Memory Problem Evaluations and Interventions for Medically At-Risk Drivers

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Objectives

Describe the impact of Dementia and other memory disorders on driving skills

Describe various methods to assess the extent and potential effect of memory disorders on driving

Explore potential approaches to maximize safe travel

Dementia is a Syndrome, Not an Etiology

- Syndrome: a group of signs and symptoms that occur together and characterize a particular abnormality
- Etiology: the cause or causes of a disease or abnormal condition

(Merriam Webster Medical Dictionary, 2003)

The Dementia Syndrome: DSM-IV Definition

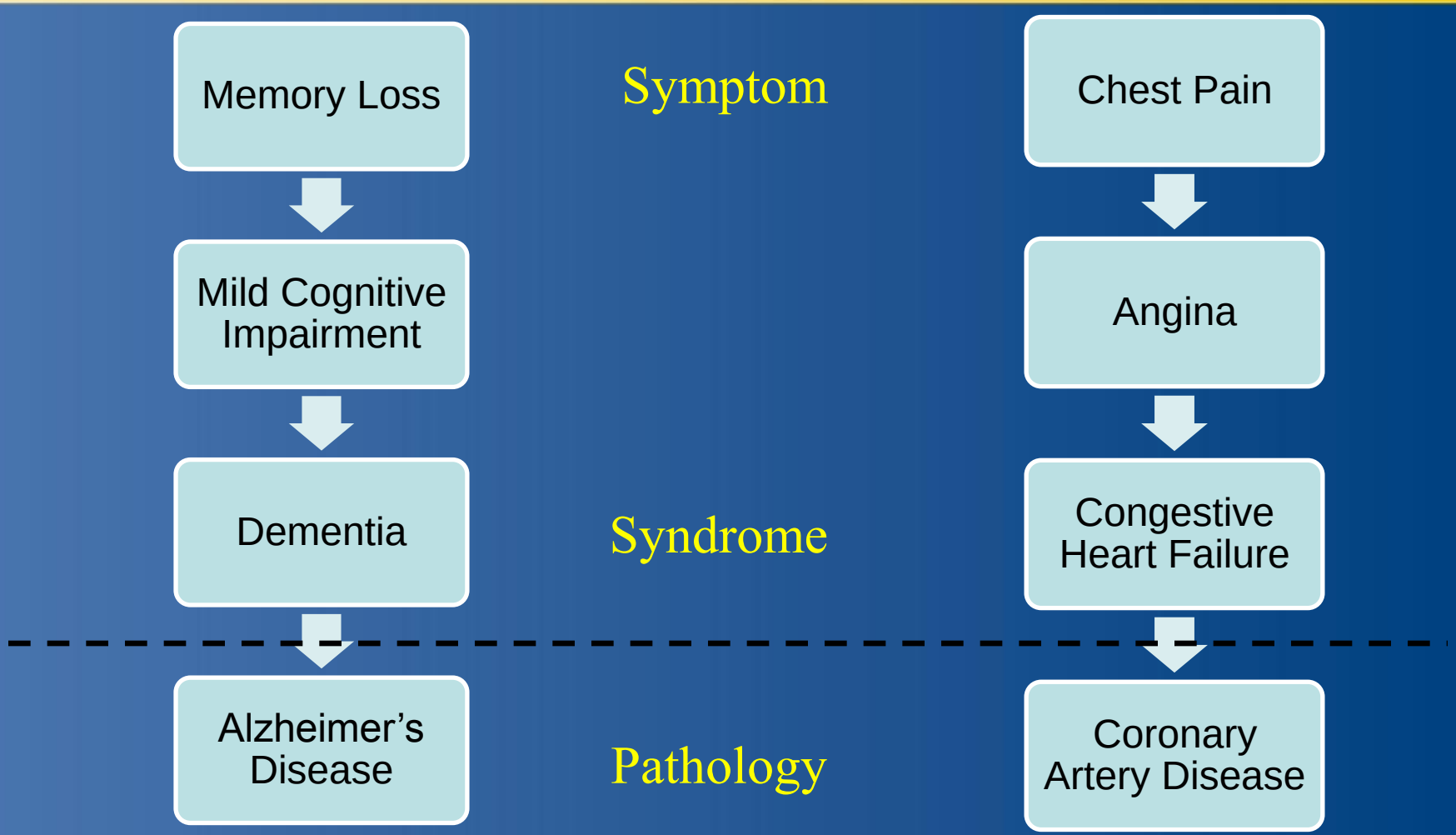
A. Multiple cognitive deficits manifest by both:
   1) Memory impairment
   2) One or more of the following: aphasia, apraxia, agnosia, impaired executive function
B. Functional impairment
C. Deficits not due to delirium

Mild Cognitive Impairment[1]

- Memory complaint, preferably corroborated by an informant
- Objective memory impairment
- Normal general cognitive function
- Intact activities of daily living
- Not demented

1. Petersen RC, Stevens JC, Ganguli M, Tangalos EG, Cummings JL, DeKosky ST: Practice parameter: early detection of dementia: mild cognitive impairment (an evidence-based review). Report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 2001; 56(9):1133-42

Analogy of Heart Disease



Cognitive and Functional Symptoms of Dementia

- Cognitive – 4 “A”s
  1. Amnesia (*Memory*)
  2. Aphasia (*Language*)
  3. Apraxia (*Doing things*)
  4. Agnosia (*Recognizing the world*)
  - Plus loss of executive function (*Getting things done*)

- Functional
  - Instrumental Activities of Daily Living (including driving)
  - Activities of Daily Living

Neuropsychiatric Symptoms of Dementia

- Cognitive and functional decline are disease hallmarks
- However:
  - Neuropsychiatric symptoms are nearly universal
  - Associated with multiple adverse consequences including worse quality of life, greater disability, accelerated cognitive or functional decline, greater caregiver burden, earlier institutionalization, and accelerated mortality[1]

1. Rabins PV, Lyketsos CG, Steele CD. Practical Dementia Care. Oxford University Press, New York, 2006

The Neuropsychiatric Inventory[1]

- Delusions
- Hallucinations
- Agitation or aggression
- Depression or dysphoria
- Anxiety
- Elation or euphoria
- Apathy or indifference
- Disinhibition
- Irritability or lability
- Motor disturbance
- Nighttime behaviors
- Appetite and eating

1. Cummings et al., Neurology, 1994

Assessment for Dementia (1)

- History from patient and family
  - Symptoms (cognitive and neuropsychiatric) and course
  - Assessment of functional activities
  - Past medical history, past psychiatric history, substance use history, social history, family history
- Physical examination including neurological exam

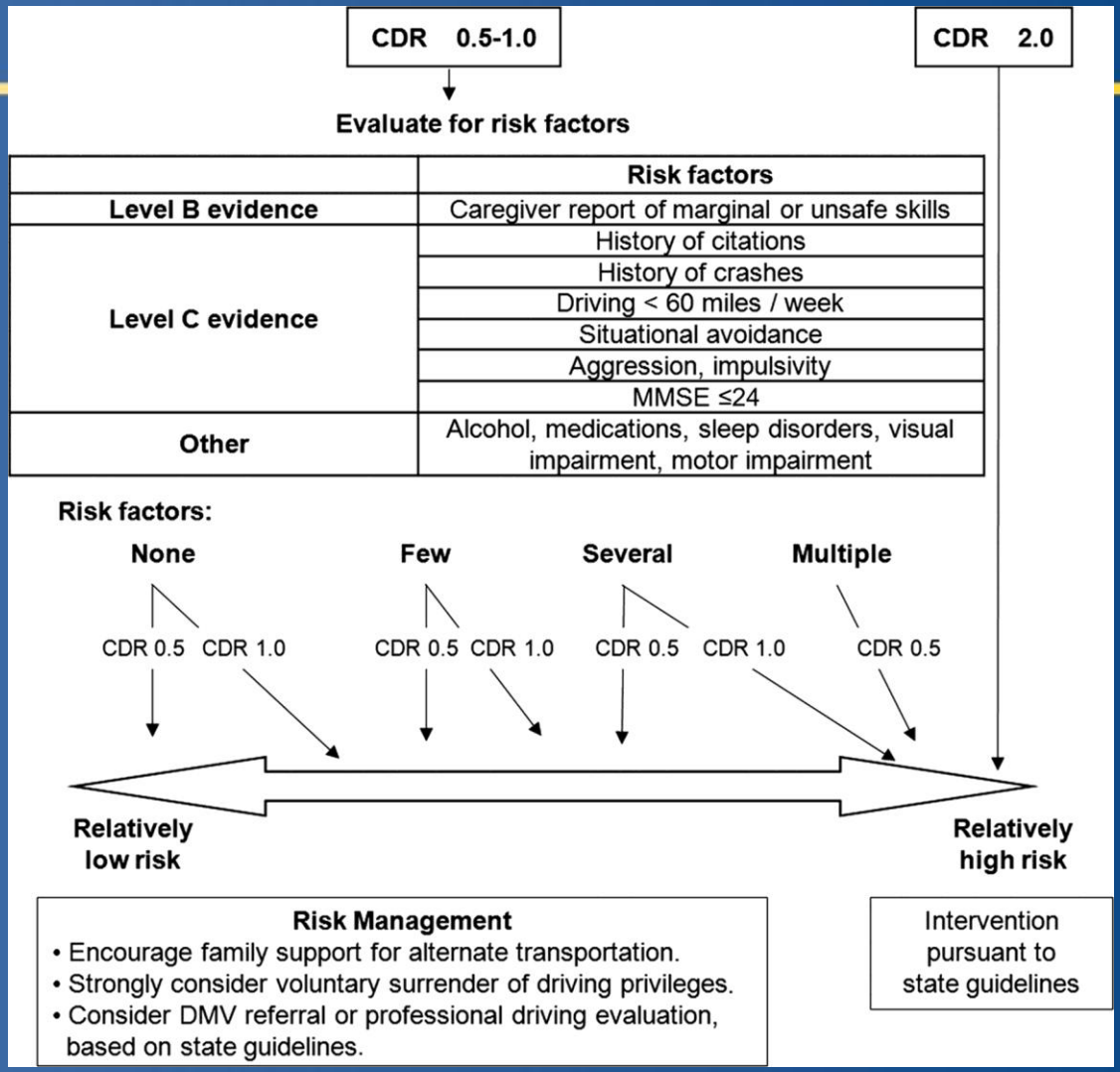
Assessment for Dementia (2)

- Cognitive assessment
  - Mini-mental state examination (MMSE) at a minimum
  - As indicated: Focused cognitive battery in the clinic or referral for neuropsychological testing
- Diagnostic tests as indicated (blood tests, neuroimaging, etc.)

Assessment for Dementia - Asking about Driving

- Must ask both the patient AND family
- Is the patient still driving?
- Any accidents, tickets, or getting lost?
- Changes in driving behaviors
  - For example: driving less, more aggressive, more cautious
- “Grandchild test”

Figure: Sample algorithm for evaluating driving competence and risk management in patients with dementia



Iverson D et al. Neurology 2010;74:1316-1324

Discussing Driving with Patients and Families

- Even if no current driving concerns, tell all patients with cognitive disorders and their families that patient eventually will have to stop driving
- Moderate to severe dementia and still driving - STOP

Discussing Driving with Patients and Families

- Mild dementia and still driving:
  - In general, recommend to stop driving altogether or undergo driving assessment if want to continue to drive
- MCI diagnosis and still driving:
  - In general, recommend close monitoring if no problems currently
  - If “warning signs” - recommend to stop driving altogether or undergo driving assessment if want to continue to drive

Driving Assessment - Clinical

Purpose: to assess requisite skills for driving

Interview: consent form, driving history, travel needs

Physical Function: upper and lower extremity range, strength, sensation, coordination, brake reaction speed

Clinical Assessment

Vision: acuity, visual fields, depth perception, color discrimination, contrast sensitivity, glare recovery

Cognition: visual-spatial skills, language, attention/concentration, memory, reasoning, judgment, speed of information processing

Behavior: insight, history of self-restricting driving

Family dynamics: concerns, impact of driving cessation on patient and family

Driving Assessment - On-Road

Purpose: assess driving skills in real-life environment

Vacant Parking lot: Basic vehicle control skills

Full Parking lot/Residential: vehicle control, light traffic, pedestrians, adherence to traffic laws

Driving Assessment - On-Road

Commercial district: vehicle control, light/moderate traffic interaction, pedestrians, adherence to traffic laws

Freeway: vehicle control at higher speeds, moderate/heavy traffic interaction, adherence to traffic laws

Route-finding: ability to plan/execute route to typical destinations

Indications of Impairment

Agnosia: unable to identify/follow graphic/written traffic signs, unable to recognize lane of travel from empty parking lot, turns into wrong lane of divided road

Aphasia: unable to comprehend written traffic signs, read posted speed or speedometer

Indications of Impairment

Apraxia: difficulty with brake reaction test, foot pedal errors, poor steering for lane control

Amnesia/Executive Function: becomes lost in familiar areas, forgets destination, unable to execute planned route, confusion regarding rules of the road, unable to remember posted speed limit sign just passed, if person makes a wrong turn, unable to return to original route

Driver Rehabilitation Assessment - Expectations

- Patient and family
- Physicians
- MVA MAB/Driver Wellness & Safety
- Driver Rehabilitation Specialists

Complications

Handling patient's reactions

Family issues

Non-compliance

Assist patients to find/utilize other forms of safe transportation

Interventions

Physician reporting requirements/anonymity

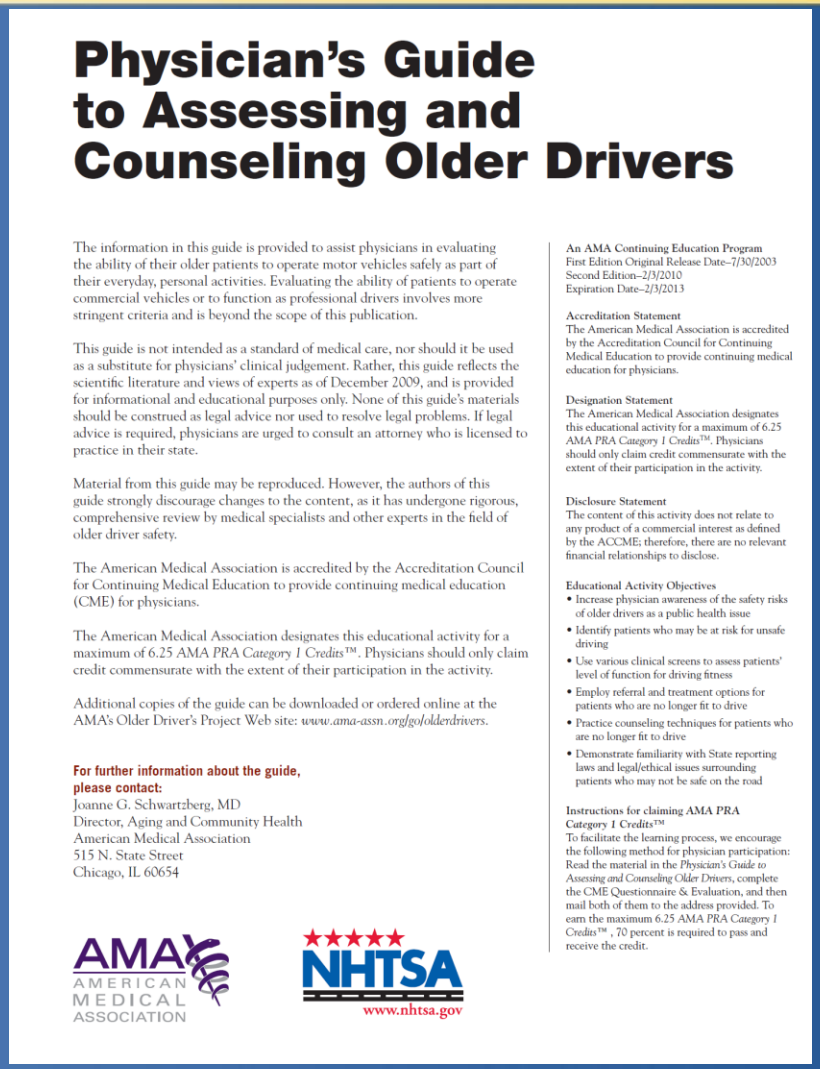
Safety supersedes desire for independence

License restrictions

Co-piloting

Re-assessment of driving ability

Driving Resources for Clinicians



Physician's Guide to Assessing and Counseling Older Drivers

The information in this guide is provided to assist physicians in evaluating the ability of their older patients to operate motor vehicles safely as part of their everyday, personal activities. Evaluating the ability of patients to operate commercial vehicles or to function as professional drivers involves more stringent criteria and is beyond the scope of this publication.

This guide is not intended as a standard of medical care, nor should it be used as a substitute for physicians' clinical judgement. Rather, this guide reflects the scientific literature and views of experts as of December 2009, and is provided for informational and educational purposes only. None of this guide's materials should be construed as legal advice nor used to resolve legal problems. If legal advice is required, physicians are urged to consult an attorney who is licensed to practice in their state.

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The American Medical Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education (CME) for physicians.

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Additional copies of the guide can be downloaded or ordered online at the AMA's Older Driver's Project Web site: *www.ama-assn.org/go/olderdrivers*.

For further information about the guide, please contact:
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Disclosure Statement
The content of this activity does not relate to any product of a commercial interest as defined by the ACCME; therefore, there are no relevant financial relationships to disclose.

Educational Activity Objectives
- Increase physician awareness of the safety risks of older drivers as a public health issue
- Identify patients who may be at risk for unsafe driving
- Use various clinical screens to assess patients' level of function for driving fitness
- Employ referral and treatment options for patients who are no longer fit to drive
- Practice counseling techniques for patients who are no longer fit to drive
- Demonstrate familiarity with State reporting laws and legal/ethical issues surrounding patients who may not be safe on the road

Instructions for claiming *AMA PRA Category 1 Credits™*
To facilitate the learning process, we encourage the following method for physician participation: Read the material in the *Physician's Guide to Assessing and Counseling Older Drivers*, complete the CME Questionnaire & Evaluation, and then mail both of them to the address provided. To earn the maximum 6.25 *AMA PRA Category 1 Credits™* , 70 percent is required to pass and receive the credit.

AMA AMERICAN MEDICAL ASSOCIATION

NHTSA www.nhtsa.gov

http://www.ama-assn.org/ama/pub/physician-resources/public-health/promoting-healthy-lifestyles/geriatric-health/older-driver-safety/assessing-counseling-older-drivers.page

Driving Resources for Clinicians

SPECIAL ARTICLE

AMERICAN ACADEMY OF NEUROLOGY

Practice Parameter update: Evaluation and management of driving risk in dementia

Report of the Quality Standards Subcommittee of the American Academy of Neurology

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ABSTRACT

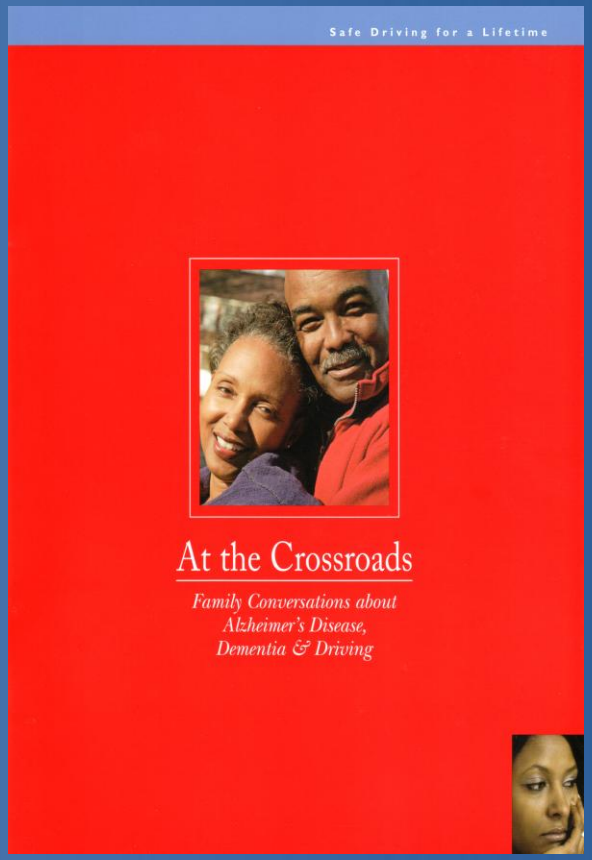
Objective: To review the evidence regarding the usefulness of patient demographic characteristics, driving history, and cognitive testing in predicting driving capability among patients with dementia and to determine the efficacy of driving risk reduction strategies.

Methods: Systematic review of the literature using the American Academy of Neurology's evidence-based methods.

Recommendations: For patients with dementia, consider the following characteristics useful for identifying patients at increased risk for unsafe driving: the Clinical Dementia Rating scale (Level A), a caregiver's rating of a patient's driving ability as marginal or unsafe (Level B), a history of crashes or traffic citations (Level C), reduced driving mileage or self-reported situational avoidance (Level C), Mini-Mental State Examination scores of 24 or less (Level C), and aggressive or impulsive personality characteristics (Level C). Consider the following characteristics not useful for identifying patients at increased risk for unsafe driving: a patient's self-rating of safe driving ability (Level A) and lack of situational avoidance (Level C). There is insufficient evidence to support or refute the benefit of neuropsychological testing, after controlling for the presence and severity of dementia, or interventional strategies for drivers with dementia (Level U). *Neurology*® 2010;74:1316-1324

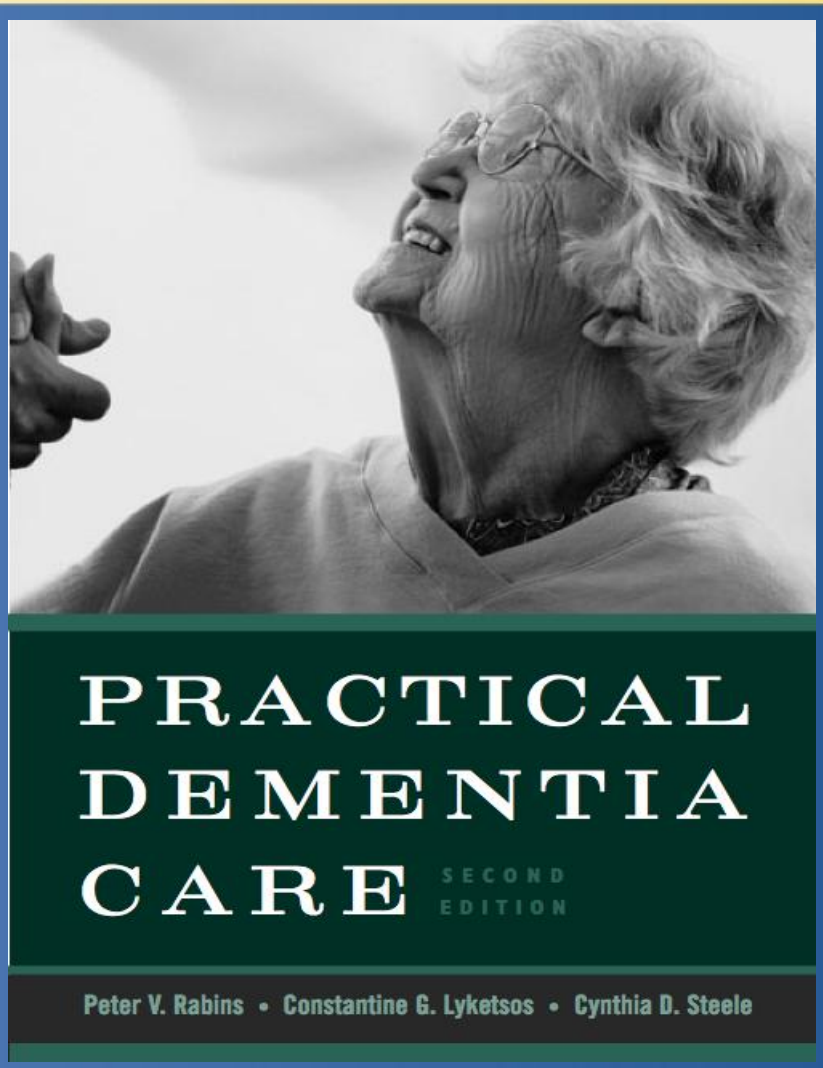
Neurology. 2010 Apr 20;74(16):1316-24. doi: 10.1212/WNL.0b013e3181da3b0f. Epub 2010 Apr 12

Driving Resources for Clinicians



http://www.thehartford.com/life-ahead/index

General Dementia Resources for Clinicians



Rabins PV, Lyketsos CG, Steele CD. Practical Dementia Care. Oxford University Press, New York, 2006

Dementia Resources for Patients and Families

- Alzheimer's Association *www.alz.org*
  - Greater Maryland Chapter

    1850 York Road, Suite D,
    Timonium, MD 21093

    410-561-9099
- Website includes extensive information about driving
- 24/7 Helpline: 1-800-272-3900

Dementia Resources for Patients and Families

- **National Library of Medicine MedlinePlus**

  www.medlineplus.gov
- **Alzheimer's Disease Education and Referral (ADEAR) Center**
  800-438-4380 (toll-free)
  www.nia.nih.gov/Alzheimers

Driver Rehabilitation Resources

Association for Driver Rehabilitation Specialists

www.aded.net

American Occupational Therapy Association

www.aota.org/olderdriver

Johns Hopkins Memory and Alzheimer's Treatment Center

- Interdisciplinary program involving neuropsychiatrists, neurologists, and geriatric medicine specialist physicians
- Offering evaluation and ongoing treatment working closely with primary care physicians
- Efficient assessment of "cognitively concerned" individuals with or without progressive memory disorders
- On-campus state of the art 3 Tesla MRI scanning and brain PET to assist in differential diagnosis

Johns Hopkins Memory and Alzheimer's Treatment Center

Call for an appointment

410-550-6337

Or access

www.hopkinsmedicine.org/memory

MedStar Good Samaritan Hospital Adaptive Driving Program

JOHNS HOPKINS MEDICINE

Call for an appointment:

443-444-4601

Or access:

http://www.goodsam-md.org