

# Taming Achilles Tendinopathies

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Tendinopathies, including Achilles Tendinopathies (AT), are prevalent injuries that can affect anyone from a sedentary office worker to an elite athlete. AT classically present with pain, swelling of the tendon and impaired function<sup>(1)</sup>. Tendinopathies are difficult cases to treat and often patients present having tried multiple treatment options without success.

There is evidence suggesting a genetic link to tendinopathies, with ABO blood typing being linked to tendon ruptures, the Tenascin C gene being linked to Achilles tendon injuries, as well as COL5A1 being linked to Achilles tendon pathology<sup>(2-4)</sup>. There is also evidence associating high cholesterol with tendon pain, as well as a link between fluoroquinolones (antibiotics), tendinopathies and tendon ruptures<sup>(5,6)</sup>. Of more clinical importance is the link between tendon loads and tendinopathies<sup>(7,8)</sup>.

The role of tendons is to capture and release energy which occurs through type I collagen fibres and a well organised tendon cell structure<sup>(9)</sup>. When excessive loads are placed on a tendon it results in cell breakdown including apoptosis, disorganisation and changes in the collagen fibre quality with an increase in type III collagen, breakdown of the cell matrix, and an increase in fatty tissue, proteoglycans (responsible for swelling in the tendon) and tenocytes<sup>(7,10-13)</sup>. The breakdown and disorganisation of the tendon cell structure directly affects the tendons ability to store and release energy resulting in tissue breakdown, neovascularisation (infiltration of new blood and nerve vessels) and ultimately degeneration of the tendon<sup>(7,10-13)</sup>.

This cell structure breakdown occurs on a sliding continuum which is directly related to tendon load, with a healthy tendon at one end and a degenerative tendon at the other<sup>(7)</sup>. When there is continuous excessive tendon load, the mechanically compromised tendon slides down the continuum from a normal tendon, to a reactive tendon, into tendon disrepair, ending at a degenerative tendon<sup>(7,14)</sup>. During this degenerative process there is no frank evidence of inflammation hence the terminology shift from tendonitis to tendinopathy<sup>(15)</sup>.

Clinically the 3 stages of tendon degradation present as follows<sup>(7)</sup>:

**Reactive tendinopathy** – most commonly seen in acute overload, usually in the young population, with no prior history of tendon pain. On MRI and ultrasound (US) the tendon will appear swollen with no signal change (MRI) and diffuse hypoechogenicity (US).

**Tendon disrepair** – can be seen in chronically overloaded young individuals, however it can be seen in a wide variety of ages across a spectrum of loading. The tendons are thickened with local changes in one area of the tendon. On MRI and ultrasound, they will appear swollen, with high signal (MRI) and small areas of hypoechogenicity and possible increased vascularity (US) within the tendon.

**Degenerative tendon** – is usually seen in the older population but can be seen in a young person or elite athlete with a chronically overloaded tendon. The typical patient is a middle aged, recreational athlete with focal Achilles tendon pain and swelling. There is usually a history of repeated tendon pain which self-limits with tendon load changes. These tendons have a higher risk of rupturing and cannot be rehabilitated. MRI and US show an increase in tendon size, high signal (MRI) and focal hypoechogenicity along with large and numerous vessels.

The most common type of tendinopathy seen in clinic will be the patient aged 40-60 years of age, with a past history of load exacerbations and an onset of increased pain following tendon overload<sup>(6)</sup>. The tendon will be degenerative with reactive aspects. The next most common is the young person 15-25 years of age, acute onset of pain, swollen tendon, associated with a rapid increase in tendon load, aggravated by exercise and slow to settle<sup>(6)</sup>.

## Achilles Tendinopathy Treatment Interventions

### Radial Extracorporeal Shockwave Therapy (RESWT)

– there is good quality, low level evidence to suggest RESWT is comparable to eccentrics for pain at 4 months and is superior to wait and see for pain and disability at 4 months for mid portion AT, as well as being superior to eccentrics at 4 months for pain and disability for insertional AT<sup>(16)</sup>. A meta-analysis of randomized controlled trials showed RESWT had a positive effect on pain and function in AT, however the study had high heterogeneity and used the QVAS (VISA-A is the gold standard) as the primary outcome measure<sup>(17)</sup>.

Exercise Therapy – exercise therapy has been advocated for AT with evidence supporting improvements in pain and function in mid portion AT<sup>(8,18)</sup>. Exercise therapy for AT typically consists of differing loading programs involving isometric, eccentric and concentric exercises. Currently there is no evidence to support one loading program over another with all programs resulting in improvements<sup>(19,20)</sup>. Commonly used

protocols include the Alfredson protocol and a 4 stage tendinopathy rehabilitation program developed by Jill Cook et.al<sup>(8,21)</sup>.

**Platelet-Rich-Plasma (PRP)** – a robust meta-analysis of randomized controlled trials looking at the use of PRP and eccentric exercises versus placebo (saline) and eccentric exercises for chronic AT, found no difference between the groups for pain and function (VISA-A score) nor changes in tendon thickness<sup>(22)</sup>. This is supported by another meta-analysis that found inconclusive evidence to support the use of PRP in AT<sup>(23)</sup>.

**Corticosteroid injections** – are associated with a high risk of adverse effects including tendon rupture, tendon atrophy, decreased tendon strength, there is also insufficient evidence to support the use of corticosteroid injections for AT<sup>(24,25)</sup>.

**Orthotics** – there is no evidence to support the use of orthotics for the improvement in pain and function for AT<sup>(18)</sup>.

**NSAIDs** – the use of NSAID's in chronic AT appears redundant as there is no evidence of inflammation in the tendon. There is an argument they could be used to treat pain in the acute phase however, evidence shows they have little or no effect on the outcome of AT<sup>(1)</sup>.

**Surgery** – there are a wide variety of invasive, minimally invasive and endoscopic techniques for treating mid portion AT. There appears to be no difference in outcomes between techniques<sup>(26,27)</sup>. However, there are no studies comparing surgery to placebo or non-surgical interventions such as exercise therapy<sup>(27)</sup>. There also appears to be highly variable complications risks associated with surgery<sup>(27)</sup>.

AT and tendinopathies are challenging for the clinician and patient. Tendinopathy treatment needs to be individualised and should focus on removing the "abusive" tendon load, as well as utilizing exercise therapy to strengthen any deficient areas and to manage tendon pain and improve function. Shockwave therapy should be considered for those not responding solely to exercise therapy or used in addition to exercise therapy. Clinicians also need to manage the expectations of their patients, as tendinopathies can take several months and sometimes longer to rehabilitate<sup>(28)</sup>. With exercise therapy being the primary treatment modality, chiropractors are well placed to be the first-choice clinician in the management of AT tendinopathies.

*References on next page.*

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## DVA Changes The Treatment Cycle For Allied Health Referrals

DVA's treatment cycle changes to allied health referrals will start on 1 October 2019.

General practitioner (GP) referrals to allied health providers will be valid for up to 12 sessions or a year, whichever ends first. Clients may have as many treatment cycles as the GP determines are needed. The treatment cycle does not limit the number of clinically required services that the client needs. These new arrangements aim to improve the quality of care for DVA clients.

There is no change to referral arrangements between GPs and medical specialists (including surgeons and psychiatrists).

The new referral arrangements apply to Gold Card and White Card holders, excluding exercise physiology and physiotherapy services for Totally and Permanently Incapacitated (TPI) Gold Card holders.

Transitioning to the treatment cycle arrangements

DVA understands providers need certainty about the validity of referrals made prior to 1 October 2019. When the new treatment cycle begins on 1 October 2019, the following arrangements will apply:

- All new referrals made on or after 1 October 2019 will be subject to treatment cycle arrangements, except for exercise physiology and physiotherapy for DVA clients with a TPI marked Gold Card.
- After 1 October 2019, clients with an existing indefinite allied health referral can receive up to 12 sessions or access for one year (whichever ends first) before they need a new GP referral.
- After 1 October 2019, clients with an existing annual allied health referral can receive up to 12 sessions or treatment until their annual referral expires (if that occurs first).

DVA will send information to allied health providers, GPs and DVA clients currently receiving allied health services before the treatment cycle commences

The new End of Cycle Report item

As the care coordinator, the GP is key to the treatment cycle. They will ensure health care and allied health treatment is the most appropriate for their patient's needs. The allied health provider will need to prepare a treatment plan and ask the patient about their goals.

At the end of the treatment cycle, the allied health provider will send a report back to the patient's usual GP. The GP will use this report to review the treatment progress and assess if further treatment is clinically required or whether other treatment options are needed.

To support allied health providers, DVA is introducing a new End of Cycle Report item with a fee of \$30 (excl. GST) that allied health providers can claim on completion of the report at the end of each treatment cycle. This End of Cycle Report item will be available for reports made from 1 October 2019.

Further details about the treatment cycle, including revised Notes for Providers and Fee Schedules, will be published on the DVA website in coming weeks.

More information

See Improved Dental and Allied Health (provider information) for further information about the treatment cycle.

Subscribe to DVA Provider News for updates on DVA health arrangements.