



United States Military-Baylor University
Post-professional Sports Medicine-Physical Therapy Doctoral Program
Keller Army Community Hospital, West Point, New York
“Academic, Research, and Clinical Excellence”

SHOULDER RECONSTRUCTION REHABILITATION GUIDELINES

PRE-OP

EVALUATION: ROM, Strength, Load Shift, Apprehension, Relocation, Scapulohumeral Rhythm.

EXERCISE: Learn Phase I Exercises.

EDUCATION: Understand the need of Compliance in Rehabilitation, Timelines, Goals, Precautions & Discharge Criteria.

PHASE I: POST-OP (Inpatient) PHASE

Generally lasts 3-7 days

****Note:** Exercise prescription is dependent upon the tissue healing process and *individual* functional readiness in *all* stages. If any concerns or complications arise regarding the progress of any patient, physical therapy will contact the orthopedic doctor

DOCUMENTATION: Neurovascular Status, Pain Level, and Precautions
Passive Shoulder Flexion (ROM) (after exercise)
Submaximal Motor Response

SLING: Always wear sling, even while sleeping.

WOUND: Check for signs/symptoms of infection. P.T. will debulk dressing.

PRECAUTIONS: No active use of arm - Must wear sling.

EXERCISES: 1. SUPINE ASSISTED SHOULDER FLEXION

Instructions: Lie on back with arm down at side and thumb pointed towards the ceiling. Use unaffected hand to grasp the wrist of the affected arm and slowly raise it only to 90 degrees.

2. MODIFIED PENDULUM

Instructions: (May be done in the sling.) While supporting the affected arm with the unaffected hand, move the shoulder in clockwise and counterclockwise directions. ****Not done for Electrothermal Reconstructions**

3. HAND SQUEEZING EXERCISES

Instructions: Use a foam ball, newspaper, or theraputty to squeeze repetitively.

4. ELBOW & WRIST AROM

Instructions: Perform elbow and wrist flexion, extension, pronation, and supination while holding the shoulder in a neutral position at side.

5. “TWO FINGER” ISOMETRICS

Instructions: Use the unaffected hand to provide very light resistance during shoulder flexion, adduction, extension, and abduction (No rotation).

PHASE II: PROTECTION PHASE

Generally lasts approximately from one week post-op to approximately 4-6 weeks

FOLLOW-UP: Weekly with P.T., Monthly with Ortho, Attend P.T. TIW, Home Exercise Program twice each day

DOCUMENTATION: Neurovascular Status
Pain Level
ROM - Passive Supine Shoulder Flexion, ER at side (after exercise)
Submaximal Motor Response
Precautions

SLING: Continue in sling per Ortho Doctor: Generally,
a. 2-4 weeks post-op after Open Bankart Repair
b. 4-6 weeks post-op after Capsular Shift or Scope Reconstruction
c. See "Sling Usage Guidelines" for more specific considerations

WOUND: Staples/sutures removed @ 7-10 days per P.T.
May shower the morning after sutures are removed
Begin scar massage after incision site sloughs / scar is formed

PRECAUTIONS: No active use of arm, must use sling until cleared through Ortho Doctor

EXERCISES: 1. SUPINE ASSISTED SHOULDER FLEXION

Instructions: Lie on back with arm down at side and thumb pointed towards the ceiling. Use unaffected hand to grasp the wrist of the affected arm and slowly raise it only to 90 degrees. **Not done electrothermal and scope reconstructions.**

****Electrothermal procedures: After 2 weeks, begin ACTIVE supine shoulder flexion.**

Note - No ER ROM past neutral during this phase for all procedures.

2. PENDULUM

Instructions: Bend over, allowing affected arm to hang freely, and move trunk forward, backward, side to side, and circular motions thereby causing the shoulder to move like a pendulum. ****Not done for Electrothermal Reconstructions**

****Continue Supported Pendulum for all other Scope Repairs**

3. ELBOW AND WRIST AROM WITH LIGHT WEIGHTS

Instructions: Perform elbow and wrist flexion, extension, pronation, and supination ROM with light weights (starting with one pound progressing to no more than three pounds) while holding the shoulder in a neutral position at side

4. ISOMETRICS

Instructions: Use unaffected hand to provide submaximal and **PAIN FREE** resistance during flexion, adduction, extension, abduction, ER, IR

5. SCAPULAR RETRACTION AND PROTRACTION

Instructions: "Pinch" shoulder blades together. Hold for 5 seconds and relax. Then spread shoulder blades far apart. Hold for 5 seconds and relax. Repeat several times.

PHASE III: BEGINNING STRENGTHING & ENDURANCE PHASE

Generally lasts approximately one month (From 4-6 weeks post-op until 8-10 weeks post-op)

FOLLOW-UP Every 2-3 weeks with P.T., Monthly with Ortho, Attend P.T. TIW

DOCUMENTATION: AROM - Supine Shoulder Flexion, ER at side, ER at 90 deg, Sitting IR (Apley's)
Strength - Manual Muscle Testing
Scapulohumeral Rhythm
Exercise Compliance
Pain or Tenderness

EXERCISES: **1. SHOULDER ROM EXERCISES AS NEEDED (Exceptions below)**
Instructions: Work on motion restrictions as needed. Exercises to include wand, pulley, towel stretch, wall climbs, etc. Patient should be more aggressive gaining motion but not "push through" any "sharp, jabbing, or pinching" pain
****Electrothermal and Capsular Shift procedures: Do AROM exercises only.**
Limit ROM to 30 degrees ER until 6 weeks post surgery.
Limit ER ROM to -15 degrees of opposite shoulder until phase IV.

2. PENDULUM (Continued as needed for ROM)

3. UPPER BODY CYCLE

Instructions: Perform up to 10 minutes forward and 10 mins backwards on the upper cycle

4. PROGRESSIVE RESISTIVE EXERCISES (Rotator Cuff PREs)

Instructions: Perform the following exercises emphasizing high repetition, low resistance and correct technique.

1. ER in sidelying, and ER at 0 deg
2. IR at 0 deg
3. Flexion (thumb up) to 90 degrees
4. Scaption (thumb up) to 90 degrees

5. PROGRESSIVE RESISTIVE EXERCISES (Scapular PREs)

Instructions: Perform the following exercises emphasizing high repetition, low resistance and correct technique.

1. Prone Horizontal Shoulder Abduction at 90 degrees
2. Rowing
3. "Pushouts" - (Essentially a pushup "plus" in standing)

6. LEVEL I NEUROMUSCULAR TRAINING EXERCISES

Instructions: Under supervision, begin inertial training, "beginning level" plyoball and pool exercises.

7. AEROBIC CONDITIONING

Instructions: Ride a stationary bike, do stairmaster, Nordic Track, etc. No running

CRITERIA FOR PROGRESSION TO PHASE IV

1. 90% FAROM
2. Pain free ADLs
3. 90% Strength per manual muscle testing
4. Able to perform 10 minutes of UBC without shoulder pain

PHASE IV: ADVANCED STRENGTHENING & BASIC FUNCTIONAL PHASE

Generally lasts 4-6 weeks (From 8-10 weeks post-op until 12-16 weeks post-op)

FOLLOW-UP: Every 3-4 weeks with P.T., 3 Month Evaluation with Ortho, Attend P.T. TIW

DOCUMENTATION: AROM - Supine Shoulder Flexion, ER at side, ER at 90 deg, Sitting IR (Apley's)
Strength - Manual Muscle Testing
Scapulohumeral Rhythm
Exercise Performance (Presence of pain noted)
Tenderness

EXERCISES: 1. ROM EXERCISES AS NEEDED

Instructions: May need to be more aggressive with stretching. Therapist may add mobilizations, or other techniques as needed.

2. CUFF AND SCAPULAR PREs

Instructions: Emphasis is on muscle fatigue. Perform **all exercises to fatigue** 3 times per week. (preferably every other day) Start with the same exercises as Phase 3 and move progressively into higher shoulder ROMs. May use free weights, pulleys, body blade, inertial trainer, isokinetics, etc. May do weight lifting with light weights in "safe" positions.

3. PROPRIOCEPTIVE TRAINING

Instructions: Follow the therapists directions to complete rhythmic stabilization, BAPS on all fours, Ball against wall, Balance on all fours, etc.
Also, begin pushup progression: Start with wall pushups. Progress to pushups on table, then to knees.

4. AEROBIC CONDITIONING

Instructions: Ride a stationary bike, do stairmaster, Nordic Track, etc. May begin jogging.

5. LEVEL II NEUROMUSCULAR TRAINING EXERCISES

Instructions: Under supervision, perform inertial training and "intermediate level" plyoball exercises.

6. FUNCTIONAL TRAINING

Instructions: **Under the therapist's supervision**, do level 1 functional activities. Generally, "no overhead" activities are done and activities **must be pain free**. Begin each exercise at a submaximal level and progress the intensity level slowly as tolerated.

Basketball - Dribbling, pass and catch (No overhead), shooting in the key
Frisbee - throw and catch
Racquetball, tennis, ping pong - forehand and backhand (No overhead)
Football catch and underhand throw
Volleyball - bumping, setting, and underhand serve

CRITERIA FOR PROGRESSION TO PHASE V

1. Full or nearly full AROM
2. Full Strength per manual muscle testing
3. At least 80% Performance on shoulder functional tests
4. Pain free with functional training exercises

PHASE V: ADVANCED FUNCTIONAL TRAINING / RETURN TO SPORT PHASE

Generally lasts two months (from 3-4 months post-op to 5-6 months post-op)

FOLLOW-UP: Monthly with P.T., 6 Month Evaluation with Ortho, Attend P.T. TIW
Continue follow-up evaluations at 1 yr, 2 yrs, & 3 yrs post-op as available

DOCUMENTATION: AROM - Shoulder Flexion, ER at side, ER at 90 deg, IR (Apley's)
Strength
Scapulohumeral Rhythm
Exercise Performance (Presence of pain noted)
Functional Testing

EXERCISES: 1. CUFF AND SCAPULAR PREs

Instructions: Continue the emphasis on muscle fatigue. Perform **all exercises to fatigue** 3 times per week. (preferably every other day) Exercises of the previous phases should be done in the higher shoulder ROMs.

2. PROGRESSIVE WEIGHT TRAINING

Instructions: **All exercises must be pain free.** May begin all weight training exercises. Keep shoulders out of the "at risk" positions.

3. PROPRIOCEPTIVE TRAINING

Instructions: Two or three exercises will be added by the physical therapist. (Plyoball, stairmaster shoulder, fitter, step-ups, shoulder treadmill, etc.) Also, continue pushup progression.

4. AEROBIC CONDITIONING

Instructions: Patient is responsible to continue aerobic program.

5. FUNCTIONAL TRAINING / RETURN TO SPORT TRAINING

Instructions: **Under the therapist's supervision**, do level 2 functional activities. All activities previously may be done to "warm up". Then a **gradual** overhead progression is begun. Remember all activities **must be pain free.**

Basketball - Dribbling, passing and catching, shooting, rebounding

Racquetball, tennis - forehand, backhand, overhand, serving

Football catch and throw

Volleyball - bumping, setting, serving, spiking

GOALS:

1. AROM: Equal to opposite UE (Accept 5 degrees ER loss)
2. 90% Strength per isokinetic testing
3. 90% Performance on shoulder functional tests
4. 90% Patient Subjective Rating
5. Pass APFT

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APPROVE / DISAPPROVE

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APPROVE / DISAPPROVE

Sling Usage Guidelines For Post-op Shoulder Reconstructions
Shoulder Range of Motion Considerations
Revised Dec 99

	End of week 1	End of week 2	End of week 3	End of week 4
“Ideal” PROM	ER: 0 FF: 90	ER: 10 FF: 110	ER: 20 FF: 120	ER: 30 FF: 130
Condition: Decreased ROM	If ROM is ER < 0 FF < 90	If ROM is ER < 0 FF < 90	If ROM is ER < 0 FF < 90	
P.T. Action	Ensure proper exercise performance and compliance	Re-instruct and re-emphasize exercise compliance	Patient to F/U with ortho to consider sling removal	
Condition: Increased ROM	If ROM is ER > 10 FF > 110	If ROM is ER > 20 FF > 120	If ROM is ER > 30 FF > 130	If ROM is ER > 40 FF > 140
P.T. Action	Discontinue PROM Exercises - reassess in one week	Discontinue PROM Exercises - reassess in one week	Discontinue PROM Exercises - reassess in one week	Discontinue PROM Exercises - reassess in one week

	1 week after sling removal	2 weeks after sling removal	3 weeks after sling removal	3 months post-op
Condition - Decreased ROM	ROM < 5 ER < 100 FF	ROM < 10 ER < 110 FF	ROM < 20 ER < 120 FF	ROM < 20 ER < 120 FF
P.T. Action	Ensure proper exercise performance and compliance	Instruct patient to be more aggressive in AAROM exercises	Consider more aggressive P.T. measures “hands on”	Ortho follow-up to consider surgical intervention

Regular Procedures

1. Ortho/P.T. evaluates patients on a weekly basis for the first month following shoulder reconstructive surgery. Part of the evaluation includes PROM measurements.
2. Currently, all patients are restricted in rehabilitation to 90 degrees passive elevation and neutral external rotation until they are progressed to phase III which generally occurs 4 - 6 weeks post surgery.

Other Important Considerations for Sling Usage

1. Patient psychological characteristics: (i.e. - timid vs. aggressive personality, high vs. low pain tolerance, etc.)
2. Generalized ligament laxity: generally move less aggressively in rehabilitation the more lax the patient is.

Notes

1. The presence of more or less ROM does not signify a patient is doing poorly . . . it merely signifies the direction of rehabilitation emphasis.
2. Sling removal denotes patient progression to phase III shoulder rehabilitation. ROM instruction at that time is gentle active assist stretching exercises.
3. Patients generally follow-up at a minimum with their orthopedic doctor between 2-5 weeks and at approximately the 3 month mark.