*primary studies - published RCT*

# Effects of a Short-Term Resistance-Training Program on Heart Rate Variability in Children With Cystic Fibrosis-A Randomized Controlled Trial.

**Code:** PM33859572 **Year:** 2021 **Date:** 2021 **Author:** Estévez-González AJ

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

Randomized controlled trial

### Participants

Children diagnosed with CF aged 6-18 years. 19 subjects (13 boys) were included (CON = 11; and EX = 8). Mean age was 12.2 ± 3.3, FEV(1) (forced expiratory volume in the first second) z-score was 1.72 ± 1.54 and peak oxygen consumption (VO(2)peak) 42.7 ± 7.4 mL.Kg(-1).min(-1).

### Interventions

A short-term resistance exercise program. Individuals were divided into two groups: control (CON) and resistance-training (EX). Individuals in the EX group completed an individualized guided resistance program (5-RM-60-80%) for 8 weeks (3 sessions of 60 min/week). Upper and lower limbs exercises (seated bench press, seated lateral row, and leg press) were used.

### Outcome measures

Heart rate variability (HRV) was measured using a Suunto watch with subjects in lying position.

### Main results

Exercise induced significant changes in the frequency-domain variables, including a decrease in LF power (p = 0.001, d = 0.98) and LF/HF ratio (p = 0.020, d = 0.92), and an increase in HF power (p = 0.001, d = -0.97), compared to the CON group. No significant changes were found for time-domain variables, although increases with a moderate effect size were seen for SDNN (p = 0.152, d = -0.41) and RMSSD (p = 0.059, d = -0.49) compared to the CON group.

### Authors' conclusions

A short-term resistance exercise-training program was able to modulate HRV in children and adolescents with CF presenting mild to moderate lung function impairment and good physical condition.

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### See also

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### Keywords

exercise; non pharmacological intervention - devices OR physiotherapy; training; Combined Modality Therapy; Aerobic training; Chest physiotherapy; strength training;