

Whole body electromuscular stimulation (EMS training) for back ailments

(BOECKH-BEHRENS, W.-U. / GRÜTZMACHER, N. / SEBELEFSKY, J., unpublished dissertation, University of Bayreuth, 2002).

Aim of study

The objective of this study was to investigate the effects of extensive EMS training on back ailments.

Methodology

49 employees of the University of Bayreuth with back ailments, 31 women and 18 men averaging 47 years of age, took part in the study voluntarily. The frequency and intensity of the back ailments as well as general complaint status, mood, vitality, body stability, and body contour were determined with the help of initial and subsequent questionnaires. 10 units of EMS training, twice a week, each lasting 45 minutes, were carried out within the following training parameters: pulse duration 4 s, pulse interval 2 s, frequency 80 Hz, rise time 0 s, pulse width 350 s. In the process, a period of about 25 minutes of training, during which various static exercise positions were assumed, followed a habituation period lasting 10-15 minutes in each case for the adjustment of individual pulse strengths. The training period concluded with a five-minute relaxation program featuring a pulse duration of 1 s, a pulse interval of 1 s, a frequency of 100 Hz, a rise time of 0 s, and a pulse width of 150 s.

Results

88.7% of the subjects saw a reduction in back ailments, with significant relief from the complaints in 38.8% of the cases. A slight improvement in the general complaint condition resulted in 41.9% of the cases. The frequency and the intensity of the complaints also declined sharply during the training time frame.

In addition, the EMS training led to the following general effects: 61.4% of the individuals reported an improvement in their general complaint condition, 75.5% saw an improvement in their mood, 69.4% registered increased vitality, 57.1% of the men and 85.7% of the women perceived improved body stability, 50% of the subjects asserted positive effects on their body contour, and 75.5% felt more relaxed after the training.

Conclusion

Whole body EMS training combats back ailments, a common condition, very effectively. The current evidently engages even deep muscles that can only be reached with conventional treatment measures with difficulty. The special whole body EMS training represents a time-saving, very effective all-round training that achieves far-reaching, positive health effects. At the same time, therapeutic as well as preventive objectives are achieved.