

28th ECSS Anniversary Congress, Paris/France, 4-7 July 2023

Inspiratory muscle training in the training process of disabled swimmers.

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INTRODUCTION:

The purpose of this study was to evaluate the effects of inspiratory muscle training attached to standard swimming training on lung ventilation, inspiratory muscle strength and aerobic endurance levels, as well as the training status of athletes with disabilities participating in swimming.

METHODS:

The study was performed in 16 athletes of the Polish Disabled Sports Association "Start". The subjects were divided into 2 groups, allocation to groups was randomized according to the distribution table: group I (IMT group) - athletes performing standard swimming training with attached inspiratory muscle training of medium intensity at a load level of 50% MIP; group II (sham-IMT group) - athletes performing standard swimming training with attached inspiratory muscle training of low intensity at a load level of 15% MIP. All subjects received eight weeks of inspiratory muscle training on personal PowerBreath KH1 devices. The following tests were performed on each athlete: spirometrics, maximum inspiratory pressure (MIP), expiratory pressure (MEP), T-30 test; step test - progressive test 8 x 100. All tests were performed 3 times: I - before the start of IMT, II - after of IMT, III - follow - up after 8 weeks. The results of the study were statistically analyzed using STATISTICA PL V.12.0.

RESULTS:

Significant increases in FVC, FEV1, as well as MIP and MEP values were obtained only in group I after applied inspiratory muscle training. In this group, maintenance of the results was observed at follow-up. Also in group I, there was a significant increase in the distance swum during the T-30 test after IMT and a significant maintenance of the effect at follow-up. A significant reduction in lactic acid concentration was also observed in this group and a significant reduction in heart rate at 88% and 93% of maximum speed.

CONCLUSION:

1. Inspiratory muscle training with 50% MIP load significantly increased pyrometric parameters and respiratory muscle strength in disabled swimmers. The disabled swimmers showed maintenance of training effects over a longer period of time at a high level.
2. There were positive distal effects of using training with 50% MIP load in maintaining the achieved levels of respiratory functional parameters.
3. Training of inspiratory muscles at a higher intensity significantly improved the training level of the tested athletes, which was associated with an increase in swimming distance. The use of medium-intensity inspiratory muscle training significantly reduced lactic acid levels in the progressive test. Higher intensity training significantly lowered the heart rate in the 8x100 progressive test at 88% and 93% of maximum speed improving the athletes aerobic endurance.
4. The use of medium-intensity inspiratory muscle training effectively improved the training level and physiological parameters of the swimmers effort. This indicates the need to include this type of training in the standard of competitive preparation of athletes with disabilities.

Topic: Disabilities

Presentation: Poster

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