

EFFECTIVENESS OF TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION (TENS) FOR CONSERVATIVE MANAGEMENT OF KNEE OSTEOARTHRITIS IN OLDER INDIVIDUALS. Bajema J, Kelley K, Krasowski K, Schultz T, Barr JO; Physical Therapy Department, St. Ambrose University, Davenport, IA. BarrJohnO@sau.edu

Purpose: For more than 20 years, the professional literature has suggested the use of transcutaneous electrical nerve stimulation (TENS) as an intervention for conservative chronic pain management with older individuals. Studies have shown that TENS is an effective treatment for knee OA overall, but these have included patients as young as 21 year old. The purpose of this study was to determine the effectiveness of TENS for the conservative management of knee osteoarthritis (OA) exclusively with older individuals.

Subjects: Subjects were three community-dwelling individuals (2 men / 1 woman; mean age of 59.7 years) with medically-diagnosed knee OA. A screening health history was taken. Exclusion criteria included: current participation in PT or rehab program for the knee with OA; previous TENS for pain; cardiac pacemaker or electrosensitivity; cancer involving the knee; an implanted electro-medical device; impaired skin sensation over the knee. **Materials/**

Methods: During the pre-treatment week, and for the next 7 weeks, subjects kept daily home logs of: knee pain estimate ratings (i.e., at rest, after daily activities, best pain, and worst pain); pain medications; and comments. Knee pain, 3-minute walk distance, and Nottingham Health Profile (Part I – pain subscores) were assessed at the end of the pre-treatment week, of treatment weeks 2, 4, and 6, and of the post-treatment week. After initial instruction, subjects performed daily 40-minute home treatments with conventional TENS (frequency = 60 Hz; intensity producing distinct paresthesia) to the involved knee for 6 weeks. **Data Analysis:** The data collected from the three subjects were graphically displayed and assessed by a case study approach. **Results:** Overall trends were depicted using graphs of median data values. After 6 weeks of TENS, pain ratings were reduced for two subjects and timed walking distance increased for two subjects. Pain subscores from the Nottingham Profile were dramatically improved for one subject, and largely unchanged for two subjects. Pain medication decreased for one subject, stayed the same for one subject, and increased for one subject. **Conclusion:** Although positive trends in outcome measures for patients with knee OA were observed, they cannot be directly attributed to the use of TENS. Further placebo-controlled randomized studies, with greater numbers of subjects and longer post-treatment assessment periods, need to be conducted. **Clinical Relevance:** Proper instruction and daily use of TENS appears to contribute to successful short-term conservative management of knee OA for select older individuals.