Dear Patient

Achilles Tendinitis

Achilles Tendinitis is a syndrome of pain and tenderness over part or all of the Achilles tendon, aggravated by activities that apply a force to the tendon, such as running and jumping. Achilles tendinitis is usually associated with overuse and results in inflammatory and/or degenerative changes. Athletes whose sport involves running and jumping, and dancers are particularly susceptible. It is the most common tendinitis to affect the lower limb and is more prevalent in individuals over the age of 30.

ANATOMY

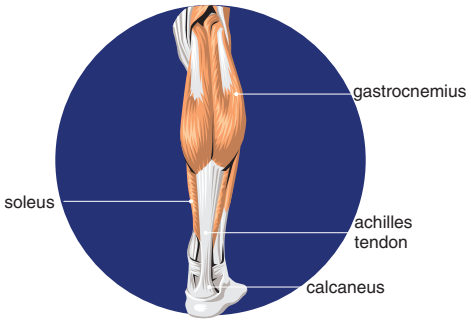
Achilles tendinitis involves the achilles tendon and/or the connective tissue surrounding the tendon. The two major muscles located at the back of the leg are the gastrocnemius and the soleus muscles and together they form the calf. The ends of these muscles form the thick, 'rope-like' fibrous structure of the achilles tendon. The tendon attaches to the top of the calcaneus (heel bone) allowing the calf muscle to control movements of the ankle. The calf muscles are responsible for the downward movement of the foot and toes (called plantar flexion), as in standing on tip toes or pushing off in walking or running.

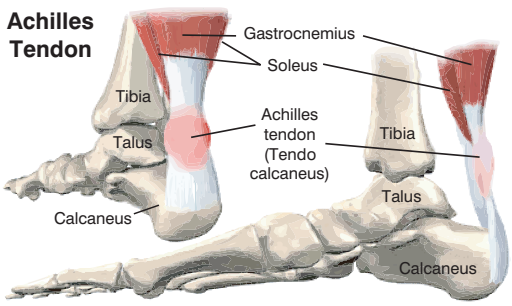
The connective tissue surrounding the tendon is called the peritendon sheath. It protects and lubricates the tendon allowing it to move within this protective covering.

HOW DOES ACHILLES TENDINITIS DEVELOP ?

Tendinitis develops when the tendon and/or the sheath are exposed to forces that cause it to be damaged. Achilles tendinitis may develop acutely after a sudden injury, or more commonly, over a period of exposure to low grade stress (chronic tendinitis). As the tendon is exposed to abnormal forces and damage occurs, an inflammatory reaction begins causing pain and swelling. The cycle of damage and inflammation continues. Over time the tendon sheath begins to thicken and the tendon degenerates and develops scar tissue. The tendon becomes weak and vulnerable to further injury at this time. Factors that contribute to the development of chronic tendinitis include abnormal biomechanics such as excessive foot pronation or rolling, leg length differences, tight calf or hip muscles, poorly fitting shoes and changes in exercise intensity.

Right: Illustration of the muscles of the back of the lower leg inserting via the achilles





Left: Close-up of the achilles tendon

Signs and Symptoms

- Pain at the back of the leg, felt anywhere from mid-calf to the bottom of the heel.
- Pain made worse on loading i.e. pointing toes, standing on toes, running, walking or jumping.
- Pain on palpation (the tendon is sore to touch). The calf muscle may also be tender.
- Pain on stretching the calf muscle.
- Hard 'nodules' or 'thickening' may be felt along the tendon.
- Stiffness in the calf and tendon, worse in the mornings.

CAUSATIVE FACTORS EXPLAINED

- Foot pronation- this is when the inside of the foot 'rolls in' as one takes a step or pushes onto their toes. This causes the tendon to be overstretched as it whips sideways and micro tears may develop.
- Leg length discrepancies- the shorter leg may force the foot into pronation to compensate for its lack of height.
- Tight calf muscles- this also forces the foot into pronation. The foot must alter its position to compensate for lack of movement at the ankle.
- Pelvic rotation- can contribute to leg length discrepancies.
- Poorly fitting shoes- may directly cause irritation if they fit too tightly across the back of the foot. If the heel is not supported enough, the heel may drop causing the tendon to overstretch.
- Exercise Intensity- if exercise intensity is too high muscle fatigue occurs, contributing to poor foot biomechanics.
- Sudden changes in exercise such as adding hills or sprints or a change in training surface can also cause Achilles tendinitis.

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TREATMENT

Treatment varies according to the 'stage' of tendinitis, that is, whether it is a new injury, if inflammation is present, or if the tendon is already healing.

AIMS

In the early stages the aims of treatment are to reduce pain and inflammation, avoid re-injury of the tendon while its strength is low and maintain the strength and flexibility of the surrounding soft tissues (eg. calf muscles).

This may be achieved by;

- regular application of ice
- electrotherapy
- rest
- change of causative factors such as footwear
- exercise program modification
- heel supports and foot taping
- deep tissue massage
- passive foot movements
- gentle stretching
- medication as prescribed.

Later, active exercises will be used to strengthen the tendon, stretching will become more vigorous and friction massage may be used to loosen adhesions. This phase of treatment aims to prepare the tendon for a return to full activity and prevent recurrence of tendinitis. If treatment is unsuccessful, surgery may be appropriate, although this is relatively uncommon.

RECOVERY

The speed and success of treatment will depend on how quickly Achilles tendinitis is diagnosed and treatment commenced. If the tendinitis is recognized immediately before any significant damage to the tendon is incurred, one can expect recovery within 2 - 4 weeks (with rest). Those who have suffered tendinitis for any length of time before commencing a rest and treatment program will usually take much longer to recover. In most cases, the time to recover will be at least as long as the time the tendonitis has been active to allow for healing of damaged tissue, resolution of scar tissue and rebuilding of strength. In severe cases, full recovery can take up to two years.

Please consult a physiotherapist before embarking on an exercise programme for achilles tendinitis.

Above Photos illustrate exercises for improving strength in the calf muscles.

Disclaimer : The material contained in these pages is intended as a guide only and does not constitute advice or treatment. For further information, please see your qualified health professional.

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