

INFLUENCE OF INSTRUCTIONAL STYLE ON PAIN PERCEPTION DURING TENS. Ferguson J, Hird K, Koch M, Vaughan J, Barr JO; Physical Therapy Department, St. Ambrose University, Davenport, IA. BarrJohnO@sau.edu

Purpose: This study determined the affect of instructional style (directive vs. neutral) on experimental pain threshold and tolerance during active and sham TENS. The manner in which instructions are presented during active or sham (control) interventions may influence the outcomes of those interventions. Enhancement of a placebo effect by directive instructions may limit the ability of a randomized control trial to disclose an active treatment effect. As a result, an intervention may be deemed ineffective. **Subjects:** 40 male college students, 18-25 years old. Exclusion criteria: cardiac disorder; decreased sensation; TENS or medications for pain; pain ratings exceeding noxious stimulator output. **Materials/Methods:** Participants randomly assigned to either: directive instructions / active TENS; directive / sham TENS; neutral instructions / active TENS; neutral / sham TENS. Pain induced by noxious electrical stimulation of the fifth digit, dominant hand. Pain threshold and tolerance were assessed pre-instruction / TENS. Videotaped instructions were directive (authoritative; suggestive of pain control) or neutral (neutral tone; not suggestive of pain control). TENS (frequency = 60pps; phasewidth = 40 microsec) next given to ventromedial forearm. Active TENS initially produced paresthesia from forearm into digit; after 4 min, readjusted to assure paresthesia; TENS continued. Sham TENS produced local paresthesia under electrodes only lasting <5 sec; TENS turned off; readjusted after 4 min to produce local paresthesia lasting <5 sec; TENS turned off. Pain threshold and tolerance again measured post-instruction / TENS. **Data Analysis:** Analysis via two-way ANCOVAs, with pretreatment pain threshold and tolerance as covariates. **Results:** Pain threshold was not significantly influenced by instructional style ($p=.301$), TENS ($p=.774$), or by their interaction ($p=.809$). Directive instructional style significantly increased pain tolerance ($p=.015$). TENS ($p=.732$), or the interaction of instruction and TENS ($p=.484$), did not significantly influence pain tolerance. **Conclusion:** A directive instructional style used in association with TENS was the important factor for increasing pain tolerance. **Clinical Relevance:** Researchers and clinicians assessing the effectiveness of TENS should be aware of the influence that instructions can have in enhancing active and placebo effects associated with TENS. Such an influence may have confounded studies that determined TENS to be ineffective in some laboratory and clinical applications.