

Arthroscopic Shoulder Debridement Subacromial Decompression Clinical Practice Guideline

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Background Information: Subacromial irritation has been documented repeatedly in previous literature. Structures underneath the coracoacromial arch can often times become irritated due to overload and compressive forces. Recent literature suggests a multitude of contributing factors that entail not only structural pathology, such as bony/articular compression (extrinsic theory), but rather a consequence of rotator cuff tendinopathy from overuse and degenerative tendon changes (intrinsic theory) as well as bursal thickening. Subacromial decompression is often times performed to aid with improving structural pathology. This may consist of mild debridement of rotator cuff tissue, bursectomy, and acromioplasty. This process aids with improving structural irritation, however it is important to reflect that other contributing factors may exist preoperatively regarding rotator cuff tendinopathy; therefore, a progressive loading program to aid with tendon adaptation is needed post-operatively to ensure proper recovery and restore function. This clinical practice guideline is intended to aid with progression back to function. Emphasis should consider time dependent tissue healing and criterion-based progression regarding patient demographics and clinical assessment. Please refer to the surgical note for more information regarding each procedure.

Precautions:

1. Avoid heavy lifting movements, especially overhead
2. Refrain from quick, jerking movements
3. For the first 6 weeks do not use affected extremity in sitting or rising (this is to prevent fracture/cracking of acromion)
4. Sling use as guided by surgeon

Biceps Tenodesis Precautions: In some cases, the long head of the biceps brachii could be involved which could lead to surgical repair alongside a rotator cuff repair. In these cases, this attachment site is surgically cut and reattached to the humerus. To ensure proper healing of this tendon particular guidelines should be followed.

- Limit ER to 40 degrees with no humeral extension or horizontal adduction for 4-6 weeks
- Any biceps tension should be avoided for 6 weeks
- Avoid cross friction massage for 6 weeks (indirect gentle soft tissue mobilization can be utilized at 2 weeks)
- Sling use for 6 weeks
- No isolated elbow flexion, straight-arm resisted shoulder flexion, or forearm supination for 8 weeks

Phase 1: Immediate Motion Phase (0-2 weeks)

GOALS:

- Prevent the negative effects of immobilization
- Regain full non-painful range of motion
- Retard muscular atrophy & reestablish dynamic stabilization
- Decrease pain and inflammation

PRECAUTIONS:

- Proper sling use guided by surgeon
- ROM should be gradual and never forced (avoid pain or pinching)
- Towel roll placed underneath arm to avoid humeral extension for ROM
- Avoid heavy lifting, using extremity in sitting/rising, or quick/jerky movements

<i>Post-Operative weeks 0 to 2</i>	<i>Week 2</i>
<p><i>PROM & AAROM</i></p> <ul style="list-style-type: none"> ▪ Therapist PROM for all directions (flexion, ER, IR, abduction) ▪ Pendulums ▪ Shoulder assisted pulley's (avoid pain/pinch) ▪ L-bar/cane/wand exercises <ul style="list-style-type: none"> -Forward elevation in scapular plane -ER/IR initially in 30 °abd (progress to 45 ° abd) <p><i>Strengthening</i></p> <ul style="list-style-type: none"> ▪ Submaximal glenohumeral ISOM (flex, abd, ER, IR- all pain-free) ▪ Scapular clocks (neutral humeral position with elbow at trunk) <p><i>Elbow/wrist/hand ROM as tolerated (follow precautions if biceps tenodesis performed)</i></p> <p><i>Modalities/cryotherapy PRN</i></p>	<p><i>PROM & AAROM</i></p> <ul style="list-style-type: none"> ▪ Continue all previous ROM exercises ▪ Initiate L-bar/cane/wand ER & IR at 90° abd <p><i>Strengthening</i></p> <ul style="list-style-type: none"> ▪ Progress previous ISOM ▪ Initiate light resistive ER & IR with tubing in neutral humeral positioning (arm at side/scapular plane with towel roll between arm and body) ▪ Continue scapular postural reeducation <p><i>Neuromuscular Reeducation</i></p> <ul style="list-style-type: none"> ▪ Rhythmic stabilization training <ul style="list-style-type: none"> -Supine flex/ext -Supine ER/IR (30 degrees abd, neural humeral positioning) <p><i>Elbow/wrist/hand ROM as tolerated (follow precautions if biceps tenodesis performed)</i></p> <p><i>Modalities/cryotherapy PRN</i></p>

MILESTONES TO PROGRESS TO PHASE 2:

1. Nearly complete full ROM (80-90% affected vs uninvolved extremity)
2. "Good" MMT for IR, ER, flexion (MMT 4/5)
3. Minimal pain or tenderness (<3/10)

Phase 2: Intermediate Phase (2-6 weeks)

GOALS:

- Normalize full non-painful motion and shoulder complex arthrokinematics
- Regain and improve muscular strength
- Enhance shoulder complex neuromuscular control
- Diminish residual pain/inflammation

PRECAUTIONS:

- ROM should be gradual and never forced (avoid pain or pinching)
- Provided patient has no c/o pain and has normalized scapulohumeral rhythm with AROM, initiate resistive isotonic dumbbell exercise with 1 lb
- If biceps tenodesis follow precautions (avoid biceps tension for 6 weeks; no active bicep flexion/wrist supination, or resisted shoulder flexion for 8 weeks)
- Warning signs of not making progress: loss of motion (especially IR), lack of strength (especially abductors and ER), and continued pain (especially at night)

<i>Post-Operative 2 to 3 weeks</i>	<i>Weeks 3 to 6</i>
<p><i>ROM</i></p> <ul style="list-style-type: none"> ▪ Continue previous AAROM & PROM with emphasis on terminal ROM (avoid pain) <p><i>Strengthening</i></p> <ul style="list-style-type: none"> ▪ Initiate Isotonic program with gravity resistance only (Emphasize proper scapulohumeral rhythm) <ul style="list-style-type: none"> -Shoulder elevation (thumb-up scaption) -Sidelying ER -Scapular protraction -Prone rows and shoulder extension to neutral -Sidelying Shoulder abduction to 90 ° -Prone horizontal abduction (palm down/neutral rotation) -Elbow flexion and extension <p><i>Neuromuscular Reeducation</i></p> <ul style="list-style-type: none"> ▪ Continue previous rhythmic stabilization training ▪ Sidelying scapular manual resistance (neutral humeral positioning) <ul style="list-style-type: none"> -Elevation, retraction, posterior tilting <p><i>Manual</i></p> <ul style="list-style-type: none"> ▪ Glenohumeral joint mobilizations PRN <ul style="list-style-type: none"> -Inferior, posterior, and anterior glides <p><i>Elbow/wrist/hand ROM as tolerated</i> (follow precautions if biceps tenodesis performed)</p> <p><i>Modalities PRN</i></p>	<p><i>ROM</i></p> <ul style="list-style-type: none"> ▪ Continue previous AAROM & PROM with emphasis on terminal ROM (avoid pain) ▪ Low-load static stretching <ul style="list-style-type: none"> -Cross-body stretch (horizontal adduction) -ER at 90° abduction -IR at 90° abduction <p><i>Strengthening</i></p> <ul style="list-style-type: none"> ▪ UBE with light resistance ▪ Continue previous isotonic program with low resistive dumbbells <ul style="list-style-type: none"> -Avoid scapular substitution -Prone horizontal abduction with ER -Prone Y's (initiate at modified ROM if substitution present) <p><i>Manual</i></p> <ul style="list-style-type: none"> ▪ Glenohumeral joint mobilizations PRN <ul style="list-style-type: none"> -Inferior, posterior, and anterior glides <p><i>Neuromuscular Reeducation</i></p> <ul style="list-style-type: none"> ▪ Supine PNF patterns of movement with manually applied resistance <ul style="list-style-type: none"> -D2 flex and ext -Rhythmic stabilization holds (D2 flex & ext) <p><i>Modalities PRN</i></p>

MILESTONES TO PROGRESS TO PHASE 3:

1. Full AROM without scapular substitution/compensation
2. No reactive inflammation, pain or tenderness
3. Able to perform ADLs without complaints of pain
4. Involved UE strength 70% vs uninvolved (tested with handheld dynamometry or MMT 4+/5)
5. Involved shoulder ER to IR ratio >67% (isokinetic or handheld dynamometry)

Phase 3: Dynamic Strengthening Phase (weeks 6-12)

GOALS:

- Improve strength, muscular endurance and power of shoulder complex musculature
- Enhance neuromuscular control and proprioception of shoulder
- Prepare the athlete for return to sport

PRECAUTIONS:

- Emphasize proper scapulohumeral rhythm with all below activity
- If biceps tenodesis follow precautions (avoid biceps tension for 6 weeks; no active bicep flexion/wrist supination, or resisted shoulder flexion for 8 weeks)
- Warning signs of not making progress: loss of motion (especially IR), lack of strength (especially abductors and ER), and continued pain (especially at night)
- If patient does not perform velocity dependent tasks during work/sport/ADLs do not perform plyometrics

<i>Post-Operative 6 to 9 weeks</i>	<i>Weeks 9 to 12</i>
<p><i>ROM</i></p> <ul style="list-style-type: none"> ▪ Previous ROM PRN with emphasis on terminal ROM (avoid pain) ▪ Low-load static stretching PRN <p><i>Strengthening</i></p> <ul style="list-style-type: none"> ▪ UBE moderate resistance ▪ Continue previous PREs <p><i>CKC UE Stabilization Training (Week 8)</i></p> <ul style="list-style-type: none"> ▪ Initiate in standing (fixed distal segment, no elbow flexion) ▪ Per pt demands gradually lower int prone plank -Modified positions first <p><i>Neuromuscular Reeducation</i></p> <ul style="list-style-type: none"> ▪ Continue previous routine ▪ Initiate reactive stabilization training (start in neutral positions) -Ball drops -Wall dribbles -Body blade ▪ Add double-arm plyometrics -Chest pass -Cross-body chop -Late stage progress into overhead (overhead shoulder extension) 	<p><i>ROM</i></p> <ul style="list-style-type: none"> ▪ Previous ROM PRN with emphasis on terminal ROM (avoid pain) ▪ Low-load static stretching PRN <p><i>Strengthening</i></p> <ul style="list-style-type: none"> ▪ Continue all previous PREs ▪ Continue with CKC UE stabilization progression <p><i>Neuromuscular Reeducation</i></p> <ul style="list-style-type: none"> ▪ Initiate single-arm plyometrics -Catch and toss drills (Ex: supine PNF, ER, IR) ▪ Weeks 10-12 progress into sport-specific single-arm exercises (ex: towel slaps at low percentage of effort) <p><i>Trunk and lower extremity strengthening (avoid behind the head positions and holding excessive loads)</i></p>

MILESTONES TO PROGRESS TO PHASE 4:

1. Full non-painful AROM without scapular substitution/compensation
2. No pain or tenderness
3. Able to complete UE plyometric activity without pain and with substantial power
4. Adequate strength of scapular stabilizers & rotator cuff: MMT 4+/5 to 5/5 (70-80% bilateral comparison with handheld dynamometer)
5. Involved extremity ER to IR ratio >66% (isokinetic or handheld dynamometry testing)

Phase 4: Return to Activity Phase (weeks 13-22)

GOALS:

- Maintenance of shoulder complex strength and ROM
- Progressive return to unrestricted activity

PRECAUTIONS:

- Emphasize proper scapulohumeral rhythm with all below activity
- If biceps tenodesis follow precautions (avoid biceps tension for 6 weeks; no active bicep flexion/wrist supination, or resisted shoulder flexion for 8 weeks)
- Warning signs of not making progress: loss of motion (especially IR), lack of strength (especially abductors and ER), and continued pain (especially at night)
- If patient does not perform velocity dependent tasks during work/sport/ADLs disregard return to activity phase and establish detailed HEP

<p><i>Post-Operative 13 to 22 weeks</i></p> <p><i>ROM & Strengthening</i></p> <ul style="list-style-type: none"> ▪ Previous ROM PRN with emphasis on terminal ROM (avoid pain) ▪ General flexibility program ▪ Continue previous PREs <p><i>Functional Activity</i></p> <ul style="list-style-type: none"> ▪ May begin interval sports progression program once below criteria met -Ex: throwing progression program <p><i>Trunk and lower extremity strengthening</i> (avoid behind the head positions and holding excessive loads)</p>

MILESTONES TO INITIATE INTERVAL PROGRESSION PROGRAMS (e.g. throwing)

1. Clearance from physician
2. Muscular strength >80% bilateral comparison for rotator cuff & scapular stabilizers (MMT 5/5)
3. Involved extremity ER to IR ratio $\geq 75\%$ (isokinetic or handheld dynamometry testing)
4. Full functional ROM with appropriate scapulohumeral rhythm (overhead athlete see appendix)
5. Able to complete a UE plyometric progression program

Appendix:

The Overhead Athlete:	Side to side differences (throwing arm vs non-dominant arm)
Total rotational ROM at 90° abd (ER plus IR)	< 5 degrees
Shoulder flexion	≤ 5 degrees
Shoulder ER	5 degrees more
Horizontal Adduction	<15 degrees

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