



DIFFERENTIATING DEMENTIA

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BACKGROUND

- Definition: A heterogeneous syndrome of cognitive impairment which is characterized by:
 - Adult onset
 - Significant change from prior mental functioning
 - Severe enough to limit daily functioning
- Affects approximately 5-7 million Americans currently
- Prevalence expected to increase to 12-13 million by 2040 as “baby boomer” generation ages

DIAGNOSTIC CRITERIA

- DSM-5
 - Major neurocognitive disorder (dementia)
 - Requires demonstration of significant cognitive decline in **at least one cognitive domain**:
 - Complex attention, executive function, language, learning and memory, perceptual-motor, or social cognition
 - Based on both **subjective** and **objective** findings
 - Interferes with instrumental **activities of daily living**
 - Minor neurocognitive disorder (mild cognitive impairment)
 - Only requires modest cognitive decline that does NOT interfere with instrumental activities of daily living

COGNITIVE DOMAINS

TABLE 2

Cognitive Domains Affected by Dementia and Associated Symptoms

Cognitive domain	Symptoms and observations
Complex attention	Normal, routine tasks take longer; difficulty in completing tasks when multiple stimuli are present; difficulty in maintaining information while completing task (e.g., completing mental math calculations, remembering a phone number to dial); work requires more overview/rechecking than before
Executive function	Difficulty in completing previously familiar multistep tasks, such as preparing a meal; no longer wanting to participate in activities of the home; difficulty in completing activities or tasks because of easy distractibility; social outings become more taxing and less enjoyable
Language	Difficulty finding the correct words; using general pronouns regularly instead of names; mispronunciation of words; problems with understanding verbal and written communication
Learning and memory	Forgetting to buy items or buying the same items multiple times at the store; repetition in conversations; difficulty in recalling recent events; relying on lists of tasks to complete; forgetting to pay bills
Perceptual-motor	Difficulty in using familiar technology, tools, or kitchen appliances; getting lost in familiar environments
Social cognition	Apathy, increase in inappropriate behaviors, loss of empathy, impaired judgment

Information from references 23 and 24.

NEUROBEHAVIORAL PROBLEMS IN DEMENTIA

- Disorders of Thought (Delusions)
 - Most common are: people stealing their things (family member, caregiver), sexual infidelity
- Disorders of Perception (Hallucinations)
 - Auditory, visual, tactile, olfactory, taste
- Disorders of Emotion
 - Depression
 - Apathy
 - Agitation (verbal, non-verbal)
 - Pacing, stamping floor, kicking, biting, grunting, cursing, screaming
 - Elation / joy (usually a/w frontotemporal dementia)
 - Dishinhibition

INITIAL EVALUATION

- History
 - Obtain baseline functional status
 - Characterize deficits of cognitive domains
 - Timing of change
 - Recent hospitalizations
 - The usual: PMH, PSH, Meds/Rx changes, Allergies, FHx, SHx
- Brief Objective Assessment
 - At FHC -> Mini-Cog (takes a few min to complete): sensitivity 76-100%
 - If positive, consider one of the following (all similar in sensitivity/specificity):
 - Mini-Mental State Examination (MMSE)
 - Montreal Cognitive Assessment (MoCA)
 - Saint Louis University Mental Status Examination (SLUMS)

“REVERSIBLE” CAUSES

- History

- Drugs:

- Anti-cholinergics (ask about dry eyes, dry mouth)
 - Anti-histamine: diphenhydramine (Benadryl), hydroxyzine (Atarax)
 - Anti-spasmodic: oxybutynin (Ditropan)
 - TCA's: amitriptyline (Elavil), nortriptyline (Pamelor)
 - Muscle relaxants: cyclobenzaprine (Flexeril), methocarbamol (Robaxin)
 - Benzodiazepines, opioids
 - Parkinson drugs: benzotropine (Cogentin), amantadine
 - Anti-seizure medications

- Depression / Pseudodementia

- OSA

- Delirium (similar to dementia but more sudden)

- Recent hospitalizations
 - Waxing/waning, fluctuating states of consciousness (sleepy, obtunded, stuporous, etc.)

“REVERSIBLE” CAUSES

- Labs (consider CBC, CMP, TSH, A1c, vitamin D, vitamin B12)
 - Organ Failure: heart, lung, liver, kidney
 - Electrolytes: hypoNa, hyperNa, hyperCa
 - Endocrinopathies: hypothyroidism, uncontrolled hyperglycemia
 - Vitamin Deficiencies: D, B12
 - HIV/neurosyphilis -> consider if history of high-risk sexual behavior or IV drug use

“REVERSIBLE” CAUSES

- Imaging
 - Mass Lesions or Structural Neurologic
 - Subdural hematomas
 - Brain tumors (think of metastases), meningiomas
 - Neurosyphilis
 - HIV
 - Neurocysticercosis
 - Normal pressure hydrocephalus

NEUROIMAGING

- Preferred is MRI brain without contrast
- Primarily to exclude intracranial abnormalities (i.e. stroke, subdural hematoma, NPH, or a treatable mass)
- Commonly see age-related changes of white matter, small vessel ischemia, generalized atrophy

NEURODEGENERATIVE (“NON-REVERSIBLE”) DISEASES

- Alzheimer Disease
 - Accounts for 60-80% of dementia
 - Gradual onset of memory/learning symptoms
 - Women at higher risk
- Lewy Body Dementia
 - A/w visual hallucinations, REM sleep behavior disorder
 - A/w prior Parkinsonian symptoms (tremor, rigidity, akinesia, postural stooping)
 - Men at higher risk
- Frontotemporal Dementia
 - Socially inappropriate behaviors, loss of empathy, religious/political beliefs
 - Often younger ages 40-65 years old
- Vascular Dementia
 - After a major cerebrovascular event (stroke, ischemic injury, hypoxic brain damage)
- Chronic Traumatic Encephalopathy

** All related to protein metabolism (i.e. tau protein deposition, Lewy bodies, etc.)

SPECIAL TESTS

- For patients with atypical syndromes (i.e. < 60 years old or rapidly progressive dementia), consider:
 - Lumbar puncture
 - CSF 14-3-3 protein if suspecting Creutzfeldt-Jakob Disease
 - EEG
 - Serologic testing
- If multiple family members with AD at a young age in autosomal dominant pattern, consider:
 - Genetic testing for apolipoprotein E4 allele

NON-PHARMACOLOGIC MANAGEMENT

TABLE 2.

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Nonpharmacologic Therapies for the Management of Alzheimer Disease

Table 2. Nonpharmacologic Therapies for the Management of Alzheimer Disease

<i>Modality</i>	<i>Type of dementia</i>	<i>Evidence</i>
Enjoyable leisure activities (per patient preference)	Mild cognitive impairment, mild to moderate dementia	Decreased neuropsychiatric symptoms and functional capacity, slowing of memory loss
Mental stimulation programs (e.g., puzzles, word games, past/reminiscence therapy, indoor gardening, baking)	Mild to moderate dementia	Improved cognition and self-reported quality of life and well-being; no effect on functional status, mood, or behavior
Occupational therapy training in coping strategies and cognitive aides	Mild to moderate dementia	Improved cognition
Structured physical exercise programs	Mild to severe Alzheimer disease	Improved physical function, reduced neuropsychiatric symptoms (including depression), slower rate of functional decline, no improvement in cognition

- At FHC, can refer to:
 - Neurology, Alzheimer Disease
 - Neurology
 - Geriatrics
 - Geriatric Psychiatry

PHARMACOLOGIC MANAGEMENT

- Cholinesterase inhibitors
 - Commonly donepezil (Aricept); also galantamine (Razadyne) and rivastigmine (Exelon)
- NMDA receptor antagonists
 - Commonly memantine (Namenda)
- Vitamin E
- SSRI's (if suspecting depressive component)
- Methylphenidate
 - Sometimes used to treat apathy component of dementia
- Anti-psychotics (quetiapine, risperidone, olanzapine)
 - For severe agitation or neurobehavioral problems (if refractory, however increased risk of mortality)
 - Technically black boxed and not approved by the FDA

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