

## **Effect of light exercise on muscular strength and functional fitness over 12 months in frail community-dwelling older adults**

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The purpose of this study was to determine the effect of two light-intensity exercise programs on lower body muscular strength and functional fitness over 12 months in a group of frail community-dwelling older adults. Sixty-one individuals, mean age ( $\pm$ SD) 72 ( $\pm$ 10) yr, were assigned into two groups (resistance (R) group = 32 and balance (B) group = 22). The resistance group underwent a 12-wk exercise program using an exercise band and a pneumatic exercise kit in the seated position and the balance group underwent a 12-wk program using a pneumatic exercise kit for customized balance exercise in the seated position. Both groups performed the program for 12 months. Measures of lower body muscular strength (knee extension (KE), ankle dorsal extension (AE) and flexion (AF), hip adduction (HAD) and abduction (HAB)), functional fitness (chair stand (CS)), gait speed for 10m (WT), functional reach (FR), and single leg balance with eyes open (SLB) were assessed at pre- and post-3 months and again at 12 months. Significant improvements in both groups were noted for KE, AE, and HAD muscular strength at three months and these effects were maintained at 12 months (except AE in B group). No changes were found for CS, WT, FR, or SLB. These results indicate that light-intensity exercise consisting of either resistance or balance activities is effective in improving strength among frail older adults. However, likely due to the seated nature of the exercise program, functional fitness, walking speed, and balance did not improve. The development of other light-intensity exercise programs to improve these measures in this population is warranted.