A 3-MONTH EXERCISE PROGRAM FOR AN ADULT WITH CYSTIC FIBROSIS

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Background: Physical activity and fitness has shown to provide therapeutic benefit to individuals with cystic fibrosis (CF). Involvement in a resistance training program has been shown to improve pulmonary function in CF (Chest 2004 Apr;125(4):1299-305). Resistance training in non-CF subjects increases adaptive changes in skeletal muscle and improves postural stability. The combination of anatomical positional breathing training and moderate strength training has the potential to optimize the effect that exercise has on CF adults. **Aim:** To assemble a 3-month exercise program designed to increase respiratory breathing patterns, musculoskeletal strength and exercise capacity in adults with CF. **Methods:** A three month program with a combination of strength and anatomical positional breathing exercises were assembled for an adult with CF. The program consisted of four days per week of moderate intensity (50-70%) multi-joint strength exercises, supplemented with anatomical positional breathing exercises before and after exercise. Outcomes were measured by resting heart rate, 6-minute walk test, timed body weight plank test, 90º wall sit test and body weight pushup test. **Results:** A single, 55 year-old CF subject with moderate chronic obstructive pulmonary disease and exocrine pancreatic insufficiency completed the three-month exercise program. Following the program, there was improvement in most measured parameters. Resting heart rate went from 60 to 58 bpm (-2 bpm). Body weight plank time increased from 1:48 to 2:40 seconds (+52 seconds), wall sit time increased from 2:20 to 3:18 seconds (+58 seconds), and pushups improved from 35 to 38 (+3). Six-minute walk test speed improved from 3.0 to 3.4 mph (+.4 mph) and her distance increased from .40 to .45 miles (+.05 miles). BMI and FEV_1 held steady, with no decline over the 3-month period. Of note, after 7 months of continued training, BMI increased from 18.8 to 20 kg/m^2 (+1.2 kg/m^2) and FEV_1 increased from 1.72 L to 1.86 L (+0.14 L). **Conclusions:** This pilot program shows that an exercise program combining strength and anatomical positional breathing exercises for those with CF is feasible and well tolerated. While the above results are only from one individual, they are promising in that they show improvement in diaphragmatic breathing patterns, muscle strength, and endurance. We are pursuing a larger study to see if these preliminary findings are broadly applicable to those with CF and whether improvements in these parameters result in improved clinical outcomes.