Musculoskeletal Bulletin

Research informing practice

PURE PHYSIO CPD

Effects of combined strength training and aerobic training vs aerobic training alone on cardiovascular disease in coronary artery disease (CAD)

Combined training is more effective than aerobic training alone in improving cardiorespiratory fitness and body composition in patients with CAD.

To maximise the management of CAD, muscle strength training should be added without reducing aerobic exercise volume.

Exercise adherence and feasibility should be considered, as additional strength training may increase dropout rates.

Context

To compare the effects of combined aerobic and muscle strength training (combined training) versus aerobic training alone on cardiovascular disease risk indicators in patients with coronary artery disease (CAD)

Methods

- A systematic review of randomised clinical trials was conducted
- The study focused on cardiorespiratory fitness, Body composition and Cardiometabolic biomarkers
- Studies were assessed for quality, adherence, dropout rates and adverse events.
- Meta- analysis was performed using a random effects model to evaluate differences between the training methods

Results

- CRF Improvement: Combined training significantly improved cardiorespiratory fitness more than aerobic training alone.
- Body Composition: Combined training led to increased lean body mass and reduced body fat compared to aerobic training alone.
- Cardiometabolic Biomarkers: No significant differences were found in glucose, insulin, or lipid profiles between the two training methods.
- Adherence & Safety: Dropout rates were higher in some studies for combined training, and occasional muscle or joint pain was reported, but no severe adverse events occurred.

Reference

Terada T, Pap R, Thomas A, et al Effects of muscle strength training combined with aerobic training versus aerobic training alone on cardiovascular disease risk indicators in patients with coronary artery disease: a systematic review and meta-analysis of randomised clinical trials British Journal of Sports Medicine 2024;58:1225-1234.