

primary studies - published RCT

# Interval versus constant-load exercise training in adults with Cystic Fibrosis.

**Code:** PM33618051

**Year:** 2021 **Date:** 2021

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

Randomised controlled trial

## Participants

24r adults with CF

## Interventions

Interval exercise (IE) compared to constant-load exercise (CLE) training. Patients were randomised to 30-min IE (100 % peak work capacity (WRpeak) for 30-s alternated with 40 % WRpeak for 30-s;  $n=12$ ) or 30-min CLE (70 % WRpeak;  $n=12$ ) training, 3 times weekly, for 12 weeks.

## Outcome measures

Isometric quadriceps muscle strength was assessed using a strain gauge Myometer.

## Main results

The magnitude of improvement in quadriceps muscle strength was greater ( $p=0.037$ ) in the IE (by  $32\pm 13$  Nm) compared to the CLE (by  $23\pm 12$  Nm) groups. Maximum inspiratory and expiratory mouth pressures were significantly improved only in the IE group (by  $30\pm 10$  cmH<sub>2</sub>O;  $p=0.009$  and  $13\pm 4$  cmH<sub>2</sub>O;  $p=0.007$ , respectively). Arterial oxygen saturation during training was higher ( $p=0.002$ ) for IE ( $94\pm 1\%$ ) compared to CLE ( $91\pm 1\%$ ), whereas dyspnoea scores were lower ( $p=0.001$ ) for IE ( $3.8\pm 0.7$ ) compared to CLE ( $5.9\pm 0.8$ ).

## Authors' conclusions

IE is superior to CLE in improving peripheral and respiratory muscle strength and preferable to CLE because it is associated with lower exercise-induced arterial oxygen desaturation and breathlessness.

<http://dx.doi.org/10.1016/j.resp.2021.103643>

## See also

Respir Physiol Neurobiol. 2021 Jun;288:103643. doi: 10.1016/j.resp.2021.103643. Epub 2021 Feb 19.

## 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;