SPORTS INJURY
FACT SHEET

ACHILLES TENDON INJURIES

What is an Achilles tendon injury?

There are several different types of tendon injuries. For the Achilles tendon, the main types include: tendinopathy, describing pain and dysfunction of the tendon; Achilles tendon rupture, which involves complete disruption of the tendon; and overload of the gliding tissue over the tendon. There are also several bursa - sacs of fluid that allow gliding, bending and movement -which can become irritated in the area. Each of these conditions may require different treatment, and accurate diagnosis is important. This information will focus on Achilles tendinopathy.

Until recently, Achilles tendinopathy was referred to as Achilles tendinitis. However, the changes in the tendon are not the same as an ankle sprain or muscle strain, for example, where an inflammatory cycle occurs. Experts around the world agree the best term to use is *tendinopathy*, as the term *tendinitis* is inaccurate and may encourage people to seek passive treatments like rest, ice and anti-inflammatory medication - none of which are effective for Achilles tendinopathy.

Anatomy

The Achilles tendon is a large tendon at the back of the ankle. It is an extension of the gastrocnemius and soleus (calf muscles), running down the back of the lower leg and attaching to the calcaneus (heel bone). The Achilles tendon connects the leg muscles to the foot and enables push-off during walking and running. You can think of your Achilles tendon as acting like a spring. This is why Achilles tendinopathy can occur in a broad range of people, from the very active to the less active. Even as we age, we continue to use our Achilles tendon as a spring when walking downstairs, for example.

Risk Factors

The biggest risk factor for Achilles tendinopathy is a sudden change in activity. For example, going from complete rest to starting a daily running program. Not everyone who changes their activity will develop tendinopathy; other factors contribute as well. We know very little about the risk factors that lead to Achilles tendon rupture, because most people who rupture their Achilles tendon didn't have pain beforehand. They may have had structural changes in the tendon but usually no symptoms.

The best way to reduce risk is to have sufficient strength in your calf muscles for the activity you want to perform, and to gradually increase your loading. If you have other risk factors (such as diabetes), you should consult your health practitioner.

Less commonly, illness or medications - such as steroids or certain antibiotics - may weaken the tendon and contribute to ruptures.

Signs and symptoms

Achilles Tendinopathy

- Morning pain and stiffness that worsens if you were more active the day before.
- If you lifted weights (rather than performed spring-type loading), you are likely to feel better the next morning.
- Your tendon "warms up" - you may feel stiff or sore at first, but it improves with activity.
- If stiffness lasts longer than 30 minutes or pain does not improve with activity, consult a health care practitioner.

Achilles tendon rupture

The Achilles tendon can occasionally rupture completely. A complete rupture causes pain and sudden loss of strength and movement. The pain is often described as feeling like a hit or kick to the back of the leg. Consult a health care practitioner, who will arrange imaging and advise whether surgery may be required (it is not always necessary).

Management

The most important first step is accurate diagnosis. Conditions involving the sliding tissue around the tendon require completely different management to tendinopathy.
For tendinopathy, your immediate management can safely include isometric (static holds) and isotonic (through-range calf raises). Examples include:

- Standing calf raise holds: use a wall for balance and stay standing with your heels elevated on the balls of your feet (both feet if unable to do single-leg). For tendinopathy, this should be pain-free. Try 5 × 45-second holds.
- Calf raises: stand with a straight knee and raise your body up and down.

A sports medicine professional should be consulted as soon as possible to determine the extent of the injury, provide treatment advice, and advise whether you need to modify your current activity.

One of the advantages of Achilles tendinopathy is that you can start isometric and isotonic calf raises immediately. Your morning pain and stiffness should begin to improve. A health practitioner can guide your graded return to activity.

There is no evidence to support the use of ice, crutches, medications or injections. Adjunct therapies can be costly and lack research support. Your health care practitioner can guide you.

Return to activity should be gradual and guided by your symptoms.

To help prevent tendon injuries:

- Gradually increase the intensity and duration of your activity. For example, if you are new to running, consider building a strength and endurance base for your calf muscles before starting. Progress to slow stair climbing up and down, and gradually increase the pace before running. This helps train your Achilles tendon to act like a spring, as it does during running. Another benefit of improving strength and confidence on stairs is that this remains highly functional as we age.

- Participate in regular strengthening exercises. These may include endurance exercises such as standing calf raises, and strength exercises such as seated calf raises with weights or standing calf raises with weights.
- Allow adequate recovery time between workouts or training sessions. For example, running every second day and doing calf strength exercises on alternate days allows the tendon time to settle and adapt. This also helps you gauge whether your tendon tolerated the previous session.
- Listen to your next-day symptoms. We encourage people with tendinopathy to assess their 24-hour pain and stiffness. If your morning stiffness is the same or better and remains low and stable, your tendon likely tolerated the previous day's activity. If stiffness has increased, your tendon may be telling you that you overdid it. This approach is better than basing your activity on how you feel in the moment, as tendons can "warm up" and mask pain.

Resources

5 Things to Look for When Seeing a Health Professional for Achilles Tendon Pain

Access the article

Journal of Orthopaedic & Sports Physical Therapy
January 1, 2024 Volume 54 Issue1 Pages 96-96

How to Self-Manage Achilles Tendon Pain and When to See a Health Professional

Access the article

Journal of Orthopaedic & Sports Physical Therapy
January 1, 2024 Volume 54 Issue1 Pages 95-95

Always consult a trained professional

The information above is general in nature and is only intended to provide a summary of the subject matter covered. It is not a substitute for medical advice, and you should always consult a trained professional practising in the area of sports medicine in relation to any injury. You use or rely on the information in this fact sheet at your own risk, and no party involved in the production of this resource accepts any responsibility for the information contained within it or your use of that information.

Need a sports medicine practitioner?

Visit SMA's *Find a Sports Doctor* **online directory** to connect with a qualified Sports Doctor near you.

Looking for more information?

Sports Medicine Australia (SMA) is the peak national body for sports medicine, sports science and injury prevention education, dedicated to keeping Australians active, healthy and safe.

The SMA website is packed with practical resources, fact sheets and tools to support you, your team and your community to perform at their best while reducing the risk of injury.

You can explore nationally recognised training courses, including Provide First Aid and Provide Cardiopulmonary Resuscitation (CPR), as well as our industry-leading sideline support courses such as Sports Trainer Level 1 and 2, Introduction to Sports Taping, Introduction to Sports Massage and more.

Everything you need is at **sma.org.au**.

Acknowledgements

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