Mental rotation of body parts is performed through inner simulation of actual movements, and is likely to rely upon cortical and subcortical systems (e.g. motor and premotor areas and basal ganglia) involved in motor planning and execution. Studies indicate that sensory and motor deficits, such as for example pain, limb amputation or focal hand dystonia, bring about a specific impairment in mental rotation of the affected body parts. Here we explored the ability of patients affected by idiopathic cervical dystonia (CD) to mentally rotate affected (neck) and unaffected (hands and feet) body districts. The experimental stimuli consisted of realistic photos of left or right hands or feet and the head of a young men with a black patch on the left or the right eye. As non-corporeal stimulus the front view of a car with a black patch on the left or the right headlight was used. The stimuli were presented at six different degrees of orientations. Twelve CD patients and 12 healthy participants were asked to verbally report whether the hands or feet were left or right, or whether the patch was on the left or the right eye or headlight. Reaction times and accuracy in performing the laterality tasks on the four stimuli were collected. Results showed that CD patients are slow in mental rotation of stimuli representing body parts, namely hand, foot and head. This abnormality was not due to a general impairment in mental rotation per se, since patients’ ability to rotate a non-corporeal object (a car) was not significantly different from that of healthy participants. We posit that the deficit in mental rotation of body parts in CD patients may derive from a defective integration of body- and world-related knowledge, a process that is likely to allow a general representation of “me in the external world”. 
Perception of limb position and motion is abnormal in Parkinson's disease (PD). Despite the fact that the processing of proprioceptive inputs is inherently temporal, most studies have assessed spatial aspects of proprioception in PD patients. Here, we use a recently described method to test whether deficits also exist in temporal discrimination of proprioceptive inputs. We induced index finger abduction or wrist flexion through percutaneous electrical stimulation of the motor point of the first dorsal interosseous muscle (FDI) or the flexor carpi radialis (FCR), respectively. Twelve patients with unilateral bradykinetic-rigid PD and 12 healthy subjects were asked to report whether pairs of stimuli separated by different time intervals produced single or double index finger abduction movement or wrist flexion. The shortest interval at which subjects reported two separated movements was considered as temporal movement discrimination threshold. Results showed that thresholds were significantly higher in PD patients than in control subjects for both FCR and FDI muscle, thus demonstrating for the first time that temporal proprioceptive processing is altered in PD.

ORGANIZZAZIONE DI EVENTI SCIENTIFICI

- Il Prof. Carlo Capelli ha contribuito come organizzatore e chairman allo svolgimento del convegno Lo sport della vela e l'Università, Salone Nautico di Roma, Roma 10-11 Marzo. Il convegno aveva lo scopo di illustrare ad organi federali e tecnici della Federazione Italiana Vela le opportunità offerte dal mondo accademico nei campi della ricerca applicata allo sport velico, della formazione di quadri tecnici e della consulenza psicologica agli allenatori ed agli atleti.