JOURNAL of SPORTS SCIENCE & MEDICINE

Journal homepage

ISSN: 1303 - 2968

©Journal of Sports Science and Medicine (2013) 12 , 630 - 638

Research article

Effect of Additional Respiratory Muscle Endurance Training in Young Well-Trained Swimmers

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ABSTRACT

While some studies have demonstrated that respiratory muscle endurance training (RMET) improves performances during various exercise modalities, controversy continues about the transfer of RMET effects to swimming performance. The objective of this study was to analyze the added effects of respiratory muscle endurance training (RMET; normocapnic hyperpnea) on the respiratory muscle function and swimming performance of young well-trained swimmers. Two homogenous groups were recruited: ten swimmers performed RMET (RMET group) and ten swimmers performed no RMET (control group). During the 8-week RMET period, all swimmers followed the same training sessions 5-6 times/week. Respiratory muscle strength and endurance, performances on 50- and 200-m trials, effort perception, and dyspnea were assessed before and after the intervention program. The results showed that ventilatory function parameters, chest expansion, respiratory muscle strength and endurance, and performances were improved only in the RMET group. Moreover, perceived exertion and dyspnea were lower in the RMET group in both trials (i.e., 50- and 200-m). Consequently, the swim training associated with RMET was more effective than swim training alone in improving swimming performances. RMET can therefore be considered as a worthwhile ergogenic aid for young competitive swimmers.

Key words: Breathing, normocapnic hyperpnea, performance, swimming

Key Points

- Respiratory muscle endurance training improves the performance.
- Respiratory muscle endurance training improves the ventilatory function parameters, chest expansion, respiratory muscle strength and endurance.
- Respiratory muscle endurance training decreases the perceived exertion and dyspnea.
- Respiratory muscle endurance training can be considered as a worthwhile ergogenic aid for young competitive swimmers.