TENS of unknown value in the treatment of chronic low back pain

Synopsis


**Question:** Is transcutaneous nerve stimulation (TENS) effective in the management of chronic low back pain?

**Data sources:** Trials were located by searches of Medline, Embase, Cochrane Central Register of Controlled Trials, and PEDro, review of the reference list of relevant articles, and by contact with experts in the field. **Study selection and assessment:** Randomised controlled trials with more than 5 participants per arm were eligible for inclusion. Trials were additionally restricted to those enrolling patients with non-specific LBP with or without sciatica with duration of symptoms greater than 12 weeks in an outpatient setting. All standard modes of TENS were eligible. Acupuncture TENS and neuromuscular stimulation were excluded. **Outcomes:** Eligible outcomes included pain, disability, well being, work loss, and side effects of treatment. Results were expressed as weighted mean differences (WMD) for continuous data. **Main results:** The literature search revealed 39 potentially eligible studies but only two, Cheing 1999 and Deyo 1990, fulfilled all eligibility criteria. Both trials compared active TENS to placebo, however only the Deyo study excluded subjects with previous experience of TENS to assist treatment blinding. The Cheing study reported greater reduction in pain (expressed as % of baseline) one hour following a single one hour treatment with active TENS: WMD = –33.6% (–53.27% to –13.97%); but did not measure beyond this time point or measure other outcomes. The Deyo study reported that a one month course of active TENS was no more effective than placebo at one month follow-up for pain intensity, pain frequency, pain improvement, functional status, and self-rated activity level. For pain intensity (measured on a 0–100 mm VAS) the WMD was –2.3 mm (–9.5 to 5); for pain improvement (1 = entirely gone, 6 = much worse) WMD= 0.0 (–0.4 to 0.4) and for functional status (range 0–100 with higher scores indicating worse function) WMD= –0.5 (–2.3 to 1.3). **Conclusions:** Because of conflicting results the efficacy of TENS in the treatment of chronic low back pain is unclear.

Commentary

The disease burden of chronic low back pain (CLBP), particularly in industrialised societies, is recognised widely. Identification of effective treatments for this major health problem is therefore imperative. Khadilkar et al (2005) have undertaken a timely systematic review on the efficacy of TENS for CLBP, as this modality continues to be used commonly in clinical practice.

Based on two trials that met the study’s eligibility criteria, the review concluded that there is inconsistent evidence regarding the effectiveness of TENS in reducing pain or disability in CLBP patients. It is intriguing that the authors failed to include a greater number of trials than previous reviews, including their own (Brosseau et al 2002). One of the trials demonstrated significant pain reduction one hour after a single treatment (a dose not commonly used clinically) however no follow-up evaluated whether the benefits persisted in these subjects who had LBP on average for 6 years. The second trial evaluated a more typical course of treatment (over 4 weeks) but found no significant benefits.

Previous systematic reviews, including a greater number of trials, have similarly concluded that TENS is of unknown value for CLBP (e.g. Philadelphia Panel 2001). This review highlights that the weight of current objective evidence for TENS does not support its continued clinical use.

In contrast, there is substantial evidence for interventions that produce large, durable benefits for CLBP, namely multidisciplinary rehabilitation and exercise with a cognitive-behavioural approach (Maher 2004). Perhaps it is not surprising that these multimodal interventions that target the complex biopsychosocial factors underlying CLBP are more successful than TENS which aims solely to reduce nociceptive input to the spinal cord. As acknowledged by the authors, CLBP demands multiple treatment approaches, and further research is needed to resolve the role of TENS in the management of this disabling condition.

**References**


Julia Hush

*University of Sydney*