

Effects of Respiratory Muscle Training (RMT) on Ventilatory Parameters and Respiratory Muscle Strength (RMS) in Different Postures of the Rowing Stroke in Professional Male Rowers in Sri Lanka

ADP Perera

Department of Physiotherapy, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka

dperera85@yahoo.com

Rowing places 'extreme' demands on ventilation due to the cramped body posture during the rowing stroke. The aim of this study was to investigate the effects of a 12-week respiratory muscle training (RMT) program on ventilatory parameters and respiratory muscle strength (RMS) in different postures of the rowing stroke in professional male rowers in Sri Lanka. Twenty national male rowers, aged 20-35 years, were grouped randomly into an experimental (n=11) and a control (n=9) group. Prior to the study, baseline measurements of ventilatory functions (spirometry) and RMS were assessed by a portable spirometer and a handheld mouth pressure meter respectively. Subsequently, rowers in the experimental group were prescribed an RMT program comprising of breathing and abdominal exercises, while the control group was prescribed a general exercise programme for 12 weeks, after which all the above parameters were assessed again. One-way repeated-measures analysis of variance (ANOVA) within factors and post hoc Fisher least-significant-difference (LSD) tests were used to assess respiratory functions in the three different postures. Ventilatory functions and RMS were not statistically significant amongst the different rowing postures ($p>0.05$). Ventilatory functions were observed to be significantly higher in the experimental group than in the control group following the respective training programs ($p<0.05$). The novel RMT program had a beneficial effect on improving the ventilatory functions in the experimental group of the different postures of the rowing stroke.

Keywords: *posture, respiratory muscle training, rowing, ventilatory functions*