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40 Performance validity in a presurgical epilepsy population

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Objective: To examine whether suboptimal performance as determined by formal validity testing would predict neurocognitive scores in a sample of 83 pre-surgical, non-litigating epilepsy patients.
Participants and Methods: Participants were 83 patients who underwent comprehensive outpatient neuropsychological testing as part as their evaluation as epilepsy surgery candidates. The sample consisted of 41 females and 42 males, with 72 patients identifying as White, 5 as Black, 2 as Hispanic, 1 as Asian, and 2 as other. Mean age was 36 (SD=12.4) mean FSIQ was 87 (SD=12.7), mean years of education of 12.9 (SD=2.1). Each patient's assessment included a stand-alone performance validity test (PVTs)—Word Memory Test (WMT), the Test of Memory Malingering (TOMM), or the Medical Symptom Validity Test (MSVT)—as well as two embedded measures of validity—the California Verbal Learning Test Forced Choice (CVLT FC) and WAIS-IV Reliable Digit Span (RDS). Pass/fail rates were analyzed, with valid performance being defined as pass score on at least two of the completed PVTs (N=73 Pass Effort group 86.9%; N=10 Failed Effort group 11.9%). Point-biserial Pearson correlations were conducted to determine the relationship between validity pass/fail status and WAIS-IV FSIQ, VCI, and PRI scores, CVLT-II Trials 1-5 Total T scores, CVLT-II Long Delay Free Recall z scores, WMS-III Logical Memory II T scores, BVMT Total Recall T scores, BVMT Delayed Recall T scores, and Trail Making Test (TMT) B T scores.
Results: Significant relationships were found between Failed Effort group and all neurocognitive scores except BVMT Total Recall. On average, the Failed Effort group obtained significantly lower FSIQ (M=76.57, SD=10.94), VCI (M=80.89, SD=16.03), PRI (M=81.00, SD=14.91), CVLT-II Trials 1-5 Total (M =34, SD=6.89), CVLT-II Long Delay Free Recall (M =-2.44, SD=1.43), WMS-IV Logical Memory II (M =4.83, SD=2.79), BVMT Delayed Recall (M=26.38, SD=6.41), and TMT B (M=29.70, SD=11.46) standard scores compared to the Pass Effort group (FSIQ M=88.09, SD=12.52; VCI M=92.13, SD=13.61; PRI M=91.14, SD=12.06; CVLT-II Trials 1-5 Total M=47.86, SD=12.02; CVLT- II Long Delay Free Recall M=-.44, SD=1.11; WMS-III Logical Memory II M=8.41, SD=3.17; BVMT Delayed Recall M=39.19, SD=12.66; TMT B M=39.34, SD=13.18). Correlation coefficients were r=-.266* (FSIQ), r=-.255* (VCI), r=-.271* (PRI), r=.361**(CVLT-II Total), r=-.474** (CVLT-II LDFR), r=-.298** (WMS-IV LM II), r=-.308** (BVMT DR), and r=-.240* (TMTB). All coefficients were significant at the .05 (*) or .01 (**) level.
Conclusions: Results suggest that pass/fail status on formal validity testing predicts depressed performance on a variety of neurocognitive measures. Therefore, predicting surgical outcome of resection/ablation (e.g., compensation of contralateral hemisphere) should not be based upon neuropsychological memory performance alone when there are failures on tests of engagement as memory scores have strong correlations to pass/fail status on formal validity testing. Overall, this emphasizes the importance of routinely integrating PVTs as part of pre-epilepsy surgery neuropsychological evaluations.

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Keyword 1: epilepsy / seizure disorders
Keyword 2: effort testing
Keyword 3: subarachnoid hemorrhage
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41 Characterizing the Cognitive Profile of Pediatric Insular Epilepsy

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Objective: Little research exists characterizing the neuropsychological profile of pediatric insular epilepsy. Accurate diagnosis of insular epilepsy is challenging due to difficulties localizing deep brain structures with current non-invasive neurodiagnostic tools, as well as seizure semiology that may mimic temporal, frontal, and parietal seizures for this patient population [1]. Therefore, we investigated trends across neuropsychological data to help characterize the cognitive profile of pediatric insular epilepsy. This is important because studies that could accurately characterize insular epilepsy into cognitive phenotypes could potentially provide supporting evidence for insular localization during epilepsy surgery work-up. The insula is situated underneath the temporal, parietal, and frontal opercula, and has a number of diffuse projections to key brain structures involved in language, executive functioning, motor coordination, and sensory function [2]. Therefore, we hypothesized that children with insular epilepsy will demonstrate particular weaknesses in language and executive functioning skills.
Participants and Methods: Retrospective medical records review identified 19 children with insular epilepsy who completed neuropsychological assessment (Age: *M*=8.2 years, *SD*=3.4) at Boston Children's Hospital. Insular epilepsy was defined by ictal insular localization on long-term monitoring EEG. The current sample includes 59% males and 41% females. The majority of participants (69%) had left sided lateralization and more than one seizure type (63%). MRI findings were widely distributed across frontal, temporal, and multiple lobes as well as insular and perisylvian brain regions. A lesion was identified on MRI findings for most participants (63%).
Results: Descriptive analyses showed that overall IQ (FSIQ: *M*=84, *SD*=12, range=68-102) fell in the Low Average range. Verbal and visual reasoning skills were equally developed in the Low Average range (VIQ: *M*=88, *SD*=12, range=70-104; PIQ: *M*=88, *SD*=16, range=53-117). Participants exhibited lower performance on speeded expressive language measures, including measures of phonemic fluency (*M*=5.5, *SD*=1.5, range=2-8) and semantic fluency (*M*=6.7, *SD*=2.5, range=3-11). With regard to executive functioning, reduced cognitive flexibility was observed on D-KEFS Trail Making Test (Trial 4, Number-Letter Switching: *M*=5.9, *SD*=4.9, range=1-12). Additionally, working memory skills fell in the Below Average range (WMIQ: *M*=77, *SD*=8.5, range=67-88).
Conclusions: Our results indicate that pediatric patients with insular epilepsy present with reduced scores across aspects of speeded expressive language and executive functioning, including working memory and cognitive flexibility. Additional research is needed to replicate these preliminary findings with a larger sample size and determine whether these trends in cognitive profile would help with seizure localization. Future research should investigate whether insular epilepsy has a clearly identifiable and distinct cognitive phenotype that could be helpful in differential diagnostic workup.

Categories: Epilepsy/Seizures
Keyword 1: cognitive functioning
Keyword 2: pediatric neuropsychology
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42 Social Problems in Childhood Epilepsy as it Relates to Overall Intellectual and Adaptive Functioning and Social Skills

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Objective: Previous studies have demonstrated a high prevalence of social and emotional problems in young adults with a history of childhood epilepsy, with social skill impairment hypothesized to play a significant role in these outcomes. Few studies have examined social skills within children with epilepsy and very few have examined this within the context of other neuropsychological and neurological variables. This study aims to examine the association between social problems and other relevant neuropsychological variables (IQ, adaptive functioning, social skills) within the pediatric epilepsy population.
Participants and Methods: Participants were 86 epilepsy patients between the ages 5 and 18 years of age who were referred for neuropsychological assessment as a part of

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