



Columbia University Sports Medicine and Rehabilitation

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REHABILITATION GUIDELINES FOR THE OVERHEAD ATHLETE TO IMPROVE DYNAMIC STABILITY

PHASE I – BASELINE STABILIZATION

Goals:

- Diminish pain and inflammation
- Improve posterior flexibility
- Re-establish dynamic stability (muscular balance)
- Re-establish muscular control
- Improve scapula position, strength, and control

Treatment:

Modalities:

- Cryotherapy to posterior capsule/ cuff
- Iontophoresis (Empi Hybresis)
- Electrical stimulation

Flexibility:

- Sleeper stretch
- IR stretch @ 90° ABD
- Horizontal ADD w/ IR stretch
- Shoulder flexion and ER ROM (gentle stretch)

Exercises:

- Emphasize muscle balance (unilateral muscle ratios)
- Rotator cuff strengthening (esp ER)
 - Thrower's Ten
- Scapular strengthening exercises
 - Prone exercises on table and physioball
- Dynamic stabilization exercises
 - ER/IR t-band w/ manual resistance and rhythmic stabilization
 - Manual resistance side-lying ER w/ end ROM rhythmic stabilization
 - Manual resistance prone rowing w/ end ROM rhythmic stabilization
- Proprioceptive training
- Closed kinetic chain
 - push-up position rhythmic stabilization at mid ROM
 - ball on wall in scapular plane w/ rhythmic stabilization
- Monitored Rehabilitation System- ER/IR neuromuscular program
- Seated neuromuscular control drill
- Push-ups on plyoball w/ rhythmic stabilization / tilt board perturbations

Avoidance:

- Abstain from throwing (as advised by physician)

PHASE II – INTERMEDIATE PHASE

Goals:

- Progress strengthening exercises
- Restore muscular balance (ER/IR)
- Enhance dynamic stability
- Maintain flexibility and mobility
- Improve core stabilization

Flexibility:

- Control stretches and flexibility exercises
- Sleeper stretch
- Horizontal ADD w/ IR stretch

Exercises:

- Progress strengthening exercises
 - Thrower's Ten exercises
- Initiate core stabilization program
- Implement LE strength program
- Dynamic stability
 - Seated ER t-band on physioball w/ manual resistance and rhythmic stabilization @ end ROM
 - Prone scapular exercises on physioball w/ trunk extension (performed bilaterally)
 - Planks on plinth
 - Planks on physioball
 - Manual resistance rowing w/ rhythmic stabilization
 - Seated neuromuscular control drill on physioball and contralateral knee extension
 - Body Blade activities for endurance
 - Single leg stance on foam w/t-band ER/IR
 - Weighted cross motion while single leg stance on foam
 - PNF D2 flexion/extension w/ rhythmic stabilization @ 45°, 90°, 145°
 - PNF D2 seated on physioball
 - Side-lying scapula neuromuscular control drill
- Initiate 2 hand plyometrics
 - Chest pass soccer throw
 - Alternating over-head side-to-side
 - Side stance overhead throw
 - Side under-hand throw

PHASE III – ADVANCED STRENGTHENING

Goals:

- Aggressive strengthening program
- Progress neuromuscular control
- Improve strength, power, endurance
- Initiate light throwing activities

Exercises:

Continue all exercises and stretches previously listed

- Thrower's Ten progressing to advanced throwers 10
- Manual resistance
- Dynamic stability drills
 - Seated physioball ER/IR t-band @ 0° ABD w/ manual resistance and rhythmic stabilization
 - Seated physioball ER/IR t-band @ 90° ABD w/ manual resistance and rhythmic stabilization
 - Planks on table
 - Bilateral UE support w/ rhythmic stabilization
 - Unilateral UE support w/ rhythmic stabilization
 - Unilateral UE support w/ LE movement and rhythmic stabilization
 - Continue Monitored Rehabilitation System for ER/IR
- Plyometrics
 - Continue 2 hand drills
 - Initiate 1 hand drills
 - Wall dribble (30-60 sec bouts)
 - Plyometrics throw at 90°/ 90°
 - Baseball motion throw to Plyoback w/ 1 lb ball (10–12 feet)
- Initiate light interval throwing
- Stretch post exercise

Phase IV – Return to activity phase

Goals:

- Continue strengthening / advanced throwers 10 and flexibility exercises
- Progress to Interval Throwing Program
- Return to competitive throwing

Exercises:

- Stretching and flexibility drills
- Thrower's Ten program

- Plyometric program
- Dynamic stability drills
- Progress to phase I interval throwing program
- Progress to appropriate phase II interval throwing program
- Gradual progression to competitive throwing

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