



FASCIA SCIENCE AND CLINICAL APPLICATIONS: PILOT STUDY

Whole body vibration therapy for painful diabetic peripheral neuropathy: A pilot study



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Summary The unsatisfactory results associated with conventional treatments for symptoms of diabetic peripheral neuropathy (DPN) demonstrate a need for research into alternative therapies. The purpose of this study was to determine the efficacy of whole body vibration therapy (WBV) as a treatment for pain associated with DPN. Participants ($n = 8$) with painful DPN received three treatment sessions per week for four weeks. Each session consisted of four bouts of 3 min of vibration (frequency 25 Hz, amplitude 5 mm). **The primary outcome measures were changes in the visual analog pain scale (VAS) and changes in the neuropathic pain scale (NPS). WBV demonstrated a significant ($p < 0.05$) acute pain reduction in the VAS, and a significant chronic reduction in both the VAS and NPS scales. No side-effects were observed during this study. WBV appears to be an effective, non-invasive treatment for pain associated with DPN.**

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Introduction

Diabetic Peripheral Neuropathy (DPN) is one of the most prevalent complications of diabetes, with a prevalence of 60–70% in the diabetic population (CDC, 2011). The most

common form, peripheral small fiber neuropathy, is characterized by damage to the primary afferent nociceptors due to chronic hyperglycemia (Tolle et al., 2006). This damage causes peripheral sensitization, leading to central neuron hyperexcitability and spontaneous nerve impulse generation, presenting as chronic pain (Tolle et al., 2006; Veves et al., 2009).

Research into treating DPN is scarce due to the complicated nature of neurological pathologies (CDC, 2011; Veves et al., 2009; Mao et al., 2011; Meyer-Rosberg et al., 2001). Currently, the only type of treatment available for DPN is pharmaceutical: tricyclic antidepressants, anticonvulsants, antiarrhythmics, NMDA receptor antagonists, opioid analgesics, and non-prescription NSAID's which are purely

Abbreviations: WBV, Whole body vibration, DPN, Diabetic peripheral neuropathy; NPS, Neuropathic pain scale, VAS, Visual analog scale.

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