analysis but did not reach statistical significance. No statistically significant correlations were observed in the Aβ negative group. **Conclusions:** This is the first report of a strong relationship between AV1451 tau uptake and longitudinal change in cortical thickness, perhaps better reflecting "active" neurodegeneration than cross-sectional measures. It also the notion that AV1451 tracer uptake links tau pathology with neurodegeneration. The absence of effects in the Aβ negative group has implications for either the neurodegenerative effects of primary age-related tauopathy (PART) or the sensitivity of AV1451 PET to PART.

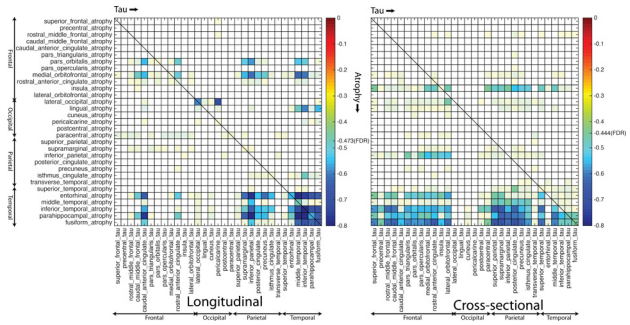

Figure 2. Partial correlation of tau uptake and atrophy as measured by thickness change (left) or thickness (right) in 31 ROIs, with age as a covariate. Columns are sorted by ROIs in lobes with least average tau uptake on the left to most on the right. ROIs within a lobe are similarly sorted. Columns and rows represent tau and atrophy respectively such that a given row shows correlation between tau in an ROI with atrophy in all other ROIs. Diagonal values represent local correlation of the two measures within the same ROI. Empty cells denote non-significant correlation. Opaque cells represent correlations with FDR-corrected $p < 0.05$. Transparent cells represent correlations that did not survive FDR correction but had an uncorrected $p < 0.05$. FDR thresholds are indicated in the colorbar.

SUNDAY, JULY 16, 2017
ORAL SESSION
O1-13
NEUROPSYCHOLOGY: MULTICULTURAL ISSUES IN ASSESSMENT OF DEMENTIA

O1-13-01 SUBJECTIVE CONCERNS PREFERENTIALLY ASSOCIATE WITH AMYLOID BURDEN AND MEMORY IN CAUCASIANS, BUT WHITE MATTER HYPERINTENSITIES AND EXECUTIVE FUNCTION IN AFRICAN-AMERICANS

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Background: Previously, we found that subjective cognitive concerns (SCC) were associated with memory performance in Caucasians, but not African-Americans in the Harvard Aging Brain Study (HABS). Given this finding, we sought to further explore possible mechanisms that could explain this dissociation. Here, we investigated whether racial differences emerged in associations among SCCs, objective cognition, and biomarkers for AD dementia risk, including global amyloid and white matter hyperintensity burden. We hypothesized that a double dissociation would emerge—namely that SCCs would preferentially associate with amyloid and memory in Caucasians, but executive function and white matter hyperintensities in African-Americans. **Methods:** To examine the relationship between subjective and objective cognition, we used a composite of three SCC questionnaires, an episodic memory factor score, and an executive function factor score. Using the HABS dataset, we matched 50 (66% female) clinically normal older Caucasians with 50 (78% female) clinically normal older African-Americans on age, estimated verbal IQ, and socioeconomic status. All participants underwent baseline amyloid imaging with Pittsburgh compound-B (PiB)-PET and MRI. A partial correlation assessed the modifying role of race on the association among SCCs, the cognitive measures, and the AD biomarkers was conducted, controlling for sex, APOE status, and symptoms of depression. **Results:** A double dissociation emerged, such that in Caucasians, SCCs were associated with memory ($r = -.311$) and PiB ($r = .274$), but not executive function or white matter. In African-Americans, SCCs were associated with executive function ($r = -.242$) and white matter hyperintensities ($r = .262$), but not memory or PiB. **Conclusions:** Results replicate previous data suggesting that SCCs are a reliable correlate of both cognitive performance and AD biomarkers. However, SCCs may be differentially sensitive to biomarkers implicated in AD risk depending on race, which may mediate the relationship with cognition. Additionally, executive function performance may also be a useful metric when examining subjective reports of cognition. Taken together, the observed double dissociation highlights the importance of examining racial and cultural influences on risk factors implicated in AD, particularly for high-risk populations such as African-Americans.

O1-13-02 COGNITIVE VULNERABILITIES IN PRESENILIN-1 E280A MUTATION-CARRYING CHILDREN FROM THE WORLD'S LARGEST AUTOSOMAL-DOMINANT ALZHEIMER'S DISEASE KINDRED

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Background: Autosomal dominant Alzheimer's Disease (ADAD) mutation carriers will develop early-onset Alzheimer's disease (AD) in the future with near 100% certainty and provide a unique opportunity to characterize the earliest biological changes associated with the predisposition to develop AD. We previously reported that *presenilin-1 (PSEN1) E280A* mutation–carrying children from the world's largest ADAD kindred in Colombia have structural and functional connectivity MRI abnormalities, along with plasma biomarker findings consistent with Aβ1-42 overproduction. In this study, cross-sectional measures of cognitive, behavioral and socio-emotional functioning were assessed in *PSEN1* mutation–carrying children, decades before the kindred's estimated median age 44 of mild cognitive impairment. **Methods:** Two-hundred-

sixteen children (108 *PSEN1* E280A carriers, 108 non-carriers), aged 8 to 17 years, were recruited from the Alzheimer's Prevention Initiative Colombia Registry. Participants were administered the Evaluacion Neuropsicologica Infantil-ENI, assessing memory, language and attention/executive function, and the Wechsler Intelligence Scale for Children-IV (WISC-IV), measuring general intelligence (verbal and non-verbal abilities, working memory, and processing speed). Parent-Child dyads completed the Behavior Assessment System for Children-2, assessing socio-emotional and behavioral functioning. Families and raters remained blind to the participant's genetic test results. Regression models examined the associations between cognitive and behavioral measurements and age in the mutation carrier and non-carrier groups. **Results:** Compared to non-carriers, *PSEN1* mutation carriers had lower mean scores on the WISC-IV Verbal Comprehension (p=0.01) and Processing Speed domains (p=0.04). Self-report measures revealed lower mean scores for carriers in Interpersonal Relations, skills which are necessary for interacting successfully with peers and adults (p=0.04). Age-associated differences between groups were seen in ENI subtests of attention (p=0.02). There were no differences in memory, complex attention, executive function or other cognitive domains. **Conclusions:** Results describe the earliest known cognitive and social vulnerabilities associated with ADAD. Findings suggest that children at genetic risk for ADAD have verbal, attention, and social vulnerabilities, even before the kindred's previously reported ages of 23 and 28 at the respective onset of CSF and PET indicators of fibrillar amyloid-β deposition. It remains to be clarified whether each of these alterations are developmental or reflective of the earliest progressive changes associated with preclinical AD.

O1-13-03 CULTURE- AND EDUCATION-FAIR 10/66 DEMENTIA DIAGNOSTIC ASSESSMENT: VALIDITY OF THE CORE MEASURES IN SUB-SAHARAN AFRICAN POPULATIONS

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Background: A culture- and education-fair dementia diagnostic algorithm to ascertain dementia status was developed and validated by the 10/66 DRG, with strong evidence of construct, criterion and predictive validity in Asia and Latin America. However, only one African site (Nigeria) participated in the development phase while the assessment was used subsequently in other sub-Saharan African (SSA) countries. The aim of this study is to assess the validity of its core measures in SSA populations. **Methods:** The 10/66 dementia diagnostic assessment and algorithm were used during surveys in Nigeria, Ghana, South Africa, Central African Republic, Congo and Tanzania. The extensive data available from those sites were analysed alongside those from other 10/66 sites to estimate the size of centre and interviewer effects on the core assessments of cognition, mental state and informant report upon which the 10/66 diagnosis relies. Patterns of intercorrelation between the core assessments, and external indicators within the nomological net were assessed to understand their construct validity. Psychometric analyses (Item Response Theory) were conducted to assess possible measurement bias (DIF) across centres and to identify potential for co-calibration with score distributions from other regions. **Results:** Variation in score distributions, both among and within centres, were much greater in SSA than were observed in other 10/66 regions. Informant reports of cognitive and functional decline (CSI-D relscore), and depression symptoms (EuroD), rather than the assessment of cognition (CSI-D cogscore) were mainly affected. Informant scores were between 4.2 (2.0-8.0) and 6.7 (4.0-9.5) in Central Africa vs. 1.0 (0.0-2.0) in urban Latin America and 0.5 (0.0-1.5) in urban India, while depression scores were 5.5 (4.0-7.0) in rural Ghana vs. 1.0 (0.0-3.0) in Cuba and Puerto-Rico, and 2.0 (1.0-4.0) in Peru, Mexico and Argentina. Detailed results on measurement bias that may have occurred because of differential item functioning (DIF) across cultures will be presented. **Conclusions:** Preliminary results suggest that the challenges of cross-cultural adaptation may be greater between SSA countries and other world regions.

O1-13-04 CROSS-CULTURAL EVALUATION OF A NOVEL LANGUAGE-NEUTRAL VISUAL-BASED COGNITIVE EVALUATION TEST (VCAT) IN FOUR SOUTHEAST ASIAN POPULATIONS

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Background: Cognitive screeners are imperative for early diagnosis of dementia. The Visual Cognitive Assessment Test (VCAT) is a language neutral test that has been proven to be useful for multilingual population in a single center study. However, its performance utility is unknown in a wider and more diverse cohort. Therefore, we want to validate and evaluate the performance of the VCAT in detecting cognitive impairment across Asian countries as well as to study the influence of language differences on test results. **Methods:** 288 participants were recruited to determine the usefulness of a single version of VCAT, without translation or adaptation in a multinational, multilingual population. 164 healthy controls (HC), 47 mild cognitive impairment (MCI), and 73 mild dementia participants, were recruited from Singapore, Malaysia, Indonesia and Philippines. All participants underwent Mini Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA), a single version of VCAT, and Geriatric Depression Scale (GDS) and the tests were administered by trained psychologists. HCs and CIs (MCI+mild dementia) were analyzed separately to ensure similar baseline cognition in the language analysis. To study the influence of language used to administer the VCAT, participants were classified into different language groups based on the writing system (logographic vs alphabetic) and language family (Indo-European vs Sino-Tibetian vs Austronesian). **Results:** VCAT