

## ANKLE SPRAINS

Ankle sprains are the most common injury in sports and account for 45% or all injuries in basketball and up to 31% in soccer. Ankle sprains primarily involve the ligamentous structures on the outside of the ankle joint, known as the lateral ligamentous complex. There are three ligaments making up the lateral ankle joint, the anterior talofibular ligament (ATFL), the calcaneofibular ligament (CFL) and posterior talofibular ligament (PTFL). Each ligament connects a part of the outside leg bone (the fibula) to the ankle or heel bone.

The ATFL is the weakest ligament of the lateral ankle structure and is the one most commonly injured. Ankle sprains primarily involve tearing or disruption of the ligament complex, but can also have a bony component involved as well as tendon tear or injury. Injury to the ligaments can result in laxity of the ankle complex, but neuromuscular deficits are also likely to occur.

Nerve deficits can result in impaired balance, reduced joint position sense, slower movements and strength of the ankle joint and decreased range of motion. In addition, scar tissue formation after injury can lead to significant functional instability of the ankle complex.

Clinically, patients describe a popping or tearing sensation and sometimes an audible noise. Pain and loss of support is also commonly described. The mechanism is one primarily of the foot and ankle being placed in down and in position. Swelling and pain occur immediately after injury. Patients with a complete ligamentous tear and those with tears of two or more ligaments have difficulty weight bearing.

Physical exam reveals swelling and tenderness over the affected ligaments. As the time between injury and examination increases, the specificity of tenderness decreases. Initial treatment involves evaluation with x-rays to determine any type of bony involvement, rest, ice, elevation, anti-inflammatories and immobilization with possible non-weight bearing. Physical therapy and use of ankle braces may be required. If pain continues after initial treatment, or if clinical suspicion is warranted, evaluation of the ankle joint with an MRI is required to determine the extent of ligamentous injury or other structure involvement.

The vast majority of ankle sprains are treated conservatively, but certain studies and clinical experience has shown that about one-third of patients had chronic complaints of pain, stiffness, ankle instability, muscle weakness, swelling or recurrent sprains. Functional impairment with regard to athletic activity was found in approximately 72% of people. Recurrent ankle sprains occurred in 19% of individuals and 4% of people experienced pain at rest.

Early return to activity is advocated, however, dysfunction can persist in up to 40% of patients for as long as 6 months following injury. If conservative treatment fails and symptoms persist, surgical intervention is required consisting of repair and/or reconstruction of the lateral ankle ligamentous complex. Patients are non-weight bearing for 4-6 weeks. Physical therapy is usually initiated after

stitches are removed in 2-3 weeks, to help with range of motion and continued until recovered at full weight bearing and out of any type of bracing. Pain and swelling can still occur anywhere from 3 months to 1 full year post-operatively. Patients recover at 75-100% successful post conservative or surgical treatment.