



South County Orthopedics

Orthopedics & Sports Medicine • Physical Therapy • Sports Performance

Nonsurgical Shoulder Impingement Rehabilitation Protocol

Ramin R. Tabaddor, MD
Arlene D. Kavanagh, PA-C

This protocol provides general guidelines for initial stage and progression of rehabilitation according to specified time frames, related tissue tolerance and directional preference of movement. The intent is to provide the therapist with a general framework.

Phase 1: Maximal protection – Acute phase

Goals

- Relieve pain and swelling
- Decrease inflammation
- Retard muscle atrophy
- Maintain/increase flexibility

Active rest

- Eliminate any activity that causes an increase in symptoms (i.e. throwing, tennis, volleyball)

Range of motion

- Pendulum exercises
- Active-assisted ROM – limited symptom-free available range
 - Rope/pulley: flexion
 - L-bar: flexion with neutral external rotation

Joint mobilizations

- Grades 1 and 2
- Inferior and posterior glides in scapular plane

Modalities

- Cryotherapy
- Transcutaneous electrical stimulation (TENS), high-voltage galvanic stimulation (HVGS)

Strengthening

- Isometrics – submaximal
 - External rotation
 - Internal rotation
 - Biceps
 - Deltoid (anterior, middle, posterior)

Patient education and activity modification

- Regarding activity, pathology, and avoidance of overhead activity, reaching, and lifting activity

Criteria for Progression to Phase 2

- Decreased pain and/or symptoms
- Increased ROM
- Painful arc in abduction only
- Improved muscular function

Phase 2: Motion phase – subacute phase

Goals

- Reestablish nonpainful ROM
- Normalize arthrokinetics of shoulder complex
- Retard muscular atrophy without exacerbation of pain

Range of motion

- Rope/pulley: flexion, abduction
- L-bar
 - Flexion
 - Abduction (symptom-free motion)
 - External rotation in 45° abduction, progress to 90° abduction
 - Internal rotation in 45° abduction, progress to 90° abduction
 - Initiate anterior and posterior capsular stretching

Joint mobilization

- Grades 2,3,4
- Inferior, anterior, and posterior glides
- Combined glides as required

Modalities

- Cryotherapy
- Ultrasound/phonophoresis

Strengthening exercises

- Continue isometric exercises
- Initiate scapulothoracic strengthening exercises (see scapular exercise program)
- Initiate neuromuscular control exercises

Criteria for Progression to Phase 3

- Painless active ROM.
- No shoulder pain or tenderness.
- Satisfactory clinical examination.

Phase 3: Intermediate strengthening phase

Goals

- Normalize ROM
- Symptom-free normal activities
- Improve muscular performance

Range of motion

- Aggressive L-bar active-assisted ROM in all planes
- Continue self-capsular stretching (anterior-posterior)

Strengthening exercises

- Initiate isotonic dumbbell program

- Side-lying neutral
 - Internal rotation
 - External rotation
- Prone
 - Extension
 - Horizontal abduction
- Standing
 - Flexion to 90°
 - Supraspinatus
- Initiate serratus exercises
- Wall pushups
- Initiate arm ergometer for endurance

Criteria for progression to phase 4

- Full, nonpainful ROM
- No pain or tenderness
- 70% of contralateral strength

Phase 4: Dynamic advanced strengthening phase

Goals

- Increase strength and endurance
- Increase power
- Increase neuromuscular control

Isokinetic testing

- Internal and external rotation modified neutral
- Abduction-adduction

Initiate thrower's ten exercise program (when applicable)

- Velocity spectrum 180o/sec to 300o/sec
- Progress from modified neutral to 90/90 position as tolerated

Initiate plyometrics (late in phase)

Criteria for progression to phase 5

- Full, nonpainful ROM
- No pain or tenderness
- Isokinetic test that fulfills criteria
- Satisfactory clinical examination

Phase 5: Return to activity phase

Goal

- Unrestricted, symptom-free activity

Isokinetic test

- 90°/90° internal and external rotation, 180/sec, 300/sec

Initiate interval activity program

- Throwing
- Tennis
- Golf

MAINTENANCE EXERCISE PROGRAM

Flexibility exercises

- L-bar
 - Flexion
 - External rotation
 - Self-capsular stretches

Isotonic exercises

- Supraspinatus
- Prone extension
- Prone horizontal abduction
- Internal and external rotation
- Neutral or 90/90 position
- D2 proprioceptive neuromuscular facilitation (PNF) pattern

Serratus pushups

Interval throwing phase II for pitchers

This protocol provides you with general guidelines for the patient undergoing nonsurgical treatment for shoulder impingement.

Specific changes in the program will be made by the physician as appropriate for the individual patient.

Questions regarding the progress of any specific patient are encouraged, and should be directed to Dr. Tabaddor at 401-789-1422, ext. 104.

REFERENCE: Clinical Orthopaedic Rehabilitation, 2nd edition. SB Brotzman, KE Wilk. Mosby 2003.