

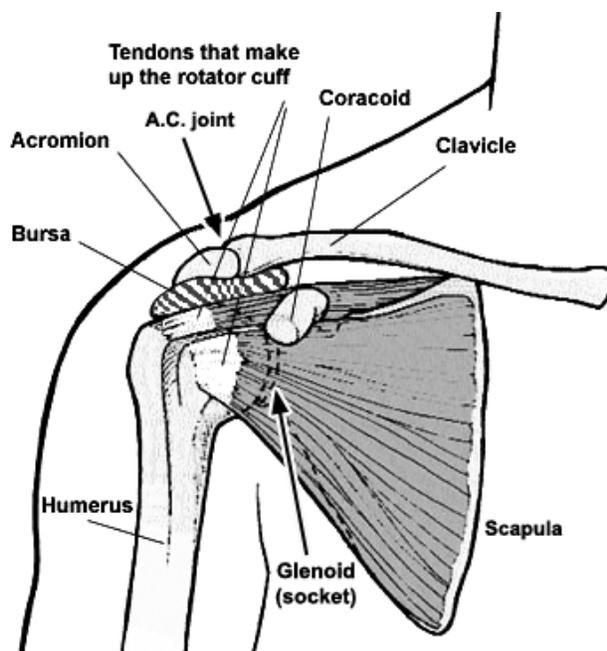
InfoSheet – Shoulder Instability

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WHAT IS SHOULDER INSTABILITY?

Shoulder instability can be a common problem after a shoulder dislocation, and it can even occur without a full dislocation. **Instability** means that the shoulder is too loose and has a tendency to slip out of the socket (or glenoid). If the shoulder slips completely out of the socket, it has become **dislocated**. Repeated dislocations are not only a nuisance, but can cause further injury to the shoulder and can lead to arthritis of the shoulder if not treated.

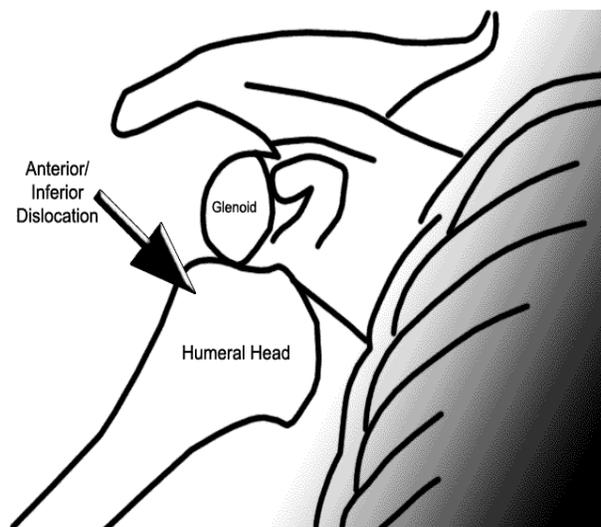
ANATOMY



The shoulder is made up of three bones: the scapula (shoulder blade), the humerus (upper arm bone) and the clavicle (collarbone). The tendons of four muscles form the **rotator cuff**. The muscles are called the supraspinatus, infraspinatus, teres minor, and subscapularis. Tendons attach muscles to bones. Muscles are

able to move bones by pulling on these tendons. These muscles not only move the bones, but when the rotator cuff muscles contract, they also keep the humerus tightly in the socket (glenoid) of the scapula. Good strong rotator cuff muscles help stabilize the shoulder.

The shoulder joint capsule is a bag of tissue that surrounds the shoulder joint. The joint capsule is made up of ligaments that join together to form this watertight bag. A ligament is a soft tissue structure made up of connective tissue. While tendons attach muscles to bones, ligaments attach bones to bones. The ligaments that make up the joint capsule have a considerable amount of slack, or looseness, so that the shoulder is unrestricted as it moves through its rather large range of motion.



However, if the shoulder moves too far, the ligaments become tight and stop any further motion (like a dog coming to the end of its leash). If these ligaments are torn or quite overstretched, the shoulder will not stop, but will slide past the edge of the

socket, causing it to be 'out of joint', or **dislocated**.

Sometimes the shoulder does not come completely out of the socket but slips out partially and then returns to its normal position. This is called a **subluxation**.

97 out of 100 dislocations are anterior, meaning that the humerus slips out of the front of the shoulder socket. Only 3 out of 100 dislocate posteriorly, or out the back.

CAUSES

Shoulder instability is commonly caused by an initial injury that caused the shoulder to dislocate. This initial injury is usually fairly significant and the shoulder must be reduced, or put back into the socket, by a physician. After that first violent injury that causes the shoulder to dislocate, the joint may remain unstable. The ligaments that are supposed to hold the shoulder in the socket may not heal back properly, or they may remain stretched and *too loose* to keep the shoulder in the socket in certain positions. This can result in repeated episodes of dislocation, even during normal activities.

In some cases, instability may be present without an initial dislocation. The initial injury may not have been severe enough to cause a dislocation. In some cases, a genetic problem with the connective tissue of the body can lead to ligaments that are too elastic and stretch too easily. All the joints of the body may be too loose and some joints, such as the shoulder, may be easily dislocated. These people are sometimes referred to as *double-jointed*, although **most of them will**

never experience any shoulder instability.

SYMPTOMS

A shoulder dislocation is usually obvious. The injury is usually very painful and the shoulder looks abnormal. Any attempted movement is extremely painful. A dislocated shoulder may cause damage to the nerves around the shoulder joint. If the nerves have been stretched, usually there will be a patch of numbness on the outside of the arm just below the point of the shoulder. Several of the muscles around the shoulder may be slightly weak until the nerve recovers. This is usually temporary.

Chronic instability causes several symptoms. The shoulder may slip, or **sublux**, when in certain positions. One of the common positions is with the hand raised above the head in a throwing motion. Subluxation of the shoulder usually causes a quick feeling of pain, as if something is slipping, or pinching, in the shoulder. This creates a situation where you cannot trust the shoulder and you may feel anxious in situations that require you to use the shoulder in the position.

The shoulder may become so loose that it dislocates frequently. This can be a real problem - especially if you can't get it back in the socket and must go to the emergency room every time it happens. This can severely restrict your ability to work and play as you would like.

COMPLICATIONS

The two injuries that are commonly associated with shoulder dislocations are axillary nerve palsies and rotator cuff tears. Axillary nerve palsies are usually

stretch injuries that do not allow the brain to communicate with the deltoid muscle, so the arm cannot be raised under its own power. Most of these injuries are temporary, but may take many months to resolve. Rotator cuff tears during shoulder dislocations are more common in people over the age of 40. If a tear is significant, recovery from the entire injury is often better if the tear is repaired.

DIAGNOSIS

The diagnosis of shoulder instability relies on the history and physical examination. For the dislocated shoulder, X-rays are necessary to rule out a fracture of the shoulder. X-rays are usually done after the shoulder is relocated as well, to check and make sure it is back in place and no fractures are present.

For chronic instability, the diagnosis relies on your history of a dislocation (that was confirmed by an X-ray) and a physical examination that suggests a loose shoulder. During the physical examination, your physician will stress the shoulder to test the ligaments. When the shoulder is stretched in certain directions, you may get the feeling that the shoulder is going to dislocate. This is a very important sign of instability and is called an **apprehension sign**. (Unless your shoulder is very loose, the shoulder will not dislocate.) In some cases where the diagnosis is in question, special tests such as examining the shoulder while you are under general anesthesia. This will allow your doctor to test the ligaments of the shoulder while you are asleep and the muscles around the shoulder are paralyzed. Remember that the muscles play an important role in the stability of the shoulder and it is sometimes difficult to

test the ligaments alone if you are awake and reflexively tightening these muscles during the exam.

TREATMENT

The treatment of shoulder instability begins with a well-designed physical therapy program. The two major parts to stability of the shoulder are the muscles and the ligaments about the shoulder. If the ligaments have been weakened by injury, the muscles can be strengthened to substitute for them, to some extent. The important muscles are the rotator cuff muscles, since these muscles stabilize the humerus in its socket. Most typical weight lifting programs **do not** focus on these muscles - so make sure that you consult a physical therapist for the right exercises before you go off on your own.

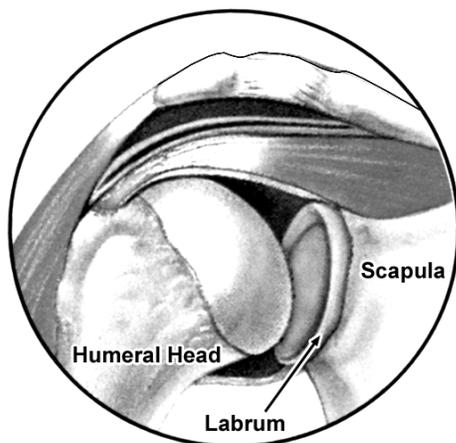
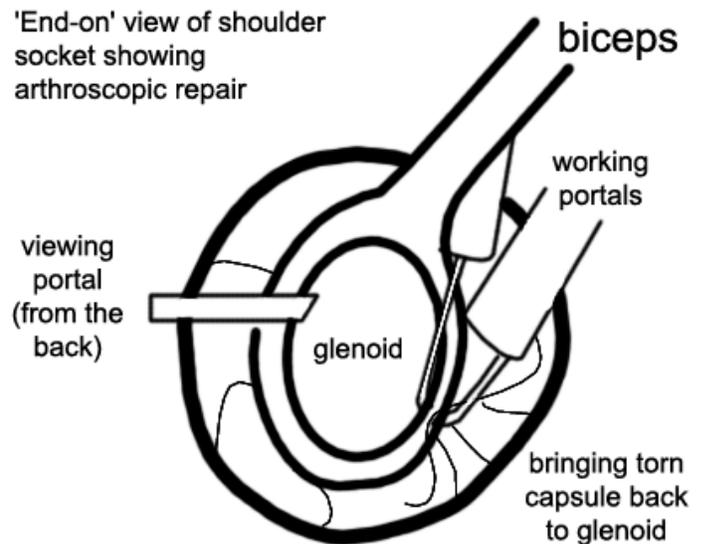
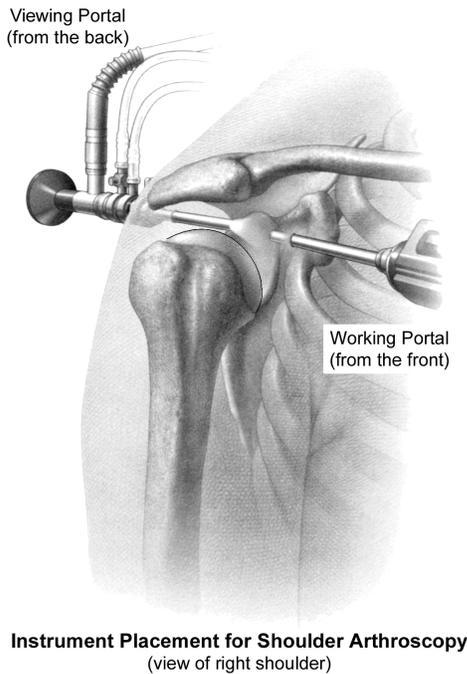
If rehabilitation fails to stabilize your shoulder, surgery may be suggested. There are many different types of shoulder operations designed to stabilize the shoulder. Nearly all of these operations attempt to tighten the ligaments that are loose, usually the ligaments at the front of the shoulder.

Probably the most popular method for surgically stabilizing the shoulder that dislocates anteriorly (out the front) is a procedure known as a Bankart repair. This procedure was developed based on the idea that a primary reason the shoulder is dislocating is that the ligaments in the front of the joint have been torn from their attachment on the socket [glenoid] of the shoulder joint. In this type of operation, the ligaments are fixed back into their original position, and allowed to heal so that the shoulder is again stable.

Typically, this operation is done through an incision on the front of the shoulder, but some physicians prefer to perform a similar operation with the aid of the arthroscope.

In either case, a regimented program of physical therapy will follow operative repair.

Figures – Arthroscopic repair of anterior labrum and capsule:



Front view of right shoulder --
The **Labrum** is what needs to be repaired. The next diagrams show only the **glenoid** (cup) and **labrum**.

