

Effect of Six Weeks Respiratory Muscle Combine Core Muscle Training on Swimming
Performance and Lung Function

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Abstract

Introduction: Swimming is a movement that moves horizontally. The position of the body in the water is very important. Respiratory Muscle Training (RMT) can increase the body's tidal volume, respiratory frequency and contraction rate of the respiratory muscle, that allow trunk reach surface of the water; Core Muscle Training (CMT) can raising the intra-abdominal pressure through various movements or equipment to stabilize the trunk, that also allow limb's power output more stable. The aim of this study is to verify the benefit of a six weeks RMT combine CMT in college students. We assessed the effect of this training on swimming performance and lung function (Vital Capacity, VC; Force Vital Capacity, FVC; Forced Expiratory Volume In One Second, FEV1).

Methods: Recruited 16 college students (8 males and 8 females) were randomly into an experimental group (EG) and a control group (CG). During six weeks program, Both group performed regular swimming training, EG used Triflow® for RMT and CMT; CG only used Triflow® for RMT.

Results: EG's 50m swimming performance has found significant difference in mean value -2.58s (p=0.04). Although 400m swimming performance has no significant difference, but mean value reduced 12.38s (p=0.10), and all lung function have significant difference (VC, p=0.00; FVC, p=0.01; FEV1, p=0.02); CG has significant increase VC (p=0.07).

Conclusions: Our findings indicate the RMT combine CMT has beneficial effects on swimming performance and lung function; and the RMT improve on VC.

Keywords: Respiratory training, Core muscle training, Swimming performance, Lung function