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Alzheimer's Disease Pathology in Elderly with Preserved Memory

- Population Studied: Healthy older adults with stable above average memory, longitudinal memory performance, cross sectional AD pathology
- Methods: Quantitative neuropathological observations
- Our group investigates the cellular and pathological concomitants of preserved cognitive performance in old adults with an emphasis on quantitative morphometry

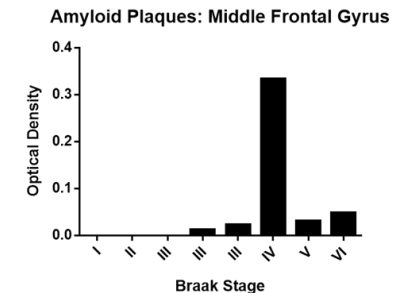
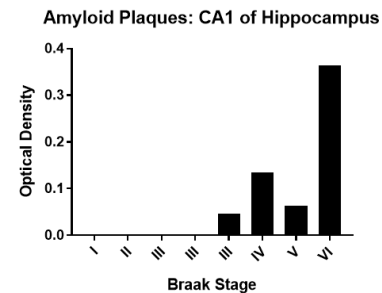
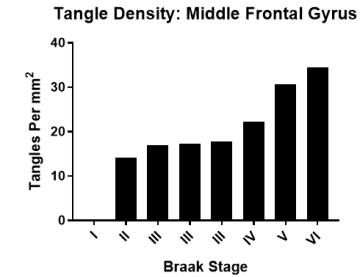
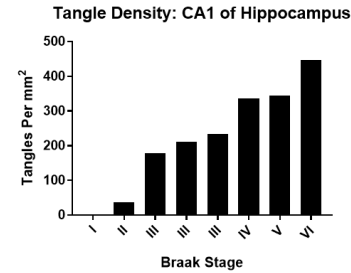
Concepts Used In Research

- **Resistance** → resistance of the brain to emergence of age-related involutinal changes and pathology
- **Resilience** → protection against deleterious effects of pathology (e.g. plaques and tangles)
- **Maintenance** → the preservation of neural resources, including ongoing repair and replenishment of the brain in response to damage incurred at cellular and molecular levels due to pathology.

Example of Data that Address One Concept

Preserved memory with full range of AD pathology

- **Concept:** Resilience
- **Measures:** Progression and density of AD pathology (plaques and tangles), integrity of neurons, cognitive performance
- Quantitative analysis of tangles, amyloid- β in plaques and neurons
 - Eight 90+ study participants with highest and maintained episodic memory (CVLT) performance
 - Hippocampus and middle frontal gyrus



Despite above average episodic memory performance, two of eight brains displayed density of plaques and tangles sufficient for pathological diagnosis of AD