

# High Energy Extracorporeal Shock Wave Therapy as a Treatment for Non-Insertional Achilles Tendinopathy

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## Introduction:

Prior studies have shown that single treatment, high energy extracorporeal shock wave therapy (SWT) is an effective treatment for chronic insertional Achilles tendinopathy. Multiple treatment, low energy SWT has been shown to be an effective treatment for non-insertional Achilles tendinopathy. The results of single treatment high energy SWT for chronic non-insertional Achilles tendinopathy are not determined. The purpose of this study was to determine the safety and efficacy of high energy SWT as a treatment for adults with chronic non-insertional Achilles tendinopathy.

## Methods:

Thirty-four patients with chronic non-insertional Achilles tendinopathy were treated with a single dose of high energy SWT (SWT Group, 3000 shocks, 0.21 mJ/mm<sup>2</sup>, total energy flux density of 604 mJ/mm<sup>2</sup>). Thirty-four patients with chronic non-insertional Achilles tendinopathy were not treated with SWT, but instead were treated with additional forms of non-operative therapy (control group). All SWT procedures were performed using regional anesthesia. Evaluation was by change in visual analog score (VAS) and by determination of the Roles and Maudsley functional score.

## Results:

One month, three months, and twelve months post treatment, the mean VAS for the control and SWT groups were 8.4 and 4.4 ( $p < .001$ ), 6.5 and 2.9 ( $p < .001$ ), and 5.6 and 2.2 ( $p < .001$ ) respectively. Chi square analysis revealed that the percentage of patients with excellent or good Roles and Maudsley scores (i.e. successful results) twelve months post treatment was statistically greater in the SWT group compared to the control group ( $p < .002$ ). Eighty-five percent of the SWT patients and 25 percent of the control patients were assigned an excellent or good result twelve months post treatment.

## Discussion:

Although extensively studied, the optimal treatment regime for non-insertional Achilles tendinopathy remains unclear. Spontaneous recovery after more than 6 months of symptoms is unlikely. The results from this study add to the growing number of favorable reports that substantiate the efficacy of SWT as an effective treatment for chronic noninsertional Achilles tendinopathy. The mean VAS for the SWT group was statistically improved at 1, 3, and 12 months after treatment compared with the control group. The percentages of excellent or good results after the procedure for the SWT and control groups were 85% and 27% respectively, and there were no significant complications.

## Conclusion:

Single treatment, high energy SWT is an effective treatment for chronic noninsertional Achilles tendinopathy. Further prospective studies are needed to confirm this finding. Studies comparing high energy single treatment protocols with low energy multiple treatment protocols, and studies comparing various dosing intervals and energy flux densities are also needed to determine optimal treatment parameters.