

Not Your Typical Dementia

Robin J. Heinrichs, Ph.D., ABPP CN

Board Certified in Clinical Neuropsychology

Director of Neuropsychology Training

Neuropsychology Services of Kansas, Owner

What is Normal?

Typical Changes with Aging?

Yes! We all notice changes starting in our 30's and 40's

- Slowed processing speed
- More difficult to attend
- Word-finding difficulty
- Memory change – harder to encode information
- Cognitive flexibility

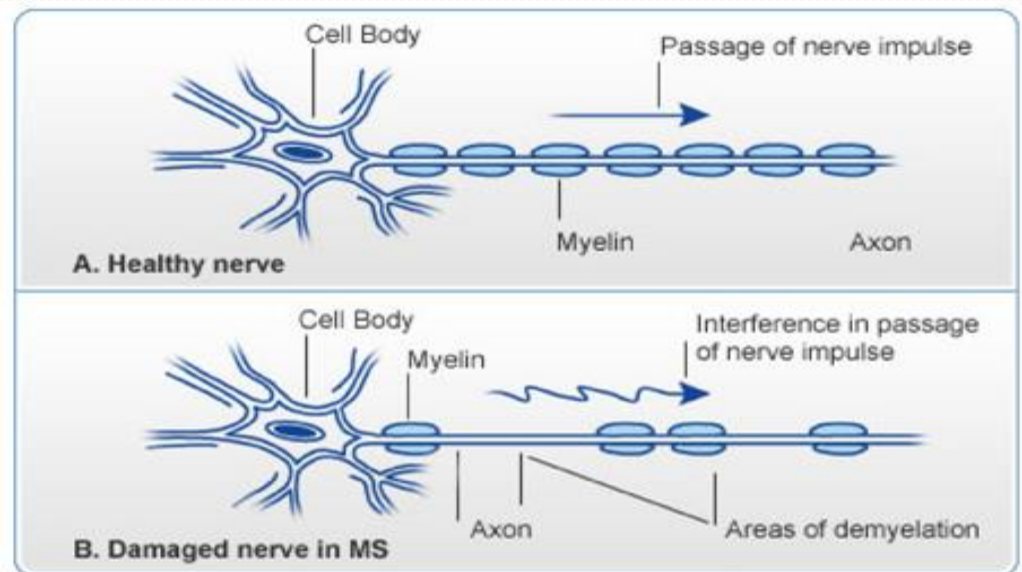
Why?

Decline in the number of nerve cells throughout the brain

- MRI = diffuse white matter changes

Decline in some of the ways the brain functions

- Degeneration of individual cells (myelin)
- Decline in the number of synapses
- Changes in the way nerve cells connect at certain layers of the brain



What is Dementia?

Dementia is an enduring decline in cognition that interferes with functioning in everyday living.

American Psychological Association

- New Term: Major Neurocognitive Disorder (DSM 5)

Dementia is an **enduring** decline in cognition that interferes with functioning in everyday living.

American Psychological Association

The changes are gradually worsening or continue over time.

Different types of dementia follow different patterns of decline.

But...if changes in cognition come on suddenly

- Delirium

Delirium

Delirium is a temporary state of cognitive decline that can include confusion, difficulty saying what you want, hallucinations and suspicious thoughts about others.

- Especially likely in older adults
- Happens suddenly
- Often involves fluctuations in alertness and orientation
- Usually resolves when the underlying cause is treated

Causes of Delirium

- Urinary tract infection
- Suddenly discontinuing a medication
- Taking too much of a medication
- Surgery and/or hospitalization
- Routine illness such as flu or cold, especially with infection

Dementia is an enduring **decline in cognition** that interferes with functioning in everyday living.

American Psychological Association

- Some portion of cognitive abilities have declined
- Pattern of decline varies depending on the cause
- Decline is in more than one area of cognition (e.g. memory and problem solving)

Dementia is an enduring decline in cognition that **interferes with functioning** in everyday living.

American Psychological Association


- The change in cognitive functioning must be severe enough to make it harder for the individual to carry out activities of daily living
 - Managing finances
 - Managing medication
 - Maintaining a calendar and going to appointments on time
 - Preparing meals

Dementia is a General Diagnosis

If decline in cognitive abilities and difficulty functioning are severe enough = Dementia

- Cognitive decline that is 2 standard deviations below previous
- Decline in more than one cognitive domain

A diagnosis of Dementia does not tell you what is causing the decline.

- 
- Dementia can be caused by many diseases and pathologies that have affected the brain.
 - Knowing the cause tells us what to expect in the future.
 - The best route to diagnosis is neuropsychological evaluation.

Neuropsychological Evaluation

- Interview with you and a loved one
- Neuropsychological Testing
 - Understand your cognitive functioning
 - Look for areas of weakness or impairment
 - Look for areas of strength
- Determine if patient has severe enough impairment to be Dementia
- Determine cause of impairment
- Discuss diagnosis with patient and family

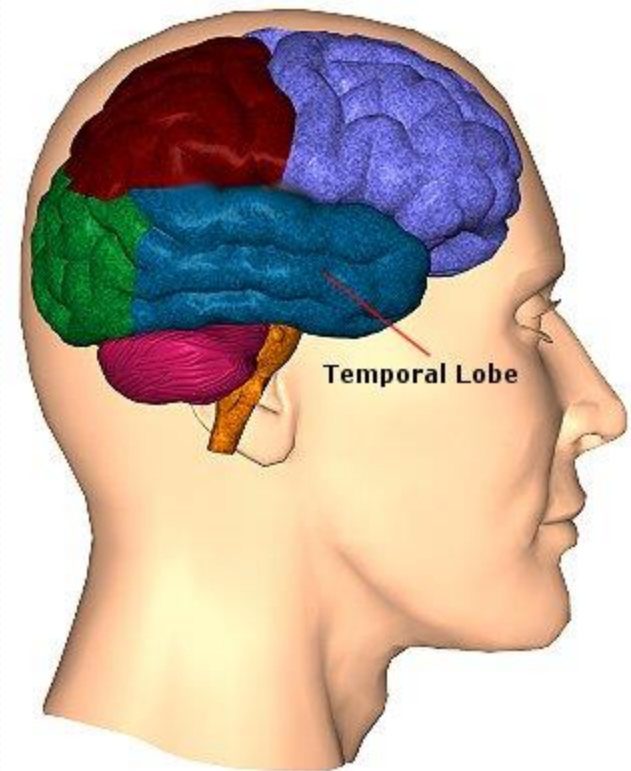
Types of Dementia

- Alzheimer's Disease
- Frontotemporal Disease
- Vascular Disease
- Parkinson's Disease
- Lewy Body Disease

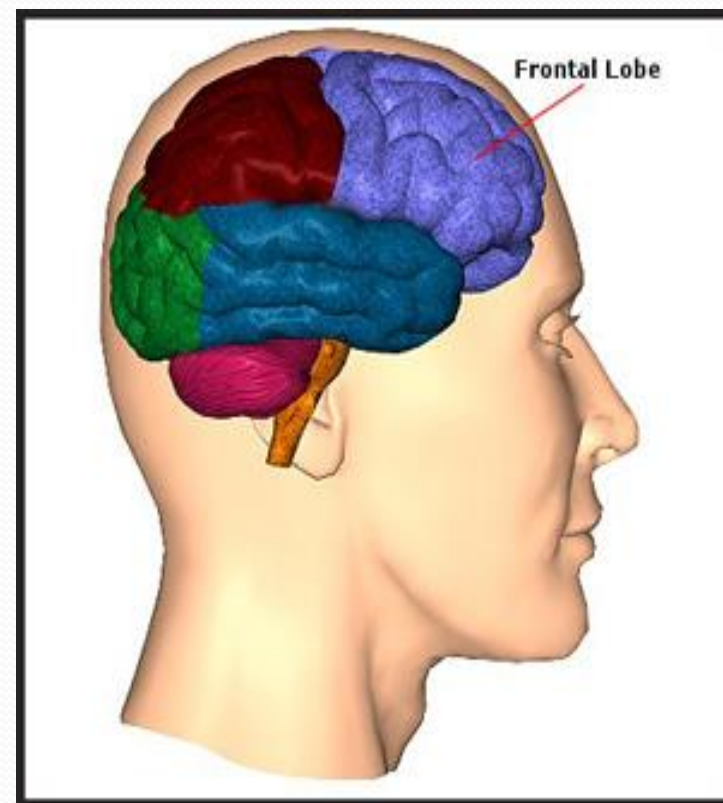
Alzheimer's Disease (AD)

- AD is a disease in which nerve cells in the brain degenerate and die.
- The hippocampal and parahippocampal areas see the most change.
- Historically the disease was identified by the presence of amyloid plaque and neurofibrillary tangles in the brain upon autopsy.
- These findings are now known to be late in the disease and are found in brains without AD.
- Research has progressed into other theories of the etiology of the disease.

- Alzheimer's Disease can be diagnosed with a neuropsychological evaluation.
- Patients first notice trouble remembering things.
- May repeat the same questions or stories.
- Forgetting is first...as damage is first done to the temporal lobe of brain.



- The frontal lobe experiences damage next.
- This causes problems with executive functioning.
 - Focusing
 - Multi-tasking
 - Problem solving
 - Staying on track with a task
 - Switching between tasks
 - Abstract thinking
 - Comprehension or complex information



Course of AD:

- Gradual decline in abilities
- Increasing need for assistance first with independent tasks of daily living like finances and medication management, then with daily tasks like dressing and bathing.


Forms:

- 65 and older = typical onset
 - Course varies can range from six to fifteen years (or more)
- Under age 65 = Early Onset (as young as 30's)
 - Course can be quicker

Frontotemporal Disease

Frontotemporal Dementia is caused by degeneration and death of nerve cells within the frontal lobes and the temporal lobes.

- In general caused by loss of neurons and abnormal amounts or forms of tau proteins in the brain.
- FTD is often confusing to families and others as a decline in memory is not associated. (Unlike Alzheimer's Disease)
- Instead, executive functioning abilities decline.

- 
- Executive functioning changes:
 - Focusing without distraction
 - Planning and sequencing
 - Solving problems
 - Comprehending complex information
 - Multitasking
 - Focus on unimportant details and missing the big picture
 - Personality changes
 - Diagnosis requires a full neuropsychological evaluation.



Of all changes, changes in personality are often the most upsetting to families

- Failure to inhibit inappropriate behaviors, e.g. loud, rude comments in front of others that do not bother the patient and are not typical.
- Inappropriate sexual comments to others.
- Flattened reaction to emotional events, e.g. when spouse is upset they do not react.
- OR...More easily irritated or upset, more often tearful.



One form of FTD involves decline in the areas of the brain that allow us to verbally express ourselves.

- Trouble coming up with what you want to say.
- Difficulty finding the right word.
- Pronunciation problems.
- Paraphasia; saying words that sound like the one you want.
- Trouble reading.
- Difficulty writing.

Course of FTD:

- Like AD, involves a gradual decline in cognitive and functional abilities.
- Gradually increasing need for assistance with tasks.
- Because trouble carrying out tasks is primary difficulty, assistance is often needed earlier in the disease.
- Course varies from several years to ten years.

Lewy Body Disease

Lewy body disease is caused by degeneration and death of nerve cells within the cerebral cortex, the limbic cortex, the hippocampus, the midbrain and the brain stem.

- Alpha-synuclein (a protein) clumps inside nerve cells so they don't function properly.
- Causes impairment in cognition, motor problems, hallucinations and sleep problems.

Cognitive Change:

- Executive Functioning problems
 - Focusing without distraction
 - Planning and sequencing
 - Solving problems
 - Comprehending complex information
 - Multitasking
 - Focus on unimportant details and missing the big picture
 - Personality changes
- Visuospatial Problems

Fluctuations:

- Cognitive abilities
- Attention
- alertness

Motor Problems/ Parkinsonian Symptoms


- Slow movements
- Slow and shuffling gait
- Rigidity
- Tremor

Sleep Disorder

- Acting out dreams

Parkinson's vs. Lewy Body Disease:

- Parkinson's Disease
 - Movement symptoms early and worse
 - Cognitive symptoms much later and less severe
- Lewy Body Disease
 - Cognitive symptoms first and worse
 - Movement symptoms later and less severe

- 
- Visual Hallucinations
 - REM Sleep Behavior Disorder
 - Physically act out dreams – thrashing around, falling out of bed


Course of Lewy Body Disease:

- A gradual decline in cognitive and functional abilities.
- Gradually increasing need for assistance with tasks.
- Typical age 50 and older, sometimes younger.
- Average course of 5 to 7 years, but can range from 2 to 20 years.

Vascular Dementia

Vascular Dementia is caused by cerebrovascular disease through any insult to the brain by blocked blood flow or a bleed within the brain.

- Terms used include: stroke, transient ischemic attack (TIA), hemorrhage, ischemia, embolism, thrombosis, infarct
- These events cause brain cells to die in the affected areas.
- This causes cognitive deficits that coincide with the area of insult.

- 
- For example, if a blockage or bleed occurs in certain areas of the left hemisphere, patient will have difficulty speaking or understanding what is said.
 - The bigger the area of insult the more cognitive damage.
 - The longer the anoxic insult or the bleed, the greater the cognitive decline.

- Cognitive decline in Vascular Dementia is more sudden than AD or FTD.
 - Insult...then cognitive decline...then some recovery...left with enduring deficit
 - Step-wise decline
- If no more vascular insults occur cognitive abilities will not decline more.
- BUT...past CV disease makes future CV disease more likely.

Other Causes of Dementia

- Parkinson's Disease – not all patients with Parkinson's Disease incur cognitive decline.
- Huntington's Disease
- Multiple Sclerosis
- Anoxic Insult



Questions?

Dr. Robin Heinrichs ABPP CN
Neuropsychology Services of Kansas
Board Certified Neuropsychologist
(316)867-3434 rheinrichs@nsofks.com