

# Understanding Dementia

Linda K. Shumaker, RN-BC, MA  
Pennsylvania Behavioral Health and Aging Coalition

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## Dementia

- Recognized since ancient times as consequence of aging
- Today it is a major public health concern.
- Approximately 5.2 million people in US with Alzheimer's Disease at all ages
- One in nine individuals 65 and older (11 percent) have Alzheimer's Disease.
- If no cure, 14 million will be affected by 2030.



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## Costs of Dementia

- Dementia costs this country \$157 – \$215 billion annually making the disease more costly than either heart disease or cancer. (Rand Corporation and University of Michigan, 2013)
- Greatest economic cost is providing institutional and home-based long-term care rather than medical services.
- If age-specific prevalence rates remain constant, with the growth of the aging population this cost will double by 2040.



New England Journal of Medicine, April 4, 2013 Funding by National Institute of Aging.

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## Costs of Dementia

- In 2010, 14.9 million family members and friends provided 17 billion hours of unpaid care to those with dementia.
- Economic value of unpaid care was \$202.6 billion in 2010.



[2011 Alzheimer's Disease Facts and Figures](#)

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## Costs of Dementia

- More than 60% of caregivers rate the emotional stress of care-giving as high or very high; over 30% report symptoms of depression.
- The physical and emotional impact of care-giving is estimated to result in \$7.9 billion in increased healthcare costs.



[2011 Alzheimer's Diseases Facts and Figures](#)

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## Alzheimer's Disease

- ✓ Statistics – 5.2 million Americans
  - The majority of those with the disease are women
    - Age-specific incidence, however is the same for men and women
  - People with lower levels of education appear to be at higher risk of Alzheimer's and/or other dementias
  - African-Americans are twice as likely to develop Alzheimer's disease and/or other dementias
  - Hispanic individuals are 1½ times more likely to develop Alzheimer's disease and/or other dementias

[2013 Alzheimer's Diseases Facts and Figures](#)

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## Diversity and Rural Population Issues

- Alzheimer’s disease and other dementias are under-diagnosed in rural and minority populations more than in urban or white populations.
- Lack of diagnosis seriously reduces an individual’s access to available treatments and information.
- Active medical management, information and support, and coordination of medical and community services have been shown to improve quality and outcomes of care for people with dementia.

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## Diversity Issues: African-Americans

- African-Americans are about 2 times more likely than white Americans to have Alzheimer’s and other dementias.
- However Medicare data show they were only 32% more likely to have a diagnosis (i.e., they were less likely than whites to have a diagnosis and less likely to say a doctor had told them they had a “memory-related disease”).
- Diagnosis is typically in the later stages of the disease, when they are more cognitively and physically impaired (so medical costs higher at that point).

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## Diversity Issues: African-Americans

- One of most promising areas of research is growing body of evidence that vascular disease may be a key mechanism in triggering the manifestation of Alzheimer’s disease.
- Persons with history of either high blood pressure or high cholesterol are 2X more likely to get AD; those with both risk factors are 4X more likely to get dementia.

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### Diversity Issues: African-Americans

- 65% of African-Americans have hypertension; higher risk of stroke; 60% higher risk of type 2 diabetes (contributes to vascular disease)
- Better management (or prevention) of these medical conditions, especially if treatment started in midlife, could reduce Alzheimer's and other dementia risk.
- Ethnic and cultural bias in current screening and assessment tools lead to higher rates of false-positive results

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### Diversity Issues: African-American Caregiving

- Most frequently documented cultural differences were:
  - ✓ Better psychosocial health of caregiver
  - ✓ More positive appraisals of caregiving
  - ✓ Greater spirituality or use of prayer
  - ✓ More social support for care-giver
  - ✓ Stronger beliefs about filial responsibility
  - ✓ Higher value placed on extended family networks
  - ✓ Greater aversion to institutionalization of relatives

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### Diversity Issues: Hispanics

- One and ½ times more likely than whites to have Alzheimer's and/or other dementias
- Less likely to have a diagnosis of the condition
- When diagnosed typically in later stages of disease, so more impaired and need more medical care
- Hispanics with dementia are low users of formal service; less likely to see a physician and much less likely to receive services to help monitor and control their chronic conditions

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### Diversity Issues: Hispanic

- High incidence of diabetes – 64% higher than non-Hispanic white Americans; diabetes is one of the vascular risk factors related to risk of AD and other dementia in absence of stroke
- Study of older Mexican Americans found diabetes and hypertension contribute more to dementia in this ethnic group than in non-Hispanic whites
- Again, better management of these conditions (or prevention) beginning in midlife may reduce higher risk of AD and other dementia

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### Diversity Issues: Hispanic

- Hispanic community of USA represents people from over 17 Spanish-speaking countries, but culturally-based attitudes and behaviors unite them.
- Lack of Spanish-language abilities and cultural sensitivity in many health care systems:
  - ✓ Instills distrust
  - ✓ Limits access to care
  - ✓ Adversely affects quality of care they do receive
  - ✓ Imposes further burdens on extended family as interpreters

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### Diversity Issues: Hispanic

- Cultural biases in cognitive testing and inadequate translation of diagnostic tools may skew diagnosis of dementia in Hispanics
- Significant progress in developing culturally sensitive tools, but not standardized or normed across subgroups of Hispanics, and not widely used
- Older Hispanics have far less health insurance than non-Hispanic contemporaries

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### **Diversity Issues: Hispanic Caregiving**

- Strong cultural value of family responsibility
- High acceptance of cognitive impairment and dementia as a normal part of aging to be managed within the family
- Thus families provide more care, for longer periods, and at higher levels of impairment than non-Hispanic families.

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### **Diversity Issues: Hispanic Caregiving**

- Accept stress as a normal, expected part of the familial role
- Resistance to sharing familial problems with outsiders
- Reluctant to use formal services until overwhelmed
- Services must be provided in way that reinforces family values and overcomes cultural barriers

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### **Alzheimer's Disease**

- Most prevalent kind of dementia (60 – 80% of all cases)
- Although there is an increased incidence with age, it is not consequential to the aging process
  - 13% population 65 years of age and older
  - Nearly half of the individuals (43%) over age 85

2011 Alzheimer's Diseases Facts and Figures

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## Dementia

- Senility, Hardening of the Arteries, Organic Brain Syndrome (OBS)

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## Risk Factors for Alzheimer's Disease

- Older age
- Genetics
- Head injury
- Ethnic background
- Rural background
- Lower social economic scale
- Lower education level
- Poor diet
- Lower levels of exercise
- Lower levels of cognitive engagement
- Lower levels of social engagement

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## Cognitive Reserve (CR) Hypothesis

✓ The concept of cognitive reserve provides an explanation for differences between individuals with susceptibility to age-related brain changes or pathology related to Alzheimer's disease, whereby some people can tolerate more of these changes than others and maintain function.

- Epidemiological studies suggest that lifelong experiences can increase this reserve:
  - Educational achievements - Higher IQ
  - Occupation attainment
  - Leisure activities in later years

Alzheimer Dis Assoc Disord. 2006 Jul-Sep;20(3 Suppl 2):S69-74. Y. Stern

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### Cognitive Reserve (CR) Hypothesis (cont.)

✓ CR postulates that individual differences in how tasks are processed provide differential reserve against brain pathology or age-related changes.

- 2 Forms –
  - » In **neural reserve**, preexisting brain networks that are more efficient or have greater capacity may be less susceptible to disruption.
  - » In **neural compensation**, alternate networks may compensate for pathology's disruption of pre-existing networks (how tasks are performed that may allow some individuals to be more resilient).

✓ There is also the possibility that directly enhancing CR may help forestall the *diagnosis* of AD.

Alzheimer Dis Assoc Disord. 2006 Jul-Sep;20(3 Suppl 2):S69-74. Y. Stern

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### Dementia

- Not a disease, but a broader set of symptoms that accompanies certain diseases (Alzheimer's Association) –
- Irreversible chronic brain failure
  - ✓ Structural damage to the brain
  - ✓ Loss of mental abilities
  - ✓ Involves memory, reasoning, learning and judgment

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### Dementia – DSM 5

- The term dementia is eliminated.
- Replaced with “major” or “minor” neurocognitive disorder.
- The definition focuses on the decline as opposed to deficit.
- Old definition required memory impairment, which is not always the first symptom.
- The presence of a “neurocognitive” disorder needs to be established, and then it is determined whether it is minor or major.

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### Minor Neurocognitive Disorder – DSM 5

- **Modest cognitive decline** from a previous level of functioning based on the concerns of the individual, knowledgeable informant or the clinician;
- **Decline in neurocognitive performance** in the range of one or two standard deviations below appropriate norms.
- The cognitive deficits are **insufficient to interfere with independence (IADL's)**, but more complex tasks require compensatory strategies or accommodation.
- The cognitive deficits do **not** occur in the context of a **delirium**.
- The cognitive deficits are **not** attributable to **another mental disorder**.

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### Major Neurocognitive Disorder – DSM 5

- There is evidence of a **substantial cognitive decline** from a previous level of performance in one or more of the domains based on the concerns of the individual, a knowledgeable informant, or the clinician;
- **Decline in neurocognitive performance** typically involving test performance in the range of **two or more standard deviations below** appropriate norms on formal testing or equivalent clinical evaluation.

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### Major Neurocognitive Disorder – DSM 5 (cont.)

- The cognitive deficits are sufficient to **interfere with independence** requiring minimal assistance with instrumental activities of daily living.
- The cognitive deficits do **not** occur in the context of a **delirium**.
- The cognitive deficits are **not** attributable to **another mental disorder**.

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### Changes in DSM 5

“The DSM IV terminology required the presence of memory impairment; often memory impairment is not always the first domain affected in dementia or neurocognitive disorders.”

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### Causes of Dementia

- Alzheimer’s Disease
- Vascular or Multi-infarct Dementia - strokes, mini-strokes, TIA’s
- Lewy Body Disease
- Pick’s Disease
- Jacob-Creutzfeldt Disease
- Parkinson’s Disease
- Substance abuse

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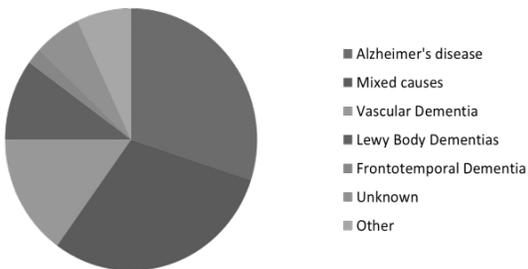
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### Estimated Causes of Dementia



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## Alzheimer's Disease

- Slow and progressive; varies day to day
- Course of the disease is gradual, about 8 -10 years.
- Causes?
- Diagnosis is one of inclusion.
- Presence of neurofibrillary tangles and senile plaques in brain matter
- Assessments make sure there are no other psychiatric illnesses or medical diseases causing the cognitive problems.

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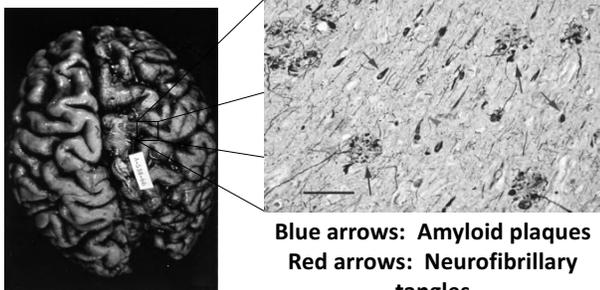
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## Alzheimer's disease



Blue arrows: Amyloid plaques  
Red arrows: Neurofibrillary tangles

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## Areas of brain affected

### The Brain and Alzheimer's Disease

Alzheimer's disease attacks nerve cells (neurons) in several regions of the brain.

*Cerebral cortex:*

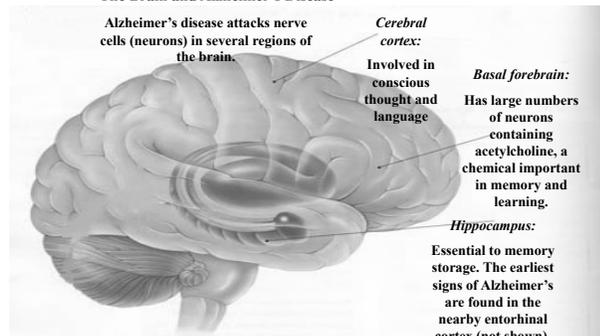
Involved in conscious thought and language

*Basal forebrain:*

Has large numbers of neurons containing acetylcholine, a chemical important in memory and learning.

*Hippocampus:*

Essential to memory storage. The earliest signs of Alzheimer's are found in the nearby entorhinal cortex (not shown).



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## Alzheimer's Disease: Complex Disorder

- Genetics
- Aging
- Amyloid deposits
- Inflammation
- Plaques and tangles
- Neuronal damage and loss
- Neurochemical changes
- Patient may have other dementias also.

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## APOEε4 is Risk-Factor Gene

- Increases **risk** of developing Alzheimer's Disease (AD)
- But inheriting this allele does **not** mean definitely will develop AD
- Some with one or two of these alleles **never** get AD
- Some with AD do **not** have any of these alleles

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## Epigenetics: Nature Meets Nurture

- Expression of genes (when particular genes are "Switched" on or off) can be affected -- positively and negatively – by environmental factors, e.g.
  - ✓ Exercise
  - ✓ Diet
  - ✓ Chemicals
  - ✓ Smoking
  - ✓ Exposures in uterus

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### Epigenetics (cont.)

- Environmental and behavioral exposures during lifetime can alter a cell's DNA and make people more or less susceptible to developing a disease later in life
- Emerging evidence the epigenetic mechanisms contribute to Alzheimer's disease – can be protective, benign, or harmful

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### Alzheimer's Disease

- Higher prevalence with increasing age makes genetic association by chance more likely.
- Mode of inheritance is very difficult to determine.
- An older person has many potential other reasons for cognitive decline.

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### Alzheimer's Disease and Cerebrovascular Disease

- Mixed dementia is **more common** than pure Alzheimer's disease (in majority of people with AD, their brains have vascular microinfarcts, white matter lesions, or vessel wall alterations).
- Accumulating epidemiological, pathological, and imaging evidence have suggested a role for cerebrovascular disease in onset and progression of Alzheimer's disease.

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### Alzheimer's Disease and Cerebrovascular Disease (cont.)

- Vascular risk factors have been linked to risk for Alzheimer's disease in many epidemiological studies:
  - ✓ High blood pressure and/or high cholesterol
  - ✓ Obesity
  - ✓ Elevated homocysteine
  - ✓ Atherosclerosis
  - ✓ Carotid stenosis
  - ✓ Atrial fibrillation
  - ✓ Diabetes
  - ✓ Coronary disease

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### Two Theories of Alzheimer's Disease

#### Amyloid Hypothesis

- Abnormal amyloid protein precursor cleavage ↓
- A $\beta$  ↓
- Plaques/oligomers ↓
- Neurodegeneration ↓
- Alzheimer's disease

#### Vascular Hypothesis

- Advanced aging and vascular risk factor ↓
- Brain hypoperfusion ↓
- Neuroglial energy crisis ↓
- Mild cognitive impairment ↓
- Neurodegeneration ↓
- Alzheimer's disease

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### Alzheimer's Disease and Cerebrovascular Disease (cont.)

- There are disagreements as to how to "integrate" the vascular risks into the "amyloid cascade".
- Late-onset Alzheimer's disease likely has a "multi-factorial" cause.
- Given the number of people worldwide who are affected by vascular risks, we must work on an integration of these factors.
- Could lead to early intervention efforts via education, lifestyle modification, and clinical trials of novel protective strategies.

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### **Alzheimer's Disease and Diabetes**

- Individual with diabetes are twice as likely to develop Alzheimer's disease.
  - ✓ Even individuals with impaired glucose tolerance (a level of poor glucose control that precedes diabetes) were 35% more likely to develop some type of dementia.
  - ✓ Theories
    - Vascular disease → Vascular dementia; diabetes can accelerate the disease.
    - Diabetes may play a role in that poor blood sugar control makes it harder for the body to clear away amyloid.
    - Or... high levels of glucose may create a toxicity-related or oxidative stress where harmful free radical molecules build up and damage tissue in the brain.

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### **Alzheimer's Disease, Vascular Disease and Diabetes**

Treating diabetes and vascular risk factors such as hypertension and high cholesterol may help prevent dementia.

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### **Vascular or Multi-Infarct Dementia**

- The second most common type of dementia
- Affects more men than women, ages 55 – 75.
- Caused by a series of small strokes
- Different pattern than Alzheimer's Disease (but can also be present in patients with AD).

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## Vascular or Multi-infarct Dementia

- Risk factors:
  - ✓ Diabetes
  - ✓ Hardening of the arteries (atherosclerosis)
  - ✓ High blood pressure (hypertension)
  - ✓ Smoking
  - ✓ High Cholesterol
  - ✓ Heavy alcohol use
  - ✓ Stroke

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## Frontotemporal Dementia

- Uncommon form of dementia.
- Second or third most common cause of dementia in individuals under age 65.
- Damage to the frontal lobe and/or the temporal parts of the brain.
- A more rapid onset than in Alzheimer’s disease.
- May experience language difficulties, such as mutism, difficulty with word-finding, or aphasias.

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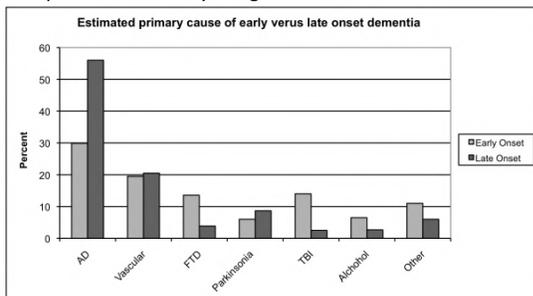
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## Frontotemporal Dementia

- Common cause of dementia before the age of 65.
- Has presented as early as age 22.




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### **Frontotemporal Dementia**

- Symptoms are more changes in personality and behavior:
  - ✓Lack insight, and loss of ability to empathize with others, making them appear selfish and unfeeling
  - ✓Behave inappropriately
  - ✓Lose their inhibitions
  - ✓Be easily distracted
  - ✓Develop compulsive rituals
  - ✓Become aggressive

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### **Pick's Disease**

- Variant of Frontotemporal dementia
- Brain cells get larger and contain "Pick bodies".
- Affects more men than women
- Onset of 40 – 60 years of age
- Produces changes in personality, judgment, language and memory
- Course of the disease is 6 – 12 years
- Cholinesterase inhibitors do NOT work

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### **Dementia with Lewy Bodies**

- One of the most common types of dementias
- Lewy body dementia exists either in pure form, or in conjunction with other brain changes, including those typically seen in Alzheimer's disease and Parkinson's disease.
- Presents as "cognitive decline" plus three defining characteristics

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### **Dementia with Lewy Bodies**

- Defining features:
  - ✓ “Fluctuations” in alertness and attention, such as frequent drowsiness, lethargy, lengthy periods of time spent staring into space, or disorganized speech;
  - ✓ Recurrent visual hallucinations,
  - ✓ Parkinsonian motor symptoms, such as rigidity and the loss of spontaneous movement.

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### **Creutzfeldt-Jakob Disease**

- Rare, fatal, rapid brain disease
- Death within 6 – 12 months of the diagnosis
- Thought to be caused by prions (protein in misfolded form) that change proteins into infectious proteins that cause brain death

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### **Creutzfeldt-Jakob Disease**

- Two types
  - ✓ Classic:
    - Sporadic – Most common (ages 45 -75); Cause unknown
    - Familial (genetic) – abnormal gene
    - Iatrogenic – Less than 1% - acquired during medical procedure
  - ✓ Variant – Rare - Younger (ages 28 – 29) – eating meat from cows that have been contaminated

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## Current Treatment of Dementia

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## Medication Interventions for Dementia

- Cholinesterase Inhibitors
- NMDA Receptor Antagonist
- Antidepressant Medication
- Antianxiety Medication
- Antipsychotic Medication
- Mood Stabilizers

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## Cholinesterase Inhibitors

- Proposed to Increase Acetylcholine
- Target
  - ✓ Cognitive Symptoms of Alzheimer's Disease
  - ✓ May Help Behavioral & Psych Symptoms of Dementia (BPSD)
    - Apathy
    - Delusions and Hallucinations

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## Cholinesterase Inhibitors

### Benefits on Cognition:

- ✓ Many trials have shown statistically significant improvement over placebo on measures of cognition and measures of overall improvement.

### Secondary endpoints have shown:

- ✓ Improved ADL's in mild to moderate AD, unclear in severe AD
- ✓ Fewer neuropsychiatric symptoms in mild to moderate AD (but not agitation)
- ✓ Delayed placement to nursing homes
- ✓ Less burden to caregivers

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## Cholinesterase Inhibitors

- Aricept - donepezil
  - Selective, reversible acetylcholinesterase inhibitor
- Exelon - rivastigmine
  - Dual inhibitor of both acetylcholinesterase and butyrylcholinesterase
- Razadyne - galantamine
  - Both an acetylcholinesterase inhibitor and a selective booster of nicotine action

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## Cholinesterase Inhibitors

- Aricept - donepezil
- Starting dose: 5 mg po q HS for 4 weeks, then 10 mg po q HS
- May take with or without food
- New Aricept 23 mg dosing

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### Cholinesterase Inhibitors

- Aricept - donepezil
- Common side effects:
  - ✓ Nausea and anorexia
  - ✓ Diarrhea
  - ✓ Insomnia
  - ✓ Fatigue
- May help cognition, behavior, ADLs, and delay Nursing Home placement

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### Cholinesterase Inhibitors

- Exelon - rivastigmine
- Starting dose: 1.5 mg twice a day for two weeks, then 3 mg twice a day for two weeks, then 4.5 mg twice a day for two weeks, then 6 mg twice a day (maximum).
- Should be taken with food in the morning and the evening

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### Cholinesterase Inhibitors

- Exelon - rivastigmine
- Common side effects:
  - ✓ Nausea and vomiting
  - ✓ Abdominal pain
  - ✓ Loss of appetite and weight
  - ✓ Dizziness
- May help cognition, behavior and function
- Now comes in a 24-hour Patch

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### Cholinesterase Inhibitors

- Razadyne - galantamine
- Starting dose: 4 mg po bid for 4 weeks, then 8 mg po bid for 4 weeks (usual dose), may give up to 12 mg po bid
- Given with morning and evening meals
- New - Extended release form

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### Cholinesterase Inhibitors

- Razadyne - galantamine
- Common side effects:
  - ✓ Nausea and vomiting
  - ✓ Diarrhea
  - ✓ Anorexia and weight loss
- May help general function, cognition, ADLs, and behavior

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### NMDA Receptor Antagonist

- Namenda - Memantine
  - ✓ N-methyl-D-aspartate (NMDA) receptor antagonist that protects against glutamate-mediated neurotoxicity.
  - ✓ For moderate to severe Alzheimer's disease
  - ✓ Slows the progression
  - ✓ Start 5 mg po q day. Titrate to 10 mg po BID.
  - ✓ Side effects: dizziness, headache, confusion, constipation, incontinence, nausea, tiredness

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## Memantine

- Mechanism of action: NMDA receptor antagonist. Unknown reason for benefit.
- Evidence of efficacy with or without donepezil:
  - ✓ Improvement on measures of cognition, clinician global impression and ADL's
  - ✓ Improvement on measure of neuropsychiatric symptoms
- Metabolism partially hepatic and renal excretion
- Common side effects: nausea, dizziness, tiredness

Reisberg, et. al. NEJM. 2003  
Tariot, et. al. JAMA. 2004  
Cummings, et. al. Neurology. 2006.

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## Antipsychotics and Dementia

- Black box warning: Elderly patients with dementia-related psychosis treated with atypical Antipsychotic are at an increased risk of death compared to placebo...over the course of a typical 10 week controlled trial, the rate of death in drug-treated patients was 4.5%, compared to a rate of about 2.5% in the placebo group...most of the deaths appeared to be either cardiovascular (heart failure; sudden death) or infectious (e.g. pneumonia) in nature.

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## Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia

- Symptoms of **disturbed perception, thought content, mood or behavior** that frequently occur in persons with Dementia
- BPSD are treatable!
- BPSD can result in:
  - Suffering
  - Premature Institutionalization
  - Increased Costs of Care
  - Loss of quality of life for the person and caregivers

Finkel et al 1996

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Hallucinations (Usually visual)
- Delusions
  - People are stealing things
  - Abandonment
  - This is not my house
  - You are not my spouse
  - Infidelity

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Misidentifications
  - People are in the house
  - People are not who they are
  - Talk to self in the mirror as if another person
  - Events on television

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Depressed Mood
- Anxiety
- Apathy
  - Decreased social interaction
  - Decreased facial expression
  - Decreased initiative
  - Decreased emotional responsiveness

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Wandering
  - Checking
  - Attempts to leave
  - Aimless walking
  - Night-time walking
  - Trailing
  - Excessive activity

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Verbal Agitation
  - Negativism
  - Constant requests for attention
  - Verbal bossiness
  - Complaining
  - Relevant interruptions
  - Irrelevant interruptions
  - Repetitive sentences

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Verbal Aggression
  - Screaming
  - Cursing
  - Temper Outbursts

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Physical Agitation
  - General Restlessness
  - Repetitive Mannerisms
  - Pacing
  - Trying to Get to a Different Place
  - Handling Things Inappropriately
  - Hiding Things
  - Inappropriate Dressing or Undressing

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Physical Aggression
  - Hitting
  - Pushing
  - Scratching
  - Grabbing Things
  - Grabbing People
  - Kicking and Biting

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**Behavioral and Psychological or Neuropsychiatric Symptoms of Dementia**

- Disinhibition
  - Poor Insight and Judgment
  - Emotionally Labile
  - Euphoria
  - Impulsive
  - Intrusiveness
  - Sexual Disinhibition

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## Causes of Behavioral Problems in Older Adults

- “Mental Health” Issues
  - ✓ Behavioral and psychological/ Neuropsychiatric Symptoms of dementia
  - ✓ Delirium
  - ✓ Depressive illness
  - ✓ Anxiety
  - ✓ Regressive symptoms of psychiatric illness
- Personality “issues”
- Institutional causes of problem behaviors

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## Delirium

- Delirium is a sudden, severe confusional state with rapid changes in brain function that occur with physical or mental illness
- Fluctuating level of consciousness
- Reversible/ treatable

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## Delirium DSM 5

1. Disturbance in attention (reduced ability to direct, focus, sustain and shift attention) and orientation to the environment.
2. Disturbance develops over a short period of time (hours to few days) and represents an acute change from baseline; not attributable to another neurocognitive disorder and tends to fluctuate in severity throughout the day.

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### Delirium DSM 5

- 3. A change in an additional cognitive domain such as memory deficit, disorientation or language disturbance, or perceptual disturbance that is not better accounted for by a pre-existing, established or evolving other neurocognitive disorder; and
- 4. Disturbance in #1 and #3 must not occur in the context of a severely reduced level of arousal, such as a coma.

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### Delirium

- ✓ Symptoms:
  - Decrease in short-term memory and recall
  - **Disrupted or wandering attention**
  - Disorganized thinking
  - Emotional or personality changes
  - Incontinence
  - Psychomotor restlessness

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### Delirium

- Most common complication of hospital admission of older individuals.
  - ✓ Occurs in 11 – 42% of medical inpatients
- Medications may be the sole precipitant for 12 – 39% of delirium.
  - ✓ Medications most commonly associated with delirium are benzodiazepines, narcotic analgesics, psychoactive drugs, and medications with anticholinergic effects.

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### **Risk Factors for Delirium**

- Pre-existing cognitive problems
- Advanced age
- Hospitalization
- Multiple medical conditions
- Depression
- Use of multiple medications, especially those with anticholinergic properties
- General anesthesia
- Visual problems
- Male gender
- Abnormal serum sodium

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### **Delirium**

✓ **Causes:**

- Medications
- Infections
- Metabolic/ endocrine
- Vitamin Deficiency
- Anesthesia
- Trauma
- Alcohol or sedative drug withdrawal

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**Behavioral Management  
is the key in taking care of  
anyone with a Dementia!**

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## Communication

### 10 Keys of Communication

- Set a positive mood for interaction
- Get the person's attention
- State your message clearly
- Ask simple, answerable questions
- Listen with your ears, eyes and heart

Fact Sheet: Caregiver's Guide to Understanding  
Dementia Behaviors, Family Caregiver Alliance

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## Communication (Cont.)

### 10 Keys of Communication

- Break down activities into a series of steps
- When the going gets tough, distract and redirect
- Respond with affection and reassurance
- Remember the good old days
- Maintain your sense of humor

Fact Sheet: Caregiver's Guide to Understanding  
Dementia Behaviors, Family Caregiver Alliance

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## Handling Troubling Behaviors

- Check with the doctor first!
- We cannot change the person
  - ✓ Try to accommodate the behavior, not control the behavior.
  - ✓ Remember that we **can** change our behavior or the physical environment.

Fact Sheet: Caregiver's Guide to Understanding  
Dementia Behaviors, Family Caregiver Alliance

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## Handling Troubling Behaviors (Cont.)

- Behavior has purpose.
- Behavior is triggered.
- What works today may not work tomorrow.
- Get support from others!

Fact Sheet: Caregiver's Guide to Understanding  
Dementia Behaviors, Family Caregiver Alliance

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## Three Steps in Identifying Causes of Behaviors

1. Identify and examine the behavior:
  - ✓ Could it be related to medication or illness?
  - ✓ What was the behavior? Could it be considered harmful?
  - ✓ What happened before the behavior?
  - ✓ What was the trigger?
  - ✓ What happened immediately after the behavior occurred? How did individuals react?

*Alzheimer's Association – "How to respond when dementia causes unpredictable behaviors."*

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## Three Steps in Identifying Causes of Behaviors (Cont.)

2. Explore potential solutions:
  - ✓ What are the individual's needs? Are they being met?
  - ✓ Can adapting the surroundings comfort the person?
  - ✓ How can you change your reaction or your approach to the behavior? Are you responding in a calm and supportive way?

*Alzheimer's Association – "How to respond when dementia causes unpredictable behaviors."*

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### Three Steps in Identifying Causes of Behaviors (Cont.)

3. Explore different responses:

- ✓ Did your new response help?
- ✓ Do you need to re-evaluate for other potential causes and solutions?
- ✓ What could you do differently?

*Alzheimer's Association – "How to respond when dementia causes unpredictable behaviors."*

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### Remember Behaviors may be related to:

- Physical discomfort – illness or medication
- Overstimulation – loud noises or a "busy" environment
- Unfamiliar surroundings – new places or the inability to recognize home
- Complicated tasks – difficulty with activities or chores or even simple requests
- Frustrating interactions – inability to communicate effectively

*Alzheimer's Association – "How to respond when dementia causes unpredictable behaviors."*

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**Behaviors are a form of communication!**

**Understanding, flexibility, and creativity are the keys to effective behavior management!**

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**Multidisciplinary Needs for Individuals with Alzheimer’s disease**

- Social needs for both caregivers and patients.
- Cognitive difficulties and behavioral manifestations
- Psychiatric symptoms
- Complicated medical needs
- Changing communication and ADL needs
- Normal age related changes may cause iatrogenic illness

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**Multidisciplinary Approach**

- History and Physical
- Laboratory tests - CBC with Differential, Thyroid studies, B12, Folate, Chemistry Profile, RPR, UA, Sedimentation Rate
- Psychiatric Assessment
- Psychological testing
- Evaluation of functional abilities
- Social factors

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**Resources**

- Alzheimer’s Association – [www.alz.org](http://www.alz.org)
- ADEAR – [adear@alzheimers.org](mailto:adear@alzheimers.org)
- Family Caregiver Alliance – [www.caregiver.org](http://www.caregiver.org)
- Geriatric Mental Health Foundation – [www.gmhfonline.org](http://www.gmhfonline.org)
- Medline Plus – [www.medlineplus.gov](http://www.medlineplus.gov)

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## Resources for Families

- **The 36-Hour Day, 4<sup>th</sup> Edition: A Family Guide to Caring for People with Alzheimer Disease, Other Dementias, and Memory Loss in Later Life**, Nancy L Mace and Peter V. Rabins. (2006)
- **Still Alice**, Lisa Genova. (2009)
- **Contented Dementia**, Oliver James. (2008)
- **Dementia Reconsidered: the Person Comes First**, Thomas Kitwood. (1997)

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