primary studies - published RCT

Effects of exercise and airway clearance (positive expiratory pressure) on mucus clearance in cystic fibrosis: a randomised crossover trial.

Code: PM30846472 **Year:** 2019 **Date:** 2019 **Author:** Dwyer TJ

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

Randomised, controlled, crossover trial

Participants

14Â adults with mild to severe CF lung disease (forced expiratory volume in 1â€…s % predicted 31-113%)

Interventions

20â€…min of resting breathing (control), treadmill exercise at 60% of the participant's peak oxygen consumption or PEP therapy (including huffing and coughing).

Outcome measures

Mucus clearance was measured using the radioaerosol technique and gamma camera imaging.

Main results

Treadmill exercise improved whole lung mucus clearance compared to resting breathing (mean difference 3%, 95% CI 2-4); however, exercise alone was less effective than PEP therapy (mean difference -7%, 95% CI -6- -8). When comparing treadmill exercise to PEP therapy, there were no significant differences in mucus clearance from the intermediate and peripheral lung regions, but significantly less clearance from the central lung region (likely reflecting the huffing and coughing that was only in PEP therapy).

Authors' conclusions

It is recommended that huffing and coughing are included to maximise mucus clearance with exercise.

http://dx.doi.org/10.1183/13993003.01793-2018

See also

Eur Respir J. 2019 Apr 18;53(4):1801793. doi: 10.1183/13993003.01793-2018. Print 2019 Apr.

Keywords

Aerobic training; Airway clearance technique; Chest physiotherapy; exercise; non pharmacological intervention - devices OR physiotherapy; Positive-Pressure Respiration- PEP- pep mask; Respiratory Tract Diseases; strength training; training;