trials go on. Autistic youth with more restricted interests have difficulty with the first trial due to the shifting required when starting a new unfamiliar task. Additionally, youth with a greater focus on their own interests had more difficulty on cued recall indicating that these youth may have had trouble shifting when prompted to use semantic categories. Fewer challenges with transitions were a significant predictor of learning above and beyond age, gender, and diagnosis. Previous research has shown large discrepancies between parent-report and laboratory-based tasks in autistic youth. This project highlights two unique measures of different modalities that show similarities in their ratings emphasizing their potential as good representations of overall skills. Future research should utilize a larger sample size to continue to examine the role of flexible problem solving in working memory and learning in autistic youth.

Categories: Autism Spectrum Disorders/Developmental Disorders/Intellectual Disability
Keyword 1: autism spectrum disorder
Keyword 2: learning
Keyword 3: executive functions
Correspondence: Rebecca Handsman Center for Autism Spectrum Disorders, Childrens National Hospital rebecca.handsman@du.edu

---

3 Exploring the Relationship Between Cognition, Adherence, and Engagement in Compensatory Strategy Training in Mild Cognitive Impairment

Kayci L. Vickers, Jessica L Saurman, Felicia C. Goldstein
Emory University School of Medicine, Atlanta, GA, USA

Objective: Compensatory strategy training has been identified as a useful mechanism to improve everyday cognitive function among older adults with Mild Cognitive Impairment (MCI). Despite this, few studies have looked at cognitive factors that support adherence and engagement in these programs, which are key to maximizing benefit. The present study aimed to evaluate the relationship between cognition, adherence, and engagement during a group-based compensatory strategy training for people with MCI. We hypothesized individuals with better memory and executive function performance would show better adherence and higher engagement scores in cognitive training classes.

Participants and Methods: Twenty-five participants enrolled in Emory University's Charles and Harriet Schaffer Cognitive Empowerment Program (CEP) completed an 11-week compensatory strategy training group (CEP-CT). CEP-CT is adapted from Ecologically Oriented Neurorehabilitation to be suitable for people with MCI. Participants enrolled were on average 74.3 years old (SD= 5.4), 52% Male, primarily Caucasian (80%; 16% African American), and college educated (M= 16.5 years; SD= 2.7). All participants received clinical diagnoses of MCI prior to enrollment in the program. Participants completed multiple cognitive measures, including Montreal Cognitive Assessment (MoCA), Hopkins Verbal Learning Test (HVLT), Trail Making Test A & B (TMT), Number Span Forward (NSF) and verbal fluency (S-words and Animals). For all group sessions, class attendance (present vs. not present) was recorded for each participant and their care partner, and engagement ratings for participants were recorded by the facilitator on a 1 to 5 scale (higher scores indicate better engagement). Outcomes include adherence to cognitive training (percentage of sessions attended; M= 82% class attendance, SD= 18%) as well as the average engagement ratings across 11 weeks (M= 3.25, SD= .40).

Results: Bivariate Pearson correlations revealed that individuals who attended more classes also demonstrated better engagement in class, r= .44, p= .03. Class attendance was significantly related to performance on measures of memory and executive function (HVLT: r= -.42, p= .04; TMT-B: r= .69, p= .04), such that participants who performed worse on these measures attended more CEP-CT classes. Average engagement ratings were unrelated to cognitive performance.

Conclusions: Results did not support initial hypotheses, and instead indicate individuals with poorer performance on measures of memory and executive function had better adherence to CEP-CT classes, as measured by attendance. These results may indicate individuals experiencing cognitive difficulties are more likely to attend cognitive training classes. Subjective engagement ratings were unrelated to cognition; however, individuals who attended more sessions were more engaged in cognitive

training classes. Future areas of research include objective measurement of class engagement as well as the incorporation of nuanced adherence metrics to further elucidate the relationship between these factors and cognition in MCI.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: cognitive rehabilitation
Keyword 2: mild cognitive impairment
Keyword 3: dementia - Alzheimer's disease
Correspondence: Kayci L. Vickers, Emory University School of Medicine, kvicker@emory.edu

---

4 Associations Between Glycemia and Cognitive Performance in Adults with Type 1 Diabetes (T1D) using Continuous Glucose Monitoring (CGM) and Ecological Momentary Assessment (EMA)

Olivia H Wang[1], Miranda Zuniga-Kennedy[2], Luciana Mascarenhas Fonseca, PhD[1], Michael Cleveland, PhD[1], Zoë W. Hawks[3], Laneé Jung[3], Jane D. Bulger[4], Elizabeth Grinspoon, PhD[3], Shifali Singh, PhD[5], Martin Sliwinski, PhD[6], Alandra Verdejo[7], Ruth S. Weinstock MD PhD[4], Laura Germine, PhD[3], Naomi Chaytor, PhD, ABPP[1]
[1]Washington State University, Spokane, WA, USA. [2]Washington State University, Pullman, WA, USA. [3]McLean Hospital, Belmont, MA, USA. [4]SUNY Upstate Medical University, Syracuse, NY, USA. [5]McLean Hospital/Harvard Medical School, Belmont, MA, USA. [6]Penn State University, University Park, PA, USA. [7]Jaeb Center for Health Research, Tampa, FL, USA

Objective: Despite associations between hypoglycemia and cognitive performance using cross-sectional and experimental methods (e.g., Insulin clamp studies), few studies have evaluated this relationship in a naturalistic setting. This pilot study utilizes an EMA study design in adults with T1D to examine the impact of hypoglycemia and hyperglycemia, measured using CGM, on cognitive performance, measured via ambulatory assessment.

Participants and Methods: Twenty adults with T1D (mean age 38.9 years, range 26-67; 55% female; 55% bachelor's degree or higher; mean HbA1c = 8.3%, range 5.4% - 12.5%), were recruited from the Joslin Diabetes Center at SUNY Upstate Medical University. A blinded Dexcom G6 CGM was worn during everyday activities while completing 3-6 daily EMAs using personal smartphones.   EMAs were delivered between 9 am and 9 pm, for 15 days. EMAs included 3 brief cognitive tests developed by testmybrain.org and validated for brief mobile administration (Gradual Onset CPT d-prime, Digit Symbol Matching median reaction time, Multiple Object Tracking percent accuracy) and self-reported momentary negative affect. Day-level average scores were calculated for the cognitive and negative affect measures. Hypoglycemia and hyperglycemia were defined as the percentage of time spent with a sensor glucose value <70 mg/dL or > 180 mg/dL, respectively. Daytime (8 am to 9 pm) and nighttime (9 pm to 8 am) glycemic excursions were calculated separately. Multilevel models estimated the between- and within-person association between the night prior to, or the same day, time spent in hypoglycemia or hyperglycemia and cognitive performance (each cognitive test was modeled separately). To evaluate the effect of between-person differences, person-level variables were calculated as the mean across the study and grand-mean centered. To evaluate the effect of within-person fluctuations, day-level variables were calculated as deviations from these person-level means.

Results: Within-person fluctuations in nighttime hypoglycemia were associated with daytime processing speed. Specifically, participants who spent a higher percentage of time in hypoglycemia than their average percentage the night prior to assessment performed slower than their average performance on the processing speed test (Digit Symbol Matching median reaction time, $b = 94.16$, $p = 0.042$), while same day variation in hypoglycemia was not associated with variation in Digit Symbol Matching performance. This association remained significant ($b = 97.46$, $p = 0.037$) after controlling for within-person and between-person effects of negative affect. There were no significant within-person associations between time spent in hyperglycemia and Digit Symbol Matching, nor day/night hypoglycemia or hyperglycemia and Gradual Onset CPT or Multiple Object Tracking.