

# Effects of inspiratory muscle training in children with cerebral palsy: a randomized controlled trial

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## Abstract

**Background:** Respiratory muscle weakness and its relation to other impairments in children with cerebral palsy (CP) have been shown in the latest studies. The effects of inspiratory muscle training (IMT) in this population have not been comprehensively investigated so far.

**Objectives:** To investigate the effects of IMT on trunk control, pulmonary functions, respiratory muscle strength, daily living activities, exercise capacity and quality of life in children with CP.

**Methods:** This was a prospective-randomized controlled trial. Twenty-five children with CP were randomly assigned to the treatment (n=13) or the control group (n=12). The treatment group received IMT at 30% of maximal inspiratory pressure (MIP) and the control group received sham therapy (5% of MIP) for 6 weeks. Also, both groups received routine conventional physical therapy (stretching, strengthening, and functional exercises, etc.) for 6 weeks. The primary outcome measure was trunk control. Secondary outcome measures were pulmonary function, respiratory muscle strength, daily living activities, functional exercise capacity and quality of life.

**Results:** The treatment group had better outcome for trunk control (3.87, 95% CI 3.72-4.02). Also, respiratory muscle strength, daily living activities, functional exercise capacity

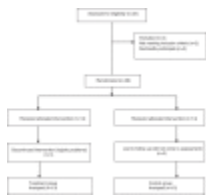
and quality of life were significantly improved in the treatment group compared with controls. No improvements were observed in the pulmonary function test scores between the groups.

**Conclusion:** Inspiratory muscle training improves trunk control, respiratory muscle strength, daily living activities, functional exercise capacity and quality of life in children with CP and it can be included in the physiotherapy and rehabilitation programs.

**Keywords:** Cerebral palsy; Exercise capacity; Inspiratory muscle training; Quality of life; Trunk control.

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## Figures



### Figure 1

Flow chart.

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