

Subacromial (Impingement) Syndrome is a painful condition of the upper extremity resulting from a structural narrowing of the subacromial space. Usually described as a painful condition of the shoulder that results from inflammation, irritation, and degradation of the anatomic structures within the subacromial space. Shoulder impingement syndrome was thought to be a sole diagnosis, but it is now considered to be a cluster of symptoms and anatomic characteristics (Cools et al. 2008) often chronic in nature (Lewis 2009). Subacromial (external) impingement should be recognized as a clinical entity that is separate from internal impingement.

History	
<p>Shoulder Pain</p> <ul style="list-style-type: none"> Individuals will usually present with complaints of shoulder pain associated with associated with abduction and/or flexion of the arm. A loss of shoulder motion, weakness and nighttime pain can interfere with sleep (Dhillon et al. 2019). Symptom onset is usually gradual or insidious and can develop over weeks to months. Patients typically are unable to describe a specific trauma or event that resulted in the pain (Koester et al. 2005) Pain is often located over the lateral acromion, frequently with radiation to the lateral mid-humerus. Symptom relief may be noted with rest, anti-inflammatory medications (NSAIDs), and ice, but symptoms often return with overhead activity. 	

Physical Examination Findings	
Observation/Posture	AROM
<ul style="list-style-type: none"> Physical examination is straight forward. Usually unremarkable, although rounded shoulders with anterior head carriage are often seen (Garving et al. 2017). 	<p>Patients with subacromial impingement syndrome will often have weakness of abduction and/or external rotation of the symptomatic side. Scapular dyskinesia can usually be seen with forward flexion of the involved arm (Cools et al. 2008).</p>
Palpation	Impingement Tests:
<ul style="list-style-type: none"> Shoulder tenderness is usually present over the coracoid process of the involved arm. Painful joint play may be noted with horizontal adduction, and internal rotation. 	<ul style="list-style-type: none"> Hawkins Kennedy Neer’s Test Empty Can Test (Jobe Test) Painful Arc * Rotator cuff testing outside of abducted positions is usually unremarkable.

Ancillary Tests	
<ul style="list-style-type: none"> The role of imaging is to provide structural information to influence therapeutic decisions. Usually, X-Rays are not indicated upon presentation, unless osseous pathology is suspected. The overall diagnostic sensitivity of the physical exam may be 90%, imaging studies can be performed to confirm the diagnosis and rule out other pathologies, especially with recalcitrant cases. (Garving et al. 2017) Plain film shoulder radiographs (AP and lateral/scapular Y) can be used to evaluate boney structures especially the shape of the acromion, which can contribute to impingement (Garving et al. 2017). 	<ul style="list-style-type: none"> Advanced imaging with MRI is recommended only after 6 weeks of conservative care has failed to provide significant clinical improvement (Jaggi et al 2010). Diagnostic Musculoskeletal Ultrasound (MSK Ultrasound) is also a useful imaging option after 4-6 weeks of conservative care without clinical improvement to better assess of the soft tissue structures such as tendinopathies, ligament tears, and subacromial bursitis (Kadi et al 2017)

Treatment Options	
<ul style="list-style-type: none"> The emphasis of care is to decrease pain and improve overall shoulder function; increase pain free active range of motion, improve shoulder segmental motion, and improve mechanical faults. Management incorporates rehabilitative exercise programs that focus on scapular stability, reducing scapulothoracic dyskinesia, rotator cuff strengthening, and exercises to correct strength imbalances of the upper extremity. Injection or surgical intervention is usually not necessary except with significant underlying anatomical pathology, or failure of response to conservative care. 	
<p>Acute Phase</p> <ul style="list-style-type: none"> Exercises within the pain free arc (scapular stabilization, Codman arm swings, broomstick exercises, and wall walk/table walks). <p>Sub-Acute Phase</p> <ul style="list-style-type: none"> Scapular stability and rotator cuff strengthening outside the painful arc added as tolerated. Scapular stability and general strengthening exercises can include: <ul style="list-style-type: none"> Brugger’s Prone abduction (full can) Standing full can Side-lying abduction 	<p>Manual Therapy</p> <ul style="list-style-type: none"> Shoulder manipulation/mobilization into joint restriction based upon directional preference. Soft tissue techniques can be incorporated to shoulder muscles if tender muscles are present. (PIR, Pin and Stretch, Ischemic Compression) Mulligan belt exercises away from pain. As pain range of motion increases and pain decreases, incorporating work/sport specific exercises can be added. <p>Activity Modification</p> <ul style="list-style-type: none"> Avoid painful motions which exacerbate the symptoms. Focus on exercises within the pain free zone.

Treatment Options	
<ul style="list-style-type: none"> ○ Side-lying external rotation at 0* abduction ○ Standing external rotation at 0*, 45*, 90* ○ Prone external rotation at 90* ○ Internal rotation belly presses ○ Standing internal rotation at 0* adduction ○ Standing internal rotation at 90* ○ Standing internal rotation in a diagonal direction ○ Bicep curls ○ Serratus Punch ○ Serratus push-up with a plus ○ Dynamic hug ○ Wall angels ○ Prone full can at 15* ("I") ○ Prone full can at 45* ("Y") ○ Prone horizontal abduction at 90* ("T") ○ Prone external rotation at 90* ○ Standing bilateral external rotation with arms at 0* ○ Prone Rows ○ Farmers carry 	<p>Common Treatment Duration</p> <ul style="list-style-type: none"> ● 4-6 weeks <p>Other Options</p> <ul style="list-style-type: none"> ● Class IV laser ● Cryotherapy ● Pharmaceuticals: NSAID's ● Corticosteroid injections ● Platelet Rich Plasma (PRP) injections <ul style="list-style-type: none"> ○ Surgery (Arthroscopic subacromial decompression (ASD) Cryotherapy ○ Pharmaceuticals: NSAID's ○ Corticosteroid injections ○ Platelet Rich Plasma (PRP) injections

Potential ICD 10 Codes	DDX List for this Condition
<ul style="list-style-type: none"> ● M75.4 = Shoulder Impingement 	<ul style="list-style-type: none"> ● Adhesive Capsulitis ● Calcific Tendonitis ● Acromioclavicular Joint Arthritis ● Bicipital Tendinopathy ● Glenohumeral Joint Arthritis ● Rotator cuff tears ● Distal Clavicle Osteolysis

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