

**Orthopedic Surgery • Sports Medicine**  
*Neil Kumar, MD*

### **Open Shoulder Stabilization Protocol**

“As tolerated” should be understood to “perform with safety” for the repair. Pain, swelling, or other undesirable factors are indicators that you are doing too much too soon. If any of these should occur, decrease your activity level and ice your shoulder.

Ice should be applied to the shoulder for 15 to 20 minutes following each exercise, therapy, or training session. While your shoulder remains swollen, icing should also be done separate from exercise sessions at least three times per day.

All times and exercises are to serve as guidelines only. Progression through the protocol should be based upon criteria as opposed to dates listed and will vary depending on each individual patient. Progress should be agreed upon by the patient and his/her team of providers.

#### **Pre-Operative**

- ROM (range of motion) – Full, no restrictions
- Therapeutic Exercise - Learn exercises for post op regimen
  - Scapular stabilization
  - Rotator cuff isometrics
  - Pendulums
  - Passive and active elbow ROM
  - Passive and active wrist ROM
  - Grip squeezes
- Modalities - Cryotherapy (Ice) six to eight times per for 15 to 20 minutes each time
  
- **Goals for Surgery**
  - Educate on proper sling positioning and management
  - Educate on safe pendulums technique

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### **Post-Operative Phase I: Weeks 0 - 6**

**\*\*\*Subscapularis repair should be protected during early rehabilitation\*\*\***

- Sling – *At all times*
- ROM - *Gentle, supine, passive ROM only*
  - Forward flexion 90<sup>0</sup>
  - External rotation 30<sup>0</sup> at 0<sup>0</sup> abduction
- Therapeutic Exercise
  - Pendulums
  - Rotator cuff isometrics submaximal ***without subscapularis or IR exercises***
- Modalities - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Cardio – Stationary bike without resistance

### **Post-Operative Phase II: Weeks 6 - 10**

**\*Radiographic healing of bony stabilization procedures will determine progression\***

- Sling
  - Weeks 6 – 8: Remove pillow, continue with sling
  - Weeks 8 - 10
    - At home, remove sling
    - In public places, crowded areas, or uneven terrain for comfort
- ROM - Full active-assisted progressing to active ROM, *no passive manipulation*
- Therapeutic Exercise
  - *Internal and external rotation strength exercises performed only at 0<sup>0</sup> abduction*
  - Rotator cuff isometrics with max effort, progress subscapularis slowly
  - Scapular stabilization with light resistance
  - Isotonics within pain-free ROM
- Modalities
  - NMES (neuromuscular electrical stimulation)
  - HVPC (high volt pulsed current) for swelling reduction
  - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Proprioception – rhythmic stabilization within pain-free ROM
- Cardio
  - Stationary bike with resistance
  - Week 8 – initiate UBE (arm bike) without resistance
- **Goals for Phase II:**
  - Full ROM

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### **Post-Operative Phase III: Weeks 10 – 14**

***\*\*\*Include exercises on non-involved side\*\*\****

- Sling - none
- ROM – Full active ROM
- Therapeutic Exercise – Continue Phase II exercises
  - Diagonal plane strengthening
  - Scapular stabilization with increasing resistance
  - Isotonics within pain-free ROM
  - Week 12 – initiate ER/IR strengthening up to 90<sup>0</sup> flexion/90<sup>0</sup> abduction
- Modalities
  - Scar massage
  - NMES (neuromuscular electrical stimulation)
  - HVPC (high volt pulsed current) for swelling reduction
- Proprioception – advance as tolerated
- Cardio
  - Stationary bike with resistance
  - Elliptical
  - UBE (arm bike) with increasing resistance
  - Treadmill ambulation progressing to treadmill running
- **Goals for Phase III:**
  - Full ROM
  - No pain
  - Increasing strength and power (5/5 manual muscle testing)
  - Improving scapular control

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#### **Post-Operative Phase IV: Weeks 14 – 18**

- ROM – Full active ROM
- Therapeutic Exercise – Continue Phase III exercises
  - Initiate bench press, pushups, and chest strengthening
    - No elbow flexion  $>90^{\circ}$
    - No full elbow extension
  - Light upper body plyometrics including two-hand rebounder toss progressing to one-hand
- Modalities
  - Scar massage
  - NMES (neuromuscular electrical stimulation)
- Proprioception – advance as tolerated
- Cardio
  - Stationary bike with resistance
  - Elliptical
  - UBE (arm bike) with increasing resistance
  - Treadmill running
- **Goals for Phase IV:**
  - Total ROM  $<10^{\circ}$  difference
  - Functional Movement Screen  $<2$
  - Isokinetic ER and IR  $>75\%$  of non-involved side
  - Y-balance  $<4\text{cm}$  difference
  - Pull-up vs Push-up strength 1:1
  - Seated medicine ball (2kg) throw  $<10\%$  difference

#### **Post-Operative Phase V: After Week 18**

Transitional therapy for return to sport activities during this phase with progression based upon patient progress through earlier protocol.

- Initiate overhead weightlifting at 5 months
- Initiate Thrower's Ten Program at 5 months
- Initiate Phase 1 return to throwing at 6 months

Initiate sport specific plyometric activities as tolerated such as:

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Soccer/Football: Two foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double arm alternate leg bound, and cycled split squat jump

Basketball/Volleyball: Two foot ankle hop, double-leg hop, squat jump, double-leg vertical jump, single-leg hop, single-leg vertical jump, power skip, backwards skip, double-arm alternate-leg bound, alternate leg push off box drill, and side-to-side push off box drill

Baseball/Softball/Overhead/Throwing sports: Two foot ankle hops, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double arm alternate leg bound, cycled split squat jump, and return to throwing program

### **Return to Sports**

Return to sports is based on provider team (physician, physician assistant, athletic trainer, therapist) input. At 5-6 month follow-up with provider, clinical exam and functional testing will be used to determine optimal timing for return to sport. Transitional Therapy should continue during this time as the patient prepares to return to sports and athletic activities.

Clearance for return to full sports activities will be determined with input from the entire health team. When cleared by the provider, patients should return to their sports with a *4-week progression plan* as determined by the health team and coaches. This allows the athlete to acclimate to the mental and physical demands of sports and athletics in safe manner.

Follow-up testing at 9 and 12 months will include

- Functional Movement Screen
- Isokinetic ER and IR
- Y-balance
- Pull-up vs Push-up strength
- Seated medicine ball (2kg) throw