

# The efficacy of local corticosteroid injections in Achilles tendinopathy: a systematic review

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## INTRODUCTION

The Achilles tendon links the triceps surae muscles (gastrocnemius and soleus) to the calcaneus (heel) bone to provide plantarflexion power at the ankle. 'Achilles tendinopathy' is the term used to describe a group of pathological conditions related to the tendon. These conditions have been associated with 'over-use' and are therefore particularly prevalent in long distance runners and jumping athletes. However, they may also be found among obese individuals and the elderly. Rapid treatment of Achilles tendinopathy is required to minimise pain and the disruption of sporting careers. Surgical interventions are associated with wound complications and therefore non-operative treatment is preferred in the majority of cases. One such treatment is the injection of glucocorticoids (corticosteroids). This has been used to relieve pain in several tendinopathies around the body. However, a systematic review by Speed in 2001 suggested that very little benefit is derived from local glucocorticoid injections. Furthermore, this

**"This project allowed me to develop my knowledge of the area under study, but more importantly it greatly increased my ability to use biomedical databases and to critically appraise research papers"**

mode of treatment may be associated with an increased risk of tendon rupture, particularly in weight-bearing tendons such as the Achilles.

We reviewed the current literature regarding the efficacy of local glucocorticoid injections in Achilles tendinopathy.

## METHODS

We searched five databases: Medline, EMBASE, CINAHL, AMED and the Cochrane Library. All interventional and observational studies were included and review articles were analysed for further sources of data. Search results were limited to English language articles reporting on studies of human participants. An example search strategy is shown below:

MEDLINE (1950 to date) –

1. explode TENDINOPATHY
2. explode ACHILLES-TENDON
3. explode GLUCOCORTICIDS
4. explode ANTI-INFLAMMATORY-AGENTS
5. #2 and #3
6. (#4 and #1) not #5

## RESULTS

A total of 187 articles were identified and the title and abstract of each paper was assessed. Twenty-nine papers were found to address our research question but only five reported outcomes in terms of pain, swelling, activity level, or tendon rupture.

**"I have learned that primary research is of highly variable quality and that authorities should not be relied upon uncritically, even when their data is published in high impact journals"**



Image (above) of an injection directly into the area surrounding the Achilles tendon. Reproduced with kind permission of Daniel Redrup, Narellan Physiotherapy.

These papers are summarised in Fig 1 and were then critically appraised.

## DISCUSSION

Although there is a great deal of discussion within the literature regarding the efficacy of local corticosteroid injections in Achilles tendinopathy, our review has found little hard evidence to guide clinical practice. The only randomised controlled trial suggested that the potential treatment effect is small, but there are limitations in the design of this study and the sample size may have been inadequate.

In summary, there is no consensus as to whether local glucocorticoid injections have a therapeutic role in the treatment of Achilles tendinopathy. Further research is required to improve our understanding of the tendon pathology and the effect of corticosteroids.

**"The URSS scheme has provided a great way of developing many transferable skills"**

STUDY	TYPE	PATIENTS	INTERVENTIONS	CONTROL	OUTCOME
DaCruz et al 1988	Prospective, randomised, double-blind study	28 (34 tendons)	Local steroid injections with marcaïne. Standardised physiotherapy	Local marcaïne injections and standardised physiotherapy	Self-reported pain, activity level and range of ankle flexion. Calliper assessment of swelling
Read 1999	Retrospective cohort study	64	Peritendinous intrabursal steroid injections.	Appropriate orthotics, shoe adjustment, controlled rehabilitation	Self-reported morning, rest and activity pain.
Koenig et al, 2004	Prospective case series	5 (6 tendons)	Intratendinous glucocorticoid injection guided by Doppler imaging	-	Self-reported rest and activity pain.
Read & Motto, 1992	Retrospective cohort study	83	Injection of hydrocortisone acetate and procaine/lignocaine.	Physiotherapy (ultrasound and cross frictional massage) or advice only	Subjective appraisal of 'match fitness'
Gill et al, 2004	Retrospective case series	43	Low volume peritendinous corticosteroid injection. Physiotherapy.	-	Self-reported symptoms

Fig 1 Summary of relevant papers

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