*primary studies - published, non RCT*

# Inspiratory muscle training in patients with cystic fibrosis.

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### Study design (if review, criteria of inclusion for studies)

Parallel design over 6 weeks.

### Participants

Intervention: n = 8; mean (SD) age = 17 (5.2) years. Control: n = 8; mean (SD) age = 19 (5.5) years.

### Interventions

IMT = Threshold loading; 20 minutes a day, 5 days per week. At 40% of PImax. Control = Threshold loading; 20 minutes a day, 5 days per week. At 10% of PImax.

### Outcome measures

FEV1, FVC, Wmax, VO2max, VEmax, IME, perceived breathlessness, general fatigue, physical fatigue, reduced activity score, reduced motivation score, mental fatigue and dyspnoea.

### Main results

No significant differences were found among the two groups in gender, age, weight, height, pulmonary function, exercise capacity, inspiratory-muscle strength and inspiratory-muscle endurance before starting the training programme. Mean (SD) age in the control group was 19 (5.5) years, mean (SD) age in the training group was 17 (5.2) years. Mean FEV1 in both groups was 70% predicted, mean inspiratory-muscle strength in both groups was above 100% predicted. All patients except one, assigned to the training group, completed the programme. After 6 weeks of training, mean inspiratory-muscle endurance (% Pimax) in the control group increased from 50% to 54% (P = 0.197); in the training group mean inspiratory muscle endurance (% Pimax) increased from 49% to 66% (P = 0.003). Statistical analysis showed that the change in inspiratory-muscle endurance (% Pimax) in the training group was significantly higher than in the control group (P = 0.012). After training, in the training group there was a tendency of improvement in Pimax with an increase from 105 to 123% predicted, which just fell short of statistical significance (P = 0.064). After training no significant differences were found in changes from baseline in pulmonary function, exercise capacity, dyspnoea and fatigue. It is concluded that low-intensity inspiratory-threshold loading at 40% of Pimax was sufficient to elicit an increased inspiratory-muscle endurance in patients with CF.

http://www.mrw.interscience.wiley.com/cochrane/clcentral/articles/837/CN-00325837/frame.html

### See also

Respiratory medicine YR: 2001 VL: 95 NO: 1

### Keywords

Adolescent; Adult; Inhalation OR nebulised; non pharmacological intervention - psyco-soc-edu-org; non pharmacological intervention - devices OR physiotherapy; pharmacological_intervention; training; inspiratory muscle training; exercise; Chest physiotherapy;