

A RANDOMIZED, CONTROLLED TRIAL OF TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION OF T6 FOR APPETITE CONTROL IN OBESE SUBJECTS ON A LOW-CALORIE DIET.**K. Hutchinson¹, W. Shah², S. Chaney², S. Sreenan³, L. Cormican², C. Burke², J. Faul²**¹*Clinical Chemistry, Eurofins-Biomnis, Ireland*²*Asthma Research Centre, Connolly Hospital Blanchardstown, Ireland*³*Department of Endocrinology, Connolly Hospital Blanchardstown, Ireland*

Obese patients commonly fail a prescribed low-calorie diet because they feel hunger. TENS (transcutaneous electrical nerve stimulation) is a widely-used non-pharmacologic treatment for discomfort associated with knee arthroplasty. Since some afferent pain fibers pass from the stomach through the spinal root T6, we hypothesized that TENS applied to dermatome T6 might alleviate the abdominal discomfort accompanying a low-calorie diet. We performed a randomized controlled study of TENS to improve dietary control in obese subjects (BMI 30 kg/m²) on a 1,200 kcal diet. Subjects randomized to Group I (controls) were prescribed a 1,200 kcal diet. Subjects in Group II, on the same diet, also received TENS of dermatome T6 for 20 minutes twice weekly. After six weeks, compared to controls ($n = 8$), Group II ($n = 10$) had improved adherence to the diet plan (-1.0(1.1) vs 0.1(0.9), $p 0.05$); felt less hunger (-1.0(1.1) vs 0.2(1.3), $p0.05$); had greater weight loss (- 7.7(3.9) vs 1.7(6.1) kg, $p0.01$); a greater reduction: (-0.6 (0.8) vs 0.4 (0.6) mmol/L, $p=0.01$), (-1.5 (1.6) vs 0.4 (1.2) ng/ml, $p0.05$) in total cholesterol and C-peptide respectively. There was no significant difference in serum measures for CRP, fasting glucose, cortisol, or vitamin D. TENS appears to improve dietary control by alleviating hunger during a low-calorie diet. When prescribed a 1,200 kcal diet, subjects using TENS can achieve meaningful weight loss, and a lowering of cholesterol, associated with significantly lower C-peptide.

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