improvement (level 3), and Cases 4 and 5, who had mild impairment (level 3), exhibited a normal level of improvement (level 1). We calculated the z-scores of the improvement rates of the JSTS based on the standard deviations according to the severity (Anzaki, 2019). The z-scores of Case 4 and 5 were 4.01 and 2.01, respectively, indicating a significant improvement.
**Conclusions:** In our report last year, although ADSs with moderate and severe impairment showed improvement by stimulation intervention on the left hemisphere through the right ear, those with mild impairment exhibited only a slight or no improvement as per the JSTS (Anzaki, et al. 2021). The application developed in this study was found to significantly improve the disfluencies of all the participants as per the JSTS, especially those with mild impairment. Therefore, we considered that stuttering disorders are layered; ADSs have auditory monitoring disorder in the base.

**Categories:** Language and Speech Functions/Aphasia
**Keyword 1:** speech
**Keyword 2:** language: development
**Keyword 3:** auditory processing disorder
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## 72 Boston Naming Test Performance Improves with Increasing Age: What's Wrong with this Picture?

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**Objective:** As word finding or "naming" impairment is a symptom of multiple neurological conditions, naming assessment is an integral component of most neuropsychological evaluations. For decades, the Boston Naming Test (BNT) has been, and remains, the most widely used measure of naming. Although it has been shown that naming is generally stable from young adulthood through middle age, we have observed, clinically, that young adults tend to have greater difficulty on the BNT than older adults. Considering that the BNT was developed more than 50 years ago, and that language and culture change over time, we hypothesized that 1) increasing age would be associated with stronger performance on the BNT, whereas 2) there would be no association between age and naming performance on more recently developed naming measures.
**Participants and Methods:** Participants were healthy adults who served as normative subjects in the revision study of the Auditory (ANT) and Visual Naming (VNT) Tests. Due to known effects of education level on BNT performance, we excluded those with less than 16 years of education, targeting young adults through middle age, resulting in 118 adults, 20 through 50 years of age (mean age: 32.9 ± 9.2 years; mean education: 16.8 ± 1.2 years; mean FSIQ: 106.0 ± 12. 6). All participants were native English speakers or learned English by age 5 and were fully educated in English. Untimed accuracy (i.e., response within 20 seconds) is the standard performance measure for the BNT; the ANT and VNT additionally include tip-of-the-tongue (TOT) scores, which incorporate response time and reliance on phonemic cueing (TOT score = number of items named in > 2 seconds but < 20 seconds, plus items named correctly after 20 seconds, following a phonemic cue). Pearson correlations examined the relation between age and naming performance on the BNT, ANT and VNT.
**Results:** Pearson correlations revealed a small but significant, positive correlation between age and BNT performance ($r = .22$, $p = .017$), yet no correlation between age and performance on the ANT (ANT Accuracy: $r = .05$, $p = .60$, ANT-TOT: $r = -.14$, $p = .12$) or VNT (VNT Accuracy: $r = .04$, $p = .67$, VNT-TOT; $r = -.03$, $p = .72$).
**Conclusions:** In this sample of healthy adults, naming performance improved with increasing age on the BNT; however, while vocabulary knowledge may broaden, naming efficiency should not improve with age. By contrast, we found no relation between age and naming performance on the more recently developed ANT and VNT. Results underscore the need to revise test stimuli on verbal measures, particularly those that assess naming, and suggest caution in interpreting BNT performance in young adults, as poor BNT performance might not accurately represent their true naming ability.

**Categories:** Language and Speech Functions/Aphasia
**Keyword 1:** naming
**Keyword 2:** assessment

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## 73 Do depression, anxiety, or stress moderate the relationship between simple attention, working memory and verbal learning?

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**Objective:** Working memory is a vital construct in efficient verbal memory encoding (Cotton & Ricker, 2021). Working memory is impacted by attentional capacities (Riccio, Cohen, Garrison, & Smith, 2005). Mood symptoms impact efficient information processing and consolidation of memory (Hubbard, 2016; Lukasik, 2019). This study examines self-reported symptoms of depression, anxiety, and stress as possible moderators of the relationship between working memory and a verbal list-learning task.
**Participants and Methods:** Archival data from 415 adults (Mage= 56.10, SD=18.05; Medu= 15.5 SD=2.2; 53% female; 73% white) were collected at an outpatient clinic. Sex and race were not available in a small percentage of cases included in analyses. The Wechsler Adult Intelligence Scale 4th Edition Digit Span subtest was given to assess attention and working memory. Although Digit Span Forward is a measure of simple attention, not working memory, it was included in initial analyses because the subtest was given as a whole. The three components of Digit Span total, Forward, Backward, and Sequencing were also investigated separately, with the two latter scores being better representations of working memory. Learning was assessed via the California Verbal Learning Test (CVLT-II) total T-Score (Trials 1-5). Mood was assessed via the Depression Anxiety and Stress Scales (DASS-42).
**Results:** Results of a hierarchical linear regression showed a significant effect between total Digit Span performance and total learning on the CVLT-II in the Block 1 ($F(3, 411)=14.383$, $p =<.001$ , $\Delta R2=.095$). Standardized beta weights and p-values for Digit Span Forward, Backward, and Sequencing were ($\beta=-.50$, $p=.374$), ($\beta= .159$, $p=.009$), and ($\beta=.210$, $p<.001$) respectively. In Block 2, when the DASS variables were introduced, the model remained significant $F(3,408)=2.602$, $p=.05$ , $\Delta R2=.017$). The DASS anxiety and stress subscales had significant beta weights in the model ($\beta=-.172$, $p=.015$) and ($\beta=.144$, $p=.039$) respectively, with depression being insignificant ($\beta=--.023$, $p=.724$).
**Conclusions:** Mood symptoms have been shown to be an important consideration when assessing working memory and verbal learning performance (Massey, Meares, Batchelor, & Bryant, 2015). Present results demonstrate that when accounting for working memory, anxiety and stress were significant predictors of performance on a measure of verbal learning. Additionally, as the components best representing working memory, Digit Span Sequencing and Backward were significantly correlated with verbal learning, whereas a measure best representing simple attention, Digit Span Forward, was not significantly correlated with verbal learning.

**Categories:** Executive Functions/Frontal Lobes
**Keyword 1:** working memory
**Keyword 2:** learning
**Keyword 3:** mood disorders
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## 74 The Role of Executive Functioning in Predicting Health Numeracy in a Memory Disorders Clinic.

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**Objective:** Health numeracy is the understanding and application of information conveyed with numbers, tables and graphs, and probabilities in order to effectively manage one's own healthcare. Health numeracy is a vital aspect of communicating with healthcare providers and participating in one's own medical decision making, which is especially important in aging populations. Current literature indicates that assessing and establishing one's health numeracy abilities is among the first steps in

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