

Conservative Impingement Rehabilitation Program

Impingement is a chronic inflammatory process produced as the Rotator Cuff Muscles (supraspinatus, infraspinatus, teres major, and subscapularis) and the subdeltoid bursa are "pinched" against the coracoacromial ligament and the anterior acromion when the arm is raised above 80 degrees. The supraspinatus/infraspinatus portion of the rotator cuff is the most common area of impingement. This syndrome is commonly seen in throwing sports, racquet sports, and in swimmers; but can be present in anyone who uses their arm repetitively in a position over 90 degrees of elevation.

This 5 phased program can be utilized for conservative impingement clients. The protocol serves as a guide to attain maximal function in a minimal time period. This systematic approach allows specific goals and criteria to be met and ensures the safe progression of the rehabilitation process. Client compliance is critical.

Phase I – Acute Phase (Maximal Protection)

- Goals:
1. Relieve Pain and Swelling
 2. Decrease inflammation
 3. Retard Muscle Atrophy
 4. Maintain/Increase Flexibility

Active Rest: The elimination of any activity that causes an increase in symptoms.

Range of Motion:

- Pendulum exercises
- AAROM – Limited symptom free available range
 - Rope and Pulley
 - Flexion
- L-Bar
 - Flexion
 - Neutral External Rotation

Joint Mobilizations:

- Grade I/II
- Inferior and Posterior Glides in Scapular Plane

Modalities:

- Cryotherapy
- TENS, HVGS

Strengthening Exercises:

- Isometrics – Submaximal
 - External Rotation
 - Internal Rotation
 - Biceps
 - Deltoid (Anterior, Middle, Posterior)

Patient Education:

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

Guideline for Progression:

1. Decreases pain and/or symptoms
2. ROM Increased
3. Painful Arc in abduction only
4. Muscular function improved

Phase II – Sub-acute Phase

- Goals:
1. Re-establish non-painful ROM
 2. Normalize Arthrokinematics
 3. Retard muscular atrophy without exasperation

Range of Motion:

Rope and Pulley

- Flexion
- Abduction (Symptom Free Motion)

L-Bar

- Flexion
- Abduction (Symptom Free Motion)
- External Rotation in 45 degrees of Abduction, progress to 90 degrees of Abduction
- Internal Rotation in 45 degrees of Abduction, progress to 90 degrees of abduction

Initiate Anterior and Posterior Capsular stretching

Joint Mobilizations:

Grade II/III/IV

Inferior, Anterior, and Posterior Glides

Combined Glides as Required

Modalities:

Cryotherapy

Ultrasound/Phonophoresis

Strengthening Exercises:

Continue Isometric Exercises

Initiate Scapulothoracic Strengthening Exercises

Initiate Neuromuscular Control Exercises

Guideline for Progression:

Begin to incorporate intermediate strengthening exercises as:

1. Pain/symptoms decreases
2. AAROM normalizes
3. Muscular strength improves

Phase III – Intermediate Strengthening Phase

- Goals:
1. Normalized ROM
 2. Symptom-free Normal Activities
 3. Improved Muscular Performance

Range of Motion:

Aggressive L-Bar AAROM All Planes

Continue Self Capsular Stretching (Anterior/Posterior)

Strengthening Exercises:

Initiate Isotonic Dumbbell Program:

- Sidelying Neutral:
 - Internal Rotation

- External Rotation
- Prone:
 - Extension
 - Horizontal Abduction
- Standing:
 - Flexion to 90 degrees
 - Abduction to 90 degrees
 - Supraspinatus

Initiate Serratus Exercises

- Wall Push-ups

Initiate tubing progression in slight Abduction for Internal/External Rotation

Initiate Arm Ergometer for Endurance

Guideline for Progression:

1. Full non-painful ROM
2. No Pain/Tenderness
3. 70% Contralateral Strength

Phase IV – Dynamic Advanced Strengthening Phase

- Goals:
1. Increase Strength and Endurance
 2. Increase Power
 3. Increase Neuromuscular Control

Isokinetic test:

IR/ER Modified Neutral
Abduction/Adduction

Initiate Thrower's Ten Exercise Program

Isokinetics:

Velocity Spectrum 180's to 300's
Progress from Modified Neutral to 90/90 position as tolerated

Initiate Plyometric 5 Exercises (Late in Phase)

Guideline for Progression:

1. Full non-painful ROM
2. No pain or tenderness
3. Isokinetic Test fulfills criteria
4. Satisfactory Clinical Examination

Phase V – Return to Activity

Goal: Unrestricted Symptom Free Activity

Isokinetic Test:

90/90 Internal/External Rotation, 180, 300 deg/sec
Abduction/Adduction 180, 300 deg/sec

Initiate Interval 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

Thera-tubing Exercises

Internal/External Rotation
Neutral or 90/90 Position
D2 PNF Pattern

Serratus Push-ups

Interval Throwing Phase II for Pitchers