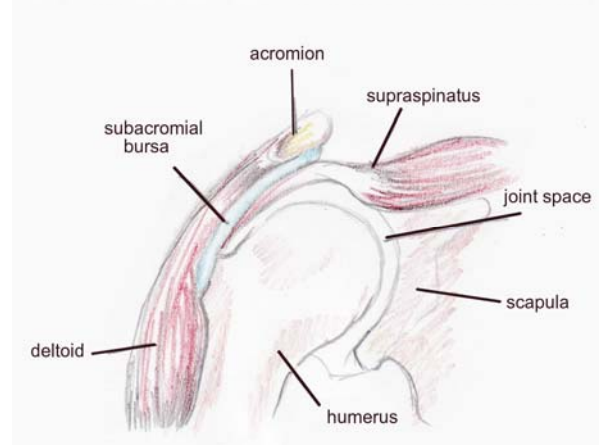
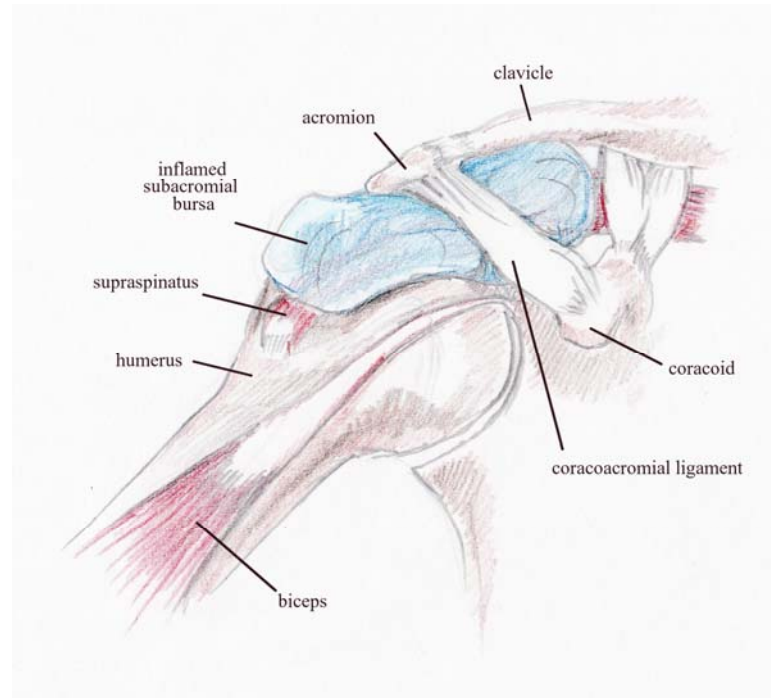
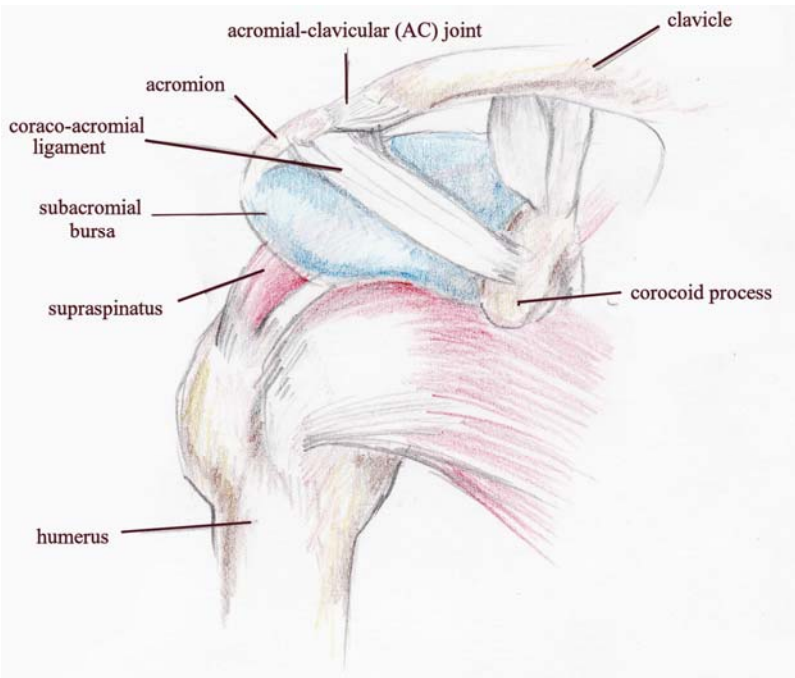


What is subacromial bursitis?

Bursitis is an inflammation or irritation of the bursa, which is a small sac located between a bone and muscle, skin, or a tendon. The bursa allows smooth gliding between these structures. The subacromial bursa helps the motion of the rotator cuff in activities such as overhead work. Bursitis often develops secondary to injury, impingement, overuse of the muscle, or calcium deposits.



Where is the subacromial bursa?

The subacromial bursa is a sac of fluid that separates the acromion from the rotator cuff. The bursa is underneath the coracoacromial ligament, acromion bone, and the deltoid muscle as shown in the illustration. It also touches the other muscles of the rotator cuff (specifically the supraspinatus muscle) and the humerus (long bone of the upper arm).

What causes subacromial bursitis?

- Upper extremity muscle weakness
- Overuse of the adjacent shoulder
- Degeneration of muscle tendons
- Calcium deposition
- Adjacent inflammation of the supraspinatus tendon
- Glenohumeral instability (excessive movement of the joint)

- Degeneration of the acromioclavicular (AC) joint
- Tears of the surrounding rotator cuff
- Impingement by the coracoacromial ligament
- Coracoid impingement
- Impingement on the posterosuperior aspect of the glenoid

What are risk factors for subacromial bursitis?

- Acute trauma or repetitive injury to the shoulder
- Frequent overhead lifting
- Frequent forceful pulling

What are the symptoms of subacromial bursitis?

The most common features of subacromial bursitis include:

- **Pain on motion and at rest**, referred to the insertion of the deltoid muscle, about 4-5 inches down the outer arm
- Occasional regional **loss of active movement**
- Local tenderness, typically located in the front (anterior) and upper (superior) aspects of the shoulder, or the upper third of the arm
- **Acute burning pain** in shoulder as opposed to the intermittent dull pain of degenerative rotator cuff disease
- Pain may be described as **severe pain which may interrupt sleep and prevent active movement**
- **Passive arm movement is often restricted** in abduction only

How is subacromial bursitis diagnosed?

Subacromial bursitis is often diagnosed clinically, meaning based on signs and symptoms in conjunction with a physical exam. Other imaging may be needed to clarify the clinical picture as the complex functional anatomy of the shoulder; it is often difficult to identify the exact origin of pain from physical exam.

Components of the Physical Examination

- Skin overlying subacromial bursa may be warm to touch & tender to palpation.
- When actively abducting the arm elicits a painful arc occurs between 80 and 120 degrees
- When lowering from full abduction there is often a painful "catch" at midrange.
- Pain when performing an isometric flexion contraction against resistance of the examiner (Speed's test), then resistance is removed, a sudden jerking motion results and latent pain indicates a positive test for bursitis.
- If pain occurs during forward elevation of the internally rotated arm above 90 degrees (Neer's test), this identifies impingement of the rotator cuff, but is also sensitive for subacromial bursitis.

Imaging modalities

X-rays may help physicians to see if there are any other abnormalities that may be causing your pain such as bone spurs, acromial anatomy, and arthritis. Calcification in the subacromial space and rotator cuff may be identified. Osteoarthritis of the AC joint may co-exist and may be seen on radiographs.

Magnetic Resonance Imaging may be indicated to evaluate subacromial bursitis, and may show distention of the fluid filled sac, but is not specific for bursitis and may be true in rotator cuff tears and other pathology.

Other tests

An impingement test may be used by injecting the area near the bursa with numbing medication (lidocaine). If pain is relieved and normal strength returns with improved range of motion, then subacromial bursitis and/or rotator cuff tendonitis is the likely cause.

What are other possible causes of my pain?

- Rotator cuff tear, partial or complete
- Rotator cuff tendinosis
- Subacromial impingement
- Rheumatoid arthritis, or other inflammatory disorders
- Shoulder calcification (calcific tendonitis)
- Infection (Septic Bursitis)
- Pseudogout

How is subacromial bursitis treated?

- Ice, heat, and rest should be utilized until acute pain subsides
- Initial management of subacromial bursitis involves immobilization with a sling and NSAIDs (non-steroidal anti-inflammatory drugs) like naproxen sodium or ibuprofen or coxibs like Celebrex.
 - o This may include regular daily use of a nonselective NSAID such as Indomethacin 75mg two times a day or naprosyn 500mg twice a day.
 - o Some people cannot take NSAIDs alone and in these cases another medicine (such as a PPI or proton pump inhibitor) may be additionally prescribed. Alternatively a selective cyclooxygenase inhibitor (coxib) may be prescribed.
- For pain that remains disabling after 72 hours, steroid injection of the bursa may be indicated. Injections should be avoided in the case of septic bursitis.
- Intrabursal steroid injection may be considered as initial treatment of some patients, especially those for whom daily NSAID or coxib use is not favorable (some cardiovascular or renal disease)
- If the bursa is believed to be infected, fluid may be aspirated with the guidance of imaging and the fluid can then be analyzed for organisms. It may be possible to debulk a calcific deposit by aspiration as well.
- It is rarely necessary to surgically remove the bursa.
- Physical therapy modalities including strengthening and range of motion exercises can aid in recovery.

What might the physical therapist suggest?

Physical therapists may use a combination of therapeutic heat, ice, ultrasound, and other methods in conjunction with stretching and strengthening exercises as well as proprioceptive (balance) techniques to help improve mobility and relieve pain. One method used by our institution involves eight visits with progressive exercises some of which are illustrated below, courtesy of UNC Physical Therapy.

Table Slides (Flexion): Start with your hand on a table (facing the table) on a towel as shown below, Stretch your arm forward on the table by sliding the towel. Feel a stretch under your arm. Do 20-30 repetitions. This exercise is modified for abduction as well.



Upper Trap (UT): Sit on a table or chair and use the hand of the affected side to grip under the table, stabilizing the shoulder downward. With the opposite hand, pull the head to the opposite shoulder, maintaining your gaze forward and feeling a stretch in the upper trap muscle. Hold for 30 seconds and do 1-3 repetitions two times a day.



Open Book Stretch: Placed a rolled up towel on a mat table between the shoulder blades and lie flat on your back. Keep your arms folded together over the top of your body, with your hands together. Open your arms up, similar to the second picture, like you are simulating the opening of a book, feeling a stretch in the front of your shoulder. Hold for 30-60 seconds and do 1-3 repetitions two times a day.



Wall Push Ups: Start in the position shown and bend your elbows and move toward the wall, simulating a push up against the wall. When you then extend your arms out, push as far away from the wall as possible without your palms leaving the wall. Progress towards a mat table and then eventually to the floor. Do two sets of 10-20 repetitions three times a week.



Rowing (using a theraband): Sit in a chair as shown or stand. Anchor a theraband to a door or pole, making sure that the anchor point is around chest level. Pull the theraband backwards **most importantly pulling the shoulder blades together**. Do two sets of 10-20 repetitions three times a week.



Low Row Isometric: Push your hand back into the table as shown in the picture. Think like you are trying to push your shoulder blade down into your back pocket. Do 20 repetitions and hold each for five seconds.



What can you do to help prevent subacromial bursitis?

Avoid aggravating factors such as:

- Carrying heavy objects or repeatedly elevating the arm
- When possible, patients should use both arms or pull heavy loads on wheels

Subacromial bursitis – Developed by Sarah Nossov MSIV, Kristin Powell, MD, Harry Stafford, MD, Kevin Poplawski, DPT, Christopher Adams, PTA, ATC, CSCS,

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