

ESWT FOR THE TREATMENT OF LOWER LIMB INJURIES

Dr Rick Seah

Consultant in Sports Medicine

Platinum Medical Centre & Elstree Waterfront Outpatients Centre

The Wellington Hospital

OVERVIEW

Extracorporeal Shockwave Therapy (ESWT) - often referred to simply as *Shockwave Therapy* - is a non-invasive and effective treatment for patients suffering from longstanding sports injuries or musculoskeletal conditions. These injuries can occur in the upper limb (e.g. shoulders and elbows) and also in the lower limb (e.g. hip, knee, ankle and foot).

ESWT works by the application of either radial (*RaSW*) or focused shockwaves (*FoSW*) to the injured area. These shockwaves break down injured tissue and calcification. Increased local blood circulation is promoted which encourages the body's own healing processes. In some cases, symptom resolution only occurs several months after the treatment is completed.

ESWT is a non-invasive procedure and no anaesthetic is required. A series of treatments- on average 3-6 treatments- are required. The typical interval between treatments is 1-2 weeks.

Each treatment session lasts approximately 30 minutes. If severe discomfort is experienced, adjustments can be made to the treatment settings to reduce the level of discomfort. Strenuous exercise should be avoided for 2-3 days after treatment as a precautionary measure.

There is accumulating evidence that ESWT is successful in treating lower limb injuries, particularly tendinopathies. Tendinopathy is a generic term used to describe disease in and around tendons (the durable connective tissue that attaches a muscle to a bone), often associated with overuse and degeneration.

RESEARCH

A recent meta-analysis of 29 randomised controlled trials by Liao et al. considered the effectiveness of both radial and focused ESWT for treating lower limb tendinopathies¹. In general, ESWT demonstrated significant improvement to pain and function as the initial follow-up, as well as at 3, 6 and more than 12 months after treatment had ended.

They noted that in sequence, high dosage FoSW, high dosage RaSW and finally, low dosage Ra-SW had superior effects on overall clinical outcomes.

Prior to that, Mani-Babu et al. carried out a systematic review and meta-analysis to evaluate the effectiveness of ESWT for lower limb tendinopathies². They identified 20 studies, with 13 studies providing sufficient data to compute effect size calculations.

They found moderate evidence that ESWT is more effective than home training and corticosteroid injection in the short term (less than 12 months) and long term (more than 12 months) for greater trochanteric pain syndrome.

There was limited evidence that ESWT is more effective than alternative non-operative treatments (including non-steroidal anti-inflammatory drugs (NSAIDs), physical therapy and an exercise program) and equal to patellar tenotomy surgery in the long term for patellar tendinopathy.

There was moderate evidence that ESWT is more effective than eccentric loading (a specific type of physiotherapy exercise) for insertional Achilles tendinopathy and equal to eccentric loading for midportion Achilles tendinopathy in the short term.

Additionally, there was moderate evidence that combining ESWT and eccentric loading in midportion Achilles tendinopathy may produce superior outcomes to eccentric loading alone.

In conclusion, they noted that ESWT is an effective intervention and should be considered for greater trochanteric pain syndrome, patellar and Achilles tendinopathy particularly when other non-operative treatments have failed.

REFERENCES:

1. Liao CD, Tsao JY, Chen HC, Liou TH. *Efficacy of Extracorporeal Shock Wave Therapy for Lower Extremity Tendinopathy: A Meta-analysis of Randomised Controlled Trials*. Am J Phys Med Rehabil. 2018 Mar 19. doi: 10.1097/PHM.0000000000000925. [Epub ahead of print] PubMed PMID: 29557811.
2. Mani-Babu S, Morrissey D, Waugh C, Screen H, Barton C. *The effectiveness of extracorporeal shock wave therapy in lower limb tendinopathy: a systematic review*. Am J Sports Med. 2015 Mar;43(3):752-61. doi: 10.1177/0363546514531911. Epub 2014 May 9. Review. PubMed PMID: 24817008.

NOTE TO READERS:

Both radial and focused shockwave therapy is available at the Platinum Medical Centre (in St John's Wood, London) and the Elstree Waterfront Outpatient Centre (in Elstree, Hertfordshire).