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Effects of Traumatic Brain Injury (TBI) on Cognitive Control Processes

Kristen Kanoff

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This behavioral study aims to characterize the effects of traumatic brain injury (TBI) on the ability to accurately and efficiently make response selections in the presence of conflicting information. Deficits in this area of executive cognitive control may have devastating effects on everyday functioning. This study utilizes the Simon task, a choice–reaction time paradigm, in an attempt to measure the ability of subjects to control impulsive behaviors. Delta plots will be constructed to determine response selection, and conditional accuracy functions will be plotted to determine strength of response capture. The primary hypothesis under investigation states that subjects with a history of TBI will show deficits in the ability to suppress the selection of an incorrect response when compared to healthy control participants. It is also hypothesized that TBI participants who demonstrate a greater deficit in inhibitory control will rate higher on an impulsivity scale. Ratings will be obtained from the Barrat’s Impulsiveness Scale, a self–report questionnaire. The results of this study may be important for the development, implementation, and monitoring of the effectiveness of cognitive rehabilitation strategies following traumatic head injuries.