



The American Orthopaedic  
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## SPORTS TIP

# Achilles Tendon Injuries

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The Achilles tendon is one of the largest, thickest, strongest tendons in the human body. It connects the calf muscles to the heel bone, and allows the heel to push off the ground during movement. Problems affecting the Achilles tendon vary from mild inflammation and tendinopathy, to partial tears, to complete ruptures.

### Achilles Tendinopathy

Tendinopathy (otherwise known as tendinitis or tendinosis) typically results from repetitive microtrauma and tendon overuse, such as may occur with sports and exercise, and manifests as tendon degeneration and inflammation of the surrounding tissues. The most common activities that lead to Achilles tendon overuse include running (especially hills) and jumping. Certain athlete-specific factors may predispose to Achilles tendinopathy, including congenital foot deformity (for example, an abnormally high arch), excessive weight, muscle weakness, and lack of flexibility.

Typical symptoms of Achilles tendinopathy include pain, weakness, and limited motion. Treatment must begin with eliminating or decreasing the offending activity, and altering the pre-disposing factors, if possible. A guided physical therapy program is often instituted and is aimed at reducing inflammation, improving flexibility and strength, and gradually returning the athlete to their activity. Anti-inflammatory medications can be used to help control the pain associated with inflammation, but should be used with caution, as these

can mask symptoms and lead to greater injury as the athlete tries to play through the pain.

### Achilles Tendon Ruptures

The Achilles tendon is one of the most commonly ruptured tendons in the human body. The tendon can rupture as the athlete is coming down from a jump, and also during a start-and-stop motion of many sports.

In cases of a complete rupture, a sudden pop or snap is typically felt in the back of the ankle, sometimes “as if someone kicked the leg,” while running, jumping, or quickly changing directions. Almost always the injured athlete is unable to continue playing or exercising. On-the-field medical attention should include pulling the injured player out of the game, and eliminating weight-bearing activity on the injured leg (i.e., putting the athlete on crutches).

Suspected Achilles ruptures should be evaluated by a doctor as soon as possible, since delays in diagnosis and treatment have been shown to lead to worse outcomes and function. Initial medical evaluation will include a careful physical examination, and typically X-rays to make sure that there are no fractures or other bone injuries. However, Achilles tears cannot be seen on X-rays, and if the diagnosis is not obvious from the physical examination, an ultrasound or an MRI may be ordered. These imaging procedures may also help distinguish between a partial and a complete tear, and determine how significant a tear is.

While partial tears are typically treated non-operatively, complete Achilles tears may be treated both with surgical repair and without surgery. While most competitive athletes typically undergo surgical repair of the torn Achilles, some recent research studies have shown that outcomes may be similar in the general population between tears treated operatively and non-operatively. Therefore, the decision as to whether surgical or non-surgical treatment is chosen should be made by the patient and the treating physician, and should include careful consideration of such factors as the patient's age, activity level, and other medical issues.

Rehabilitation after Achilles repair or during non-surgical treatment involves protecting the healing tendon with either a cast or a brace for a period of 6 to 8 weeks, followed by a rehabilitation program to gradually regain motion, strength, and function. Return to athletic activities typically occurs after 6 months.

### Reference

Saltzman CL, Tearse DS. Achilles Tendon Injuries. *J Am Acad Orthop Surg.* 1998;6:316-325.