



## Effects of Modified Arm Swing Exercise on Pulmonary Function in Patients with Chronic Obstructive Pulmonary Disease

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**Background and Objectives:** Chronic obstructive pulmonary disease (COPD) is a global health problem leading to poor quality of life and increased healthcare expenditure. Pulmonary dysfunction and dyspnea in COPD patients cause exercise limitation, which leads to chronic avoidance of physical activities. Exercise is highly recommended as an additional therapeutic modality in COPD patients. Therefore, this study aimed to investigate the effect of modified arm swing exercise (MASE) training on pulmonary function in patients with COPD.

**Methods:** Ten COPD patients (aged 66.88±2.67 yrs) without cardiovascular complication in Khon Kaen province were recruited. They performed 30-min MASE per day, 6 days per week for 12 weeks. Forced expiratory volume in the first second (FEV<sub>1</sub>), forced vital capacity (FVC), peak expiratory flow (PEF), maximal expiratory pressure (PE<sub>max</sub>), maximal inspiratory pressure (PI<sub>max</sub>), modified Medical Research Council

(mMRC) dyspnea scale and COPD Assessment Test™ (CAT) scores were assessed at before and after exercise.

**Results:** After the MASE, PE<sub>max</sub> was significantly increased from 99.38 ± 10.58 to 111.00 ± 12.09 cmH<sub>2</sub>O (p < 0.05). Moreover, CAT scores were significantly decreased from 11.38 ± 1.77 to 8.75 ± 1.55 (p < 0.05) after MASE training. However, FEV<sub>1</sub>, FVC, FEV<sub>1</sub>/FVC ratio, PEF, PI<sub>max</sub> and mMRC dyspnea scale did not change after MASE training.

**Conclusions:** These data demonstrated that MASE training increases expiratory muscle strength and improved impact of COPD on patients' health status in patients with COPD. Thus, MASE may be suggested to be an alternative mode of exercise for the COPD patients.

**Keywords:** Exercise training, respiratory muscle strength, lung function



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