

A pain in the calf

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Pain in the region of the Achilles tendon is a very common symptom in referees. A common cause is an overuse injury of the tendon. This was called Achilles tendinitis, however it is now clear that inflammation is not a major feature of this condition. Increasingly you will see the condition described as Achilles tendinopathy, which more accurately describes the microscopic picture of a cycle of repetitive damage and degeneration of the collagen in the tendon and poor attempts at repair.

Anatomy

The Achilles tendon is the thickest and strongest tendon in the body. It attaches the calf muscles (gastrocnemius and soleus) to the heel bone (calcaneus)

Making the diagnosis

Pain of overuse injuries usually begins as a “niggle” or ache in the lower calf on warm up or during the first few steps each morning. It settles with activity. Later the pain is present after activity and eventually may be severe enough to prevent activity. The key symptom is gradual worsening of symptoms over days, months or even years. More sudden, severe symptoms may be due to a partial tear of the tendon and should not be ignored.

Examination looks for

- swelling, grating (crepitus) and tenderness of the tendon
- contributing factors like muscle tightness, joint stiffness and abnormal running gait

Where the diagnosis is unclear some form of imaging of the tendon is done. This may be ultrasound or MRI scanning.

Why me?

Predisposing factors to Achilles tendinopathy include

- Years of running
- Age
- Increase in mileage, speed etc
- Inadequate recovery time between games and training sessions
- Change in running surface including hard surfaces and hills
- Change in footwear, or poor footwear which does not give adequate support
- Abnormal running gait
- Calf muscle weakness

Can I avoid this problem?

To reduce the chance of calf problems, and most other overuse injuries, you should pay attention to the following...

- Avoid sudden changes in mileage, speed or intensity of training – a 10% increase per week is about right
- Improvement in strength and fitness occur as a response to the stress of training. If you don't allow sufficient rest between training sessions and/or matches you will not recover or improve fitness. Try to alternate high and low intensity workouts and have at least one rest day per week.
- Make sure you warm-up, stretch and cool down with further stretches at every training session and match
- Adapt slowly to new surfaces eg very hard or soft, muddy conditions. If you only train on treadmills and suddenly have to run on grass you may have a problem. At least one training session each week should be on pitches in your match boots.

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- The body and muscles of the legs need time to adapt to the new demands of a change of footwear or running surface. Sudden changes increase the risk of injury.
- New boots and trainers should be worn in gradually. Throw away old unsupportive trainers and boots. After about 4-500 miles running trainers may provide less support and should be replaced - How many miles have you done in your current pair?
- If you know you have a biomechanical problem like one leg longer than the other, or excessively flat or high arched feet consider getting a formal assessment by a sports medicine specialist or podiatrist before you get symptoms. About 60% of all overuse running injuries are due to this type of problem. If you already use orthotics or insoles, when did you last change them?– they tend to wear out after about a year or two.
- Lack of back and lower limb flexibility is very common in referees. If it persists it will cause overuse injuries and may shorten your career. It can be corrected. A formal flexibility session, as well as any warm-up/cool down stretching you may do, for all the major muscle groups should be part of your weekly training.
- Lower limb resistance and strength training should also be part of your training. Concentrate on closed chain exercises – that is, your feet are on the floor and supporting your body weight during the exercise. Make sure you learn the right techniques and start at low resistances. Concentrate on developing strength within the range of movement you need for sport.

Too late, it hurts! What's the treatment?

Early, acute phase

Make sure you get an accurate diagnosis early – not all calf pain is caused by Achilles problems
Get control of the pain – this means

- Relative rest from activities that worsen the pain,
- Use ice on the tendon
- Use a heel raise in both shoes, boots and trainers to take pressure off the tendon
- Consider a physiotherapy assessment to discuss a stretching programme
- Pain free massage of the tendon may be of help in the early phase
- Simple painkillers may help symptoms

Rehabilitation

The key elements of rehabilitation are

- Calf strengthening
- Muscle and joint flexibility
- Correction of running gait abnormalities

Calf strengthening

- Develop a supervised eccentric strengthening programme as part of your rehabilitation. The emphasis of this program is that you must work just into pain. This is one of the few occasions when “no pain, no gain” is true!
- The exercises are done, after adequate warm-up and stretching, twice daily, attempting 3 sets of 15 reps.
- Stand on the edge of a step and aim for a slow lowering of the heel on the symptomatic leg, followed by a raise to the start position on the other leg. This is done with straight leg and then bent leg to work both calf muscles.
- Start with lowering and raising on both legs and slowly increase the amount of weight through the symptomatic leg until you can do single leg heel drops and raises. Once performed pain free, weights are added to get back into pain again.
- After exercise treat the tendon with ice.
- This is not a quick fix and requires a minimum of a six-month programme of increasing load.

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Muscle and joint flexibility

Achilles problems are usually associated with lower leg muscle tightness. Most referees do not follow flexibility programmes, other than during warm-up or cool-down. To be effective a stretching regime must, after an appropriate warm-up work, cover all the major muscle groups, aiming for "hold" of 20-30 seconds repeated 2-3 times each session. Get advice on safe stretches, which cover all the muscle groups.

You may have stiff ankle or foot joints which need mobilisation. Sports massage may help muscle and joint stiffness and tightness.

Running gait.

If you develop Achilles problems you should see a sports podiatrist for assessment and advice on any biomechanical problems which are contributing to you symptoms. You may need orthotics or insoles for your shoes and boots to correct any problems.

When can I get back to refereeing?

Your return to sport will depend on your symptoms. You can maintain fitness with activities that don't make the tendon painful such as cycling, rowing, swimming etc. while you begin the stretching and strengthening programmes.

Once you have control of the acute symptoms and can tolerate the eccentric strengthening exercises, you can try activities such as running. The aim is not to cause pain during the activity. A bit of post exercise stiffness and discomfort that settles with ice is acceptable. The time for which you can jog before pain begins is a good indicator of improvement and recovery. When you can jog for about 30-40 minutes without pain, you can begin to increase the speed and work towards sprinting and sudden changes of direction. Even as you return to sport you should continue the stretching, strengthening and icing treatments

How long will it take?

From studies of this problem about 50-75% of runners who followed the programmes returned to sport in 12 weeks

And if all else fails?

If, in spite of following the programmes for at least 6 months after correction of any underlying problems, you remain symptomatic you may require surgery. This operation is not without problems and it may take 6-9 months afterwards to get back to sport.

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