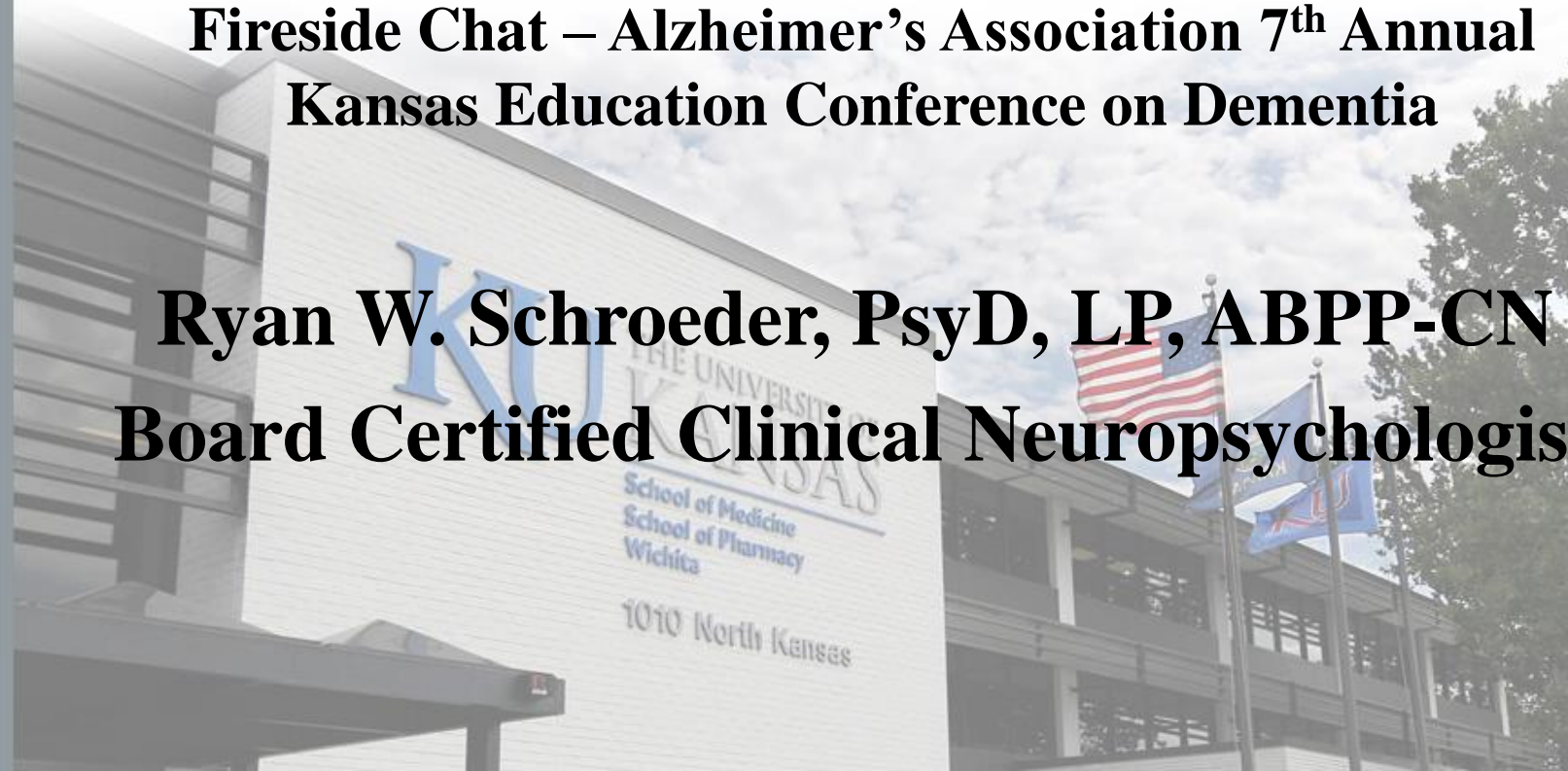




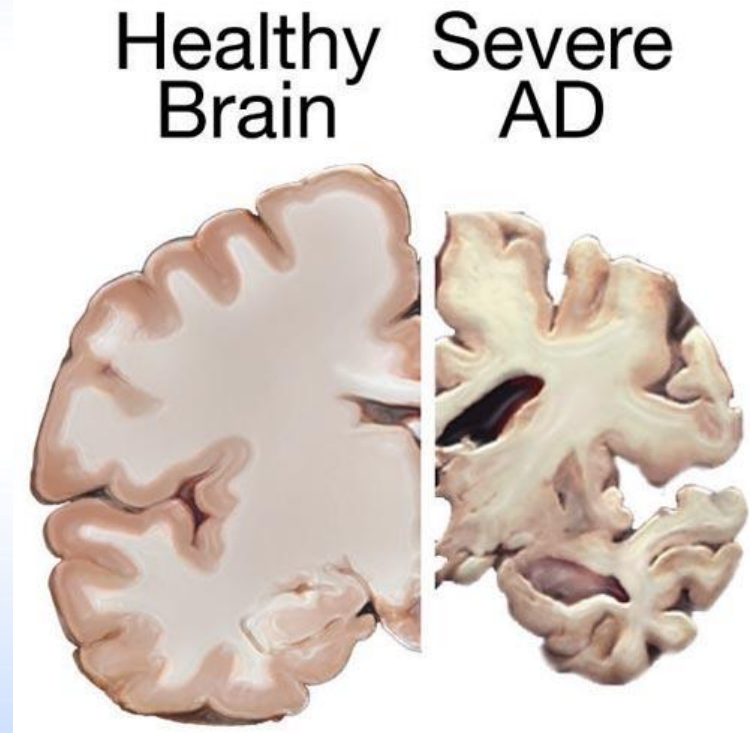
# **Dementia Through Clinical Cases**

**Fireside Chat – Alzheimer’s Association 7<sup>th</sup> Annual  
Kansas Education Conference on Dementia**

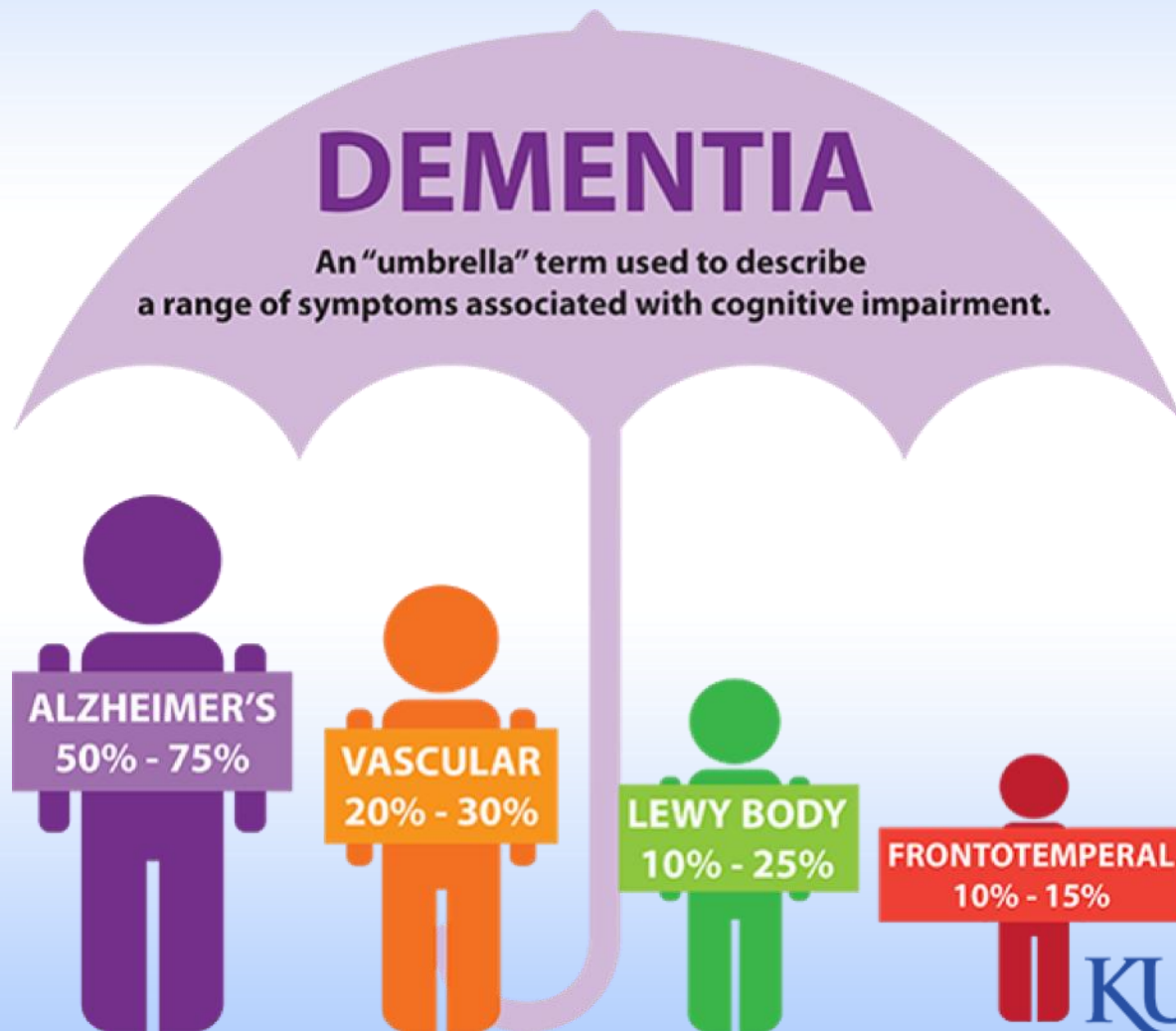
**Ryan W. Schroeder, PsyD, LP, ABPP-CN  
Board Certified Clinical Neuropsychologist**



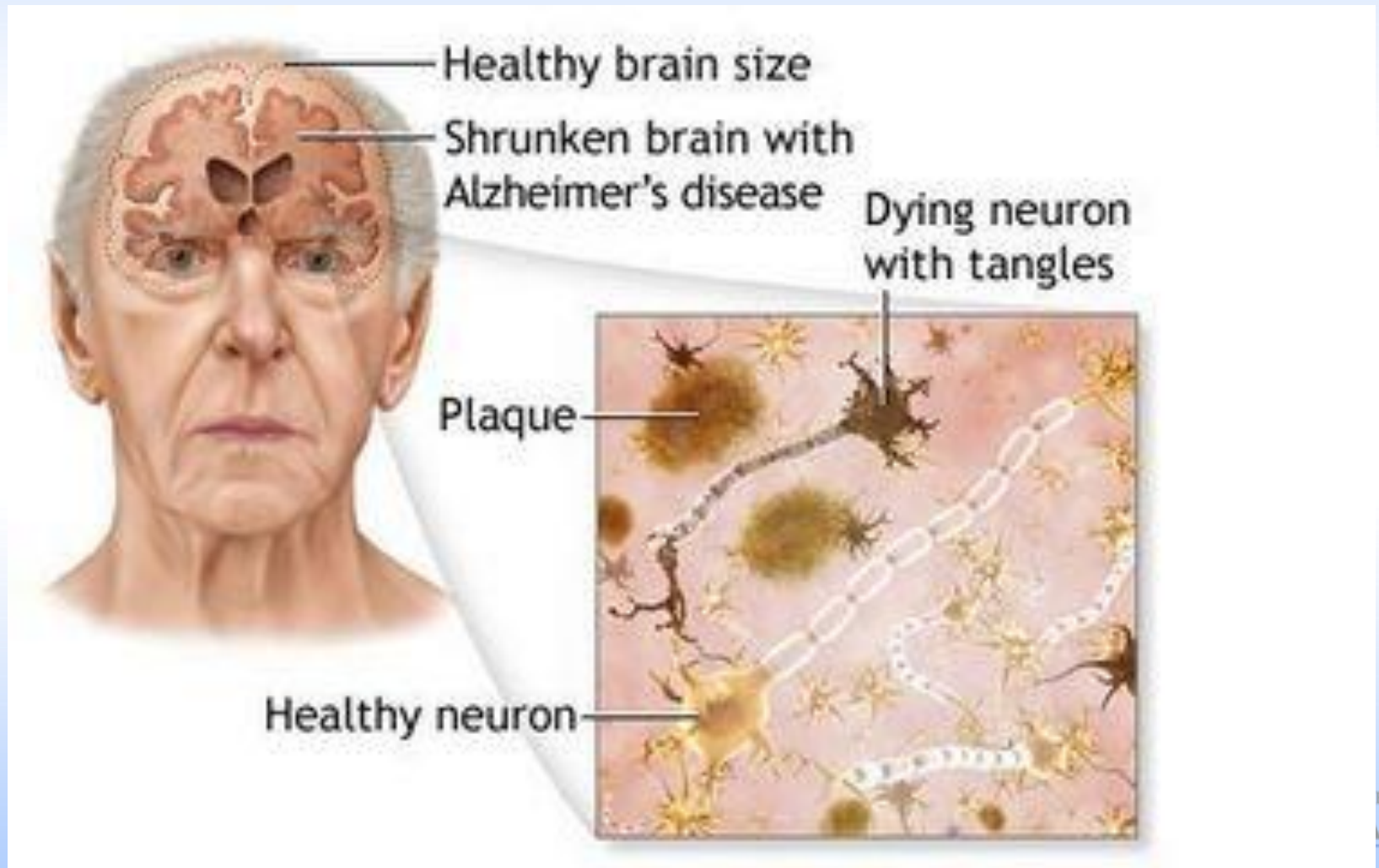
# What is Dementia?



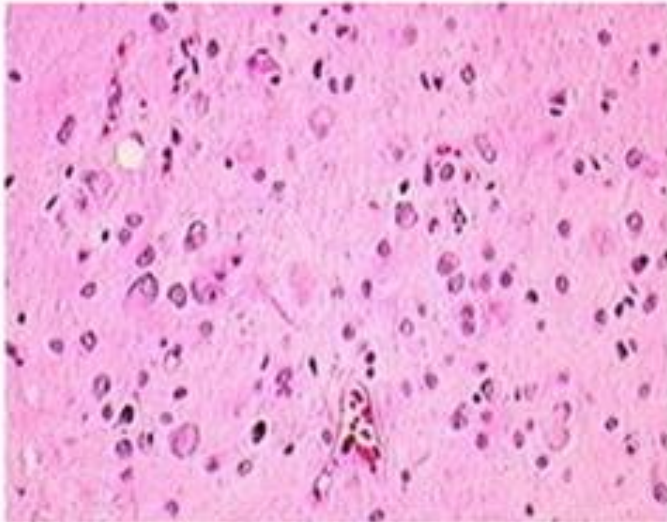
# What is Dementia?



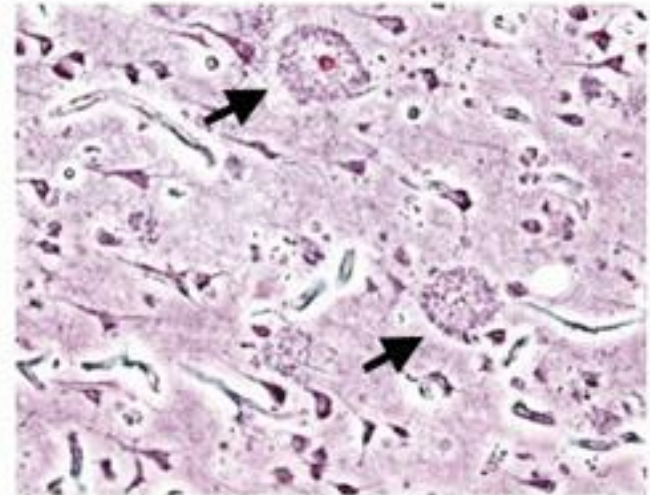
# Pathology



# Pathology under Microscope

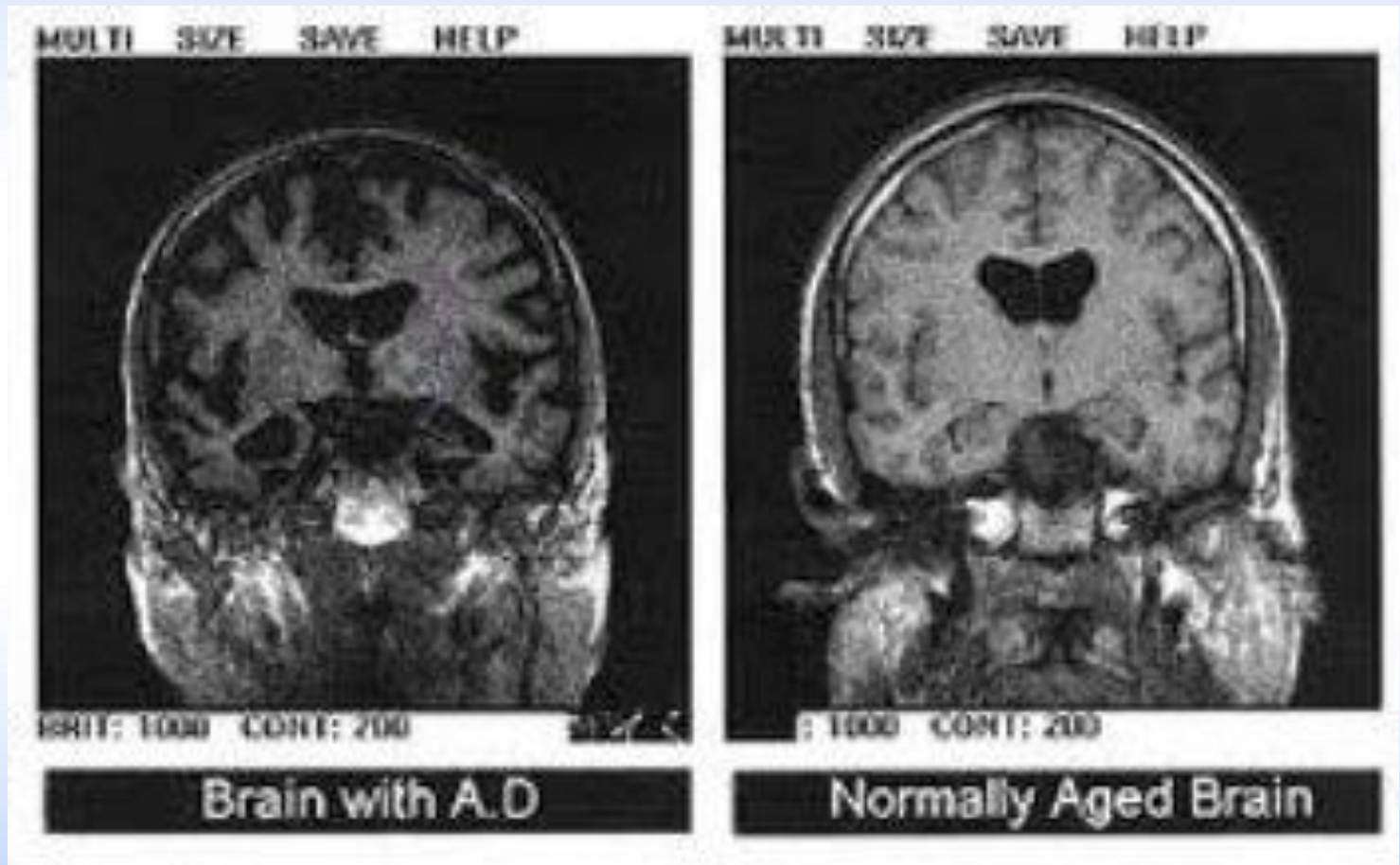


Normal brain histology



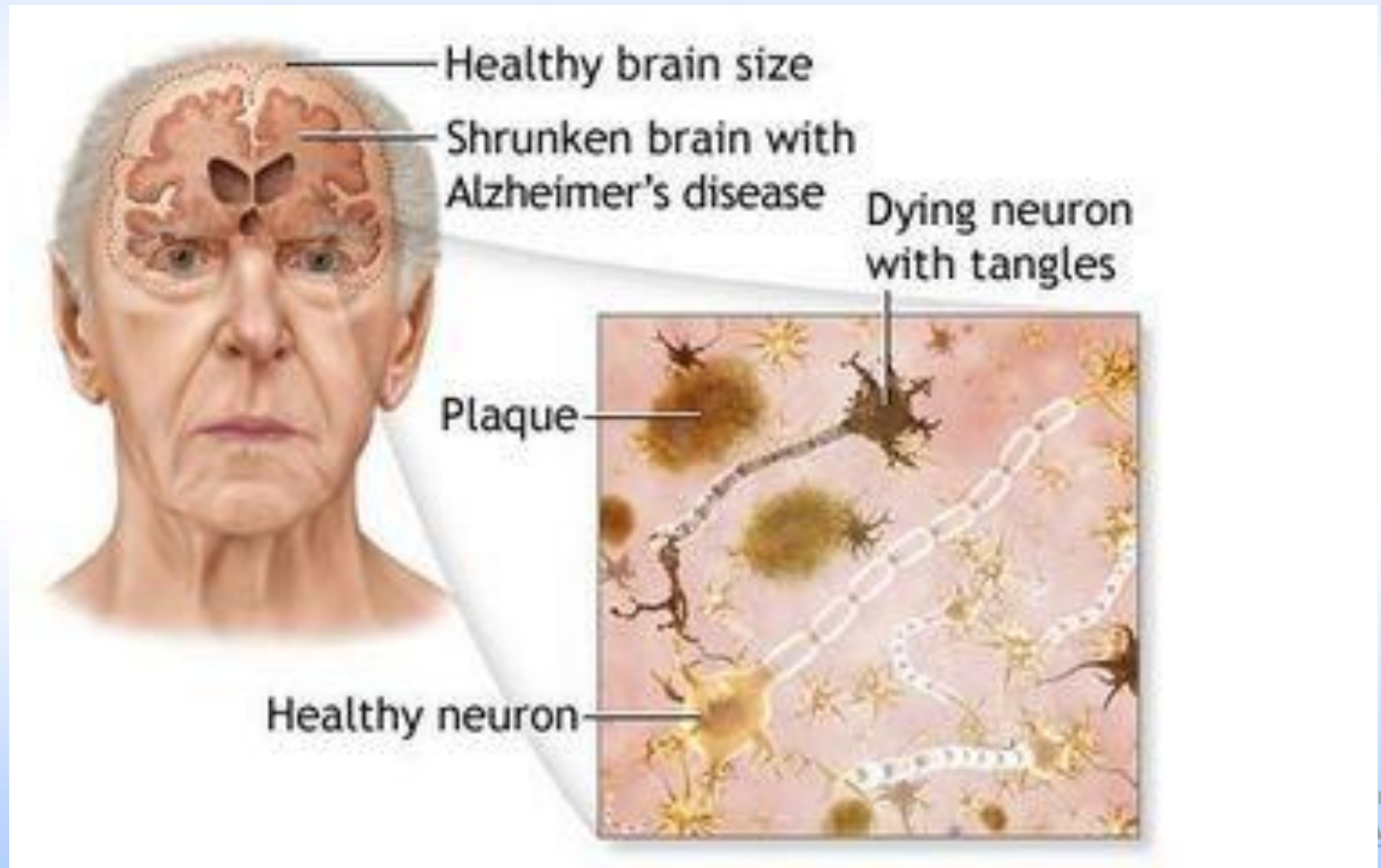
Alzheimer's brain histology

# Imaging of the Brain



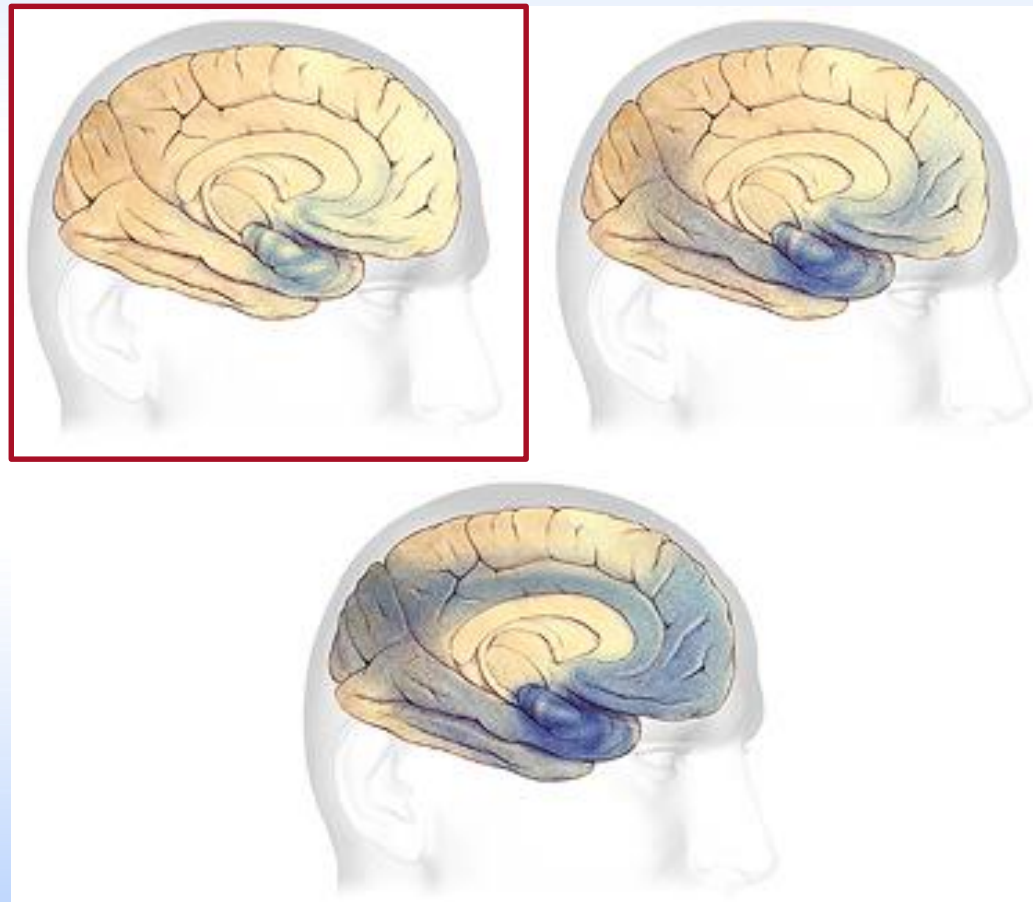
# Alzheimer's Dementia

# Alzheimer's Dementia





# Early Stage AD



# Common Sx in Early AD

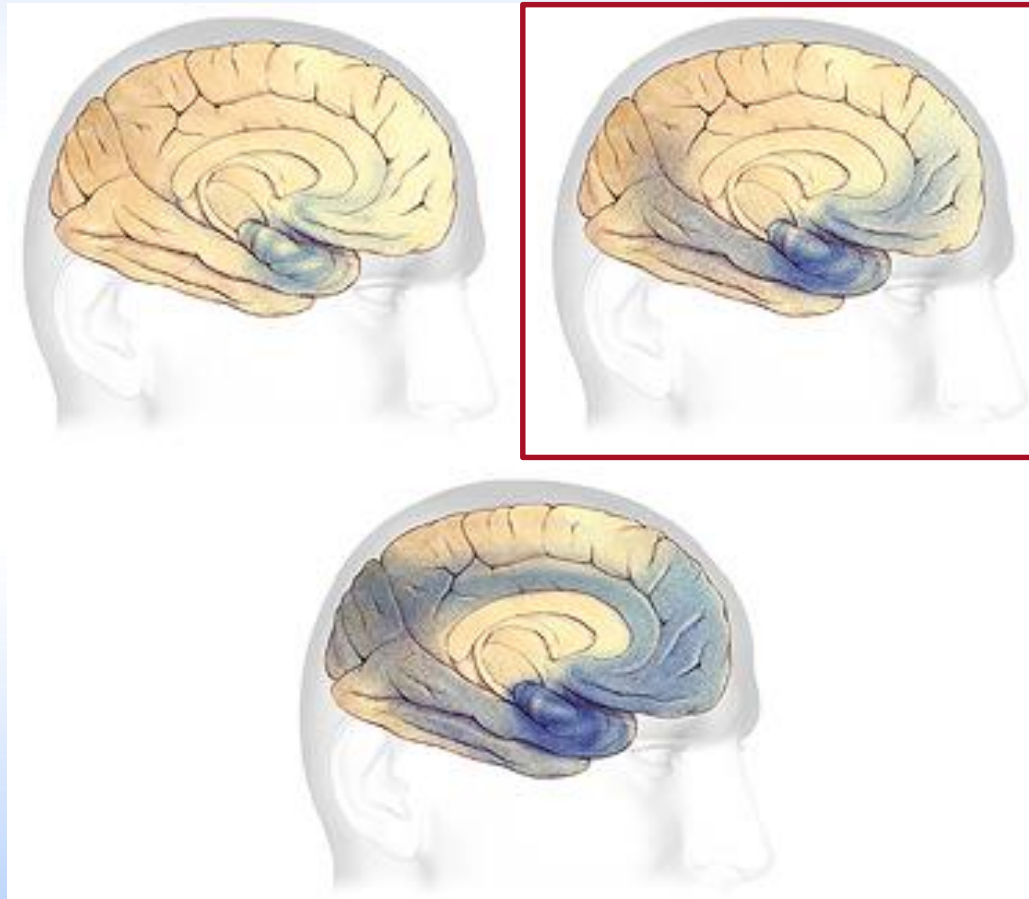
## Primary cognitive change:

- Difficulty learning and remembering *new* information
- Able to remember old information

## Common behavior changes:

- Forget to take medications or pay bills
- Frequently misplace or forget to take items (keys, purse)
- Seem withdrawn from socially or mentally challenging situations (potentially due to being unable to keep up with information)
- Experience frustration or irritability due to difficulties
- Increase arguing due to not seeing issues that are being pointed out about them

# Middle Stage AD



# Common Sx in Middle AD

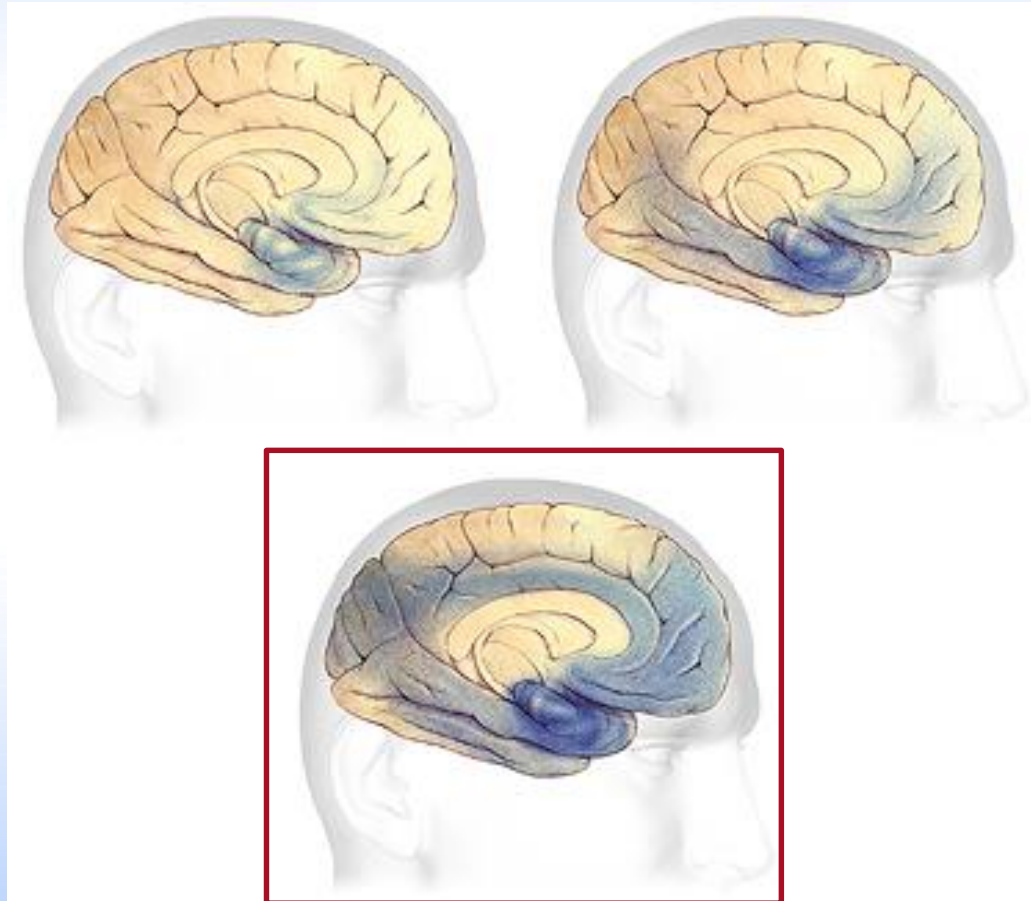
## **Cognitive changes:**

- Significant difficulty learning & recalling new information
- Misremember or forget some long-term information
- Difficulty making decisions effectively
- Difficulty with spatial awareness/processing

## **Examples of behavior changes:**

- Delusions could be present
  - Think others are stealing items
- Have difficulty recalling phone number, address, etc.
- Gets lost easily while driving (maybe walking)
- Make impulsive and/or odd decisions
- Be apathetic

# Late Stage AD



# Common Sx in Late AD

## **Cognitive changes:**

- Inability learning any new information
- Difficulty remembering long-term information
- Minimal reasoning ability
- Significant reduction in general intellectual functioning

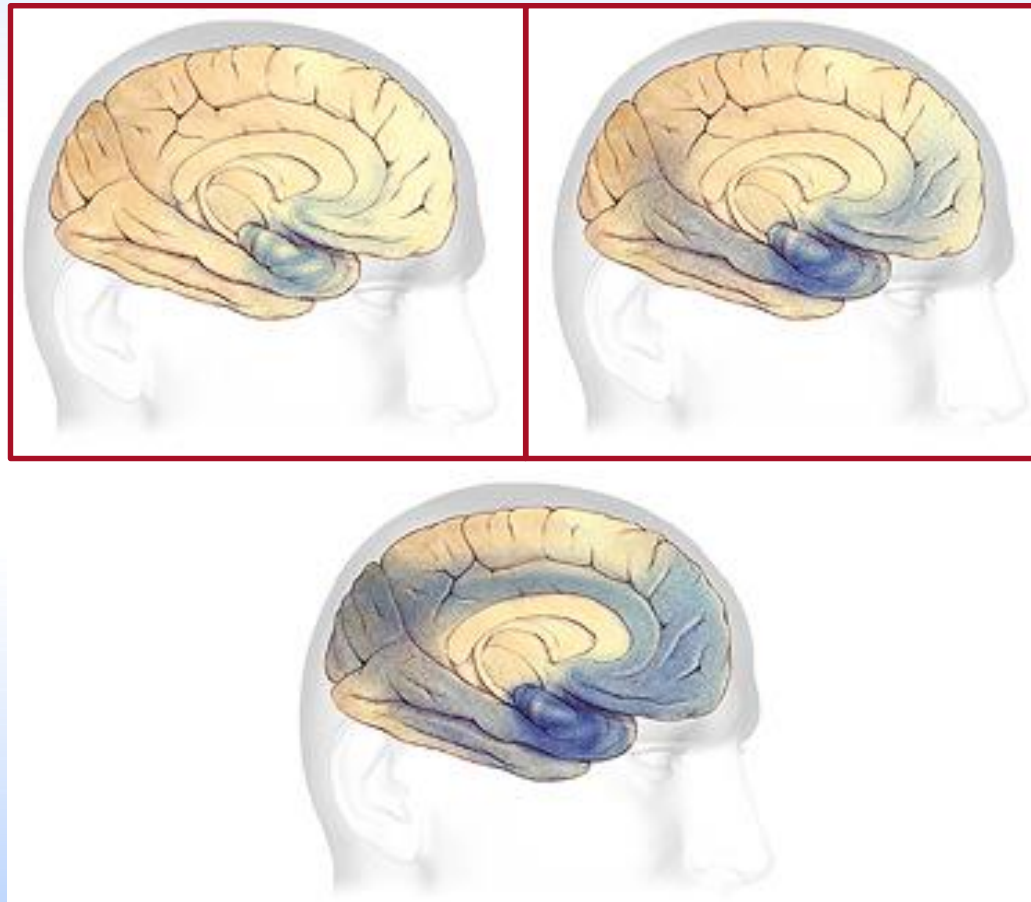
## **Examples of behavior changes:**

- Unable to learn any new information
- Might forget family members or call them by wrong name
- Speech might become incomprehensible
- Hallucinations and delusions can occur
- General urinary incontinence
- Require assistance with bathing, grooming, dressing, eating, and toileting
- Require help walking

# Example – Early to Middle Stage

A woman in her upper 60s was referred for a workup due to concern about dementia. Her family indicated that there has been gradual memory decline for the past four years. Now, the patient quickly forgets conversations, she misplaces items which results in her thinking that other people must have moved or taken the items, she occasionally forgets to go to doctor appointments, and she has gotten lost while driving her car in a familiar location. The patient's family also reported that the patient's memory for long-term information seems a bit fuzzy. For example, it was stated that the patient remembers vacations from the past, but when talking about them, she seems to mix up details from various vacations. The patient is not particularly concerned about her difficulties and she is not all that interested in treating her memory decline. Her family, however, is quite concerned.

# AD Pathology

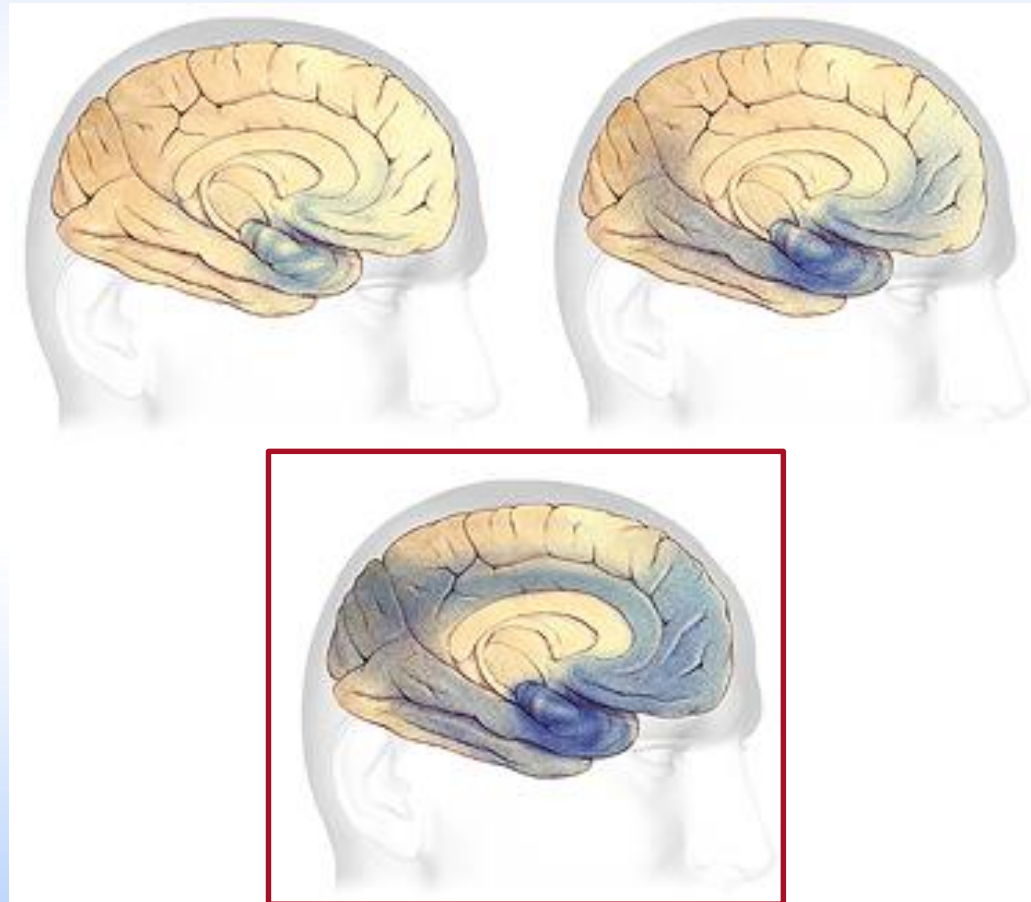




# Example – Late Stage

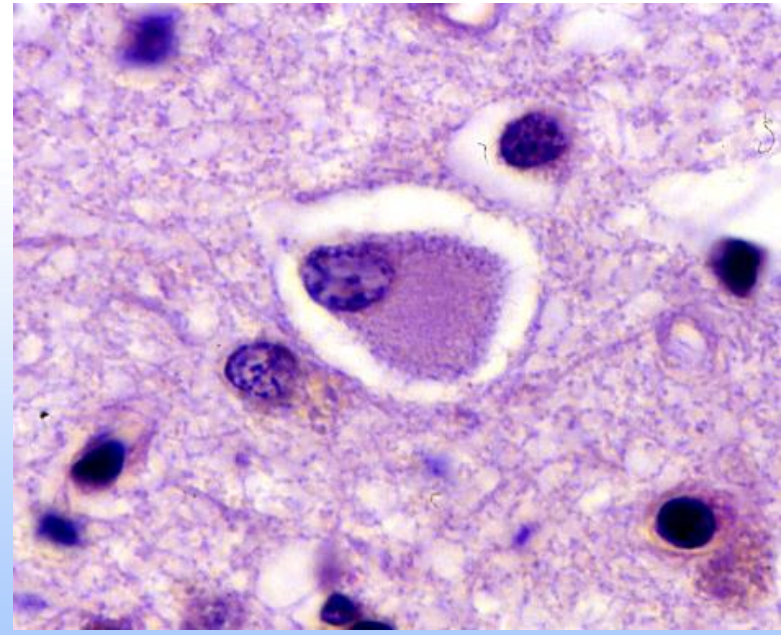
A male in his early 80s was referred for an evaluation. He had previously been diagnosed with Alzheimer's dementia. At the time of the evaluation, he was living at home with assistance from his family and paid caregivers. He is now unable to learn most any new information, and long-term memories are also weak (sometimes forgetting who his wife and children are). He is sometimes hard to understand due to slurring of words, and he appears to see people who are not in the room. He is needing help bathing, dressing, cutting his own food, and using the toilet. Due to falls, he is usually transported to appointments in a wheelchair. During the evaluation, he was unable to state his age, the current month, the current year, or the city where he was located. He was read a list of 3 words but could not remember any of them after just 1 minute. His family noted that they are struggling to provide care to him, and they asked whether it would be appropriate to consider moving him to a residence with a memory care unit.

# AD Pathology

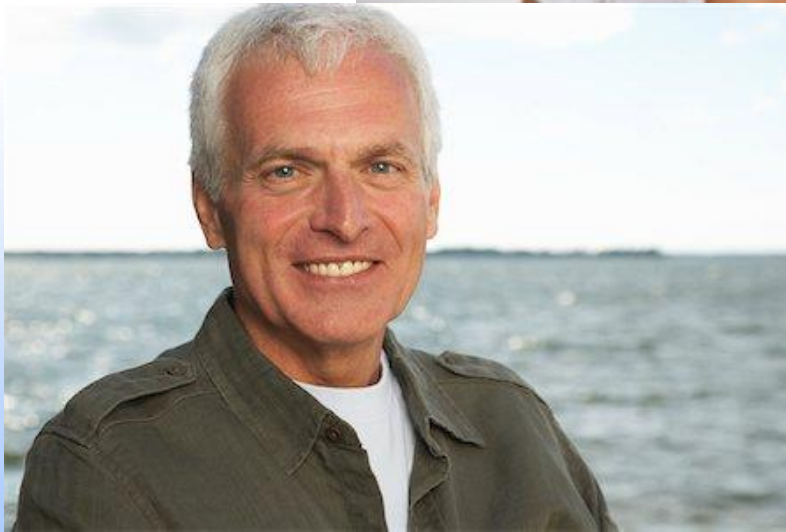


# Frontotemporal Dementia

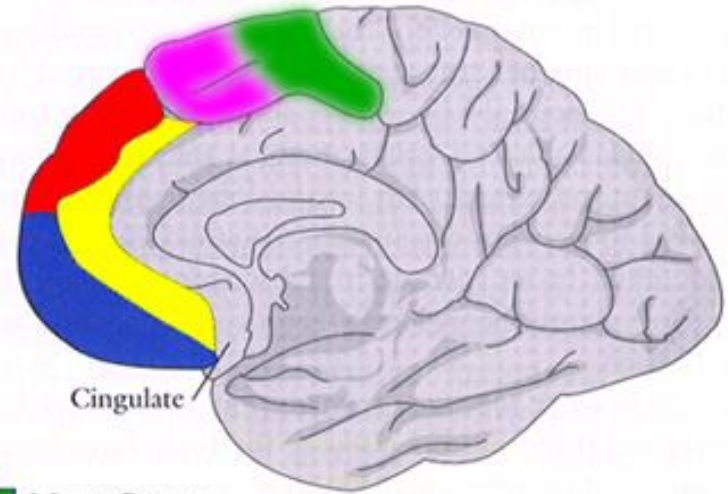
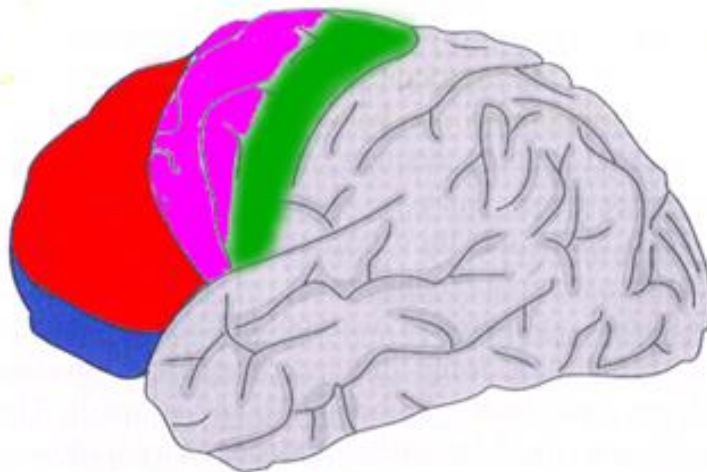
# Frontotemporal Dementia



# Frontotemporal Dementia



# Frontotemporal Dementia



- Dorsolateral area of Prefrontal
- Orbital area of Prefrontal
- Medial area of Prefrontal

- Motor Cortex
- Premotor Cortex

# FTD Behavioral Variant

## Examples of behavior changes:

### (1) *Dorsolateral Prefrontal:*

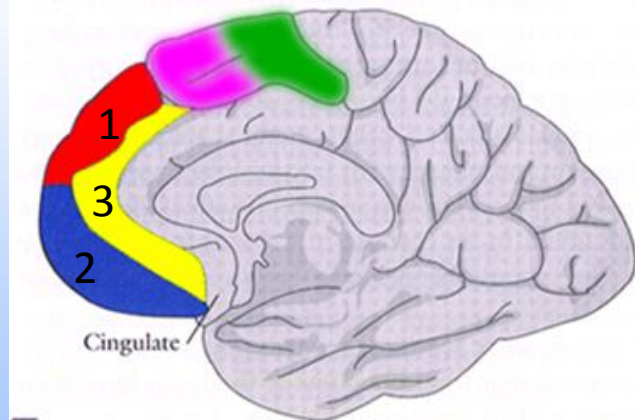
- Reduced problem-solving and reasoning

### (2) *Orbitofrontal Prefrontal:*

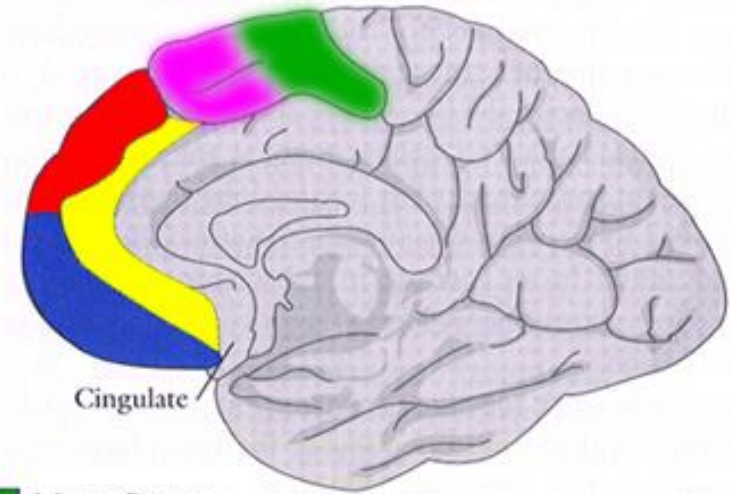
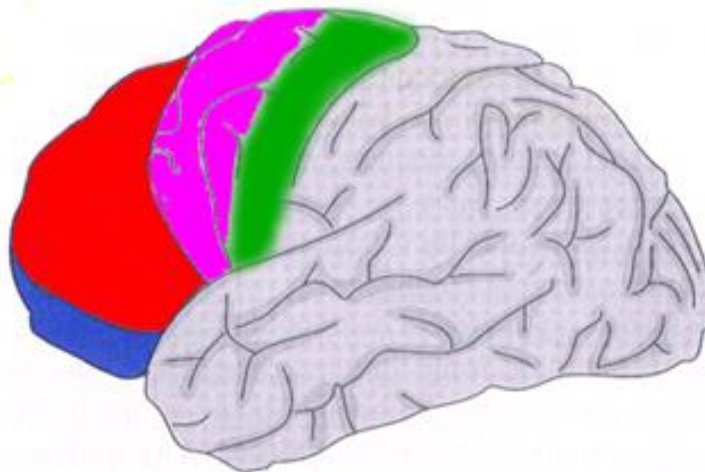
- Being impulsive or losing “filter”
- Acting out in socially inappropriate ways
- Participating in risky behavior
  - Sexually risky behavior, gambling, theft
- Becoming fixated on topics

### (3) *Medial Prefrontal:*

- Losing interest and motivation



# Frontotemporal Dementia



- Dorsolateral area of Prefrontal
- Orbital area of Prefrontal
- Medial area of Prefrontal

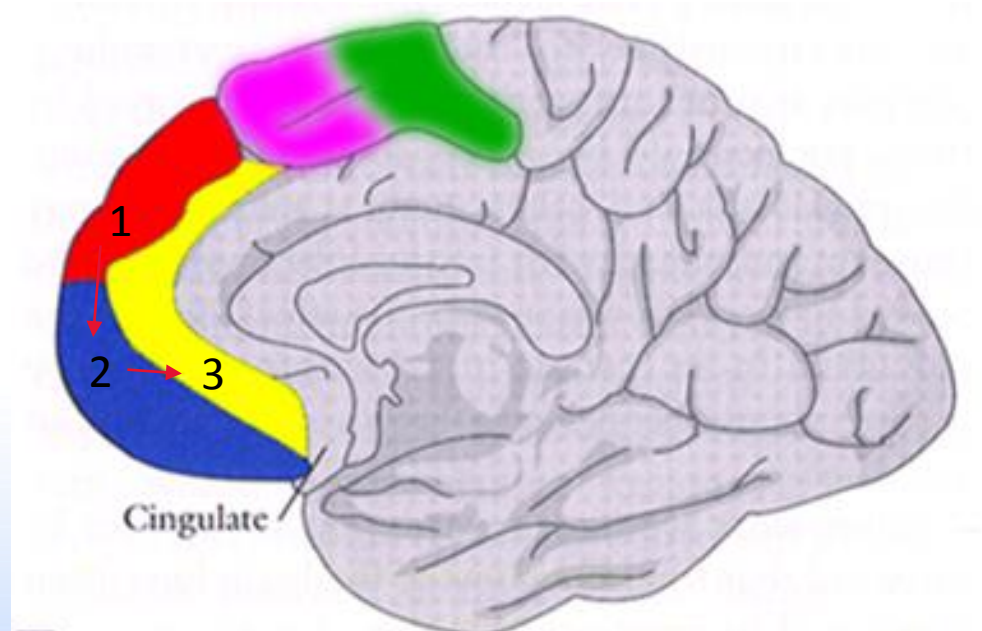
- Motor Cortex
- Premotor Cortex



# FTD Behavioral Variant

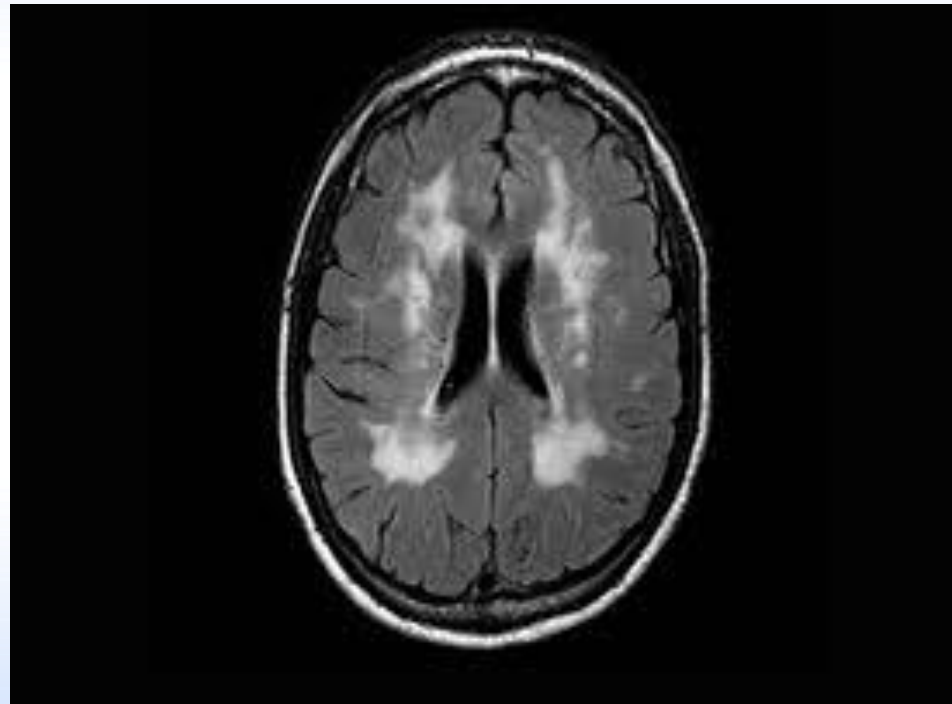
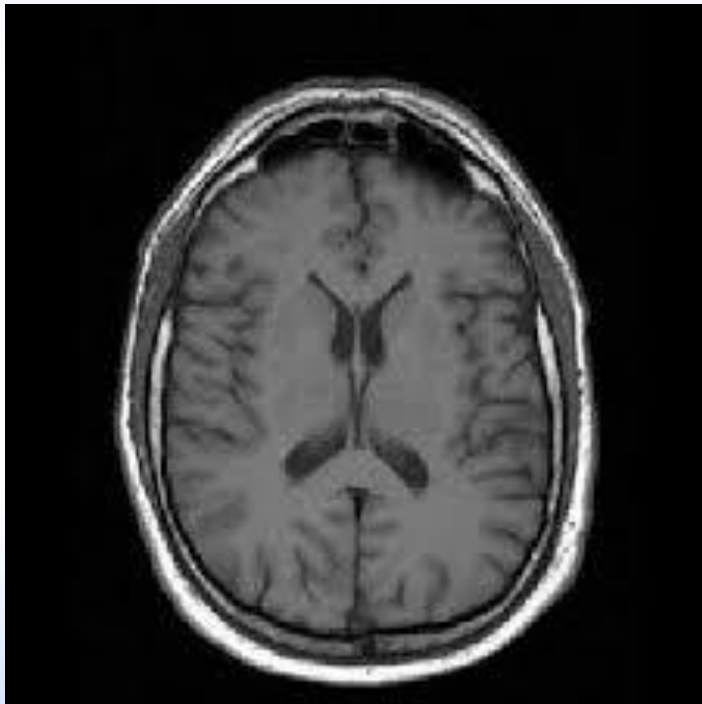
A male in his mid 50s began having trouble problem-solving issues at work. In time, his employer assigned him to do paperwork only. His wife thought this change was because he may be depressed (a family member tragically died 2 years earlier). He was treated for depression but his symptoms did not improve. In fact, over time, his symptoms worsened. He became more impulsive and began making inappropriate comments to female friends. He neither understood nor seemed to care that his behavior disturbed his family and friends. His wife was distraught, and she stated that they needed to pursue therapy if they wanted to ensure that their relationship does not suffer further. The patient, however, seemed to lack interest in pursuing this and helping his relationship despite the fact that he stated that he still loved her dearly. As time went on, the patient became less affectionate toward his family. He was eventually referred for a neuropsychological evaluation and diagnosed with FTD – Behavioral Variant.

# Frontotemporal Dementia

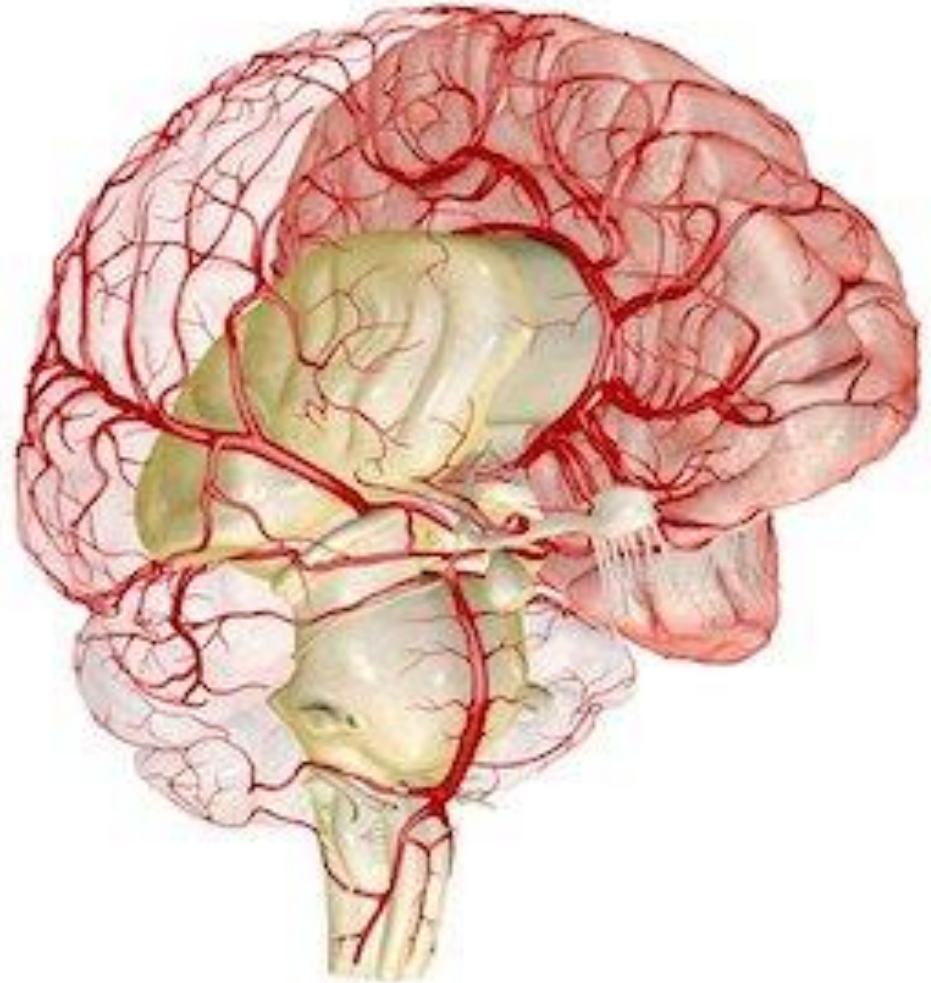


# Vascular Dementia

# Vascular Dementia



# Vascular Dementia



# Vascular Dementia

## Examples of cognitive & behavior changes:

- Poor attention
- Slowed thinking
- Weakness in learning
- Reduced reasoning
- Disinhibition
- Reduced balance
- Frustration
- Depression

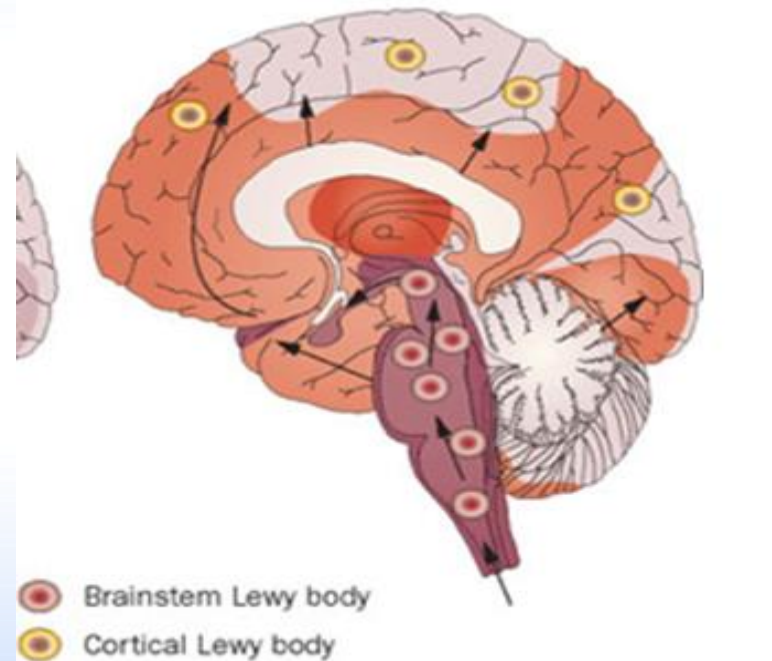
# Example - Vascular Dementia

The patient is a male in his early 60s who has high blood pressure, high cholesterol, diabetes mellitus, and atrial fibrillation. Nearly two years ago, the patient developed an abrupt cognitive decline. Since that time, he has been experiencing stepwise declines in his functioning. His family reported that he now has attention problems, slowed thinking, reduced reasoning, and increased falls. He also seems to be more impulsive than he used to be. The patient and his family further described a recent experience where the patient had word-finding problems and slurred speech for approximately one day.

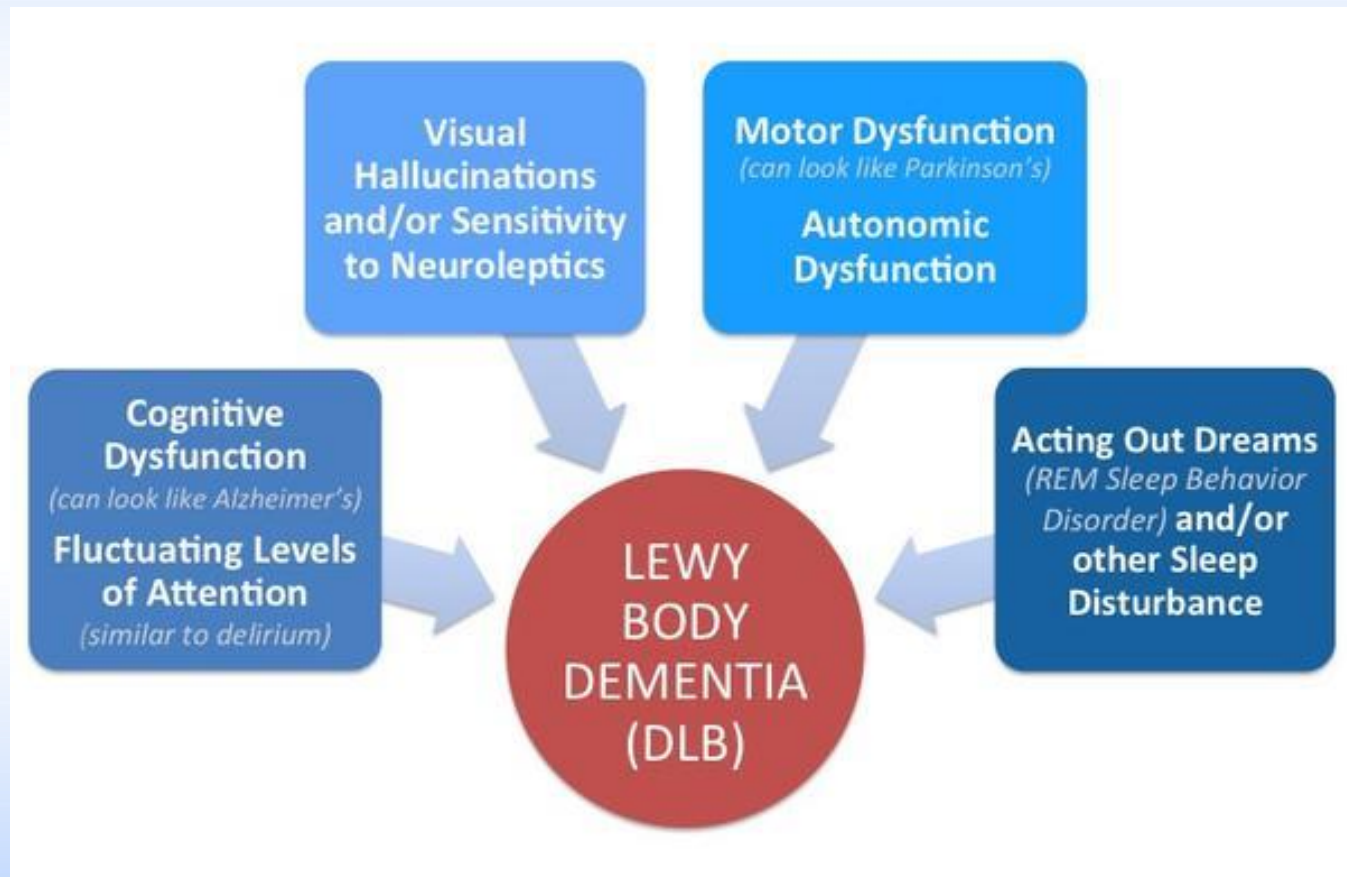
# Lewy Body Dementia



# Lewy Body Dementia



# Lewy Body Dementia

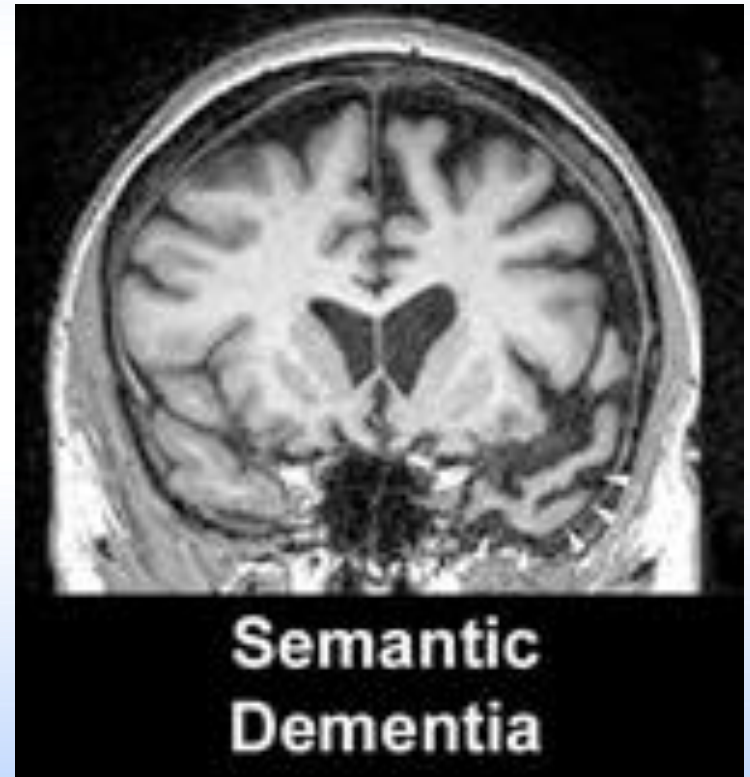
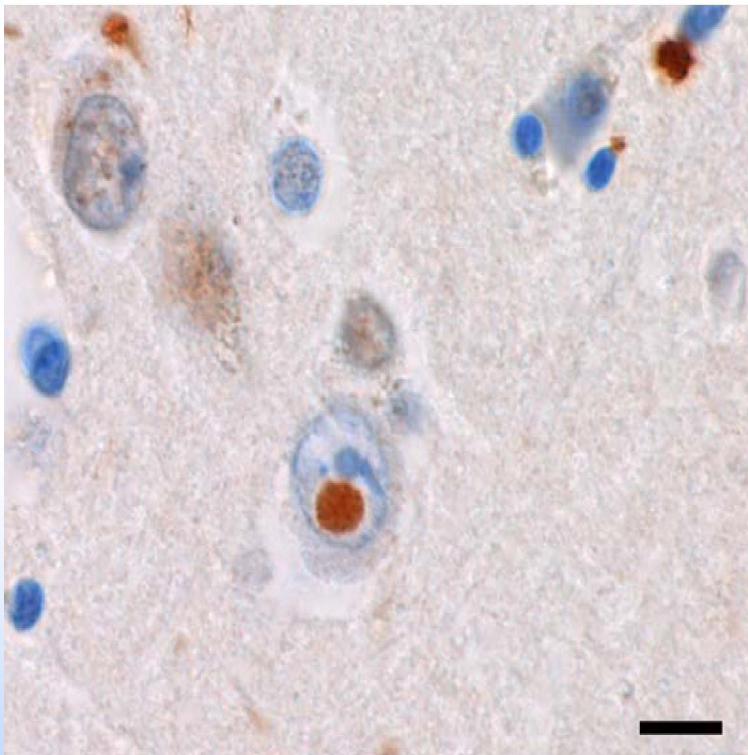


# Lewy Body Dementia

The patient is a man in his mid 60s. He became restless in his sleep around age 60. At age 62, he began experiencing issues with inattention and problem-solving. At age 63, he began showing a tremor in his hands, and he began stumbling and falling; he was diagnosed with PD. Since then, his cognitive problems worsened. He recently got in an automobile accident (driving the wrong way on a street). He also started experiencing hallucinations. He reported seeing small animals and children in his home, even though no animals or children were present. He would also begin losing track of time, and he would insist that he had appointments on days that he did not. His walking became worse, and he began falling more frequently. After a particularly nasty fall, he was taken to the hospital. He was evaluated and his diagnosis was changed from PD to LBD. His medication was adjusted, and his thinking became somewhat more clear (although he still had cognitive difficulties) and his hallucinations reduced in frequency.

# Semantic Dementia (PPA)

# Semantic Dementia (PPA)



# Semantic Dementia (PPA)

## Examples of cognitive & behavior changes:

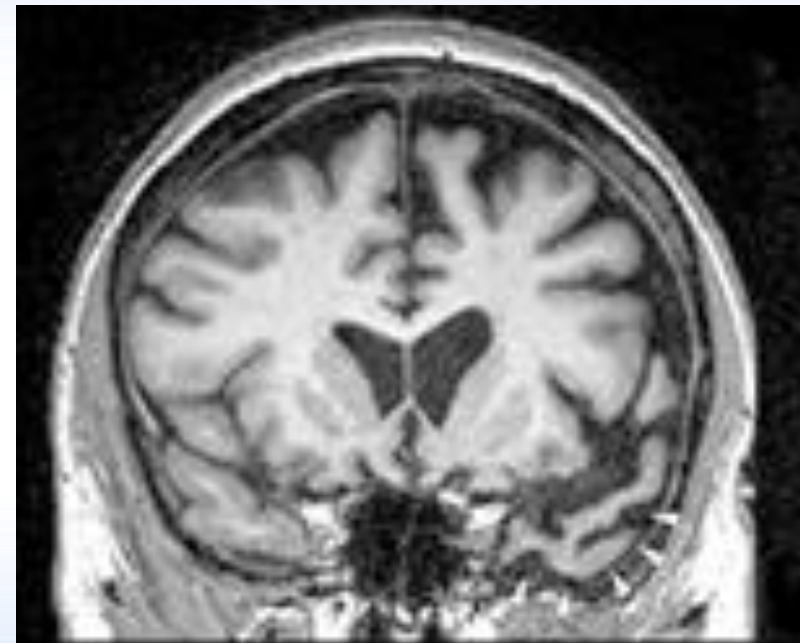
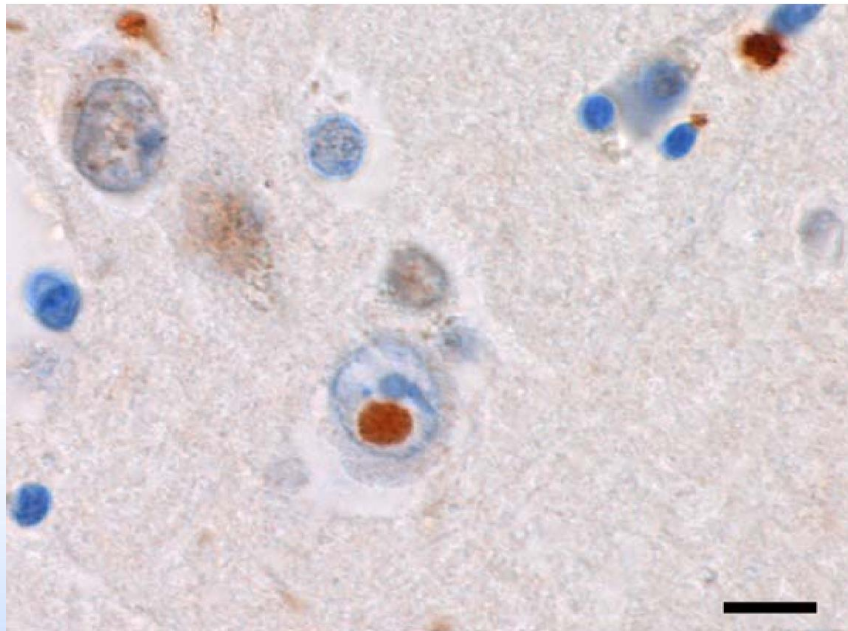
- Impaired ability to recall and name things
  - Especially low frequency items
- Impaired ability to comprehend certain words
  - Especially low frequency words
- Impaired ability to read or write words
  - Especially phonemically irregular words
- Behavioral issues (such as in FTD) can emerge as the disease worsens and spreads throughout the frontal lobe

# Example - Semantic Dementia

A bright and well-educated female in her early 60s was referred for an evaluation after telling her physician that she had trouble remembering and naming items. She reported that she sometimes had difficulty comprehending conversations with clients as well. In addition, she stated that she feels like she cannot solve issues/problems in her work as efficiently as she used to.

When the examiner asked “What is a thermometer?” she responded, “I used to know things like that.” This woman’s overall knowledge base, ability to define words, ability to name pictures, and ability to read phonemically irregular words were all strikingly poor. Her ability to learning new verbal information was somewhat weak, but her ability to learn new visual information was quite strong.

# Semantic Dementia (PPA)



**Semantic  
Dementia**



# Final Case

# Final Case

The patient is a male in his early 80s who has a two year history of gradually progressing short-term memory decline. His family reported that he used to be really sharp but over the past two years, he's had difficulty learning and remembering short-term information. He now frequently repeats questions, forgets conversations, misplaces items, and forgets having seen movies. No other notable symptoms were initially reported.

# Final Case

The patient was diagnosed with Alzheimer's dementia. One year later, he started developing a tremor and gait instability. The gait instability lead to falls. Another year after that, he developed visual hallucinations of children, a sleep disturbance (acting out dreams), autonomic symptoms (sweating frequently, frequent urination), and increased cognitive difficulties. These cognitive difficulties were related to poor attention, poor problem-solving, and poor visuospatial functioning.

# Final Case

The patient's symptoms continued to progress. After he eventually passed away, his autopsy showed that he had a mixture of beta-amyloid, tau, and Lewy bodies in his brain.