



# Orthopaedic Protocols

## Impingement Syndrome (Conservative Management)

### Goals:

- Maintain or increase ROM
- Decrease pain
- Strengthen to prevent recurrence

### Symptom:

- Pain with AROM
- Avoid overhead use & minimize pushing & pulling activities.

### Treatment:

- For those who are quite painful pendulum exercises can serve to quiet pain & provide a gentle distraction to the glenohumeral joint. The patient leans over & places the unaffected hand on a countertop or chair for support. By gently rocking the knees & hips, the affected arm begins to swing in a pendulum like fashion. It should be stressed that momentum, not AROM, is what generates the movement. A small weight can be attached to the wrist to provide more distraction if desired. It is recommended that patients perform the pendulum exercises for 5-10 min sessions every 1-2 hours.
- The patient is also instructed in gentle PROM exercises to be performed frequently throughout the day (4-6 times). By using the unaffected extremity or a dowel rod to assist in maintaining ROM, the inflamed rotator cuff muscles are permitted to rest. These exercises should be performed in a pain-free range & should emphasize end range stretching. Posterior capsule tightness is generally the primary cause of end range flexion limitations. Incorporating stretches for internal rotation will help address posterior capsule tightness. In addition, the use of low load prolonged stretches combined with heat can be helpful in regaining flexibility. Pulleys can also be very helpful in maintaining or increasing PROM during this phase. It is not unusual for patients to perform these exercises for 4-6 weeks before seeing a significant improvement in pain.
- Corticosteroid injections or oral anti-inflammatory medications may also be used during this time to decrease inflammation & pain. Modalities that generate heat should be used with caution as they may actually increase inflammation in the tissues. Although helpful in selected cases, as a rule, we have not consistently found ultrasound, phonophoresis, or iontophoresis to be effective in reducing pain in patients with impingement syndrome. Conversely, ice packs applied to the shoulder immediately after exercises may help prevent further inflammation.
- As pain begins to subside & normal activities can be performed comfortably, AROM & gentle strengthening may be initiated. Again, it is important to emphasize exercising in a pain-free range. For those who still have pain at mid-range, isometrics are appropriate. For those whose pain is more.

## **Impingement Syndrome (Conservative Management)**

- In the end-range or after use, small weights or exercise tubing may be initiated to the rotator cuff & periscapular muscles. Emphasis on strengthening below 90 degrees in order to target the humeral head depressors without causing impingement. Flexibility exercises to maintain PROM should be continued as a warm-up before strengthening sessions.
- Strengthening is generally performed every other day to allow time for rest & repair. An emphasis is generally placed on endurance (high repetitions and less weight) to help prevent recurrence.

### **Considerations:**

- Patients with acute tendinitis of the rotator cuff often describe an aching pain not over the glenohumeral joint, but instead near the deltoid insertion on the humerus. They often insist that their pain is not in the shoulder, but in the arm.
- The anatomical shape of the acromion plays a significant role in impingement syndrome. The more curved or hook-shaped the acromion, the less likely conservative efforts will be effective. An X-ray that reveals the supraspinatus outlet can be helpful in determining the morphology of the acromion.
- If conservative efforts to decrease pain have been ineffective for 2-3 months, surgical alternatives should be considered.
- Avoidance of active use of the inflamed musculature can be a challenge. Using a step stool for activities requiring overhead reach can decrease the extent to which the humerus is required to elevate.
- Do not underestimate the role of the periscapular muscles in pain free use of the shoulder. Disuse of the arm can lead to weakness & tightness. Be sure to incorporate strengthening of the scapular mobilizers & stabilizers in the home program as early as possible.