indicating limited functionality. Participants also underwent a lumbar puncture to obtain CSF measurements of amyloid-beta 42 (Ab42) and phosphorylated tau (p-tau). We calculated the p-tau/Ab42 ratio, which is positively correlated with AD progression. Finally, participants were administered a comprehensive neuropsychological battery, and cognitive composites were created for attention (Digit Symbol, Digit Span Forward, Trails A), executive function (Digit Span Backward, Trails B, Color-Word Inhibition Switching), and two measures of verbal memory [learning (CVLT List A 1-5, Logical Memory Immediate Recall) and delay (CVLT Long Free Recall, Logical Memory Delayed Recall)]. Four multiple linear regressions modeled the relationship between each composite with age, gender, education, p-tau/Ab42, average LC contrast, and interactions between average LC contrast and p-tau/Ab42. For models that were statistically significant, additional regressions were assessed to determine which segment of the LC (caudal, middle, rostral) contributed to the relationship. **Results:** Our model predicted attention (p=.001, R^2=.298) with main effects of average LC signal, p-tau/Ab42, and LC by p-tau/Ab42 interaction. Follow-up regressions revealed that each LC segment contributes to this relationship. Our model predicted executive function (p=.006, R^2=.262) with a main effect of average LC signal and LC by p-tau/Ab42 interaction. Follow-up regressions revealed that this relationship was limited to the caudal and middle LC. Our models predicted both verbal learning (p<.001, R^2=.512) and delayed memory (p<.001, R^2=.364); both with main effects of gender and education. Follow-up regressions revealed that the rostral LC signal interacts with p-tau/Ab42 to predict both verbal learning and delayed memory. For all interactions, those with low p-tau/Ab42 exhibited a positive relationship between LC signal and cognition, whereas those with higher p-tau/Ab42 showed a negative relationship. **Conclusions:** MR-assessed LC signal relates to attention, executive function, and verbal learning and memory in a manner that depends on CSF levels of p-tau and Ab42. The relationship between LC signal and cognition is positive at low levels and negative at higher levels of p-tau/Ab42. If lower LC signal indicates reduced integrity, these findings imply that MR-assessed LC signal may be a more meaningful marker of AD progression in earlier stages of the disease. Alternatively, this measure may capture a different underlying mechanism depending on tau and amyloid biomarker status.

Categories: Neuroimaging
Keyword 1: dementia - Alzheimer's disease
Keyword 2: neuroimaging: structural
Keyword 3: cognitive functioning
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50 Neuropsychological Functioning in Depression, Borderline Personality Disorder, and Suicidality

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Objective: Depression and borderline personality disorder (BPD) are frequently comorbid psychiatric disorders that reliably share deficits in executive functioning (EF). In addition to EF, meta-analytic evidence indicates that processing speed and verbal memory are also affected in depression and BPD, but the impact of BPD further spans the domains of attention, nonverbal memory, and visuospatial abilities. Suicidality is a notable phenotypic commonality in depression and BPD. Neuropsychologically, there are consistent discrepancies between individuals who have and have not thought about suicide in global cognitive functioning, as well as between those who have attempted suicide and those who have just thought about suicide in EF. This study aims to replicate the effect size differences between these groups and explore whether neuropsychological functioning relates to dimensional measures of psychopathology. **Participants and Methods:** Right-handed women between the ages of 18 and 55 were recruited into one of three diagnostic groups: a) current major depressive episode (MDD; n=22); b) current major depressive episode with comorbid BPD (MDD+BPD; n=19); and c) absence of current major depressive episode and BPD (controls; n=20). Groups were also classified based on historical suicide attempt and on the presence or absence of historical suicidal ideation. Exclusions included bipolar disorder, neurodevelopmental disorder,

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moderate/severe brain injury, neurological illness, serious physical illness, eating disorder, and moderate/severe alcohol/substance use disorder. Participants were administered the Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD), Beck Depression Inventory (BDI-II), Interpersonal Needs Questionnaire (INQ), UPPS-P Impulsive Behavior Scale, Everyday Memory Questionnaire, Brief Visuospatial Memory Test (BVMT), California Verbal Learning Test (CVLT), Delis-Kaplan Executive Function System (D-KEFS) Color-Word Interference Test, D-KEFS Trail Making Test, D-KEFS Verbal Fluency, Wechsler Adult Intelligence Scale-IV Coding and Digit Span subtests, Wechsler Memory Scale-IV Logical Memory, and Wechsler Test of Adult Reading.
Results: With one exception, analyses of raw scores indicated there were no significant neuropsychological differences between groups based on diagnosis, historical suicidal ideation, and suicide attempt (p>.05). However, individuals with MDD+BPD, historical suicidal ideation, or suicide attempt endorsed more memory complaints than the other groups with large effect size differences. Differences in self-reported impulsivity indicated large effects between controls and MDD+BPD, moderate to large effects when comparing controls to MDD and MDD to MDD+BPD, and moderate effects among the suicidal ideation and suicide attempt groups. Impulsivity was rated highest in those with MDD+BPD, historical suicidal ideation, or suicide attempt. These analyses applied false-discovery rate correction and adjusted for age. Using ridge regressions to separately predict depressive symptoms, BPD symptoms, and suicide risk factors, neuropsychological indices were most associated with suicide risk factors and explained 22.8% of INQ variance. Conversely, these indices explained 9.6% of ZAN-BPD variance and 0.6% of BDI-II variance.
Conclusions: The neuropsychological literature on BPD describes moderate crosscutting neuropsychological dysfunction, and clarifying the distinct cognitive alterations associated with comorbid psychiatric disorders and suicide phenomena offers novel avenues of research for investigating their mechanisms. While neuropsychological functioning may not strongly relate to psychiatric symptomatology, it may contribute to meaningful algorithms of suicide risk in individuals with depression and BPD.

Categories: Psychiatric Disorders
Keyword 1: executive functions
Keyword 2: depression
Keyword 3: personality
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51 Word Fluency Association Task (WFAT) Performance in Adolescents with Mild-Type Schizophrenia

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Objective: Schizophrenia is often disguised as a crisis of adolescence.
We want to understand how schizophrenia manifests itself in speech.
We expect the difference in the Word Fluency Association Task (WFAT) in *Normality Index* and *Time Delay*.
Participants and Methods: The analyses data was collected by the WFAT (authored by V.Kritskaya).
WFAT actualize speech connections based on past experience.
Stimuli – various syllables of 2-letters (20 pcs.), 3-letters (30 pcs.), varying in frequency of use (compiled on the basis of the Corpuses of the Russian language).
Instruction: "Now I will tell you a syllable, your task is to complete the proposed syllable to words as quickly as possible, your words must be real".
For study purposes we subdivided the sample into two subgroups: 12-14 years, 15-17 years.
For statistical analysis we used U-criterion, Mann-Whitney.
Analyzed parameters:

1. Normality index (**NI**) – the ratio of productive nouns to the amount of the standard associations
2. Time delay (**TD**) – response delay of the subject (sec., millisec.)

Study involved 57 participants:
27 adolescents with schizophrenia (CI_G) aged from 12 to 18 years, assessed in the hospital setting (DS: F20.xx, F21.xx) and 30 normotypal peers (Co_G) assessed in the school setting.

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