**Conclusion.**—A clinical trial, a comparative of superiority, monocentric, in two parallel groups is in included phase. Objective: show the superiority of an approach to prevention of shoulder pain of patients post-stroke, in stroke unit.

**Further reading**


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**CO48-004-e**

**Bimanual coupling in stroke patients and its applications for rehabilitation in occupational therapy**

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**Keywords:** Stroke; Bimanual coupling; Rehabilitation

**Background.**—Although the majority of functional activities implicate both upper-limbs, the assessment and rehabilitation of bimanual synergies remain largely neglected following a cerebrovascular accident (CVA). This issue is notably important knowing that more than half of stroke patients suffer from chronic functional limitations concerning mainly manual activities.

**Objectives.**—Bimanual behavior is primarily characterized by the presence of a spontaneous coupling between the limbs. This coupling is observable via the presence of spatio-temporal interactions between the kinematics of each limb. In stroke patients, many questions remain regarding, on the one hand, the conditions according to which such coupling persists and, on the other hand, how it could be eventually restored. The aim of our study (in progress) is to provide some answers to these questions.

**Methods.**—The present study is a monocentric prospective cohort. Patients were recruited in their sub-acute phase (> 2 months). They had no major executive functions deficits. Following an initial phase of traditional rehabilitation, patients underwent a specific rehabilitation program for a period of 6 months. The rehabilitation program consists in warming-up unimanual exercises, followed by bimanual exercises designed to stimulate the expression of coupling. It includes also bimanual exercises that were inspired from daily living activities.

Assessment sessions are planned at pre-, mid-, and post-rehabilitation. An additional assessment session is also scheduled following a retention period. Assessments included a kinematic testing wherein kinematic variables were acquired via a digitizer, and a clinical evaluation including functional tests.

**Results.**—Preliminary results show an alteration in bimanual interactions following stroke, which related to the severity of the lesion. This alteration seems, however, to be more or less reversible following a proper intervention.

**Discussion.**—We suggest a simple protocol whose aim is to re-establish bimanual coupling and readapt functional synergies involving upper-limbs. Our preliminary results are encouraging and open doors to further investigations.


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**Integration and evaluation of a lexical prediction engine in a virtual keyboard support on text input for people with mobility impairments**

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**Purpose.**—Information technologies play a large role in both the social and professional lives of individuals. Text input using assistive devices allowing computer access for disabled people is often slow. The aim of this study was to evaluate the effect of a dynamic on-screen keyboard (custom virtual keyboard [CVK]) and a word prediction system (Sybille) on text input speed in patients with functional tetraplegia.

**Methods.**—Ten patients tested four modes in their homes (Standard, Standard + Word, Dynamic and Dynamic + Word) for one month before choosing one and continuing to use it for another month.

**Results.**—The results suggested that the effect of the word prediction system on text input speed was very variable across subjects. Only the patient who used a scanning system appeared to benefit. The same was found for the dynamic keyboard.
**CO48-008-e**  
**Comparing pre- post-treatment effects of constraint induced movement therapy (CIMT) in a patient after stroke: A qualitative analysis of performance in instrumental activities of daily living using the situational assessment AMPS**  
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**Keywords:** Constraint induced movement therapy (CIMT); AMPS; Sensory motor hemiplegia; Motor rehabilitation; Measurement; Integration of the paretic limb.  

**Introduction**—According to most of the studies, 15% of patients recover the use of their paretic limb in the first 3 to 6 months after stroke. Upper limb paresis post-avc decreases the performance in activities of daily life. Several studies have demonstrated evidence of effectiveness in using CIMT (Taub, 1993, 1994; Sirtori et al., 2009). However, few situational tools are used to measure actual integration of the paretic limb in ADL following CIMT program.  

**Objective**—To observe the transfer in ADL of functional improvements following CIMT in applying a situational measure.  

**Method**—We present the case of a 63-year-old patient with a right sensitivo-motor hemiparesis, without aphasia, at three months after stroke. Following a standard rehabilitation, we practice two phases of 3 weeks of CIMT interrupted by two weeks of traditional rehabilitation.  

**Outcome measurements**—The outcome measurements are practiced at the beginning and at the end of each phase: motor assessment, Box and Block Test, Purdue pegboard, Barthel (IB), FIM. The situational measurement namely the AMPS (Fisher 2005), is a validated assessment offering 115 standardized daily living tasks. The assessment consists of a motor and a procedural scales. The AMPS is practiced at the beginning and at the end of phase 2 and 8 months post-CIMT?  

**Results**—After CIMT, the patient presents significant improvements in all functional tests: motor assessment, wrist and fingers (2+ to 4). Number of cubes/minute at the Box and Block Test (9 to 21). The number of threaded rods strung/minute at Purdue Pegboard (1 to 7). The IB (40 to 65), FIM (82 to 110). The AMPS shows a substantial but non-significant improvement (−1.86 to 1.47 logits) but shows no change in the procedural scale (0.33 to 0.33 logits). At eight months post-CIMT, the patient shows a significant change in the motor scale (−1.47 to −0.5) but no change on the procedural scale.  

**Discussion**—Actually these results show the relevance in measuring transfer of the rehabilitation experiences to ADL using validated situational assessment. Using AMPS allows a qualitative detailed analysis of the motor and procedural performance in real ADL situations.