

Association Of Muscle Power With Functional Status In Community-Dwelling Elderly Women

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BACKGROUND:

Muscle power output is a product of the force and velocity of a muscle shortening (concentric contraction). Loss of power has been measured at 3.5% per year, far exceeding the 1.5% per year that has been reported for declines in strength with age. Therefore, power may be more directly related to impaired physical performance than muscle strength in elderly persons.

OBJECTIVE:

This study used baseline data collected as part of a 1-year randomized controlled trial of combined strength, power, and endurance training with 80 elderly woman (74.8 ± 5 yr) to test the hypothesis that peak muscle power is closely associated with self-reported functional status. The subjects functional status was assessed by self-report using the NHANES I questionnaire. Additional variables of strength, muscle power, muscle endurance, Vo2 Peak, depression and cognitive status were measured using 1RM, maximum number of repetition, treadmill test, Geriatric Depression Scale and the Mini-Mental State Exam respectively.

RESULTS:

Analyzing each variable individually, functional status at baseline was related to physiologic capacity, habitual physical activity level, neuropsychological status, and medical diagnosis. Leg power had the strongest correlation to self-reported functional status than any of the physiological factors tested. Additionally leg press power and habitual physical activity level were the only two factors that contributed independently to functional status, accounting for 40% for the variance in functional status.

SUMMARY:

A significant amount of research has been done on the effects of increased strength on functional status of older adults. However, this study highlights the importance of power to the functional status of community dwelling elderly women. Leg power was the strongest predictor of self-reported functional status in elderly women. Habitual physical activity also significantly impacted functional status.

KEISER PIECES USED:

Chest Press, Upper Back, Leg Press and Hip Abductor

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