

Rehabilitation Protocol for Nonoperative Impingement Syndrome

I. Phase 1: Maximal Protection Acute Phase

Goals

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

1. Active rest: Eliminate any activity that causes an increase in symptoms
2. Range-of-motion exercises
 - (a) Pendulum exercises
 - (b) Active-assisted range of motion—limited symptom-free available range
 - Rope-and-pulley exercises in flexion
 - L-bar exercises in flexion and neutral external rotation
3. Joint mobilizations (grades I and II)
 - (a) Inferior and posterior glides in scapular plane
4. Modalities: Cryotherapy, transcutaneous electrical nerve stimulation, high-voltage galvanic stimulation
5. Strengthening exercises
 - (a) Isometrics (submaximal)
 - External rotation
 - Internal rotation
 - Biceps
 - Deltoid (anterior, middle, posterior)
6. Patient education: Regarding activity, pathology, and avoiding overhead activity, reaching, and lifting

Guidelines for progression

Decreases in pain or symptoms
Range of motion increased
Painful arc in abduction only
Muscular function improved

II. Phase II: Motion Phase (Subacute Phase)

Goals

Re-establish nonpainful range of motion
Normalize arthrokinematics of shoulder complex
Retard muscular atrophy without exacerbation

1. Range-of-motion exercises
 - (a) Rope-and-pulley exercises in flexion and abduction (symptom-free motion)
 - (b) L-bar exercises in flexion, abduction (symptom-free motion)
 - External rotation at 45° abduction, progress to 90° abduction
 - Internal rotation at 45° abduction, progress to 90° abduction
2. Joint mobilizations (grades II, III, and IV)
 - (a) Inferior, anterior, and posterior glides
 - (b) Combined glides as required
3. Modalities: Cryotherapy, ultrasound, phonophoresis
4. Strengthening exercises
 - (a) Continue isometric exercises
 - (b) Initiate scapulothoracic strengthening exercises
5. Initiate neuromuscular control exercises

Guidelines for progression

- Begin to incorporate intermediate strengthening exercises as
 - Pain or symptoms decrease
 - Active-assisted range of motion normalizes
 - Muscular strength improves

I. Phase III: Intermediate Strengthening Phase

Goals

- Normalized range of motion
- Perform symptom-free normal activities
- Improve muscular performance

1. Range-of-motion exercises
 - (a) Aggressive L-bar active-assisted range of motion in all planes
 - (b) Continue self-capsular stretching (anterior-posterior)
2. Strengthening exercises
 - (a) Initiate isotonic dumbbell program:
 - Side-lying neutral internal and external rotation
 - Prone extension and horizontal abduction
 - Standing flexion to 90° abduction to 90°; supraspinatus exercise
 - Initiate serratus exercises (wall push-ups)
 - Initiate tubing progression in slight abduction for internal and external rotation
3. Initiate arm ergometer for endurance

Guidelines for progression

- Full nonpainful range of motion
- No pain or tenderness
- 70% of contralateral strength

Goals

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

1. Isokinetic test in internal-external rotation in modified neutral position and abduction-adduction
2. Initiate Throwers' Ten Exercise Program (Appendix C)
3. Isokinetics
 - (a) Velocity spectrum exercises from 180°/sec to 300°/sec
 - (b) Progress from modified neutral to 90/90 position as tolerated