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Areas of Investigation with Respect to Reserve and Resilience

- **Population Studied**

Population-based cohort (50-90+ years) in Olmsted County, MN

- **Methods**

PET (Amyloid, Tau, FDG) & MRI (structural, DTI, CVD)

We investigate mechanisms through which risk factors (vascular health, lifestyle enrichment, genetics, sleep etc.) in the population impact brain across the life span

Concepts Used

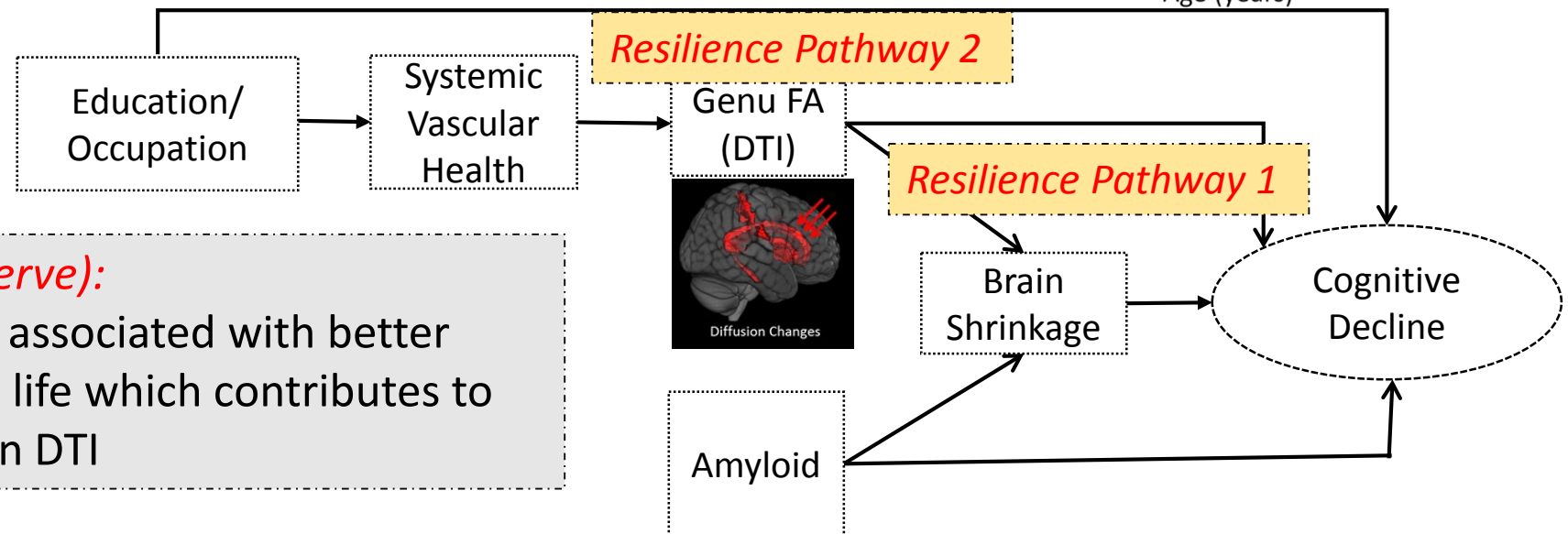
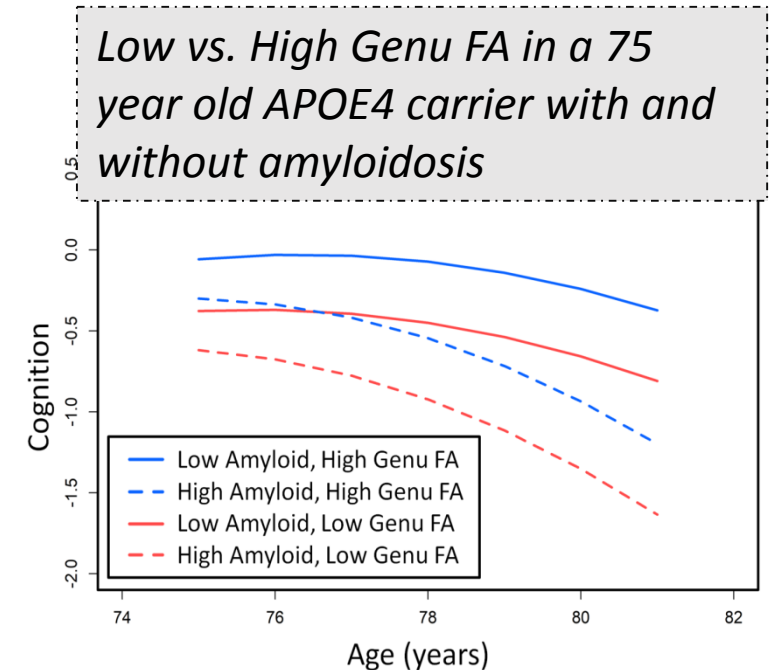
- **Resilience to AD** → Coping with pathology.
Better-than-expected cognitive performance in relation to the degree of AD pathology
- **Resistance to AD** → Avoiding pathology.
Absence or lower than expected levels of AD pathology
- **Brain Reserve** → Neurobiological capital which captures individual variation in structural characteristics of the brain.
E.g. Anesthesia exposure/surgery or vascular risk factors can lower the brain reserve (DTI, FDG-PET, MRI)

Resilience Pathways in Cognitive Aging

Concept: Resilience

Measures: DTI, amyloid PET, longitudinal brain and cognitive decline (5 years)

Operational definition: Pathways or processes that help cope with pathologies – explain higher cognitive performance at the same level of pathology



Resilience Pathway 1 (Brain Reserve):

Higher Education/Occupation is associated with better systemic vascular health later in life which contributes to greater white matter integrity on DTI