Understanding Ankle Sprains

Anatomy

The ankle joint is comprised of a complex assortment of bones, muscles, tendons and ligaments. While muscles and tendons provide dynamic stability, the ligaments of the ankle provide static stability.

There are two groups of ligaments on either side of the ankle. On the medial (inside) side the deltoid ligament prevents the ankle joint from rolling out (eversion). Conversely, on the lateral (outside) aspect of the ankle there are three separate ligaments that prevent the ankle from rolling in (inversion). If the ankle is stressed beyond its normal end range of motion, the ligaments can be sprained. Certain bones of the ankle and foot can become fractured if the mechanism of injury is severe and with a substantial amount of force.

Symptoms

The severity of your symptoms will depend on the degree of injury to the ligaments. A first-degree sprain is the stretching of the ligaments without any tearing or significant laxity. A second-degree sprain is the stretching of the ligaments with partial tearing of the fibers, resulting in mild to moderate laxity. Finally, a third degree sprain involves a complete rupture of the ligaments and significant laxity.

Patients with an ankle sprain typically develop pain, swelling and bruising. Depending on the degree of the sprain, it may also be difficult to bear weight on the injured leg and walking can be painful.

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Symptoms of an ankle sprain can be diverse in presentation and severity. The above should only be thought of as a generalization of the symptoms associated with this disorder.

Diagnosis

In order to determine the cause of your symptoms, your doctor will ask you questions and conduct a physical examination. X-ray is useful in viewing the bony anatomy of the ankle and can help confirm or eliminate a specific diagnosis. After your doctor has conducted the examination, they may recommend that you undergo more diagnostic tests such as an MRI (magnetic resonance imaging) scan. An MRI allows your physician to clearly see the ligaments and tendons of the ankle and determine the extent of the injury.

Treatment

Initial treatment of an ankle sprain focuses on a very simple pneumonic: R.I.C.E.

Rest: Do not walk on the affected ankle. If bearing weight causes pain, crutches can be provided

Ice: Putting a bag of ice on your ankle for twenty minutes five to six times a day can limit swelling and help control pain.

Compression: Wrapping an Ace bandage from your toes up to your calf can prevent swelling.

Elevation: Elevate your leg as high into the air as possible and use gravity to let the swelling drain from your ankle.

Following these guidelines can help prevent swelling and accelerate your recovery.

Depending on the severity of your injury, your doctor may prescribe some type of supportive device. This can range from an ankle brace to a short leg cast. The severity of your injury will dictate which type of support is utilized. Exercises may be prescribed to you as well as sessions with a physical therapist. The goal of therapy is to increase your range of motion, control the pain and swelling and strengthen the ankle joint. In conjunction with your doctor, you will agree on the treatment plan most appropriate for you.

For additional educational materials regarding this topic please visit our website, **www.summitortho.com** and click on the "Patient Education" quick link at the bottom of the page.

Types of Stability

Dynamic: stability created by muscle contraction when the joint is in motion.

Static: stability created by ligaments that prevent the joint from moving beyond the end range of motion.