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ABSTRACT 131

Effects of aging on muscle strength and functional activities in male and female subjects

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Background. Aging is associated with the loss of muscle strength and difficulties of functional activities.

Objectives. This study was conducted to investigate effects of aging on muscle strength and functional activities. A total of 373 male and 371 female subjects participated in this study. Among male subjects, 105 were between the age of 40 and 49 years old, 110 between 50 and 59, 101 between 60 and 69, 47 between 70 and 79, and 10 between 80 and 89. Among female subjects, 106 were between the age of 40 and 49 years old, 109 between 50 and 59, 100 between 60 and 69, 48 between 70 and 79, and 8 between 80 and 89.

Methods. The muscle strength of bilateral hip flexors, knee extensors and ankle plantar flexors were measured by hand-held dynamometer. The functional activities including functional reach, one leg standing, Berg balance, timed up and go and alternating stair stepping were also measured.

Results. The abilities for functional reach, one leg standing, balance and the up and go task were all significantly decreased after the age of 70 as compared with the age group of 40 to 49 in the male group. The abilities for functional reach, balance, the up and go task, and alternating stair stepping were significantly decreased after the age of 60 as compared with the age group of 40 to 49 in the female group. However, the muscle strength did not change in parallel with the change of functional activities in either the male or female group

Conclusions. We have noted functional activities were decreased earlier in female subjects than male subjects, but muscle strength and functional activities did not change in parallel. Therefore, it is important to implement functional activities in addition to strengthening exercise to maintain functional levels of the geriatric population.

Key words: Aging, Muscle strength, Functional activity