

**Results:** Difficulties with inhibition decreased across age in youth with SB according to mother, father, and teacher reports ( $p=.000-.007$ ). Mother and father reports of shifting problems decreased across age ( $p=.009$ ), while teacher reports showed no significant change ( $p=.799$ ). Working memory problems also significantly decreased over time, but only according to fathers and teachers ( $p=.004-.005$ ). Difficulties with planning/organizing remained stable across age for all reporters ( $p=.076-.935$ ). With regards to inattention, symptoms decreased across age according to mothers and teachers ( $p=.000-.017$ ), but not fathers.

**Conclusions:** Overall, inhibition, shifting, and inattention improved across age in this sample of youth with SB according to at least two reporters. Contrary to existing literature, working memory also improved over time in this sample. Planning/organizing was the only area of executive functioning that remained stable over time across reporters. These results support previous findings of improvements in behavioral regulation (i.e., inhibition, shifting), and stable, elevated planning/organizing difficulties. These findings also highlight the importance of considering different contexts and reporters' perspectives when examining change over time. Predictors of the development of executive dysfunction and inattention should be considered, as this information may aid with increased understanding of neuropsychological function in SB and identifying which individuals may be most likely to benefit from early intervention. Examining predictors may also help explain differences in working memory development demonstrated in the current study compared to extant literature.

**Categories:** Medical/Neurological Disorders/Other (Child)

**Keyword 1:** spina bifida

**Keyword 2:** executive functions

**Keyword 3:** attention

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## 79 Concordance Between Theorized Cognitive Profiles, Medical Risk Factors, and Clinical Diagnoses Within Preschool-Aged Children

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**Objective:** Early childhood is recognized as a critical window of rapid cognitive development. Unfortunately, many risk factors for atypical cognitive development may occur during this period, including genetic syndromes, congenital neuroanatomical malformations, pre- or perinatal injury, and neurological and medical disorders. The impact of these risk factors on cognitive functioning may not always map onto patterns typically observed in adults. Limited literature exists on the presentation of cognitive profiles within clinical populations in the preschool developmental period. The present study aimed to evaluate whether discrete a priori cognitive profiles consistent with common neurobehavioral syndromes emerge and are distinguishable on testing in early childhood in a mixed clinical sample. We also aimed to determine if there was a consistent association between known medical risk factors and resultant cognitive profiles.

**Participants and Methods:** Participants included 163 children aged 1-5 years ( $M=48.5$  months,  $SD=12.8$  months) referred for neuropsychological evaluation. The sample was predominantly male (67.5%) and White (72.9%), followed by other/mixed race (11.6%), Black (9.7%), and Latino/Hispanic (5.8%). Cognitive abilities assessed included broad intellectual abilities, verbal abilities, nonverbal abilities, attention, and executive functioning. Continuous test scores were transformed into categorical ranges of performance, with scores classified as "above average," "average," "below average," or "extremely low" to allow for profile classification. Theoretical clinical profiles consistent with common neurobehavioral syndromes were determined a priori by consensus among three authors (JK, AH, LM). Chi square tests of independence were conducted to compare membership across neurobehavioral diagnostic groups, clinical profile groups, and medical groups.

**Results:** Based on cognitive data, 55.2% of the sample ( $n=90$ ) was classified as Global Developmental Delay/Intellectual Disability, 19.6% (GDD/ID;  $n=32$ ) was classified as

Language Disorder, and 18.4% (n=30) was classified as Typical Cognitive Development. 4.3% (n=7) of the sample was classified as Attention-Deficit/Hyperactivity Disorder (ADHD), and 2.5% (n=4) was classified as Nondominant Hemisphere Dysfunction. As hypothesized, cognitive profile group membership was consistent with diagnostic impressions, as actual clinical diagnoses of Language Disorder, ADHD, GDD/ID, or a classification of typical cognitive development were significantly associated with theorized cognitive profile based on test performance alone ( $\chi^2(1,20) = 147.29, p < .001$ ). Cognitive profile group membership was also significantly associated with referral source ( $\chi^2(1,28) = 62.88, p < .001$ ) and the presence of a neurological disorder ( $\chi^2(1,4) = 14.64, p = .006$ ).

**Conclusions:** Findings support the presence of specific theorized cognitive profiles in preschoolers in a mixed clinical sample. Specifically, GDD/ID, Language Disorder, and typical cognitive development are discrete and consistently distinguishable cognitive profiles in this age range. Early life neurological risk factors are also significantly related to cognitive profile membership, suggesting that these factors may be useful in predicting cognitive development even in very young children. Future work is needed to examine the consistency of these profiles over time and their predictive value in estimating subsequent development, and the possibility of discriminating unique cognitive profiles for specific medical conditions in preschoolers.

**Categories:** Medical/Neurological Disorders/Other (Child)

**Keyword 1:** pediatric neuropsychology

**Keyword 2:** child development disorders

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## 80 Implications of Body Mass Index on Executive Functioning in Clinically Diagnosed Neurodiverse Children

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**Objective:** Childhood obesity is a serious health epidemic affecting the world today. Children who are obese earlier in life are more likely to stay obese and have an increased risk of poorer health outcomes later in life, such as diabetes and cardiovascular diseases. Obesity is also associated with deficits in executive function. Executive function (EF) is comprised of several distinct but interrelated abilities including working memory, planning, inhibition, and flexibility. Prior research suggests that obesity drives brain changes which implicate executive function structures. Our aim is to examine the relationship between childhood obesity and executive function in children with neurodevelopmental disorders.

**Participants and Methods:** These data are from an ongoing study on neural and behavioral phenotypes of executive functioning in children with developmental disabilities, primarily Attention-Deficit/Hyperactivity Disorder (ADHD) and Autism Spectrum Disorder (ASD). Only study participants with complete BMI and BRIEF data were included in these analyses (n = 184). 134 representing (72.8%) of the participants were Male, 49 representing (26.6%) were Female, and 1 representing (.5%) were Gender nonconforming. 50 representing (27.2%) of the participants were between 8-9 years, 55 representing (29.9%) were between 10-11 years, and 80 representing (43.0%) were between 12-13 years. Average age was 11 years. 11 representing (6.0%) of the participants were underweight, 115 representing (62.5%) were healthy, 29 representing (15.8%) were overweight, and 29 representing (15.8%) were obese. Average BMI was 19.0, ranging from 13.2 to 36.3. 106 representing (57.6%) of the participants identified as White, 65 representing (35.3%) identified as BIPOC (2 Asian, 31 Hispanic/Latinx, 32 Black) and 13 representing (4.4%) identified as other/unspecified. 114 representing (61.9%) of the participants had a diagnosis of ADHD, ASD, or comorbid ASD and ADHD, 70 representing (38.1%) had a diagnosis of other. Average FSIQ-2 score was 106.98.

Parents were asked to complete the Behavior Rating Inventory of Executive Function (BRIEF-2) and the Inhibit, Shift, Working Memory (WM), Planning, and Global Executive Composite