


## Overview


- Dementia and Alzheimer's Care, PLLC
- Dementia Overview
- Types of Dementia
  - Prevention
- Treatment and Staging
- Q&A



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## Overview


- 7,918 individuals turn 65 daily
- 330 individuals turn 65 per hour
- 10 million baby boomers will develop dementia
- Every 71 seconds someone is dx with AD
- Midcentury every 33 seconds someone will be dx with AD
- 67.8% have dementia in ALF
- 34% of the 67.8% have significant behavioral symptoms associated with the dementia
- 27% moderate to severe dementia
- Out \$3 of \$5 of Medicare dollars goes to pay for dementia care in the United States



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## Dementia and COVID by the Numbers

- Data from the Office of National Statistics (ONS) from March 7 to May 1 showed that dementia and Alzheimer's Disease and 'symptoms, signs and ill-defined conditions', mainly indicating old age, account for two-thirds of the total number of non-COVID-19 excess deaths.
- The leading Alzheimer's research charity has emphasized that more research is needed to help understand why there has been such a significant increase in the number of people dying from dementia.
- Figures from the Office for National Statistics have shown that dementia and Alzheimer's disease were the two most common pre-existing conditions found among deaths involving COVID-19. The findings highlighted that they were linked to 6,887 deaths, which amounted to 20.4% of all deaths involving COVID-19.
- They also showed that compared with the five-year average, the rate of deaths due to dementia and Alzheimer's disease was significantly higher in April 2020.



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## Dementia Overview

Not a specific disease

Collection of symptoms characterized by:

- Impaired intellectual functioning
- Loss of problem solving ability
- Emotional ability
- Personality changes
- Behavioral
- Memory loss


Not a normal part of aging



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## Dementia Overview

- D-Degenerative, depression, drugs
- E-Endocrine
- M-Metabolic, myelin
- E-Epilepsy
- N-Neoplasm, nutrition
- T-Toxic, trauma
- I-Infection, inflammation, inherited, infarction (TB, Lyme Disease, Lupus, CVA)
- A-Atherosclerotic, vascular (Blood flow, Vascular Disease)
- S-Structural, systemic



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## Dementia Overview

- Cortical Atrophy
- Mild Cognitive Impairment
  - Amnesic-Most Common
  - Multiple Domain- Language Deficits, Judgement impairments and/or accompany declines in memory
- MCI and AD
- AD 71% of all Dementias

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## Cognitive and Memory not associated with Normal Aging

- Frequent Memory Lapses
- Forgetting how to do things
- Difficulty learning new materials
- Repeating questions or conversations
- Indecisiveness
- Difficulty handling money
- Losing track of daily events

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## Dementia Overview

- 5 As
  - Amnesia: Recognition/Retrieval of New Information
  - Aphasia: Language
  - Apraxia: Carrying out Motor Movements
    - **Motor Memory and Motor Movements**
  - Agnosia: Recognition of People, Places, Environment
  - Attention/Concentration: Gait and Weight Loss

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9

## William Utermohlem



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10

## Types of Dementia

Not all forms of dementia are progressive

1. Alzheimer's Dementia (AD) - most common
2. Vascular Dementia (VaD)/Multi-Infarct Dementia
3. Lewy Body Dementia (LBD)
4. Parkinson's Dementia
5. Frontotemporal Lobar Dementia (FTD)
  - A. Behavior Variant (BvFTLD)
  - B. Semantic Dementia/Temporal Variant (Tv-FTLD)
  - C. Primary Progressive Aphasia (PPS-FTLD)

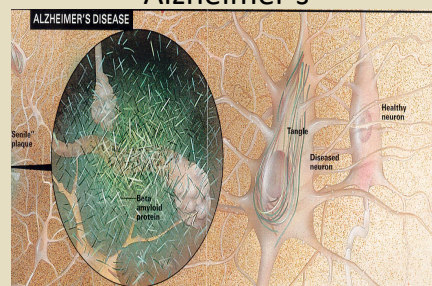
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11

## Neuropathology of Alzheimer's

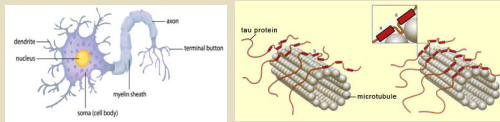


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## Dementia

- **Tau Proteins- Railroad track**
  - Only present in the axon of the neuron
  - Proteins that structure or stabilize neurons
  - Chromosome 17



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## Alzheimer's Genetic Mutations

- Chromosome 14, 17, 19, 21
- Amyloid Precursor Protein (APP)-4 Epsilon Genes
  - Membrane protein found in many tissues including neuron synapse that make chemical connections between nerve cells
  - APOE ε4 is associated with increased Risk of Alzheimer's.
  - Family History of Alzheimer's Disease
  - Located in Chromosome 21
  - Iron export and synapse function
- Lifestyle + Environment + Chromosome 19 mutation = Causes late onset AD
- Presenilin 1 (PSEN1) located on 14<sup>th</sup> Chromosome
- Presenilin 2 (PSEN2) Located on 1<sup>st</sup> Chromosome

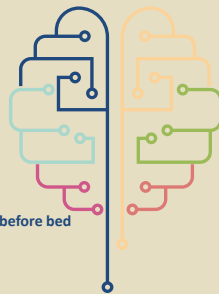
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14

## Prevention

- 1) Sleep Hygiene
- 2) Diet
- 3) Finish eating 4 hours before bed
- 4) Physical Exercise
- 5) Cognitive Exercise



- 6) Socialize
- 7) Boost Mood
- 8) Stop Smoking
- 9) Healthy Weight
- 10) Alcohol in Moderation

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15

## Vascular Dementia

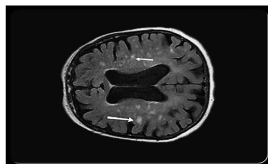
- Second most common form of dementia
- Approximately 20% of all dementias
- Associated with cardiovascular problems that cause reduced blood flow to the brain

Multi-infarct	Single-infarct
<ul style="list-style-type: none"> <li>• Small, repeated reduction in blood flow that results in tissue damage</li> <li>• Often throughout the brain</li> <li>• Step-wise pattern to clinical decline</li> </ul>	<ul style="list-style-type: none"> <li>• Single, often larger reduction in blood flow that results in tissue damage (stroke)</li> <li>• Symptoms depend on area that is damaged</li> </ul>

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16

## Vascular Dementia



Alzheimer's Disease Education and Referral Center, National Institute on Aging

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24

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## Vascular Dementia: Clinical Characteristics

- Slowed thinking
- Mood instability
- Laughing or crying inappropriately (Pseudobulbar Affect)
- Confusion, which may get worse at night
- Personality changes and loss of social skills
- Memory problems
- Hallucinations and delusions
- Dizziness /leg or arm weakness /tremors
- Coordination/balance issues
- Incontinence
- Slurred speech; word search

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## Parkinson's Disease Dementia and Lewy Body Dementia

### Two Related Clinical Diagnoses

Dopamine regulates: movement, mood, sleep, reward, motivation, addiction

#### Dementia with Lewy Bodies (DLB)

- Dementia comes first, then onset of Parkinson's like symptoms
- Minimum of one year between these components
- Abnormal protein structures called Lewy Bodies within the substantia nigra
- Average life expectancy is 7 years

#### Parkinson's Disease Dementia (PDD)

- Parkinson's Disease is established first, then symptoms of dementia
- Minimum of one year between these components; often 10-15 years
- Approximately 20-40% of patients with Parkinson's disease develop PDD
- PDD less common with early-onset PD (<age 50)

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19

## Parkinson's Disease Dementia (PDD)

### • **Symptoms:**

- Visual Hallucinations
- Excessive daytime sleeping or disruption in sleep
- Changes in memory, concentration and judgment
- Trouble interpreting visual information.
- Slurred speech
- Swallowing issues
- Low volume or soft voice that is hard to hear
- Delusions, especially paranoid ideas
- Depression
- Irritability and anxiety

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20

## Lewy Body Dementia

### **Symptoms:**

- Changes in thinking and reasoning.
- Confusion and alertness that varies significantly from one time of day to another or from one day to the next.
- Parkinson's symptoms, such as a hunched posture, balance problems and rigid muscles.
- Visual hallucinations.
- Delusions.
- Trouble interpreting visual information.
- Acting out dreams, sometimes violently, a problem known as rapid eye movement (REM) sleep disorder.
- Malfunctions of the "automatic" (autonomic) nervous system.
- Memory loss that may be significant but less prominent than in Alzheimer's.

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21

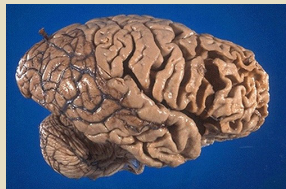
## Frontotemporal Dementia (FTD)

- Group of progressive degenerative diseases characterized by shrinking of the frontal and temporal lobes of the brain
- Estimated 10-15% of all dementias
- Symptoms usually emerge between age 40-65
- On average, 6-8 year life expectancy
- 3 Main Types
  - Behavioral Variant FTD (bvFTD): Changed behavior; judgment
  - Semantic Dementia/Temporal Variant (Tv-FTLD)
  - Primary Progressive Aphasia (PPS-FTLD)

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22

## Frontotemporal Dementia



Source: [http://www.alzheimer-society.com/Glossary/FTD\\_disease.html](http://www.alzheimer-society.com/Glossary/FTD_disease.html)

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23

## Treatment and Staging

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24

## Pharmacological Treatments

- All medications used to treat Alzheimer's and other forms of dementia are not designed to slow the progression of the disease rather are designed to help improve cognitive functions, learning and memory.
- There are two types of medications.
  - Cholinesterase Inhibitors (Aricept, Exelon, Razadyne)
  - Memantine (Namenda).
- Medications Impacts
  - Early Stages
  - Middle Stages-Combine Medications
  - Late Stages

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## Pharmacological Approaches to Symptom Management

- Pharmacological to treat sundowning , behaviors and Depression  
Seroquel  
Trazadone  
SSRI  
Benzo

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26

## Neurocognitive Tools

- ✓ St. Louis University Mental Status Exam (SLUMS)
- ✓ Mini Mental Status Exam (MMSE)
- ✓ Clock Drawing Test
- ✓ Brief Cognitive Rating Scale
- ✓ Global Deterioration Scale
- ✓ Caregiver Burden Test

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27

## MMSE and Function in the Home

- **25-20**
  - Keeping appointments (ie., doctor etc.)
  - Meal Preparation
  - Walking/Ambulation
  - Transfers
  - Medication management
  - Other High Level ADLs
- **20-15**
  - Safety in the home
  - Use of appliances in the home
  - Dressing, grooming, selecting cloths to wear
  - Toileting
  - Communication
  - Finding objects in the home
- **Below 15**
  - Eating
  - Swallowing
  - Inappropriate behaviors
  - Appetite
  - Sensation
  - Communicating Wants and Needs

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## Brief Cognitive Rating Scale

- 5 Axes
  - Concentration
  - Recent Memory
  - Past Memory
  - Orientation
  - ADL & Functional Abilities
- Each axis is measured on a scale of 1-7
  - Scores from each axis added then divided by 5
- Higher scores indicate higher level of impairment

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## Global Deterioration Scale

### Rating scale

- 1: No cognitive impairment
- 2: Very mild cognitive decline
- 3: Mild cognitive decline
- 4: Moderate cognitive decline
- 5: Moderately severe cognitive decline
- 6: Severe cognitive decline
- 7: Very severe cognitive decline

Used with Brief Cognitive Rating Scale

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**The Global Deterioration Scale for Assessment of Primary Degenerative Dementia**

The Global Deterioration Scale (GDS), developed by Dr. Barry Reisberg, provides caregivers an overview of the stages of cognitive function for those suffering from a primary degenerative dementia such as Alzheimer's disease. It is broken down into 7 different stages. Stages 1-3 are the pre-dementia stages. Stages 4-6 are the dementia stages. Beginning in stage 5, an individual can no longer survive without assistance. Within the GDS, each stage is numbered (1-7), given a short title (e.g., PreFrontal, Early Confusional, etc.) followed by a brief listing of the characteristics for that stage. Caregivers can get a rough idea of where an individual is in the disease process by observing that individual's behavioral characteristics and comparing them to the GDS. For more specific assessment, use the accompanying [Brief Cognitive Rating Scale \(BCRS\)](#) and the [Functional Assessment Staging \(FAST\)](#) measures.

Level	Clinical Characteristics
1 <b>No cognitive decline</b>	No subjective complaints of memory deficit. No memory deficit evident on clinical interview.
2 <b>Very mild cognitive decline</b> (Age Associated Memory Impairment)	Subjective complaints of memory deficit; most frequently in following areas: (a) forgetting where one has placed familiar objects; (b) forgetting names one formerly knew well. No objective evidence of memory deficit on clinical interview. No objective deficit in employment or social situations. Appropriate concern with respect to compromised memory.
3 <b>Mild cognitive decline</b> (Mild Cognitive Impairment)	Earliest clear-cut deficit. Manifestations in more than one of the following areas: (a) patient may have gotten lost when traveling to an unfamiliar location; (b) co-workers become aware of patient's relatively poor performance; (c) word and name finding deficit becomes evident to associates; (d) patient may read a passage or a book and retain relatively little material; (e) patient may demonstrate decreased facility in remembering names upon introduction to new people; (f) patient may have lost or misplaced an object of value. (g) concentration deficit may be evident on clinical testing. Objective evidence of memory deficit obtained only with an extensive interview. Decreased performance in demanding employment and social settings. Patient begins to become manifestly inpatient. Mild to moderate anxiety accompanies symptoms.
4 <b>Moderate cognitive decline</b> (Mild Dementia)	Clear-cut deficit on careful clinical interview. Deficit manifested in following areas: (a) decreased knowledge of current and recent events; (b) may exhibit some deficit in memory of more personal history; (c) concentration deficit elicited on serial subtraction; (d) decreased ability to write; handle finances, etc. Frequent use of delirium-inducing agents (e.g., sedatives) to help with sleep. Loss of capacity to function personally and socially. (e) ability to travel to familiar locations; inability to perform complex tasks. Tended to dominate behavior with others. Pattern of affect and withdrawal from challenging situations frequently occur.


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5 <b>Moderately severe cognitive decline</b> (Moderate Dementia)	Patient can no longer survive without some assistance. Patient is unable during interview to recall a major relevant aspect of their current lives, e.g., an address, telephone number of many years, the name of their family members (such as grandchildren), the name of the high school or college from which they graduated. Frequently some deterioration in time (date, day of week, season, etc.) is in place. An educated person may have difficulty counting back from 40 by 4s or from 20 by 2s. Persons at this stage retain knowledge of more recent facts regarding themselves and others. They accurately know their own names and generally know their spouses' and children's names. They require some assistance with toileting and eating, but may have some difficulty choosing the proper clothing to wear.
6 <b>Severe cognitive decline</b> (Moderately severe Dementia)	Patient no longer keeps the name of the spouse upon whom they are entirely dependent for survival. Will be largely unaware of all recent events and experiences in their lives. Retain some knowledge of their past lives but this is very sketchy. Generally unaware of their surroundings; the year, the season, etc. Will have difficulty counting from 10, both backward and countdown. Forward. Will require some assistance with activities of daily living. e.g., may become incontinent. Will require travel assistance but occasionally will be able to travel to familiar locations. Usual clothes frequently discarded. Almost always on all their own name. Frequently continue to be able to distinguish familiar from unfamiliar persons in their environment. Personality and emotional changes occur. There are great variable and further (a) intellectual behavior, e.g., patient may accuse their spouse of being an impostor, may talk to imaginary figures in the environment, or to their own reflection in the mirror; (b) obsessive-compulsive, e.g., person may continually repeat simple cleaning activities; (c) anxiety symptoms, agitation, and even previously nonviolent violent behavior may occur; (d) incontinent adults, i.e., feces or urination become an automatic cannot carry a thought long enough to determine a purposeful course of action.
7 <b>Very severe cognitive decline</b> (Severe Dementia)	All verbal abilities are lost over the course of this stage. Frequently there is no speech at all and unintelligible utterances and few responses of seemingly responsive words and phrases. Incontinent of urine, requires assistance toileting and feeding. Basic psychomotor skills, e.g., ability to walk, are lost with the progression of this stage. The brain appears to no longer be able to tell the body what to do. Generalized rigidity and developmental atrophy reflects not frequently present.

Reisberg, B., Ferris, S.H., de Leon, M.J., and Crook, T. The global deterioration scale for assessment of primary degenerative dementia. *American Journal of Psychiatry*, 1982, 139, 1130-1139.  
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# Q&A



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