



## Postural control and cognitive decline in older adults: Position versus velocity implicit motor strategy

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Résumé en anglais	<p>The present study explored the impact of cognitive decline on postural control strategies in older adults with and without cognitive decline from mild cognitive impairment (MCI) to mild-to-moderate Alzheimer disease (MMAD). We hypothesized that the cognitive decline affected the postural control leading to higher bounding limits of COP velocity dynamics. Based on a cross-sectional design, 175 non-faller older adults were recruited in Angers University Hospital, France, including 50 cognitively healthy individuals [CHI] (mean age 76.42 +/- 4.84 years; 30% women), 64 age- and body mass index-matched participants with MCI (mean age 77.51 +/- 6.32 years; 39% women), and 61 age- and body mass index-matched participants with MMAD (mean age 78.44 +/- 3.97 years; 62% women). For all data collection of postural sway, the participants were asked to maintain quiet stance on force platform. The postural test consisted of two trials of quiet stance, with eyes open and with eyes closed. The COP parameters were mean and standard deviation (SD) of position, velocity and average absolute maximal velocity (AAMV) in anteroposterior and medio-lateral directions. Overall, the analysis concerning all COP parameters revealed a significant main effect of cognitive status on velocity-based variables, with post hoc comparisons evidencing that SD velocity and AAMV increased with cognitive impairment. The current findings suggest an active control (or corrective process) of COP velocity dynamics for CHI, whereas MCI and MMAD are affected by COP movements. (C) 2013 Elsevier B.V. All rights reserved.</p>
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