

## Acromioclavicular Joint (AC joint)

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“Separation” of the shoulder is the common term used for a sprain of the AC or Acromioclavicular Joint. A fall directly on the shoulder can cause the joint to “separate.” This injury occurs most frequently in contact sports, particularly football. The main cause of a shoulder separation or AC joint dislocation is a fall on the outer upper corner of the shoulder, as may occur in a tackle or a fall onto an outstretched hand. A fall from a height, and other high energy injuries, are also major causes of AC joint separations. They also can occur skiing, snowboarding, slipping on ice, at work (a fall off a ladder or unprotected height), and in motor vehicle accidents.

Shoulder separations are different than shoulder dislocations where the ball comes out of the socket, and they are often confused with dislocations. Shoulder separations involve the small joint that connects the collar bone to the small bone above the ball and socket of the shoulder the acromion (see Figures 1 and 2). The joint can be felt as a prominent bump or ridge on the top of your shoulder. The joint is held together by strong ligaments called the coracoclavicular ligaments and the AC joint capsule. They range from minor, or grade 1 separations, that can be treated with rest, ice and an anti-inflammatory to minor displacements, or Grade 2 injuries, that can be treated the same way, to complete displacements. In the higher energy injuries, the AC joint can dislocate just like ball and socket of shoulder. In the more severe types, all of the ligaments holding the collar bone in place are torn. These higher-grade injuries (grades 4, 5 and 6) are associated with a clear deformity and instability of the AC joint on examination. These high-grade injuries can tent the skin and be irreducible.

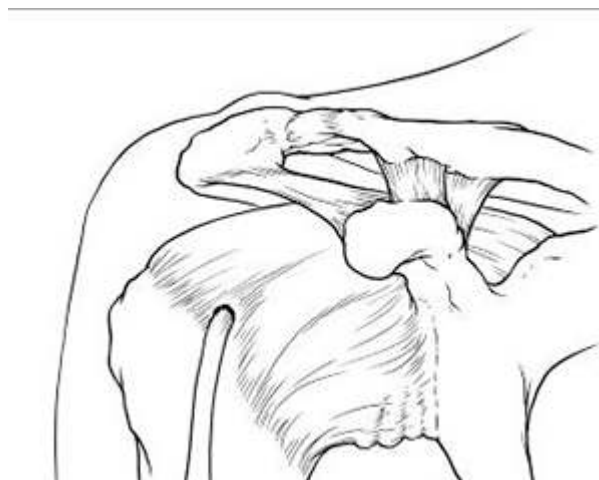


Figure 1: Shoulder anatomy

The diagnosis is made by history, physical examination and X-rays. The injury causes pain and difficulty moving the arm. The ligament injury allows muscles attached to the clavicle to pull it away from the shoulder and, depending upon the severity may produce a very prominent bump on the top of the shoulder. Special X-rays with and without weights can help define the relative instability of the AC joint in borderline cases. An MRI is not needed or helpful in the diagnosis and treatment in this injury.

Again, in simple cases, there is only a sprain and the clavicle does not move too much out of place. Treatment may consist of rest, immobilization with a sling, ice and use of an anti-inflammatory medication. Certain exercises done under the supervision of a physical therapist may also be useful. If the ligaments holding it in position are completely ruptured, then the clavicle moves upwards and backwards (see X-ray above in figure 2). Patients may complain of popping, catching or pain with overhead activities. The deformity may be very visible and disconcerting. The deformity itself is not the true indication for surgical repair. There are several clear indications for repair. They include:

1. Significant tenting of the skin: in these cases, the muscle may be trapped below the bone and the bone edge is directly under the skin or the bone may be “button holed’ or stuck in the muscle causing pain with motion.
2. There are nerve symptoms, shooting pains or numbness, in the hand or arm with any motion.
3. There is significant loss of use of the dominant arm or in many cases, the nondominant arm.
4. Continued pain and instability of the end of the collar bone after failing nonsurgical treatment.

If there is a significant deformity and or symptoms with activities of daily living, surgery may be required to bring the clavicle back into its normal position. The goal is to restore stability and function to the shoulder. Surgery is not indicated for small separations, minimal deformity or for only cosmetic reasons.



Healed incision for the repair.



Full elevation at eight weeks post op.



X-ray showing reduced AC Joint and bone tunnels.

The vast majority of the time the reconstructive surgery is very successful. Remember, as with any surgery, there is always a risk of complications including, but not limited to, infection or failure of the repair. Having AC joint ligament reconstruction surgery in cases with minor or weak indications is not worth even the limited risks of surgery and is discouraged. In some of those minor cases, a less invasive approach, like an arthroscopic Mumford procedure or resection of the prominent tip of the distal collar bone, or even no surgery at all, may be a better choice.



### **Procedure and Instructions**

If surgical repair is needed, the ligament reconstruction involves a special incision being made over the front and the top of the AC joint. The collar bone is then reduced into position and the torn tendons replaced with a tendon graft and small biocompatible screws supplemented with heavy duty sutures (Fiberwire™ and Ethibond™).

Dr. Reznik performs this surgery under a light general anesthesia with Marcaine and Lidocaine for post op pain relief on an out-patient basis. You should expect to have some post op soreness and you will be given oral pain medications for home to provide extra comfort. (To learn more see the photos from a real surgical repair performed by Dr. Reznik on this web site).

Your physical therapy will begin 3-4 days after surgery. The physical therapist will guide you in your shoulder rehabilitation program. It is very important for you to start therapy when recommended.

To avoid complications, postoperative follow up appointments with your physician are also required to monitor your progress.

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