What is Impingement Syndrome?

This condition occurs when the rotator cuff tendon rubs (impinges) on the undersurface of the acromion bone and clavicle bone when the arm is raised overhead. The acromion is the outer tip of the scapula (the shoulder blade). This rubbing causes:

**Tendinitis** which is an inflammation of the rotator cuff tendon, and

**Bursitis** which is an inflammation of the subacromial bursa. The bursa is a small sac of fluid that normally acts as a lubrication to prevent rubbing of the tendon and bone.

How is Impingement Syndrome Diagnosed?

- **Your History:** The nurse and doctor will ask detailed questions regarding your symptoms.
- **Physical Examination** of the neck, shoulder elbow and nerves.
- **Radiographs** (x-rays): Standard x-rays will be taken in the office to look for calcification, arthritis, spurs and other abnormalities.
- **The Injection Test:** Local anesthetic (lidocaine) is injected into the bursa, and if your pain is decreased immediately, then the diagnosis of impingement is confirmed. This is often the most accurate diagnostic test.
- **MRI:** Magnetic Resonance Imaging uses a large electromagnet and radio waves to make images of the shoulder’s structure. This test is rarely needed for the diagnosis of impingement syndrome. It can be useful at times to diagnose other conditions like rotator cuff tears, tumors, osteonecrosis, etc.

What Causes Impingement Syndrome/Rotator Cuff Problems?

Usually there are several causes in a patient. Your doctor will explain which are important in your case.

- **Calcification of the Rotator Cuff**
  Calcium deposits can form in the tendon for various reasons. This can cause the tendon to enlarge, exacerbating impingement.

- **Instability of the Shoulder**
  An injury or repetitive overuse can cause tearing or stretching of the shoulder ligaments which we term “instability.” This can worsen the tendency of the rotator cuff to impinge.

- **Bone Spurs**
  Spurs can form on the underside of the acromion and the clavicle (the collarbone) slowly over time. Arthritis of the acromioclavicular joint can also cause spurs. These spurs can rub on the rotator cuff tendon.

- **Inflammation of the Rotator Cuff**
  Inflammation causes swelling which enlarges the tendon, worsening the impingement.

- **Rotator Cuff Muscle Weakness.**
  The rotator cuff consists of four muscles which come together into one large tendon the rotator cuff tendon. The muscles can become weakened from different causes, e.g., injury or overuse. Weakness of these muscles causes the humerus to not sit properly in the joint, worsening the impingement.

- **Rotator Cuff Tear**
  Can result from wear over time, repetitive injuries and/or a single traumatic event.
What is the Treatment?

I. The vicious cycle of worsening pain and inflammation must be broken.

II. The underlying causes of the impingement must be corrected

<table>
<thead>
<tr>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rotator Cuff Weakness</td>
<td>• Muscle-strengthening exercises</td>
</tr>
<tr>
<td>• Rotator Cuff Inflammation</td>
<td>• Anti-inflammatory medication (e.g., Ibuprofen, Aleve), relative rest, corticosteroid injection.</td>
</tr>
<tr>
<td>• Instability</td>
<td>• Strengthening exercises or surgery to correct the instability.</td>
</tr>
<tr>
<td>• Calcification of the Tendon</td>
<td>• Corticosteroid injection or Arthroscopic Surgery to remove calcium deposits.</td>
</tr>
<tr>
<td>• Bone Spurs</td>
<td>• Corticosteroid injection or Arthroscopic Surgery to smooth and remove spurs.</td>
</tr>
<tr>
<td>• Rotator Cuff Tear</td>
<td>• Arthroscopic Repair</td>
</tr>
</tbody>
</table>

Surgery: Recovery and Results

Surgeries are generally performed as out-patient surgery. Some simple home exercises are given to you to start immediately after surgery.

- **Acromioplasty** patients will focus on range of motion for six weeks then start strengthening. This can be done on your own or working with a therapist.

- **Rotator Cuff Repair** patients generally benefit from a period of shoulder immobilization (3-6 weeks) and then exercises and/or supervised therapy usually lasting 6 - 12 weeks.

- For both types of surgery, recovery generally continues for 6 - 12 months. Try to be patient and keep up with your exercises long term for maximal benefit and recovery.

- Even with maximal recovery, the strength and function of a repaired rotator cuff is not equal to a normal cuff. Often there will be some long term limitations, but overall function should be much better than before surgery.