Assessing and Counseling Older Drivers

Laying the Foundation for Older Driver Autonomy and Safety

*Developed in cooperation with the National Highway Traffic Safety Administration as part of the AMA Older Drivers Project*
Santa Monica Farmers Market Crash Jul7 17, 2003 (CNN.com)
Disclosures

Ramon L Rodriguez, MD
- Speakers Bureau
  - Novartis, GSK, Valeant, Boehriner Ingelheim, UCB
- Drug Industry Sponsored Trials
  - Merz Pharmaceuticals, Solvay Pharmaceuticals
- Investment/Stock/Equity
  - None

Desiree Lanford
- Nothing to disclose
Course Objectives

• Why is older driver autonomy and safety a public health issue?

• Why is health a factor in older driver autonomy and safety?

• How can physicians help maximize older driver autonomy and safety?
The Aging Demographic:
Notice the increase in the elderly population as the baby-boomers age.

Source: U.S. Census Bureau
The Importance of the Automobile

- The Transportation Method of Choice
- Autonomy
- Identity
- Social Connectedness
- Psychological and Physical Health Correlates
- Private cars account for over 90% of trips made by seniors
Public Safety Issues: Motor Vehicle Crashes

2003 data for the U.S.

- 42,643 total fatalities
- 6,730 fatalities over age 65 years
- 3,000,000 total injuries
- Daily financial loss $630 million

http://safety.fhwa.dot.gov/older_driver/older_facts.htm
Crash Rate of Age Groups with Comparisons of Licensed Drivers and Vehicle Miles Traveled (VMT)

Figure 3: Accident Involvement Rate Age Group Comparison by Licensed Drivers and Vehicle Miles Traveled
Exposure: Vehicle Miles Traveled

![Average Annual Miles Traveled](image)

*Source: National Highway Traffic Safety Administration, 1995*

*Prepared by AARP Public Policy Institute*
Increased Vulnerability of Older Adults in Motor Vehicle Crashes

Figure 4: Fatal Accident Rate Age Group Comparison by Licensed Drivers and Vehicle Miles Traveled

http://search.cga.state.ct.us/dtSearch_lpa.html
Physician’s Plan for Older Driver Safety (PPODS)

- **Screen** to determine if patient is potentially at risk
- **Assess** driving related functional skills (ADReS)
- **Treat** underlying causes of functional decline
- **Refer** for further evaluation and/or adaptive training
- **Counsel** on safe driving behavior/alternative options
- **Follow-Up** for signs of depression, isolation and compliance

**Goal is to promote independence and patient safety**
Screening Older Adults for Driving Impairment

Red Flags

Case Finding

Patient’s or family member’s concern
Referral from the DMV
Referral from colleague/health professional

Identifying Medical/Co-Morbid Conditions

Acute events with/without impaired LOC
Chronic medical conditions
Medications
Medical Conditions that may Impair Driving in Older Adults

- Acute Conditions
  - Cardiac
  - Endocrine/Metabolic
  - Psychiatric
  - Neurological
  - Medications
  - Other

- Chronic Conditions
  - Cardiac
  - Endocrine/Metabolic
  - Psychiatric
  - Neurological
  - Medications
  - Other
Screens that can identify previously undiagnosed illnesses

- Cognition/Attention
  - Mini-Mental Status Exam
  - Short Blessed Test
  - Clock Drawing Test
- Sleep disorders
  - Epworth Sleepiness Scale for Sleep Apnea
- Depression
  - Geriatric Depression Scale
- Alcohol
  - CAGE Questionnaire
Drugs Associated With Impaired Driving Ability***

- Alcohol
- Anticholinergics
- Anticonvulsants
- Antidepressants
- Antiemetics
- Antihistamines
- Stimulants
- Antihypertensives
- Antipsychotics
- Benzodiazepines
- Muscle Relaxants
- Narcotic Analgesics
- NSAID’s
Assess for deterioration in traffic skills and/or driving related functional abilities (ADReS battery)

- Impaired Traffic Skills
  - Driving History
- Functional Abilities
  - Vision
  - Cognition
  - Motor function
Assessment of Driving Related Skills (ADReS)

- ADReS is a brief, function-based, in-office assessment of driving-related abilities
- ADReS individual testing components have been correlated with crash risk
- ADReS battery results should not be the deciding factor in directing driving retirement decisions
Vision

Visual fields confrontation testing: any deficit, refer to ophthalmology

Visual acuity with the Snellen E Chart: acuity in any eye less than 20/40, refer to ophthalmology


Vision

• Contrast Sensitivity
  • Found to be a predictor of crash risk among older drivers
  • Most vision care specialist are not familiar with measures of contrast sensitivity
  • No standardized, validated cut off points for contrast sensitivity

Your view, OD, 20/40+
Patient’s View – 20/40+
Macular Perimetry OS - 20/100
Patient’s View – 20 /100
Cognition
Trail-Making Test, Part B

- Tests attention, working memory, visual processing, visuospatial skills, and psychomotor coordination
- Patient connects numbers and letters in alternating pattern
- Test is scored by time (sec) to complete and number of errors requiring correction
- Greater than 180 sec signals a need for intervention

Tarawneh MS, McCoy PT, Bishu RR, Ballard JL. Factors associated with driving performance of older drivers. Transportation Research Record. 1993;1405:64-71.
### Summary and Conclusions from Maryland Pilot Older Driver Study

<table>
<thead>
<tr>
<th>Cognitive Task</th>
<th>Peak valid at-fault OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visualization of missing information (MFVPT; Visual Closure)</td>
<td>4.96</td>
</tr>
<tr>
<td>Directed visual search (Trail-Making B)</td>
<td>3.50</td>
</tr>
<tr>
<td>Working memory (Delayed Recall)</td>
<td>2.92</td>
</tr>
<tr>
<td>Information processing speed (Useful Field of View, subtest 2)</td>
<td>2.48</td>
</tr>
<tr>
<td>Lower limb strength (Rapid Pace Walk)</td>
<td>2.64</td>
</tr>
<tr>
<td>Head/neck flexibility (Recognizing Clock Time)</td>
<td>2.56</td>
</tr>
</tbody>
</table>

Clock Drawing Test (CDT)

- CDT can assess:
  - memory
  - visual perception & visual spatial skills
  - selective attention
  - executive skills
- Draw clock face, numbers, and set time at 11:10
- Errors on any of the components signals a need for intervention

Pictures courtesy of Barbara Freund, PhD Eastern Virginia Medical School
Clock Drawing Task/Driving

Drawing Clocks and Driving Cars
Use of Brief Tests of Cognition to Screen Driving Competency in Older Adults

Barbara Freund, PhD,1 Stefan Gravenstein, MD,1 Rebecca Ferris, BS,1 Bonnie L. Burke, MS,2 Elias Shaheen, BS3

1The Glennan Center for Geriatrics and Gerontology, and 2Epidemiology and Biometry Core, Graduate Program in Public Health, Eastern Virginia Medical School, Norfolk, VA, USA; 3Division of Gerontology, Medical College of Virginia, Richmond, VA, USA.

• 119 community-dwelling older adult drivers
• CDT showed a high level of accuracy
• Analysis revealed a CDT score of 4 or less, made more hazardous errors in the simulation test
• Outcome measure was failure on a driving simulator

3 points for using two hands correctly, 2 points for using correct numbers, 2 points for appropriate spacing

**Clock Drawing Task/Driving**

**OBJECTIVE:** The purpose of the study was to determine whether a new method of scoring the Clock Drawing Test (CDT) is a reliable and valid method for identifying older adults with declining driving competence.

**DESIGN:** Prospective cohort study.

**SETTING:** An outpatient driving evaluation clinic.

**PARTICIPANTS:** One hundred nineteen community-dwelling, active drivers with a valid driver’s license, aged 60 and older referred for driving evaluation.

**MAIN OUTCOME MEASURES:** The CDT and a driving test using a STISIM Drive simulator.

**RESULTS:** The CDT showed a high level of accuracy in predicting driving simulation outcome (area under the receiver-operator curve, 0.90; 95% confidence interval, 0.82 to 0.95). CDT scoring scales were comparable and all correlations between CDT scores and driving performance were negative, implying that as the CDT score decreases, the number of errors increases. Interrater reliability of CDT scores was 0.95. Subjects scoring less than 5 out of 7 points on the CDT made significantly more driving errors, hazardous and in total (P<.001).

**CONCLUSIONS:** The CDT can help establish problems with executive function and indicate the need for a formal driving evaluation. Our CDT scoring scale is a reliable, valid, and time-effective screening tool for identifying elderly drivers in need of further evaluation.
Motor Function

Rapid pace walk
- Measures lower limb strength, endurance, range of motion, balance, and gross proprioception
- Patient walks 20 feet
- Scoring based on time to complete (sec)
- Completion time of greater than 9 sec impaired

Manual test of motor strength

- Shoulder adduction, abduction and flexion
- Wrist flexion and extension
- Hand-grip strength
- Hip flexion and extension
- Ankle dorsiflexion and plantar flexion
- Score grade 0 to 5


Manual test of range of motion

- Neck rotation
- Finger curl
- Shoulder and elbow flexion
- Ankle plantar flexion
- Ankle dorsiflexion
- Score: within normal limits; not within normal limits
Additional Tools/Courses

- Computer Programs
  - DrivingHealth, Inventory
  - AAA RoadWise Review
  - UFOV (Useful Field of View)
  - Driving Simulators

- Courses
  - Driving Course/ AARP
  - AAA Driving Education Course
  - DriveWell
  - Community Sponsored Health Classes
Treat underlying causes of functional decline

- Examples of interventions that can improve key driving functional abilities
  - Physical therapy for muscle weakness and/or to improve range of motion
  - Discontinue sedating medications
  - Improving visual function with ophthalmology intervention
- Examples of medical interventions that have been show to reduce crash risk
  - Cataract surgery
  - Stopping sedating medications
  - Sleep apnea treatment
What is the Next Step?

**Green Light**
- No red flags
- Monitor at intervals
- Full speed ahead!

**Yellow Light**
- Red flags/co-morbid illnesses
- Decline in traffic skills
- Deficits on ADReS battery
- Consider referral and caution!

**Red light**
- Driving Retirement/Counseling
- Stop!
Referral Options

- Health Professionals
- Road Tests
  - OT’s
  - DRS
  - DMV
  - Others

Referral may depend on
- Preferences
- Cost
- Availability
- Geographic Location
What is a Driver Rehabilitation Specialist?

• One who “plans develops, coordinates and implements driving services for individuals with disabilities”

• These individuals are often Occupational Therapists with specialized training in driver rehabilitation
Certified Driver Rehabilitation Specialists have expertise in:

- Targeted clinical assessment
- Functional on-road assessment
- Prescribing and training clients in the use of adaptive equipment
- Counseling and advising on driving concerns and mobility alternatives
How can a DRS help patients maintain or regain their safe driving abilities?

- Recommend adaptive techniques and provide driver retraining
- Coordination of vehicle modifications
  - Vehicle modification
  - Vehicle Inspection and final fitting
  - Vehicle Consultation
- Provide information on state reporting laws and assists in license restrictions
Provide Recommendations

- **Option for restrictions**
  - Daylight driving only
  - No highway driving
  - Avoid rush hour/bad weather
  - Speed limitations
  - Re-evaluation Time Period

- **Options for Rehabilitation**
  - Physical Therapy
  - Range of Motion Exercises
  - Trip or Route Modification
  - Vehicle Adaptation
Disabilities and Suggested Driving Aids

Lack of range of motion--neck
• Wide angle mirrors or additional rear and side mirrors

Nonfunctional lower extremity
• restraint for disabled leg, hand-operated parking brake, automatic transmission

All or partial loss strength on 1 side of body
  spinner knob, left foot accelerator, right-side turn signal

Photograph courtesy of Rod Schmall
Counseling the Medically Impaired Driver

• Why is driving retirement a difficult topic to discuss with patients?
• How can physicians encourage their patient to retire from driving?
• What are viable alternative modes of transportation?
• What kind of follow-up is needed?
Why is driving retirement a difficult topic to discuss with patients?

• Patients feel a loss of
  • mobility
  • independence
  • self-esteem
  • control
  • level of care
• Patient may direct anger toward the physician
• Patient may lack insight
• Family may not be in the position to assist with driving
How can physicians encourage a patient to retire from driving?

Discuss Assessment of Driving Related Skills and Driver Rehabilitation Specialist recommendations

- Explain why driving retirement is important at this time
- Listen to any concerns and feelings
- Try to connect on common ground
Encourage Family or Caregiver Involvement

Family or a close friend can help reinforce physician recommendations by providing or exploring alternative transportation.
Strategies to Encourage Driving Retirement

- Set a tone for eventual cessation early on
- Enlist family members
- Work on family dynamics (grief, power, and role reversal)
- Ask family members to ride with the driver
- Suggest a driving evaluation and negotiate an outcome based on the finding
Strategies (continued)

- Enlist the help of police, social worker or others to address driving problems
- Seek to preserve the dignity of the driver
- Report unsafe driving to state agency
- Reassurance that important driving destinations will be preserved
- Use of office pamphlets or booklets like “We Need to Talk”
Enforcing retirement in patients without insight (e.g. dementia)

1) Hiding/filing down the keys
2) Do not repair the car
3) Remove the car by loaning, giving or selling
4) Disable the car
5) Replace keys
6) Alter the driver’s license to indicate expiration
7) Ask non-family member to talk with driver
8) Ask physician to “prescribe” driving retirement
9) Use a contract (see At the Crossroads guide)
10) Initiate the revocation process
Transportation Alternatives

- Family
- Friends
- Call-A-Ride
- Taxi
- Bus
- Train

- Provide patient & caregiver resources
- Social Work Consult
- Level of Care
- ITN America
- Easter Seals
Follow-up with retired driver & family

- Ask your patient how she/he has handled driving retirement
- Ask about the use of alternative transportation
- If indicated, assess for signs of isolation and depression
- Include family members in the follow-up assessment process


Legal Considerations

- Protecting the patient
  - Case law illustrates that failure to advise patients on medical conditions and medications is negligent behavior
  - Case law also illustrates the health care system can be liable for breaching confidentiality

- Protecting the public
  - Legal precedents demonstrate that physicians may be held liable for third-party injuries
What do physicians need to know about state reporting laws?

- Mandatory Medical Reporting Laws - require physicians to report patients with specific medical conditions
- Physician Reporting Laws - require physicians to report ‘unsafe’ drivers
- All states allow voluntary physician reporting, but…
Legal protection for patient reporting

Immunity: exempts physicians from liability for civil damages

Anonymity/Legal protection: protects physicians from civil actions for damages caused by reporting in good faith
What do physicians need to know about patient confidentiality?

*Confidentiality*- the physician’s ethical obligation to keep information about the patient and his/her care unavailable to those who do not have the authorization to receive this information.
Confidentiality

- Patient information may be released with patient consent
- HIPAA allows information to be released in order to comply with state law
- Physicians should reduce the impact of breaching patient confidentiality when reporting to licensing agencies
HIPAA Implications

• Health professions are at risk for civil suit if they disclose medical information w/o patient consent.
• However, HIPAA (45-CFR-164.512) allows for reporting to the state when the situation is significant enough to put public safety at risk.
• How HIPAA impacts reporting of driving impairment and associated risks has not been tested in court as yet.

Protect yourself legally

- Know and abide by your state reporting laws
- Document all conversations, recommendations, referrals and reports!
State of Florida

- Florida Statute 322.126: “Any physician, person, or agency is authorized to report”
- “reports shall be confidential”
- “No civil or criminal action maybe brought against any physician, person, or agency”
State of Florida

• **Visual acuity**
  - Each/both eyes without correction ..................................................20/40; if 20/50 or less, applicant is referred to eye specialist for possible improvement
  - Each/both eyes with correction .....................................................20/70; worse eye must be better than 20/200
  - If one eye blind—other with/without correction..........................20/40
  - Absolute visual acuity minimum ..................................................20/70
  - Are bioptic telescopes allowed? ....................................................No

• **Visual fields**
  - Minimum field requirement .....................................................130° horizontal
  - Visual field testing device ............................................................None; Goldman by eye specialist if indicated
State of Florida

- **Standard**
  - Length of license validation: 4-6 years, depending on driving history
  - Renewal options and conditions: In-person every 3rd cycle
  - Vision testing required at time of renewal?: At in-person renewal
  - Written test required?: May be required based on driving history and/or observation of physical or mental impairments
  - Road test required?: May be required based on observation of physical or mental impairments

- **Age-based renewal procedures**
  - Effective January 2004, vision testing is required at each renewal for drivers over the age of 79.
• Physician/medical reporting- Any physician, person or agency having knowledge of a licensed driver’s or applicant’s mental or physical disability to drive may report the person to the Department of Highway Safety and Motor Vehicles (DHSMV). Forms are available on the DHSMV Web site, as well as at local driver license offices. The Division of Driver Licenses’ (DDL) Medical Review Section provides other forms as the situation requires.

• Chapter 8—State Licensing and Reporting Laws 91

• Immunity - N/A

• Legal protection - The law provides that no report shall be used as evidence in any civil or criminal trial or in any court proceeding.

• DMV follow-up The DHSMV investigates, sanctions actions if needed, and notifies the driver in writing.

• Other reporting The law authorizes any person, physician, or agency to report.

• Anonymity Available
Thanks!!!
Can High-Risk Older Drivers Be Identified Through Performance-Based Measures in a Department of Motor Vehicles Setting?

OBJECTIVES: To evaluate the relationship between performance-based risk factors and subsequent at-fault motor vehicle collision (MVC) involvement in a cohort of older drivers.

DESIGN: Prospective cohort study.

SETTING: Motor Vehicle Administration (MVA) field sites in Maryland.

PARTICIPANTS: Of the 4,173 older drivers invited to participate in the study, 2,114 individuals aged 55 to 96 agreed to do so. These analyses focus on 1,910 individuals recruited through MVA field sites.

MEASUREMENTS: Gross Impairment Screening Battery, which included Rapid Pace Walk, Head/Neck Rotation, Foot Tap, Arm Reach, Cued Recall, Symbol Scan, Visual Closure subtest of the Motor Free Visual Perception Test (MVPT), Delayed Recall, and Trail Making Test with an Abbreviated Part A and standard Part B; Useful Field of View (UFOV®) subtest 2; a Mobility Questionnaire; and MVC occurrence.

RESULTS: In drivers aged 55 and older with intact vision (20/70 far visual acuity and 140° visual field), age, sex, history of falls, and poorer cognitive performance, as measured using Trails B, MVPT, and UFOV subtest 2, were predictive of future at-fault MVC involvement. After adjusting for annual mileage, participants aged 78 and older were 2.11 as more likely to be involved in an at-fault MVC, those who made four or more errors on the MVPT were 2.10 times as likely to crash, those who took 147 seconds or longer to complete Trails B were 2.01 times as likely to crash, and those who took 353 ms or longer on subtest 2 of the UFOV were 2.02 times as likely to incur an at-fault MVC. Older adults, men, and individuals with a history of falls were more likely to be involved in subsequent at-fault MVCs.


Key words: older drivers; motor vehicle collisions
Impaired Visual Search in Drivers with Parkinson’s Disease

Ergun Y. Uç, MD,1,2 Matthew Rizzo, MD,1,3,4 Steven W. Anderson, PhD,1 JonDavid Sparks, BA,1,5 Robert L. Rodnitzky, MD,1 and Jeffrey D. Dawson, ScD1,5

Objective: To assess the ability for visual search and recognition of roadside targets and safety errors during a landmark and traffic sign identification task in drivers with Parkinson’s disease (PD).

Methods: Seventy-nine drivers with PD and 151 neurologically normal older adults underwent a battery of visual, cognitive, and motor tests. The drivers were asked to report sightings of specific landmarks and traffic signs along a four-lane commercial strip during an experimental drive in an instrumented vehicle.

Results: The drivers with PD identified significantly fewer landmarks and traffic signs, and they committed more at-fault safety errors during the task than control subjects, even after adjusting for baseline errors. Within the PD group, the most important predictors of landmark and traffic sign identification rate were performances on Useful Field of View (visual speed of processing and attention) and Complex Figure Test-Copy (visuospatial abilities). Trail Making Test (B-A), a measure of cognitive flexibility independent of motor function, was the only independent predictor of at-fault safety errors in drivers with PD.

Interpretation: The cognitive and visual deficits associated with PD resulted in impaired visual search while driving, and the increased cognitive load during this task worsened their driving safety.

Ann Neurol 2006;60:407–413
Driver route-following and safety errors in early Alzheimer disease

E.Y. Uc, MD; M. Rizzo, MD; S.W. Anderson, PhD; Q. Shi, MS; and J.D. Dawson, ScD

Abstract—Objective: To assess navigation and safety errors during a route-following task in drivers with Alzheimer disease (AD). Design/Methods: Thirty-two subjects with probable AD (by National Institute of Neurological and Communicative Disorders criteria) of mild severity and 136 neurologically normal older adults were tested on a battery of visual and cognitive tests of abilities that are critical to safe automobile driving. Each driver also performed a route-finding task administered on the road in an instrumented vehicle. Main outcome variables were number of 1) incorrect turns; 2) times lost; and 3) at-fault safety errors. Results: The drivers with mild AD made significantly more incorrect turns, got lost more often, and made more at-fault safety errors than control subjects, although their basic vehicular control abilities were normal. The navigational and safety errors were predicted using scores on standardized tests sensitive to visual and cognitive decline in early AD. Conclusions: Drivers with Alzheimer disease made more errors than neurologically normal drivers on a route-following task that placed demands on driver memory, attention, and perception. The demands of following route directions probably increased the cognitive load during driving, which might explain the higher number of safety errors.

NEUROLOGY 2004;63:832–837
Longitudinal Driving Performance in Early-Stage Dementia of the Alzheimer Type

Janet M. Duchek, PhD, David B. Carr, MD, Linda Hunt, PhD, Catherine M. Roe, PhD, Chengjie Xiong, PhD, Kamini Shah, PhD, and John C. Morris, MD

OBJECTIVES: To longitudinally assess on-road driving performance in healthy older adults and those with early-stage dementia of the Alzheimer type (DAT).

DESIGN: A prospective longitudinal study.

SETTING: Large urban medical center and surrounding area.

PARTICIPANTS: A sample of 58 healthy controls, 21 participants with very mild DAT, and 29 participants with mild DAT participated. DAT was diagnosed using validated clinical diagnostic criteria and staged according to the Clinical Dementia Rating (CDR) Scale.

MEASUREMENTS: Healthy controls and individuals with very mild DAT and mild DAT were administered a standardized on-road driving assessment over repeated times of testing.

RESULTS: Subjects in the CDR = 1 group (mild DAT) had a faster rate of receiving a rating of not safe on the driving test than subjects in the CDR = 0 group (healthy controls; log rank test, P = .006), and the survival function of the CDR = 0.5 group (very mild DAT) fell between those of the CDR = 0 and CDR = 1 groups. A Cox proportional hazards model indicated a significant difference in survival functions between the CDR = 0 and CDR = 1 groups after baseline age was controlled for (P < .001). Cox regression analysis also indicated that baseline age was a significant risk factor for a rating of “not safe” (P = .002).

CONCLUSION: This study provides longitudinal evidence for a decline in driving performance over time, primarily in early-stage DAT, and supports the need not only for driving assessments, but also for reevaluation of individuals with very mild and mild DAT. J Am Geriatr Soc 51:1342–1347, 2003.

Key words: driving; aging; Alzheimer’s disease
Impact of Internal Versus External Cueing on Driving Performance in People With Parkinson’s Disease

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Judith L. Charlton, PhD, MAPS,² Robert Iansek, BMedSci, MBBS, PhD, FRACF,³
and John L. Bradshaw, PhD, DSc, FBPsS¹

Abstract: Numerous aspects of driving performance seem compromised in people with Parkinson’s disease (PD). Measures of cognitive impairment consistently correlate with poor driving simulator performance in this population; however, the effects of specific cognitive difficulties on discrete aspects of driving behavior have not been investigated thoroughly. Previous studies have demonstrated that people with PD exhibit difficulties internally cueing cognitive processes. This study examined the impact of impaired internal cueing on specific driving behaviors. A simulator measured the driving behavior of 18 current drivers in the mild-to-moderate stages of PD and 18 matched controls. Participants navigated through different driving conditions where the opportunity to use internal and external cues was manipulated. People with PD exhibited difficulties using internal cues to regulate driving behavior around traffic signals and curves. Instead of using internal cues, participants with PD were more reliant on external cues to regulate driving behavior. They were also less able to adapt their driving behavior to suit driving conditions. Because all participants with PD were current drivers in the mild-to-moderate stages of the disease, findings challenge the widely-held assumption that cognitive difficulties only impact on driving performance in the moderate-to-severe stages of PD. © 2005 Movement Disorder Society

Key words: Parkinson’s disease; driving behavior; cognitive impairment; internal cues; external cues
Table 1: Evaluation and Management—Preventive Medicine Services
If the primary reason for your patient’s visit falls under the E/M category of Preventive Medicine Services, choose one of the following codes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Age Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>99386</td>
<td>40-64 years</td>
<td>New Patient, Initial Comprehensive Preventive Medicine Evaluation and management of an individual including an age and gender appropriate history, examination, counseling/anticipatory guidance/risk factor reduction interventions, and the ordering of appropriate immunizations(s), laboratory/diagnostic procedures.</td>
</tr>
<tr>
<td>99387</td>
<td>65 years and older</td>
<td>New Patient, Initial Comprehensive Preventive Medicine Evaluation and management of an individual including an age and gender appropriate history, examination, counseling/anticipatory guidance/risk factor reduction interventions, and the ordering of appropriate immunizations(s), laboratory/diagnostic procedures.</td>
</tr>
<tr>
<td>99396</td>
<td>40-64 years</td>
<td>Established Patient, Periodic Comprehensive Preventive Medicine Reevaluation and management of an individual including an age and gender appropriate history, examination, counseling/anticipatory guidance/risk factor reduction interventions, and the ordering of appropriate immunization(s), laboratory/diagnostic procedures.</td>
</tr>
<tr>
<td>99397</td>
<td>65 years and older</td>
<td>Established Patient, Periodic Comprehensive Preventive Medicine Reevaluation and management of an individual including an age and gender appropriate history, examination, counseling/anticipatory guidance/risk factor reduction interventions, and the ordering of appropriate immunization(s), laboratory/diagnostic procedures.</td>
</tr>
</tbody>
</table>

*Modifier-25 is appended to the office/outpatient service code to indicate that a significant, separately identifiable E/M service was provided by the same physician on the same day as the preventive medicine service.*

<table>
<thead>
<tr>
<th>Code</th>
<th>Time Duration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>99401</td>
<td>Approximately 15 minutes</td>
<td>Counseling and/or Risk Factor Reduction Intervention Preventive medicine counseling and risk factor reduction interventions provided as a separate encounter will vary with age and should address such issues as family problems, diet and exercise, substance abuse, sexual practices, injury prevention, dental health, and diagnostic and laboratory test results available at the time of the encounter. (These codes are not to be used to report counseling and risk factor reduction interventions provided to patients with symptoms or established illness.) These are time-based codes, to be reported based upon the amount of time spent counseling the patient.</td>
</tr>
<tr>
<td>99402</td>
<td>Approximately 30 minutes</td>
<td>Counseling and/or Risk Factor Reduction Intervention Preventive medicine counseling and risk factor reduction interventions provided as a separate encounter will vary with age and should address such issues as family problems, diet and exercise, substance abuse, sexual practices, injury prevention, dental health, and diagnostic and laboratory test results available at the time of the encounter. (These codes are not to be used to report counseling and risk factor reduction interventions provided to patients with symptoms or established illness.) These are time-based codes, to be reported based upon the amount of time spent counseling the patient.</td>
</tr>
<tr>
<td>99403</td>
<td>Approximately 45 minutes</td>
<td>Counseling and/or Risk Factor Reduction Intervention Preventive medicine counseling and risk factor reduction interventions provided as a separate encounter will vary with age and should address such issues as family problems, diet and exercise, substance abuse, sexual practices, injury prevention, dental health, and diagnostic and laboratory test results available at the time of the encounter. (These codes are not to be used to report counseling and risk factor reduction interventions provided to patients with symptoms or established illness.) These are time-based codes, to be reported based upon the amount of time spent counseling the patient.</td>
</tr>
<tr>
<td>99404</td>
<td>Approximately 60 minutes</td>
<td>Counseling and/or Risk Factor Reduction Intervention Preventive medicine counseling and risk factor reduction interventions provided as a separate encounter will vary with age and should address such issues as family problems, diet and exercise, substance abuse, sexual practices, injury prevention, dental health, and diagnostic and laboratory test results available at the time of the encounter. (These codes are not to be used to report counseling and risk factor reduction interventions provided to patients with symptoms or established illness.) These are time-based codes, to be reported based upon the amount of time spent counseling the patient.</td>
</tr>
</tbody>
</table>

*Driver safety or driving retirement counseling fall under the category of injury prevention. Please note that for driving retirement counseling, a copy of the follow-up letter to your patient can be included in the patient’s chart as additional documentation. A sample letter can be found in Chapter 6.*
# Table 2: Additional Codes

The codes below can be used for administration of ADReS (see Chapter 3). If you complete the entire assessment, you can include codes 99420, 95831 and either 99172 or 99173. The ADReS Score Sheet can serve as the report.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>99420</td>
<td>Administration and Interpretation of Health Risk Assessment Instrument</td>
</tr>
<tr>
<td>95831</td>
<td>Muscle and Range of Motion Testing</td>
</tr>
<tr>
<td></td>
<td>Muscle testing, manual (separate procedure) with report; extremity (excluding hand) or trunk.</td>
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<tr>
<td>99172</td>
<td>Visual Function Screening</td>
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<td>Automated or semi-automated bilateral quantitative determination of visual acuity, ocular alignment, color vision by pseudoisochromatic plates, and field of vision (may include all or some screening of the determination(s) for contrast sensitivity, vision under glare).</td>
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<tr>
<td>99173</td>
<td>Screening Test of Visual Acuity, quantitative, bilateral</td>
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<td></td>
<td>The screening used must employ graduated visual acuity stimuli that allow a quantitative estimate of visual acuity (eg, Snellen chart).</td>
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</tbody>
</table>