



# Pediatric and Adolescent Sports Medicine Update

1st Quarter 2012

## Ankle Injuries in Young Athletes

by Paul L. Benfanti, M.D.

Ankle injuries are a very prevalent injury, particularly in young athletes. Ankle sprains occur simply by twisting the ankle or foot, or stepping on an uneven surface. However, in young growing athletes it is important to distinguish between an ankle sprain and physal injury. Diagnosing and treating these particular injuries appropriately is key to allowing the athlete back to their sport in peak condition. Our team of sports medicine physicians understand the importance of this, and the importance of customized, age-appropriate care.

**Ankle Sprains:** An ankle sprain occurs when one or more of the ligaments that support the ankle are stretched past its normal range of motion. Ligaments can stretch to a certain degree and spring back, sustaining only a mild injury, but if stretched too far, they will rupture or tear. This can occur by either inverting or everting the ankle.



Ankle sprains are generally grouped into 3 grades:

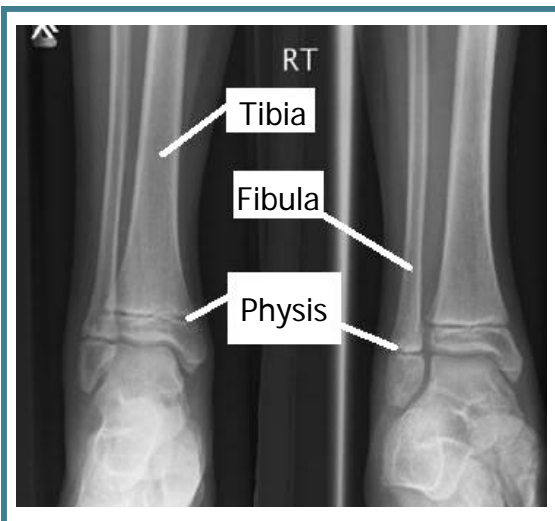
Grade 1 – the ligament stretches just beyond its limit and begins to tear. The ankle is still stable.

Grade 2 – the ligament starts to tear but doesn't tear completely. The ankle may or may not be stable.

Grade 3 – the ligament completely tears. The ankle is unstable.

It is often difficult to tell exactly the degree or grade of sprain has occurred. Fortunately, the treatment of each is essentially the same.

**Physal Injuries:** In children who are still growing the physal, or growth plate, of the ankle remains open. The physis is formed of cartilage and is weaker than the surrounding bone and ligaments, therefore creating a "weak link" in the ankle. Children may injure their physis before the ankle ligaments themselves are injured. Although the symptoms are very similar to an ankle sprain, it is important to differentiate between a physal injury and ankle sprain, as the treatments vary for each. The difference is tenderness over the physis and not the ankle ligaments.



### Initial Treatment

Radiographs are indicated if there is severe swelling, bony tenderness or deformity. If there is tenderness over the physis, then immobilization in a cast or boot is indicated with crutch use as needed. If the x-rays are negative and exam shows the physis to be non-tender, then treatment follows the RICE protocol:

**Rest** – stay off the ankle. Use crutches or a wheelchair as needed.

**Ice** – ice the ankle 20 minutes on and 20 minutes off for several cycles during the first few days.

**Compression** – an ACE wrap or ankle brace will help support the ankle and decrease swelling.

**Elevation** – elevate the ankle above the level of the heart for the first couple days.

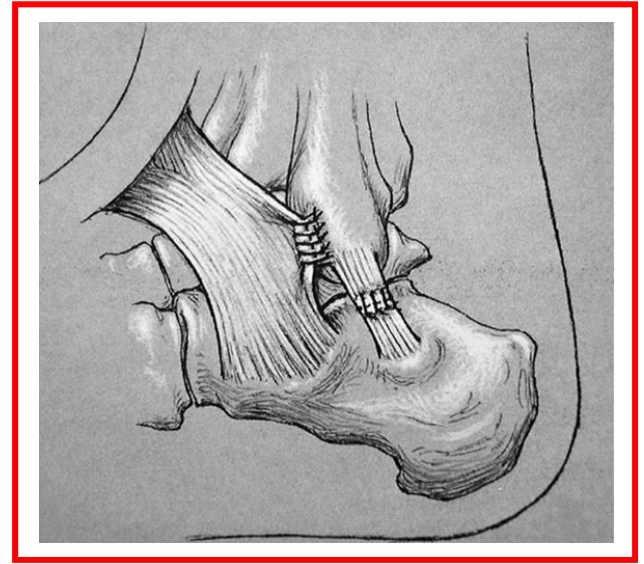


### Physical Therapy

Physical therapy may be indicated once the initial swelling and pain subside. Therapy is directed at decreasing swelling, decreasing pain, and regaining motion, strength & proprioception. In high-performing athletes, physical therapy can appropriately rehabilitate the patient's ankle to allow a patient a faster – and safer – return to their desired sport. Rehabilitation of the ankle is important to help prevent or decrease the number of recurrent injuries to the ankle.

### Surgery

Surgery is not frequently required, as 80%-90% of ankle sprains heal without any residual pain or instability. If there is persistent instability following adequate conservative management, further studies such as an MRI may be indicated to evaluate the ankle ligaments and other structures. Our sports medicine physicians are able to determine if surgery is recommended in order to allow an athlete full function. Surgery often includes an out-patient procedure, such as a modified Bostrom procedure. This involves re-approximation and reinforcement of the torn ankle ligaments. Patients are immobilized for 4-6 weeks followed by 6-8 weeks of physical therapy and then are able to gradually return to activities and sports.



## Meet our team of Physicians

For appointments, please call  
**(727) 898– BONE (2663) or (813) 879 BONE (2663)**

For more information please visit [www.chortho.com](http://www.chortho.com)



**Jeff Neustadt, M.D.**

Board certified and fellowship trained in pediatric orthopaedic and scoliosis surgery.



**Scott Beck, M.D.**

Board certified and fellowship trained in pediatric orthopaedic surgery.



**Greg Hahn, M.D.**

Board certified and fellowship trained in pediatric orthopaedic and scoliosis surgery.



**Drew Warnick, M.D.**

Board certified and fellowship trained in pediatric orthopaedic surgery with an emphasis in sports medicine and hip preservation



**Paul Benfanti, M.D.**

Board certified and fellowship trained in pediatric orthopaedic and spinal deformity surgery.