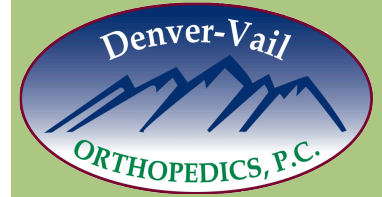
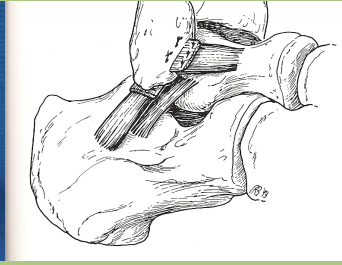


# Ankle Sprains/Instability



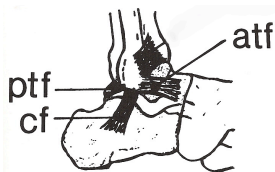
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**Ankle sprains are very common injuries. Initial treatment includes ice, elevation, compression and occasionally crutches. Once the initial inflammation and pain diminishes physical therapy is initiated to improve muscle balance and lessen the risk of recurrence. Surgery is rarely indicated for initial injuries but is usually reserved for recurrent instability.**

Ankle sprains are common sports related injuries, with lateral (outer) sprains accounting for 85% of all such injuries. It is estimated that approximately 300,000 new ankle sprains occur in the United States each year, of which 42,000 are severe. This injury is a very common cause of missed practices and games. Studies have shown initial ankle sprains resulted in an average of 18 missed days from sporting activities.

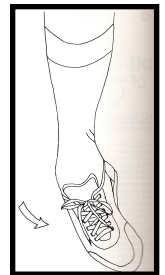
The ankle is comprised of four major ligaments. The ligament on the medial (inside) aspect of the ankle is the deltoid. This is a very broad and large ligament



and is less frequently injured. The more common ligaments injured are the lateral (outside) which include the anterior talofibular (atf),

calcaneofibular (cf), and the posterior talofibular (ptf) ligaments. These ligaments are injured when an athlete rolls his foot and ankle. This frequently occurs when landing on another player's foot, stopping, or landing after jumping. When the foot and ankle roll over the greatest amount of stress is on

the lateral ligaments and the anterior talofibular ligament (which is the weakest) is the first to be injured. The calcaneofibular ligament is involved in 50 to 75% of such injuries while the posterior talofibular ligament is involved in less than 10% of sprains.



At the time of injury a pop may be felt and tenderness is noted on the lateral aspect of the ankle. Unlike a fracture, where the tenderness is over the bone, the area of maximal tenderness is over the ligaments. Frequently, an athlete can walk after a sprain. Swelling usually will develop over the



injured ligament. On physical exam swelling and bruising is noted over the lateral aspect of the ankle and tenderness is noted over the ligaments. A stress test can be done to evaluate the integrity of the ligaments. An anterior drawer test is done to assess the anterior talofibular ligament.

This test involves placing one hand on the lower

bone (tibia) and the other on the heel and then pulling the heel and a foot forward. If the ankle comes forward more than the uninjured ankle this indicates an injury or tear. The calcaneofibular ligament is assessed by turning the heel in. If the foot and heel turn in more than the opposite uninjured ankle



this indicates an injury. This can also be assessed with x-rays and measurements can be performed.

Sprains can be graded on a scale from I to III, one being a minor sprain while three being a more severe sprain. This grading scale is based on laxity as well as range of motion and swelling.

## Management

Initial management of ankle sprains includes ice, elevation, compression and rest. If the sprain is severe a short course of the immobilization with a splint (partial cast) can be helpful. If the pain is severe then non-weight-bearing with crutches until the pain improves is warranted. Once the swelling and pain improves then physical therapy is initiated. Therapy emphasizes range of motion as well as proprioception (balance and strength). Proprioception training is essential for the recovery of balance and postural control and consists of a series of progressive drills and devices such as wobble boards and

trampolines. In addition to therapy external supports, such as an ankle brace, will provide stability and also provide proprioceptive feedback and lessen the risk of re-injury.

Scientific studies have shown the benefit of a functional rehabilitation program versus rest and immobilization. Functional management was associated with a higher percentage of patients returning to sports, shorter time to return to play, improved range of motion as well as a lower re-injury rate. Concerning external braces and taping, some studies have shown that lace up braces are most effective while taping was associated with skin irritation and tended to loosen up during athletic activities.



Although the initial cost of a brace is higher than tape in the long term it is less expensive

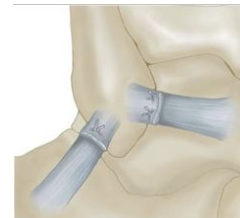
than taping the ankles daily.

Surgery is very rarely indicated for initial ankle sprains and is usually reserved for recurrent instability.

## Recurrent instability

It is common that after an initial ankle sprain recurrence can occur. Recurrent ankle sprains are treated very similarly to initial injuries. Initial management includes rest, ice, elevation, compression and then physical therapy stressing range of motion, strengthening and proprioception. If sprains persistently occur despite exercise, therapy and bracing then surgery is an option.

Surgical management of ankle instability involves evaluation of intra-articular structures (cartilage surfaces). If the joint surfaces are injured treatment includes smoothing the area out or possibly performing a procedure to regenerate or replace cartilage. The next step is to tighten the ankle. The two most common ligaments injured are the anterior talofibular ligament and the calcaneofibular ligaments. At the time of surgery, these two ligaments are identified and shortened up, tightened and then reattached to bone.



Postoperatively a person is non-weight-bearing in a cast or a splint for approximately 3 to 4 weeks. Afterwards, weight bearing is allowed and gentle range of motion is initiated. As the range motion improves physical therapy is started and strengthening and proprioception are emphasized. The results from this type of surgery have shown between a 85 to 90% good to excellent result.

If you have other questions or would like to view other orthopedic topics please visit my website [www.davidostermd.com](http://www.davidostermd.com). For a office appointment and evaluation please call 303-214-4500.

