



NEURO RESOURCE GROUP

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NON-INVASIVE INTERACTIVE NEUROSTIMULATION (INTERX®) ELICITS SIGNIFICANTLY GREATER PHYSIOLOGICAL RESPONSE THAN TENS: LYMPHOCYTE METABOLISM AND CYTOKINE PRODUCTION

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Abstract

A previous InterX study which examined the effect of Interactive Neurostimulation pre and post treatment was extended to include volunteers treated with a TENS device to compare the physiological response following another form of electrical stimulation. As the amplitude used with the InterX is approximately three times higher than TENS and the current density up to ninety times higher, it is hypothesized that a significantly greater physiological response will occur following InterX than following TENS.

A multidisciplinary approach was used to examine the difference in effect of transdermal interactive neurostimulation with the InterX 5002 device compared to the Biomed 2000XL TENS device on lymphocyte metabolic function and cytokine production. Blood was drawn from 4 healthy adults (2M/2F) before and 20 minutes following a treatment session. Treatments consisted of 10 minutes of treatment on the lateral elbow of the arm from which blood was drawn and 10 minutes over the corresponding spine root. The same 4 patients were used in the InterX and TENS groups and a minimum of two weeks between treatments was implemented. Results: The TENS treatment slightly, but not significantly, increased the maximal respiration in the uncoupled state and there was no discernable difference due to glutamate over control. The InterX treatment, however, elicited significantly ($p < 0.05$ by ANOVA) greater respiration compared with pre-treatment control. Cytokine production was demonstrated to be affected by both InterX and TENS though the quantification of cytokine concentrations suggest much greater physiological response to InterX. This study suggests that higher amplitude and current density elicits greater physiological response in healthy humans and may have significant clinical implications for patients with inflammation and/or pain.