TOA

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ROTATOR CUFF REPAIR PROTOCOL

This rehabilitation protocol has been developed for the patient following a rotator cuff surgical procedure. This protocol will vary in length and aggressiveness depending on factors such as:

- Size and location of tear
- Quality of the repaired rotator cuff tissue
- Presence of additional procedures such as biceps tenodesis
- Degree of shoulder instability/laxity prior to surgery
- Acute versus chronic condition
- Length of time immobilized
- Strength/pain/swelling/range of motion status
- Rehabilitation goals and expectations

Early passive range of motion is highly beneficial to enhance circulation within the joint to promote healing. The protocol is divided into phases. Each phase is adaptable based on the individual and special circumstances. The **overall goals** of the surgical procedure and rehabilitation are to:

- Control pain, inflammation, and effusion
- Regain normal upper extremity strength and endurance
- Regain normal shoulder range of motion
- Achieve the level of function based on the orthopedic and patient goals

The physical therapy should be initiated within the first week and one half to two full weeks post-op. A CPM machine will be used for home range of motion prior to beginning a full therapy program. The supervised rehabilitation program is to be supplemented by a home fitness program where the patient performs the given exercises at home or at a gym facility. **Important post-op signs** to monitor:

- Swelling of the shoulder and surrounding soft tissue
- Abnormal pain response, hypersensitivity, increasing night pain
- Severe range of motion limitations
- Weakness in the upper extremity musculature
- Improper mechanics or scapular dyskinesia
- Core and peri-scapular strength deficits

Return to activity requires both time and clinical evaluation. To safely and most efficiently return to normal or high level functional activity, the patient requires adequate strength, flexibility, and

endurance. Functional evaluation including strength and range of motion testing is one method of evaluating a patient's readiness return to activity. Return to intense activities following a rotator cuff repair require both a strenuous strengthening and range of motion program along with a period of time to allow for tissue healing. Symptoms such as pain, swelling, or instability should be closely monitored by the patient and therapist. Specific exercises may be added, substituted, or modified where clinically appropriate by experienced sports/shoulder therapists or trainers who have expertise in the care of post-operative rotator cuff rehabilitation. While patients may be "cleared" to resume full activities at 6+ months following surgery, additional time spent in full activity or sport participation is often necessary to achieve maximal recovery.

Suggestions during rehab:

1. The RC gets a better blood supply when the shoulder is slightly away from the body; therefore, advocate the use of a towel roll under the arm when in a resting position.
2. The RC muscles are very small; therefore, we use lower intensities to isolate each muscle without recruitment from surrounding larger muscles. Focus on hypertrophy initially by high volume (V= Reps X intensity/weight). Following the hypertrophy phase, strength is the focus with lower reps and higher intensities/weight.
3. Closed chain rotator cuff exercises facilitate cuff strength and shoulder proprioception. Like closed chain exercises for the knee, these can be safely initiated early in the post op course.

ROTATOR CUFF REPAIR – SMALL (<1cm)/MEDIUM TEAR (1-3cm)
PHASE 1: WEEK 1-4

HEALING

- Inflammatory Phase (Day 1-7): Weak fibrin clot forms
- Proliferative Phase (Week 2-3): Granulation tissue forms and the clot is replaced with weak and poorly organized type III collagen
- Maturation Phase (Week 3-): Type I collagen slowly replaces type III collagen and aligns to increase tensile strength; may take 12-16 weeks to reach maximum tensile strength

BRACE/SLING

- To be worn at all times for 4-8 weeks per Dr Crook (default is 6 weeks)
- Brace to be worn while sleeping
- Can be removed for exercises only

PRECAUTIONS

- **No Active shoulder ROM for 3 weeks**
- ROM: Gradual ↑ Passive ROM in scapular plane
- Avoid excessive adduction and IR

ROM

- Pendulum exercises – keep circles very small
- ER with cane (not to exceed 30° of ER at 45° abduction)
- AA flexion supine
- Rope/pulley week 4 post-op
- Gentle posterior capsular stretch (week 3)
- Active elbow ROM all planes as tolerated

STRENGTH

- Seated and/or supine scapular retractions – perform every hour
- Shoulder shrugs
- Grip strengthening using ball or putty
- Supine shoulder flexion initiated with elbow flexed 90° (week 3-4)
- Supine scapular protraction (week 3-4)
- Supine Rhythmic stab (week 3-4)

MANUAL

- STM to decrease pain and muscle spasm
- PROM all planes except extension adhering to limitations

MODALITIES

- Moist heat 10-15 min prior to exercise
- Ice 10-15 min following exercise and as needed
- E-stim/TENS for pain as needed
- US as needed

GOALS OF PHASE 1

- Promote healing of repaired tissue
- Control pain and inflammation
- Gradual increase of ROM
- Independent in HEP

PHASE 2: WEEK 4-8

ROM

- Continue previous
- Rope/Pulley (flex, abd, scaption)
- Towel IR stretching
- Wand/cane activities in all planes

STRENGTH

- Supine progress to standing flexion, scaption when good scapulo-humeral rhythm
- Side-lying ER AROM progress to DB
- Thera-band IR/ER (goal 3x20 with one color before progress to next)
- B ER with TB
- Standing TB extension with scapular retraction
- UBE
- Body blade with elbow flexed, arm by side moving into IR/ER
- Prone rows
- *If biceps tenodesis, no light resistive biceps exercises until week 6
- Rhythmic stab in SL progress to standing in scaption
- Bicep/Tricep work

MANUAL

- STM to decrease pain and muscle spasm
- GH and scapular jt mobs as needed
- PROM all planes except extension adhering to limitations

MODALITIES

- Continue previous as needed

GOALS OF PHASE 2

- Pain free ADLs
- 80% ROM in all planes
- Good scapulo-humeral rhythm with elevation
- Initiate RC strengthening

PHASE 3: WEEK 8-16

ROM

- Goal is to be at full AROM wk 10-12
- Continue/progress all ROM work from previous phases
- Posterior capsule stretching
- Sleeper stretch
- Hands behind head IR/ER

STRENGTH

- Continue with all strengthening from previous phases increasing resistance and repetition
- Manual rhythmic stabilization exercises in standing at 90° flex/scaption
- Supine punches with resistance
- Prone shoulder extension
- Prone Ys, Ts
- Prone ER with abduction
- Initiate D1/D2 PNF patterns in standing
- Push-up progression – start at week 8 on wall
- UBE for endurance training
- Body blade – multi-planar
- Advance to thrower's 10 program of 2 sets of 30 reps (10 ea 3 different ways) for standing and prone db exercises

MANUAL

- Continue to gradually progress PROM
- Continue STM as needed

GOALS OF PHASE

- Minimize pain and swelling
- Reach full ROM
- Improve upper extremity strength and endurance
- Enhance neuromuscular control
- Normalize kinematics

PHASE 4: WEEK 16-36

ROM

- Continue with all ROM activities from previous phases

STRENGTH:

- Progress strengthening program with increase in resistance and high speed repetition
- UBE high resistance for endurance
- IR/ER exercises at 90° abduction
- Progress rhythmic stabilization activities to include standing PNF patterns with tubing
- Initiate single arm plyotoss (ball toss, ball on wall)
- Eccentric RC strengthening
- Initiate military press, bench press, flys, lat pulldowns week 16+ (do NOT let elbow extend past plane of thorax)
- Initiate sport specific drills and functional activities
- Initiate interval throwing program week 16-20 – consult with Dr. Crook first*
- Initiate light upper body plyometric program week 16-20
- Progress isokinetics to 90° abduction at high speeds

MANUAL

- Grade III-IV joint mobs as needed for full ROM
- Full PROM

MODALITIES

- MHP as needed
- Ice 10-15 minutes
- Ultrasound as needed

GOALS OF PHASE

- Full painless ROM
- Maximize upper extremity strength and endurance
- Maximize neuromuscular control
- Optimize shoulder mechanics/kinematics
- Optimize core stability
- Initiate sports specific training/functional training