

# Effects of inspiratory muscle training on exercise capacity in individuals after stroke: A systematic review

Josielly de Queiroz Ferreira<sup>1</sup>, Paulo Israel Queiroz Fernandes<sup>1</sup>, Alan Carlos Nery dos Santos<sup>2,3</sup>, Jefferson Petto<sup>3</sup>, Ramon Martins Barbosa<sup>1,2,4</sup>

1. Salvador University – Salvador (BA), Brazil
2. RehabScience Clinic – Feira de Santana (BA), Brazil
3. Bahiana School of Medicine and Public Health – Salvador (BA), Brazil
4. Faculty of the Sisaleira Region – Conceição do Coité (BA), Brazil

**Introduction:** Cerebrovascular accident (CVA) is one of the main diseases worldwide. Furthermore, it directly impacts high costs for health agencies, and it is worth mentioning its adverse impacts on functionality, social participation and biopsychosocial factors of the population affected by this clinical condition. Furthermore, the global burden of disease study highlights that each year, 13.7 million individuals have a stroke in the world and 5.5 million die, in addition to there being 80.1 million prevalent cases of stroke in the world, making it an important health condition, which requires strategies aimed at rehabilitation, as well as recovery of its clinical outcomes. Thus, inspiratory muscle training (IMT) has been described as an intervention capable of improving functional parameters related to patients with neurological disorders. However, there are no reviews relating IMT to exercise capacity. **Objectives:** To summarize randomized clinical trials that analyzed the effects of IMT on exercise capacity in patients after stroke. **Materials and Methods:** Systematic review, PROSPERO (CRD42022338504), carried out in the following databases: PUBMED, LILACS, MEDLINE, Portal VHL, SciELO and PEDro. Descriptors: “Functional capacity”, “stroke” and the keyword: Inspiratory Muscle Training. Included: Randomized clinical trials, which aimed to analyze the effects of inspiratory muscle training in individuals after stroke, for outcomes such as: Functional capacity, respiratory muscle strength (PIMAX and PEMAX), balance, dyspnea and cardiopulmonary capacity (VO<sub>2</sub>max). There were no restrictions regarding the language and publication time of the studies. Methodological quality was assessed using the PEDro scale. **Results:** The searches identified 140 articles. However, after analysis, 11 were included. These were randomized clinical trials published between 2010 and 2021. Inspiratory muscle training promoted improvements in respiratory muscle strength (PIMAX and PEMAX). Furthermore, there were significant improvements in dyspnea, balance and cardiopulmonary function. However, in terms of functional capacity, studies present controversial results. The PEDro average was 6.6. **Conclusions:** IMT positively affects respiratory muscle strength, dyspnea and balance. However, the results do not appear to be transferred to functional capacity and quality of life in patients after stroke.