to plot an individual’s MR data on top of this regression line and the first two standard deviations. Results: The SNC was established with 194 subjects ranging in age from 43-90. When corrected for total intracranial volume, combined left and right hippocampal volume declined on average 50.4 mm$^3$ per year. Conversely, combined lateral ventricle volume increased on average 726 mm$^3$ per year. Conclusions: Before attempting to diagnose Alzheimer’s Disease, a standard model of healthy aging must be developed. The group averages from this healthy aging cohort can be combined with open source software to aid in clinical diagnosis of Alzheimer’s Disease. Future work will validate the use of the ILP as a diagnostic tool for Alzheimer’s Disease using a clinical population.

**P1-391** DIFFUSION TENSOR IMAGING INVESTIGATION OF CORTICAL DISARRAY MEASUREMENT IN POSTERIOR CORTICAL ATROPHY AND TYPICAL ALZHEIMER’S DISEASE

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**Background:** Posterior Cortical Atrophy (PCA) is a rare neurodegenerative condition usually considered an atypical variant of Alzheimer’s Disease. The goal of this research was to investigate the whole brain and regional quantitative histological features of the neural architecture in the brains of patients with PCA and AD compared with elderly controls. A novel MRI measurement, sensitive to minicolumnar organization changes in the cerebral cortex, was used as index of neuro-pathological changes in dementia. Methods: A cohort of 17 PCA patients, 20 probable AD and 20 healthy elderly volunteers were enrolled, in order to investigate the changes in architecture of the cortex among groups, using a novel diffusion analysis method. An additional cohort of healthy elderly volunteers from Alzheimer’s Disease Neuroimaging Initiative 3 (ADNI 3), was used to compare the cohorts studied with a multi-centre cohort, in order to test the external validity of our method. For each subject, 3T MRI T1 weighted images and DTI scans were analyzed to extract four DTI derived measures. Results: The results showed that the new DTI derived measures were able to detect whole brain altered microstructure in PCA and AD patients compared to healthy controls. The whole brain comparison between PCA and AD patients revealed a different pattern of damage within the AD spectrum and the regional comparisons revealed significant differences in key regions including parietal and temporal lobe cortical areas. Conclusions: Diagnostic group differences were found and the comparison with multi-centre data from ADNI showed good consistency of measurements, indicating that the method is robust to differences between centres. These findings suggest that the new DTI analysis method, Cortical Disarray Measurement (CDM), is useful to assess the cytoarchitectural organization changes among groups and will be an effective tool to better characterize neurological groups improving differential diagnosis and prognostic accuracy.

**P1-392** OCCIPITAL AND CINGULATE HYPOMETABOLISM ARE SIGNIFICANTLY UNDER-REPORTED ON 18-FLUORODEOXYGLUCOSE POSITRON EMISSION TOMOGRAPHY SCANS OF PATIENTS WITH LEWY BODY DEMENTIA

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**Background:** Recent studies have reported higher sensitivity and specificity for occipital and cingulate hypometabolism on FDG-PET of DLB patients. Methods: This retrospective chart review looked at regions of interest (ROI’s) in FDG-PET CT scan reports in 35 consecutive patients with a clinical diagnosis of probable, possible, or definite DLB as defined by the latest DLB Consortium Report. ROI’s consisting of glucose hypometabolism in frontal, parietal, temporal, occipital, and cingulate areas were tabulated and charted separately by the authors from the reports. A blinded Nuclear medicine physician read the images independently and marked ROI’s separately. A Cohen’s Kappa coefficient statistic was calculated to determine agreement between the reports and the blinded reads. Results: On the radiology reports, 25.71% and 17.14% of patients reported occipital and cingulate hypometabolism respectively. Independent reads demonstrated significant disagreement with the proportion of occipital and cingulate hypometabolism being reported on initial reads: 91.43% and 85.71% respectively. Cohen’s Kappa statistic determinations demonstrated significant agreement only with parietal hypometabolism ($p < 0.05$). Conclusions: Occipital and cingulate hypometabolism is under-reported and missed frequently on clinical interpretations of FDG-PET scans of patients with DLB, but the frequency of hypometabolism is even higher than previously reported. Further studies with more statistical power and receiver operating characteristic analyses are needed to delineate the sensitivity and specificity of these in vivo biomarkers.

**P1-393** THE INCREMENTAL VALUE OF AMYLOID PET VERSUS CSF BIOMARKERS FOR THE DIAGNOSIS OF ALZHEIMER’S DISEASE (INDIA–FBB STUDY)

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**Background:** Amyloid PET and CSF Aβ42 have demonstrated analytical and clinical validity, but their comparative clinical utility is unclear. The aim of this study is to compare the incremental diagnostic value of [18F]-Florbetaben PET and CSF markers (Aβ42, tau and pH-tau) in patients with cognitive impairment. Methods: 75 patients satisfying AUC for amyloid PET underwent dementia workup for suspected primary dementia, including amyloid PET