



## Acupuncture Treatment of Shoulder Pain: The Acromioclavicular Joint

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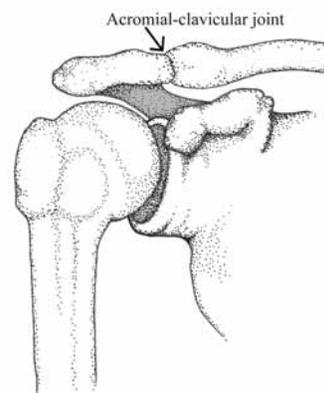
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### Abstract

The acromioclavicular (AC) joint is a commonly injured site on the shoulder and thus a cause of pain. Injury may be due to separation of the joint and/or sprain to the acromioclavicular ligament. This injury is common to many types of activities and may be seen as a sports injury with skiers, snowboarders, and cyclists. This injury can also occur from a simple fall from a skateboard or a ladder or result from a direct blow to the shoulder. When uncomplicated, and where rehabilitation is chosen over surgery, acupuncture often times can be a very effective treatment when directed locally to the AC joint, which is on the Large Intestine *Yangming* channel. Additionally, adjacent muscles are involved, therefore treatment to the supraspinatus, infraspinatus, and pectoralis muscles are also involved in protocols.

**Keywords:** acupuncture, acromioclavicular joint, acromial-clavicular joint, AC joint, shoulder pain, shoulder separation, shoulder arthritis.

### AC Joint 1



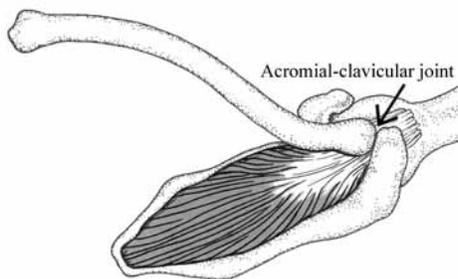
“Injury to the AC joint is almost always the result of a sudden, traumatic event that can be attributed to a specific incident or action.”

## Introduction

Injury to the acromioclavicular (AC) joint is a common cause of shoulder pain and occurs in all types of athletic and active individuals. Skiers, snowboarders, and cyclists can incur this injury or it can occur from a simple fall from a skateboard or a ladder. Injury to the AC joint can also result from a direct blow to the shoulder. Usually called a “separation,” it accounts for 45% of all athletic shoulder injuries.<sup>1</sup> When this condition is acute and the damage limited, rehabilitation may be chosen over surgery.

With precise needling and the inclusion of complementary therapies, acupuncture offers a modality to consider during rehabilitation treatment. While none of the points and protocols that follow have been subject to research or formal studies, it is the author’s experience that these acupuncture techniques provide significant relief and shortens the healing time. Organized into a four step approach, the different choices of points start distally, and they end at the site of injury with local and adjacent treatment. Given that the AC joint is complicated, a review of the anatomy and the mechanisms of this injury will remind the practitioner when to treat and when to refer for further orthopedic evaluation.

## AC Joint 2



## Discussion

The AC joint is the articulation between the lateral end of the clavicle and the acromial end of the scapula. This lies between LI 16 (*Jugu*) on the medial aspect and LI 15 (*Jianyu*) more laterally. When the AC joint is disrupted from trauma, it is called an “acromioclavicular joint separation” or AC separation. That means the acromial-clavicular ligament is affected as it spans the joint. Therefore, this injury may also be considered a sprain.

The practitioner must clearly differentiate an AC separation from a shoulder dislocation. With dislocation, the humerus is displaced from the glenoid fossa of the shoulder. While the AC joint may also be affected, a dislocation is different in terms of treatment, recovery, and rehabilitation; it is a much more serious orthopedic condition. This article only considers an AC separation.

Injury to the AC joint is almost always the result of a sudden, traumatic event that can be attributed to a specific incident or action. The trauma may vary in its severity. In a system using three grades, the Grade I sprain presents with pain, point tenderness, slight swelling, and perhaps some loss of arm motion. The AC

ligament is probably only slightly stretched. In a Grade II injury, the point tenderness is more significant, and some joint laxity may present, as injury to the AC ligament is more pronounced. Pain with arm movements will be also increased. A Grade III sprain is a continued worsening of these signs and symptoms. Here, shoulder laxity may be pronounced to the degree that the acromion is “tenting” as the shoulder drops inferiorly. If present, the practitioner will easily observe this sign. In addition to the AC ligament, the conoid or the trapezoid ligaments may also be injured in this more severe case. It should be noted that this type of grading, from I to III, is not universally used; you may commonly see systems describing pathology up to Grade V.

The patient will obviously complain of pain, specifically on the superior portion of the shoulder in the region of the AC joint. First, confirm if the onset is due to acute trauma. Inspect for swelling and bruising; some joint laxity may be observed. Palpating the joint space and the ligament between LI 16 (*Jugu*) and LI 15 (*Jianyu*) should reveal local tenderness. This may be the single most important part of the exam – palpation of the joint space – and can be done simply with your thumb or finger. Second, the practitioner should test the patient’s range of motion as he or she stands with the arm adducted to their side. The patient slowly abducts the arm by actively raising it laterally. An injured AC joint usually produces pain that starts above 90 degrees.<sup>2</sup> Pain may continue past 120 degrees as the arm moves towards vertical and the joint becomes positionally “compressed.” Also consider the cross-body adduction test, which actively places torsional stress on the joint, and therefore, when painful, implicates the AC joint. The practitioner should look up the details of performing this easy orthopedic maneuver.

If the injury is acute with significant damage, movement may not be tolerated.

Additionally, with severe pain and obvious visual joint gapping, the practitioner should not hesitate to get a more complete orthopedic evaluation to rule out fracture and dislocation. A Grade III injury with complete rupture of all three ligaments may require surgery. Both practitioner and patient need to know these details; however, pain has probably already sent the patient to the emergency room or the orthopedic clinic if the injury is severe. Fortunately, many injured AC joint patients come to the acupuncturist with a prior diagnosis, and, if separation has occurred, the shoulder has been reset.

Before discussing treatment, a reminder is helpful: we are dealing with a joint, which can become inflamed from trauma. This occurs acutely but may also be seen as a chronic case of arthritis to the AC joint. Although often overlooked, this inflammatory condition often contributes to shoulder pain and may be seen in non-athletic and non-active patients. Due to a lack of immediately recognizable points on the joint itself, acupuncturists tend to overlook this diagnosis. With patients over 50 years of age, and especially those with a prior history of injury, the acromioclavicular joint may be a very likely site that generates pain in the shoulder. According to

one source, 9-23 % of patients who have experienced AC joint separation will have chronic symptoms in the joint limiting normal activity later in life.<sup>3</sup> This needs to be watched for in the acupuncture clinic.

Muscles play a significant role in shoulder stability and function as well as pathology. The supraspinatus and infraspinatus of the rotator cuff are often involved with both acute and chronic patients with AC joint involvement. The deltoid, pectoralis major, and pectoralis minor may also contribute after shoulder trauma. So, in addition to treatment of the ligament and the joint space, treatment to the soft tissue is essential. This is outlined in Step four of treatment below.

### Acupuncture Treatment

Overview: Shoulder pain due to AC joint sprain or separation is most commonly diagnosed under the category of accident/trauma. Thus internal organ imbalances are probably not relevant to this injury; it is usually an acute traumatic injury at the level of the ligaments, tendons, and the joint. There is *qi* and blood stagnation in the channels and collaterals. The Large Intestine *Yangming* is the primary meridian affected. However, the accompanying soft tissue trauma affects the scapular muscles of the rotator cuff, the deltoid, and the pectoralis. Thus the other meridians are secondarily involved in this injury. The acute case is usually clinically obvious to the practitioner.

The sub-acute and chronic cases should be thoroughly accounted for during exam. More easily overlooked is the chronic arthritis and inflammation that may develop in the AC joint. This may be considered a *Bi* syndrome, with heat or cold factors predominating depending on the condition of the specific patient.

Prognosis: It is recommended to treat twice a week for three weeks and then re-evaluate. In chronic cases, continue treatment at least once weekly after the first three-week period. This may need to continue for six to eight weeks. Most uncomplicated cases, however, will show improvement within six treatments. Patients often report relief immediately after each session. However, they should be advised to remain cautious with any abduction movements of the upper extremity, as the shoulder may be susceptible to re-injury from separation.

### The Four Steps of Acupuncture Treatment

The following are points and techniques to consider in the treatment of the AC joint in both acute and chronic cases. This protocol is organized into four steps, an approach that is useful in sports medicine acupuncture in the treatment injury and pain. This “four steps approach” makes point selection and needle technique simple, logical, and systematic, and it is both easy to understand and inclusive for acupuncturists from differing traditions and backgrounds.

**Step One:** Using points and techniques that may have an immediate effect on the patient, such as a decrease in pain or an increase in range of motion.

The Tendino-Muscle Meridians (*Jin jing, Jin mai*) **LI 1** (*Shangyang*)

Bleeding Technique: This *jing-well* point treats the area of the AC joint, which is on the Large Intestine *Yangming* channel. An excellent choice for the acute case.

Opposite Side (contra-lateral) Method: **LI 16** (*Jugu*), **LI 15** (*Jianyu*)

Corresponding points on the opposite (unaffected) side: After needle insertion, the patient performs active movement of the affected shoulder. Carefully observe if an increase of range of motion is accomplished.

Empirical Points: There are no well-known empirical points for AC joint trauma. Many of the general points for pain and inflammation from the Master Tong system may suffice. However, for frozen shoulder in a chronic case, consider the following acupuncture point: **St 38** (*Tiaokou*) Choose one side, based upon point sensitivity. Treat with moderate pecking and rotation, with active movement of the affected shoulder. Carefully observe if an increase of range of motion is accomplished. Allow several minutes for this technique.

**Step Two:** Using meridian and microsystem points that are not located at the site of injury.

The Shu-Stream Point Combination: **LI 3** (*Sanjian*) affected side + **St 43** (*Xiangyu*) opposite side A very effective point combination utilizing upper/lower and right/left shu-stream points of the *Yangming* channel. Electrical stimulation between these two points may be considered.

Other Traditional Point Categories: Palpation may assist in your choice of other meridian points. These *Yangming* points are obvious for this pain syndrome of the shoulder:

**LI 11** (*Quchi*) *He-sea* point, **LI 10** (*Shousanli*) Predictably point sensitive with AC joint pathology, **LI 4** (*Hegu*) *Yuan-source* point  
Microsystems: Auricular Therapy

Local: Shoulder, master shoulder, plus cervical spine

Systemic points for pain: Shen men, thalamus, adrenal, endocrine

**Step Three:** Using points that benefit the *qi*, blood and the *zangfu* organs. Internal organ (*zangfu*) imbalances are usually not causative factors for this condition. However, the patients overall constitution may need to be assessed and treated.

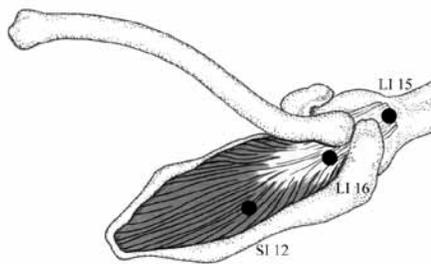
**Step Four:** Using local and adjacent points at the site of injury. Adjacent to the Acromioclavicular Joint

**LI 16** (*Jugu*) + **LI 15** (*Jianyu*): Consider this treatment as “above and below” (or in correct anatomical terms, medial and lateral) to the AC joint. These are the most important two points for treating shoulder separation and usually relieve pain and inflammation without aggravation. Insert LI 16 (*Jugu*) perpendicularly as lateral as possible, so that the needle is just medial to the acromion. LI 15 (*Jianyu*) is usually needled obliquely inferior towards LI 11, but with this point, many techniques of insertion probably suffice. Use electrical stimulation between these two points.

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### Scapula Above

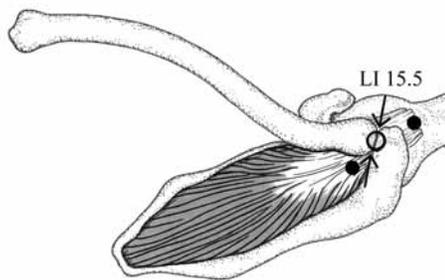
Local points: The Acromioclavicular Joint Space The AC joint space is approximately halfway between LI 16 (*Jugu*) and LI 15 (*Jianyu*), which can be called LI 15.5.



Threading this joint space and the region of the AC ligament is a precise and effective local treatment technique. One needle is inserted at the anterior aspect of the acromion and the joint space and is directed posteriorly. The second needle at the posterior aspect of the joint line is inserted in an anterior direction. Both needles are at an oblique to transverse angle. Using 1.0 or 1.5 inch needles, they are inserted over but superficial to the acromioclavicular joint space. However, the practitioner is encouraged to experiment with the angle of the needle, inserting as far into the joint as can be “allowed” by the specific anatomy of the patient. Thus, in a case of moderate separation, the needle will approach an oblique angle due to the additional space created by the “gapping” joint.

### AC Joint 3

After insertion, needle technique needs to be considered. Electrical stimulation between the anterior and posterior needles at LI 15.5 is preferred; the author has



found this technique to be effective with a low risk of aggravation. However, this may be too aggressive and should be avoided when the condition is acute, painful, and swollen.

In the chronic case of AC joint arthritis, consider needle-top moxa on LI 16 (*Jugu*) and LI 15 (*Jianyu*). Needle-top moxa on the two paired points of LI 15.5 may be difficult due to their oblique to transverse insertion, which increases the possibility of burning the skin. However, with protection, it can be accomplished. Thread moxa or indirect moxa is also a possibility along the joint line. These heat treatments often benefit the patient with chronic arthritis.

### Other Adjacent Points

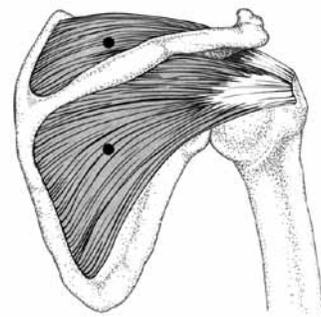
**SI 12 (*Bingfeng*)** The Supraspinatus Muscle: The supraspinatus is often involved in cases of shoulder trauma. Consider two paired points determined by palpation. SI 12 (*Bingfeng*) should be viewed as a secondary point but very important to include in treatment. One may take the point of view that wind (*feng*) “enters”

the shoulder from the trauma of separation. The pain is of sudden onset and sudden disappearance with radiating qualities. Thus treatment to dispel wind would logically follow. The Chinese name of SI 12 (*Bingfeng*), “grasping the wind,” implies it may be used in the treatment of wind symptoms.

**SI 11 (*Tianzong*)** The Infraspinatus Muscle: The infraspinatus is often involved in cases of shoulder trauma. Consider two paired points determined by palpation. SI 11 (*Tianzong*) should be viewed as a secondary point.

### Infraspinatus + Supraspinatus

**LI 14 (*Binao*)** (Located at the insertion of the deltoid): LI 14 (*Binao*) may be point sensitive, as the deltoid muscle is affected by AC joint separation. LI 14 should be viewed as a secondary point.



**SI 14 (*Jianwaishu*)** The Levator Scapulae Muscle: The levator is often involved in cases of shoulder trauma. Consider two paired points determined by palpation. SI 14 (*Jianwaishu*) should be viewed as a secondary point.

**Lu 1 (*Zhongfu*), Lu 2 (*Yunmen*)** The Pectoralis Muscle: The pectoralis is often involved in cases of trauma to the AC joint. Consider two paired points determined by palpation. Lu 1 (*Zhongfu*) and/or Lu 2 (*Yunmen*) should be viewed as secondary points. They cover a “zone” of taut bands and *ahshi* points on the superficial muscle—the pectoralis major. The pectoralis minor lies deeper, attaching to the 3rd, 4th, and 5th ribs. It is often clinically significant, yet commonly used techniques and modalities in orthopedic and sports medicine often fail to target this muscle.

The practitioner should be alert to the pectoralis minor in AC joint and other shoulder pain patients. It often plays a significant role in compensating for the pain pattern of the shoulder. Due to the possibility of pneumothorax, non-needle techniques such as tuina, acupressure, and cupping might be necessary. Consider referral to a physical therapist for some handwork and other modalities to treat this muscle and complement the acupuncture protocols.

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