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The Effects of Weighted Exercise Training on Lean Body Weight, Balance and Functional Capacity in Individuals with Cystic Fibrosis: A Pilot Study

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Objectives: The positive effects of weighted exercise training on balance and exercise capacity in different diseases with low bone mineral density have been demonstrated. The aim of our study was to investigate the effects of exercise training with weighted vest on lean body weight, balance and functional capacity in patients with cystic fibrosis (CF).

Methods: Weighted exercise training was carried on treadmill that the patients wore a weighted vest (4–8% of body weight). Exercise training was performed in 70% of the maximal heart rate for 6 weeks, 3 days a week, 30-45 minutes a day. Body composition, body fat mass, and lean body mass were measured by bioelectrical impedance analysis. Balance was evaluated with Flamingo Balance Test (static balance) and Y Balance Test (dynamic balance). Functional exercise capacity was assessed using 6 Minute Walk Test (6MWT).

Results: Six CF patients completed the weighted exercise training. Two of the four patients who did not complete the study stopped exercising due to acute lung infection and two others due to transportation problems. Demographic characteristics of the patients who completed and did not complete were similar ($p>0.05$). At the end of the training, there was a significant improvement in 6MWT distance and Flamingo Balance test score ($p<0.05$). No differences were found in the body composition and Y balance test after training ($p>0.05$).

Conclusion: Exercise training with a weighted vest in CF improves the functional exercise capacity and the static balance. We need a greater number of patients and control group for evaluating the effects on the body composition.

Keywords: Cystic fibrosis, exercise training, balance