

# PROCEEDINGS

II EGREPA CONFERENCE  
(European Group for Research into Physical  
Activity for the Elderly)

## *PHYSICAL ACTIVITY AND HEALTH IN THE ELDERLY*

*and  
III Erasmus Short Course*

### *AGEING, EXERCISE AND QUALITY OF LIFE*

*1 - 5 SEPTEMBER 1994  
UNIVERSITY OF STIRLING  
STIRLING - SCOTLAND*

#### INSPIRATORY MUSCLE TRAINING REDUCES EXERTIONAL BREATHLESSNESS IN HEALTHY ELDERLY MEN AND WOMEN

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It is accepted that respiratory muscle strength declines with advancing age and that inspiratory muscle weakness is associated with an increase in exertional breathlessness. This study examined the influence of inspiratory muscle training (IMT) upon breathlessness in 15 healthy, elderly non-smokers ( $70 \pm 5$  y, mean  $\pm$  SD, 8 male) who gave informed consent. Local Ethical Committee approval was obtained. Using a double blind study design, subjects were allocated randomly to train with either a pressure threshold inspiratory muscle trainer developed in this laboratory ( $n=8$ ), or a sham device ( $n=7$ ), for ten minutes, three times per day for six weeks. Maximum inspiratory pressure was determined at residual volume (MIP@RV), and maximum expiratory pressure at total lung capacity (MEP@TLC) using a hand held mouth pressure meter (Precision Medical). Breathlessness was quantified during incremental treadmill exercise using a modified Borg Scale; a mean Borg score was calculated for the test. All measurements were repeated after training, at which time subjective assessments of functional capacity were also made. Following training, there was no change in MEP@TLC in either group. MIP@RV increased significantly in the training group ( $19.9 \pm$  SD 15.3%,  $p < 0.003$ ; t-test), and these subjects also displayed a significant reduction in mean Borg score post training ( $21.4 \pm$  SD 14.9%,  $p < 0.006$ , t-test). There were no such changes in the control group. These improvements were supported by the subjective analyses: 75% of training subjects reported an improved perception of their breathing, compared with only 14% of control subjects. Also, 62% of trained subjects were less breathless doing tasks which had made them breathless before training, whilst all control subjects reported no change. These data suggest that IMT alleviates exertional breathlessness in healthy elderly men and women, and conveys considerable perceptual improvements in their quality of life.