Treating the Common Ankle Sprain

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In the U.S., ankle sprains are the most common sports injury (14-21%). Athletes in basketball, soccer, volleyball, and football are at an increased risk for an ankle sprain, comprising of 24-45% of injuries in these sports.

The ankle joint has many functions, one of which allows the body to adapt to uneven terrain, failure to compensate may result in an ankle sprain. Eighty-five percent of ankle injuries occur in the lateral compartment. When an athlete "rolls the ankle", they are typically in a dorsiflexed position when the ankle moves unintentionally into an inverted position. This motion causes the distal end of the fibula to translate anteriorly on the tibia and talus, causing an inversion sprain of the anterior talo-fibular ligament (ATFL).

When examining an ankle sprain, it is important to rule out a fracture of the medial of lateral malleoli. Look for grinding of crepitus when palpating the distal tib-fib joint, external rotation test, and the squeeze test to the distal end and mid-shaft of the tib-fib joint. When comparing bilateral anterior draw test, translation of 10mm or greater than 3mm difference from the normal side suggests an ATFL rupture. The talar tilt test is positive for a grade III ATFL sprain when measured10 degrees or greater than the uninjured side.

Acute treatment and management of symptoms include the Rest, Ice, Compression, and Elevate (R.I.C.E.) concept. The goal during this stage is to decrease pain and maintain ROM. Aggressive pain free ROM is recommended, having the patient repeat the alphabet with their injured foot several times throughout the day.

Traditional taping techniques may be recommended for a high-grade ankle sprain, however studies have shown immobilization tape techniques are not effective after 24 minutes of applying. Tape has also shown to be virtually ineffective after 40 minutes of injury, however there are a few tape techniques that are proven to increase function, stability, and decrease pain. For example, Brian Mulligan, FNZSP recommends placing a 5cm zinc-oxide strip of tape anchored to the distal fibula in a posteriorly and superior position. Then wrapping the tape obliquely up and around the back of the calf and then anchoring it again in the front of the leg. Mulligan suggests this technigue will not restrict blood flow, normal motion at the ankle during gait, will maintain lateral stability with structural support to a certain degree, provide proprioceptive feedback, and allowing a less painful gait. Using this technique may half the recovery time and improve long term outcomes. Most other tape techniques are counter productive by restricting normal movement and gait patterns which inhibits the recovery and does not address the main problem within the ankle joint.

The recovery phase treatment plan should be aimed to regaining full ROM, strength, and proprioceptive abilities. Strength is started with isometrics and progressed to resistive concentric and eccentric training. Concentration on the peroneals is crucial for ankle stabilization. Proprioception rehab begins with balance on foam with a combination of eyes open and eyes closed while in narrow stance, tandum stance, and single leg stance for up to 3 minutes. Tilt or BAPS boards are also successful by having the injured foot balance or tap the board to the floor in multiple directions in a controlled manner.

Manual therapy is also indicated for sub-acute and chronic ankle sprains. Mobilizations should be in the direction of limitation. The Mulligan Concept has produced mobilizations with movement (MWM) that are indicated with loss of motion or pain associated with active movement.

In the final stages of recovery, the patient or athlete should practice and demonstrate pain free jogging, sprinting, cutting, figure-8 drills, and carioca. It is recommended that the injured ankles function is of 80% to the uninjured lower extremity before returning to competition.