

Executive and social emotional functioning in patients with CHI

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Some patients who have sustained a closed-head injury (CHI) suffer from a so called dysexecutive syndrome (DES). This closely resembles what was once called the " frontal lobe syndrome", but Baddeley and Wilson (1988) argued that specification of a syndrome in terms of localisation is unfortunate and potentially misleading. They therefore introduced the term dysexecutive syndrome, but still acknowledge that the prefrontal cortex plays a vital role in executive functioning. In general, this syndrome is characterized by a lack of adequate behavioral control. More specifically, it can encompass both deficits in cognitive aspects of the executive functions, concerning planning and regulation of complex goal-directed task behavior, as well as deficits in emotional/behavioral aspects of the executive functions, concerning regulation and control of complex social-interpersonal behavior. Cummings (1995) states that impairments in executive functions can result from disruptions in different frontal-subcortical circuits: damage in the dorsolateral prefrontal subcortical circuit produces disorganized task behavior, whereas damage in the orbitofrontal subcortical circuit produces disturbances in emotional regulation and social cognition.

An important element of social cognition is theory of mind (ToM): the ability to form a representation of other people's mental states. Some authors (Stone, 2000, Baron-Cohen, 1995) suggest that theory of mind is a modular cognitive capacity, underlied by a neural circuit of which the orbitofrontal, the medial and dorsolateral prefrontal cortex as well as the amygdala make part of. Others (Frye, 1995) argue that mental state information is processed by domain-general cognitive functions, and that ToM is thus merely another executive function. In a recent study of Milders and colleagues (2003) evidence was found for impaired ToM after traumatic brain injury. I will present data from a study in which performance of CHI patients on ToM tests was related to performance on tests for executive functions and for perception of emotional expressions.

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