Other Reviews - - Other Review

The Impact of Exercise Intervention on Pulmonary and Physical Function in Patients With Cystic Fibrosis: A Comprehensive Systematic Review.

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

Systematic review. Eligible studies were randomized controlled trials

Participants

Cystic fibrosis (CF) patients aged 7 or older, reporting outcomes related to pulmonary function, cardiorespiratory fitness, or muscle strength following aerobic, resistance, or mixed exercise interventions.

Interventions

Various exercise interventions

Outcome measures

Lung function, specifically forced expiratory volume in 1 second (FEV(1)), maximum inspiratory pressure (MIP), and maximum expiratory pressure (MEP), as well as on cardiorespiratory fitness (peak oxygen uptake [VO(2)peak]), and muscle strength (handgrip strength). The review also considers factors such as patient adherence, follow-up duration, and statistical significance to inform clinical practice.

Main results

A total of 1,033 articles were identified through the database search. After screening and eligibility assessment, 4 randomized controlled trials involving 156 participants met the inclusion criteria. Both supervised and wearable activity tracker (WAT)-based exercise programs significantly improved VO(2)peak and exercise capacity, as demonstrated by the 6-minute walk test. Home-based programs enhanced upper limb muscle strength. However, improvements in FEV(1) were inconsistent and tended to decline without ongoing training. No adverse events were reported.

Authors' conclusions

Structured exercise, particularly WAT based or supervised, supports better physical fitness in CF. Standardized protocols, longer-term follow-up, diverse participant inclusion, and strategies to improve adherence are needed in future research.

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See also

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Keywords

Acapella; Active Cycle of Breathing Technique -ACBT-; Aerobic training; Airway clearance drugs -expectorants- mucolytic- mucociliary-; Airway clearance technique; Autogenic drainage; Chest physiotherapy; Chest Wall Oscillation; Child; Combined Modality Therapy; Drainage; exercise; flutter; forced expiration technique; High Frequency Chest Wall Oscillation -HFCWO-; inspiratory muscle training; Intrapulmonary Percussive Ventilation; non pharmacological intervention - devices OR physiotherapy; non pharmacological intervention - psyco-soc-edu-org; oscillating devices; Percussion; pharmacological_intervention; Positive-Pressure Respiration- PEP- pep mask; Postural Drainage; Respiratory Tract Diseases; strength training; training; VEST Airway Clearance System; Vibration;