

Effect of the Velocity Resistance Training on Muscular Fitness and Functional Performance in Older Women

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Abstract : Objective: Regarding effects of training velocity on strength in the functional condition of older adults controversy exists. The purpose of this study was to examine the effects of a twelve-week strength training program (PE) performed at high speed (GAV) versus a traditionally executed program (GBV), on functional performance, maximum strength and muscle power in a group of older adult women. Methodology: 86 women aged between 60-81 years participated voluntarily in the study and were assigned randomly to the GAV (three series at 40% 1RM at maximum speed, with maximum losses of 10% speed) or to the GBV (three series with three sets at 70% of 1RM). Both groups performed three weekly trainings. The maximum strength of upper and lower limbs (1RM), prehensile strength, walking speed, maximum power, mean propulsive velocity (MPV) and functional performance (senior fitness test) were evaluated before and after the PE. Results: Significant improvements were observed ($p < 0.05$) in all the tests in the two groups after the twelve weeks of training. However, the results of GAV were significantly ($P < 0.05$) higher than those of the GBV, in the tests of agility and dynamic equilibrium, stationary walking, sitting and standing, walking speed over 4 and 6 meters, MPV and peak power. In the tests of maximum strength and prehensile force, the differences were not significant. Conclusion: Strength training performed at high speeds seems to have a better effect on functional performance and muscle power than strength training performed at low speed.

Keywords : power training, resistance exercise, aging, strength, physical performance, high-velocity, resistance training

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