was shown between the two groups for gait velocity, step length, step width, or simple support time.  

**Conclusion**—It seems that quantified gait parameters are not relevant evaluation criteria to assess the efficiency of a treatment with botulinum toxin type A. This evaluation must be done using satisfaction scales fulfilled by the patient, linked with therapeutic objectives that are well specified before the treatment, with the PRM doctor.


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**Neurophysiological features of motor imagery with applications in motor rehabilitation**

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**Keywords:** Motor imagery; Quadiplegia; Grasping; Motor rehabilitation; Tenodesis

**Introduction**—Motor imagery is the mental representation of a movement without any concomitant execution. One of the main features of motor imagery is to share the same properties with actual execution, in particular, the principle of isochrony. Therefore, the aim of this presentation is to describe how motor imagery can be incorporated into the rehabilitation process of patients with tetraplegia. For over 10 years, the literature describes significant advances in the rehabilitation of motor functions through motor imagery, whether concerning central (brain, spinal cord) or peripheral lesions.

**Comments**—We focus on grasping illustrated by two clinical cases where motor imagery was integrated into conventional physiotherapy and occupational therapy management. The first patient had a level C6-C7 lesion and was able to re-learn to grasp objects with the tenodesis effect. The motor imagery work was mainly focused on motor function of daily life. We showed an improvement in movement time, precision and range of motion. The second patient exhibited a C5-C6 spinal cord lesion, leading to the impossibility of arm extension. After surgery, i.e. the transfer of the distal insertion of the biceps tendon on the triceps, the rehabilitation of the extension of the forearm on the arm and the seizure of an object by tenodesis effect was undertaken with a protocol comparable to the first patient. We observed an improvement in kinematic parameters with decreased movement times and reduced variability of arm trajectory. Progress remained stable during a retention test at 1 month.

**Discussion**—The role of motor imagery is beneficial in addition to conventional rehabilitation. It strengthens motor programs through brain plasticity and also helps to learn new ones. Physical workload could thus be reduced, especially when eliciting fatigue and pain. The quality of the imagery work remains to be evaluated. A set of tests is used to evaluate the vividness of the mental image, the maintenance of attention during the work session and a level of physiological arousal consistent with a sustained mental work. A set of tests is used to evaluate the vividness of the mental image, the maintenance of attention during the work session and a level of physiological arousal consistent with a sustained mental work. We currently work on a larger maintenance of attention during the work session and a level of physiological arousal consistent with a sustained mental work.

**References**


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**Isokinetic program in stroke survivors with chronic upper limb hemiparesis**

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**Keywords:** Stroke; Chronic hemiparesis; Isokinetic muscular strengthening; Upper limb

**Purpose**—To evaluate the effects of isokinetic strength training combined with conventional rehabilitation on hemiparetic arm motor function in patients with chronic stroke.

**Patients and methods**—Eight patients with persistent hemiparesis 6 months after stroke were included in a 6 weeks rehabilitation program. Rehabilitation sessions occurred 3 times a week during 6 weeks. The program involved isokinetic muscle strengthening in CPM mode of flexor and extensor muscles of the elbow and wrist, associated with a conventional neurological rehabilitation of the affected upper limb. The evaluation was made before and just after the program (18 sessions) bearing on 3 points: clinical evaluation, isokinetic test and functional evaluation (Fugl-Meyer upper limb scale [FMS] and Block and Box test [BBT]).

**Results**—At the beginning of the study, the isokinetic evaluation highlighted a speed-dependent muscular deficit on the muscular groups tested. After 18 rehabilitation sessions we noted a significant increase in FMS upper limb scale (+18%, P < 0.01) and in BBT score, an increase in muscle strength without any increase in upper arm spasticity.

**Discussion**—The loss of strength is considered as a major limiting contributor to disability after stroke (Canning, 2004). Some studies present arguments in favour of an isokinetic training of the paretic upper limb, by highlighting deteriorations of the characteristics of the muscular contraction. It is expected that isokinetic training could improve both magnitude and time-dependent...