

15<sup>th</sup> International Conference on

# OBESITY MEDICINE

October 30-31, 2017 Bangkok, Thailand

## Effects of electrical muscle stimulation on waist circumference in adults: A randomized controlled trial

Sang Yeoup Lee<sup>1</sup> and Eun Jung Choi<sup>1</sup><sup>1</sup>Pusan National University Yangsan Hospital, South Korea<sup>2</sup>Daedong Hospital, South Korea

Electrical muscle stimulation (EMS) has been used as a training tool to improve muscular strength. In this randomized sham-controlled study, we investigated the effects of EMS on waist circumference (WC) as compared with an identical device providing transcutaneous electrical nerve stimulation (TENS) as control in adults with abdominal obesity. This was a randomized, double-blind, sham-controlled trial. 60 patients with abdominal obesity (men WC >90 cm and woman WC >80 cm) has received EMS or TENS, randomly five times a week for 12 weeks. Compliance was satisfactory and no changes in caloric intake or physical activities were observed in either the EMS or TENS groups over the 12-week treatment period. However, the EMS group achieved a mean  $5.2 \pm 2.8$  cm decrease in WC while the TENS group showed only a  $2.9 \pm 3.3$  cm decrease ( $P=0.005$ ). 70.0% of the EMS group lost more than 4 cm of WC but that only 33.3% of the TENS group did so ( $P=0.008$ ). Furthermore, fasting FFA levels were significantly higher in the EMS than in the TENS group at week 12 ( $P=0.006$ ). In the EMS group, slight decreases in CT, VAT and TAF were observed at 12 weeks, but these decreases were not significant. In addition, patients' self-rated satisfaction scores with this program were significantly higher in the EMS group. In conclusion, the 12-week EMS program modestly reduced WC in abdominally obese adults without side effects. This study indicates EMS may be an effective and safe treatment for adults with abdominal obesity.

saylee@pnu.edu