

The Shoulder

Shoulder pain is common, affecting about 16–21% of the population and is second only to back pain. The anatomy of the shoulder is complex. With its 5 joints, 8 ligaments and 30 muscles, the shoulder complex presents a compromise between stability and mobility, and the result is that it is inherently unstable.

Regarding the muscles, those attached to the scapula, such as trapezius and serratus transfer energy to the arm, along with the pectoralis and latissimus dorsi; while the rotator cuff muscles maintain the centre of rotation of the humeral head, and its position in the glenoid. The rotator cuff comprises the deep stabilizers of the shoulder and is considered by many to the equivalent of the 'core muscles' of the spine. Without great rotator cuff strength and control the shoulder cannot function normally.

The primary sources of shoulder pain are:

1. AC joint, including the articular meniscus
2. Subacromial area, with the rotator cuff, the bursa and the acromion
3. Glenohumeral joint, including the articular labrum, the biceps and the capsule

COMMON INJURIES

AC JOINT INJURY

The main goals of treatment, whether surgical or nonsurgical, are to achieve a pain-free shoulder with full range of motion, normal strength, and no limitations in activities. The demands on the shoulder will differ from patient to patient, and these demands should be taken into account during the initial evaluation.

FROZEN SHOULDER

Frozen shoulder is an extremely disabling condition, presenting with and remitting shoulder pain and stiffness. It is characterised by a loss of movement. It has 3 stages.

Stage:

1. Freezing phase: This is associated with pain and loss for about 3 months.
2. Frozen phase: This lasts for approximately 3–9 months, with pain at extreme range of movement and marked stiffness.
3. Thawing phase: This last for approximately 9–18 months, usually painless and the stiffness starts to gradually resolve at this stage.

The frozen shoulder has been found to be more common in association with the

following conditions:

Overhead athlete/worker shoulder pain

The problem in the overhead athlete /worker (be they elite or amateur in level) and can be of various pathological origin. Key to their successful management is a multidisciplinary assessment, looking at extrinsic and intrinsic influences; including biomechanical, nutritional and training factors. Initial management should

include rest with protected mobilisation, specialist physiotherapy input is vital. Early input from a shoulder specialist with experience in managing overhead athletes is beneficial for optimal and quicker return to sports.

Return to sport/work is dependent on many factors; age, severity of the injury, the type of treatment administered and patient expectations.

ROTATOR CUFF INJURY TEARS

Rotator cuff tendinopathy is a common cause of shoulder pain and impingement.

There are two main theories for the cause of rotator cuff tears:

1. Extrinsic - due to compression and impingement of the rotator cuff from without. Such as on the subacromial bursal side from acromial spurs and the coracoacromial ligament (subacromial impingement); and on the articular side from trapping of the tendon between the glenoid and humerus in extreme abduction and external rotation (internal impingement)
2. Intrinsic - development of tears due to changing properties of the rotator cuff itself

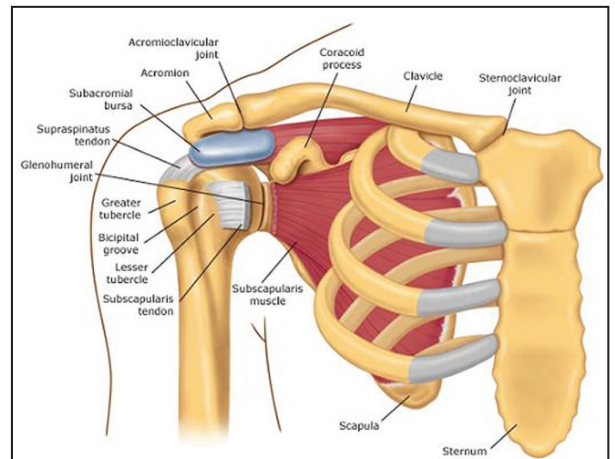
As we age the tendons do degenerate and this does predispose them to injury.

However a full range of injuries present from tendonopathy (tendon injury) to tears (small to full rupture). Some will respond to graded exercise/rehabilitation, and the larger and more disabling tears will not. Surgery is effective when indicated.

GLENOID LABRAL TEARS

The glenoid labrum is a ring of fibrous tissue attached to the rim of the glenoid (socket part of the joint). The labrum is the primary site of attachment of the shoulder capsule, and ligaments, as well as the long head of biceps.

Injuries to the labrum occur with repetitive overhead action (like throwing) or trauma.



Unfortunately management of most labral injuries requires surgery. Only a few get better with conservative management.

DISLOCATIONS AND INSTABILITIES

Dislocations of the shoulder are one of the most common sporting injuries. Outcomes are best when reduction is quick. Recurrence rates are very high and so rehabilitation needs to be thorough and in many cases surgery is a serious option.

The shoulder also is commonly unstable, but without trauma (as per dislocation). This occurs often with overhead activity. It is best treated with good quality rehabilitation.

IMPINGEMENT

Sub acromial impingement syndrome accounts for 44–66% of all shoulder pain. Impingement syndrome involves degeneration and/or mechanical compression of the sub acromial structures. The key structures involved are the rotator cuff tendons, the long head of biceps and sub acromial bursa. The cause of impingement is considered multifactorial and related to exposure and biomechanical factors. Repetitive work or sports activities above the head are associated with higher levels of impingement. Poor posture, poor rotator cuff function, limitations in flexibility and poor scapular control are also related risk factors.

The treatment options include rehabilitation, to address strength, ROM or posture deficits and then a graduated loading regime. Surgery to decompress the impingements or injections.

