

## Electrical Stimulation as an Adjunctive Treatment of Painful and Sensory Diabetic Neuropathy

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### Abstract

#### **Background:**

The objective of this review is to evaluate the use of electrical stimulation to treat diabetic neuropathy. Application of electrical stimulation may provide a novel treatment option for large and small fiber neuropathy in persons with diabetes. Large and small nerve neuropathy alters pain, proprioception, touch perception, and motor function, which cause burning foot pain and serve as protective mechanisms from ulcerations.

#### **Methods:**

A content search for clinical trials involving electrical stimulation, neuropathy, and diabetes was conducted through PubMed. Randomized clinical trials and prospective studies with outcome measures affecting the lower extremity function were selected for review.

#### **Results:**

We identified eight studies in which electrical stimulation was used to treat diabetic neuropathy. Six studies evaluated small fiber neuropathy. Two studies evaluated patients with both small and large fiber neuropathy and reported significant improvement in vibration and monofilament testing and reduction in symptoms in the electrical stimulation treatment group. Six of the eight painful neuropathy studies identified significant improvement in symptoms. There were no studies that evaluated electrical stimulation to treated diabetic motor neuropathy, fall prevention or postural instability.

#### **Conclusions:**

Electrical stimulation may be an effective alternative and adjunctive therapy to current interventions for diabetic peripheral neuropathy.

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