

## 88 Considering Lateralization and Localization of Neurosurgical Intervention for Predicting Treatment Response to Computerized Cognitive Remediation (CCR) Targeting Attention and Working Memory: A Case Series

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**Objective:** Lateralization and localization of neuropathology helps determine the extent to which eloquent cortex and diseased brain tissue share loci, important information for neurosurgical decision-making, and predicting neurocognitive outcomes. Emerging data suggest that lateralization and localization can inform specific neurorehabilitation approaches following acquired brain injury (ABI). In recent years, computerized cognitive remediation (CCR) of attention and working memory (WM) has been included among treatment guidelines to enhance cognition in post-acute recovery following ABI. Although CCR has shown promise for improving attention and executive functioning in ABI, it is unknown how treatment response may be predicted by locus of ABI. Even less is known about the effects of CCR following neurosurgery. The current study explores neurosurgical lateralization and localization as potential variables for predicting treatment response to CCR.

**Participants and Methods:** Adult patients with a variety of neurological diagnoses (N = 17; ~47% women) completed a full course of Cogmed Working Memory Training (CWMT) s/p neurosurgical intervention. All participants engaged in 30 sessions of CWMT over eight weeks, as well as neuropsychological (NP) assessment at pre-training baseline, immediate post-training, and at 3-month follow-up. Objective and subjective indices of attention, working memory, executive functioning, and emotional well-being were evaluated at three time-points. Neurosurgical loci included left-hemisphere frontal, temporal, and temporoparietal lobes, as well as right-hemisphere frontal, frontotemporal, and temporal lobes.

**Results:** NP data were reviewed and yielded a clinical impression of cognitive and affective functioning for a cohort of patients with heterogeneous diagnoses (e.g., brain tumor, epilepsy, NPH). Preliminary NP findings suggested that treatment response to CCR for WM was consistent with extant literature on brain-behavior relationships according to lateralization and localization of neurosurgical intervention.

**Conclusions:** Neurosurgical patients experience neurocognitive and affective dysfunction that may respond well to cognitive rehabilitation (CR) that includes CCR. Additionally, it is possible that lateralization and localization of surgical intervention may contribute to individual differences in treatment response. Further neurorehabilitation research is warranted to identify patients most likely to benefit from CCR and better tailor CR modalities to optimize recovery s/p neurological surgery.

**Categories:** Cognitive Intervention/Rehabilitation

**Keyword 1:** brain injury

**Keyword 2:** cognitive rehabilitation

**Keyword 3:** laterality

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## 89 A Pilot Study of a Parent-Delivered Game-Based Cognitive Intervention in Children Born Preterm

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**Objective:** Preterm birth (gestational age < 37 weeks) is associated with delays in the development of executive functions and their precursors, including controlling attention and retaining task-relevant information. In the current study, we aim to examine the potential therapeutic effects of a novel cognitive tablet game, Dino Island (DI), and its implementation through a parent-delivered intervention program on cognitive development in preterm children.