

Competency and Ethical Issues in Assessing Older Drivers: Where do you Start?

Resources:

1. BC Government website for driver medical fitness - <https://www2.gov.bc.ca/gov/content/transportation/driving-and-cycling/driver-medical/driver-medical-fitness>
2. Form to report unsafe drivers - <https://www2.gov.bc.ca/assets/gov/driving-and-transportation/driving/publications/mv2351-report-ability-drive.pdf>
3. Driving and dementia tool kit for **families/caregivers** - <http://www.rgpeo.com/en/patients-and-families/resources/driving.aspx>
4. Driving and dementia tool kit for **medical professionals** - <http://www.rgpeo.com/media/30695/dementia%20toolkit.pdf>
5. Further reading articles:
 - a. Molnar FJ, Simpson CS. Approach to assessing fitness to drive in patients with cardiac and cognitive conditions. *Canadian Family Physician*. 2010;56 (11):1123-1129.
 - b. Molnar FJ, Simpson CS. Approach to assessing fitness to drive in patients with cardiac and cognitive conditions. *Canadian Family Physician*. 2010;56 (11):1123-1129.
 - c. Jacobs M, Hart EP, Roos RAC. Driving with a neurodegenerative disorder: an overview of the current literature. *Journal of Neurology*. 2017;264 (8):1678-1696.
 - d. Hollis AM, Duncanson MA, Kapust LR, Xi PM, O'Connor MG. Validity of the Mini-Mental State Examination and the Montreal Cognitive Assessment in the Prediction of Driving Test Outcome. *JAGS*. 2015; 63:988-992.

Aging

Alert

- Driving restrictions based solely on age are inappropriate
- Resources are identified to assist physicians in assessing the impact of hidden disease or of multiple comorbidities on older drivers

7.1 Overview

Most of the health-related conditions listed in this guide that affect driving are more prevalent in older age groups. Older drivers may be involved in crashes because of the accumulation of medical illnesses and/or medications that affect function.

Unfortunately, the standard physical examination does not directly assess functional skills such as the ability to drive. At best, it can be used to detect the presence of medical conditions and to evaluate their severity and related complications, which may allow the physician to make judgments regarding possible effects on functions, such as fitness to drive.

Despite the above limitations of the standard physical examination, most Canadian provinces and territories require that physicians report patients who have medical conditions that may make it unsafe for them to drive (see section 3: Reporting – when and why). Even where such reporting is not mandatory, physicians may still be found liable if they fail to report a patient who is later determined to have caused harm to others as a result of medical impairment affecting fitness to drive.

When involved in motor vehicle crashes, older drivers suffer higher rates of morbidity and mortality than younger drivers. Accurate assessments of fitness to drive allow physicians to help their patients avoid disabling injury or death. Such assessments also help patients and their families avoid the grief and legal repercussions associated with contributing to the injuries or deaths of other road users or bystanders. Thus, assessing fitness to drive represents a form of preventive health care that benefits not only one's patients but also the public. The reality is that, although physicians cannot completely assess all aspects of fitness to drive, they can make significant contributions to this assessment that will prevent unnecessary trauma to their patients and to the general public. While physicians therefore represent a major part of the solution, it is unrealistic to expect them to be able to detect all issues affecting fitness to drive in all situations. It should also be noted that physicians do not determine licence status. Rather, physicians provide accurate, timely and relevant data to allow licensing authorities to make the most appropriate licensure decisions.

The objective of this section is to optimize physicians' ability to fulfill this important societal role by addressing complex situations specifically related to aging that are not covered by other sections in this guide.

7.2 Red flags — the 3Rs

The following red flags should trigger screening and evaluation of fitness to drive:

Record (family/caregiver history) — family members and caregivers' reports of concerns regarding driving safety (ask them to be specific), unexplained damage to the patient's vehicle, moving violations (e.g., speeding tickets), near crashes or crashes. Discuss this information with the family/caregiver(s) in a location separate from the patient so that they will be comfortable providing full disclosure.

Recent crashes reported by patient (Joseph et al., 2014).

Restriction of driving to less complex situations (Classen et al., 2013).

7.3 Hidden disease

A variety of age-related changes in sensory input (e.g., vision), cognition (e.g., speed of cognitive processing, attention, scanning) and motor output (e.g., reaction time, power, coordination) can affect driving safety. Fortunately, because of compensatory driving strategies at both the strategic level (e.g., planning when and where to drive, such as restricting driving to optimal traffic and weather conditions) and the tactical level (e.g., defensive driving strategies such as increasing following distance), as well as years of driving experience, healthy seniors remain the safest drivers on the road.

Nonetheless, when older drivers experience medical conditions, either the conditions themselves or the medications used to treat them may affect fitness to drive. This guide provides a wealth of information regarding how to address such situations.

There may, however, be situations in which physicians or family members or both feel that a problem with driving is developing, but they cannot identify the precise cause. As a result, the physician may have difficulty employing the recommendations provided in other sections of this guide. An example of such a concern would be a sudden change in driving habits (e.g., marked decrease in distances driven or new avoidance of challenging driving situations), which the American Academy of Neurology suggests is a marker of possible driving concerns. Often, these concerns arise from changes related not to aging but rather to hidden, as-yet-undiagnosed medical conditions. In such situations, tools such as the CANDRIVE fitness to drive assessment mnemonic (Figure 1) can help physicians to structure their review of potential causes contributing to the concerns about fitness to drive. Identification of likely causes will in turn allow them to use the most relevant sections of this guide. The CANDRIVE mnemonic is similar to but incorporates more detail (e.g., in-car experiences) than the SAFEDRIVE mnemonic that appeared in the 7th edition of this guide. In particular, the CANDRIVE mnemonic captures reaction time as both speed of mentation and speed of movement.

For cases in which physicians and family members are concerned but the CANDRIVE fitness to drive assessment mnemonic does not yield any identifiable medical domains where physicians can focus their diagnostic skills and for cases in which the functional effects are too subtle to determine whether they represent a significant risk to fitness to drive, physicians should consider referral to specialized driving assessment programs, many of which provide on-road evaluation (Appendix E).



FIGURE 1: CANDRIVE fitness to drive assessment mnemonic*

C	Cognition	Dementia, delirium, depression, executive function, memory, judgment, psychomotor speed, attention, reaction time, and visuospatial function
A	Acute or fluctuating illness	Delirium, seizures, Parkinson disease, and syncope or presyncope (cardiac ischemia, arrhythmia, postural hypotension)
N	Neuromusculo-skeletal disease or neurological effects	Speed of movement, speed of mentation, level of consciousness, stroke, Parkinson disease, syncope, hypoglycemia, hyperglycemia, arthritis, cervical arthritis, and spinal stenosis
D	Drugs	Drugs that effect cognition or speed of mentation, such as benzodiazepines, narcotics, anticholinergic medications (e.g., tricyclic antidepressants, antipsychotics, oxybutynin, dimenhydrinate), and antihistamines
R	Record	Patient or family report of accidents or moving violations
I	In-car experiences	Patient or family descriptions of near accidents, unexplained damage to car, change in driving skills, loss of confidence or self-restriction, becoming lost while driving, others refusing to be driven by patient, need for assistance of a copilot (particularly concerning would be the need for cues to avoid dangerous situations that could result in a crash), and other drivers having to drive defensively to accommodate changes in the patient's driving skills
V	Vision acuity	Visual field defects, glare, contrast sensitivity, comfort driving at night
E	Ethanol use	Physician's opinion regarding whether ethanol use is excessive and whether alcohol is imbibed before driving

* Reprinted, with permission, from Molnar FJ, Simpson CS. *Approach to assessing fitness to drive in patients with cardiac and cognitive issues*. *Can Fam Physician* 2010;56(11):1123–1129 (<http://www.cfp.ca/content/cfp/56/11/1123.full.pdf>).

7.4 Multiple comorbidities

Often the issue is not that the medical conditions are hidden but, rather, that there are too many conditions to assess vis-à-vis fitness to drive. Again, it may be unreasonable to expect that a physician who has never been trained to assess function directly will be able to determine medical fitness to drive in the face of multiple comorbidities that may be interacting (at times in a synergistic fashion).

For complex cases of this nature, the physician may start with general lists, such as the CANDRIVE fitness-to-drive assessment mnemonic (Figure 1). In the setting of multiple comorbidities, the main limitation of such lists is that they do not provide guidance on sequencing complex assessments.

In the November 2010 edition of *Canadian Family Physician* (www.cfp.ca/content/56/11/1123.full.pdf+html), Molnar and Simpson described a complementary approach to assessing patients with multiple comorbidities, based on classifying the problems identified into *acute intermittent* and *chronic persistent* disorders. Acute intermittent disorders (called “episodic limitations” in section 2 of this guide and “acute or fluctuating illnesses” in the CANDRIVE mnemonic) are medical problems that can suddenly incapacitate an otherwise low-risk driver. These problems (e.g., syncope, seizures) can cause sudden changes in cognition or level of consciousness or both, but are less likely to be detected by physical examination, because they are not present most of the time. Decisions regarding when patients can resume driving after the occurrence of one of these episodes are based on the probability of recurrence (see “risk of harm” formula, Appendix F). Chronic persistent disorders, called “permanent limitations” in section 2 of this guide, are medical problems that are present at all times and can be detected by examining and testing the patient. Specific acute intermittent and chronic persistent disorders are reviewed in greater detail in other sections of this guide.

An effective way to employ this categorical breakdown is to first decide when the patient might resume driving according to his or her acute intermittent disorders (e.g., myocardial infarction, arrhythmia treated with implantable cardioverter defibrillator, seizure). This will provide time for recovery from any apparently persistent features that may in fact have a degree of reversibility (e.g., delirium, postural hypotension, stroke, traumatic brain injury, sleep apnea). At that point, the physician can more accurately assess irreversible chronic persistent conditions (e.g., dementia). For an example of how to employ this approach, readers are directed to the article by Molnar and Simpson.

As useful as the above approaches are, what is truly needed are provincially and territorially funded continuing professional development (CPD) programs focused on the assessment of fitness to drive, as suggested by Dow and Jacques (2012). For such CPD programs to attract large numbers of physicians, linking attendance to CPD credits issued by the College of Family Physicians and the Royal College of Physicians and Surgeons of Canada should be considered.

To learn more regarding the assessment of fitness to drive in older patients, see the *Canadian Geriatrics Society Journal of CME* (<http://canadiangeriatrics.ca/category/dementia/driving/>).

Dementia and mild cognitive impairment

Alert

- Cognitive screening alone cannot be used to determine fitness to drive.
- If a patient's fitness to drive is unclear, the physician should recommend an on-road assessment.

8.1 Overview

Current demographic trends predict major increases in the number of older drivers over the next 20 years. Given that the prevalence of dementia increases with age, this indicates that the number of older drivers with dementia will increase significantly. Cognitive problems often have a direct effect on ability to drive safely. Physicians must therefore not neglect any indications of possible cognitive compromises of fitness to drive.

The term “dementia” encompasses a group of diseases (i.e., different types of dementia) that may have different effects on the functional skills required for safe driving. It is known that patients with Alzheimer's dementia show a predictable decline in cognition, with the decline in driving abilities over time being steep but less predictable (Duchek et al., 2003). However, to date, no longitudinal studies of declines in driving ability have been conducted for other forms of dementia. Nonetheless, certain characteristics of these dementias may have implications for fitness to drive. For example, vascular dementia can present with abrupt periods of worsening associated with the accumulation of vascular lesions. Parkinson's dementia and Lewy Body dementia are often associated with motor, executive and visuospatial dysfunction, any of which can be hazardous on the road. Furthermore, some frontotemporal dementias are associated with early executive dysfunction and behavioural changes (e.g., anger control issues) that may render driving hazardous. Finally, all people with dementia are more prone to delirium, with unpredictable and sudden cognitive decline. Ultimately, then, progression to unsafe driving status is unpredictable for patients with dementia.

8.2 Canadian Dementia Guidelines

The Third Canadian Consensus Conference on Dementia (CCCD3; Hogan et al., 2008) recommendations on fitness to drive for patients with dementia and mild cognitive impairment are as follows:

- Diagnosis of dementia is not sufficient to withdraw driving privileges.
- Moderate to severe dementia is a contraindication to driving.
- Driving is contraindicated in people who, for cognitive reasons, have an inability to

independently perform multiple instrumental activities of daily living or any of the basic activities of daily living. This degree of functional impairment describes a moderate or worse stage of dementia.

- People with mild dementia should receive comprehensive off- and on-road testing at specialized driving centres.
- No test, including the MMSE (Mini–Mental State Examination), has sufficient sensitivity or specificity to be used as a single determinant of driving ability. However, abnormalities on tests, including the MMSE, clock drawing, and [Trails B](#), should trigger further in-depth testing of driving ability.
- Patients with mild dementia who are deemed fit to continue driving should be re-evaluated every 6 to 12 months or sooner if indicated.
- (Note recommendations are rated by CCCD3 at Grade B, Level 3: Fair evidence to support this manoeuvre. Opinions of respected authorities based on clinical experience, descriptive studies, or reports of expert committees.)

8.3 Reporting according to stage of dementia

To date, there are no published guidelines as to when patients with mild dementia or mild cognitive impairment should be reported in jurisdictions with mandatory physician reporting (table in section 3). However, it is clear, given the guidelines listed in section 8.2, above, that those with moderate to severe dementia should be reported.

The determination of whether a patient has crossed the threshold from mild to moderate dementia is challenging. As a basic guideline, the CCCD3 defined moderate dementia as the loss of one or more basic activity of daily living (ADLs) or the loss of 2 or more instrumental activities of daily living (IADLs including medication management, banking, shopping, use of the telephone or cooking) due to cognitive problems.

Another means of defining stages of dementia is the [Clinical Dementia Rating scale](#) (www.rgp.toronto.on.ca/dmcourse/toolkit/app5.htm). A score of 2 (moderate dementia) or 3 (severe dementia) on this scale would preclude driving. Unfortunately, the Clinical Dementia Rating scale is of limited clinical utility because it requires training and is rarely used in general clinical practice.

A general rule of thumb is that any physician who suspects that a patient's cognitive problems may affect safe driving should refer the patient for a functional driving assessment, either through an occupational therapy evaluation or directly to the licensing authority.

8.4 Red flags — the 3Rs

The following red flags should trigger screening and evaluation of fitness to drive:

Record (family/caregiver history) — family members and caregivers report concerns regarding driving safety (ask them to be specific), unexplained damage to the patient's vehicle, moving violations (e.g., speeding tickets), near crashes or crashes. Discuss this

information with the family/caregiver(s) in a location separate from the patient so that they will be comfortable providing full disclosure.

Recent crashes reported by patient (Joseph et al., 2014).

Restriction of driving to less complex situations (Classen et al., 2013).

For patients with dementia, it has been shown that caregivers are able to predict driving safety more accurately than can the patients themselves, but in some circumstances, the caregivers may have a vested interest in preserving the patient's autonomy beyond a safe window. This possibility must also be taken into consideration.

8.5 Assessment of non-cognitive factors

Dementia does not occur in isolation. It is most common among older adults in whom medical comorbidities, physical frailty and the use of multiple medications are also factors that must be taken into consideration when assessing fitness to drive or considering reporting (see section 7, Aging).

No studies have supported the notion that cholinesterase inhibitors extend the window for safe driving, but some drugs, such as anticholinergic medications or benzodiazepines have a clear propensity to worsen a person's driving ability. These medication classes, as well as antipsychotics should raise concerns. For more details on medications see section 6, Drugs.

Behavioural disturbances, including agitation, personality change and psychosis, are common over the course of dementia and can increase the risk of collision (Rapoport et al., 2008).

8.6 Cognitive screening tools

Many in-office cognitive screening tools have been proposed to predict which patients are most likely to have problems with driving. For the most part, these tools have been developed to assess cognition or to screen for dementia, rather than to identify unsafe drivers. Furthermore, most studies of these tools have involved populations that included both patients with dementia and healthy controls, and none has yet consistently shown consistently reliable cut-offs beyond which patients' driving becomes unsafe.

The most studied of office-based screening tool is the [Trails B](http://cgjonline.ca/index.php/cgj/article/view/76), which has a recommended 3-minute or 3-error cut-off (3 or 3 rule) (cgjonline.ca/index.php/cgj/article/view/76).

Some screening tests are claimed to have been designed to determine fitness to drive, but these tests have not been demonstrated to have a predictive value that permits licensing decisions based solely on their results. No single test currently available has sufficient sensitivity or specificity to accurately predict, in the office setting, a person's driving safety in all situations but may be helpful in some situations. If cognition is impaired enough (i.e., where test results are so poor that sensitivity is not a concern), the results may be specific enough (i.e., unlikely to represent false results) to justify reporting the findings as being of concern and meriting licensing review. With the exception of

such clear situations, the consequences of misclassifying a safe driver as unsafe or an unsafe driver as safe solely on the basis of current cognitive screens can be substantial, both for the safe driver who is inappropriately deprived of independent mobility and for the unsafe driver who continues driving and is involved in a crash.

It is recommended that physicians administer more than 1 cognitive screening tool. If the results of cognitive tests such as the MMSE, the [Montreal Cognitive Assessment \(MoCA®; www.mocatest.org\)](#), the clock-drawing test, the trail-making test, or other in-office tests are markedly abnormal (i.e., where the results are specific and believable), consideration should be given to whether the patient has moderate or severe dementia, taking into account the history and recalling that moderate or severe dementia is a contraindication to driving.

It is important that screening tools not be misused. To optimize the use of current screening tools, despite the limitations of the evidence described above, [an article \(Molnar et al., 2012; http://74.220.219.145/~canadjf9/wp-content/uploads/2016/12/Dementia-and-Driving-Maximizing-the-Utility-of-In-Office-Screening-and-Assessment-Tools.pdf\)](#) suggests applying the following considerations when using in-office screening tests:

- **Determine if the test result is consistent with other evidence** — Are the results of the test consistent with the history provided by the patient, caregiver and family and with the results of other tests? Conversely, is the result of this single test an outlier and possibly not reflective of the patient's true functional ability?
- **Make certain you know what you are really measuring** — Ensure that low scores are not due to confounding variables, such as a language barrier, low education, dyslexia, performance anxiety, depression or sensory deficits.
- **Consider the trajectory of the patient's condition** — Consider whether the patient's function is expected to improve (e.g., delirium, recent head injury, recent stroke), remain stable (e.g., stable head injury, stable stroke) or decline (e.g., progressive degenerative disorders such as dementia, Parkinson's disease).
- **Understand your role** — Even in jurisdictions where reporting is mandatory, the role of physicians is not to directly determine fitness to drive, but rather to report clinical findings that raise concerns regarding fitness to drive. The licensing authorities then decide if the patient is fit to drive or needs more testing based, in part, on accurate, fair and timely information from physicians.
- **Use common sense and consider the severity of the findings** — Examine the entire picture, including any physical and behavioural limitations. Sometimes it is obvious that a patient is not safe to drive, given low valid test scores, dangerous behaviours, significant physical limitations or significant functional impairment. Do not be afraid to make a judgment based on any obvious impairments that may be uncovered.
- **Examine qualitative and dynamic aspects of the testing** — When interpreting performance on a test, do not focus solely on the score but also consider qualitative dynamic information regarding how the patient performed the test, such as slowness,

hesitation, anxiety or panic attacks, impulsive or perseverative behaviour, lack of focus, multiple corrections, forgetting instructions or inability to understand the test. These may indicate other sources of impairment that may negatively influence driving safety.

- **Understand cut-off scores and apply trichotomization** — For many health care measures, there is substantial overlap between the scores of people who are “normal” and the scores of those who are “impaired.” This makes reliance on a single cut-off score challenging, if not impossible.

To help make a decision, the physician can answer the following 4 questions:
Given the results of my clinical assessment,

- would I get into a car with the patient driving?
- would I let a loved one get into a car with the patient driving?
- would I want to be crossing the street in front of a car with the patient driving?
- would I want to have a loved one cross the street in front of a car with the patient driving?

For each question, 3 answers are possible: “yes” (meaning there are no concerns that would trigger further testing), “uncertain” (meaning that more tests are needed), and “absolutely not” (meaning that the risk is clear and too high).

8.6.1 Use tests in the context of more detailed approaches

Test results do not stand alone but should be part of a more detailed assessment. Consider the following resources:

1. [An article in the November 2010 issue of Canadian Family Physician \(www.cfp.ca/content/56/11/1123.full.pdf+html\)](http://www.cfp.ca/content/56/11/1123.full.pdf+html), which described an approach to sorting through such complex situations in the context of underlying dementia.
2. [The Driving and Dementia Toolkit for Health Professionals \(www.rgpeo.com/en/health-care-practitioners/resources/driving.aspx\)](http://www.rgpeo.com/en/health-care-practitioners/resources/driving.aspx)
3. [BrainXchange \(http://brainxchange.ca/Public/Resource-Centre-Topics-A-to-Z/Driving-and-dementia.aspx\)](http://brainxchange.ca/Public/Resource-Centre-Topics-A-to-Z/Driving-and-dementia.aspx) driving and dementia resources

8.7 When fitness to drive remains unclear

Although physicians may volunteer their opinion of patients’ fitness to drive and whether they feel that road testing is merited, and although physicians may counsel patients not to drive when such advice is appropriate, it is not their responsibility to directly determine fitness to drive. Rather, it is the responsibility of physicians to provide accurate information to their respective licensing authorities, which have the responsibility to make the determination of fitness to drive or to decide if further evaluation (e.g., specialist evaluation, on-road testing) is needed.

Some provinces, including Quebec, offer ministry-funded on-road testing for patients with dementia. Others, including Ontario, do not provide ministry funding for on-road

testing of persons with dementia. In the latter provinces, the patient is required to pay for the comprehensive on-road test, which is performed by a ministry-approved private company (sometimes costing as much as \$800). Physicians should inform themselves regarding the particular arrangement in their respective jurisdictions.

8.8 Counselling patients with dementia who can still drive safely

If a patient with dementia is found to be still safe to drive, the patient and the family should be made aware that this is a temporary situation and that, in time, the patient will need to cease driving. This conversation regarding eventual retirement from driving should be held as early as possible. Patients and families should also be advised that if there is any significant worsening of cognition (including symptoms of delirium such as slow mentation, decreased attention and focus, fluctuation or hallucinations) the patient should stop driving immediately and should see his or her physician. When assisting a patient with dementia to plan for future driving cessation, physicians can consider providing the patient and family with a copy of the [Driving and Dementia Toolkit: For Patients and Caregivers](http://www.rgpeo.com/en/health-care-practitioners/resources/driving.aspx) (www.rgpeo.com/en/health-care-practitioners/resources/driving.aspx). The patient's fitness to drive should be reassessed every 6 to 12 months, or more frequently if the cognitive impairment progresses. For further information on driving cessation, see section 4.

8.9 Disclosure of unfitness to drive

When a patient is found to be unsafe to continue driving, the discussion between physicians and patients is a delicate one, fraught with opportunities to upset and traumatize patients, or, alternatively, to help them move through a difficult stage in life in a compassionate and supportive manner. Guidance regarding how best to approach this challenging dialogue can be found in a [case-based article](http://74.220.219.145/~canadjf9/wp-content/uploads/2016/11/Disclosing-a-Diagnosis-of-Dementia.pdf) (<http://74.220.219.145/~canadjf9/wp-content/uploads/2016/11/Disclosing-a-Diagnosis-of-Dementia.pdf>).

8.10 Follow-up after loss of licensure

Loss of a driver's licence has been associated with social isolation and depression. Therefore, after a person with dementia has had his or her license revoked, the physician should monitor for these problems in scheduled follow-up.

It is also important to enlist family members and obtain their help in creating a transportation plan for the patient.

8.11 Countermeasures

There is little data to support the safety of restricted licensing, co-piloting, or other countermeasures for persons with dementia (Iverson, 2010)*.

* Iverson DJ, Grosneth GS, Reger MA, et al: Practice parameter update: Evaluation and management of driving risk in dementia: Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology* 2010; 74:1316-132