

DEMENTIA PREAMBLE

Many disease processes can cause dementia, most commonly Alzheimer's Dementia, stroke, and Parkinson's Disease. Less common causes include Lewy Body and fronto-temporal dementias, HIV and other chronic viral CNS infections, B12 deficiency, chronic alcohol damage, and multiple sclerosis. All dementias cause some mixture of permanent, often progressive, loss or impairment of cognitive skills like memory, visuo-spatial perception, language, abstraction, prosody and/or praxis impairments, and/or executive function (complex reasoning, planning and judgment).

Cognitive impairment due to another diagnosis such as mental health or neurodevelopmental disorders should be reviewed according to the appropriate Functional Ability Profile (FAP). Dementia caused by another diagnosis such as stroke, brain Injury or other medical conditions should trigger completion of a profile level for the other condition as well as dementia. When there are cognitive changes or other combination of deficits raising concern for unsafe driving but there is no diagnosis of dementia and no explanatory diagnosis, refer to the "Medical – Other" FAP. In setting of unknown diagnosis, physician will need to determine appropriate work up or refer to appropriate specialist.

Memory loss is usually the first symptom to occur in Alzheimer's Dementia, but alone is insufficient to make that diagnosis without other cognitive deficits. Memory loss may be absent or at least occur later in several other types of dementia. Dementias must also be differentiated from other cognitive impairments like a congenital intellectual disability, transient impairments from delirium-producing conditions, or "mild cognitive impairment" (MCI) which entails mild memory or other cognitive deficits but no functional impairment. MCI carries no increased crash risk, nor may mild dementia. However, the potential for progression in both justifies more frequent physician re-evaluations.

The cognitive changes associated with dementia often affect drivers' ability to operate competently and increase crash risks. Those risks are elevated, especially in emergencies and in complicated traffic patterns, such as at intersections, with lane changes, while merging and making left-hand turns.

Unfortunately, there are no tests of driving competence with 100% sensitivity/specificity. Current evidence does show several potentially useful clinical associations between specific cognitive test results and driving outcomes, although scoring cut-points for safe/unsafe driving often vary among studies. Nevertheless, office tests of attention, executive function, visuo-spatial skills, and memory are useful in assessments of drivers with dementia. These include Trails B, Useful Field of View, clock drawing, Snellgrove Maze Test and several others.^{A, B} Testing should be tailored to the type of dementia and the particular deficits identified to best capture degree and severity of the impairment.^C

Although clinical testing and screening have limited ability to predict whether or not an individual driver may be able to pass a road test, screening scores may be used as supporting evidence when selecting a profile level and completing the Driver Medical Evaluation form. For example, a Mini Mental Status Exam (MMSE) of 24-26+, Clinical Dementia Rating Scale (CDR) <1, or Montreal Cognitive Assessment Test (MoCA) ≥ 22 would usually be associated with mild cognitive impairment and lower crash risk. An MMSE 20-23, CDR 1-1.5, or MoCA 19-21 may be associated with moderate cognitive impairment and greater crash risk. While an MMSE ≤ 19 , CDR 2 or greater, or MoCA ≤ 18 , or deficits in visuo-spatial or executive function would often be associated with greater impairment and higher crash risk. Drivers with a screening (MMSE) score of <24 fail road tests 70% of the time, but 30% pass; those with scores of <19 fail 95% of the time, and only 5% pass.^A All relevant factors, including self-report or family/caregiver reports of unsafe driving, should be taken into consideration. Documentation should support evidence for the diagnosis and profile level written on the Driver Medical Evaluation form.

Although not all experts agree, the Driver Fitness Working Group^A states that the presence of two or more of the following factors may indicate the need for a cognitive assessment by a health care professional. Applicants with greater numbers of risk factors should be considered at greater risk, although the relative risks are not necessarily additive.

- 1) Age 80 years or older
- 2) History of a recent crash or moving violations
- 3) Applicant self-report or caregiver report of impaired skills
- 4) Use of psychoactive medications such as benzodiazepines, neuroleptics, antidepressants, or use of medications for Alzheimer's Disease
- 5) History of active alcohol abuse
- 6) History of falls
- 7) Inability to understand or hear instructions during interactions with the health professional
- 8) Scores with simple screening tools that indicate the possibility of a cognitive deficit

Online medical textbooks maintain useful reviews of all these issues.^D

When BMV is notified that a licensed driver is diagnosed with dementia, the driver will usually be required to submit a "Driver Medical Evaluation" (CR-24) form, completed by an appropriate clinician. Depending on the outcome of the Evaluation, the driver may also be required to take a road test, which must be administered by a BMV Driver's License Examiner.

For a description of the BMV road test components, see the Appendix. It should be noted that Driver License Examiners are not trained in cognitive evaluation.

Online programs intended to assist older drivers self-evaluate driving skills may help them to an appropriate decision to retire from driving. On-road tests with a driving rehabilitation instructor, occupational therapist or a driver educator may also be useful. Please be aware that BMV does not normally require these evaluations and they are not a substitute for the BMV road test. Refer to the appendix for more information about Occupational Therapy Evaluations.

FUNCTIONAL ABILITY PROFILE
Dementia¹

Profile Levels	Degree of Impairment/ Potential for At Risk Driving	Condition Definition / Example	Interval for Review and Other Actions
1.	No diagnosed condition	No diagnosed dementia, no suspected dementia of concern for driving.	N/A
2.	Condition fully recovered	Cognitive impairment recovered. (Rare, usually within 6 months of identification. Example: recovery following a stroke.)	N/A
3.	Active impairment (Profile levels are intended to describe potential for at risk driving; they are NOT consistent with clinical definitions for mild, moderate or severe.)	Diagnosed dementias (not MCI), other causes having been ruled out. (For Lewy Body Dementia, see footnote ²). Or, New cognitive impairment under investigation, see Dementia Preamble.	Documentation should support evidence of the diagnosis and profile level reported.
	a. Mild risk	Consistent slight forgetfulness, or mild deficits in judgment and problem solving. May have mild comprehension difficulties. No evidence of executive dysfunction or visuo-spatial impairment. No known driving impairment.	2 years ³ ROAD TEST if recommended by clinician
	b. Moderate risk	Cognitive impairment interferes with everyday activities and there may be geographic disorientation, or deficits in judgment, difficulty problem solving or managing sudden events. Without significant evidence of executive dysfunction or visuo-spatial impairment. Potential concern for driving impairment.	1 year ³ ROAD TEST

	<p>c. Severe risk</p>	<p>Cognitive impairment significant to the point that new information is not retained; or judgment and problem solving significantly impaired; or there is disorientation to time and place or may be unable to manage complex chores or activities; or</p> <p>History of unsafe driving; or driving is not safe in judgment of clinician; or</p> <p>New cognitive impairment under investigation for dementia, with concern for potentially unsafe driving.</p>	<p>No driving</p> <p>Documentation supports evidence of the diagnosis and profile level reported</p>
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¹ For further discussion regarding DEMENTIA, please refer to PREAMBLE at the beginning of this section.

² Lewy Body Dementia exhibiting significant movement disorder manifestations should also be reviewed using the Parkinson’s FAP.

³ If clinician documents progression of disease and recommends more frequent review and road testing, the interval may be shortened.