TENS vs. BMAC

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Data de publicació: 30-10-2022

**TENS is an abbreviation of Transcutaneous Electrical Nerve Stimulation.
Transcutaneous means “across the skin”. In simple terms, a TENS unit stimulates your nerves via an electrical current through your skin.**

A comparison of the analgesic efficacy of medium-frequency alternating current and TENS

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Published:September 03, 2009DOI:https://doi.org/10.1016/j.physio.2009.06.005

PlumX Metrics

Abstract

Objective
To compare the analgesic efficacy of burst-modulated medium-frequency alternating current (BMAC) and transcutaneous electrical nerve stimulation (TENS) using an experimental cold pain model.

Design
Within-group crossover study.

Setting
A university research laboratory.

Participants
Twenty healthy subjects.

Interventions
BMAC (4-kHz AC applied in 4-millisecond bursts at 50?Hz) and TENS (125-microsecond phase duration applied at a frequency of 50?Hz) administered to each participant on separate occasions.

Main outcome measure
Time to cold pain threshold.

Results
The mean time to cold pain threshold with the BMAC intervention was no different than with TENS. Statistical analysis showed that both interventions elevated the cold pain threshold significantly [BMAC: increase?=?15.2?seconds, 97.5% confidence interval (CI) 3.1 to 27.2, P =?0.01; TENS: increase?=?15.4?seconds, 97.5%CI 2.5 to 28.4, P =?0.02], and the difference between interventions was not simply insignificant but the intervention effects were ‘significantly the same’ (mean difference?=?0.3?seconds, 95%CI ?15.3 to 15.9, P =?0.97).

Conclusions
BMAC is as effective as TENS in increasing cold pain thresholds in healthy subjects. Since BMAC has been shown to be more comfortable than TENS in previous studies and is likely to be better accepted and tolerated by patients, clinical investigation is warranted.

Keywords

Transcutaneous nerve stimulation
Cold pain
Experimental pain
Hypoalgesia

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