

## Patient Guide to Clavicle (Collarbone) Fractures

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### Where is the clavicle?

The clavicle is the bone that connects the breastplate (sternum) to the shoulder. It is a very solid bone that has a slight  $\square S \square$  shape and can be easily seen in many people. It connects to the sternum at a joint with cartilage called the sternoclavicular joint. At the other end the bone meets the shoulder area at a part of the shoulder blade (scapula) called the acromion. The joint at that end of the bone containing cartilage is called the acromioclavicular joint (Figure I).

The collarbone acts as a strut to connect the sternum to the shoulder blade. Because of the critical location of the clavicle, any severe force on the shoulder, such as falling directly onto the shoulder or falling on an outstretched arm, transfers force to the clavicle. As a result, the collarbone is one of the most commonly broken bones in the body.

### How do you know it is broken?

When bones break, there is swelling due to bleeding from the blood vessels in and around the bone. There is also pain from the broken bone due to damage of microscopic nerve endings around the bone. Sometimes the bone is broken enough to create an angle between the broken ends, which causes a deformity along the bone. Usually with a broken collarbone the pain and swelling are severe and there may be a visible deformity. Often there is pain at the site of the fracture with any attempt to move the arm. The only way to verify if there is a fracture is to get an X-ray of the area.

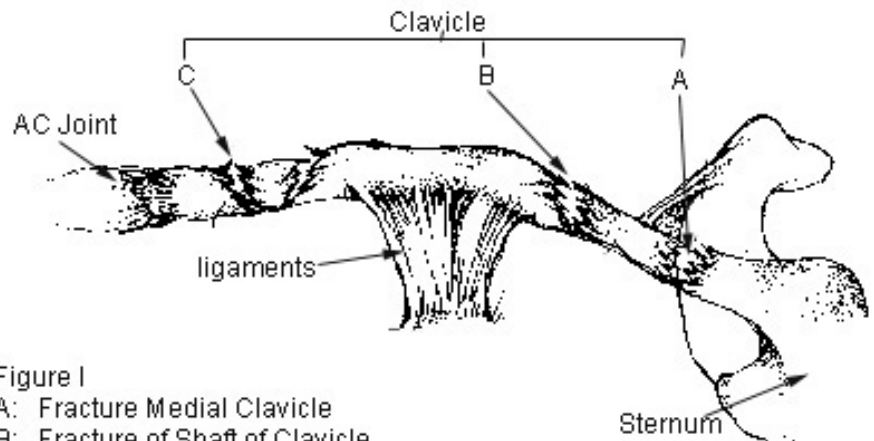


Figure I

A: Fracture Medial Clavicle

B: Fracture of Shaft of Clavicle

C: Fracture of Distal Clavicle near AC Joint

## **What should be done if you think it is broken?**

If you think that the clavicle is broken, it is best to seek medical treatment right away. The best way to treat the injury until you can reach a physician or emergency facility is to immobilize the arm and shoulder by holding the arm close to the body with the other arm or in a sling. You should put ice on the injured area for 20-30 minutes at a time, making sure not to freeze the skin. Pain medication such as Tylenol or over-the-counter nonsteroidal agents such as ibuprofen or naproxyn, such as Advil or Alleve, are acceptable. The only time you should not take medication is if there is a break in the skin over the fracture, which indicates that the ends of the bones may have punctured the skin. In that case the fracture may need surgery to clean out any dirt or debris. Other indications of more severe injury include tingling, numbness or weakness in the hand or arm. If the injury is near the sternum and you have shortness of breath or difficulty swallowing you should seek immediate medical attention.

## **How are clavicle fractures treated?**

The first thing the physician will do is take an X-ray to determine if the clavicle is broken, where the fracture is located, and how many pieces it is broken into. Clavicle fractures are basically divided into three types based upon location. Fractures near the sternum are the least common (less than five percent of all clavicle fractures). Fractures near the AC joint are the second most common and can come in many different patterns. The most common fractures of the clavicle are in the middle of the shaft of the bone, approximately halfway between the sternum and the AC joint. The most common way to treat the fractures in the middle is with immobilization with either a sling or a special bandage called a □figure-of-8 splint.□ Studies have shown that these fractures heal just as quickly and as well with a sling as with the figure-of-8 splint, so we recommend a sling in a majority of cases. The figure-of-8 splint generally is uncomfortable, difficult to wear non-stop for six or eight weeks, can result in skin problems and a smelly patient because it should not be removed to wash the armpit. Figure-of-8 splints are not indicated or useful in fractures of the clavicle near the AC joint. However, some orthopaedic doctors have strong opinions about the use of this figure-of-8 device, and it can produce an acceptable result.

The second thing that helps in the treatment of clavicle fractures is pain relief with cold therapy and pain medication. It is recommended that you ice the fractured area for 15-20 minutes every two hours for as long as necessary to decrease the pain and swelling. Heat is not recommended. Pain medication in the form of narcotics is the best for relief of pain from a fractured clavicle, and you may need it for several weeks, especially to help you sleep. Many patients with this injury have to sleep sitting up to be comfortable. Other pain-relieving medications such as acetaminophen or nonsteroidal medications may be used, but they generally will not be adequate by themselves until the pain and swelling start to subside.

## **How long will the fracture take to heal?**

How long it takes the fracture to heal depends upon many factors, such as age, the location of the fracture and how many pieces it is broken into. Clavicle fractures in children

(younger than 8 years old) may heal in four or five weeks, and clavicle fractures in adolescents may take 6 to 8 weeks. However, fractures in adults or teenagers who have stopped growing take 10-12 weeks to heal and may take longer. Most clavicle fractures will heal completely by four months in an adult. There are some indications that clavicle fractures broken into more pieces take longer than ones with a fewer fragments.

### **What can be done while waiting for it to heal?**

Within a few days of the fracture you should be able to move your fingers, wrist and elbow without too much discomfort. As the pain in the clavicle area improves you should be able to begin moving the shoulder joint a little to prevent the joint from tightening up too much. If the shoulder joint gets stiff, it is a condition known as a frozen shoulder. Usually as the pain in the fracture begins to subside, it is acceptable to begin moving the shoulder. Your physician may show you the motions or send you to a physical therapist for instructions. Generally motion of the shoulder does not prevent clavicle fractures from healing once the fracture has begun to heal.

Once the fracture has healed, motion is generally not restricted. It may take months before the fracture has healed enough to withstand contact such as in sports. Strengthening of the shoulder and arm should wait until the fracture has healed. Exercises should not be done until directed by your physician. Also, individuals who want to stay aerobically fit can usually begin light exercise such as walking or exercise biking after a few weeks, with the permission of their physician.

### **What result can be expected once it heals?**

Usually there are no limitations once the fracture heals. Most patients have full range of motion and can return to activities with no limitations. Some fractures can take six to nine months to heal. If the fracture does not heal, surgery may be necessary. Some fractures of the clavicle that do not heal completely are not painful and may not need surgery. Many factors determine whether a clavicle fracture will need surgery and they should be discussed with your doctor. Generally, if surgery is necessary it is done with an incision followed by implanting a plate and screws. Sometimes a bone graft may be needed to help stimulate healing. Treatment after surgery depends upon many factors, such as how fast the fracture heals. Fortunately surgery is successful in cases where it is needed, but surgery is needed in few cases. Surgery can reduce a visible deformity of the fracture but results in a scar. Occasionally surgery may be indicated in a high-caliber athlete but this, too, is controversial and studies are mixed on when exactly surgery should be done.

### **Are fractures by the AC joint any different?**

Fractures near the AC joint also can usually be treated without surgery. If there are torn ligaments associated with the fracture, then surgery may be indicated, although it is controversial. The pluses and minuses of surgery should be discussed with your doctor. Fortunately fractures of the clavicle near the AC joint need surgery only a small percentage of the time (less than 10 percent overall).

**Additional readings:**

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