

Ankle Sprains

Ankle injuries are one of the most common injuries we see in our office. It is important to recognize an ankle sprain and treat accordingly to prevent recurrent injury, instability, chronic pain, and inability to participate in sports.

Types of sprains: Ankle sprains can be divided into three categories.

- 1) Lateral ankle sprain/Outside ankle sprain: This is the most common ankle sprain and occurs when the foot is pointed down and turned inwards during the injury. Ligaments in this group are the anterior talofibular ligament (often the only ligament injured and most common), the calcaneofibular ligament (uncommon to have isolated injury), and the posterior talofibular ligament. It takes a strong force to rupture the anterior talofibular and calcaneofibular ligaments and significant ankle instability occurs when both are affected.
- 2) Medial ankle sprain/Inside ankle sprain: An injury to the medial deltoid ligament would be classified as a medial ankle sprain. The medial deltoid ligament is the strongest of all the ankle ligaments and therefore is not often injured. This injury occurs when the foot is forced to point outwards. When this happens there is often a concurrent avulsion fracture of the medial malleolus, which requires additional follow up.
- 3) High ankle sprain/Syndesmotic sprain: This occurs when the toes are pointed up and/or the foot turns outwards. The affected ligaments are the anterior tibiofibular, posterior tibiofibular, and transverse tibiofibular ligaments. A high ankle sprain is more common in contact sports but comprises roughly less than 11% of all ankle sprains. These ligaments play an important role in ankle stability and are more likely to contribute to longer term instability and recurrent injuries.

Severity of sprain: Traditionally ankle sprains are graded on a scale of one to three based on clinical signs and functional loss. Grade 1 sprains are mild stretching of a ligament and the individual has mild swelling and tenderness. Individuals are able to walk with minimal or no pain and have no ankle instability. Grade 2 sprains are an incomplete tear of a ligament. There is moderate pain, swelling, tenderness, and often bruising. On exam there is mild to moderate joint instability, decreased range of motion, and walking is painful. Grade 3 sprains involve a complete tear of a ligament. The individual is unable to walk, has severe pain, tenderness, bruising, and instability on exam along with significant loss in range of motion.

Treatment of sprains: Immediate treatment goals are to limit inflammation and swelling and to preserve range of motion. Early treatment is similar for grade 1 and 2 and last roughly three days.

- 1) Rest. Limit weight bearing/walking. It is appropriate for an individual to use crutches but only until they are able to walk with a normal gait.

- 2) Ice. 15-20 minutes every 2-3 hours for the first 48 hours.
- 3) Compression. Apply an elastic wrap to the ankle as soon as possible. Make sure the wrap is not too tight by applying two fingers under the wrap.
- 4) Elevate. Keep the ankle elevated above the level of the heart as much as possible the first 2-3 days.
- 5) NSAIDS such as Motrin can be taken every 6-8 hours for pain and inflammation.
- 6) Exercises. They should be started as soon as the acute pain and swelling has subsided and includes exercises such as foot circles', tracing the letters of the alphabet in the air with one's big toe, and toe curls.

When to seek medical attention: If you are concerned your child may have an ankle sprain it is important to schedule an appointment to be evaluated in our office if the pain is not improving 48 hours after implementing the above treatment (of course if you are concerned we will be happy to see you sooner). Your child should be seen immediately if there is any numbness, tingling, or if they are unable to walk. If there is significant instability or obvious deformity please head to the ER.