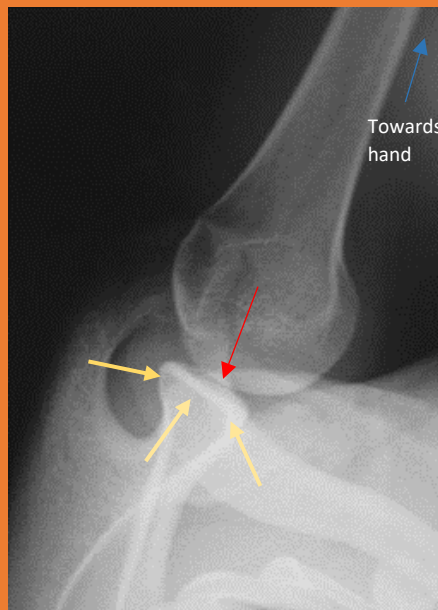
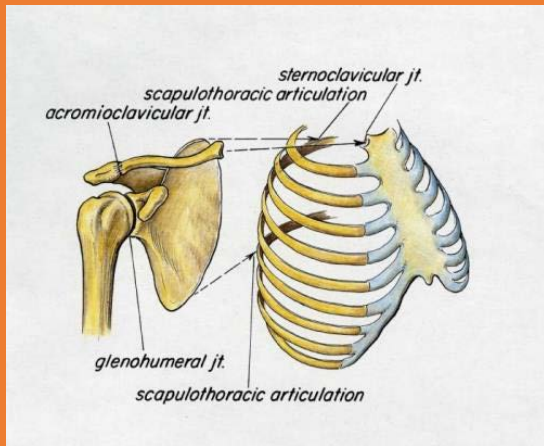


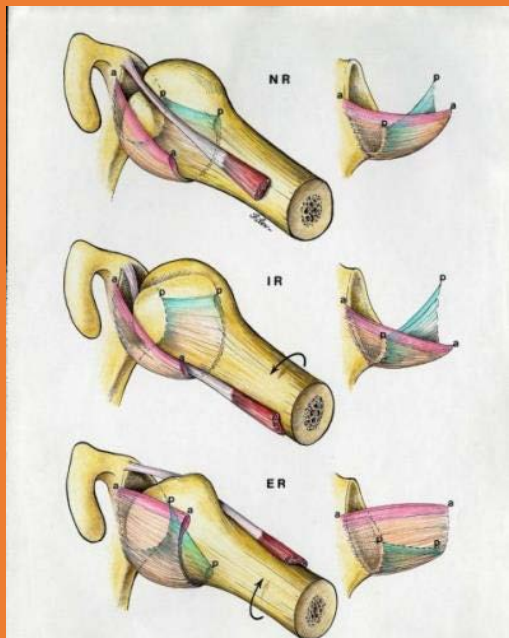
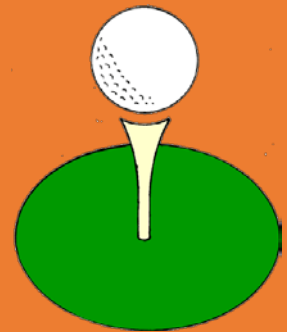
The Shoulder

The Normal Shoulder

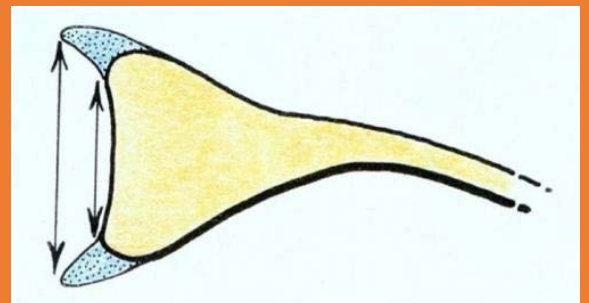
The normal shoulder is composed not only of the glenohumeral joint (“Ball-in-Socket”) but also the the articulation of the scapula with the chest wall (“scapulothoracic articulation”), the connection between the scapula and the clavicle (“AC Joint”) and clavicle to the sternum (“breast bone”). Normal shoulder motion means that the scapulothoracic joint must move as well as the glenohumeral joint. During this motion the glenohumeral joint moves with the humeral head rotating in the glenoid socket. Use of the arm over the head as in work or sports puts stress on the ligaments which keep the ball in the socket. The normal humeral head (ball) is larger than the glenoid (socket), similar to a golf ball and tee.



The humeral head (ball) remains centered (red arrows) in the socket (yellow arrows) if the scapula moves in proper rhythm with the glenohumeral joint motion.



The socket is made broader (wider) and deeper by a flexible rim of cartilage (labrum) which runs along its perimeter. This increases stability



by making the socket larger and deeper. The labrum also acts as an anchoring point for the ligaments which stabilize the shoulder joint during shoulder motion. The normal main ligament of the shoulder (inferior glenohumeral ligament) supports the humeral head like a hammock supports a person. With arm rotation, the ligament (hammock) moves

forward and backward to keep the ball in the socket during this rotation.

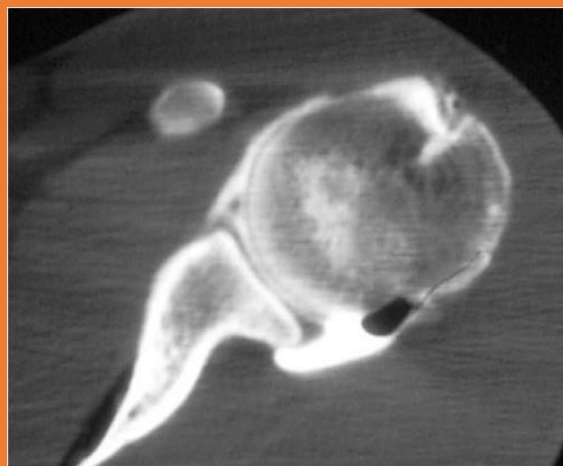
Shoulder Instability

What is it?

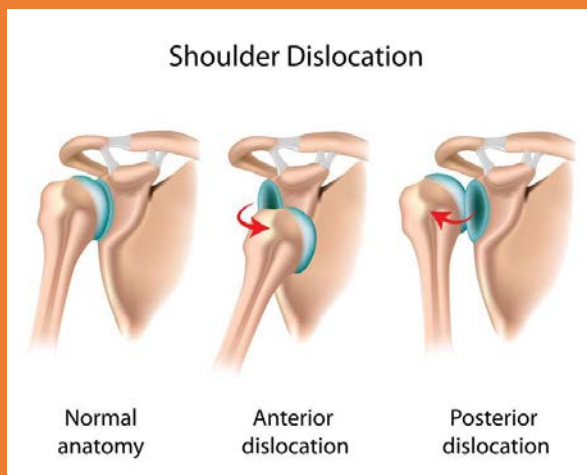
Shoulder instability occurs when the humeral head (ball) moves out of the glenoid (socket) during shoulder motion. This is associated with symptoms which are typically pain and sometimes a sense of shifting. If the ball completely moves out of the socket, this is called a dislocation. If the ball moves partially out of the socket, this is called a subluxation.

Shoulder instability may occur as the result of a traumatic event such as a football tackle or a fall. It can also occur as a consequence of repeated motions which stretch the ligaments in the shoulder allowing the ball to then move partially out of the socket.

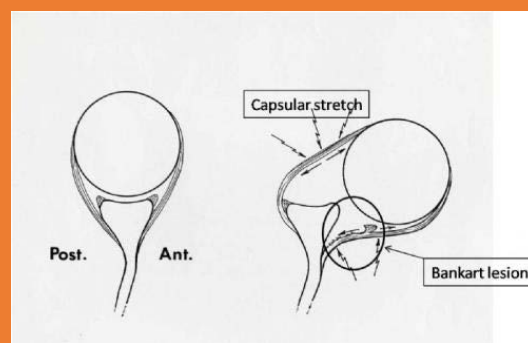
Shoulder instability is usually in the anterior (out the front) direction, though in about 10% of individuals it may be posterior (out the back). In another 5-10% of cases shoulder instability may occur in more than one direction. This is called multidirectional instability.



Normal shoulder

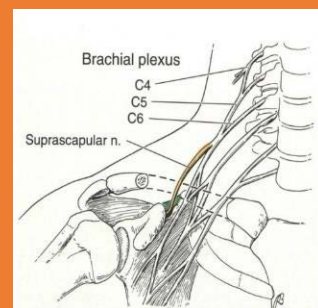


When sufficient force is applied to the shoulder and a dislocation occurs one or more injuries must occur to the ligaments, cartilage, and labrum in the shoulder. The most common injury is called a "Bankart lesion". This is a separation of the labrum from the edge of the socket.

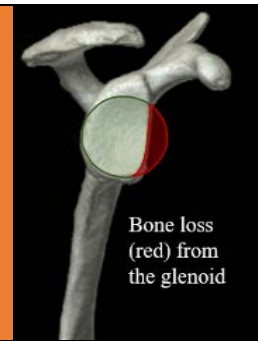


Associated injuries:

NERVE INJURY: The brachial plexus are the complex of nerves that run in the front of the shoulder. When the humeral head (ball) dislocates out of the socket it can stretch or compress the nerves of the brachial plexus. This can result in weakness and loss of sensation (numbness).



BONY INJURIES: In some cases of severe injury, the edge of the socket may fracture or the attachment of the rotator cuff (greater tuberosity) may pull off. In the case of multiple recurrences of shoulder dislocation, there may be wearing down of the edge of the glenoid socket and development of a divot in the back of the humeral head (ball), called a Hill-Sachs lesion.



Treatments

ACUTE DISLOCATION

- The shoulder is immobilized in a sling for a period to allow the inflammation and pain to resolve.
- Return to sports is then possible; however, there is a significant risk of recurrent instability especially in young male athletes.

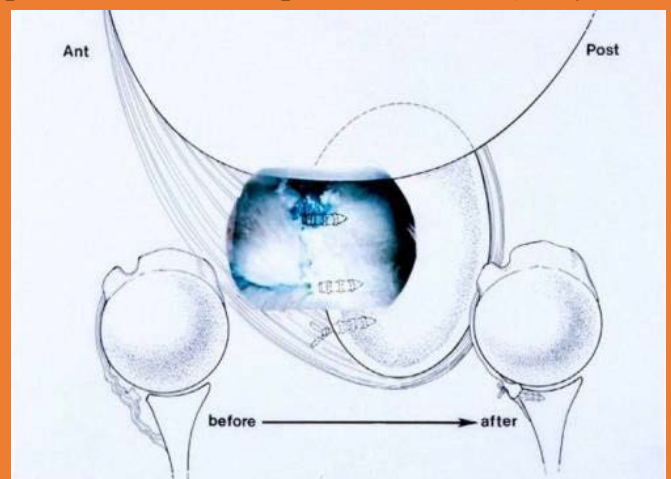
NON-ACUTE DISLOCATION

It is necessary for the individual to go to an emergency room in order to have a physician reduce the shoulder back into place. This is usually done with intravenous sedation (medicine by vein) so the muscles will relax and with gentle manipulation the arm ball can be reduced back into the socket

ARTHROSCOPIC SURGERY

In the absence of a boney injury, the goal of surgery is to restore stability by repairing the Bankart lesion and any capsular stretch or rupture. In the majority of cases, this can be performed as an **arthroscopic surgery**.

- This surgery involves placement of anchors (plastic, metal, or absorbable) into the edge of the glenoid socket.
- Sutures from these anchors are then placed arthroscopically through the labrum and capsule.
- The sutures are then tied down, reattaching the labrum and capsule



LATARJET PROCEDURE

In the case of loss of bone along the anterior (front) of the glenoid socket, a soft-tissue Bankart repair has a high likelihood of failure. Our approach is to perform an operation called a **Latarjet Procedure**.

- It involves transfer of a bone (coracoid process) in the front of the shoulder into the front part of the scapula so that it acts to restore the glenoid socket surface.
- Attached to this bone is a tendon (conjoined tendon) that acts as a sling in the front of the shoulder.

