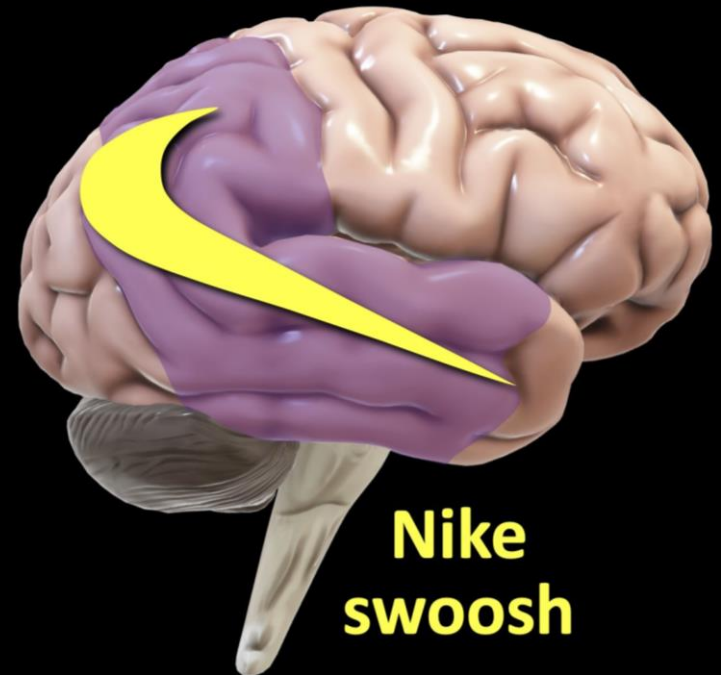


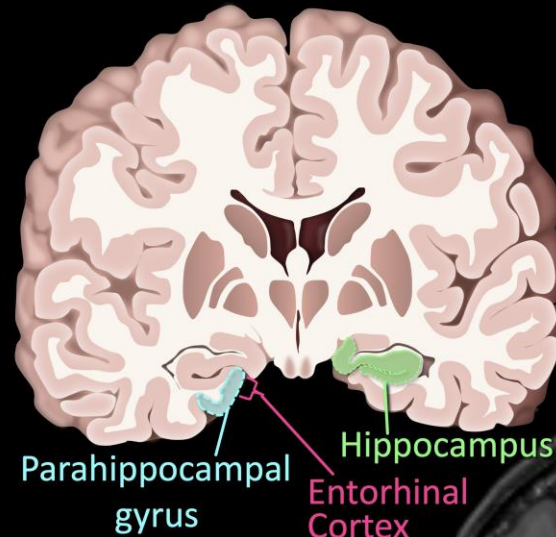
Alzheimer's disease

- Accumulation and deposition of cerebral amyloid- β ($A\beta$) and is the most common cerebral amyloid deposition disease.
- Medial temporal lobe atrophy (MTA) and parietal atrophy



Alzheimer's disease

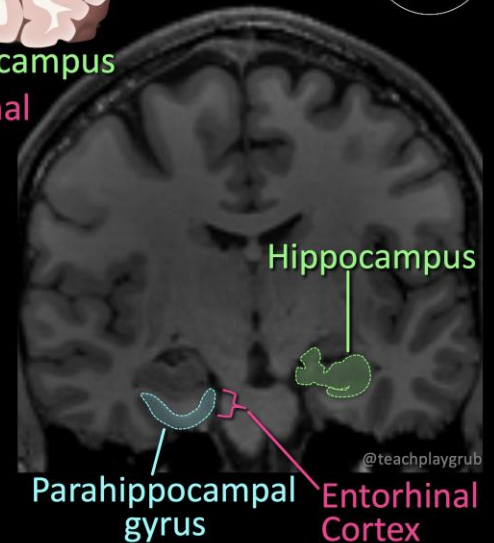
- Atrophy often involves the hippocampus & the anterior/medial portion of the adjacent parahippocampal gyrus, called the **entorhinal cortex**



Specific structures atrophy in AD



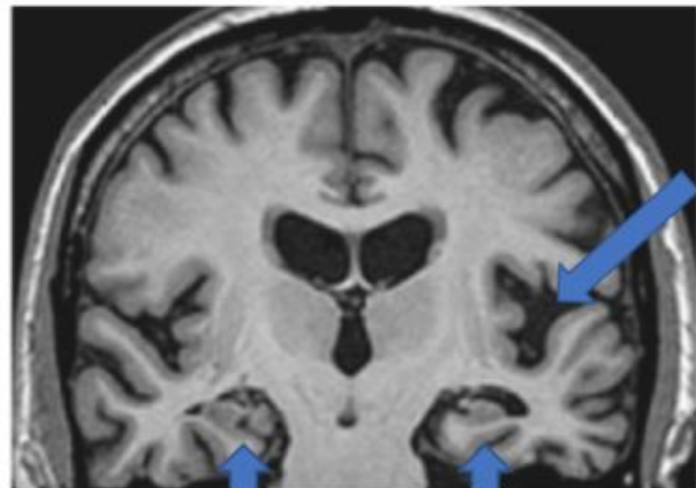
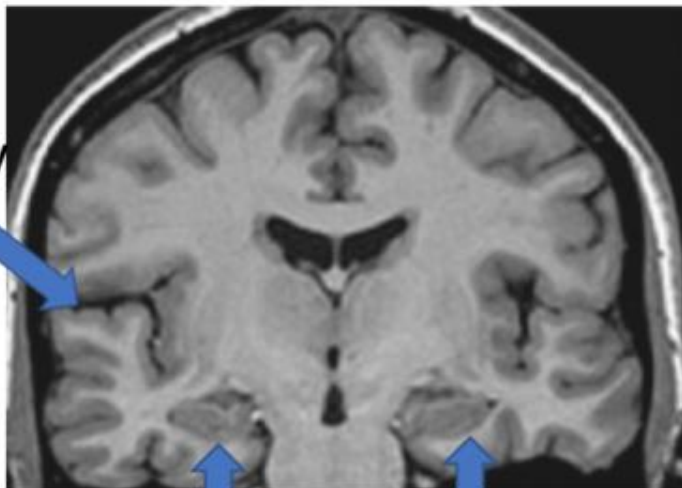
Need to recognize atrophy of these structures on imaging to help support a clinical diagnosis



Healthy Control

Alzheimer's Disease

Normal atrophy



Atrophy

Hippocampus

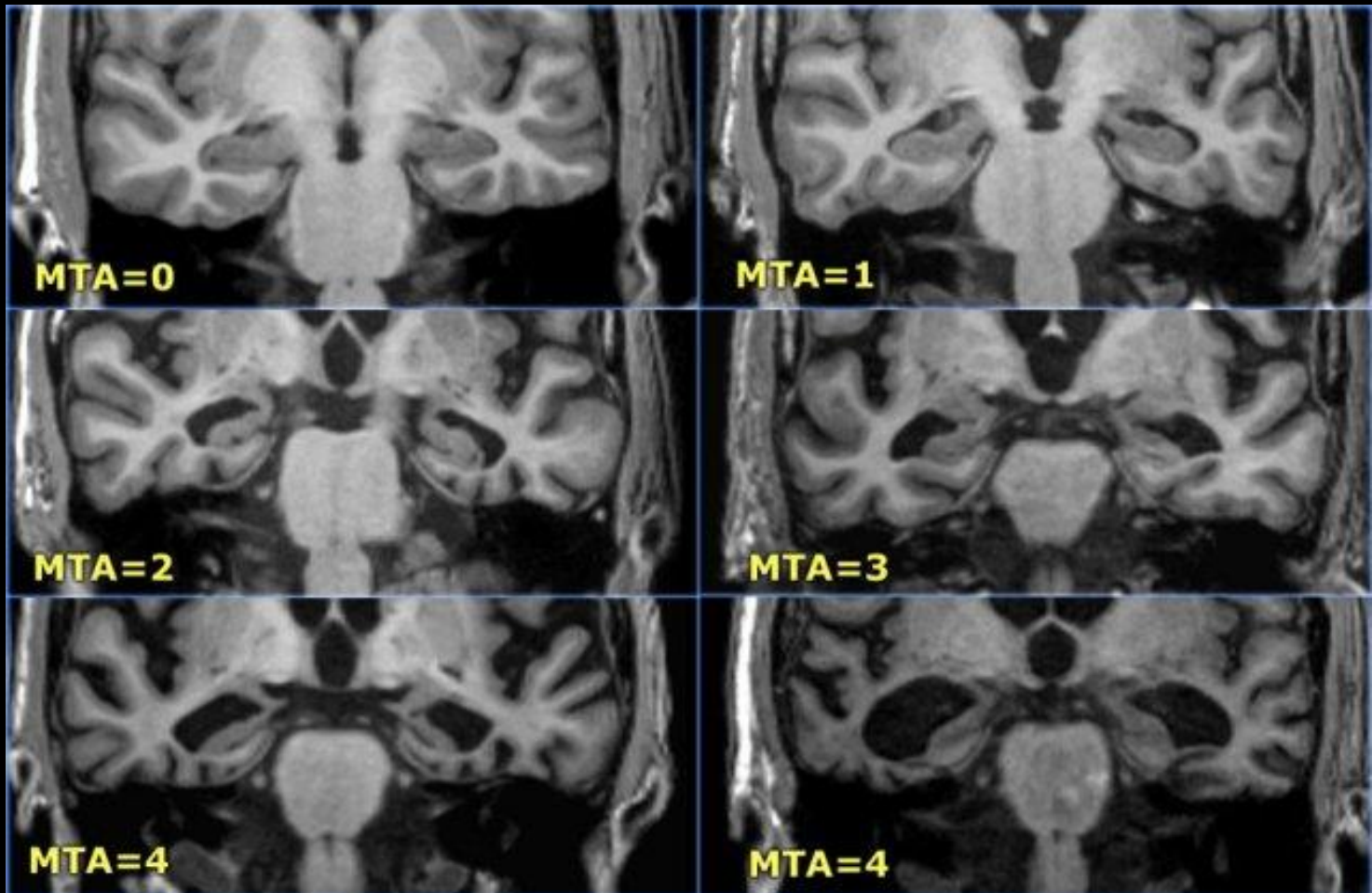
Medial Temporal lobe Atrophy

- MTA-score should be rated on coronal T1-weighted images at a consistent slice position.
- Select a slice through the corpus of the hippocampus, at the level of the anterior pons.
- > 75 years : MTA-score 3 or more is abnormal (i.e. 2 can still be normal at this age)
- Data from a study with 222 controls and patients with various forms of dementia in which this visual rating scale was used to assess temporal lobe atrophy suggest that sensitivities and specificities of 85% can be obtained for patients with AD.

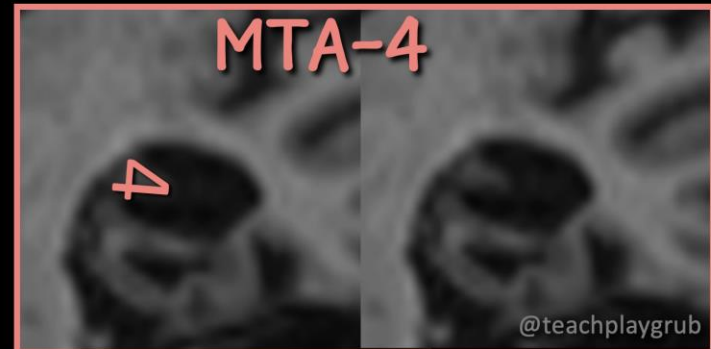
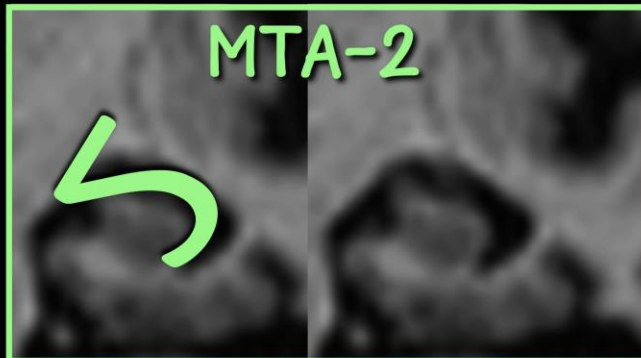
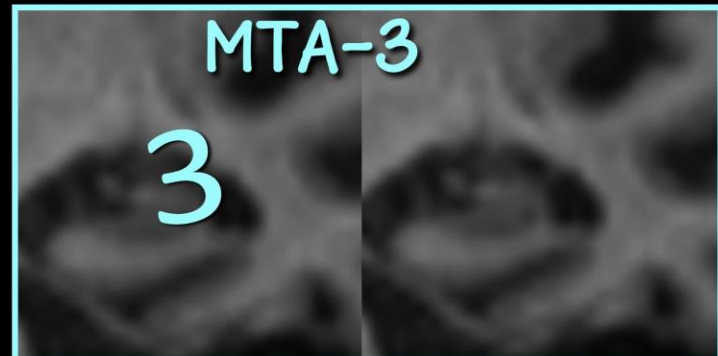
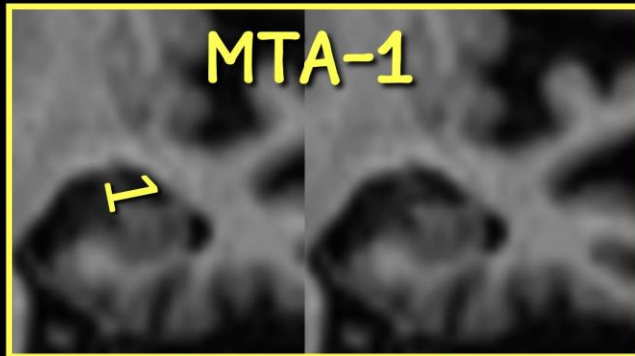
Medial Temporal lobe Atrophy

- Score is based on a visual rating of the width of the choroid fissure, the width of the temporal horn, and the height of the hippocampal formation.
- 0: No atrophy
- 1: only widening of choroid fissure
- 2: also widening of temporal horn of lateral ventricle
- 3: moderate loss of hippocampal volume (decrease in height)
- 4: severe volume loss of hippocampus
- < 75 years: score 2 or more is abnormal.
- > 75 years: score 3 or more is abnormal.

Medial Temporal lobe Atrophy

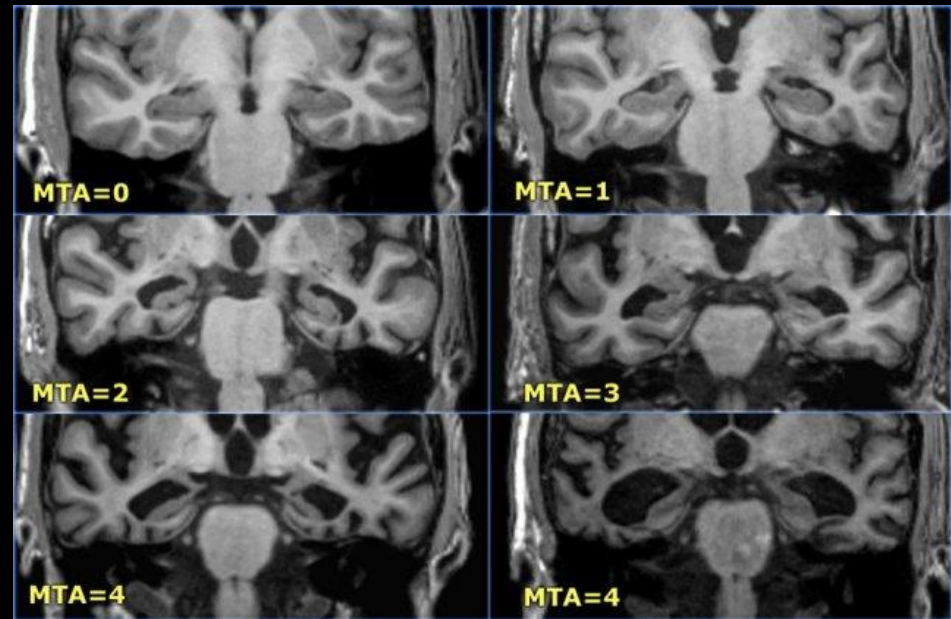


MEDIAL TEMPORAL ATROPHY SCORE



Medial Temporal lobe Atrophy

- Score is based on a visual rating of the width of the choroid fissure, the width of the temporal horn, and the height of the hippocampal formation.
- Zero:
 - No atrophy
- One
 - Widening of choroid fissure
- Two
 - Also widening of temporal horn of lateral ventricle
- Three
 - moderate loss of hippocampal volume (decrease in height)
- Four
 - severe volume loss of hippocampus



- < 75 years: score 2 or more is abnormal.
- > 75 years: score 3 or more is abnormal.