Driving After Stroke: The Art, Science, Legal Implications and Headaches of Reporting our Patients (New 2018 MTO guidelines included!)

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Provincial Stroke Rounds
Stroke Rehabilitation Program
Elisabeth Bruyère Hospital
November 4, 2020

Heart&Stroke Cœur+AVC

uOttawa

Candrive
Driving research for older adults.
Au volant de la recherche sur les aînés.

INSTITUT DE RECHERCHE Bruyère RESEARCH INSTITUTE

Mitigating Potential Bias

The Provincial Stroke Rounds Committee mitigated bias by ensuring there was no Industry involvement in planning or education content.

Disclosures

- We have no actual or potential conflict of interest in relation to this presentation.
- Numerous slides included in this talk were obtained from Dr. Catherine Ballyk, Physiatrist, Elke Hilgendag, Occupational Therapist, McMaster University, Hamilton, ON, and Dr. Shawn Marshall, Physiatrist, University of Ottawa, Ottawa, ON - Thank you!
- The new 2018 MTO legislation information was obtained from online MTO sources and discussions.

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Certified Driver Rehabilitation Specialist, Association for Driver Rehabilitation Specialists (ADED)

Objectives - by the End of This Talk You Will:

1. Understand how stroke survivors' impairments can affect driving ability and safety.

2. Appreciate how medical screening measures and functional assessments can assist the MD and the healthcare team in predicting a patient's readiness to resume driving.

3. Wisely exercise your driving-related evaluation and reporting responsibilities of stroke patients (including new MTO 2018 guidelines).


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HOSPITAL

Why Is Driving Important to Our Patients/Clients?

- Driving is an important part of a person's lifestyle, representing freedom and independence, particularly in rural areas.
- Giving up driving is strongly correlated with an increase in depression.
- Driving promotes life satisfaction and quality of life for older people.

Statistics

- 50,000 Canadians suffer a stroke each year; 30-50% of stroke survivors will resume driving.
- Less than 35% of stroke survivors discuss driving with their doctor before discharge from hospital.
- 87% of stroke survivors who resume driving do not receive a formal driving assessment.

Devos et al., (2011)
Petzold et al., (2010)

We Know That…

- Driving is a Complex Skill.
- Driving is a privilege…not a right!
- Mobility is a right. Is it…?
- Drivers are required to take responsibility for their change in medical status. Are they?

Redelmeier et al., (2012)

MTO Online Information – What are Drivers' Responsibilities?

- Report to your doctor:
  - vision changes, unexplained dizziness or fainting spells
  - frequent, chronic or severe pain
- Avoid driving if you're experiencing pain. It can decrease your ability to concentrate and limit your movement behind the wheel.
- Have your hearing and eyes checked regularly. Peripheral vision and depth perception tend to decline over the years.
- Your doctor can recommend an exercise program to improve flexibility and maintain strength, which can help your ability to drive safely.
- Consider taking a driver's course to refresh your knowledge of the rules of the road and safe driving practices.

What's Our Driving-Related Role?

We, MDs and Health Care Professionals, are:

- Screening our patients
- Looking for clues
- Figuring out if historical, physical, visual, cognitive, visuo-spatial, communicative or psychological factors may be impeding their ability to drive a vehicle safely.
- We're "driving detectives"! We're nice!

Top 5 Medical Conditions RR for Crash

Diagnosis/Impairment	Vaa (2003) Relative Risk* (and 95% Confidence Interval)	Charlton et al. (2010) Relative Risk* (Untreated)	Dobbs (2005) ("Red Flags")
Alcohol Abuse and Dependence	2.00 (1.89–2.12)	2.1–5.0	Yes
Dementia	1.45 (1.14–1.84)	2.1–5.0	Yes
Epilepsy	1.84 (1.68–2.02)	1.1–5.0+	Yes
Schizophrenia	2.01 (1.60–2.52)	2.1–5.0	Yes
Sleep Apnea	3.71 (2.14–6.40)	2.1–5.0+	Yes

N/A = not available, NS = not significant.
*1.1–2.0 = slightly increased, 2.1–5.0 = moderately increased, 5+ = considerably increased.

Medical Conditions RR for Crash

Diagnosis/ Impairment	Vaa (2003) Relative Risk* (and 95% Confidence Interval)	Charlton et al. (2010) Relative Risk* (Untreated)	Dobbs (2005) ("Red Flags")
Alcohol Abuse and Dependence	2.00 (1.89–2.12)	2.1–5.0	Yes
Cardiovascular Disease	1.23 (1.09–1.38)	1.1–5.0	Yes
Cerebrovascular Accident/ Traumatic Brain Injury (TBI)	1.35 (1.08–1.67)	Inconclusive (stroke and TBI)	Yes (stroke) N/A (TBI)
Depression	1.67 (1.10–2.45)	Inconclusive	No
Dementia	1.45 (1.14–1.84)	2.1–5.0	Yes
Diabetes Mellitus	1.56 (1.31–1.86)	1.1–2.0	Yes
Epilepsy	1.84 (1.68–2.02)	1.1–5.0+	Yes
Hearing Impairment	1.19 (1.02–1.40)	N/A	No
Medication Use	1.58 (1.45–1.73)	N/A	Yes
Musculoskeletal and Motor Disability	1.17 (1.004–1.36)	1.1–2.0	No
Parkinson's Disease	N/A	Inconclusive	N/A
Renal Disease	0.87 (0.54–1.34)	N/A	Yes
Schizophrenia	2.01 (1.60–2.52)	2.1–5.0	Yes
Sleep Apnea	3.71 (2.14–6.40)	2.1–5.0+	Yes
Vision Disorder	1.09 (1.04–1.15)	1.0–2.0	Yes

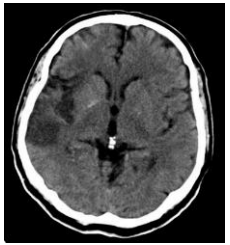
N/A = not available, NS = not significant.

*1.1–2.0 = slightly increased, 2.1–5.0 = moderately increased, 5+ = considerably increased.

Case Report – You Know the Driving Outcome

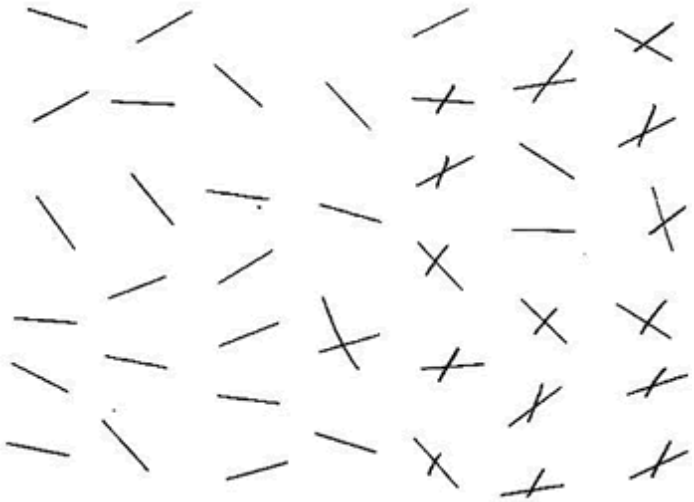
Case 1

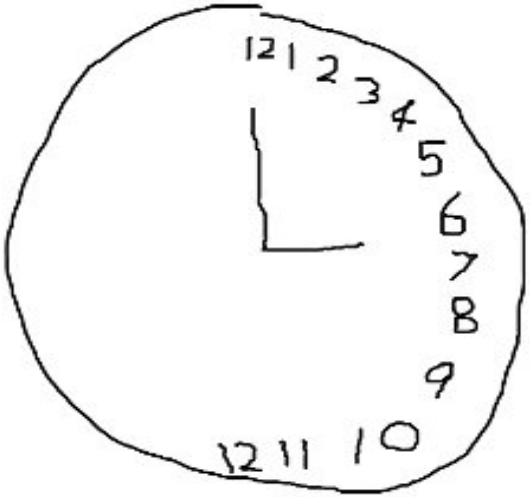
- Dx – Stroke
- CT – moderate right temporo-parietal infarct
- Inpatient on acute care – 3 weeks
- Moderate left UE & LE weakness
- Walks - 2 wheeled walker – assist x 1 therapist, bumps into objects on left
- MoCA 23/30, Clock 2/5
- Driving History – 2 MVAs in last year (family report- “I didn’t want to drive with him/her”)



Sinanović O et al. *Acta Clin Croat* 2011; 50:79-94.

Right Brain Stroke With Left Neglect





Outcome of Case 1

- Seems clear that she would be an unsafe driver – history, physical and special tests all point to this potential.
- Deficits – physical, cognitive, visuo-spatial, possibly visual field…
- SO, in Canadian provinces and American states with mandatory reporting, you would feel comfortable sending in her name as being a potentially unsafe driver.

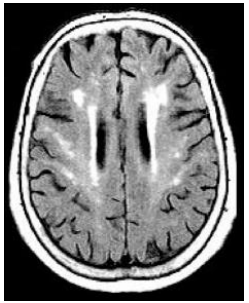
Case 2 – You Are Not so Sure

- Dx – Stroke, hypertension, patient was seen in the emergency room, discharged home
- She was then referred to “stroke prevention” (neurology) and “stroke rehabilitation” (physiatry) outpatient clinics.
- In your office – you note mild left arm & leg weakness, good sensation, which is resolving.
- “Sensory-motor dissociation”, oft associated with a subcortical stroke

Case 2 – You Are Not so Sure

- Walking, talking, oriented, no visual deficits, family says cognition was “Ok, maybe memory is worse...”; confusion, initially commented on in ED, seems to have resolved.

- CT – “negative” for acute ischemia, but presence of “moderate” small vessel disease is noted in the radiology report.



Inzitari D et al. *BMJ*. 2009;339:b2477.

Outcome – Case 2

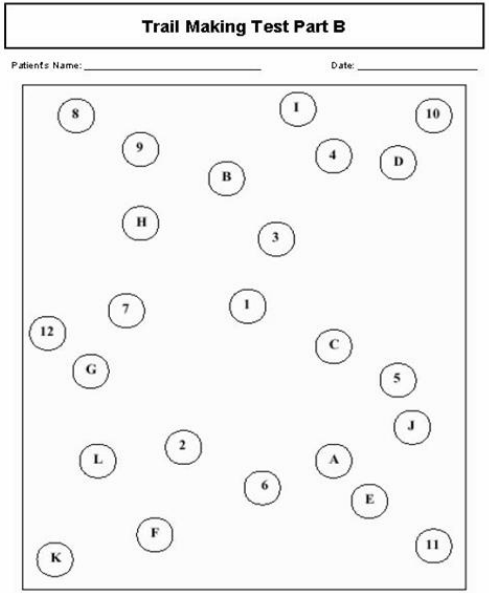
- You are not sure whether she would be a safe or unsafe driver.

- The actual stroke-related deficits may be minimal but the presence of small vessel disease may be affecting cognition, executive function, concentration, reaction time, etc. If we did a MRI, it would likely show a sub-cortical (e.g., internal capsule or pontine) infarct.

- Do we report her to ministry of transportation of Ontario, the MTO? Do we need more information? Can we do more in our offices and clinics to help us decide?

Case 3 – You Are Really Scratching Your Brain

- 66 year old male plumber, wife does not drive.
- Medical history – HTN, CAD - CABG X 3- 5 years ago
- Stroke - CT scan showed left subcortical (posterior limb of the internal capsule) and diffuse white matter changes.
- Inpatient on acute care and stroke rehabilitation unit - 5 weeks, MoCA - 25/30, Trails B – 2 errors, 2 mins 58 sec.
- Indep ADLs, using a straight cane. Kitchen assessment was equivocal (hard time organizing a grilled cheese) and he is noted to be impulsive “sometimes”.
- Hospitalist in acute care told “don’t drive for a month” (CMA Guidelines). Discharged home.



Outcome – Case 3

- Presents at Family MD/PM&R office two weeks later: “I want/need to drive!”
- Seems like he could be an unsafe driver but you are not sure.
- There is a potential for him to cause an accident because of his cognitive/ perceptual deficits (e.g., MoCA, kitchen assessment, staff’s indication of “impulsivity”).
- Reporting to MTO therefore makes a lot of sense, but he was discharged before any discussion occurred.

Outcome – Case 3 (cont'd)

- **Pre-July 2018**: Letter sent to Ministry of Transportation, province of Ontario, "medical condition report" and "Optional" section of form could have read: "should have testing at a specialized driving evaluation program, before getting back on the road".
- **Post-July 2018**: new MTO guidelines are moderately different. Let's take a look!

MINISTRY OF TRANSPORTATION OF ONTARIO

THE HIGHWAY TRAFFIC ACT, R.S.O. 1990, C H.8

NEW AMENDMENT JULY 2018

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Before 2018

Medical condition reporting form:
Section 203 of HTA requires that **only** legally qualified medical practitioners must report to the registrar of motor vehicle the name, address and clinical condition of any patient 16 years of age or older who “is suffering from a medical condition that may make it dangerous for the person to operate a motor vehicle”.

Highway Traffic Act:
203 (1) Every prescribed person shall report to the Registrar every person who is at least 16 years old who, in the opinion of the prescribed person, has or appears to have a prescribed medical condition, functional impairment or visual impairment.

The “prescribed” person could only be a physician.

New 2018

For the purposes of subsection 203 (1) of the Act, the following are the prescribed persons who are **obligated** by law to report their patients:

- **an optometrist – visual info**
- **a nurse practitioner**
- **a physician**

New 2018

For the purposes of subsection 203 (2) of the Act, **occupational therapists** may report their patients but are **not obligated** by law to do so – “discretionary”.

New 2018

Subsection 1 (1) of Ontario Regulation 340/94 adds the following definitions:

•"**nurse practitioner**" means a member of the College of Nurses of Ontario who is a registered nurse and who holds an extended certificate of registration in accordance with the regulations under the *Nursing Act, 1991*

•"**optometrist**" means a member of the College of Optometrists of Ontario

•"**physician**" means a member of the College of Physicians and Surgeons of Ontario

•"**occupational therapist**" means a member of the College of Occupational Therapists of Ontario

What medical conditions, functional impairments and visual impairments shall a prescribed person report to the MTO?

New MTO Amendments 2018

“The following are the prescribed medical conditions, functional impairments and visual impairments that a prescribed person shall report”:

1. **Cognitive impairment**: a disorder resulting in cognitive impairment that,
   i. affects attention, judgment and problem solving, planning and sequencing, memory, insight, reaction time or visuospatial perception, and
   ii. results in *substantial* limitation of the person’s ability to perform activities of daily living.

☐ Dementia ☐ Brain Injury/Tumour ☐ Unknown ☐ Other/Specify

New MTO Amendments 2018 (cont'd)

"The following are the prescribed medical conditions, functional impairments and visual impairments that a prescribed person shall report":

2. Sudden incapacitation: a disorder that has a moderate or high risk of sudden incapacitation, or that has resulted in sudden incapacitation and that has a moderate or high risk of recurrence.

Sudden Incapacitation (con't)

Seizure

- ☐ Alcohol/Drug Withdrawal
- ☐ Epilepsy
- ☐ Stroke
- ☐ Other (Specify)

CVA resulting in (check all that apply)

- ☐ Physical Impairment
- ☐ Cognitive Impairment
- ☐ Visual Field Impairment

Syncope

- ☐ Single episode not yet diagnosed
- ☐ Recurrent episodes
- ☐ Heart disease with pre-syncope/syncope/ arrhythmia

Other

- ☐ Narcolepsy with uncontrolled cataplexy or daytime sleep attacks
- ☐ Obstructive sleep apnea – untreated or unsuccessfully treated with apnea-hypopnea (AHI) of $\geq$ 30 or excessive daytime sleepiness
- ☐ Hypoglycaemia requiring intervention of third party or producing LOC
- ☐ Uncontrolled diabetes or hypoglycaemia
- ☐ Other (Specify)

New MTO Amendments 2018 (cont'd)

3. Motor or sensory impairment: a condition or disorder resulting in ***severe*** motor impairment that affects co-ordination, muscle strength and control, flexibility, motor planning, touch or positional sense.

- ☐ Neurological Disease (Specify) _____
- ☐ Spinal Cord Injury
- ☐ Loss of Limb
- ☐ Other (Specify) _____

New MTO Amendments 2018 (cont'd)

"The following are the prescribed medical conditions, functional impairments and visual impairments that a prescribed person shall report":

4. **Visual impairment**:

i. A best corrected visual acuity that is below 20/50 with both eyes open and examined together.

ii. A visual field that is less than 120 continuous degrees along the horizontal meridian, or less than 15 continuous degrees above and below fixation, or less than 60 degrees to either side of the vertical midline, including hemianopia.

iii. Diplopia that is within 40 degrees of fixation point (in all directions) of primary position, that cannot be corrected using prism lenses or patching.

New MTO Amendments 2018 (cont'd)

The following are the prescribed medical conditions, functional impairments and visual impairments that a prescribed person shall report:

5. **Substance use disorder**: a diagnosis of an uncontrolled substance use disorder, excluding caffeine and nicotine, and the person is non-compliant with treatment recommendations.

6. **Psychiatric illness**: a condition or disorder that currently involves acute psychosis or severe abnormalities of perception such as those present in schizophrenia or in other psychotic disorders, bipolar disorders, trauma or stressor-related disorders, dissociative disorders or neurocognitive disorders, or the person has a suicidal plan involving a vehicle or an intent to use a vehicle to harm others.

New MTO Amendments 2018 (cont'd)

- A person prescribed under subsection (1) ***is not required*** under subsection 203 (1) of the Act to report a person whose impairment is, in the prescribed person's opinion, of a distinctly ***transient or non-recurrent nature***,

  No examples provided! E.g.? My friend's umbilical hernia surgery - "don't drive for 24 hours, for anaesthetic, pain and opioids reasons."

- A person prescribed under subsection (1) ***is not required*** under subsection 203 (1) of the Act to report *modest or incremental changes* in ability that, in the prescribed person's opinion, are attributable to ***a process of natural aging***, unless the cumulative effect of the changes constitutes a condition or impairment described in subsection (3).

New MTO Amendments 2018 (cont'd)

7. **Discretionary report** of medical condition, functional impartment or visual impairment.

A patient has or appears to have a medical condition, functional or visual impairment that may make it dangerous for the person to operate a motor vehicle and is being reported pursuant to *Section 203(2) of the Highway Act*.

Please describe condition(s) or impairment.

Discussion with MTO: if patient doesn't fit in sections 1- 6 (mandatory) then may use section 7. Reporting under 1-6 will lead to suspension of driver's license but reporting under 7 "may" not.

New MTO Amendments 2018 (cont'd)

When considering whether a person has or appears to have a prescribed medical condition, functional impairment or visual impairment that is described in subsection (3), a prescribed person under subsection (1) may take into consideration,

a) the *CCMTA Medical Standards for Drivers* described in subsection 14 (4); and

b) the document entitled *Determining Medical Fitness to Operate Motor Vehicles* (9th edition), published by the Canadian Medical Association and dated 2017; it may be amended from time to time. Available on the Internet through the website of the Canadian Medical Association.

Occupational Therapists

- Occupational therapists are identified as **discretionary reporters - "MAY"**.
- Discretionary reporting is ***not*** a legal requirement but gives authority for reporting to occupational therapists: "any person who is at least 16 years old who, in the opinion of the prescribed person, has, or appears to have, a medical condition, functional impairment or visual impairment that may make it dangerous for the person to operate a motor vehicle."

Entwistle J and Hunt S. Reporting Unsafe Drivers: The New Role of Occupational Therapists in Ontario. 2018. Solutions for living.

Occupational Therapists

- OTs can report concerns about a client's fitness to drive *directly* to the MTO. The standard MTO form is used for this purpose.
- OTs can make a report *without client consent* to prevent or reduce risk of harm.
- OTs can only make a report if they have met the client for assessment or service delivery.
- OTs can report on *both* prescribed conditions and any other medical conditions, functional impairments or visual impairment that may make it dangerous for a client to drive.

Entwistle J and Hunt S. Reporting Unsafe Drivers: The New Role of Occupational Therapists in Ontario. 2018. Solutions for living.

Occupational Therapists

- OTs who make a report in good faith are *protected from legal action* but failing to report when they should have could be a breach of professional obligations.
- OTs are **NOT** expected to report on conditions that, in their opinion, are of:
    - A transient or non-recurrent nature
    - Modest or incremental changes in ability
- Lastly, although OTs are not legally required to make discretionary reports, a **professional obligation** to identify a potential safety issue with a client (such as a concern about fitness to drive) and, taking action to address this concern, is expected of the OT. Taking action may or may not include making a discretionary report to the MTO.

Entwistle J and Hunt S. Reporting Unsafe Drivers: The New Role of Occupational Therapists in Ontario. 2018. Solutions for living.

Ontario Ministry of Transportation

Medical Condition Report

Fee Code K035

Mandatory report by a prescribed person in compliance with subsection 203 (1) of the *Highway Traffic Act*, or Discretionary report in relation to subsection 203 (2) of the *Highway Traffic Act*. For guidance on reporting requirements see Regulation 340/94 or Interpretive Guide – Form 5108E_Guide.

Complete electronically, print, sign and fax both pages.

Fax Cover
Medical Condition Report Form – 2 Pages

To: Driver Medical Review 416-235-3400 or 1-800-304-7889

From:

Or Mail to: Ministry of Transportation - Driver Medical Review
77 Wellesley Street West, Box 589
Toronto ON M7A 1N3
Telephone: 416-235-1773 or 1-800-268-1481

Please complete in full. Fields marked with an asterisk (*) are mandatory.

Part 1. Patient Information

Last Name *	First Name *	Middle Init.	Date of Birth (yyyy/mm/dd) *

Gender * ☐ Male ☐ Female

Driver's Licence Number (if available)

Current Address

Unit Number	Street Number *	Street Name or Lot *	PO Box

City/Town/Village *	Province *	Postal Code

Part 2. Practitioner's Information

Practitioner's Last Name *	Practitioner's First Name *

Practitioner's Address

Unit Number	Street Number *	Street Name *

City/Town/Village *	Province *	Postal Code	Phone Number ext.

I am this person's:

☐ Family/Treating Physician ☐ ER Physician ☐ Nurse Practitioner ☐ Occupational Therapist
☐ Urgent Care/Walk In Clinic Physician ☐ Other

Patient is aware of this report . . . . . ☐ Yes ☐ No

I approve of the ministry releasing this report to the patient or their legal representative if requested . . . . . ☐ Yes ☐ No

I wish to be notified if my patient requests a copy of this report from the ministry, as releasing this report may threaten the health or safety of the patient or another individual . . . . . ☐ Yes ☐ No

Practitioner's Signature	Date of Report Examination (yyyy/mm/dd) *

Patient Information

Last Name	First Name	Middle Init.	Date of Birth (yyyy/mm/dd)

Part 3. Medical Condition or Impairment – Check all that apply

Cognitive Impairment

A disorder resulting in cognitive impairment that affects attention, judgement and problem solving, planning and sequencing, memory, insight, reaction time or visuospatial perception, and results in substantial limitation of the person's ability to perform activities of daily living. **Due to:**

☐ Dementia ☐ Brain Injury/Tumour ☐ Unknown ☐ Other (Specify) _____

Sudden Incapacitation

A disorder that has a moderate or high risk of sudden incapacitation, or that has resulted in sudden incapacitation and that has a moderate or high risk of recurrence. **Due to:**

Seizure

☐ Alcohol/Drug Withdrawal
☐ Epilepsy
☐ Stroke
☐ Other (Specify) _____

CVA resulting in (check all that apply)

☐ Physical Impairment
☐ Cognitive Impairment
☐ Visual Field Impairment

Syncope

☐ Single episode not yet diagnosed
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☐ Uncontrolled diabetes or hypoglycaemia
☐ Other (Specify) _____

Motor or Sensory Impairment

A condition or disorder resulting in severe motor impairment that affects: coordination, muscle strength and control, flexibility, motor planning, touch or positional sense. **Due to:**

☐ Neurological Disease (Specify) _____ ☐ Spinal Cord Injury ☐ Loss of Limb
☐ Other (Specify) _____

Visual Impairment

☐ Best corrected visual acuity below 20/50 with both eyes open and examined together
☐ Visual field less than 120 continuous degrees along the horizontal meridian, or less than 15 continuous degrees above and below fixation, or less than 60 degrees to either side of the vertical meridian, including hemianopia.
☐ Diplopia within 40 degrees of fixation point (in all directions) of primary position, that cannot be corrected using prism lenses or patching.

Substance Use Disorder

A diagnosis of an uncontrolled substance use disorder, excluding caffeine and nicotine, and patient is non-compliant with treatment recommendations.

☐ Alcohol ☐ Other Substances (Specify) _____

Psychiatric Illness

A condition or disorder currently involving any of the following: acute psychosis, severe abnormalities of perception, or patient has a suicidal plan involving a vehicle or an intent to use a vehicle to harm others.

☐ **Due to:** _____

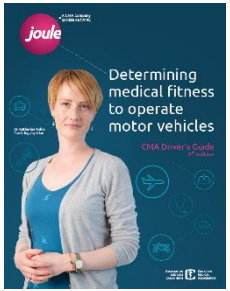
Part 4. Discretionary report of Medical Condition or Impairment

Please describe condition(s) or impairment

5106E (2020/07) Save Form Print Form Clear Form

Stakeholders in Driving

- Driver/Family
- Public
- Healthcare Professionals
- Ministries of Transportation
- Police
- Research



Candrive
Driving research for older adults.
Au volant de la recherche sur les aînés.

Ontario
MINISTRY OF TRANSPORTATION

CAOT - ACE
Canadian Association of Occupational Therapists
Association canadienne des ergothérapeutes

CCMTA·CCATM
CANADIAN COUNCIL OF MOTOR TRANSPORT ADMINISTRATORS
CONSEIL CANADIEN DES ADMINISTRATEURS EN TRANSPORT MOTORISÉ

All Together Now-How Do We Assess Patients in the Office/Clinic?

- We rely on:
  - Personal beliefs and attitudes
  - Clinical experience, results of history (including family members comments), physical exam, pen and paper tests and brain imaging
  - Advice from medical and driving specialists e.g. CMA driver's guide, CCMTA
  - Research - literature
  - The law concerning reporting in a particular province or state

Patients wants to get their license back! Or, not lose it in 1st place!

Medical Fitness to Drive

- On the one hand, physicians are NOT being asked to DETERMINE patients' fitness to drive, but to report if they are a potential danger to drive.
- On the other hand, what physicians report matters to provincial ministries of transportation and can determine whether a patient will drive or not.
- Gathering as much medical information as possible facilitates your decision as well as provincial ministries' decisions.

CMA (2012)

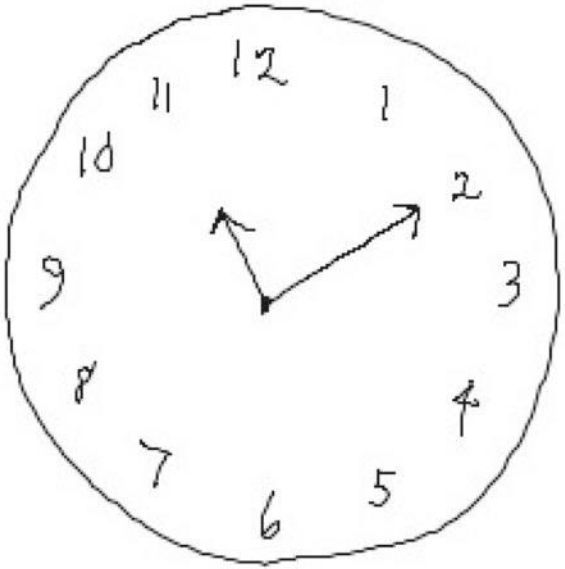
Table 2. SAFE DRIVE checklist: *If concerns are noted in any of these areas, referral to a specialized centre is recommended.*

SAFETY RECORD	History of driving problems: obtain from department of motor vehicles
ATTENTION SKILLS	Look for lapses of consciousness or recurrent episodes of confusion
FAMILY REPORT	Ask family members about observations of driving ability
ETHANOL	Screen for alcohol abuse
DRUGS	Conduct a medication review, checking for sedating or anticholinergic drugs
REACTION TIME	Check for neurologic or musculoskeletal disorders that could slow reactions
INTELLECTUAL IMPAIRMENT	Conduct a Mini-Mental State Examination
VISION AND VISUOSPATIAL FUNCTION	Test for visual acuity
EXECUTIVE FUNCTIONS	Check ability to plan and sequence activities and self-monitor behaviours

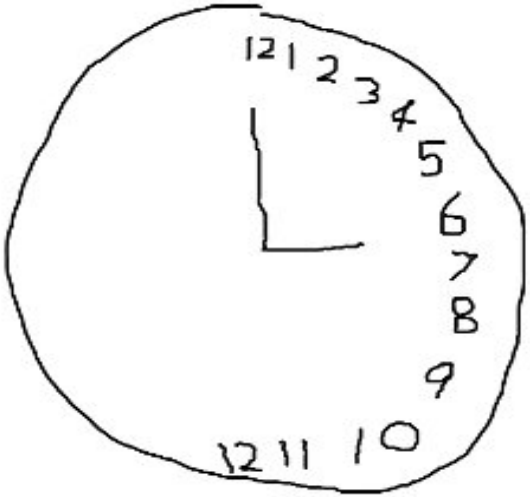
Adapted with permission from Wiseman and Souder.[23]

Wiseman EJ, Souder E. The Older Driver: A handy tool to assess competence behind the wheel. Geriatrics 1996;51:36-45

Good Clock, Bad Clock



VS



Souillard-Mandar W et al. *Mach Learn*. 2016;102(3):393–441.

Clock Scoring

6. **Trail-Making Test, Part B:** _____ seconds

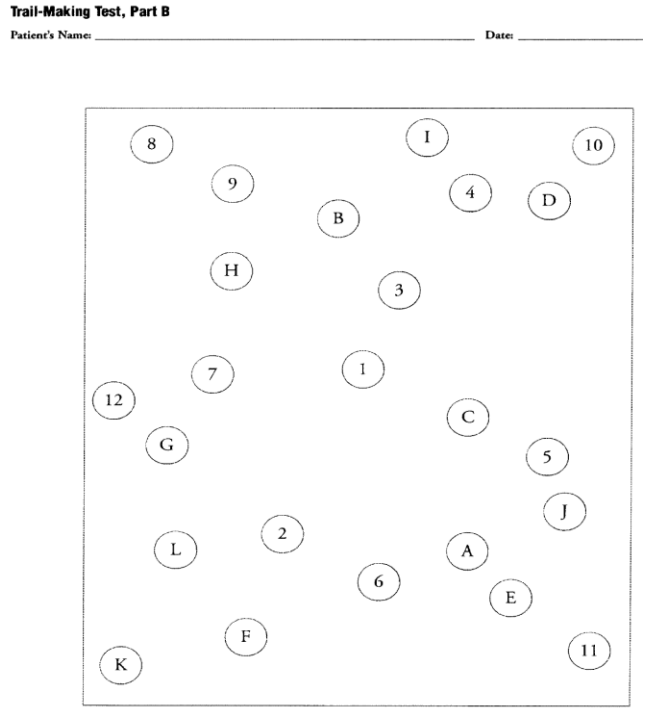
7. **Clock drawing test:** Please check 'yes' or 'no' to the following criteria.

	Yes	No
All 12 hours are placed in correct numeric order, starting with 12 at the top		
Only the numbers 1-12 are included (no duplicates, omissions, or foreign marks)		
The numbers are drawn inside the clock circle		
The numbers are spaced equally or nearly equally from each other		
The numbers are spaced equally or nearly equally from the edge of the circle		
One clock hand correctly points to two o'clock		
The other hand correctly points to eleven o'clock		
There are only two clock hands		

Trails B Test

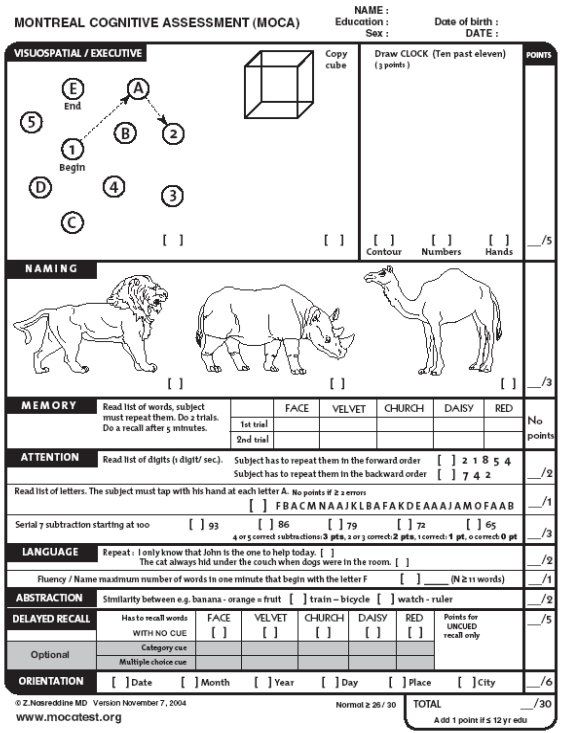
Trails Test Part B
“3 or 3 Rule”

3 Errors or 3 Minutes to complete



Roy M, Molnar F. Systematic review of the evidence for Trails B cut-off scores in assessing fitness to drive. Can Geriatr J. 2013; 16(3): 120–142

Montreal Cognitive Asessment(MoCA)



MONTREAL COGNITIVE ASSESSMENT (MOCA)

NAME :
Education :
Sex :
Date of birth :
DATE :

VISUOSPATIAL / EXECUTIVE — POINTS

Copy cube

Draw CLOCK (Ten past eleven) (3 points)

[ ] Contour [ ] Numbers [ ] Hands __/5

NAMING

[ ] [ ] [ ] __/3

MEMORY — Read list of words, subject must repeat them. Do 2 trials. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED
1st trial					
2nd trial					

No points

ATTENTION — Read list of digits (1 digit/ sec).

Subject has to repeat them in the forward order [ ] 2 1 8 5 4

Subject has to repeat them in the backward order [ ] 7 4 2 __/2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors

[ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B __/1

Serial 7 subtraction starting at 100 [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65

4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt __/3

LANGUAGE — Repeat : I only know that John is the one to help today. [ ]

The cat always hid under the couch when dogs were in the room. [ ] __/2

Fluency / Name maximum number of words in one minute that begin with the letter F [ ] ____ (N ≥ 11 words) __/1

ABSTRACTION — Similarity between e.g. banana - orange = fruit [ ] train – bicycle [ ] watch - ruler __/2

DELAYED RECALL

	FACE	VELVET	CHURCH	DAISY	RED	Points for UNCUED recall only
WITH NO CUE	[ ]	[ ]	[ ]	[ ]	[ ]	
Optional — Category cue						
Optional — Multiple choice cue						

__/5

ORIENTATION [ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City __/6

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www.mocatest.org

Normal ≥ 26 / 30

TOTAL __/30

Add 1 point if ≤ 12 yr edu

INSTITUT DE RECHERCHE Bruyère RESEARCH INSTITUTE

Driving Management

- After your assessment/screening, there are 3 possibilities:
  - Patient is not fit to drive
  - Patient is fit to drive
  - Patient may or may not be fit to drive – further assessment required. The gray hair producer…..

Patient Not Fit to Drive

- Discuss concerns with patient and family:
  - Remain firm in instructions not to drive.
  - Communicate in writing your legal obligations and intent to notify government authority.
  - Use line: “If I didn’t report, I’d lose my license.”
  - Ask wife or husband what they think the deficits are.
  - Explain concern of safety for patient and others.
  - Explore other transportation options.
  - Encourage family to remove opportunity to drive if non-compliant.
  - Do not argue – may have limited insight.

Patient Medically Fit to Drive

- Consider compensatory driving strategies – if appropriate
  - Driving only familiar routes
  - Driving slowly
  - Not driving at night
  - Not using the radio in the vehicle (distraction)
  - Avoid busy intersections
  - 55 Alive course
  - Avoid expressways
  - Avoid rush hour traffic
  - Avoid poor weather conditions

Further Assessment Required

- Referral for Functional Driving Assessment
  - Approved by the ministry; located all over the province
  - Gold standard
  - Includes clinical and on-road assessments completed by an occupational therapist
- It is our job to notify jurisdictional authorities as per provincial reporting requirements

Functional Assessment – Clinical

- Determines client's abilities, impairments, insight and ability to learn
- Using:
  - Vision, cognitive and visuo-spatial tests
  - Physical tests
  - Driving simulator - Not acceptable for ultimately determining fitness to drive, but can give insight to the evaluator for the on-road assessment

Functional Assessment - On-Road

- Completed in vehicle with a dual brake by OT and driving instructor
- Standard route including residential, moderate business traffic and highway
- Manoeuvers that drivers with cognitive impairment find difficult
    - Right of way situations
    - Left turns at controlled and uncontrolled intersections
    - Lane changes
    - Unusual intersections

Outcome of Assessment

- Pass/Fail
- Further training/lessons recommended
- Follow-up required for degenerative conditions
- Require physical modifications to vehicle

- left foot accelerator pedal, steering knob, modifications to turn signal lever and other secondary controls

- Restricted license
  - Available in some provinces, but NOT Ontario

Outcome Case 3 (cont'd)

- **Client:** Male, 72 years old, Subcortical stroke with microvascular disease
- Completed Functional Driving Assessment 6 months after stroke
- Passes cognitive and visuo-perceptual tests
- Fails on-road driving assessment: doesn't stop, doesn't yield, difficulty following instructions.
- Unsafe!

Results of Driving Evaluation – Occupational Therapist

- Failed evaluation but lessons with driving instructor recommended as client demonstrated insight regarding significance of errors made.

- 7 hours of lessons completed

- Driving instructor reported minimal improvement

- Client disagreed with instructor’s report and his teaching methods

- OT attended final lesson

Results of Driving Evaluation – Occupational Therapist

Physical function

• Demonstrated full neck rotation but rarely completed shoulder checks – relied on his mirrors; client demonstrated full trunk rotation but relied on his mirrors while backing up.

• Demonstrated smooth and safe operation of the accelerator and brake pedals using his right foot.

• Demonstrated smooth and safe steering control using the hand over hand method.

• Demonstrated safe use of the turn signals lever and other secondary controls.

• No evidence of fatigue.

Results of Driving Evaluation – Occupational Therapist

Cognitive /Perceptual function:

• Client completed some maneuvers well but also significant errors.

• Demonstrated difficulty multi tasking and slowed information processing (did not adjust speed or position for a pedestrian until instructed to do so, very late braking for red lights, and stop signs).

• Demonstrated poor lane position (after moving left to pass a parked vehicle, he remained in the on-coming lane, traveled in the bicycle lane, traveled too close to parked cars and traveled on or over dotted line four different times and did not correct his position until instructed to do so).

Results of Driving Evaluation – Occupational Therapist

Cognitive /Perceptual function (cont'd):

•Initially, he was checking the speedometer regularly and his speed control was acceptable; however, later he was no longer checking his speed he traveled above the speed limit.

Behaviour

•Client demonstrated appropriate behavior during the on road evaluation but demonstrated aggressive behavior when given the results of the evaluations.

Driving habits

•Client demonstrated an acceptable knowledge of the rules of the road.

Results of Driving Evaluation – Occupational Therapist

Recommendations

•Significant errors were made during the lessons including during the last lesson that was observed by the therapist. It is recommended that lessons be terminated and that the client's license remain suspended as the client demonstrated unsafe driving skills.

•The client does not agree with the observation made by this therapist and the driving instructor.

Summary

- Medical conditions and their effect on driving ability should be considered for all patients.
- A wide-ranging inquiry (physical, cognitive, visuospatial, social, brain imaging report) can identify patients who may have impaired ability to drive.
- If you have driving concerns, licensing authority needs to be informed.
- A formal driving assessment can help determine fitness to drive.

Thank you


GEECH
WHAT SEEMS TO BE THE PROBLEM, OFFICER?
YOU DIDN'T SIGNAL YOUR TURN BACK THERE.
I DIDN'T KNOW I WAS GOING TO TURN.

Evaluation Survey:

Please complete the brief evaluation survey by scanning the QR Code, or by clicking on the following link:

https://www.surveymonkey.com/r/TY23F63