

Theodore Ganley, MD  
Brendan Williams, MD

J. Todd Lawrence, MD, PhD

Kathleen Maguire, MD  
Joseph Yellin, MD

## SLAP Repair (Type II and IV) Rehabilitation Protocol

Revised 2023

**\*\*\*Please refer to written prescription for any special instructions for each case\*\*\***

This protocol guides a progressive return to full activity between 4-6 months for non-overhead athletes (may take longer for overhead athletes) if all of the criteria are achieved. If the criteria are met sooner, the patient must restrict their activity level until the appropriate timeframe based on this protocol. If the patient has a concomitant surgical procedure, treatment will likely vary. Please consult with surgeon.

**Weeks 0 to 6:** (Initial PT evaluation to be scheduled within 2 weeks from surgery date)

### Precautions:

- Wear sling at all times (including sleep), may remove for bathing and while performing physical therapy exercises
- No AROM or isometrics for forward elevation
- No ER ROM at 90° abduction
- No IR behind the back
- No biceps contraction
- No weight bearing/closed chain exercises through involved UE

### Goals:

- Protect healing labrum, glenoid and biceps tendon anchor (if involved)
- Minimize effects of immobilization
- Decrease pain and inflammation
  - Facilitate distal UE circulation and prevent distal swelling
- Gradually regain shoulder motion with staged passive range of motion goals
- **Discontinue sling no sooner than 6 weeks post-op**

### Interventions:

- Supported pendulums (no weight)
- Shoulder forward elevation and abduction PROM/AAROM
  - 0-3 weeks:  $\leq 90^\circ$
  - 3-6 weeks:  $\leq 120^\circ$
- Shoulder ER PROM/AAROM with arm supported in plane of scapula
  - 0-3 weeks:  $\leq 30^\circ$
  - 3-6 weeks:  $\leq 45^\circ$
- IR and ER submax isometrics (pain free)
- Scapula retraction to neutral (avoid UE movements posterior to frontal plane)
- Grade 1-2 anterior and posterior mobilizations for pain modulation
- PROM elbow flexion and extension with help from uninvolved UE (no biceps activation)
- Wrist/hand: Ball squeezes/gripping exercises, AROM
- Ice for 15 minutes, 5 times per day
- Home exercise program

## Weeks 6 to 12:

### Precautions:

- No biceps strengthening, but may begin AROM for elbow flexion
- Gradually progress shoulder PROM/AAROM as tolerated toward
  - May initiate gentle ER at 90° in plane of scapula and gentle IR behind back at 6 weeks (no pain or apprehension)
  - If patient is hypermobile, avoid aggressive stretching
- No weight bearing/closed chain exercises through involved UE

### Goals:

- Full shoulder PROM by week 10
  - IR at 90° abduction within 10° of other side
  - ER of 40-60° at 0° abduction
  - ER of 90° at 90° in plane of scapula
- Promote normal arthrokinematics of glenohumeral and scapulothoracic joints
- Increase rotator cuff and scapula strength to support glenohumeral joint

### Interventions:

- Initiate forward elevation AROM once patient has at least 140° passively
- Shoulder strengthening (IR/ER/extension/abduction/scaption/forward elevation) with bands/weights (begin with non-provocative positions)
- Scapula stabilizing exercises, avoid UE movements posterior to frontal plane
- Active elbow flexion and extension (no resisted flexion)
- Grade 3-4 anterior and posterior mobilizations in the plane of the scapula at 30° of abduction
  - No inferior glenohumeral mobilizations to avoid tension on biceps-labral complex
- Initiate lower body and core strengthening

### **CRITERIA TO ADVANCE – 3-month assessment**

- **Full pain-free shoulder AROM with normal arthrokinematics**
- **Objective UE shoulder strength ≥ 75% limb symmetry using hand-held dynamometer or isokinetic testing**
- **Push-up test: 5 push-ups with good symmetry and pain free**
- **Upper Quarter Y balance Test (medial reach only): ≥ 90% of limb length (measure C7 to middle fingertip)**

## Weeks 12 to 16:

### Goals:

- Full AROM and PROM without pain and with good mechanics
  - Gradually restore ER at 90° in plane of scapula to achieve sport demands
- Gradually begin biceps strengthening at 12 weeks
- May initiate free weights and gym machines, but start with light weight and higher repetitions initially
  - Avoid pectoral strengthening posterior to frontal plane
  - Avoid overhead lifting (e.g. military press, overhead triceps extensions, etc.)
  - No power lifting (e.g. bench press, back squats, etc.)
- Initiate shoulder ER/IR strengthening in 90° abduction
- Initiate closed chain/full weight bearing exercises
- Initiate UE plyometrics if above criteria are met
- Improve UE muscular strength and endurance
- Begin jogging (start with straight ahead jogging to minimize fall risk)

**Interventions:**

- Rotator cuff strengthening: supraspinatus (full can), IR/ER (0° and 90° in plane scapula)
- Progress scapula stabilization exercises (avoid UE movement posterior to frontal plane)
- Resisted diagonal patterns (PNF)
- Thrower's Ten
- Gradual resisted biceps exercises
- Non-provocative neuromuscular and proprioceptive activities (e.g. body blade, rhythmic stabilization)
- Begin UE plyometrics: double arm initially (chest pass, side throws, and overhead throws, plyo wall/counter push-ups, etc.), progress to single arm (wall ball dribbles, weighted ball drills, pre-throwing drills, etc.)
- If thrower: shoulder stretching to restore normal shoulder rotation at 90° abduction
- Address kinetic chain impairments at scapula, lower extremity and trunk

**Months 4 to 6:****Goals:**

- Enhance muscle performance and functional motion specific to sport demands
- Incorporate all components of kinetic chain and systems into recovery (e.g. lower extremity, trunk, cardiovascular conditioning and flexibility)
- Maximize neuromuscular control
- May gradually advance intensity using gym machines and free weights
  - Avoid motion extremes (arms moving posterior to frontal plane of body)
- Initiate sport specific training
  - Possible full return to sport for non-throwers (if return to sport criteria are achieved)
  - Initiate interval throwing program if below criteria are met (no sooner than 5 months)

**Interventions:**

- Address ongoing UE strength deficits (based on objective measurements)
- Eccentric posterior rotator cuff exercises for throwers
- Power lifting if appropriate based on age of patient, skeletal maturity, and sport demands (increasing weights with less repetitions)
- Advance plyometric and closed chain exercises based on individual sport demands
- Continue to address core/lower extremity strengthening and flexibility deficits

## CRITERIA FOR RETURN TO FULL SPORT ACTIVITIES – 4-6 month assessment

- Pain free
- Full shoulder AROM based on sport specific demands
- Normal and symmetrical scapulohumeral rhythm with adequate scapular control
- Objective strength testing > 90% limb symmetry (measured using hand-held dynamometry or isokinetic testing)
- Functional testing:
  - Upper Quarter Y-Balance Test (best of 3 trials)
    - Medial reach distance  $\geq$  95% of limb length
    - $\leq$  4 cm difference between limbs in all directions
    - $\geq$  90% limb symmetry
    - Composite score 70-80%
  - Single-Arm Seated Shot Put Test (average of 3 trials)
    - $\geq$  90% limb symmetry if non-dominant arm is involved
    - $\geq$  105% limb symmetry if dominant arm is involved
  - Closed Kinetic Chain Upper Extremity Stability Test (average of 3 trials, 15 sec each)
    - $\geq$  17 touches with good neuromuscular control
    - Testing parameters:
      - Push-up position
      - Tape width:
        - $\leq$  11 years old: 24 inches
        - $\geq$  12 years old: 36 inches
- Additional Criteria for Throwers (no sooner than 5 months post-op)
  - Shoulder ROM
    - Total arc of motion/rotation at 90° within 5° of non-throwing shoulder
    - $\leq$  20° loss of internal rotation ROM at 90° compared to non-throwing shoulder
    - $\leq$  5° loss of flexion ROM compared to non-throwing shoulder
    - $\leq$  15° loss of horizontal adduction ROM compared to non-throwing shoulder
  - Strength
    - ER/IR strength ratio between 66% to 76%
  - Once all criteria are met, thrower may begin a long toss throwing program

### Months 6+:

#### Goals:

- Gradual return to full unrestricted sport activities once above criteria are met
  - Pitchers must complete long toss throwing program before advancing to a pitching program
- Maintain ROM, stability, and neuromuscular control
- Achieve maximal strength, endurance and power based on sport demands

This protocol is designed to be administered by a licensed physical therapist and/or certified athletic trainer. Please do not hesitate to contact our office should you have any questions concerning the rehabilitation process. Protocol adapted from Christopherson et al, *Operative Techniques in Sports Medicine*, 2017.

#### Sports Medicine and Performance Center at the Children's Hospital of Philadelphia

Specialty Care Center in King of Prussia  
550 South Goddard Blvd  
King of Prussia, PA 19046  
215-590-6919

Specialty Care Center in Chalfont  
500 W Butler Pike  
Chalfont, PA 18914  
215-590-6930

Buerger Center for Advance Pediatric Care  
3500 Civic Center Boulevard  
Philadelphia, PA 19104  
215-590-5819

Specialty Care at Virtua  
200 Bowman Dr. Suite D-260  
Voorhees, NJ 08043  
215-590-6919