

## Restricted Licensing: Let's Talk

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## Background

- Limiting the use of license restrictions at our provincial licensing body
  - Removal of an interesting and effective option for certain clients
  - ? Are we blindly making recommendations that are ultimately ineffective or unsafe
- Disclaimer: Our *bias*

## Plan

- What is the pulse of our peers ?
- What does the evidence say?
- Should we change or modify our current practice?
- **Objective:** Can we identify clear guidelines as to when the recommendation of a restricted license would be appropriate?

## Definition of terms

- Restricted licence
  - Definition
    - “A driver’s license that for one reason or another has a restriction attached to it. To operate a motor vehicle, holders of such a license must meet some special requirement or must restrict their driving practices in some well-specified fashion” (AARP Graduated driver licensing: Creating mobility choices. Washington, DC: AARP; 1993).
  - Goal of restricted licensing:
    - To better manage crash-risk while still allowing acceptable levels of community mobility. To allow driving under conditions that maximize safety while retaining mobility (O’Byrne, C., Naughton, A., & O’Neill, D. 2015).
    - To maximize the fit between declining driver fitness and environmental demand (Dugan E, Barton K, et al. 2013).

## Definition of terms

**COGNITIVE IMPAIRMENT  
VERSUS Dx OF DEMENTIA**

## Cognitive impairment vs. dementia

- **Dementia:**
  - Recommend adherence to the consensus statements regarding driving and dementia as proposed by Wheatley, C., Carr D. & Marotolli R. (2009)
    - An individual with moderate to severe dementia should not drive
    - Those individuals with very mild or mild dementia may be appropriately referred for further testing when risk factors for unsafe driving are present.
    - For an individual with a neurodegenerative dementia, mobility counseling (to include alternative methods of transportation) should start immediately anticipating that driving cessation will likely occur in the future.
    - “When cognitive impairment is diagnosed such as at the MCI stage, recommendations to enhance safe driving may be provided, such as limiting geographical range, avoiding freeway or night driving. If possible, the family, friends or neighbors should begin to assume a more active role in providing transportation, to prepare the person for the transition to driving cessation”.

**Purpose of this discussion:**

**Cognitive impairment not related to a Dx of dementia**

- \* Example: reduced visual processing speed post-stroke, decreased divided attention skills related to a brain injury, Multiple Sclerosis, Parkinson's Disease etc.).
- \* Estimation of the prevalence of post-stroke cognitive impairments is difficult due the range of potential deficits and different classification criteria across countries. Reported rates have varied from **30-50%** (Zulkifly M, Ghazali SE, et al. Review of Risk Factors for Cognitive Impairment in Stroke Survivors. *The Scientific World Journal*. 2016;2016:3456943. doi:10.1155/2016/3456943).
- \* Various domains of cognitive function such as attention, concentration, memory, social cognition, language, spatial and perceptual skills, and higher-order executive functions may be affected in stroke survivors (Hodges J. R. *Cognitive Assessment for Clinicians*. Oxford, UK: Oxford University Press; 2011).

**What do our peers say?**

« AND THE SURVEY SAYS... »



**Survey to Canadian OT/DRS**

- English-language survey comprising 9 questions was sent to **213 Canadian DRSs** via ADED (**N=39**)



**Survey to Canadian OT/DRS**

- Survey translated to French and sent to **58 Quebec OTs working in Driver Rehabilitation Programs** of public rehabilitation centres (members of GRECA) (**N=49**)

**By Show of hands.....**

- **Who here has already recommended a restricted license for a client with cognitive impairment?**



**Survey to Canadian OT/DRS**

	English Version (all of Canada)	French Version (Quebec only)	Average
% of respondents who have already recommended a restricted license	41%	80%	<b>62%</b>
% of respondents who agree with the deliverance of restricted licenses	Data unavailable ☹️	71%	

Does your provincial licensing body issue restricted driver's licenses such as a restricted territory or no highway driving?  
 Yes  
 No  
 I do not know

Do you agree with this policy?  
 Yes  
 No  
 I am not sure

## What does the evidence say?



## Research Methods Summary

- Down and dirty Lit. Search- Clinician Style!
- Researched McGill library using Google Scholar, Ovid, Medline, etc
- Requested search from the CRCL librarian
- Search words: Restricted licensing, territorial licence restriction, licence restrictions and medical conditions
- Found total of approx. 55 potential peer-reviewed articles
- Retained 12 of the most relevant for more in-depth exploration
- Created a Table highlighting each study's methods and outcomes, organising into articles pertaining to **EFFECTIVENESS, COMPLIANCE or POLICY**

## Survey Question 1

IN YOUR OPINION, WHAT CRITERIA MUST BE MET FOR A RESTRICTED LICENSE TO BE AN APPROPRIATE OPTION?

Who is a candidate?  
In what circumstances do you feel it is (in)appropriate?

## Survey to Canadian OT/DRS: Defining criteria

- Survey says.....
  - Adequate insight/ awareness into limitations and reason for restriction/ Good judgement (42%)
  - When the client only drives/ needs to drive in specific area /rural area (already self-restricts) and successfully passes evaluation in said areas (32%)
    - 3 respondents specify additional requirement of successful completion of territorial road test that includes several routes within territory (not just client's usual route)
  - Adequate memory (16%)
  - Difficulty with higher speeds but performed adequately at recommended speeds (10%)
  - None (ie never an appropriate option) (9%)

## Literature: Defining criteria

- And the research says...
  - Interestingly, very little to define the profile of those who should be considered for a restricted license
  - Many studies (Asbridge et al. 2017, O'Byrne et al. 2015, Caragata & Wister, 2002, Marshall et al. 2002) focus on this as an effective option for « older drivers » or those with « medical conditions » but do not further elaborate.
  - Dow et al. (2013) performed a retrospective analysis (2002-2006) to determine crash-risk involving death or serious injury of drivers with medical conditions (license restrictions not considered).
    - **Epilepsy, psychiatric conditions and substance abuse stand out with moderately increased crash risk (less than 1.50)**
    - **Cancer, hypertension, cognitive limitations and renal conditions are associated with diminished crash risk (RR: 0.67, 0.70, 0.53 respectively). ? Self-limiting driving**
    - **The greatest influence on crash risk is the presence of multiple conditions with four or more medical conditions incurring a risk of 1.54.**

## Survey Question 2

IN YOUR OPINION, WHAT ARE SOME OF THE POTENTIAL POSITIVE CONSEQUENCES OF RESTRICTED LICENSING?

### Survey to Canadian OT/DRS: Positives

- Survey says.....
  - **Maintaining independence in community mobility (90%)**
  - Decreased social isolation (14%)
  - Help prepare for driving cessation (9%)
  - Increased safety on the road for all (5%)
  - None (5%)

### Literature: Positives

Supporting older drivers to safely remain independent and engaged in the community has positive implications for all strata of society. Restrictive licensing is one approach that has the potential to promote road safety and contribute to improved quality of life for older adults. (Systematic Review, 2017)

Vernon et al. examined continued mobility, demonstrating that a restricted license program facilitated older driver independence and mobility for longer periods of time, as compared to an unrestricted license (Vernon et al., 2002).

### Survey Question 3

IN YOUR OPINION, WHAT ARE SOME OF THE POTENTIAL NEGATIVE CONSEQUENCES OF RESTRICTED LICENSING?

### Survey to Canadian OT/DRS: Negatives

- Survey says.....
  - **Potential non-respect of the restriction (putting client and others at risk) (49%)**
    - 9% of respondents mention concern that persons with cognitive impairment cannot self-monitor or will forget restriction.
    - 2 respondents mention concern that OT/DRS could be held liable if conditions not respected.
  - **Difficulty to enforce (25%)**
  - Allowing « at risk » (borderline) drivers on the road (9%)
  - None (5%)
  - Risk that detour will bring them out of their territory (3,5%)
  - Client may drive less with restricted license, therefore more difficult to maintain capacities (3,5%)

### Literature response to the « Negatives »

- Survey says.....
  - **Potential non-respect of the restriction (putting client and others at risk) (49%)**
  - **Difficulty to enforce (25%)**

**Braitman et al (2010) compared characteristics and driving patterns of older drivers in Iowa with different licensing outcomes (N=522):**

- Drivers with a speed restriction were 70% less likely to drive on high-speed roads than drivers without the restriction in the initial survey, and 92% less likely in the follow-up survey.
- Drivers with a geographic area restriction were 75% less likely to drive 5 miles or more from home than drivers without the restriction in the initial survey and 82% less likely in the follow-up survey.
- Compliance to restrictions was therefore high, but a small percentage of drivers with license restrictions in the current study reported non-compliance with headlight and speed restrictions.

### Literature response to the « Negatives »

- Survey says.....
  - Allowing « at risk » (borderline) drivers on the road (9%)
  - Risk that detour will bring them out of their territory (3,5%)

**One study did highlight a potential increase in crash risk:**  
A study in Utah compared adverse driving events of drivers with and without medical conditions from 1992-1996. Amongst the 3% of the drivers that had a medical condition AND a restricted license, those with neurological conditions (N=79) had a lower RR of citations (0,76) but a higher RR for crash (1,33) than matched controls. (Vernon, Donald et al. 2002).

### Literature response to the « Negatives »

**Survey says.....**

- Allowing « at risk » (borderline) drivers on the road (9%)
- Risk that detour will bring them out of their territory (3.5%)

**Restricted licences actually reduce risk...**

Marshall et al. (2002) found that after the imposition of a restricted driver's license, at-fault crash rates decreased by 12.8% as compared to the general population, resulting in a reduction of up to 816 traffic crashes over their study period (1992-1999, Saskatchewan)

### Literature response to the « Negatives »

**Survey says.....**

- Allowing « at risk » (borderline) drivers on the road (9%)
- Risk that detour will bring them out of their territory (3.5%)

**Restricted licences actually reduce risk...**

Existing studies are supportive of the efficacy of restrictive licensing programs, with reduced crash rates for drivers carrying restricted licenses compared to controls. (O'Byrne et al, 2015 Systematic Review), Caragata & Wister 2009- B.C insurance data)

### Literature response to the « Negatives »

**Survey says.....**

- Allowing « at risk » (borderline) drivers on the road (9%)
- Risk that detour will bring them out of their territory (3.5%)

**Restricted licences actually reduce risk...**

As a general rule, crash rates were lower following a licence restriction. For drivers with any licence restriction, the 'before' crash rate was 49 casualty crashes per 10,000 driver-licence-years which then fell to 37 per 10,000 driver-licence-years after the licence restriction was imposed – and the fall was statistically significant. (Langford and Koppel, 2011).

### Literature response to the « Negatives »

**Survey says.....**

- Allowing « at risk » (borderline) drivers on the road (9%)
- Risk that detour will bring them out of their territory (3.5%)

**Restricted licences actually reduce risk...**

Restricted licensing is one promising strategy to lower crash risk, by more carefully matching older drivers' licenses to their health and driving ability (Langford and Koppel, 2011; Braitman et al., 2010; Marshall et al., 2002; Macdonald and Hebert, 2010; O'Neill, 2012; Redelmeier and Stanbrook, 2012).

### Literature response to the « Negatives »

**Survey says.....**

- Client may drive less with restricted license, therefore more difficult to maintain capacities (3.5%)

**True!**

“The most noteworthy change in driving behavior resulting from license restrictions was a significant reduction in weekly mileage for drivers with any kind of restriction relative to drivers without restrictions. Drivers with license restrictions reduced their weekly mileage by about 40% between the initial and follow-up surveys, whereas weekly mileage for drivers without restrictions changed little.” (Braitman et al. 2010)

## Survey: Final question

**DOES THE CONCEPT OF GRADUATED (DE)LICENSING APPEAL TO YOU?**

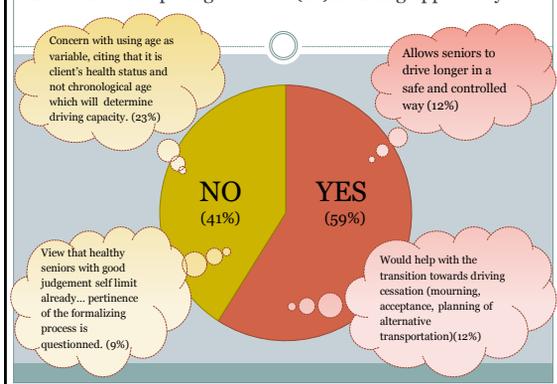
## Definition of terms

- Graduated (de)licensing for seniors
  - According to an editorial in the Canadian Medical Association Journal (Redelmeier D., & Stanbrook M., 2012)...
    - ✦ ... A process where a **full driver's license defaults automatically to a restricted license at a specified (age-triggered) transition time**. This would allow seniors to continue to drive, but only under relatively favorable conditions (ie: no highway driving, no night-time driving, etc.), similar to the graduated licensing process some provinces now have in place for young new drivers. The optimum transition time would need to be defined (ie: 75? 80 years old?) and the policy would **clearly require the allowance for exemptions from the restriction with endorsement from a physician and/or successful completion of a road test**.
  - The health care professional's role therefore switches to that of identifying and supporting those who do retain the functional abilities to continue driving safely rather than identifying those whose driving privileges should be revoked.

## Survey: Final question

### DOES THE CONCEPT OF GRADUATED (DE)LICENSING APPEAL TO YOU?

#### Does the concept of graduated (de)licensing appeal to you?



This slide features a central pie chart with a red segment (59%) and a yellow segment (41%). It is surrounded by several thought bubbles containing text related to driver licensing and safety. The text includes:

- « Just as planning for job retirement is the social norm, we should be planning for driving retirement by creating programs to help seniors drive safely for as long as possible and, when they can't, to help them get around. »
- « Graduated licensing programs for young drivers have shown surprising effectiveness for preventing motor vehicle crashes...The results has been a 20-40% reduction in serious road trauma in this age group...100 less teen deaths a year...The compelling benefits to young drivers licensing that a policy of graduated licensing for seniors also deserves serious consideration »
- « Placed in the context of the medical examination, these programs are effective than relying on the current start discussions about medical suspension. The existence of a restricted license option might further alleviate the polarizing all-or-none approach that hampers...reporting of medically unfit drivers...an opt-out rather than opt-in approach to licensing is congruent with existing safety policies for aviators, vaccination programs for children and commercial driver testing. »

References listed on the slide:

- Dugan E., Barton K. et al. (2013). **Older Driver Safety: A Systematic Review of the Literature**. Journal of Aging & Social Policy, 25:4, 335-352
- Redelmeier, D.A. and Stanbrook, B. (2012). **Graduated drivers' licenses for seniors: reclaiming one benefit of being young**. Canadian Medical Association Journal, 184(10)
- Langford, J and Koppel, S. (2011). **Licence restrictions as an under-used strategy in managing older driver safety**. Accident Analysis and Prevention 43, 487-493
- MacDonald, N. and Hébert, P.C. (2010). **Driving Retirement program for seniors: long overdue**. Canadian Medical Association Journal, 184(10)

## Interesting perspectives and support in the literature

- Kelly, M., Neilson, N. and Snoddon, T. (2014). **Aging Population and Driver Licensing: A Policy Perspective**. Canadian Public Policy
- Dugan E., Barton K. et al. (2013) **U.S. Policies to Enhance Older Driver Safety: A Systematic Review of the Literature**. Journal of Aging & Social Policy, 25:4, 335-352
- Redelmeier, D.A. and Stanbrook, B. (2012). **Graduated drivers' licenses for seniors: reclaiming one benefit of being young**. Canadian Medical Association Journal, 184(10)
- Langford, J and Koppel, S. (2011). **Licence restrictions as an under-used strategy in managing older driver safety**. Accident Analysis and Prevention 43, 487-493
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## Clinical implications

### SHOULD THE IMPLEMENTATION OF SPECIFIC RESTRICTIONS REGARDING SPEED OR TERRITORY OF DRIVING BE A POTENTIAL RECOMMENDATION FOR CERTAIN CLIENTS WITH COGNITIVE IMPAIRMENT?

## Considerations for recommendation...

- ✓ The literature supports the use of restricted licensing as an effective approach that has the potential to promote road safety and positively impact independent mobility
  - ❖ Decreased crash rates after imposing restriction
  - ❖ Good compliance
  - ❖ Decreased rates of traffic citations
  - ❖ Positive impact on independent mobility (only 1 study measured this)
- ✓ Care should be taken for those with multiple medical conditions and those with decreased cognitive capacities due to a diagnosis of dementia
- ✓ Insight and good judgment are key abilities highlighted by clinicians working in the field of Driver Rehabilitation as essential, but no literature available to date

## Thank you!

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