

## AC Joint Injuries

### ***What is the AC joint?***

The AC (acromioclavicular) joint is the joint formed by the meeting of the top of the shoulder blade (the acromion) and the end of the collarbone (the clavicle), hence the name AC (acromioclavicular) joint.

### ***What types of problems occur at the AC joint?***

The most common problems occurring at the AC joint are separations, fractures and arthritis.

### ***What is an AC “separation” and how is it treated?***

An AC joint separation can occur from trauma to the shoulder such as a fall directly on the top of the shoulder or falling on your elbow causing your upper arm to separate the collarbone from the acromion. The degree of separation can vary from mild to severe. A mild separation is termed a Grade 1 separation. This results in minor damage to the ligaments that hold the clavicle to the acromion. There is no visible deformity and the bone still line up fine on X-rays.

A moderate separation is termed a Grade 2 separation. This results in partial tearing of the ligaments that hold the clavicle to the acromion. There will be a visible abnormality at the AC joint that may be more obvious when stressed. X-rays will reveal that the clavicle and acromion don't quite line up.

A severe separation is termed a Grade 3 separation. This type of injury results in the ligaments being completely torn resulting in a visible deformity. X-rays will demonstrate complete separation of the clavicle from the acromion. Clinically you will see the end of the collarbone “tenting” the skin over it.

Very infrequently patients may sustain different variations of these injuries which may require surgical treatment.

These injuries can be quite painful and result in you not being able to lift your arm overhead, across your body or behind your back. Fortunately, whether you have incurred a grade 1, 2 or 3 separation, the treatment is non-surgical in general. There are some surgeons who advocate surgical treatment for the grade 3 AC joint separation but this is unusual in our practice. Previous studies have demonstrated no significant benefit of surgical versus non surgical treatment regarding long term range of motion, function, strength, or pain. Patients will however have a permanent “bump” in this region. Chronic pain associated with an AC joint separation is unusual but can be treated with an AC joint reconstruction. Several days in a sling may be necessary for comfort immediately after injury. Icing the area and taking an anti-inflammatory medication will help with healing. Physical therapy should be initiated as soon as you are comfortable to restore full range of motion and strength to the shoulder. The length of time to recover from these types of injuries is directly proportionate to the severity of the separation. Grade 1 injuries generally heal in 2-3 weeks, while a grade 3 injury may take 6-8 weeks.

### ***Is surgery ever indicated for AC separations?***

Grade 1 and 2 injuries generally never require surgery. A Grade 3 injury will require surgery on rare occasion. This is only recommended if non-surgical treatment fails to provide pain relief. Usually a surgical stabilization of the AC joint would be recommended. Your orthopedic surgeon will tell you if surgery is indicated. It can be performed on an outpatient basis. 8-12 weeks of post-operative physical therapy can be expected.

### ***What about clavicle fractures?***

Clavicle fractures generally occur from a direct blow to the collarbone. A good example is falling off a bicycle directly on the clavicle. Most clavicular fractures (80%) occur in the mid-shaft of the clavicle. A small

percentage of clavicle fractures (10-15%) occur on the outer inch of the clavicle and can mimic an A-C joint separation. These types of fractures are treated very similarly to AC joint separations. Most mid shaft clavicle fractures. They will almost always heal in 8-12 weeks time with non-surgical treatment. It is important to know that clavicle fractures predictably heal with a “bump” as more fracture callous occurs around the fracture region in conjunction with the frequent displacement associated with the fracture. Primary surgery may be recommended in a small group of patients who have markedly displaced fractures that may be tenting the skin or causing some compression of the nearby neurologic structures. In unusual instances (<5%) where healing does not occur and the patient is left with a *painful* non-union of the fracture, surgery may be recommended. This surgery involves surgically reducing the fracture bone grafting and securing the nonunion with a plate and screws.

### ***What is AC joint arthritis?***

Arthritis of the AC joint is caused by wearing away of the cartilage between the clavicle and the acromion. This is more common in men than in women. It frequently presents as shoulder pain in the 35 to 45 year old patient. In many patients in this age group it may be a coincidental finding on xray when the patient is being evaluated for an unrelated shoulder problem. It is characterized by localized pain and inflammation directly on top of the shoulder. The pain usually increases with activity. Over time, the joint can wear out, resulting in bone spurs forming at the joint which cause bone-on-bone pain. AC joint arthritis is common in laborers and weight lifters, particularly those involved in the bench press and military press.

### ***How is AC joint arthritis treated?***

Non-surgical treatment is usually effective in alleviating the pain associated with AC joint arthritis. Avoiding activities that aggravate the condition is the first step. Icing the area and taking an anti-inflammatory medication is also helpful. A cortisone injection directly into the AC joint is an option your orthopedic surgeon may recommend. In most cases, the pain associated with a “flare-up” of AC joint arthritis can be tempered with this form of treatment. In fact, many of these problems become asymptomatic over time and patients require no further treatment.

### ***Is surgery ever indicated for AC joint arthritis?***

Yes. If a painful AC joint persists despite the non-surgical treatment described above, surgical removal of the arthritic portion of the end of the collarbone may be recommended. Surgery is usually recommended inpatients who have chronic pain refractory to non surgical measures (rest, ice, anti-inflammatory medications, etc). This is performed on an outpatient with a very predictable and favorable outcome. Surgery is performed on an outpatient basis either arthroscopically or through a minimally invasive one inch incision. Frequently patients following surgery can discern a difference in the character of pain within one week after surgery. 6-12 weeks of post-operative physical therapy can be expected. In a paper we published a number of years ago, pain was predictably improved in the vast majority of patients.