - Instruct for self-capsular stretches as indicated
    - Posterior capsule stretching and sleeper posterior capsule stretch
2. AROM
    - Wall slide, wall washes, ball slides up wall
3. Isotonic Strengthening- avoid pain, avoid shoulder/scapular hiking
    - Bands/tubing
    - Prone exercises to neutral extension
4. Progress fundamental shoulder exercises
    - PNF patterns
5. Closed Chain stabilization exercises at and above shoulder height
6. Progress dynamic stabilization
    - Balance boards, steps working into push-up position
    - Theraball UE weight-bearing activity
7. Progress Proprioception
    - Wall dribble, ball toss
    - Plyometric training- double arm below 90° to single arm above 90°

Manual Therapy:

- Glenohumeral joint and capsular mobilizations prn

Modalities:

- NMES prn

<u>Phase IV: 25+ weeks</u>

Goals:

- Gradual return to strenuous work activities
- Gradual return to recreational sport activities
- Gradual return to functional activities, ADLs above shoulder height

Therapeutic Exercise:

1. Continue maintenance strengthening program 3-5x/week for 6 months
2. Continue stretching

3. Progress to sports/work-specific activities and exercises
4. Initiate interval sport programs (throwing, golf, tennis, swimming, etc.)

Criteria for D/C from therapy:

- **Pain-free AROM and strength, sufficient to meet daily needs**
- **Independent home exercise program to be done at least 4 times per week for 12 months (Including stretching and strengthening)**
- **Return to all functional activities, ADLs, and work activities without pain**
- **Functional progression to throwing program for throwing athletes**