

## [F-18]AV-1451 PET in non-demented adults with Down Syndrome is related to both amyloid and age

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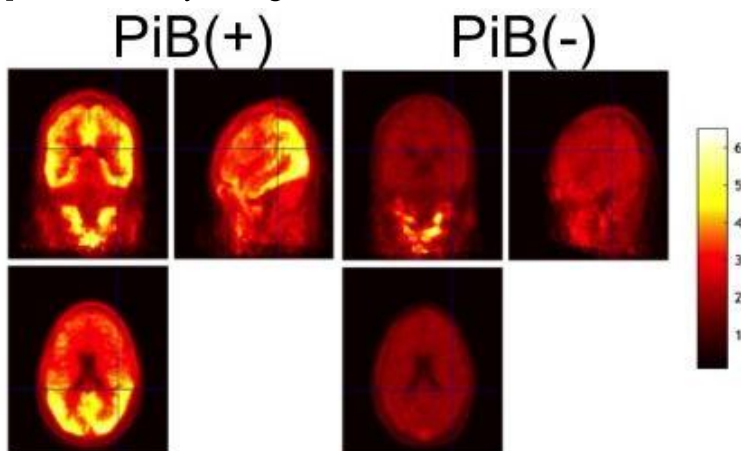
**Background:** Adults with Down syndrome (DS) are uniformly affected by AD pathology by their 30's and have a 70-80% chance of clinical dementia by their 60's. Yet, nowhere is it clearer than in DS that A $\beta$  deposition is not sufficient to produce dementia, as individuals harbor this pathology for over a decade before cognitive decline is apparent. In the longitudinal study of Neurodegeneration in Aging DS (NiAD), we have begun to explore AD related biomarkers including both amyloid and tau PET in adults with DS.

**Objective:** In the present study, we examined tau pathology using [F-18]AV-1451 PET in non-demented adults with DS.

**Methods:** 17 participants with DS (mean age 40.4 years) underwent [F-18]AV-1451 PET. [F-18]AV-1451 80-100 min summed images were created and warped to a common space via FreeSurfer. Images were converted to SUVR by normalization to FreeSurfer cerebellar gray matter. We assessed the voxelwise relationship of [F-18]AV-1451 SUVR to DSMSE using SPM8. Additionally, we assessed the retention of [F-18]AV-1451 based on amyloid status, measured by PiB-PET in a subset (n=10) of participants.

**Results:** A significant positive relationship ( $p < 0.01$ ) was observed between [F-18]AV-1451 retention and age. Additionally, when examining the voxelwise difference in [F-18]AV-1451 between PiB(+) and PiB(-) participants, there was a significant ( $p < 0.05$ ) difference between groups (Fig 1).

**Conclusions:** Significant tau burden, measured by [F-18]AV-1451 PET is observed in non-demented adults with DS and is related to both amyloid status and age. Ongoing studies will examine these relationships in more detail, particularly the relationship of regional amyloid deposition in DS to tau burden. These data suggest that [F-18]AV-1451 may be a good marker of tau burden in DS.



Keywords: tau, AV-1451, down syndrome