



Séminaire ISIR
Jeudi 28 novembre 2019 à
11H10

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Deficits of hand dexterity following stroke: online control and prediction

Abstract : Stroke frequently impairs the function of the contralateral hand. Apart from classical clinical tests such as the Pegboard-Test, tests of more elementary aspects such as diadochokinesia or visuomotor tracking and more recently also tests of more functional aspects such as grasping, lifting and moving objects have been used to characterize the deficits. We combined the tests into one battery in a cohort of neurological patients to understand the associations between the tests and to predict the performance in more complex tasks such as the Jebsen-Taylor hand function test. Apart from online control, the ability to predict and anticipate the environmental constraints is of utmost importance for dexterous and skilled motor action. We tested the hypothesis that similar to apraxia, the motor dominant left hemisphere is important in predictive fine motor control. To that aim we tested the ability to produce anticipatory finger forces during various object manipulation tasks in stroke patients with either left or right brain damage using the non-paretic ipsi-lateral hand. Interestingly, we found a strong task dependency of impairments.

Short bio : Joachim Hermsdörfer studied engineering and received his PhD at the Institute for Medical Psychology in the Ludwig-Maximilians-University in Munich in 1993. He headed the research group “Sensorimotor Disturbances” at the Clinical Neuropsychology Research Group in the Hospital München-Bogenhausen. In 2010 he was appointed as Full Professor and Chair of Human Movement Science in the Faculty of Sports and Health Sciences at the Technical University of Munich. His main interest is sensorimotor-control in healthy individuals and in patients with neurological diseases using behavioral as well as neuroimaging approaches.

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