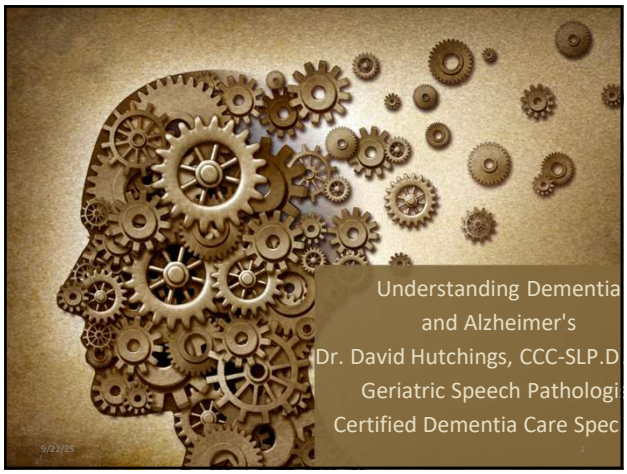

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Disclosure Statement

- Dr. Hutchings is the founder and CEO of Dementia and Alzheimer's Care, PLLC
  - Dr. Hutchings works with patients who seek guidance from Alzheimer's Tennessee however does not receive compensation from the organization for clinical evaluations.
  - Dr. Hutchings does receive honorarium for lectures and conferences

2

Overview

- Dementia and Alzheimer's Care, PLLC
- Dementia and Early Detection
- Types of Dementia
  - Prevention
- Dementia and Pneumonia
- Assessment and Staging
- Q&A

3

Overview

- 11,200-11,400 individuals turn 65 daily
- 10 million baby boomers will develop dementia
- Every 67 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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4

Dementia and Early Detection

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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5

Dementia and Early Detection

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

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6

Early Detection 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

7

Dementia and Early Detection

- 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

8

William Utermohlem

9

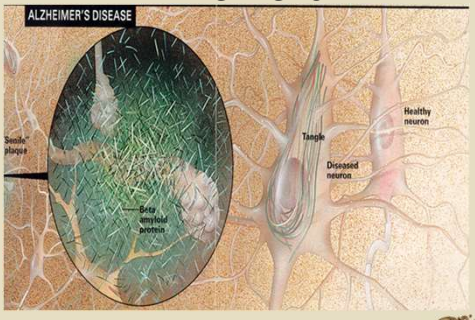
Types of Dementia

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 Varient (Tv-FTLD)
   C. Primary Progressive Aphasia (PPS-FTLD)

10

Neuropathology of Alzheimer's



11

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

12

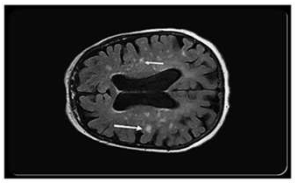
Vascular Dementia

- 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
• Small, repeated reduction in blood flow that results in tissue damage • Often throughout the brain • Step-wise pattern to clinical decline	• Single, often larger reduction in blood flow that results in tissue damage (stroke) • Symptoms depend on area that is damaged

13

Vascular Dementia



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

14

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

15

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)	Parkinson's Disease Dementia (PDD)
• 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 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)

16

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 Varient (Tv-FTLD)
  - Primary Progressive Aphasia (PPS-FTLD)

17

Frontotemporal Dementia

Source: http://www.alzheimer-adna.com/Gb/Diseases/Pick_disease.html

18

Symptom Management

- Nutritional Concern impact all dementia and all patients
- Pneumonia then Antibiotics
- Falls-Hip Fx-PT
- Falls or decline in ADLs then OT.

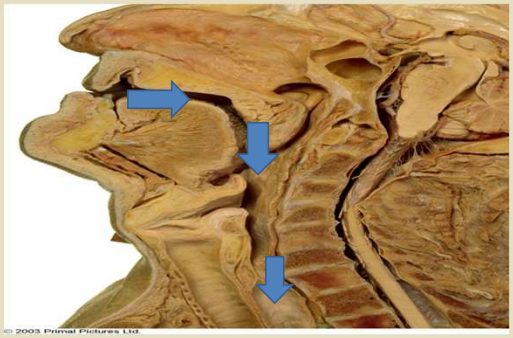
19

What is Dysphagia?

Dysphagia is an impairment in the swallowing function that may occur anywhere from the mouth to the stomach (Perlaman, 1997).

Dysphagia Causes Pneumonia

20



21

Aspiration in Dementia

- ***** Aspiration is only one symptom of dysphagia**
- **60% of aspiration is silent aspiration**
- **68% of CVA pts have silent aspiration**
- **Common Signs and Symptoms of Aspiration:**
  - Coughing during or after eating
  - Feeling of food "sticking in throat"
  - Runny Nose
  - Watery Eyes
  - Gurgled Vocal Quality
  - Loss of Weight
  - Dehydration
  - Temperature increases associated with meals and intake

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22

Dysphagia and Dementia

- **Sensory damage** can disrupt the process of bolus organization, mastication and Oral Transit.
- **Motor damage** caused by dementia can disrupt airway closure and pharyngeal movement.
- Due to Sensory and Motor Damage dementia patients demonstration aspiration, silent aspiration, bronchiectasis, dehydration, weight loss, and starvation

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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
  - Memantine
- Medications Impacts
  - Early Stages
  - Middle Stages-Combine Medications
  - Late Stages

25

Defining Cognition and Types of Dementia

- **Cognition : Is a large group of functions of knowing. Including;**
  - **Memory**
    - Immediate Memory
    - Short Term Memory
    - Long Term Memory
    - Remote Memory
    - Semantic Memory
    - Episodic Memory
  - **Executive Functions**
    - Common Sense/Problem Solving
    - Cause and Effect
    - Divergent Thinking
    - Sequencing
  - **Language**
    - Receptive (Understanding)
    - Expressive (Speaking)

26

Defining Cognition and Types of Dementia

- **Immediate**: Reproduction, recognition or recall of a limited amount of material acquired within the previous 10 seconds
- **Short-Term**: Reproduction, recognition or recall of a limited amount of material acquired between 10 seconds and 20 minutes
- **Long-Term**: Reproduction, recognition, or recall of information acquired more than 20 minutes ago
- **Remote**: Recall or recognition of experiences or information acquired in past years
- **Semantic Memory**: Memory from a fact
- **Episodic Memory**: Memory of an autobiographical event (Family vacation).

27

Defining Cognition and Types of Dementia

- **Common Sense/Problem Solving**: Good judgment or intelligence and the ability to apply commonly held knowledge of behaviour in social situations
- **Cause and Effect**: The ability to understand the results of a variety of happenings and how certain events influence other events.
- **Divergent Thinking**: An aspect of creative thinking characterized by formulation of alternative solutions to a problem.
- **Sequencing:** The ability to put a series of events in the correct order.

28

Language: Defined

- Expressive Language: The ability to express wants and needs through verbal language
  - ***Expressive Aphasia:*** Language impairment characterized by the patient's inability to express language.
- Receptive Language: The ability to understand verbal language
  - ***Receptive Aphasia***: Language impairment characterized by the patient's inability to understand language.

29

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

30

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

31

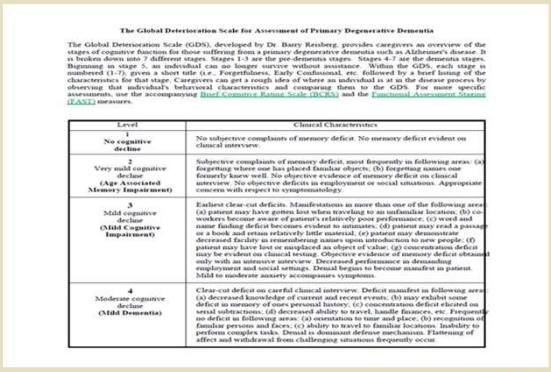
Global Deterioration Scale

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

32



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 4-7 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 (i.e., Forgetfulness, 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 at in the disease process by observing that individual's behavioral characteristics and comparing them to the GDS. For more specific assessments, use the accompanying Brief Cognitive Rating Scale (BCRS) and the Functional Assessment Staging (FAST) measures.

Level	Clinical Characteristics
1 **No cognitive decline**	No subjective complaints of memory deficit. No memory deficit evident on clinical interview.
2 Very mild cognitive decline **(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 deficits in employment or social situations. Appropriate concern with respect to symptomatology.
3 Mild cognitive decline **(Mild Cognitive Impairment)**	Earliest clear-cut deficits. 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 intimates; (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 intensive interview. Decreased performance in demanding employment and social settings. Denial begins to become manifest in patient. Mild to moderate anxiety accompanies symptoms.
4 Moderate cognitive decline **(Mild Dementia)**	Clear-cut deficit on careful clinical interview. Deficit manifest in following areas: (a) decreased knowledge of current and recent events; (b) may exhibit some deficit in memory of ones personal history; (c) concentration deficit elicited on serial subtractions; (d) decreased ability to travel, handle finances, etc. Frequently no deficit in following areas: (a) orientation to time and place; (b) recognition of familiar persons and faces; (c) ability to travel to familiar locations. Inability to perform complex tasks. Denial is dominant defense mechanism. Flattening of affect and withdrawal from challenging situations frequently occur.

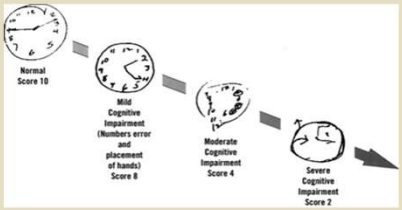
33

5 Moderately severe cognitive decline (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., no address or telephone number of many years, the names of close family members (such as grandchildren), the name of the high school or college from which they graduated. Frequently some disorientation to time (date, day of week, season, etc.) or to 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 many major facts regarding themselves and others. They unvariably know their own names and generally know their spouses' and children's names. They require no assistance with toileting and eating, but may have some difficulty choosing the proper clothing to wear.
6 Severe cognitive decline (Moderately Severe Dementia)	May occasionally forget 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. May have difficulty counting from 10, both backward and, sometimes, 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. Diurnal rhythm frequently disturbed. Almost always recall their own name. Frequently continue to be able to distinguish familiar from unfamiliar persons in their environment. Personality and emotional changes occur. These are quite variable and include: (a) delusional 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 symptoms, e.g., person may continually repeat simple cleaning activities; (c) anxiety symptoms, agitation, and even previously nonexistent violent behavior may occur; (d) cognitive abulia, i.e., loss of willpower because an individual cannot carry a thought long enough to determine a purposeful course of action.
7 Very severe cognitive decline (Severe Dementia)	All verbal abilities are lost over the course of this stage. Frequently there is no speech at all -only unintelligible utterances and rare emergence of seemingly forgotten 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 neurologic reflexes are 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: 1136-1139.

34

Clock Drawing Progression



35

Caregiver Burden Scale

Caregiver's name: _____ Date: _____

The following questions reflect how people sometimes feel when they are taking care of another person. After each question, circle how often you feel that way: never, rarely, sometimes, frequently, or nearly always. There are no right or wrong answers.

	Never	Rarely	Sometimes	Frequently	Nearly always
1. Do you feel that your relative asks for more help than he or she needs?	0	1	2	3	4
2. Do you feel that because of the time you spend with your relative, you do not have enough time for yourself?	0	1	2	3	4
3. Do you feel stressed between caring for your relative and trying to meet other responsibilities for your family or work?	0	1	2	3	4
4. Do you feel embarrassed over your relative's behavior?	0	1	2	3	4
5. Do you feel angry when you are around your relative?	0	1	2	3	4
6. Do you feel that your relative currently affects your relationship with other family members or friends in a negative way?	0	1	2	3	4
7. Are you afraid about what the future holds for your relative?	0	1	2	3	4
8. Do you feel your relative is dependent on you?	0	1	2	3	4
9. Do you feel strained when you are around your relative?	0	1	2	3	4
10. Do you feel your health has suffered because of your involvement with your relative?	0	1	2	3	4
11. Do you feel that you do not have as much privacy as you would like, because of your relative?	0	1	2	3	4
12. Do you feel that your social life has suffered because you are caring for your relative?	0	1	2	3	4
13. Do you feel uncomfortable about having friends over, because of your relative?	0	1	2	3	4
14. Do you feel that your relative wants to expect you to take care of him or her, as if you were the only one he or she could depend on?	0	1	2	3	4
15. Do you feel that you do not have enough money to care for your relative, in addition to the rest of your expenses?	0	1	2	3	4
16. Do you feel that you will be unable to take care of your relative much longer?	0	1	2	3	4
17. Do you feel you have lost control of your life since your relative's illness?	0	1	2	3	4
18. Do you wish you could just leave the care of your relative to someone else?	0	1	2	3	4
19. Do you feel uncertain about what to do about your relative?	0	1	2	3	4
20. Do you feel you should be doing more for your relative?	0	1	2	3	4
21. Do you feel you could do a better job in caring for your relative?	0	1	2	3	4
22. Overall, how burdened do you feel in caring for your relative?	0	1	2	3	4

Total score: _____

SCORING KEY:
0 to 20 = little or no burden; 21 to 40 = mild to moderate burden; 41 to 60 = moderate to severe burden; 61 to 88 = severe burden.

FIGURE 4. Caregiver Burden Scale. This self-administered 22-item questionnaire assesses the "experience of burden."
Adapted with permission from Zarit SH, Reever KE, Bach-Peterson J. Relatives of the impaired elderly: correlates of feelings of burden. Gerontologist 1980;20:649-55.

2270 AMERICAN FAMILY PHYSICIAN www.aafp.org/afp VOLUME 65, NUMBER 11 / JUNE 1, 2002

36

Care Planning

- Living at home
- Independent Living
- Assisted Living Facility (ALF)
- Memory Care (MC)-Stage 5.0/7.0
- Skilled Nursing Facility (SNF)
- Hospice

37

Sundowning

- The appearance or exacerbation of behavioral disturbances associated with the afternoon and/or evening hours
- Sundowning is broadly used to describe a set of neuropsychiatric symptoms occurring in elderly patients with or without dementia at the time of sunset, at evening, or at night
- Occurs in about 66% of Dementia patients

38

Sundowning

- **Melatonin**
  - Levels reduced in post-mortem cerebrospinal fluid of patients with Alzheimer's disease
- **Environmental Fatigue**
  - Caregiver fatigue
  - Overstimulation at shift change
  - Too much activity in AM will lead to afternoon fatigue
- **Medications**
  - May be side effect or the "wearing off" effect of various medications

39

Other Contributing factors

Medications

- 'sundowning may well be a side effect or the "wearing off" effect of various medications':
  - Antidepressants
  - Antipsychotics
  - Anti-parkinsonian
  - Anticholinergic
  - Hypnotics and Benzodiazepines

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40

Other Contributing factors

Benzodiazapines and Hypnotics use in Sundowning:

- Poor drugs of choice
- Create drug tolerance
- Dependence
- Withdrawal
- Increase disinhibition and confusion (particularly if pre-existing agitation/sundowning syndrome)

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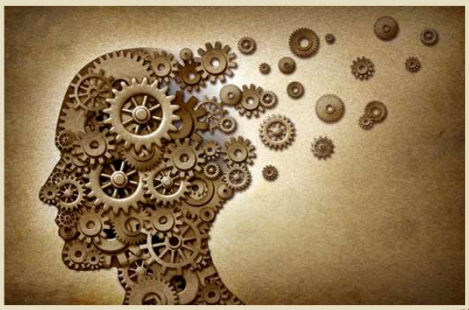
41

Q&A



9/22/25 Dementia and Alzheimer's Care, LLC 42

42