

Towards Standardizing a Framework for models of Alzheimer's Disease

This symposium was conceived independently, but with the subsequent input, of:

- Zaven Khachaturian
- Marsel Mesulam
- Ara Khachaturian
- Richard Mohs

...who have developed a new Special Topics section for Alzheimer's & Dementia to “assess the current state of knowledge related to the conceptual understanding of Alzheimer's disease and dementia.”

Canonical AD: The Human Disease
***Where all models must start...
or end up***

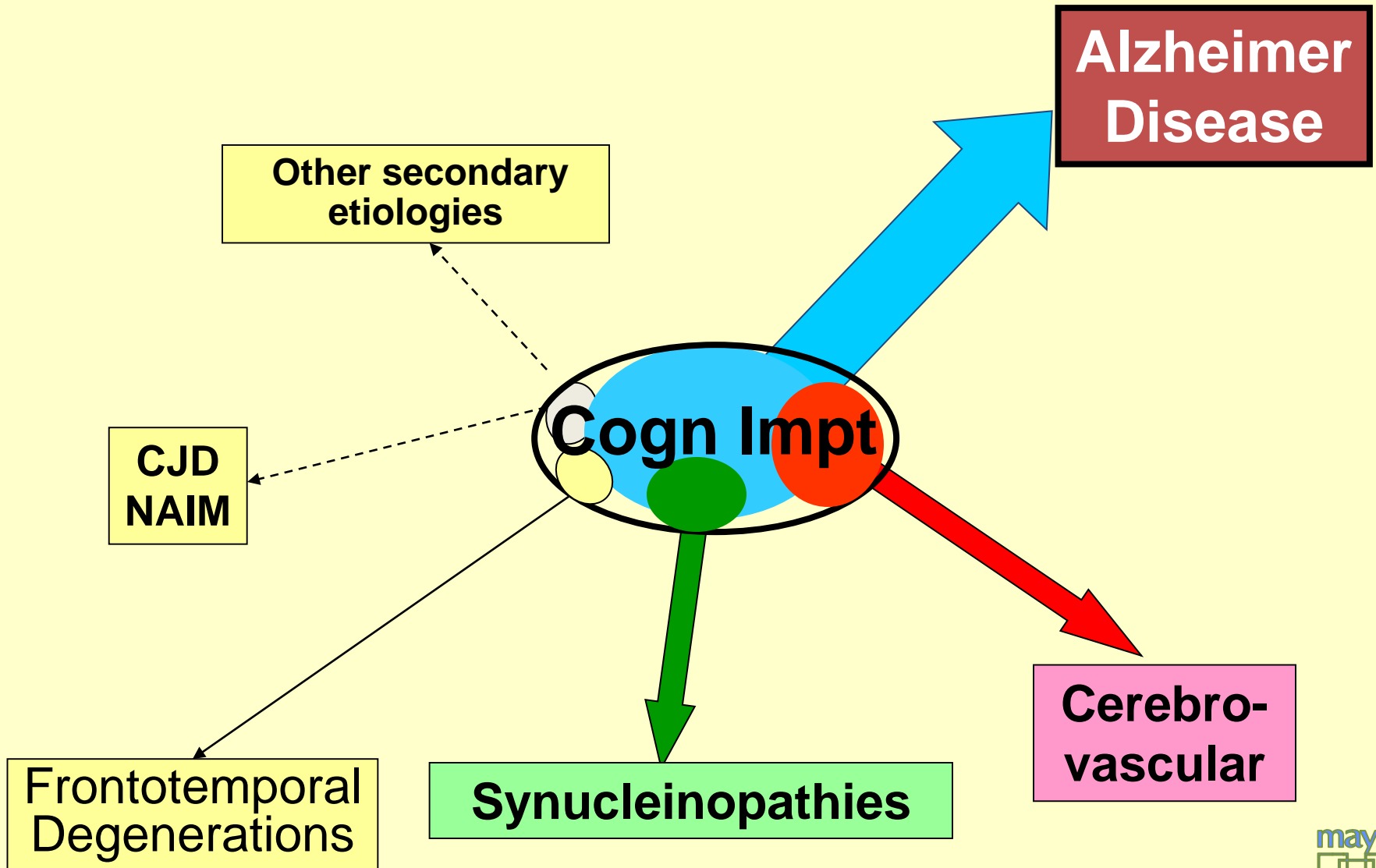
David Knopman MD

Mayo Clinic

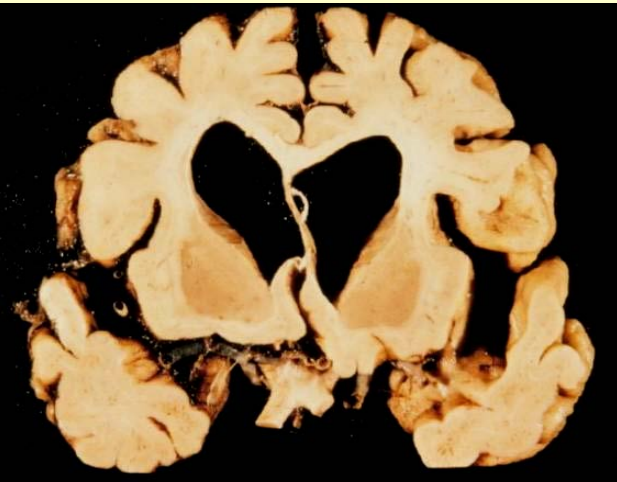
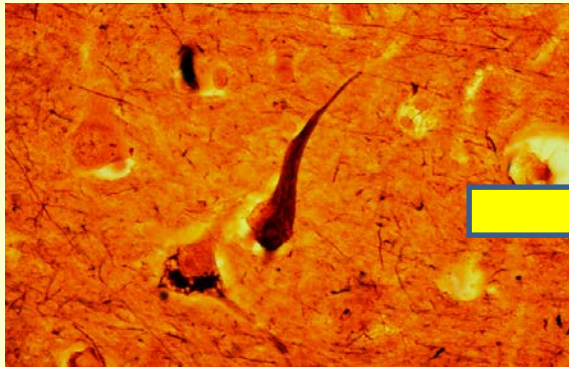
Rochester MN



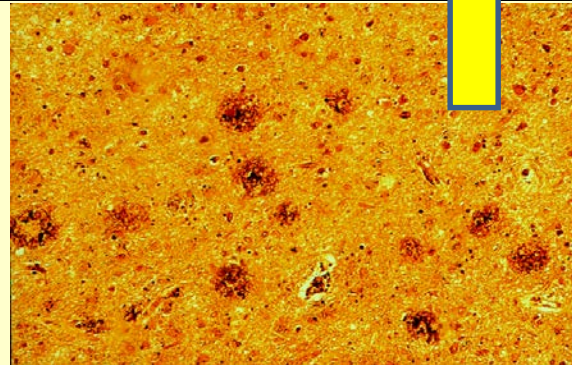
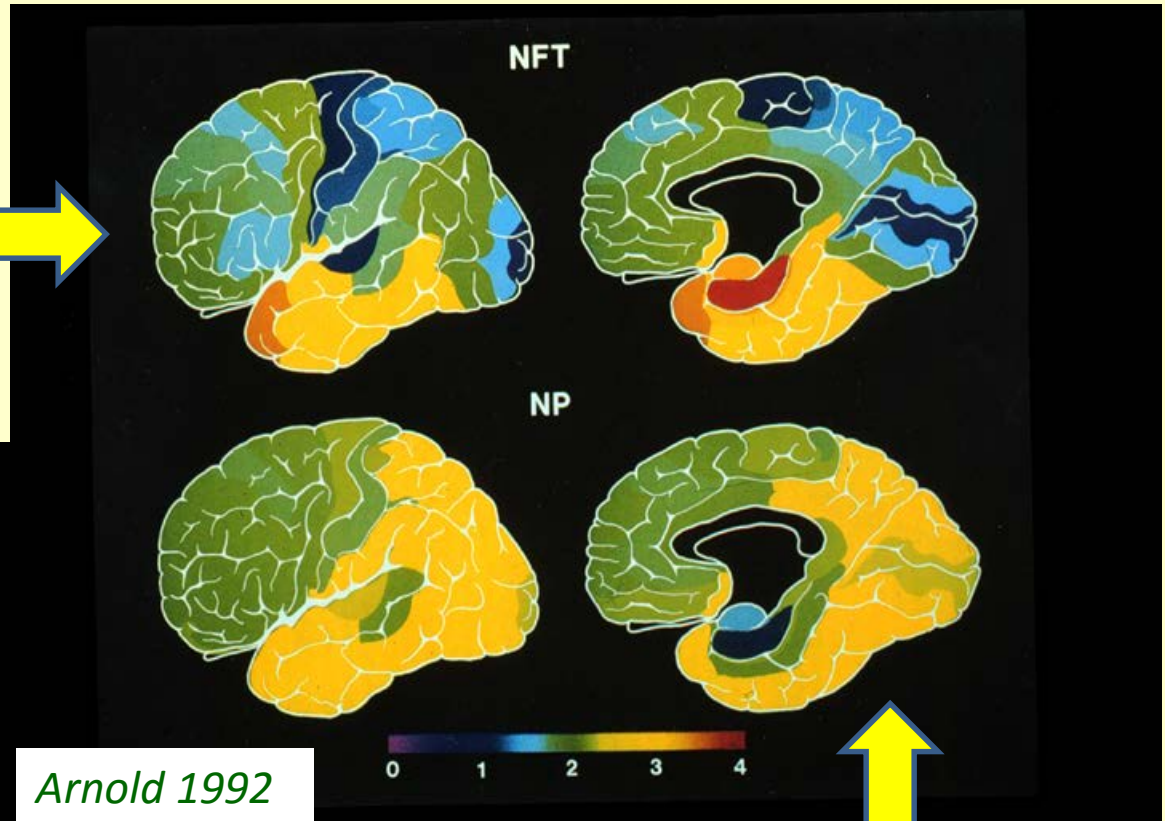
Alzheimer's Disease in relation to other etiologies



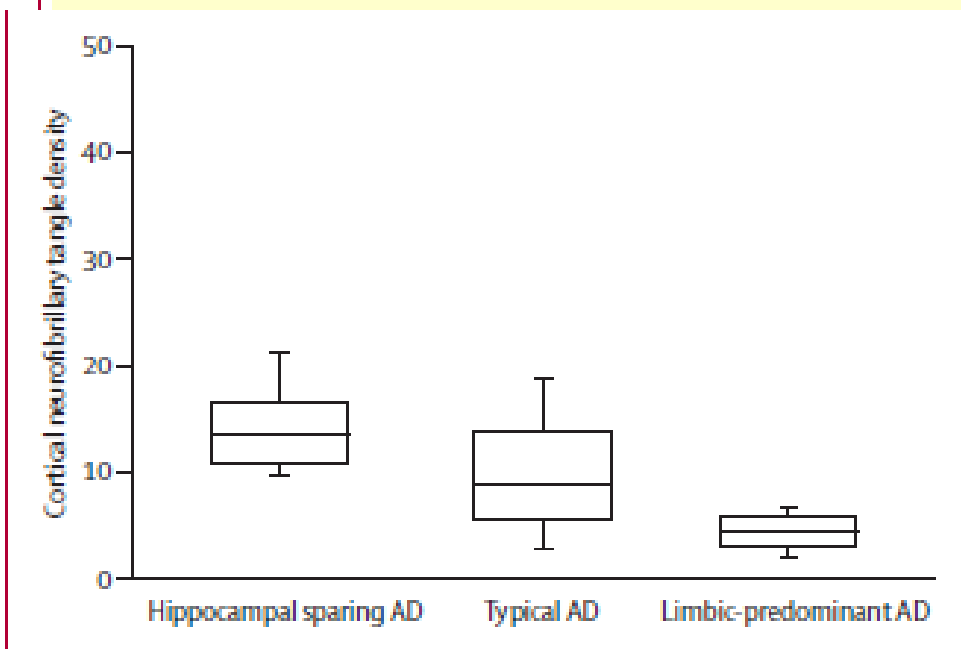
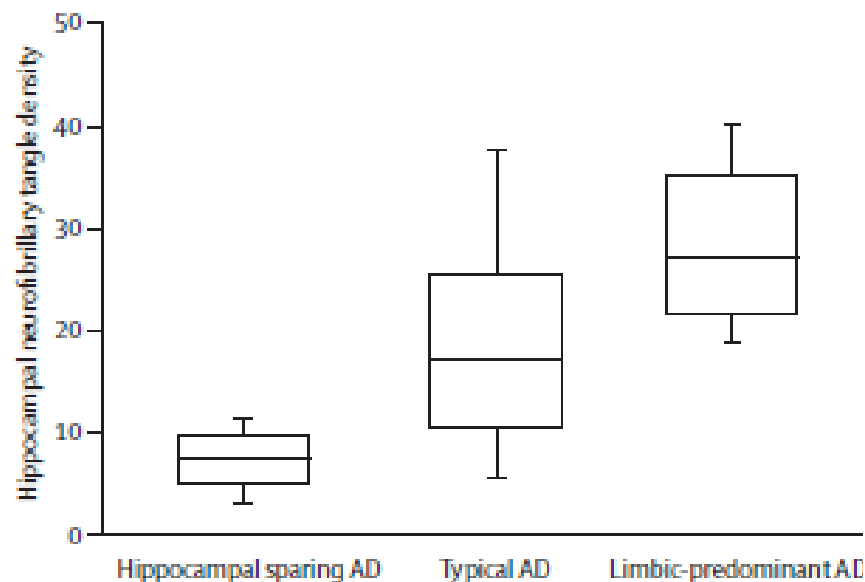
Core neuropathologic features of AD



Arnold 1992

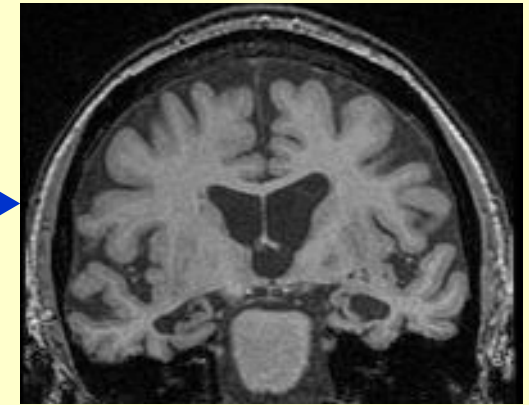


Variations in AD: Hippocampal sparing versus Limbic Predominant



Biomarkers of AD

Volumetric MR

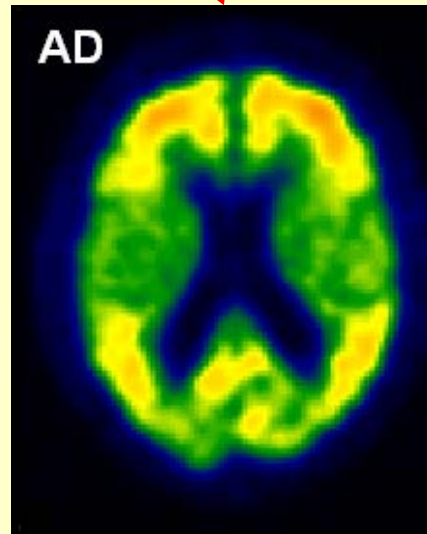
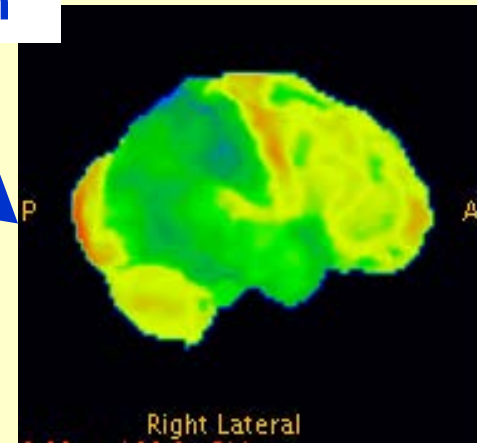


Elevated CSF tau

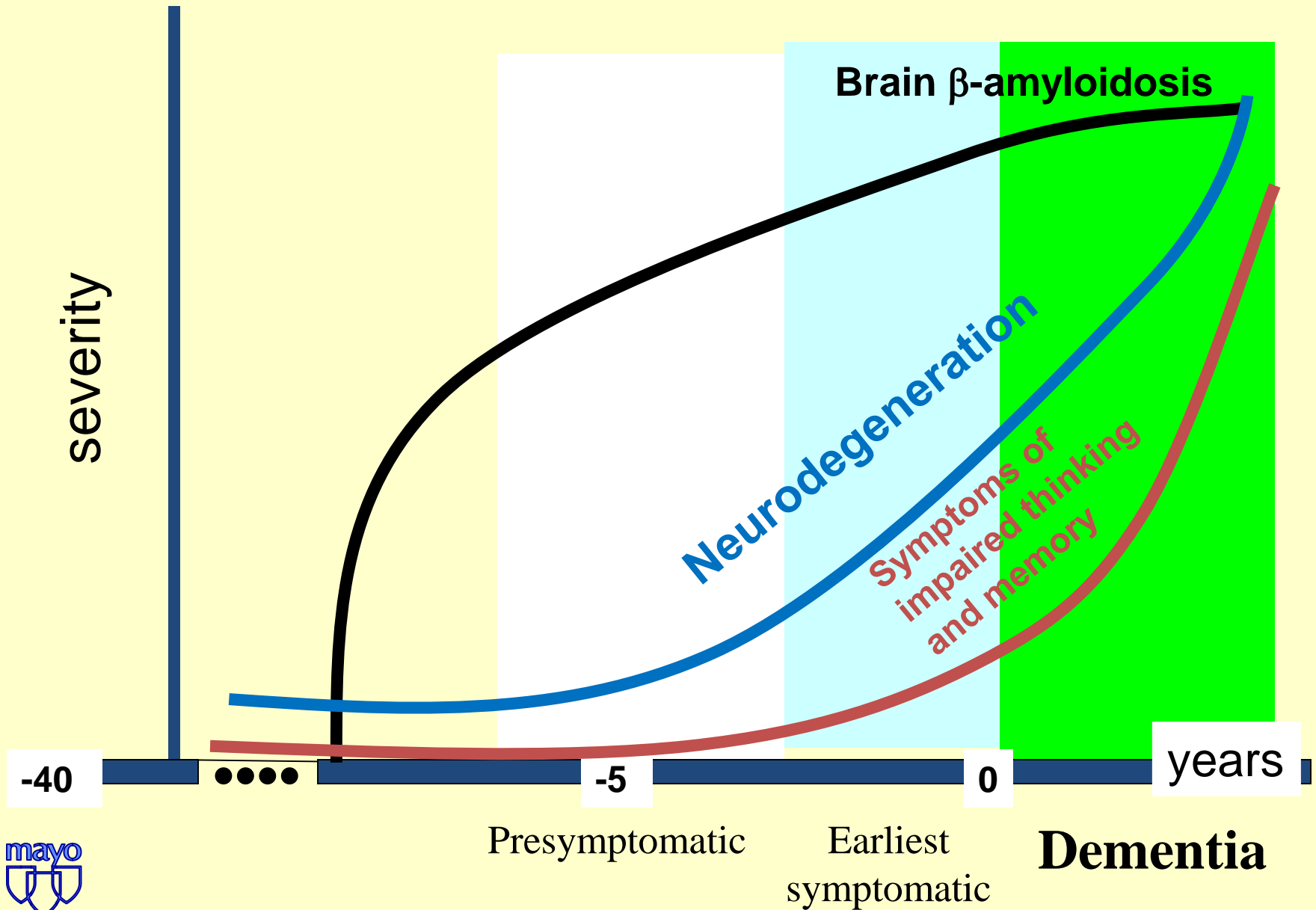
Low CSF Amyloid

Temporo-parietal hypometabolism

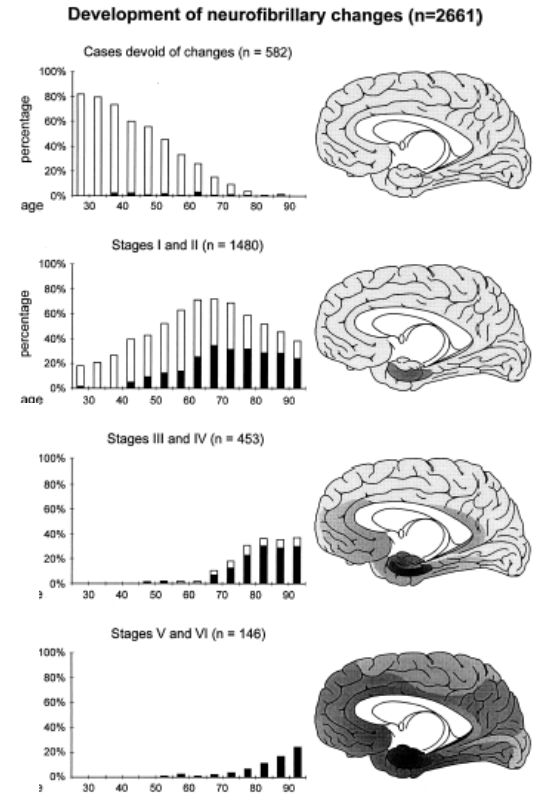
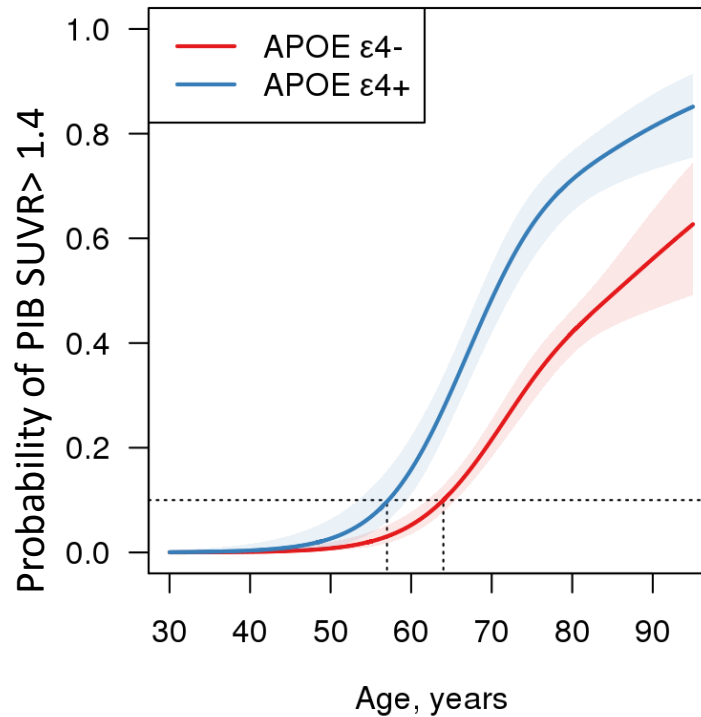
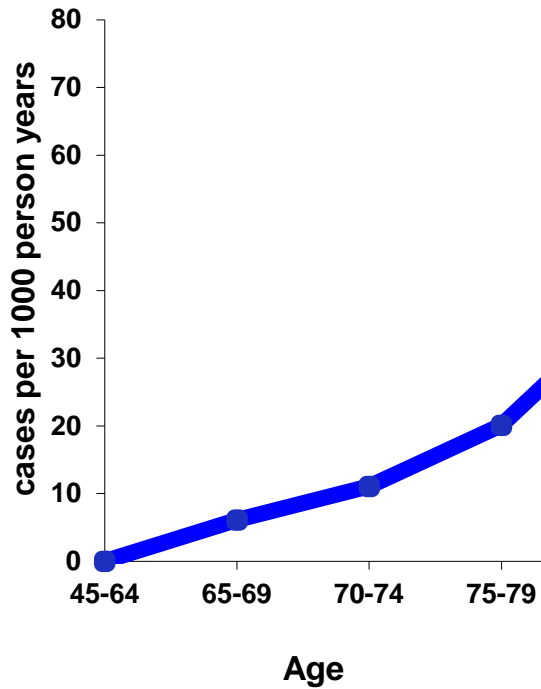
Amyloid PET



Sequential Biological & Clinical Changes in AD



Age & Expression of Alzheimer Disease



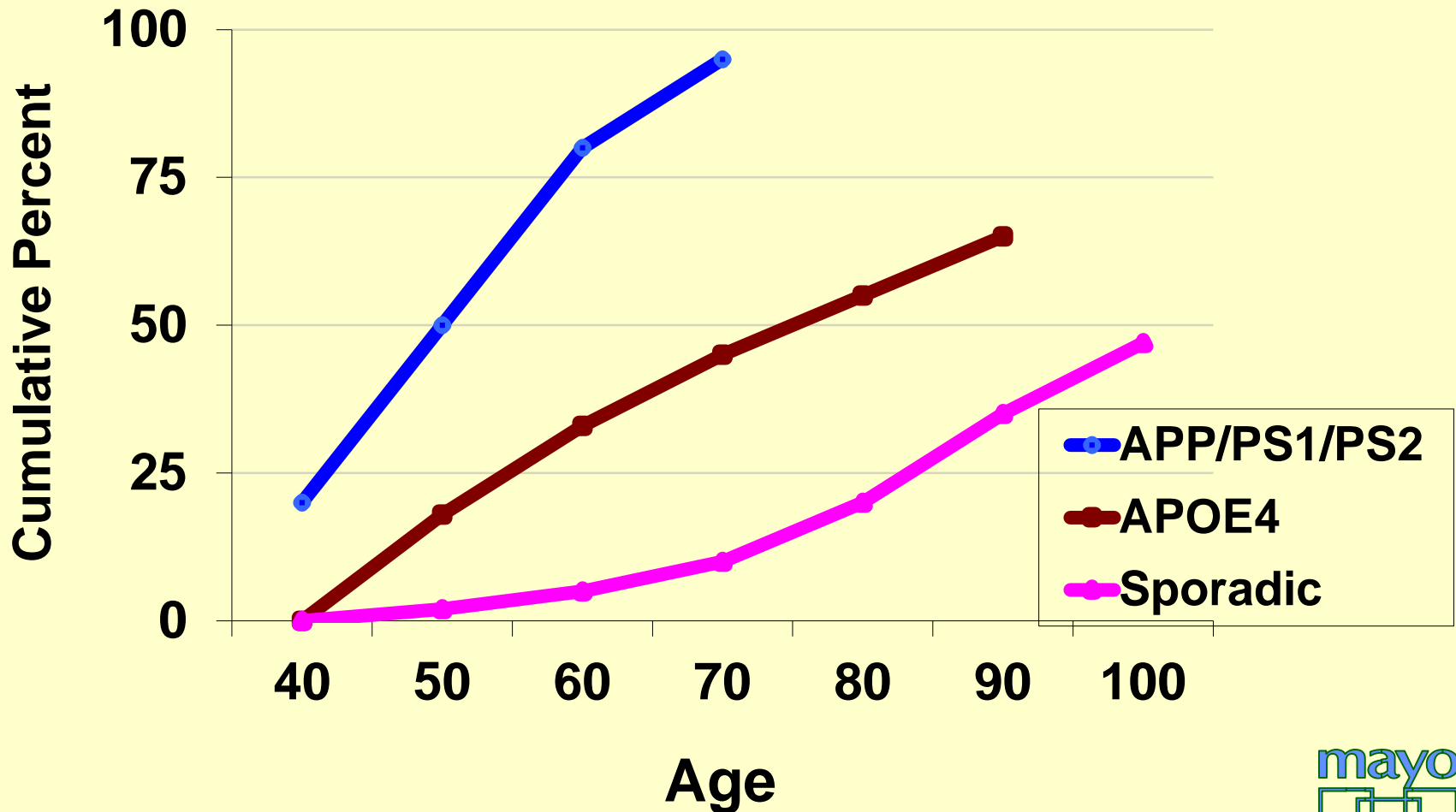
1. Jorm, Neurology 1998

3. Braak, Neurobiol Aging 1997

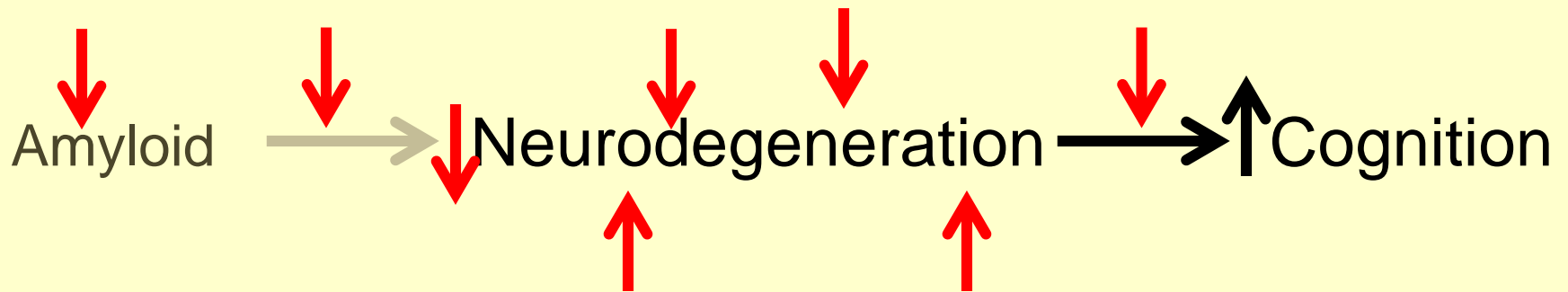
2. Jack, JAMA Neurol 2015



Relationship of dominantly inherited AD with genetic modifiers and “sporadic” AD







A sample of alternative models:

- Golde: Innate immunity
- Swerdlow: Energy homeostasis & the mitochondria
- Chui: Vascular mechanisms
- Iliff: Glymphatic system