

## EFFECTS OF CONTROLLED STRENGTH TRAINING WITH COMBINED RESISTANCE AND AEROBIC EXERCISE IN AN ELDERLY GROUP: A RANDOMIZED CONTROLLED TRIAL

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The study aimed to verify and compare the effects of strength training (RT) controlled with resistance exercise combined with aerobic and aerobic, during 12 sessions, on lower limb muscle strength and functional performance in sedentary elderly. Sixty-six elderly people of both sexes were selected, with a mean age of  $68.5 \pm 4.5$  years. Participants were divided into 3 groups: TF1 n=22, TF2 n=23 and CG n=21. The TF1 group performed resistance exercises on the extension chair and leg press  $45^\circ$ , with 4x12-15 repetitions, intensity of 40% to 60% of 1RM and aerobic exercise on the treadmill for 20 minutes of walking with a speed ranging from 5.0 to 6.5 km/ H. The TF2 group performed only aerobic exercise on the treadmill for 20 minutes of walking at a speed ranging from 5.0 to 6.5 km/h. The CG only participated in lectures and workshops on health and quality of life, without the intervention of physical exercises. Body mass index (BMI), fat percentage (%F) and quadriceps femoris 1 repetition maximum strength (FQF) and Timed Up and Go (TUG) tests were measured. The study showed that the 1RM test did not find statistically significant intergroup differences at the pre-intervention moment, however, at the post-intervention moment, statistically significant intergroup differences were found. In the 1RM test when compared with the GC (TF1pre vs TF1post -  $T = -3.666$ ,  $p < 0.001$ ; TF2pre vs TF2post -  $T = -3.555$ ,  $p < 0.001$ ; GCpre vs GCpost -  $T = -3.453$ ,  $p < 0.001$ ). There was a statistically significant difference between the TF1 and GC, TF2 and GC groups ( $H(2) = 6.276$ ,  $p = 0.04$  |  $U = 96.5$ ;  $z = -2.416$ ,  $p = 0.015$ ). The groups did not present statistically significant differences for the median values in the TUG test at the pre-intervention moment ( $H(2) = 6.916$ ,  $p = 0.48$ ) pre-test. At the post-intervention moment, there was a statistically significant difference between the TF1 and CG groups ( $H(2) = 6.276$ ,  $p = 0.04$  |  $U = 96.5$ ;  $z = -2.410$ ,  $p = 0.016$ ) (Graph 2). That is, the TF1 presented TUG values higher than the values presented in the CG. However, TF1 did not differ from TF2. The TF1 group was the only group that showed a difference between pre- and post-intervention. The groups showed statistically significant differences at the time of post-intervention. Resistance training combined with aerobic training in the elderly improves muscle strength and functional performance compared with aerobic training alone. **Keywords:** Resistance training; Seniors; Force; Functional performance in the elderly.

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