



## Ankle Sprains in Young Athletes

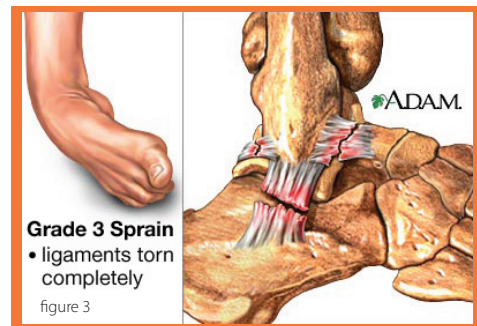
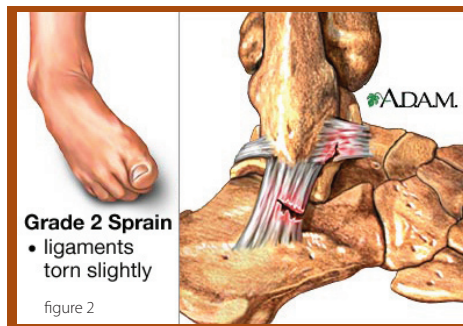
BY: David L. Marshall, MD

One of the most frequently encountered injuries in sports is the ankle sprain. A sprain is an injury to a ligament, which connects bone to bone. Sprains are graded as mild, moderate or severe, or simply, 1, 2, and 3. A grade 1 sprain is when the ligament fibers are stretched but minimally torn. (figure 1). A grade 2 sprain is a partial tear (figure 2) and a grade 3 is a complete disruption of the ligament (figure 3). Most ankle sprains are of the inversion type, which is when the ankle turns in or "rolls over." When this occurs, the ligaments on the outside of the ankle are injured. Pain is immediately felt and swelling occurs within hours. The degree of swelling depends on the severity of the sprain and how quickly treatment is applied.

a pen and trace all the capital letters of the alphabet as large as possible. This can be done 3 times in the air or in a large bucket of ice water or slush (5-7 minutes). Then re-apply a compression wrap and elevate.

### When should I seek medical attention?

1. If there is immediate or severe swelling, or an inability to bear weight, x-rays should be taken to rule out a fracture.
2. If there is pain in the bones above the ankle, there could be a fracture or an injury to the growth plate and x-rays should be taken.
3. If there is no improvement in the swelling or pain with the above treatment in 5-7 days, go see a doctor.



### What should I do if I sprain my ankle?

1. Immediately remove yourself from competition. Continuing to play will worsen the ligament damage and increase the severity of the injury.
2. Do not remove the shoe until ice can be applied. A tight shoe will act as a compression wrap and limit the initial swelling.
3. Apply crushed or chipped ice in a plastic bag directly over the skin for 20 minutes every 1 to 2 hours. Bags of frozen peas works well. Another way is to massage the ankle with a Styrofoam cup filled with frozen water.
4. Apply a horseshoe shaped felt pad around the bone on the outside of the ankle to use for compression (figure 4). Wrap an ACE bandage from the toes up tightly, not allowing skin to show. You may also apply a stirrup type brace for support and compression.
5. Ice should be applied 4-5 times a day for the first 48-72 hours or as long as there is swelling.
6. Bear weight as tolerated. If it is too painful to walk, use crutches for a short period of time until the pain subsides.
7. Keep the ankle elevated while on the bench or at home. Proper elevation is when the ankle is kept above the level of the heart.
8. Begin range of motion exercises the next day to prevent stiffness during the initial phases of healing. This is usually done in the non-weight bearing position when seated. Imagine the big toe being

### Should I take medication?

It is controversial when to start taking medication for pain and inflammation. Medications like Ibuprofen (Motrin, Advil) and naproxen (Aleve) have anti-pain and anti-inflammatory properties. The body should be allowed to initiate its own inflammatory process in response to the injury without the impedence of anti-inflammatory medications. This is thought to be a very important initial phase in the healing process to clean up debris from the injury and to signal cells to start repairing the injured ligament. Therefore, anti-inflammatory medication should be initiated 48-72 hours after the injury.

### When can I return to competition?

You may return to competition when the following criteria are met.

- A. Most swelling is gone.
- B. Range of motion is full.
- C. Strength is 90% or better than the uninjured side.
- D. Proprioception or sense of balance is regained.
- E. You can perform the tasks required of your sport (sprinting, cutting, jumping, etc) with no pain, swelling or limp.

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**Grade 1 sprains** (stretching of the ligaments with minimal tearing) usually take 2-3 weeks to recover.

**Grade 2 sprains** (partial tear of the ligaments) usually take 4-6 weeks to recover.

**Grade 3 sprains** (complete tear of the ligaments) may take 10-12 weeks to recover.

**Remember:** Return to play is best determined by function (range of motion, strength, balance) and not by time. The above time frames should serve only a guide.

### Should I go to physical therapy?

A physical therapist with experience in sports injuries and rehabilitation can help in all phases of your injury. Athletes with ankle sprains who see physical therapists will return to their sport sooner, stronger, and have a lesser chance of re-spraining than athletes who do not. A therapist can use modalities such as ultrasound, iontophoresis, contrast baths, and electric stim to decrease pain and swelling and accelerate the healing process. Once the initial phase of pain and swelling is under control, a therapist can develop a customized program to improve range of motion and flexibility, improve strength, and regain proprioception or balance,

all of which will expedite your return to competition and lessen the chance of re-injury. The therapist can offer guidance on using bracing, ankle supports, or taping when you are ready to return to play.

### Can ankle sprains be prevented?

Not all ankle sprains can be prevented. If you land or twist a certain way, a sprain may occur. You can lessen the likelihood of suffering an ankle sprain by maintaining good strength, flexibility and balance in the calves and ankles. Wearing an ankle brace or taping your ankle when playing may provide additional support if your ankle has been injured before.

If you have sprained your ankle before or have recurrent sprains, get started on a good strength and flexibility program 6-8 weeks before the start of the season. You may also benefit from taping or wearing a brace for support if you have had a previous ankle injury.

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