

AC Joint Reconstruction Rehabilitation Protocol

PHASE I: Generally post-operative weeks 1 - 12	
PRECAUTIONS:	<p>*NO elevation of shoulder past 90°*</p> <p>*Must ALWAYS wear sling/immobilizer for 6-8 weeks, even while sleeping*</p> <p>*NO jogging/running*</p> <p>Avoid unsupported dependent positions during hygiene and exercise</p>
IMMOBILIZER/SLING:	Sling must be worn except during rehabilitation for the first 8 weeks following surgery
ROM:	<p>No elevation of shoulder past 90° for 6-8 weeks - ER/IR as tolerated</p> <p>After 8 weeks post-op, gradually increase shoulder elevation ~10° per week</p>
WOUND:	<p>Post-op dressing remains intact until post-op day #3 (~72 hours after surgery)</p> <p>May begin showering after post-op day #3 (no need to cover incision site)</p> <p>*Do NOT submerge shoulder in tub or pool for 4 weeks*</p> <p>Suture/staple removal @ 10-14 days at followup with Dr. Zacchilli</p>
REHABILITATION:	<p>Frequent use of ice in a semi-reclined position is encouraged</p> <p>Exercises should be done as part of a home exercise program 3-4 x per day</p> <p>All ROM exercises should be preceded with a scapular muscle set</p>
~Weeks 1-3	<p>Scapular stabilizer muscle sets</p> <p>Elbow, Wrist, & Hand: ROM exercises, gripping, squeezing, etc.</p> <p>Gentle (“Two Finger”) isometrics (pain free)</p>
~Weeks 4-6	<p>Supine Assisted Shoulder Flexion - limited to 90° and assisted with opposite hand</p> <p>Supported <u>supine</u> pendulum</p> <p>Aerobic conditioning on stationary bike (with sling on)</p>
~Weeks 7-8	<p>Bilateral shoulder FF and scaption AROM using good form (without shoulder hiking)</p> <p>Bilateral shoulder ER AROM, only to the point of first resistance</p> <p>Scapular clock – including retraction & protraction</p> <p>Scapular retraction with thoracic extension and rotation</p> <p>Shoulder AAROM exercises: wand, pulley, gentle towel stretch, etc. – as needed</p>
~Weeks 9-12	<p>Lower extremity weight lifting (optional)</p> <p>Gentle weight-bearing shifts: quadruped → tripod, (include tripod thoracic rotation)</p> <p>Upper body ergometer (light resistance)</p> <p>Scapular exercises: rows, shrugs, and “pushouts” using light resistance</p> <p>ER/IR strengthening with light theraband (with towel roll under arm)</p>
FOLLOW-UP:	Supervised rehabilitation: 2-3 x per week as needed; Ortho: every 4-6 weeks
DOCUMENTATION:	Precautions, pain level, medications and modalities

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PHASE I GOALS:	<p>Observation: (incision sites) - Signs/symptoms of infection? Site healing well? Neurovascular status: Distal pulses, motor and sensation intact? Shoulder ROM (forward flexion, ER with shoulder at side)</p> <p>Protect the surgical repair Shoulder ROM to approximately 130° elevation</p>
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PHASE II: Generally post-operative months 4 - 5	
PRECAUTIONS:	<p>*NO pushups, heavy lifting, or other sports participation*</p> <p>*NO repetitive overhead use of shoulder*</p>
IMMOBILIZER:	None
REHABILITATION:	<p>Continue phase I exercises as needed; Strengthening exercises are only performed if pain free. Exercise progression occurs when no increase in pain/stiffness since prior session.</p>
~Month 4	<p>Upper body ergometer: forward, reverse, and clockwise & counterclockwise standing at side Shoulder ROM exercises: wand, pulley, towel stretch, sleeper's stretch, etc. – as needed Supine flexion on bolster (progress to using light weight) Kneeling thoracic reaches Progressive strengthening: ER & IR (arm at side), FF & scaption to 60-90°, prone rows (X,Y,T) (first set: 20 repetitions, then 1 additional set at the same weight to muscle failure) Neuromuscular/functional training exercises - variety of beginning level exercises that do not require > 90° shoulder elevation or 20° ER (see appendix) Aerobic Conditioning: Bike, elliptical, stairmaster as desired. May begin jogging (start with 5 minutes and progress gradually as tolerated)</p>
~Month 5	<p>Progressive strengthening: ER/IR (shoulder in 30° elevation), FF/scaption to 90-110°, Scapular retraction strengthening (seated or standing): X,Y,T,90-90 row, etc. (first set: 15 reps, then 2 additional sets at the same weight to muscle failure) Progressive neuromuscular/functional training exercises (see appendix) Lunges holding plyoball overhead</p>
FOLLOW-UP:	Ortho: ~4-5 months post-op; Supervised rehabilitation: 2-3 x per week as needed
DOCUMENTATION:	Pain level, medications, shoulder ROM & strength
PHASE II GOALS:	<p>Full shoulder ROM with exception of ~90% full ROM for external rotation Full strength based on manual muscle testing Pain free activities of daily living (If goals are not met, consider remaining on phase II for 2-4 additional weeks)</p>

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PHASE III: Generally post-operative months 6 - 7	
PRECAUTIONS:	<p>*NO participation in contact/collision sports for 9-12 months post-op*</p> <p>*All weight training should be modified to avoid the “90/90” position*</p> <p>*Avoid jerking, quick, or sudden movements with shoulder*</p>
REHABILITATION:	<p>Continue phase II exercises as needed</p> <p>Exercise progression occurs only when there has been no increase in shoulder pain or stiffness since the previous rehabilitation session</p>
~Month 6	<p>Warm-up: 5-10 minutes on upper body ergometer or elliptical</p> <p>General upper quarter stretching: 5-10 minutes (shoulder, thoracolumbar spine)</p> <p>Progressive strengthening: ER/IR (shoulder in 45-90° elevation), FF/scaption to 110- 130°, (first set: 10 repetitions, then 2 additional sets at the same weight to muscle failure)</p> <p>May also begin general UE light intensity strengthening with shoulder in “safe” position (avoid heavy overhead lifting, avoid shoulders in the 90° elevation, 90° ER position)</p> <p>Continue progression for neuromuscular/functional training exercises -intermediate level</p>
~Month 7	<p>Warm-up: 5-10 minutes on upper body ergometer or elliptical</p> <p>General upper quarter stretching: 5-10 minutes (shoulder, thoracolumbar spine)</p> <p>Progressive strengthening: ER/IR (shoulder in 60-90° elevation), FF/scaption to 130- 150°, (first set: 6-8 repetitions, then 2 additional sets at the same weight to muscle failure)</p> <p>Continue progression for neuromuscular/functional training exercises –advanced level</p> <p>Progressive sports training: Begin at 25-50% intensity, progress gradually (see appendix)</p>
FOLLOW-UP:	Ortho: ~7 months post-op; Supervised rehabilitation: 1-2 x per week as needed
DOCUMENTATION:	<p>Pain level & medications</p> <p>Shoulder ROM & strength</p>
PHASE III GOALS:	<p>Pushups at own pace without pain</p> <p>Pain free throwing motion</p>
MISCELLANEOUS:	<p>After 7 months post-op: Exercises in phase III are continued, gradually increasing intensity & duration as tolerated.</p> <p>The recommendation is to wait until 9-12 months post-op to return to contact/collision or overhead sports or aggressive physical training (i.e. CrossFit, etc.). This time period may be adjusted slightly by the surgeon and therapist according to patient progress.</p>

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APPENDIX: GENERAL SHOULDER EXERCISE PROGRESSIONS

***Note to clinician*:** There are many potentially good neuromuscular/functional training exercises that can assist a post-op shoulder during rehabilitation. For all levels, these exercises should be pain free. Rather than pick a few favorite ones, our strategy is to provide guidelines and examples of several. The clinician should stay within the general guidelines to design an individualized, effective program for his/her patient.

Primary guidelines for beginning level neuromuscular/functional training exercises:

Light resistance, shoulder ROM not to exceed 90° of shoulder elevation or 20° ER, all weight-bearing exercises should be in the quadruped position with both UEs in contact with a stable surface

Primary guidelines for intermediate level neuromuscular/functional training exercises:

Should begin only after completing several weeks of beginning level exercises
Light to moderate resistance, shoulder ROM should generally not exceed 120° or 40° ER for single arm movements, avoid the full prone push-up position for weight-bearing exercises

Primary guidelines for advanced level neuromuscular/functional training exercises:

Should begin only after completing a month or two of intermediate level exercises
Moderate resistance, full ROM - but generally avoiding the 90° abducted, 90° externally rotated position

Exercise Type	Beginning Level ~months 4-5 post-op	Intermediate Level ~months 5-6 post-op	Advanced Level ~months 6-7 post-op
Body Blade	Flexion/Extension IR/ER Superior/Inferior (arm at side)	FF range to 90° Scaption to 90° IR/ER through ROM Horiz adb/add at 90°	FF range to 150° Scaption to 150° IR/ER through ROM Diagonal motions
Ball toss	Chest pass – 2 handed IR toss – (arm at side)	Overhead toss – (2 handed) Behind back toss	Overhead diagonal toss – (2 handed) Regular throwing toss
Prone stabilization	All fours stabilization on stable surface	All fours stabilization on foam or theraball Tripod on stable surface	Tripod stabilization on unstable surface
Supine stabilization	Supine Shoulder Stabilization @ 90°	Supine Shoulder Stabilization from 60-120°	Supine Shoulder Stabilization (Available ROM)
Pushups	none	Wall pushups – progressing to inclined pushups	Knee pushups – progressing to modified regular pushups
Misc activities for sports training	Basketball: dribbling, chest and bounce pass Golf: putting Volleyball: bumping Pool: jogging, treading Wall ball drawing	Basketball: shooting within the key only Golf: chipping, short irons Volleyball: setting Pool: No overhead strokes Tossing Frisbee Catching drills: below 90°	Basketball: noncontact drills only Golf: gradual return Vball: gradual return ~6 mo Pool: gradual return Forehand, backhand racquet sports (no overhead)