

Evidence to Support Shock Wave Therapy for Plantar Fasciitis

Plantar fasciitis is a painful condition affecting the bottom of the foot. It is a common cause of heel pain and is sometimes called a heel spur. Plantar fasciitis is the correct term to use when there is active inflammation. Acute plantar fasciitis is defined as inflammation of the origin of the plantar fascia and fascial structures around the area. Plantar fasciitis is usually just on one side. In about 30 per cent of all cases, both feet are affected.

Treatment is usually with conservative (nonoperative) care. This could include stretching, wearing a splint at night, the use of antiinflammatory medications, and/or a special arch support to help reduce the pressure on the fascia.

Shock wave therapy is a newer form of nonsurgical treatment. It uses a machine to generate shock wave pulses to the sore area. Patients generally receive the treatment once each week for up to three weeks. It is not known exactly why it works for plantar fasciitis. It's possible that the shock waves disrupt the plantar fascial tissue enough to start a healing response. The resulting release of local growth factors and stem cells causes an increase in blood flow to the area. Recent studies indicate that this form of treatment can help ease pain, while improving range of motion and function.

There are different types of shock wave therapy. In this study, researchers from Taiwan conduct a systematic review and meta-analysis comparing the effectiveness of two major types of shock wave therapy. The most common type is called focused shock wave therapy (FSW). A newer, alternative form called radial shock wave therapy (RSW) was also evaluated.

Focused shock wave (FSW) therapy is just as it sounds: the energy wave is directed at a specific area. FSW concentrates the wave field whereas radial shock wave (RSW) disperses the energy over a wider range. With RSW, it is not necessary to find the painful spots before applying the energy wave.

A particular area of interest in this study was to see the value in using different intensity levels, which represent energy flow through the tissue. Turning the intensity up may provide more pain relief but could also temporarily increase pain, local swelling, and tenderness. Studies have not been done to determine the most optimal intensity to use when treating plantar fasciitis with shock wave therapy.

Focus shock wave therapy can be delivered in three intensities: low, medium, and high. Patients receiving FSW were divided into three groups based on the intensity of wave delivery. Patients receiving RSW made up the fourth group. Results were measured based on pain reduction and overall success of the treatment. The goal was to see if one type of shock therapy was superior to the others in treating plantar fasciitis.

What did they find? Well, first of all, any type of shock wave therapy yielded better results than a "sham" or placebo (pretend) treatment. The best results were gained using radial shock wave (RSW) therapy. Focused shock wave (FSW) gave the best results when used at the highest energy density tolerated by the patient in the medium intensity range.

For those who use this modality to treat plantar fasciitis, the authors say don't go out and purchase a radial shock wave machine if you already have a focused shock wave device. Anyone just considering purchasing this equipment is advised to select radial shock wave therapy. It costs less and gives better results with fewer potential side effects.

Reference: Ke-Vin Chang, MD, et al. Comparative Effectiveness of Focused Shock Wave Therapy of Different Intensity Levels and Radial Shock Wave Therapy for Treating Plantar Fasciitis: A Systematic Review and Network Meta-Analysis. In *The American Journal of Sports Medicine*. July 2012. Vol. 93. No. 7. Pp. 1259-1268.