primary studies - published RCT

Intrahospital weight and aerobic training in children with cystic fibrosis: a randomized controlled trial.

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

randomized controlled trial

Participants

CF children. Eleven participants in each group (controls: 7 boys, age = 11 +/- 3 yr, body mass index = 17.2 +/- 0.8 kg . m(-2) (mean +/- SEM)

Interventions

8-wk intrahospital combined circuit weight and aerobic training program

Outcome measures

cardiorespiratory fitness (VO2peak) and muscle strength (five-repetition maximum (5RM) bench press, 5RM leg press, and 5RM seated row) (primary outcomes) and pulmonary function (forced vital capacity, forced expiratory volume in 1 s), weight, body composition, functional mobility (Timed Up and Down Stairs and 3-m Timed Up and Go tests), and quality of life (secondary outcomes). Effects of a detraining period (4 wk) on the aforementioned outcomes.

Main results

Adherence to training averaged 95.1% +/- 7.4%. We observed a significant group x time interaction effect (P = 0.036) for VO2peak. In the intervention group, VO2peak significantly increased with training by 3.9 mL . kg(-1) . min(-1) (95% confidence interval = 1.8-6.1 mL . kg(-1) . min(-1), P = 0.002), whereas it decreased during the detraining period (-3.4 mL . kg(-1) . min(-1), 95% confidence interval = -5.7 to -1.7 mL . kg(-1) . min(-1), P = 0.001). In contrast, no significant changes were observed during the study period within the control group. Although significant improvements were also observed after training for all 5RM strength tests (P < 0.001 for the interaction effect), the training improvements were not significantly decreased after the detraining period in the intervention group (all P > 0.1 for after training vs detraining). We found no significant training benefits in any of the secondary outcomes.

Authors' conclusions

A short-term combined circuit weight and aerobic training program performed in a hospital setting induces significant benefits in the cardiorespiratory fitness and muscle strength of children with cystic fibrosis.

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See also

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Keywords

Child; exercise; non pharmacological intervention - devices OR physiotherapy; training; Hospital Care; Aerobic training; Chest physiotherapy;