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Title: Systematic review of inspiratory muscle training for asthma

Ivanizia 1100 Silva iziasoares@gmail.com ¹, Guilherme 1101 Fregonezi fregonezi@ufrnet.br ¹, Fernando 1102 Dias faldias@ufrnet.br ¹, Cibele 1103 Ribeiro cibeletdr@hotmail.com ¹, Ricardo 1104 Guerra roguerra@ufrnet.br ¹ and Gardenia 1105 Ferreira holanda@ufrnet.br ¹. ¹ Department of Physiotherapy, Federal University of Rio Grande Do Norte, Natal, Brazil, 59072-970 .

Body: Background: In patients with COPD, the IMT significantly increases strength of the inspiratory muscles, reduces dyspnoea and improves quality of life. Nevertheless there was insufficient evidence on the clinical benefits of IMT for asthma. Objectives: To evaluate the efficacy of IMT with an external resistive device in patients with asthma. We searched the Cochrane Airways Group Specialised Register of trials, Cochrane Central Register of Controlled Trials, ClinicalTrials.gov and reference lists of the articles. Methods: All randomised controlled trials that involved the use of an external inspiratory muscle training device versus a control in patients with stable asthma were considered for inclusion. Two reviewers independently selected articles for inclusion, evaluated risk of bias of the studies and extracted data. Results: A total of five studies involving 113 asthmatic patients were included. The included studies showed a statistically significant increase in PImax (MD 13.34 cmH₂O, 95% CI 4.70 to 21.98). There was no statistically significant difference between the IMT group and the control group for PEmax, PEF, FEV₁, FVC, sensation of dyspnoea and use of beta2-agonist. There were no studies describing exacerbation events that required a course of oral or inhaled corticosteroids or emergency department visits, inspiratory muscle endurance, hospital admissions and days off work or school. Conclusions: There is no conclusive evidence in this review to support or refute IMT for asthma, once the evidence was limited by the small number of studies included and number of participants in them. Thus, more well conducted randomised controlled trials are needed.