defined on co-registered MRI data via Freesurfer, and normalized using both whole cerebellar and cerebellar grey reference regions. **Results:** A nearly linear shift of SUVr values are seen with increased smoothing, but the direction of effect depends upon the amyloid burden of the subject. Generally, SUVr values increase with smoothing for low-burden subjects, and decrease with smoothing for high-burden subjects. Comparing SUVrs computed at the highest available spatial resolution to those computed at 9mm effective resolution, SUVrs changed from -5 to 8% for florbetapir and -7% to 5% for PIB using whole cerebellar reference regions. Changes due to smoothing using a cerebellar grey reference were similar. Changes due to spatial resolution differences in longitudinal SUVr measurements were fairly small, presumably in part due to the small change in SUVr between time points. **Conclusions:** White matter partial volume effects appear to increase SUVrs following smoothing in amyloid negative patients, while CSF partial volume effects appear to decrease SUVrs in amyloid positive patients, especially in cases with atrophy. Quantitative SUVr thresholds used for cross-sectional analysis therefore require attention to spatial resolution to compensate for effects of different scanner resolutions. For small longitudinal changes in SUVr, spatial resolution differences appear to have a small effect.

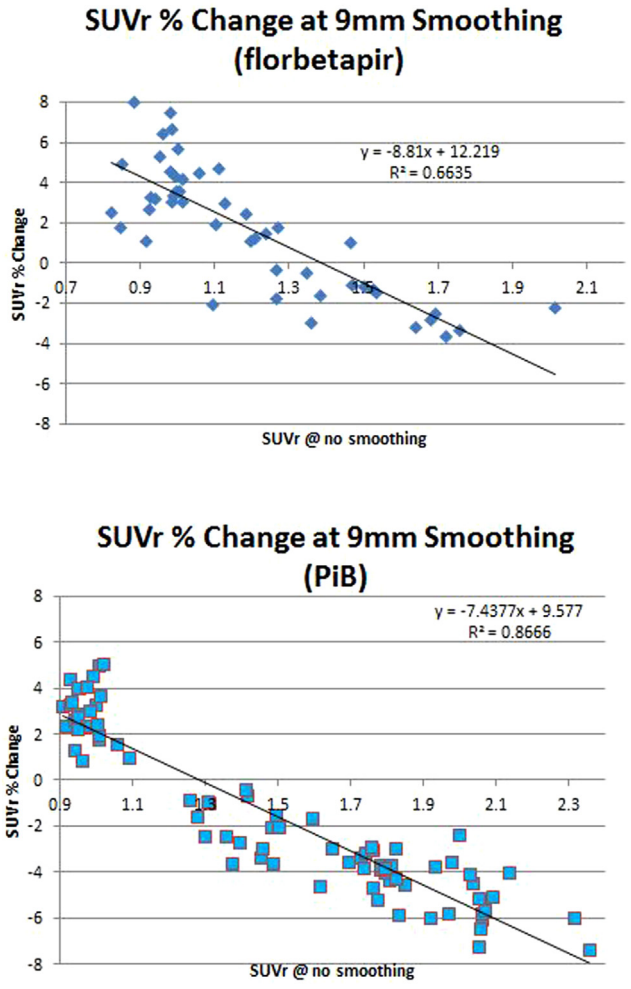

Fig 1. Percent change of composite SUVr for florbetapir (top) and PiB (bottom) ADNI images analyzed at native spatial resolution compared to images smoothed to 9mm effective resolution. A trend is seen where increasingly amyloid negative values show increasing SUVr due to smoothing, and conversely, increasingly amyloid positive values show decreasing SUVr due to smoothing.

P1-304 ARTERIAL SPIN LABELING CEREBRAL BLOOD FLOW AND BRAIN VOLUMES IN DEMENTIA-FREE ELDERLY

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Background: Decreased brain perfusion, as shown by SPECT imaging, is associated with increased risk of cognitive decline and dementia. Noninvasive measurement of cerebral blood flow (CBF) using arterial spin labeling (ASL) MRI provides an opportunity to examine how CBF may lead to key neurodegenerative changes (e.g., brain volume loss, high WMH burden) associated with increased risk of dementia. In this context, we examined ASL CBF, as a potential functional marker of increased neurodegenerative risk in nondemented elderly. **Methods:** 49 non-demented volunteers (mean age 85, MMSE 28.5) underwent 3T MRI (Siemens Trio), including structural and Q2TIPS PASL sequences and detailed cognitive and neurological assessment. Automated WMH volumes were obtained from FLAIR images using a customized routine, segmented into deep and periventricular WMHs and log transformed when necessary to account for skewed distributions. Brain, hippocampal, and WM volumes were obtained using FreeSurfer 5.1. WMHs were subtracted from total WM to obtain normal appearing white matter (NAWM) masks, which were co-registered, along with cortical and subcortical gray matter maps to M0 ASL sequences to obtain regional CBF values (ml/100g/min). Differences in total WMH and NAWM CBF were examined using matched pairs t-tests. Linear regressions determined associations between CBF, brain volumes, and subject characteristics. Multivariate linear regression analyses examined relationships between regional CBF and brain volumes, adjusted for relevant variables. **Results:** Decreased WM and NAWM CBF, but not cortical or subcortical GM CBF, were associated with increased age, and hypertension (HTN). CBF measures were not associated with MMSE. NAWM CBF was significantly higher than total WM CBF. After adjusting for age, gender, HTN, and intracranial volume, Greater PV, but not deep, WMH was associated with decreased WM and NAWM CBF; decreased total brain volume was associated with lower cortical CBF; and decreased hippocampal volume was associated with higher subcortical CBF. **Conclusions:** Regional ASL-derived CBF is associated with brain volume change in nondemented elderly at risk for dementia. The inclusion of ASL with structural MRI may enhance the ability to detect those at risk for cognitive decline, and provide a functional biomarker in prevention and treatment trials aimed at improving cerebral perfusion in the elderly.

P1-305 THE PRACTICAL UTILITY OF AMYLOID AND FDG-PET IN AN ACADEMIC DEMENTIA CENTER

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Background: We evaluated the impact of amyloid and FDG PET on clinical decision making in a heterogeneous population of cognitively impaired patients. **Methods:** We selected all patients with FDG and PIB PET and had at least one clinical evaluation before and after PET. We evaluated for change in primary diagnosis and change in treatment between the pre- and post-PET visit. The association of discordant PIB and FDG with changes in clinical management was assessed separately using chi-square and together applying logistic regression. **Results:** 140 cognitively impaired patients were included in thestudy (mean age 65.0 $\pm$ 8.2, 46.% primary Aβ diagnosis, 55.0% of new patients, mean MMSE 22.7 $\pm$ 9.0, 41.0 % CDR$<$1). PIB and FDG PET agreed in classifying 83.6% of patients. Concordance with