


Recognizing and Assessing Dementia: A Team-based Approach

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RECOGNIZING AND ASSESSING DEMENTIA: A TEAM-BASED APPROACH

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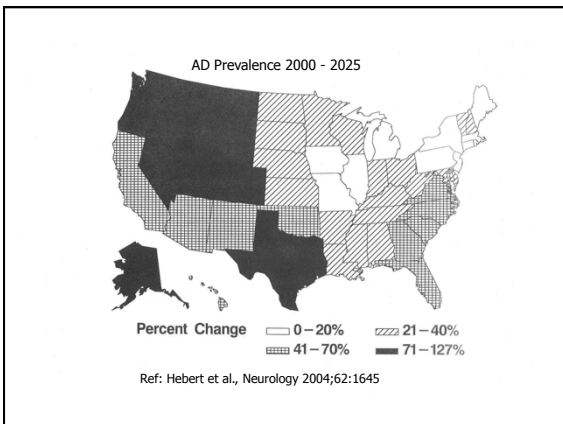


Potential Conflicts of Interest

Advisory Board Member: Wyeth/Élan Pharmaceuticals, Janssen Alzheimer Immunotherapy, GE Healthcare

Research Grants: NIH, Veteran's Administration, Anonymous Foundation, Margolis Foundation, CMS

Clinical Trials Support: Pfizer, Baxter Bioscience, Janssen Alzheimer Immunotherapy, Eli Lilly & Company, Wyeth/Élan Pharmaceuticals



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Alzheimer's Disease will Increase More in Utah than Any Other State, in the Intermountain West More than any Other Region

State	Current	2025	% Change 2000-2025
Utah	30,000	50,000	127%
Idaho	22,500	38,000	100%
Wyoming	8,500	15,000	114%

Ref: Hebert et al., Neurology 2004;62:1645

Lecture Objectives

- Describe how to recognize cognitive impairment and dementia early
- Outline the methods and unique requirements of cognitive evaluations
- Identify the typical features and treatment of some of the common and distinctive dementing diseases
- Discuss the role of primary care physicians and subspecialists in memory care

Recognition of Cognitive Deficits

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Case of "Speaking Around Words"

- Previously healthy 74 y.o. man complains that over the past 3 years he "speaks around words"
- Got lost in the middle of solving an equation in front of his college class
- Sometimes has trouble remembering what he wants to say
- Arrived in clinic unaccompanied and on time, although he had never been before

"Speaking Around Words" - II

- Lives alone and completely independent: cooks, manages own housework, finances including tax return, and uses a computer without problems
- Faxed note from son that he had trouble remembering why he wrote a large check, when tired asks same question repeatedly
- Example: After a trip to Europe, he had difficulty remembering names of grandchildren and repeatedly asked about plans

Recognizing Cognitive Deficits

- Patient or family voices complaint (reactive recognition)
 - Simple and most common
 - Physician and staff responses make a significant difference in outcomes
- Identify triggers that suggest cognitive problems when there is no complaint (proactive recognition)
 - Ideally, would be more frequent

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Early Proactive Recognition

- Be attentive to complaints; they may not be direct
 - Trouble on the job
 - Can't do things any longer
 - Less "interested" in things
- Assess risk of impairment (age, illness)
- Watch for "triggers" that suggest dementia and should stimulate an evaluation

Dementia Triggers During a Medical Visit

- Poor historian
- Appears to avoid direct questions by changing subject
- Vague responses to questions
- Can't follow directions
- Appears dependent on others for information
- Relies on others for transportation
- Many missed appointments
- Poor drug compliance

Cognitive Complaint ≠ Deficit

- Memory and cognitive complaints are common; normal memory is not computer-like
- Attention problems often interpreted as memory or cognitive problem
 - Sleep disturbance
 - Psychiatric illness, especially depression
 - Medication side effects
 - Serious medical illnesses
- Examine mental status and evaluate functional ability
- If cognition normal - reassure, but reassess in 6 mo.

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Definition of Dementia

- **A decline in intellectual function from a previous level of performance sufficient to impair daily activities in someone who is alert and cooperative**

Note that there is nothing in the definition about age, reversibility or severity

“Speaking Around Words” - III

- General neurological examination normal
- Casual speech was hesitant, presidential candidates = basketball player from New Jersey, Governor from the south
- MMSE = 26, trouble remembering 3 objects after a 5 minute delay
- Superior IQ, 33/60 on Boston Naming Test, verbal learning and memory <5%
- MRI and laboratory studies - normal

Mild Cognitive Impairment

- Objective evidence of an acquired deficit in one or more cognitive domains insufficient to impair everyday activities.
- Prognosis variable
- Mild cognitive impairment involving memory (amnestic MCI) is a risk factor for Alzheimer’s disease; approximately 15%/yr

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Definition of Delirium

(Metabolic or Drug Encephalopathy)

- A disorder of attention fluctuating in intensity throughout the day causing changing levels of consciousness, perceptual disturbance, altered psychomotor activity, disorientation and memory impairment.

One or multiple causative medical illnesses or medications often can be identified and need to be treated

Cognitive Evaluations

Unique Aspects of Dementia Evaluations

- Often Requires Dementia Specialty Clinic
- Need Knowledgeable Informants
- Therapeutic Triad of Physician - Patient - Caregiver
 - Differs from pediatric assessment
- Evaluate, Expand and Support Care Network
 - Community-based services, support groups
- Encourage Social Involvement, Mental Engagement and Physical Activity
 - Natural tendency to withdraw from activities
- Educate Patient AND Caregivers in Disease Self-management

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Initial Assessment of Cognitive Deficits

- Are functional impairments consistent with deficits?
- Is there a significant medical illness?
- Is there depression?
- Is this delirium?
- Are there significant visual or hearing problems?
- Are there centrally active medications? - most common cause of reversible dementia

Initial Interpretation

- Medical illness, depression, delirium, or sensory deficits
 - treat and reevaluate
- Centrally active medications
 - Discontinue or modify and reevaluate
- Impaired mental status but no functional loss - MCI or Impaired mental status and functional loss - dementia
 - determine the cause
 - Look for complicating issues if disproportionate functional deficits

Determining Specific Cause

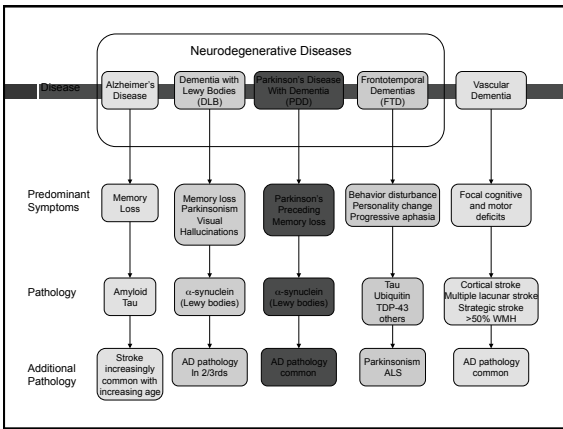
- More than 80 different disorders cause dementia
- History and examination most informative
 - Symptom onset (sudden, step-wise, insidious)
 - Clinical course (stable or progressive, rapid or slow)
 - Initial and predominant symptoms
 - Pattern of cognitive deficits (domains)
 - Findings on neurological examination
- Medical illnesses - blood tests
- Brain imaging, sometimes CSF, EEG, biopsy

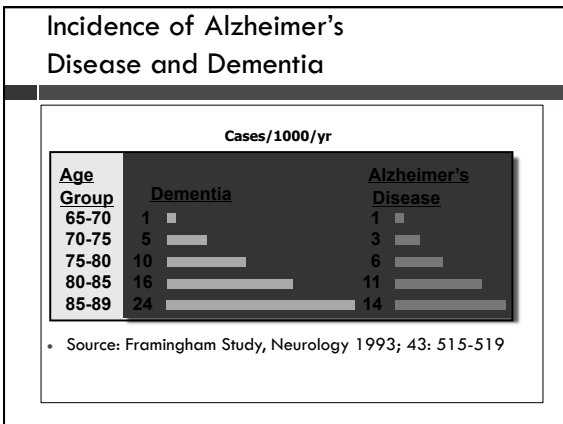
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Typical Features & Treatment of Some Dementing Disorders





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Alzheimer's Disease

- Insidious onset of gradual, progressive dementia
- Memory loss usually initial and most prominent symptom
- No focal weakness or sensory loss
- Gait normal and continent until late in the illness
- Familial in about 10%, several genetic defects
- NINCDS-ADRDA criteria, validated

Clinical Diagnosis of Alzheimer's Disease

NINCDS-ADRDA criteria

Category	Features	Diagnostic certainty
Definite	Clinical & pathologic features	100%
Probable	Typical, uncomplicated	85-90%
Possible	Atypical or complicated	60-70%

Proposed New Criteria for Alzheimer's Disease

- No longer requires presence of dementia
- Incorporates biomarker data
- Two Core Criteria
 - Objective evidence of episodic memory deficit
 - Biological evidence of AD
 - CSF: decrease in β 1-42, increase in tau
 - Imaging: AD pattern FDG-PET hypometabolism or atrophy, significant uptake with amyloid PET
 - Known causative genetic mutation

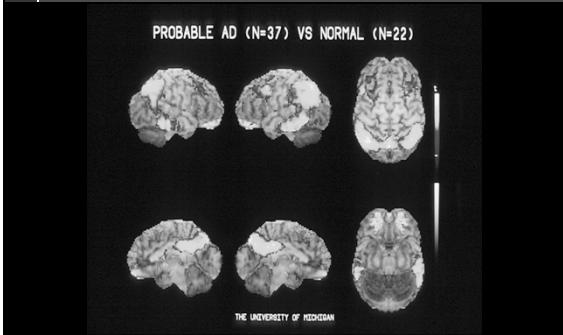
Dubois B, et al. *Lancet Neurol* 2007;6:734-746

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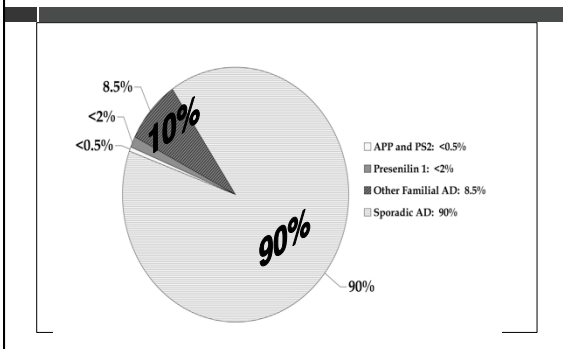
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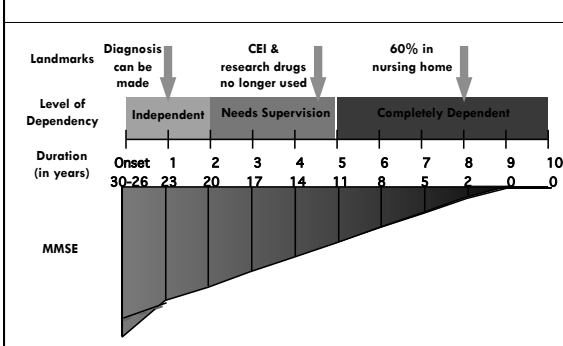
3D-Stereotactic Surface Projection Statistical Maps of FDG-PET (Synaptic Loss)



Most AD is Not Familial



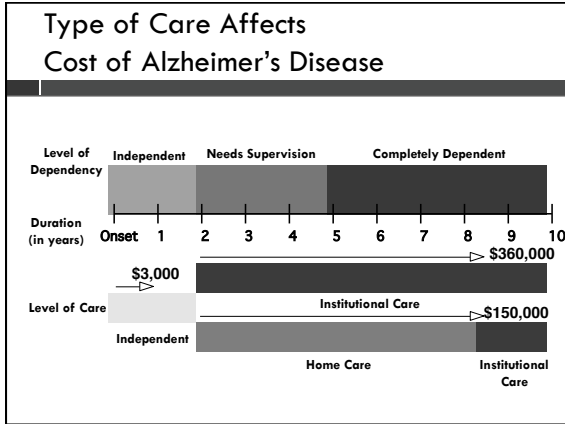
Typical Course of Alzheimer's Disease



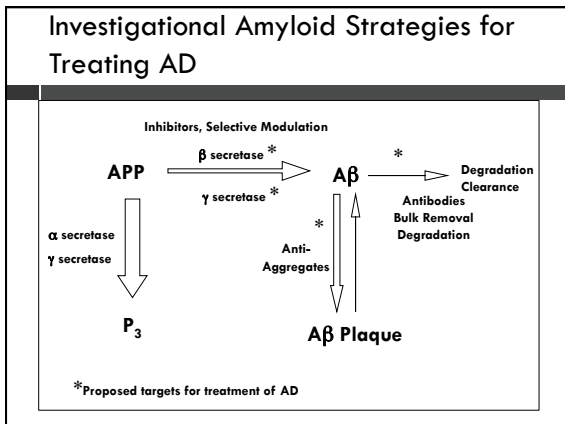
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- ### Established Drug Treatments for Alzheimer's Disease
- **Symptomatic Treatment**
 - Cholinesterase inhibitors - offsets selective loss of cholinergic neurons (n. basalis)
 - Low affinity non-competitive NMDA antagonist (offsets glutamate neurotoxicity)
 - **Drugs that Slow Progression**
 - Megadose vitamin E (offsets inflammatory response around neuritic plaques)



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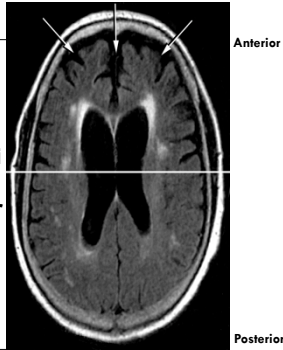
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Frontotemporal Dementia (FTD)

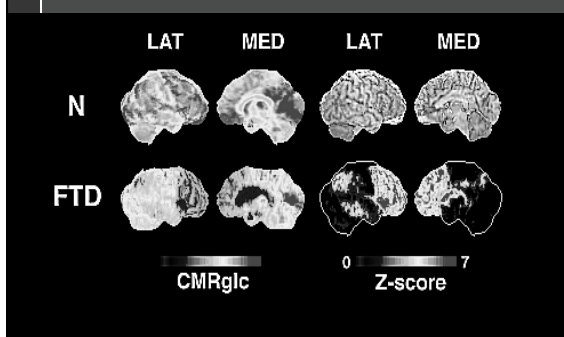
- Insidious onset of progressive dementia
- Disturbing behavior and speech problems most prominent, less evident memory loss
- Perseveration, decreased verbal fluency
- Typical behavioral changes including apathy, unrestrained and inappropriate social conduct
- Memory loss often not prominent; AD screening tests may be insensitive
- May be associated with motor neuron disease
- 2nd most common dementing disease if age <65

MRI Scan in a Patient with FTD

Compare size of sulci and ventricles in the anterior and posterior half of the brain



Glucose Hypometabolism in a Patient with FTD



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Dementia with Parkinsonism

Synucleinopathies

- Dementia with Lewy Bodies (DLB)
- Parkinson's Disease with Dementia

Tauopathies

- Progressive Supranuclear Palsy (PSP)
- Corticobasal Degeneration (CBD)

Dementia with Lewy Bodies (DLB)

- Dementia with spontaneous parkinsonism
- Dementia precedes or begins at the same time as parkinsonism
- Visual hallucinations
- Unexplained fluctuations in attention and alertness
- Consensus clinical criteria - not yet validated
- Temporoparietal > frontal and occipital hypometabolism

Parkinson's Disease with Dementia

- Onset of motor symptoms first, especially tremor
- Motor symptoms precede dementia by a year or more
- Affects about 30% of patients with PD
- More common with increasing age of patient
- Treatment of motor symptoms can worsen or improve dementia symptoms
- A synucleopathy

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Progressive Supranuclear Palsy

- Supranuclear gaze palsy
- Pseudobulbar palsy with dysarthria and choking
- Ataxic gait and falling
- Limb and axial rigidity
- Frontotemporal dementia
- A Tauopathy, 4R primarily subcortical neurofibrillary tangles

Progressive Supranuclear Palsy



Corticobasal Degeneration (CBD)

- Sporadic, onset age >55
- Asymmetric rigidity
- Profound asymmetric apraxia
- Alien hand
- Dementia (mild)
- Neuronal loss in cortex and basal ganglia
- A tauopathy, achromatic 4R tau neuronal inclusions

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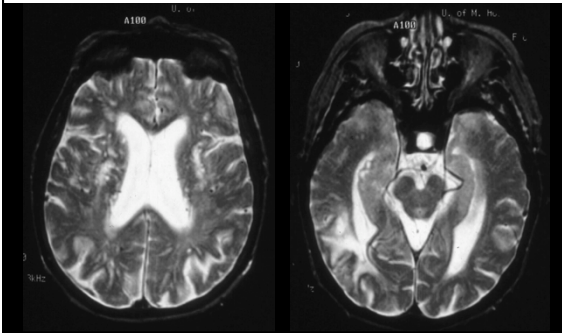
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Vascular Dementia

- Sudden onset, stepwise course
- Focal motor, sensory, reflex findings
- Cognitive impairments predominantly in one hemisphere
- Early seizures, gait impairment and incontinence
- Stroke on CT and MRI
- Hachinski ischemia score, validated

T2-Weighted MRI in Patient with Sudden Onset Dementia



The Role of Primary Care Physicians and Subspecialists in Memory Disorders

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Who Should Evaluate the Cause of Dementia?

- Most primary care physicians and geriatricians are unprepared unassisted to meet current standards for evaluating and managing cognitive impairment because of
 - Lack of training
 - Lack of inclination
 - Inadequate practice environment
- When there are cognitive deficits and neurodegenerative disease is first suspected, refer to a dementia specialty clinic

21st Century Dementia Care

- Utilize the latest research and technology to identify and treat early the underlying cause of symptoms
- Collaborative care using multidisciplinary dementia specialists to enhance the patient-centered primary care medical home
- Personalized, proactive care
 - Self-management education
 - Unified plan of progressive support
