Title: Associations between functional autonomy and physical capacities for older adults having successful aging: Gender-specific analysis from the NuAge study

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Abstract:

Background: Many older adults will experience a decrease in the physical capacities. Such decrease might be associated with diminished functional autonomy. However, little is known about which physical capacities are best associated with functional autonomy in older adults having a successful aging. ***Objective***: This study aimed to examine the associations between functional autonomy and physical capacities for aged women and men. ***Methods***: This cross-sectional study consists of secondary analyses of the observational longitudinal study NuAge. The "Functional Autonomy Measurement System" (SMAF) was used to evaluate the functional autonomy of 1278 participants. Physical capacities (test) measured were : biceps and quadriceps strength (dynamometer Microfet), the handgrip strength (Martin Vigorimeter), balance (Unipodal Balance), position change + walking (Timed Up and Go), normal and fast speed walking (four meter walking speed) and changing position (Chair-Stands). Correlation and multiple linear regression analyses were performed while controlling for age, depressive symptoms and body composition. ***Results***: Both women (n = 662) and men (n = 616), aged 73 years on average, had a mild to moderate loss of functional autonomy. For women, higher level of functional autonomy was best explained by greater unipodal and position change + walking, and greater biceps strength ($R^2 = 0.31$; $p \leq 0.01$). For men, higher level of functional autonomy level was best explained by greater dominant unipodal balance and faster walking pace ($R^2 = 0.12$; $p \leq 0.01$). **C*onclusion***: This study revealed that no physical test taken alone can estimate functional autonomy so it is important to use functional tests.

Keywords : Functional autonomy, physical capacities, SMAF