

Paper Category:	Diagnosis and Aetiology
Paper Title: (Arial Font; 14 Pt Size)	Reduced strength and fat free mass are associated with slips but not trips in older people
Abstract Body: (Arial Font; 12Pt Size)	<ul style="list-style-type: none"> • Background • Objectives • Method • Results • Discussions and Conclusions
<p>(Maximum word limit - 300 words)</p> <p>Background Lean body and fat mass have been inconsistently associated with adverse outcomes including falls. However, it has not been investigated whether these body composition measures, as well as strength and gait speed are related to different fall types.</p> <p>Objectives This study sought to determine the relationship between strength and body composition measures to the most common fall types (slips and trips).</p> <p>Methods 119 community-dwelling older adults (age 72.6 ± 5.6 years, body mass index 26.5 ± 4.5, 73% women) with no neurological deficits or osteoporosis were recruited for this cross-sectional study. Body composition was assessed via bioelectrical impedance analysis, providing fat free mass (FFM) and fat mass (FM). Appendicular lean mass (ALM), percent FFM and FM relative to body weight and phase angle were calculated, with strength (handgrip and knee extension), and usual gait speed also recorded. Unpredictable slips and trips were induced whilst participants walked on a walkway. Inability to control slip/trip recovery was measured by peak loading of an overhead safety harness and expressed as a percentage of body weight. Pearson correlations were used to determine the relationship between sarcopenia components and slip/trip harness loading.</p> <p>Results Slip harness loading was positively correlated with %FM ($r=0.215$, $n=94$, $P=0.038$), and negatively correlated with %FFM ($r=-0.215$, $n=94$, $P=0.038$), ALM ($r=-0.212$, $n=90$, $P=0.045$), phase angle ($r=-0.259$, $n=91$, $P=0.013$), handgrip strength ($r=-0.239$, $n=115$, $P=0.01$) and knee extension strength ($r=-0.228$, $n=115$, $P=0.014$). Trip harness loading was positively correlated with gait speed ($r=0.387$, $n=117$, $P<0.001$).</p> <p>Conclusions Body composition (lower FM and higher FFM/ALM) and reduced strength were associated with poorer slip recovery. In contrast, only faster gait speed was associated with poorer trip recovery. Therefore, strength and lean body/fat mass may influence fall types differently, potentially explaining the lack of associations between body composition measures and falls when considered as a unitary outcome.</p>	

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