Complex/Large/Massive(>3 cm) Rotator Cuff Repair Reconstruction Protocol

- No AAROM until 8 weeks.
- NO AROM until 12 weeks.
- No pulley until 6 weeks.

Exceptions per Additional Procedure

BICEPS TENODESIS
No resisted shoulder flexion, elbow flexion or forearm supination for 8 weeks.

BANKART OR LABRAL REPAIR
Defer to Bankart or labral repair protocol.

PHASE I:
Week 0-6

Physical therapy sessions: first session scheduled
2 weeks [ ], 4 weeks [ ], or 6 weeks [ ] after procedure (check desired box).

Schedule 1-2 PT sessions/week

Schedule follow-up appointment with MD/PA at 1-4 weeks, per physician discretion.

PRECAUTIONS	• Immobilization: + abduction pillow for 8 weeks. - May be removed cautiously for bathing and rehabilitation exercises • ROM restrictions: no AAROM or AROM • Lifting restrictions: no lifting • Weight bearing restrictions: No supporting body weight through hands • Other: No aquatic therapy until sutures removed
THERAPEUTIC APPROACH	Assure normal neurovascular status **WEEK 1** **IMMOBILIZATION IN SLING ONLY**

THERAPEUTIC APPROACH	**WEEKS 2-6** **RANGE OF MOTION** • Elbow/wrist/hand AROM (depending on biceps surgical involvement) • Supported pendulums as tolerated • Cervical spine AROM • Gentle PROM of shoulder: 10 repetitions 2x/day - Supine passive forward elevation in the plane of the scapula ▪ Week 2: 60-90 degrees ▪ Week 6: 90-120 degrees - Supine passive ER to tolerance with dowel rod @ 0-20 deg flexion and 20 deg abduction ▪ Week 2: 0-20 degrees ▪ Week 6: 20-30 degrees Modalities: ice, TENS	**STRENGTHENING** • Scapula elevation • Scapula retraction (*avoid if teres minor or subscapularis repair until 7-8 weeks) • Grip exercises: Ball, towel, PowerWeb, Digiflex **NEUROMUSCULAR RE-EDUCATION** • Contralateral strengthening exercises: ER, IR, rows, shoulder extension with resistance bands • Postural education **CARDIOVASCULAR TRAINING** • Lower extremity cardio: walking, stationary bike, treadmill walking
GOALS	• Minimize pain and inflammatory response • Achieve ROM goals	• Establish stable scapula • Maintain elbow, wrist, hand ROM
MILESTONES FOR PROGRESSION	• PROM - ER to 30 deg @ 20 deg flexion/abduction by week 6 - Flexion to 120 degrees by week 6	Pain: <4/10 No complications with Phase 1

POSTOPERATIVE PHASE II:
Weeks 6-12

Physical therapy sessions: 2-3 sessions/week

Schedule follow-up appointment with MD/PA at 6-12 weeks.

PRECAUTIONS	• Immobilization: discharge sling at 8 weeks • ROM restrictions: No AROM • Lifting restrictions: No lifting, no sudden/excessive movements • Weight bearing restrictions: No supporting body weight with hands	• Other: - No RTC strengthening until 12 weeks - No functional hand behind back until week 8 - No horizontal adduction until week 8.

THERAPEUTIC APPROACH

SUGGESTED EXERCISES
Continue with Phase I interventions with appropriate progressions.

WEEKS 6-9

RANGE OF MOTION

- PROM of shoulder: 10 repetitions 2x/day
  - Supine passive forward elevation in the plane of the scapula
    - Week 9: 130-155 degrees
  - Supine passive ER to tolerance with dowel rod @ 0-20 deg flexion and 20 deg abduction
    - Week 9: 30-45 degrees
  - Supine passive ER at 90 deg abduction
    - Week 9: 45-60 degrees
- Table slides: flexion, scaption and abduction
- Pulley: flexion, scaption and abduction
- Cane flexion, abduction and ER
- Posterior capsule stretching: posterior capsule and sleeper stretch

STRENGTHENING

- Lawn chair progressing to standing
  - Shoulder flexion (goal of 90 deg at 6 weeks)
- AROM Flexion: 90-120 deg by week 9
- Sub-maximal pain-free isometrics with 90 deg elbow flexion
- Scapula retraction with resistance band
- Prone row
- Prone shoulder extension
- Prone low trap at 60 deg abduction
- Supine punch
- Biceps and triceps with resistance band

NEUROMUSCULAR RE-EDUCATION:

- Contralateral strengthening exercises: ER, IR, rows, shoulder extension with resistance bands
- Postural education
- Sidelying: scapular ROM, PNF patterns, manually resisted training

WEEK 9-12

RANGE OF MOTION

- PROM of shoulder: 10 repetitions 2x/day
  - Supine passive forward elevation in the plane of the scapula
    - Week 12: 140 degrees to WNL
  - Supine passive ER to tolerance with dowel rod @ 0-20 deg flexion and 20 deg abduction
    - Week 12: 30 degrees to WNL
  - Supine passive ER at 90 deg abduction
    - Week 12: 75 degrees to WNL

STRENGTHENING

- Start AROM flexion: 120 deg to WNL by week 12

Modalities: ice, TENS

GOALS

- Gradual ROM increase
- Increase functional use of UE
- Minimize substitution patterns
- DO NOT overstress healing tissue
- Progress periscapular strength

MILESTONES FOR PROGRESSION	RANGE OF MOTION GOALS • AROM: 120 deg flex with minimal to no substitution patterns • PROM - ER to 30 deg at 20 deg abduction - ER to 75 deg at 90 deg abduction - Full flexion to 140 deg	Pain: <2/10 and no night pain No complications with Phase II

POSTOPERATIVE PHASE III:
Weeks 12-20

Physical therapy sessions: 2 sessions/week

Schedule follow-up appointment with MD/PA per physician cadence

PRECAUTIONS	• AROM and/or RTC strengthening with resistance bands should not be initiated until: - Overall pain level is low - Patient can maintain normal scapulohumeral rhythm during AAROM/AROM	• Strengthening focus is high repetitions with low resistance (max 2x/day) • No lifting >10 lbs

THERAPEUTIC APPROACH

SUGGESTED EXERCISES

Continue with Phase II interventions with appropriate progressions.

WEEKS 12-16

RANGE OF MOTION

- Continue to restore full PROM

STRENGTHENING

- Continue shoulder isometrics, increasing duration and volume
- Prone rows, shoulder extensions, Ts, Ws
- Supine serratus punch
- Sidelying ER and shoulder abduction
- Push-up plus at wall
- Forward Punch with resistance band
- Standing ER/IR walk-out @ 0 deg abduction

NEUROMUSCULAR RE-EDUCATION

- Rhythmic stabilization training
- PNF patterns
- Ball on wall proprioception training

FUNCTIONAL TRAINING

- Forward reach
- ADL training

THERAPEUTIC APPROACH	**WEEK 17-20** **RANGE OF MOTION** • Continue to restore full PROM **STRENGTHENING** • Continue shoulder isometrics, increasing duration and volume • Prone rows, shoulder extensions, Ts, Ws • Supine serratus punch • Sidelying horizontal abduction • Quadruped shoulder flexion • Bird dogs • Shoulder IR and ER with resistance bands	**NEUROMUSCULAR RE-EDUCATION** • Rhythmic stabilization training • PNF patterns • Ball on wall proprioception training **FUNCTIONAL TRAINING** • Seatbelt motion • Belt looping • Lifting to shoulder height Modalities: at therapist discretion, PRN
GOALS	• Achieve ROM goals • Eliminate shoulder pain • Increase functional use of UE	• Improve strength/endurance/power • Minimize substitution patterns • Improve dynamic stability of shoulder
MILESTONES FOR PROGRESSION	• AROM: Full in all planes or equal to uninvolved side • Strength - Symmetrical scapular control/mechanics with exercise - 5/5 MMT for RTC before introduction of plyometrics	Pain: <2/10 No complications with Phase III

POSTOPERATIVE PHASE IV:
Weeks 20-26

Physical therapy sessions: 1-2 sessions/week, reducing to 1x/week as patient is proficient with HEP

Schedule follow-up appointment with MD/PA per physician cadence

PRECAUTIONS	• Progress strength/endurance/power/stability exercises gradually

THERAPEUTIC APPROACH	**SUGGESTED EXERCISES** Continue with Phase III interventions with appropriate progressions. *At this stage, begin to include prone isotonic strengthening, progress CKC dynamic stability activities, initiate impulse exercises and isokinetic strengthening.* **STRENGTHENING** • Prone isotonic strengthening • Quadruped alternating isometrics • Wall ball stabilization • Standing PNF D1/D2 • Standing low trap lift off • Dynamic hug with resistance band • Wall push-up • Field goals • Standing ER/IR @ 90 deg abduction	**NEUROMUSCULAR RE-EDUCATION** • Continue PNF training • Continue rhythmic stabilization • Body weight shifts at plinth, rocker board or BOSU **FUNCTIONAL TRAINING** • Overhead reaching and lifting • Carrying exercises • Pushing and pulling exercises May start aquatic therapy for strengthening Modalities: at therapist discretion, PRN
GOALS	• Normalize strength/endurance/power	• Return to full ADL's and recreational activities
MILESTONES FOR PROGRESSION	• Full AROM	• Strength is 5/5 for deltoid and RTC

POSTOPERATIVE PHASE V:
Weeks 27-32

Physical therapy sessions: at therapist's discretion, total sessions 2-4

Schedule follow-up appointment with MD/PA at 12 months

PRECAUTIONS	• Progress strength/endurance/power/stability exercises gradually • 5# max for isotonic strengthening of rotator cuff/deltoid/scapula	• The rehab team should also begin to consider return to sport, particularly contact sports AND/OR occupational demands

THERAPEUTIC APPROACH	**SUGGESTED EXERCISES** Continue with Phase IV interventions with appropriate progressions. *In this phase, there should be decreasing external stabilization as the patient demonstrates progress. The therapist should include movement drills that integrate functional patterns, kinesthetic awareness and increase the speed of movement. During this phase of recovery, the focus is endurance and therefore, the rest time between exercise sets should be minimized.* May begin tennis ground stroke/batting/return to golf AFTER completing strength progression.	**MONTH 6-8** **PLYOMETRIC PROGRAM** • Beach ball/tennis ball progressing to weighted balls - 2 handed toss from waist to overhead to diagonal patterns • 1-handed stability drills • 1-handed tosses (vary abduction angle, UE support, and amount of protected ER) Throwing program may begin 3-6 weeks after plyometrics Modalities: at therapist discretion, PRN
GOALS	• Normalize strength/endurance/power	• Return to full ADL's and recreational activities
MILESTONES FOR PROGRESSION	DISCHARGE CRITERIA TO CLEAR FOR RETURN TO SPORT • Clearance from MD • All previous milestones met • Negative impingement and instability special tests • ROM: Full pain-free PROM/AROM • Strength - ER/IR >85% of uninvolved arm - ER/IR Ratio > 60% - Symmetrical scapular mechanics with exercises - 5/5 MMT shoulder girdle and/or satisfactory isokinetic test - Pass Closed Kinetic Chain Upper Extremity Test • Complete plyometric program (if applicable) • Complete interval RTS program (if applicable) • No complications with Phase V	