

Tongue-muscle training by intraoral electrical neurostimulation in patients with obstructive sleep apnea.

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Abstract

STUDY OBJECTIVES: To investigate the efficacy of tongue-muscle training by electrical neurostimulation of the upper-airway muscles as an alternative therapy option for obstructive sleep apnea syndrome.

DESIGN: A randomized, placebo-controlled, double-blind study.

SETTING: Department of pneumology and sleep laboratory, University of Witten/Herdecke, Germany.

PATIENTS: 67 patients with an apnea-hypopnea index of 10 to 40 per hour were randomly assigned to 2 groups: a treatment group of 33 patients (mean age, 50.8 +/- 12.1 years; mean body mass index, 29.1 +/- 4.4 kg/m²) and a placebo group of 34 patients (mean age, 53.3 +/- 11.3 years; mean body mass index, 28.9 +/- 4.9 kg/m²). Fifty-seven patients completed the study.

INTERVENTIONS: Tongue-muscle training during the daytime for 20 minutes twice a day for 8 weeks.

MEASUREMENTS AND RESULTS: Treatment efficacy was examined by polysomnography. Snoring, but not apnea-hypopnea index, improved with stimulation (snoring baseline, 63.9 +/- 23.1 epochs per hour; stimulation training, 47.5 +/- 31.2; $P < .05$) but not with placebo training (snoring baseline, 62.4 +/- 26.1 epochs per hour; placebo, 62.1 +/- 23.8; NS.).

CONCLUSIONS: Although tongue-muscle training cannot generally be recommended for the treatment of sleep apnea, the method has proven to be effective in the treatment of snoring.