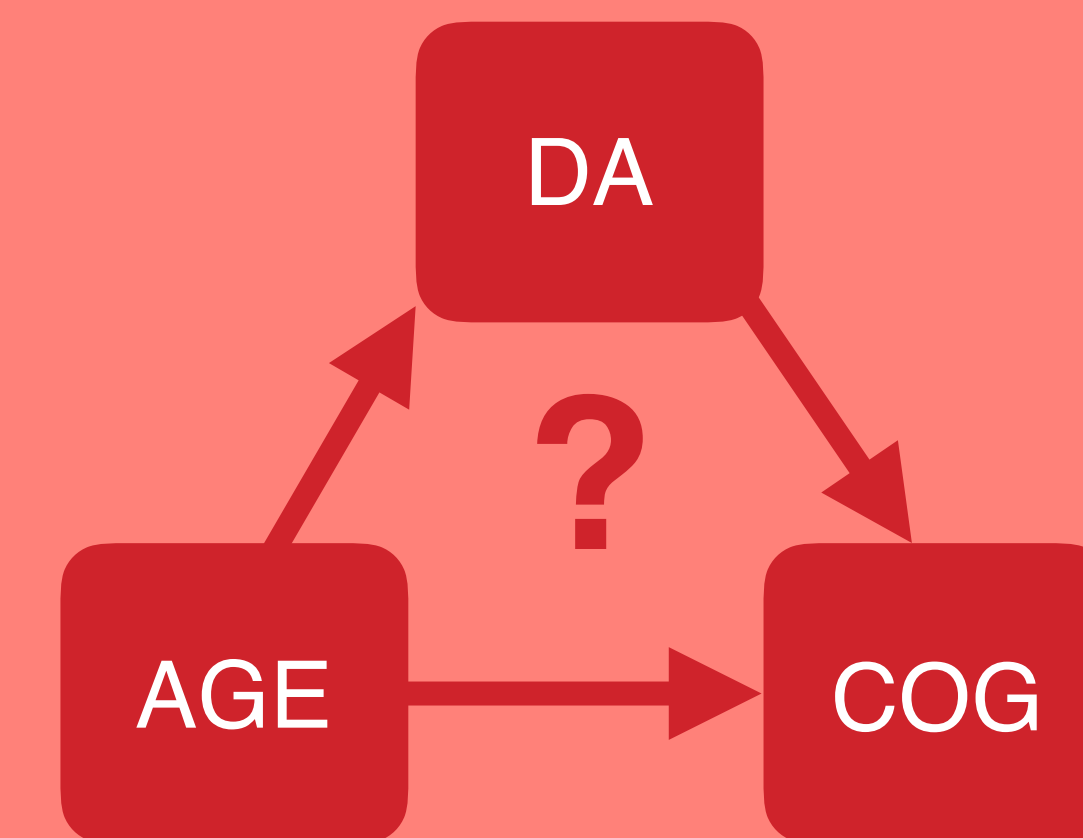


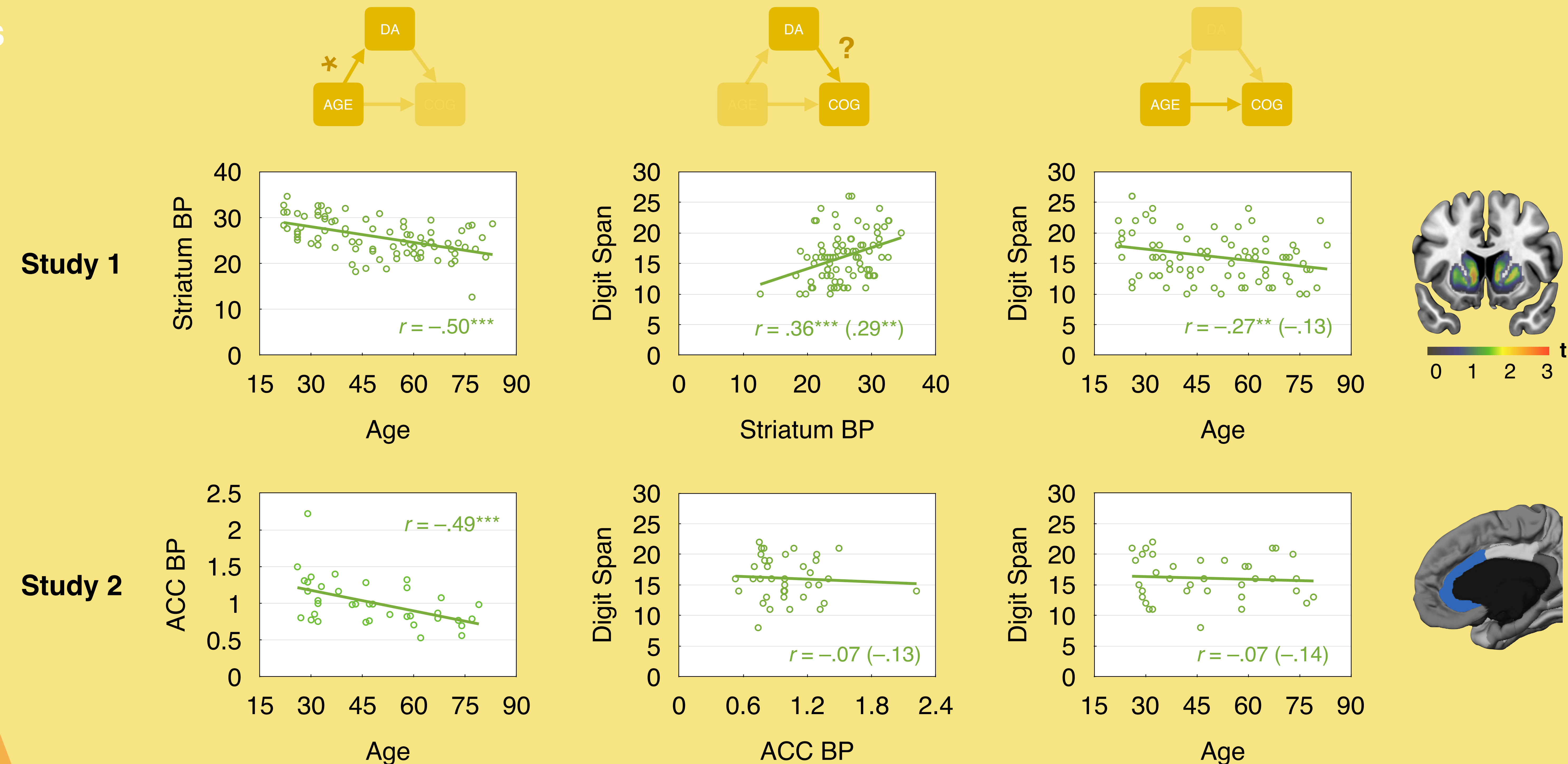
Introduction

The evidence that dopamine receptor availability mediates the association between aging and cognition is one of the most widely cited findings in the cognitive neuroscience of aging. However, few studies have directly examined these associations and most published studies have small sample sizes and inconsistent results.

Are adult age differences in cognition due to age differences in dopamine (DA)?

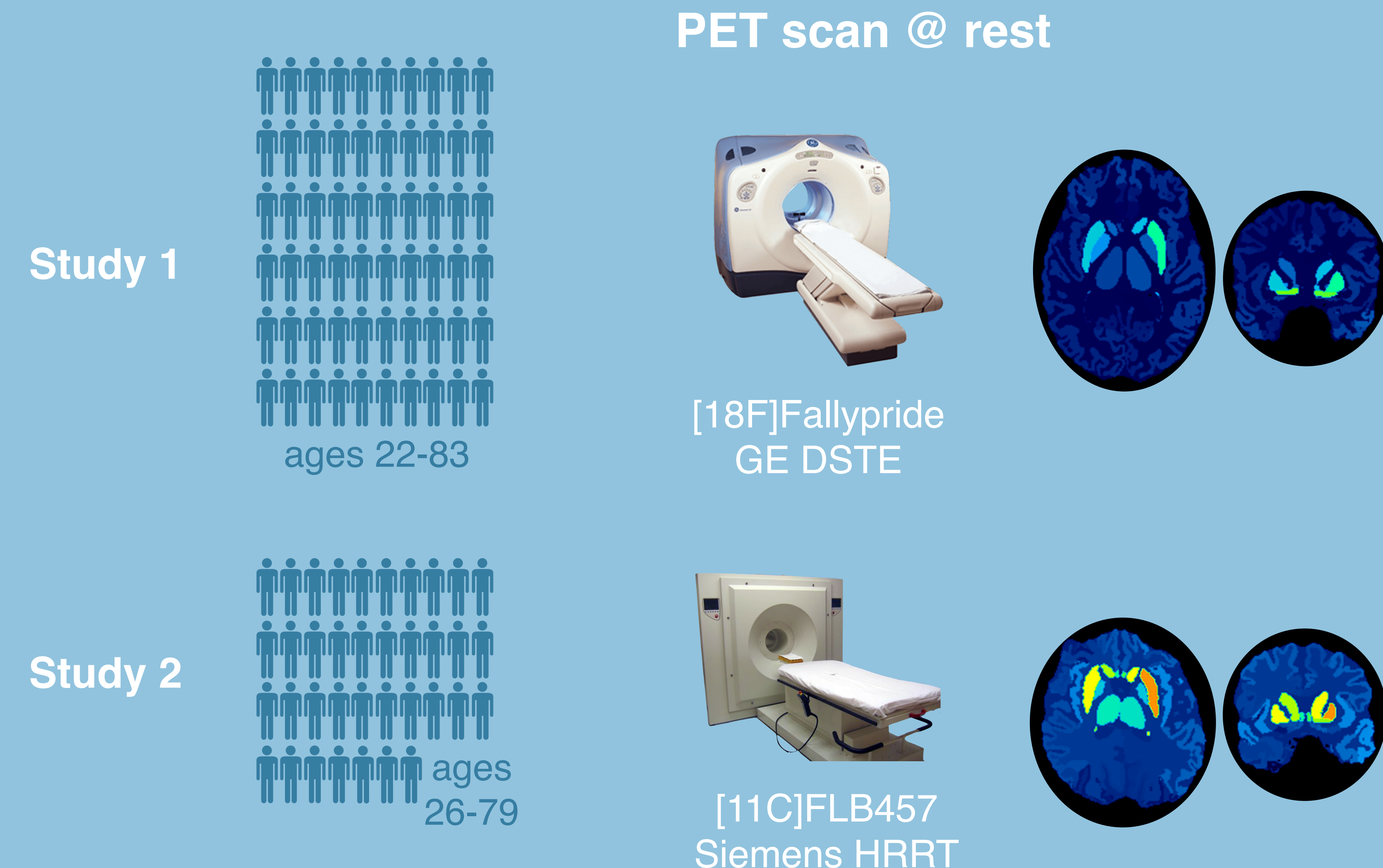


Results



Cognitive scores are NOT consistently correlated with D2-like dopamine receptor availability

Methods



Cognitive Tasks

- Memory (WMS-III)**
- Long-term memory: Delayed Recall
 - Short-term Maintenance/Working Memory: Digit Span
 - Working Memory: Letter Number Sequencing
- Speed of Processing**
- Trail-making Test (Part A)
- Cognitive Flexibility**
- Trail-making Test (Part B-A)

Conclusions

As expected, both studies showed significantly lower D2-receptor binding potential with age in nearly every region (except the hippocampus). Whole brain analyses controlling for multiple comparisons (using cluster-free thresholding) revealed no significant relationships between D2-receptor binding potential and any measure of cognitive ability (controlling for age) in either study. An ROI analysis in Study 1 provided some evidence for a correlative triad with the negative effect of age on digit span partially mediated by striatal D2-receptor availability. **Overall, the results partially support the correlative triad of age, DA, and cognition, however some of the previously reported D2-cognition associations may not be reliable.**