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Session 152 - Motor Coordination and Bimanual Control

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152.17 / JJ24 - The effect of coordination complexity on reaction time is affected by age in a choice multi-limb reaction time task

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S. Verstraelen: None. **K. Cuypers:** None. **R.L.J. Meesen:** None.

Abstract

Introduction Healthy aging is known to be associated with deterioration of at least some motor functions, such as slowing of reaction times (RT). While previous research has mainly focused on age-related declines in RT by the use of simple uni- or bimanual RT paradigms, the effect of age on RT in more complex motor tasks is less investigated. The aim of the current study was to determine whether the effect of age on RT is dependent on coordination complexity. **Methodology** 41 young adults (mean age, 19.7 years; range, 18-23 years; 21 females) and 35 older adults (mean age, 72.8 years; range, 64-84 years; 18 females) voluntarily participated in the study. As RT is considered to be a measure for the speed of central processing, a choice multi-limb reaction time task (MUL-RT) is used to detect possible differences between groups. During this task, the participant is instructed to lift one, two, three or four limbs as quickly and accurately as possible, in accordance to what is indicated by the visual stimulus. **Results** Results revealed that the effect of coordination complexity on RT differs between age groups. Older adults showed a more pronounced increase in RT in the more complex conditions compared to less complex conditions than younger adults did. **Conclusion** These results suggest that the relationship between RT and coordination complexity in a choice MUL-RT task is affected by age. The current behavioural study might provide new insights for future studies, investigating how aging affects the neural interactions between the four limb presentations in the context of motor planning.