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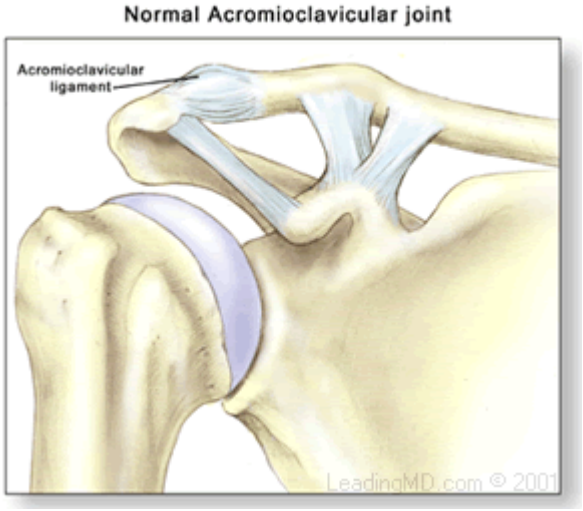
Shoulder AC Separation/Dislocation

This Information is about this condition in general. Every individual has a unique presentation. Once you understand this information, consult the doctor on any specific questions about your condition.

An **acromioclavicular joint separation**, or **AC separation**, is a very frequent injury among physically active people. In this injury the **clavicle** (collar bone) separates from the **scapula** (shoulder blade). It is commonly caused by a fall directly on the "point" of the shoulder or a direct blow received in a contact sport. Football players and cyclists who fall over the handlebars are often subject to AC separations.

In general, most AC injuries don't require surgery. There are certain situations, however, in which surgery may be necessary. Most patients recover with full function of the shoulder. The period of disability and discomfort ranges from a few days to 12 weeks depending on the severity of the separation. **Disruption of the AC joint results in pain and instability in the entire shoulder and arm.** The pain is most severe when the patient attempts overhead movements or tries to sleep on the affected side.



What does the inside of the shoulder look like?

The shoulder is the most mobile joint in the human body, with a complex arrangement of structures working together to provide the movement necessary for daily life. Unfortunately, this great mobility comes at the expense of stability. Several bones and a network of **soft tissue structures** (ligaments, tendons, and muscles), work together to produce shoulder movement. They interact to keep the joint in place while it moves through extreme ranges of motion. Each of these structures makes an important contribution to shoulder movement and stability. Certain work or sports activities can put great demands upon the shoulder, and injury can occur when the limits of movement are exceeded and/or the individual structures are overloaded.

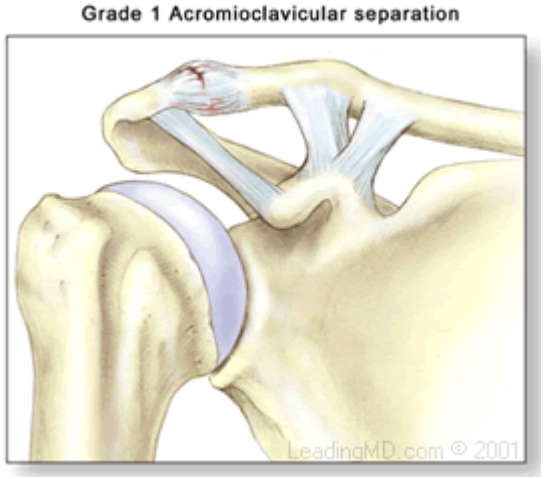
What is an AC joint separation?

An AC joint separation, often called a shoulder separation, is a dislocation of the clavicle from the acromion. This injury is usually caused by a blow to the shoulder, or a fall in which the individual lands directly on the shoulder or an outstretched arm. **AC joint separations are most common in contact sports, such as football and hockey.**

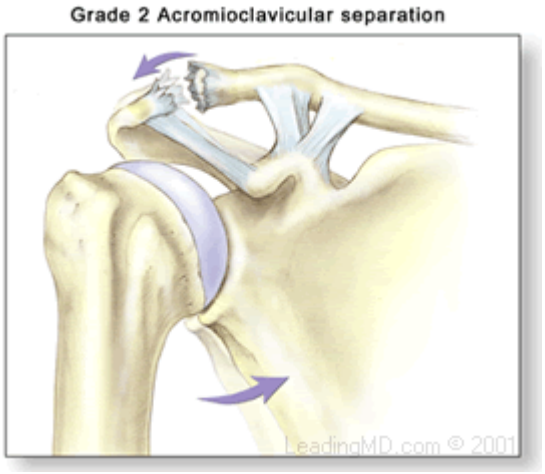
The severity of an acromioclavicular joint injury depends on which supporting structures are damaged, and the extent of that damage. Tearing of the acromioclavicular ligament alone is not a serious injury, but when the coracoclavicular ligaments are ruptured, the whole shoulder unit is involved, thus complicating the dislocation.

Simple AC injuries are classified in three grades ranging from a mild dislocation to a complete separation:

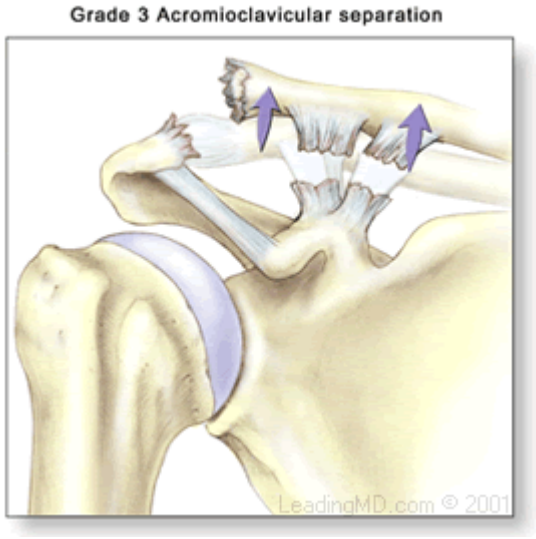
Grade I - A slight displacement of the joint. The acromioclavicular ligament may be stretched or partially torn. **This is the most common type of injury to the AC joint.**



Grade II - A partial dislocation of the joint in which there may be some displacement that may not be obvious during a physical examination. The acromioclavicular ligament is completely torn, while the coracoclavicular ligaments remain intact.



Grade III - A complete separation of the joint. The acromioclavicular ligament, the coracoclavicular ligaments, and the capsule surrounding the joint are torn. Usually, the displacement is obvious on clinical exam. Without any ligament support, the shoulder falls under the weight of the arm and the clavicle is pushed up, causing a bump on the shoulder.



There are a total of six grades of severity of AC separations. Grades I-III are the most common. Grades IV-VI are very uncommon and are usually the result of a very high-energy injury such as one that might occur in a motor vehicle accident. Grades IV-VI are all treated surgically because of the severe disruption of all the ligamentous support for the arm and shoulder.

Bones and Joints

The bones of the shoulder:

- The **humerus** is the upper arm bone. This is the "ball" of the shoulder's "ball and socket" joint.
- The **scapula** is the flat, triangular bone commonly called the shoulder blade. Prominent areas of the scapula serve as attachment points for many muscles and ligaments.
    - The **glenoid** is the shallow "socket" on the side of the scapula that receives the 'ball' of the humerus. Together they form the "ball and socket" arrangement of the shoulder.
    - The **scapular spine** is a horizontal ridge along the back of the scapula that divides the scapula into upper and lower regions.
    - The **acromion** is the end of the scapular spine. It projects up to form the top of the shoulder.
    - The **coracoid** process is a projection towards the front of the scapula and is an attachment site for several muscles and ligaments.
- The **clavicle** is the collarbone. Although it appears to be straight, it actually forms an S-shape when seen from above.
- The **thorax** or rib cage, is an anchor for several muscles and ligaments. Although the ribs do not physically attach to the scapula, the thorax stabilizes and maintains proper positioning of the scapula so that the arm can function to its fullest capacity.

Additionally, there are four bone junctions, or joints:

- The **glenohumeral joint** is the main joint of the shoulder. Here, the **glenoid** on the scapula and the head of the **humerus** come together. The fairly flat socket of the glenoid surrounds only 20% - 30% of the humeral head. Because of its poor fit, this joint relies heavily on the surrounding soft tissue for support. The **labrum,** a ring of fibrocartilage tissue, attaches to the glenoid and deepens the socket to encircle more of the humerus.

- The **acromioclavicular joint**, or AC joint, is the bony point on the top of the shoulder. It stabilizes the scapula to the chest, by connecting the **acromion** on the scapula to the **clavicle**, or "collarbone". A thick disk of fibrocartilage acts as a shock absorber between the two bones. The surrounding capsule and ligaments give this joint great stability.
- The **sternoclavicular joint**, or SC joint, connects the other end of the **clavicle** to the **sternum**, or "breastbone". Like the AC joint, this joint contains a fibrocartilage disk that helps the bones achieve a better fit. It also gets excellent support from its joint capsule and surrounding ligaments.
- The **scapulothoracic articulation** is the area where the **scapula**, embedded in muscle, glides over the **thoracic rib cage**. The surrounding muscles and ligaments keep the scapula properly positioned so that the arm can move correctly.

Cartilage

There are two types of cartilage in the shoulder:

- **Articular cartilage** is the **shiny white coating** that covers the end of the humeral head and lines the inside surface of the glenoid. It has two purposes:
    - To provide a smooth, slick surface for easy movement
    - To be a shock absorber and protect the underlying bone
- **Fibrocartilage** is the thick tissue that forms the **disks** of the AC and SC joints and the **labrum**, the ring that deepens the glenoid. Fibrocartilage has three roles:
    - To act as a cushion in shock absorption
    - To help stabilize the joint by improving the fit of the bones
    - To act as a spacer and improve contact between the articular cartilage surfaces

Ligaments

The shoulder relies heavily on ligaments for support. Ligaments attach bone to bone and provide the **"static" stability** in a joint. Ligaments will alternately become tight and loose with normal motion. They keep the joint within the normal limits of movement.

- The **glenohumeral ligaments** attach in layers from the glenoid labrum to form the **joint capsule** around the head of the humerus.
- The **coracoacromial arch** is the group of ligaments that spans the bony projections of the coracoid process and the acromion.
- The **coracoclavicular ligaments** and the **acromioclavicular ligament** provide most of the support for the AC joint.

Muscles and Tendons

Muscles and tendons work together in the shoulder to provide the **"dynamic" stability** of the shoulder.

There are four muscle groups in the shoulder:

- The **rotator cuff muscles** are the **subscapularis**, the **supraspinatus**, the **infraspinatus**, and the **teres minor**. They are the primary stabilizers that hold the "ball" of the humerus to the glenoid "socket".

The socket is too shallow to offer much security for the humerus. These four muscles form a "cuff" around the humeral head, securing it firmly in the socket. As its name implies, this group of muscles also rotates the arm. The rotator cuff protects the glenohumeral joint from dislocation, allowing the large muscles that control the shoulder to power the arm with great mobility.

- The **biceps tendon complex** also helps keep the humeral head in the glenoid and helps raise the arm.
- The **scapulothoracic muscles** attach the scapula to the thorax. Their main function is to stabilize the scapula to allow for proper shoulder motion.
- The **superficial muscles** of the shoulder are the large, powerful outer layer of muscles that are important to the overall function of the shoulder. This group includes the **deltoid muscle**, which covers the rotator cuff muscles.

Bursae

A **bursa** is a pillow-like sac filled with a small amount of fluid. Bursae (plural) reduce friction and allow smooth gliding between two firm structures, like bone and tendon or bone and muscle. There are over 50 bursae in the human body; the largest is the **subacromial bursa** (under the acromion) in the shoulder. The subacromial bursa and the subdeltoid bursa (under the deltoid muscle) are often considered as one structure. This bursa separates the rotator cuff and the deltoid muscle, from the acromion.

Treatment and Rehabilitation

1. Physiotherapy of the shoulder joint, supporting muscles and tissues is critical for several days at first and then 3 times a week for a few weeks with the onset of exercises
2. Sometimes, Manipulation of the spine and surrounding tissue relieves the stress on the muscle attachments.
3. Injections of Ozone into the surrounding musculature will help the separation heal at a much faster rate. These should begin after 1 week of physio therapy.
4. Proper exercises begun at the right time will reduce the strain on the muscles and improve function.
5. Elimination of repetitive friction motions will relieve the symptoms.

Recommendations:

1. For acute situations, utilize ice packs on the affected area until numbness is reached.

2. At the appropriate time, stretches and strengthening exercises should be implemented in the treatment regimen.

USE OF PRESCRIPTION DRUGS

We do not prescribe drugs nor recommend their use if harmful side-effects are associated with your complaints. We also do not, in any case, recommend changes in the use of prescription drugs that a licensed physician has given you. If you believe alterations in those prescriptions are in the best interest of your health, always consult with the prescribing physician before making any changes.

NUTRITION AND SUPPLEMENTATION:

The ideal situation for nutrition in any injury or disease is first to eat whole foods, and to avoid processed foods, fast foods preservatives, refined carbohydrates and sugar. We have much information on our web page under Absolute Health Clinic. The physical medicine modalities we will provide you will help reduce the symptoms in the time we have projected. If you want to heal, this step is something you will need to take.

Nowadays, even if you do all of those things, you need to realize that our food supply has been gradually depleted. The pure ingredients needed to maintain body function, metabolism and immunity have been drastically reduced. We recommend only whole food supplements. Studies are clear that synthetic vitamins and mineral supplements are not only not helpful to the body in most cases, but can toxic. Don't expect them to take the place of what we recommend here. They will not help you sufficiently to heal properly. The following list has been prioritized to help you gradually begin to supplement your improved diet and provide your body with the ingredients it needs to restore or improve your immune response and then provide the raw materials in usable form to repair the damaged or diseased tissue. The degree to which you can implement these items will largely determine how fast you recover and more importantly whether or not you have a recurrence or relapse of the symptoms again soon.

These products are all produced by Standard Process. You may obtain them on line from Amazon or other distributors if you like or we can order them for you and save you an average of $5 per bottle plus you can avoid shipping charges.

GENERAL DAILY SUPPLEMENTS

Catalyn
Tuna Omega-3 oil
Calcium Lactate
Trace Minerals B12
Cataplex D
Prolamine Iodine

SPECIFIC FOR THIS CONDITION

Biost
Glucosamine Sulphate
Ligaplex II
Calcifood

Specific dosages will be provided by the doctor.

We have many other specific items for a variety of health deficient conditions. Consult our web page or ask the doctor.

HOME REMEDIES AND MEDICINES

After the first 1-3 days when you should be using 5-8 minutes of cold packs, utilize moist heat packs on a daily basis during the first phase of treatment. 15 minutes is the maximum therapeutic dose for heat in this condition. The application may be repeated with at least 15 minutes of non-heat rest in between. This will help relax tight muscle fibers and bring blood to the region. Hot tubs and baths with Epsom salts provide temporary relief.

The use of over-the-counter medications for pain and inflammation may be seen as necessary at first depending on your pain level and tolerance. Understand that we depend on your natural immune response to function well in order to heal this disorder. Some pain relievers and most anti-inflammatory medications shut of the inflammatory response which is what triggers your body's immune response mechanisms. If you need pain medicines of any kind to continue to function or to be able to do the exercise routines we have recommended, use good judgement in when you use them. We strongly suggest you consider ice packs for 5-10 minutes for pain relief and mechanical positioning of the injured areas to relive pressure and pain. The more you are able to do these procedures and avoid medications, the faster your immune response will be effective and the sooner you will be out of pain and begin healing. The sooner you can stop taking pain medication, the better it will be for your healing.

EXERCISES:

Exercises should be specific, performed at the right time and in a particular order. They should be simple and aimed at pain relief and stabilization at first. Seek advice from your chiropractic physician on when to do these exercises and how often. When performed correctly, rehabilitation exercises can be the key to avoiding multiple episodes of pain and maintaining the function of the muscles and joints.

Our goal here is to have you begin exercises as soon as the joint mobility has been restored sufficiently. Consistent and proper exercise rehabilitation will shorten your treatment time and help reduce recurrence of the same disorder.

We offer a video training featuring exercises specifically designed and proven effective if properly performed for the rehabilitation of this condition. These video files are available on our web page at www.holladayphysicalmedicine.com ---follow that link, then the exercise pulldown menu at the top center of the home page, choose therapeutic and then scroll down to:

shoulder,

then also and review

neck and Thoracic spine

and perform them daily as soon as you can work it into your schedule. Along with the physical medicine we have recommended, it is the regular performance of these exercises that will get you well and keep you well.

Maintenance:

Regular spinal adjustments are important to reduce the symptoms of bursitis. Patients who receive monthly spinal manipulation and therapy report fewer complications with bursitis. It is important that you follow your physician's advice about the frequency of treatment for your particular condition.

Other Information

We offer a wide variety of health information at our web site. www.holladayphysicalmedicine.com All patients are welcome to use our information to improve your life and maintain your spinal health.

This information is provided to you as a health service by Dr. Bruce Gundersen, DC, DIANM. He is board certified by the International Academy of Neuromusculoskeletal Medicine and currently serves as chairman of the examination board for the Academy. He is also the President of the Utah College of Chiropractic Orthopedists and clinical director and chief clinician at Holladay Physical Medicine. He has practiced

physical and regenerative medicine for over 40 years.