however, the evidence is limited and warrants further examination. Thus, this study will investigate the contribution of several cognitive domains (intellectual functioning, attention, working memory) on academic performance for school age children with NF1.
Participants and Methods: The association between cognitive functioning and academic performance was examined for school age children with NF1 (n = 40; ages 9-13). Intellectual functioning was assessed using the Differential Abilities Scales, Second Edition School-Age Version (DAS-II) General Conceptual Ability (GCA) score. Attention was examined using the DAS-II Recall of Digits-Forward (DF) subtest and Flanker Inhibitory Control and Attention Test (Flanker). Working memory was assessed using the DAS-II Recall of Digits-Backward (DB) subtest. Academic performance was measured using the Wechsler Individual Achievement Test, Third Edition (WIAT-III) Word Reading (WR), Pseudoword Decoding (PD), Reading Comprehension (RC), Numerical Operations (NO), and Math Problem Solving (MPS) subtests.
Results: WR was significantly associated with DAS-II GCA ($r_s(38) = .689$, $p < .001$) and DF ($r_s(38) = .470$, $p = .002$) in addition to Flanker ($r_s(34) = .364$, $p = .029$), but not DAS-II DB ($r_s(38) = .292$, $p = .072$). PD was significantly correlated with DAS-II GCA ($r_s(38) = .695$, $p < .001$), DF ($r_s(38) = .394$, $p = .012$), and DB ($r_s(38) = .474$, $p = .002$), but not Flanker ($r_s(34) = .306$, $p = .070$). RC was significantly associated with DAS-II GCA ($r_s(38) = .483$, $p = .002$) and DF ($r_s(38) = .346$, $p = .029$), but not DAS-II DB ($r_s(38) = .306$, $p = .055$) and Flanker ($r_s(34) = .269$, $p = .112$). NO was significantly correlated with DAS-II GCA ($r_s(38) = .777$, $p < .001$), DF ($r_s(38) = .555$, $p = < .001$), and DB ($r_s(38) = .576$, $p < .001$) as well as Flanker ($r_s(34) = .386$, $p = .020$). MPS was significantly associated with DAS-II GCA ($r_s(38) = .685$, $p < .001$), DF ($r_s(38) = .586$, $p < .001$), and DB ($r_s(38) = .543$, $p < .001$), in addition to Flanker ($r_s(34) = .420$, $p = .011$). Significant associations had medium to large effect sizes, while non-significant correlations had small to medium effect sizes. Notably, most of the non-significant correlations had trend-level statistical significance.
Conclusions: Concurrent cognitive functioning (intellectual functioning, attention, working memory) was associated with reading-related and mathematics functioning in school age children with NF1. Notably, intellectual functioning had the strongest association with academic performance across all reading-related and mathematics tasks. Future studies should examine the association between academic performance and additional cognitive domains (e.g., language, visuospatial abilities) in children with NF1 across a wider age range to allow for examination of developmental patterns.

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54 The Differential Impact of Genetic Moderators on the Relationship Between Depression and Cognition

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Objective: Depression has a well-established negative effect on cognitive functioning. Variations in the apolipoprotein e (*APOE)* and brain-derived neurotrophic factor (*BDNF*) genes likely contribute to this relationship. *APOE4* and the *BDNF* Val66Met polymorphism are independently associated with late-life depression and cognitive dysfunction. The current study investigated the moderating effects of *APOE4* and *BDNFMet* (i.e., the presence of the BDNF Val66Met polymorphism) on the relationship between depression and cognitive functioning in older adults.
Participants and Methods: The sample included 103 older adults drawn from two clinical trials who were recruited from the VA Palo Alto Health Care System (VAPAHCS) and the Stanford/VA Alzheimer's Disease Center. Depression was diagnosed using the Mini Neuropsychiatric Interview for the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV). The presence of an *APOE4* and *BDNFMet* allele were dichotomized (i.e., yes/no) and determined using venipuncture. A comprehensive neuropsychological battery was used to assess attention (RAVLT Trial 1, WAIS-IV DSF), processing speed (TMTA, SDMT, Stroop Word, Stroop Color), working memory

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(WAIS-IV DSB, DSS), visuospatial functioning (JLO), language (VNT), memory (RAVLT Delayed Recall, WMS-IV Logical Memory II), and executive function (TMTB, Stroop Color-Word). Separate moderation analyses were conducted with depression as the predictor and *APOE4* or *BDNFMet* status as the moderator using the SPSS PROCESS macro v4.0. Age was a covariate for models with processing speed, memory, language, and executive function as outcome variables.
Results: Participants were largely male (93%) and White (75%). Ten percent met criteria for depression, 26% were *APOE4* carriers, and 32% were *BDNFMet* carriers. The overall model examining depression, *APOE4*, and memory was significant ($p < .01$, $R^2 = .14$). Depression was associated with lower memory performance ($p < .05$), however, *APOE4* was not a significant moderator ($p > .05$). Similarly, the overall model examining depression, *APOE4*, and language was also significant ($p < .05$, $R^2 = .10$). While the direct effects of depression and *APOE4* on language were nonsignificant ($p > .05$), there was a significant two-way interaction between *APOE4* and depression ($p = .03$). The overall model with depression, *BDNFMet*, and memory was significant ($p < .001$, $R^2 = .18$). While neither depression nor *BDNFMet* had significant direct effects on memory ($p > .05$), a two-way interaction emerged between depression and *BDNFMet* ($p = .05$). Simple slopes analyses were used to further investigate significant interactions. Depression, *APOE4*, and *BDNFMet* did not significantly impact attention, processing speed, working memory, visuospatial functioning, or executive function, and no significant interactions were noted among variables. *BDNFMet* had no direct impact on language.
Conclusions: *APOE4* and *BDNFMet* were found to differentially moderate the relationship between depression and cognition. Specifically, *APOE4* carriers with depression had worse language performance compared to those who were healthy, depressed, or *APOE4* carriers. *BDNFMet* carriers with depression performed worse on measures of memory compared to those who were healthy, depressed, or *BDNFMet* carriers. The treatment of depression in *APOE4* and *BDNFMet* carriers may reduce associated cognitive impairments. Limitations and future implications are also discussed.

Categories: Genetics/Genetic Disorders
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55 The Neurocognitive Profile of a Child with Rubinstein-Taybi Syndrome (RSTS-Type 2)

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Objective: Rubinstein-Taybi Syndrome (RSTS) is a rare multiple congenital autosomal dominant disorder, with an incidence of roughly 1/125,000 live births (Milani et al., 2015). RSTS is characterized by several typical somatic characteristics and developmental disabilities. Common neurological findings in patients with RSTS include mild or moderate intellectual impairment and delays in gross motor development (Taupiac et al., 2021; Hamilton et al., 2016). Additional characteristics observed among individuals with RSTS include hyperactivity, abnormalities in expressive language, inattention, motor difficulties, noise intolerance, maladaptive behaviors, and fewer modes of communication (Waite et al., 2015). Due to the condition's rarity, very few studies have investigated the cognitive profiles of RSTS patients with clinical features of EP300 (Type 2; Morel et al., 2018) in effected youth. This case study represents the first reported comprehensive neuropsychological description to our knowledge of an individual with this condition.
Participants and Methods: Participant: The participant is an 8-year, 4-month-old young girl referred for neuropsychological evaluation. LX was diagnosed with failure to thrive due to her small size, although she met all developmental milestones on time. LX was diagnosed with RSTS, Type 2 through genetic testing and blood work following concerns about small stature, microcephaly discovered on an MRI, and feeding difficulties. A 4kb deletion of 22q13.2 which contains exon 2 of EP300 was identified. Method: Medical and school records review, a clinical interview with LX and her family, neuropsychological assessment, and parent- and teacher-report questionnaires were used to

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