

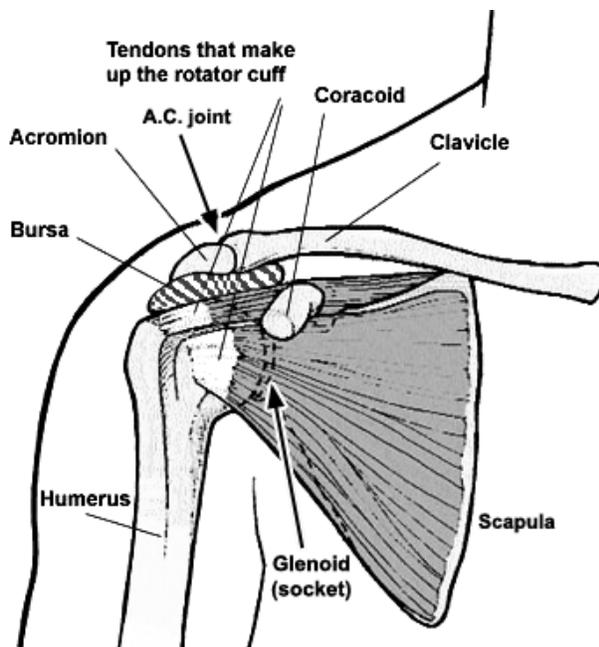
# InfoSheet – Acromioclavicular Separation

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## WHAT IS A SHOULDER SEPARATION?

A **shoulder separation** is a fairly common injury, especially in an athletic population. A shoulder separation is actually a dislocation of the acromioclavicular (AC) joint, the joint between the scapula (shoulder blade) and the clavicle (collarbone). Some people mistake this for a shoulder dislocation, and vice versa. This is a very different injury than a shoulder dislocation. Let's look at what structures are involved in this injury.

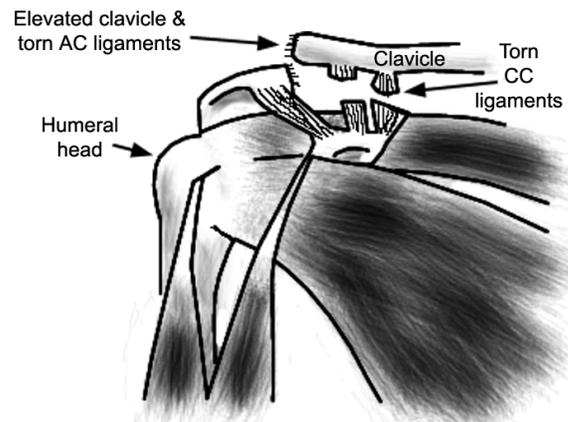
## ANATOMY



The shoulder is made up of three bones: the scapula (shoulder blade), the humerus (upper arm bone) and the clavicle (collarbone). The part of the scapula that makes up the roof of the shoulder is called the acromion. The joint where the acromion and the clavicle join is known as the **acromioclavicular (AC) joint**. Ligaments hold these two bones

together. Ligaments are soft tissue structures that connect bone to bone. One set of ligaments surround the joint and make up the joint capsule. Two other ligaments hold the clavicle down, and attach the clavicle to a bony knob on the scapula called the coracoid process.

## ***Shoulder Separation / AC Joint Sprain***



The AC joint can be injured in varying degrees. The simplest type injury is a simple sprain of the ligaments around the joint (grade 1). A more severe injury can result when the ligaments around the joint (AC ligaments) are actually torn (grade 2). If the ligaments around the joint are torn **and** the ligaments that attach the clavicle to the coracoid process (CC ligaments) are torn, then the injury results in an obvious bump on the shoulder (grade 3).

## CAUSES

The most common cause of an acromioclavicular (AC) joint separation is a fall on the shoulder. As the shoulder strikes the ground, the force from the fall pushes the scapula down. The collarbone, because it is attached to the rib cage, cannot move down enough to follow the motion of the scapula. Something has to give, and the

ligaments around the acromioclavicular (AC) joint begin to tear - separating, or dislocating, the joint. You may hear a tear or snap at the time of injury. Pain and swelling will develop in the joint area.

### **SYMPTOMS**

The symptoms may range from simply tenderness over the joint, to a complete dislocation of the acromioclavicular (AC) joint as seen in the grade 3 separation. There may be a considerable amount of swelling if the separation is grade 2 or 3. A bluish discoloration of the skin due to bruising may occur several days after the injury. In the grade three separation you may feel a popping sensation due to the loose joint shifting. There is usually a noticeable bump on the shoulder if the joint has completely dislocated. This deformity or bump will be permanent, while the pain will disappear.

### **DIAGNOSIS**

Diagnosis is usually made on physical examination. X-rays may show the acromioclavicular (AC) joint to be dislocated, and may be necessary to make sure there is not a fracture of the clavicle. In some cases, x-rays are taken while holding a weight in each hand to stress the joint and determine how much instability in the joint is present.

### **TREATMENT**

Treatment for a Grade 1 or Grade 2 shoulder separation usually consists of a sling and pain medication until the sprain, or tearing, of the ligaments heals. In most cases, the shoulder becomes relatively pain free within 3 weeks. Since there is not a danger of making the condition worse, activity can be determined by the symptoms. You can usually do whatever you can tolerate.

The treatment of Grade 3 AC separations is somewhat controversial. Many studies show no difference in the outcomes for surgically treated separations versus doing nothing. A significant portion of people who undergo surgery will need another operation later as the injury causes the joint to degenerate and become painful. Other physicians feel that some patients benefit from surgical repair. One case where repairing the ligaments may be best is in the case of the highly functioning throwing athlete. Some would argue that these athletes perform better following repair than without the repair.

In some grade 3 shoulder separations, surgery may be suggested. Surgery involves relocating the joint and repairing the torn ligaments. A screw or some other type of fixation may be used to hold the joint together while the ligaments heal. This surgery is done through a 4-5 inch incision over the acromioclavicular (AC) joint. If a screw is used to hold the clavicle in place while the ligaments heal, it will usually be removed six or eight weeks after the surgery. If not removed, the screw will probably break, but usually will not cause problems.

Several studies have been done looking at what happens to the acromioclavicular (AC) joint after this injury. It appears that many people, whether they had the joint repaired surgically or not, will need an operation at some time in the future. The injured joint degenerates faster than normal and over time becomes arthritic and painful. This process may take years to develop, but sometimes this happens within 1-2 years.