in Alzheimer's disease (AD) presenting with early and prominent aphasia. Here, we assessed the relationship between regional β-amyloid burden on PiB-PET and performance on various neurological, neuropsychometric, and language metrics using regression analyses, in AD patients presenting with aphasia. Worse performance on the Montreal Cognitive Assessment (MoCA) battery inversely correlated with β-amyloid burden in multiple cortical regions, including prefrontal, medial and lateral temporal, and primary visual cortex ($p < 0.05$). Greater aphasia severity measured using the Western Aphasia Battery (WAB), as well as the Token Test, inversely correlated with β-amyloid burden in prefrontal cortex ($p < 0.05$). Worse visuospatial performance measured with the Cube Analysis subtest of the Visual Object and Space Perception (VOSP) battery inversely correlated with β-amyloid burden in the primary visual cortex ($p < 0.05$). This study demonstrates that language and other cognitive deficits may be associated with β-amyloid deposition in unique cortical regions in AD patients with aphasia, although the confounding effects of other proteins, e.g. tau, need to be considered.

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S110. Using Mismatch Negativity to Study Speech Perception in a Low-Functioning Individual with Autism

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The status of speech perception in low-functioning individuals with autism is important for determining the basis for widespread problems in language that characterize the disorder, and for treatment options. However, behavioral assessment of speech perception can be extremely difficult and unreliable with low-functioning individuals. Instead, more implicit measures, such as event-related potentials (ERPs), may provide more direct, reliable assessment in this group. We describe the results of extensive testing with one low-functioning individual with autism (AI) in the mismatch negativity (MMN) paradigm. Based on behavioral evaluations, it was expected that the vowel sounds of "hat" vs. "hot" would be a speech contrast that AI could discriminate. In the MMN paradigm, the word "hat" served as the standard (presented on 85% of trials) and the word "hot" served as the deviant (presented on 15% of trials). The expected MMN effect was observed, supporting the conclusion that this contrast is one that is perceptually meaningful to this individual. The MMN paradigm may thus offer a means for the assessment of single-case testing of speech perception abilities in low-functioning individuals with autism.

Study supported by: N/A.

S111. The Effects of 3D Technology on the Brain during Learning and Memory Recall Processes

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This study has been aimed to evaluate the short-term and the long-term effects of 3D-technology on the human brain in the learning and memory recall processes using Electroencephalogram (EEG) signals.

EEG signals were recorded in the learning and memory recall tasks using the 128-channel HydroCel Geodesic Net from 3D and 2D groups of participants. This was performed in such a way that their intelligence and age were controlled between the groups. They watched 3D or 2D animations as learning content and recalled the content after 30 minutes of learning for short-term and after two months for the long-term effects.

The behavioral results of the short-term recall showed a 3.40% mean increase in the 3D group; 0.38 second faster than the 2D group. The long-term recall results were also better in the 3D group (0.5% increase); 1.25 seconds faster than the 2D group. The neurophysiological results of the 3D group indicated more medical temporal activation during learning than the 2D group, which reflected more involvement of the hippocampus.

In conclusion, 3D technology improves learning and requires less mental effort to remember as compared to traditional multimedia 2D technology.

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S112. Self-Monitoring Ability on Dementia Syndromes from a Greek Outpatient Memory Clinic

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Objective: Self-monitoring is the ability to adapt one's behavior based on the feedback from others. The aim is to estimate changes in the most frequent degenerative disorders.

Methods: In the study participated 182 patients and 46 normal controls. All had neuropsychological testing and diagnosis has set through international criteria (Alzheimer's disease, Parkinson's disease, Lewy body and Parkinson dementia, Frontotemporal Degeneration and subtypes: behavioral-variant, semantic-variant, non-fluent aphasia and Corticobasal Degeneration/Supranuclear Pulsy). 67 patients got the diagnosis of multi-domain MildCognitiveImpairment.

The caregivers (the relatives for normal controls) answered the Revised-Self-Monitoring Scale about the current ability of the patient to adapt his/hers behavior.

Results: Normal controls differ statistically from all types of dementia except PnFA and Parkinson patients.

AD and MCI patients differ from bvFTD and sv-FTD.

LBD/PDD patients differ only from normal controls.

bvFTD and sv-FTD patients differ from MCI, AD and PD.

PnFA and CBD/PSP patients do not differ from any other type of dementia syndrome.

PD patients differ from bvFTD and sv-FTD.

Conclusions: In dementia syndromes, the ability of the patients to adapt theirs behavior is reduced. Greater changes are for bvFTD and sv-FTD patients. The Revised-Self-Monitoring Scale is a suitable test to examine changes in this domain of social cognition.

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