

In adolescent athletes, what is the effect of transcutaneous electrical nerve stimulation on treating chronic low-back pain as compared to a sham treatment?

Khadilkar A, Odebiyi D, Brosseau L, Wells G. Transcutaneous electrical nerve stimulation (TENS) versus placebo for chronic low-back pain. *Cochrane Database of Systematic Reviews*. 2008, Issue 4. Art No.:CD003008

Low-back pain, both chronic and acute, is a condition that is very common in today's society and has been found to have a significant impact on one's work and daily life. Various solutions to this problem have been widely accepted by healthcare professionals including pharmaceuticals, exercise, surgery, acupuncture and electrical stimulation. Transcutaneous electrical nerve stimulation (TENS) specifically, has been frequently used to manage low-back pain due to its portability and noninvasiveness. Several studies have looked at the impact of TENS and TENS-like modalities on low-back pain as compared to placebos or other interventions, but until now, that evidence has not been synthesized. Therefore, the purpose of this systematic review is to determine the clinical benefit of using TENS to decrease chronic low-back pain compared to a placebo.

This review synthesized four randomized controlled trials that met their inclusion criteria. All four studies were said to be of high quality based on the Criteria for Assessment of Methodological Quality. The average subject age ranged from 28-54 and included only those individuals who were diagnosed with chronic low-back pain (lasting longer than 12 weeks). Treatment phases for the trials ranged from two to four weeks and included varying durations of treatment time. They examined five main outcome measures: pain, back-specific functional status, general health status, work disability and patient satisfaction. The authors found that the evidence was conflicting for four out of five of their main outcome measures. The fifth outcome measure, back-specific functional status, was found to be unaffected by the use of TENS. Although their results were mostly inconclusive, they feel that there is much opportunity and need for future research in this area.

Although the synthesized studies did not examine an adolescent population, I feel that this systematic review makes it clear that the effectiveness of TENS for the management of chronic low-back pain is inconclusive, and these results probably extend to the adolescent population as well. For the athletic trainers who have access to TENS units this information may be very applicable for their clinical practice. For instance, if you have an athlete who feels that electrical stimulation is very uncomfortable, choosing another modality to help manage their back pain may be ideal, since there is no evidence supporting its clinical effectiveness. Also, the evidence presented in this review would be useful to healthcare professionals looking to purchase TENS units for their patients, and also for the insurance companies being asked to reimburse for them. If there is no concrete evidence that illustrates their effectiveness in reducing chronic low-back pain, it may not be worth the extra money.

This evidence can also be used to educate a patient that may be looking into purchasing a TENS unit. They may have heard about it from a friend or read about it on the Internet. As their healthcare professional, you could present them with these results and then allow them to make a more informed decision as well as suggest other, less expensive forms of treatment that may help manage their pain.