

Medical Conditions & Driving Impairment

When is a Driving Evaluation Needed?

Many medical conditions can result in functional impairments that negatively affect driving abilities. Outcomes of these medical conditions can be classified either as Persistent or Episodic.

Persistent Outcomes

Persistent outcomes are more stable and enduring, and the effects can be measured.

- Event and impairment may be ongoing.
- Assessment question: What is the ability of the driver?
- Assessment issue: Measure impairment.
- Best Practice: **Science-Based Driving Evaluation**

Episodic Outcomes

With Episodic outcomes (e.g., an epileptic seizure, a hypoglycemic reaction), the event most often is sporadic and unpredictable, and lasts for a short duration.

- When event occurs driving ability is impaired.
- Assessment question: What is the likelihood of the event happening?
- Assessment issue: Judgment of risk level.
- Best Practice: Consensus guidelines plus clinical judgment.

Cognitive impairments

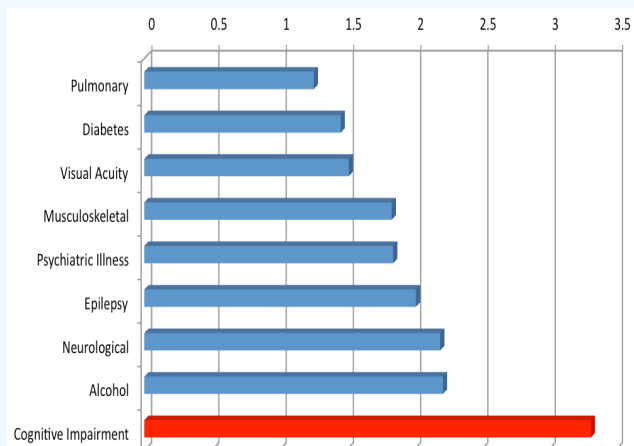
Not everyone with a medical condition has their driving reduced to an unsafe level. Rather, the presence of one or more red flag medical conditions (see next page for a list of red flags) indicates that the driver is at risk and that his or her driving may be (or may become) compromised to an unsafe level. **Driving competence should be evaluated by a science-based driving evaluation.**

Physical Impairments

When there are enduring physical impairments that make it unlikely the person can safely operate a motor vehicle:

- It may be possible to adapt the vehicle to accommodate the impairment.
- Training to use the new equipment may be necessary.
- Driving competence then should be evaluated by independent driving evaluation.

Increased at-fault crash risk:
Selected Medical Conditions



DriveABLE Cognitive Assessment Tool provides direct information about the driver's competence.

- Accommodates the combined effects of comorbidities, treatments and medications.
- Provides the best evidence, with clinical judgment evaluations providing a lower level of evidence.

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Evaluating & Reporting Fitness to Drive

Red Flag Medical Conditions*

Cardiovascular Disease if associated with cerebral ischemia

- Cardiac Arrhythmias
- Artificial Cardiac Pacemakers
- Hypertrophic Cardiomyopathy
- Congestive Heart Failure
- Valvular Heart Disease

Cerebrovascular Disease

- Cerebrovascular Accident (Stroke)
- Transient Ischemic Attacks

Head Trauma

- Traumatic Brain Injury

Respiratory Diseases

- Chronic Obstructive Pulmonary Disease if associated with respiratory failure resulting in cognitive impairment due to generalized hypoxia
- Respiratory Failure

Renal Disease

- Chronic Renal Failure
- End Stage Renal Disease

Cognitive Impairment

- Non Dementia
- Mild Cognitive Impairment

Dementia

- Progressive Dementia (e.g., AD, MID)

Metabolic Diseases

- Untreated Hypothyroidism
- Diabetes - the chronic effects of diabetes

Psychiatric Disease

- Schizophrenia
- Personality Disorder
- Chronic Alcohol Abuse

Medications

- Anti-depressants (the older tricyclics such as amitriptyline, imipramine)
- Anti-histamines (the older anti-histamines)
- Any drug that has prominent central nervous system effects

Neurological Diseases

- Multiple Sclerosis
- Parkinson's Disease
- Sleep Apnea

Other Possible Indicators

- Functional Concerns (crashes, tickets, getting lost, close calls)
- Functional Decline (Changes in ADLs, IADLS)
- Falls

When there is a fitness to drive concern about my patient, what do I do?

Advise Your Patient.

- Patients should be advised of medical conditions, procedures, and medications that may impair driving abilities.
- Recommend a science-based driving assessment as best practice.
- Diagnoses are a poor predictor of a patient's fitness to drive. Often patients have several conditions and medications with complex, unknown interactions affecting function.

Refer for a DriveABLE Assessment

- Enables evidence based decisions.
- Developed through science.
- Demonstrated to be equally fair for urban and rural drivers.
- As an arm's length assessment, DriveABLE allows you to focus on the outcome of the assessment and remain an advocate for your patient.

Manage Your Litigation Risk by Documenting Thoroughly.

- Chart actions
- Report concerns to your licensing authority.
- Medical associations encourage health professionals to report medically at-risk patients to local licensing authorities to protect public safety and manage risk.
- It is important for you to check with the licensing authority in your area for laws regarding reporting of medically at-risk drivers.

* Adapted from Dobbs, B. (2005). Medical conditions and driving: A review of the scientific literature(1960-2000). Department of Transportation, National Highway Traffic Safety Administration Project DTNH22-94-G-05297. Washington, DC: National Highway Traffic Safety Administration.



Interpreting the DriveABLE Reports

The DriveABLE Cognitive Assessment Tool for Driving (DCAT)

The cognitive assessment for driving consists of six computer presented and scored tasks. Computer experience is not relevant. A trained professional assists the driver throughout the assessment. The assessment is presented on a computer monitor equipped with a touch sensitive screen. The client only touches the screen or presses a button to respond. The test battery has been validated through research to be highly predictive of driving performance.

Two types of scores are provided in the report:

1. **The individual test scores** are presented as a table of z-scores showing the client's abilities relative to others of the same age on each of the six tasks. The scores are the number of standard deviations above or below the normative mean for the client's age group. These scores can provide useful information for clinical or rehabilitation treatment goals.
2. **The DCAT combined score is the most important score for evaluating cognitive fitness to drive. This is the score used to make a decision about driving.** The combined score is derived from a weighted combination of measures from each task. The DCAT combined score has been validated through research to be highly predictive of actual on-road performance on the DriveABLE science-based road test.

DCAT Overall Performance Outcome:

- **“No driving” recommendation:** Cognitive abilities necessary for safe driving are significantly compromised and outside the range of normal, healthy drivers. There is a very high probability the driver would fail the science-based road test and make driving errors that would place the driver and other road users at risk. If cognition improves with treatment or medications change, the client should be reassessed for possible changes in cognitive abilities for driving.
- **Indeterminant:** Cognitive abilities for driving may be reduced, but the DCAT combined score is neither sufficiently high nor low to make a recommendation based solely on the DCAT results. Nevertheless, higher combined scores indicate greater probability of driving being impaired and unsafe. Clinical judgment, additional information, or an on-road test may be necessary to resolve cognitive fitness to drive.
- **Cognitive abilities for driving within normal range:** The overall performance indicates cognitive abilities for driving are within the range of normal, healthy drivers. Any declines in physical and/or sensory abilities should be evaluated before a driving decision is made. If the medical condition is progressive and cognitive abilities are expected to change, the client should be monitored for cognitive decline and reassessed in 6 months to a year, or sooner if warranted.

In discussing the report with clients, patients, or families, it is important to keep in mind the strong possibility that the driver's insight may be compromised. It is not unusual for cognitively impaired drivers to fail to recognize even very severe driving errors at the time they are committed. Note also that, while the change in mobility is important for drivers who must stop driving, research has shown that the loss of self-esteem and declining competence may be the most salient issues for the driver.