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MUSCLE STRENGTH AND COGNITION IN AGING MEN AND WOMEN: THE DR'S EXTRA STUDY

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Objectives:

Prospective studies have found a positive association between muscle strength and cognition. However, data are mainly based on studies about the association of handgrip strength with cognition. It has been suggested that handgrip strength may not fully capture the association of muscle strength with the risk of cognitive decline. Our aim was to study whether comprehensively measured (upper and lower body) muscle strength is more sensitive than handgrip strength alone in indicating the association of muscle strength with cognition.

Methods:

Study population included 333 individuals, 57-78 years of age. Handgrip strength was tested using the handheld dynamometer. Whole body muscle strength was tested with air resistance equipment and sum scores were calculated for upper body and for lower body separately. Cognitive function was assessed using Consortium to Establish a Registry for Alzheimer's Disease (CERAD) neuropsychological test battery. We calculated CERAD Total score and sum scores for six cognitive domains: Total Recall, Immediate Memory, Delayed Memory, Verbal Performance, Visual Performance and MMSE.

Results:

Handgrip strength was associated neither with CERAD Total nor with cognitive domain scores. Upper body muscle strength was positively associated with CERAD Total (p=0.02), Total Recall (p=0.02), Verbal Performance (p=0.05) and MMSE (p=0.05), adjusted with handgrip strength. The lower body muscle strength was associated with cognition similarly with upper body muscle strength.

Conclusions:

Muscle strength is associated with cognitive function in older men and women. Measuring handgrip strength alone may not be enough to describe the association.