

Conditions of the Achilles Tendon

The Achilles tendon is the thickest tendon in the body, and connects the gastrocnemius and soleus muscles (calf) to the calcaneus (heel). The Achilles is actually comprised of a tendon (which connects muscle to bone) and a "para tendon" which is a connective tissue sheath that surrounds the tendon and allows for smooth movement and gliding of the Achilles tendon during normal ankle movement. The calf muscles cross both the ankle and knee joints, and thus affect motion in both places.

Achilles Tendonitis

- Individuals generally complain of pain and stiffness that develops gradually over time, or occurs after activity.
- Morning stiffness is common, with gradual lessening of pain with walking around or use of heat.
- Once warmed up, individuals can generally perform sporting activity, but often have pain several hours afterward or by the end of a long event.
- The more severe the condition becomes, the less able the individual is to loosen up. Pain limits the amount of activity, eventually preventing participation all together.
- Pain is generally located at the mid portion of the Achilles, or along the back of the heel.

Common Causes of Injury

- The Achilles tendon is very vulnerable to injury because it is subjected to very strong forces with running and jumping sports.
- Running produces forces on the tendon greater than eight times the person's body weight.
- Activities that combine running with explosive movements, such as tennis, soccer, basketball and track and field events are often associated with this type of injury.
- Injury may occur suddenly, or as a result of tendon irritation from repetitive stress over time.

Acute Treatment for Tendonitis

Early recognition and treatment for overuse injuries is essential. "Working through it" can often turn tendonitis into a more chronic and hard to eliminate condition called tendonosis, where the tissue thickens and becomes less pliable. Icing, rest from aggravating factors, and gentle stretching are keys to successful early treatment and rapid return to sporting activity. Once acute symptoms have abated, progression of activity and strengthening can occur.

Long Term Treatment:

- Should include strengthening of the Achilles tendon, specifically with eccentric (slowly lowering the body weight) exercises shown by studies to have the greatest effect.
- Correction of other foot and leg problems such as tight muscles or abnormal foot mechanics
- Some individuals may benefit from further biomechanical evaluation to determine whether ankle/foot mechanics, lower extremity strength, or alignment may be playing a role in symptoms, especially for those with long standing or recurrent symptoms.
- Custom or off the shelf orthotics and education on proper foot mechanics and shoe wear.
- Gradual return to play/activities to avoid overuse or re-aggravation of symptoms.

- Education regarding sport specific training routines and proper warm ups in preparation for various sports, sport/training changes from season to season.

Other conditions with heel pain that may require further medical work up or follow up include:

Sever's Disease (*aka* Calcaneal Apophysitis) is the most common cause of heel pain in the young growing athlete and is due to overuse and repetitive microtrauma of growth plates in the calcaneus (heel). It occurs in children ages 7 to 15, with the majority of patients presenting between 10 and 14 years of age. This is often confused with Tendonitis and should be considered especially for the young athlete, as different treatments, footwear changes, and further rest may be necessary for resolution.

Achilles Ruptures come on much more suddenly and usually involve severe pain and significant disability. Individuals often report hearing a "pop" and feeling as if they were kicked in the back of the leg. Most people will have a noticeable limp or inability to push off normally after a tendon rupture. You should seek immediate medical attention if this occurs, as surgery is often necessary, and repair of the tendon becomes more difficult if the individual waits too long.

BARLOW • ELLINGSON ORTHOPEDIC & SPORTS REHABILITATION
45 Lyme Road, Suite 303 • Hanover, NH 03755 • (p) 603.653.0040 • (f) 603.653.0041 • betitphysicaltherapy.com