

## EMS RESEARCH

### EMS training as an alternative form of training for the elderly

Based on EMS research done by Wolfgang Kemmler and Simon von Stengel (2010 – 2012).

It is generally known and extensively researched that the most effective way to fight the natural and age-related decline of muscle mass and function is a physically active lifestyle, and most importantly, participation in regular exercise. However due to physical limitations, lack of time or lack of motivation, a large number of elderly participants are either unable or unwilling to perform (intense) corresponding resistance training.

#### Research description and outcome

In most of their research on EMS training, Kemmler and von Stengel assessed the effects of whole body EMS training on strength parameters and body composition/muscle mass in elderly subjects. Thirty postmenopausal females (average age 65,  $\pm$  5 years), participants of a year-long study in high-intensity resistance training, performed 20-minute EMS training sessions for a period of 14 weeks. Significant positive effects were observed:

Body fat reduced

Strength increased

Power increased

Adding validity to their findings from their study done with postmenopausal females, the researchers did another study, testing even more parameters. For the second study, 28 untrained males (65-75 years old) were tested on their physical capacity and changes in body composition before and after EMS training. After 14 weeks of EMS training, the test results for the 28 males also showed significant positive effects:

Muscle mass increased

Body fat reduced

Waist circumference reduced

Strength increased

Power increased

Aerobic capacity increased

The results of this research indicate the effectiveness of EMS training for people 60 years and older and offers an attractive alternative method of training. Being able to perform risk-free strength training beyond age-related barriers, EMS training proved to be effective for females and males respectively. Both study groups showed improvements in body composition (body fat, muscle mass, waist circumference), as well as in physical capacity (strength, power and aerobic capacity).

## Conclusion

The study results show EMS training can be used by most age groups and can help people improve their body composition as well as their physical capacity. In conclusion of their findings, the researchers stated the following: "... to our best knowledge, we are not aware of conventional exercise studies that reported comparably favourable changes of body fat and free fat mass. The results are remarkable especially considering the short duration..."

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