

University of Groningen

Preservation of motor flexibility in healthy aging

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PROPOSITIONS

Belonging to thesis:

Preservation of motor flexibility in healthy aging

Flexibility in joint coordination is unaffected by age and task constraints
in two fundamental activities of daily living

1. Flexibility in joint coordination is retained in old adults during reaching, sit-to-stand and possibly other functional motor tasks. *This thesis.*
2. The interaction between age-related deficits in neuromuscular functions with the requirements of a motor task and the actual environment determines the extent of observed flexibility in joint coordination. *This thesis.*
3. During sit-to-stand movements flexibility in joint coordination increases in old adults only when operating at the maximum of the available muscle strength. *This thesis.*
4. Adaptations in movement kinematics rather than flexibility in joint coordination mediates task success during goal directed reaching movements in young and old adults. *This thesis.*
5. To establish whether flexibility in joint coordination is employed by old adults to guarantee sit-to-stand stability we need to increase task difficulty until failure. *This thesis.*
6. To better understand how age-related deficits in muscle strength and balance affect flexibility in joint coordination, longitudinal analyses on an individual rather than group level should be performed. *This thesis.*
7. There is no “good” or “bad” variability as long as we hit the target. *This thesis.*
8. The goal of motor control is NOT: “...to decipher software in the brain that has to control the poorly designed body”. The goal of motor control is: “...to find a set of laws of physics that brings about observed patterns of physiological and behavioral variables”. *Latash 2012.*
9. “Continuous effort – not strength or intelligence – is the key to unlocking our potential”. *Winston Churchill.*
10. “Man wird nicht älter sondern besser”. *Theodor Fontane.*