

primary studies - published RCT

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

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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 ± 13 Nm) compared to the CLE (by 23 ± 12 Nm) groups. Maximum inspiratory and expiratory mouth pressures were significantly improved only in the IE group (by 30 ± 10 cmH₂O; $p=0.009$ and 13 ± 4 cmH₂O; $p=0.007$, 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 ± 0.7) compared to CLE (5.9 ± 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 - psycho-soc-edu-org; non pharmacological intervention - devices OR physiotherapy; pharmacological_intervention; training; inspiratory muscle training; exercise; Chest physiotherapy;