(MED36) accuracy score (Gur et al., 2010), The Awareness of Social Inference Test Total Score (TASIT; McDonald et al., 2003), and Social Responsiveness Scale, 2nd Edition (SRS-2; Constantino & Gruber, 2012). Trauma exposure was assessed using the Structured Clinical Interview Diagnostic (controls n = 5; EOP n = 9; First et al., 2015). Pearson's correlations and independent t-tests were used to examine the relationship between cortical measurements and social cognition. Additionally, PROCESS macro (Hayes, 2018) was used to examine if trauma history statistically moderated the relationship between cortical measurements and social cognition performance.
Results: Significant group differences in SRS-2 scores were observed, as EOP participants scored 24.272 points higher than controls ($t = 20.724$, $p < .001$). Across both groups, there was a negative correlation between the SRS-2 score and precuneus volume ($r = -.438$, $p = .011$) and thickness ($r = -.383$, $p = .028$), TASIT total and superior frontal volume ($r = -.349$, $p = .023$), and KER40 and insular volume ($r = -.437$, $p = .20$). Further, the moderation analysis revealed that the relationships between precuneus volume and SRS-2 scores, precuneus thickness and MED36 scores, and rACC thickness and KER40 scores depended on experiencing trauma across both groups. Participants with trauma across groups had increased precuneus volume associated with higher SRS-2 scores ($p = .0442$). Experiencing trauma was also associated with lower precuneus cortical thickness and lower MED36 scores ($p = .0172$). Conversely, lack of trauma experience was associated with greater rACC thickness and higher KER40 scores ($p = .0119$).
Conclusions: Our findings indicate that past traumatic experiences may be a moderating factor in the relationship between atypical volume and thickness of social brain regions and social cognition. Overall, the significant interactions between trauma exposure and increased volume and thickness in both EOP and control participants were associated with increased impairment on social cognition measures. These findings emphasize the importance of accounting for the impact of early life adversities on brain development and how it may be relevant to social impairments, especially in individuals experiencing psychosis.

Categories: Neuroimaging
Keyword 1: neuroimaging: structural
Keyword 2: social cognition
Keyword 3: psychosis
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47 Exposure to Early Life Adversity is Related to Alterations in Neural Correlates of Inhibitory Control in Preadolescents: Findings from the ABCD Study Cohort

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Objective: Rapid neurodevelopment occurs during adolescence, which may increase the developing brain's susceptibility to environmental risk and resilience factors. Adverse childhood experiences (ACEs) may confer additional risk to the developing brain, where ACEs have been linked with alterations in BOLD signaling in brain regions underlying inhibitory control. Potential resiliency factors, like a positive family environment, may attenuate the risk associated with ACEs, but limited research has examined potential buffers to adversity's impact on the developing brain. The current study aimed to examine how ACEs relate to BOLD response during successful inhibition on the Stop Signal Task (SST) in regions underlying inhibitory control from late childhood to early adolescence and will assess whether aspects of the family environment moderate this relationship.
Participants and Methods: Participants (N= 9,080; M_{age}= 10.7, range= 9-13.8 years old; 48.5% female, 70.1% non-Hispanic White) were drawn from the larger Adolescent Brain Cognitive Development (ABCD) Study cohort. ACE risk scores were created (by EAS) using parent and child reports of youth's exposure to adverse experiences collected at baseline to 2-year follow-up. For family environment, levels of family conflict were assessed based on youth reports on the Family Environment Scale at baseline and 2-year follow-up. The SST, a task-based fMRI paradigm, was used to measure inhibitory control (contrast: correct stop > correct go); the task was administered at baseline and 2-year follow-up. Participants were excluded if

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flagged for poor task performance. ROIs included left and right dorsolateral prefrontal cortex, anterior cingulate cortex, anterior insula, inferior frontal gyrus (IFG), and pre-supplementary motor area (pre-SMA). Separate linear mixed-effects models were conducted to assess the relationship between ACEs and BOLD signaling in ROIs while controlling for demographics (age, sex assigned at birth, race, ethnicity, household income, parental education), internalizing scores, and random effects of subject and MRI model.
Results: Greater ACEs was associated with reduced BOLD response in the opercular region of the right IFG (b= -0.002, *p*= .02) and left (b= -0.002, *p*= .01) and right pre-SMA (b= -0.002, *p*= .01). Family conflict was related to altered activation patterns in the left pre-SMA, where youth with lower family conflict demonstrated a more robust negative relationship (b=.001, *p*= .04). ACEs were not a significant predictor in other ROIs, and the relationship between ACEs and BOLD response did not significantly differ across time. Follow-up brain-behavior correlations showed that in youth with lower ACEs, there was a negative correlation between increased activation in the pre-SMA and less impulsive behaviors.
Conclusions: Preadolescents with ACE history show blunted activation in regions underlying inhibitory control, which may increase the risk for future poorer inhibitory control with downstream implications for behavioral/health outcomes. Further, results demonstrate preliminary evidence for the family environment's contributions to brain health. Future work is needed to examine other resiliency factors that may modulate the impact of ACE exposure during childhood and adolescence. Further, clinical scientists should continue to examine the relationship between ACEs and neural and behavioral correlates of inhibitory control across adolescent development, as risk-taking behaviors progress.

Categories: Neuroimaging
Keyword 1: childhood maltreatment
Keyword 2: brain development
Keyword 3: inhibitory control
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48 Should I Stay or Should I Go? Neural Circuits Underlying Decisions to Explore or Exploit

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Objective: Adaptive decision-making is necessary to sustain functional independence. Maladaptive decisions are among the most prevalent features of psychological and neurological disorders. One crucial aspect of decision-making involves arbitrating between exploring new avenues with risky but potentially lucrative outcomes or exploiting prior knowledge and endorsing predictable outcomes. Balancing this dichotomy creates a behavioral tension that shapes all decisions and is termed the exploration-exploitation trade-off. This trade-off has been linked to reward and affective drives and associated neural circuitry as well as neuropsychological dysfunction. However, the neural mechanisms underlying the exploration-exploitation trade-off are still uncertain, due to the scarcity of literature and the heterogeneity of paradigms. This study aimed to systematically quantify and disambiguate neuroanatomical correlates of the exploration-exploitation trade-off in a normative adult sample. These findings provide a necessary starting point for future investigations of this fundamental aspect of decision-making across clinical populations, with potential implications for assessment and intervention.
Participants and Methods: We used the effect-location method of meta-analysis to analyze data from 10 functional neuroimaging studies investigating the exploration-exploitation trade-off in non-clinical samples. We analyzed the location and frequency of significant neural activations across studies for both explorative and exploitative decisions and characterized them as core and non-core regions. Core activations were defined as those reported in over 50% of studies. Secondary and tertiary activations were defined as those reported in 40% and 30% of studies, respectively. The present review was conducted in accordance with the guidelines of the 2009 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.
Results: The results revealed that explorative and exploitative choice behaviours differed

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