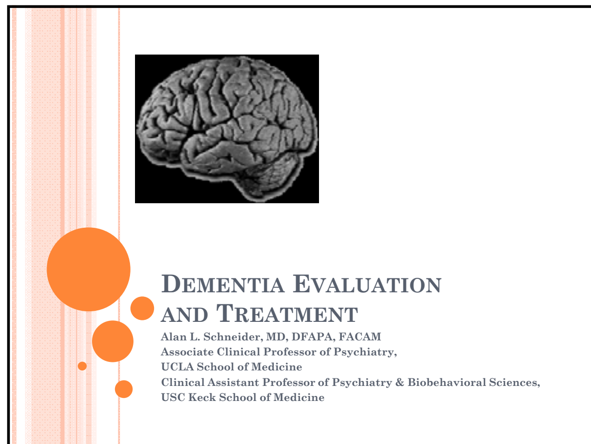
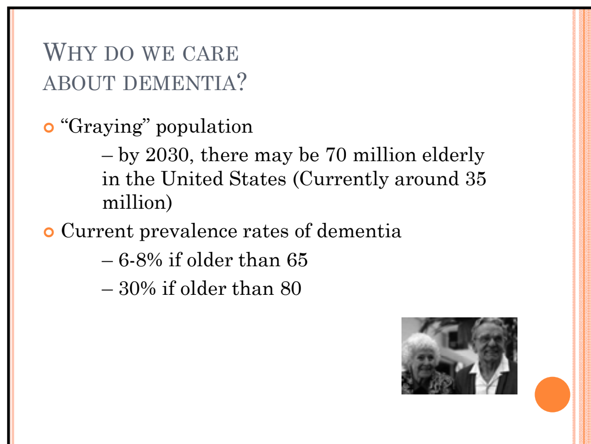


Dementia Evaluation

- Assessment
- Cognitive Screening Tests
- Etiologies of Dementia
- Treatment / Referral



Terminology

- Dementia
  - an acquired syndrome consisting of a decline in memory and other cognitive functions
- Multiple forms of Dementia
  - Alzheimer's, vascular, mixed, Parkinsonian, Lewy body

  All result in loss of executive function at some point in time.

Diagnosis of Dementia

- Memory Impairment AND one of the following:
  - -Aphasia, Apraxia, Agnosia, or impaired Executive Functioning
- Deficits cause significant impairment in social or occupational functioning

Aphasia

- Characterized initially by a fluent aphasia
  - Able to initiate and maintain a conversation
  - Impaired comprehension
  - Intact grammar and syntax however the speech is vague with paraphasias, circumlocutions, tangential and often using nonspecific phrases ("the thing")
- Later language can be severely impaired with mutism, echolalia

Impaired Executive Function

- Difficulty with planning, initiating, sequencing, monitoring or stopping complex behaviors.
  - Often undetected by patient & family members early in course of illness
  - Significantly effects capacity to operate complex machinery
  - Occurs early to midcourse
  - Contributes to loss of instrumental activities of ADLs such as shopping, meal preparation, driving and managing finances.

Dementia subtypes

- Early onset: before the age of 60
  - Less than 5% of all cases of AD
  - Strong genetic link
  - Tends to progress more rapidly
- Late onset: after age 60
  - Represents the majority of cases

Features Associated with Dementia

- Agitation
- Aggression
- Sleep disturbances
- Apathy (can be misdiagnosed as depression)
- Depression or anxiety
- Personality changes
- Behavioral disinhibition
- Impaired insight
- Hallucinations (visual more common than auditory)
- Delusions (often paranoid or persecutory)

Steps to take in Dementia Evaluation

- History
- Physical and Neurological Exam
- Cognitive Screening Test
- Rule out Reversible Causes
- Neuroimaging
- Consider the Etiology
- Treatment or Referral

Importance of Cognitive Screening

- Establish a baseline level of functioning, & ability to follow patient's progress over time
- Allows for objective documentation of cognition
- Cognitive Impairment is often not documented properly
  - Such patients are not evaluated for potentially reversible causes
  - They also do not receive treatment in a timely fashion or receive treatment long after it is efficacious

Screening Tests

- Mini-Mental State Exam (MMSE)
- Clock Drawing Test (CDT)
- Mini-Cog
- 7-Minute Screen
- Complex neuropsychiatric battery (multiple hours)

Screening Tests
Mini-Mental Status Exam

- Orientation (10 points)
- Registration (3 points)
- Attention and Calculation (5 points)
- Recall (3 points)
- Language (8 points)
- Visuospatial (1 point)
- Total=30, if less than 25, consider cognitive impairment
- Patients can maintain fluency, normal conversations, & capacity to drive at an MMSE of 15

MMSE
Pros and Cons

- Pros

-Widely used and therefore can track cognition over time and between clinicians

– 5-10 minutes.

- Cons

-False positives: those with little education.

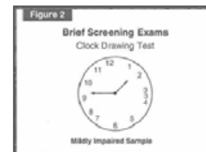
-False negatives: those with high premorbid intellectual functioning.

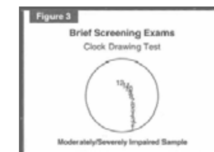
-Psychologically stressful--makes people angry!

Clock Drawing Test (CDT)

- “Draw a large circle on the (blank)page.”
- “Put numbers on the circle.”
- “Place hands to show 10 past 11.”
  - Tests planning, visuospatial abilities, but *not memory*
  - Less stressful, less culture-bound

Clock Drawing Test--abnormal





Mini-Cog

- Clock-Drawing + three-item memory test
  - More sensitive than CDT
  - Same advantages as CDT
  - Not as commonly used as MMSE, but

FAST

  - Involves visuospatial, executive and planning, and memory functions
- “Positive”= 2 word recall and/or abnormal clock

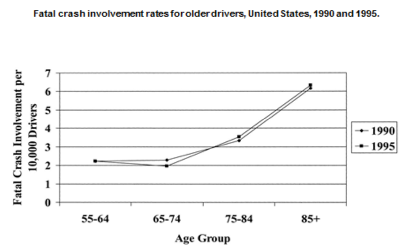
How does dementia affect driving?

- Basic skills for driving remain intact for quite some time-overlearned memory
- But several mental abilities affected:
  - Quick decision making
  - Ability to attend to multiple stimuli at once
  - Judging distances (lane changes, merges)
  - Planning for contingencies

Videos of Drivers With a Dementia 'Behind the Wheel'

- Drivers in video clips exhibited unsafe driving behaviors
  - Difficulty with lane changes
  - Difficulty with left hand turns (at both controlled & uncontrolled intersections)
  - Difficulty with staying in own lane
  - Stimulus bound by irrelevant objects such as smears in the road
  - Inattentive to stimuli in peripheral fields of view
  - The majority had no insight into driving error at the time the error occurred
  - Occurs early to midcourse

Relationship between Age and Driver Fatality Rates



Dellinger A M et al. Am. J. Epidemiol. 2002;155:234-241

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Many Illnesses Age-Associated

- Many illnesses that affect driving can occur at any age (e.g., chronic diabetes, stroke, chronic lung disease, etc.)
- Many are, however, age associated in that they are more likely to occur with age (e.g., dementia)
- Many can negatively impact the ability to drive

Medical Conditions Affecting Driving

- Hyperglycemia
- Angina
- Acute myocardial infarction
- Chronic renal failure
- Dizziness
- Falls
- Fainting
- Chronic obstructive pulmonary disorder
- Sleep apnea
- Multiple sclerosis, Parkinsonism
- Strokes
- Narcolepsy or cataplexy

Medical Conditions Affecting Driving

- *Sleep disorders
- Seizures
- Traumatic brain injury
- Visual disorders: cataracts, diabetic retinopathy, retinal separation, glaucoma, retinitis pigmentosa
- Cardiovascular: CAD, syncope, CHF, arrhythmia, valve disease

Can we use diagnosis of a dementia for decisions about driving?

- 2/3 of individuals in the early stages of their illness will be unsafe to drive
- 1/3 will be safe
  - Means revoking license based on diagnosis, unfair to those who are still safe

How do you determine if someone is unsafe?

- It takes a community
  - Physicians
  - Other Health Care Professionals
  - Licensing Agencies
  - Law Enforcement Officers
  - Family/Friends

Santa Monica Farmer's Market Crash

- 10 killed
- 73 injured
- 86 year old driver charged w/10 counts of manslaughter
- Convicted of 10 counts of manslaughter

Response from Mr. Weller's Lawyer

- At sentencing:
  - Judge said Mr. Weller "displayed an enormous indifference to human life"
  - Lawyer argued for leniency due to client's poor health ("mini strokes/neurologically impaired")
  - Judge placed Mr. Weller on probation

Physicians Play an Important Role

- In California, physicians are required by law to report drivers who may no longer be fit to drive
- Can be held legally liable for not reporting
- Many barriers including fear of damaging physician patient relationship

Strategies that Can Help

- Start the conversation in the early stages of the disease
- Begin a driving history on all patients with a diagnosis of a dementia
- Refer out for a driving assessment to assist in determination of driving competency

Strategies that Can Help

- Emphasize the past driving record but indicate that things change
- Provide information on resources in the community
- Alzheimer's Association chapters

Family/Friends

- Play an important role
- Become 'enablers' if don't address the driving issue
- Difficult conversations about driving vs. conversations about fatalities and injuries

Warning Signs

- 'Missing' traffic lights or road signs
- Difficulty merging or changing lanes
- Drifting into other lanes
- Driving on wrong side of road
- Getting lost while driving in familiar locations
- Confusing the gas and the brake pedal
- Scrapes/dents on car/garage
- Honked at by other drivers

Strategies that Can Help

- Conversation starters:
  - Dad, I'm worried about your driving. I noticed yesterday…
  - Mom, you've been a good driver all your life. Now with your illness, I'm worried that you are going to have an accident…I couldn't live with myself if you or someone else was badly hurt or fatally injured.

Strategies

- Start conversation in early stages of illness while the person still has insight
- Ask for 'permission' to talk to outside professionals when driving becomes impaired
- Sign an agreement about driving

Strategies that Can Help

- Expect resistance
  - License has both an actual value and a symbolic value
- Plan for ways to keep person 'mobile'
- Develop a transportation budget