

Scientists identify predictors of prospective memory deficit post TBI

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Kessler Foundation scientists have identified predictors of prospective memory impairment after traumatic brain injury (TBI). Findings were published on July 28 by the *Journal of the International Neuropsychological Society*. The article, "Rule monitoring ability predicts event-based prospective memory performance in individuals with TBI," is authored by Jessica Paxton, PhD, and Nancy Chiaravalloti, PhD, of Kessler Foundation. This is the first study to examine the role of rule monitoring, an executive function, post-TBI.

Prospective memory refers to the ability to remember events that will occur in the future, i.e., a doctor's appointment; a medication schedule. This ability, also referred to as 'remembering to remember' is often impaired following TBI, creating challenges in performance of activities of daily living. Little research has been done, however, on the relationship between the cognitive processes involved in deficits in prospective memory and retrospective memory in individuals living with TBI.

"It has been hypothesized that persons with TBI who have impaired retrospective memory may rely on a specific [executive function](#) called rule monitoring in the retrieval process for prospective [memory tasks](#)," noted Dr. Chiaravalloti. "We looked the relationship between prospective memory and two aspects of executive functioning – rule monitoring (the ability to avoid errors on executive function tests), and total achievement on tests of executive function."

Participants were 45 individuals who were at least one-year post moderate/severe TBI. They were evaluated with the Rivermead Behavioral Memory Test. Results showed variability in the cognitive processes used in prospective memory tasks, most likely due to differences in retrospective memory abilities. "We found that retrospective [memory performance](#) correlated with total executive function, but not rule monitoring," said Dr.

Chiaravalloti. "This may indicate that rule monitoring facilitates more accurate prospective memory in individuals with TBI."

These results have implications for cognitive rehabilitation research and care. Rule monitoring, which is not commonly tested during neuropsychological evaluations, is a measure that should be included in clinical assessments of memory performance in this population. Future research needs to address the component executive processes involved in rule monitoring and performance on [prospective memory](#) tasks.

More information: Yael Goverover, Nancy D. Chiaravalloti: The impact of self-awareness and depression on subjective reports of memory, quality- of-life and satisfaction with life following TBI. *Brain Injury*. Feb 2014. [DOI: 10.3109/02699052.2013.860474](#)

Provided by Kessler Foundation

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