

CanDRIVE

Funded by
The Canadian Institutes of Health
Research



CCMTA March 6, 2006

CanDRIVE - Vision

To establish a national multidisciplinary collaborative approach to identify, analyze and address the health-related safety and quality-of-life issues pertaining to older drivers.

- Work with transportation organizations on Canada's Road Safety Vision 2010

CanDRIVE

- **CIHR-funded infrastructure grant (\$1.25 million over 5 years: 2002-2007)**
 - **Investigators**
 - Malcolm Man-Son-Hing MD
 - Shawn Marshall MD
 - Frank Molnar MDCM
 - Keith Wilson PhD
 - Ian Graham PhD
 - Ian Stiell MD
 - Larry Chambers PhD
 - Cassandra Crowder MA (Program Manager)
 - **A nation-wide network of multi-disciplinary investigators**

Bring Together...

- **researchers**
- **seniors groups**
- **non governmental agencies**
- **clinicians**
- **ministries of transportation**
- **other governmental organizations**

CanDRIVE research members

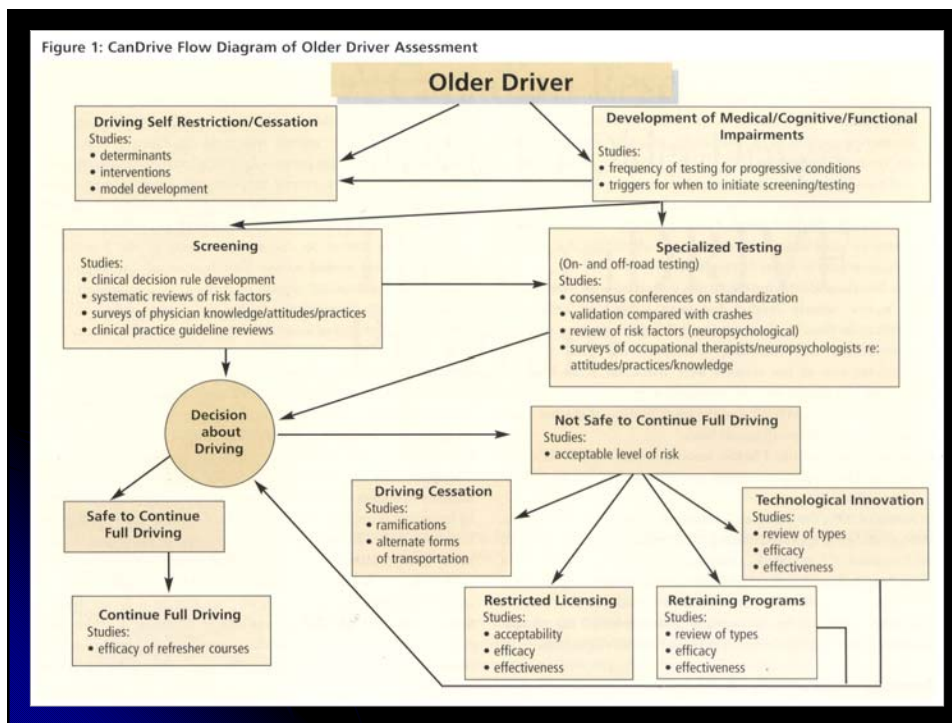
- BC: H. Tuokko PhD, B.L. Beattie MD, M. Malone MD
- AB: D. Hogan MD, B.Dobbs PhD, A. Dobbs PhD
- MB: M. Porter PhD, P. St. John MD
- ON: J. Polgar PhD, L. Hunt BSc (OT), G. Naglie MD, M. Chipman PhD, A. Byszewski MD, M. Bedard PhD, R. Blair PhD, H. Finestone MD, L.Trick PhD, E.Casson PhD, J. Lindsay PhD, S. Gagnon PhD, J Friedland PhD, A. Myers PhD
- PQ: N. Korner-Bitensky PhD, I. Gelinis PhD, M. Vanier PhD, T. Audet PhD, B. Mazer PhD
- NB: Scott Deschenes MSc
- NS: C. MacKnight MD

CanDRIVE

- Conducting research
- Influencing policy
- Improving clinical practice

CanDRIVE - Objectives

- To address all health-related aspects (psychosocial, cultural, linguistic, societal, legal, health care resource, political) of ensuring the safety for older drivers
- To find ways to extend the length of time that persons can drive
 - Retraining programs
 - Restricted licensing



CanDRIVE

- **Accomplishments to date:**
 - Establishment of a Coordinating office at University of Ottawa Elisabeth Bruyere Research Institute
 - Establishment of an Advisory Board
 - Established web-based driving research database
 - (>1400 articles – hard copies and entered into Reference Manager)
 - Development of website, materials for public and media consumption

CanDRIVE

- **Accomplishments to date (cont):**
 - **Recruitment of researchers**
 - Scientific Conferences Retreats: Jan. 2003 and Jan. 2005
 - research priorities developed including:
 - policy/legal issues
 - psychosocial aspects of driving
 - **Research Projects**
 - Influencing Policy
 - Changing Practice
 - **Bursary Program to Support Postdoctoral and Student Research**

CanDRIVE

Keeping Safe Older Drivers Driving

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CanDRIVE Members

ID: Password:

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About CanDRIVE

What is CanDRIVE?

The Canadian Driving Research Initiative for Vehicular Safety in the Elderly (CanDRIVE) is an interdisciplinary health related research program dedicated to improving the safety of older drivers. It is funded by a New Emerging Team Grant from the Canadian Institutes of Health Research (CIHR) - Institute of Aging. CanDRIVE also receives support from the Elisabeth Bruyère Research Institute - a University of Ottawa/SCO Health Service partnership, the Regional Geriatric Assessment Program of Ottawa and the Ottawa Health Research Institute.

CanDRIVE's **aim** is to improve the health, safety and quality-of-life of Canada's older drivers.

CanDRIVE's **vision** is to establish a national multi-disciplinary collaborative approach to identify, analyze and examine the issues pertaining to the safe operation of vehicles by older persons.

One of the **goals** of the CanDRIVE research program is to find a way to extend the length of time that older drivers can drive. CanDRIVE will examine both the effectiveness of retraining programs and the use of customized or restricted licensing for older drivers who might automatically have had their licence revoked. Unfortunately, even if such measures prove useful, there will still be a small minority of older drivers who are no longer safe to drive. By identifying this minority as early as possible, the program will help protect the reputation, public image and rights of the majority of older drivers who represent the safest and most experienced drivers on the road.

Another very important **goal** of CanDRIVE is to develop a screening tool that will allow clinicians to identify which older drivers, for whatever reason, are unsafe to continue operating a motor vehicle or require more in-depth evaluation.

CanDRIVE - Conducting Research, Influencing Policy, Changing Practice

CanDRIVE Partnerships

- **CARP – Canadian Association of Fifty Plus**
- **FSNA – Federal Superannuates National Association**
- **Ontario Ministry of Transportation (formal endorsement)**
- **CCMTA – Canadian Council of Motor Transportation Administrators (formal endorsement)**
- **Ontario Neurotrauma Foundation**
- **SMARTRISK**
- **CAA**
- **Ontario Seniors' Secretariat**
- **Transportation Injury Research Foundation**
- **AUTO21**
- **City of Ottawa**
- **Ontario Medical Association**
- **Ontario Safety Council**
- **The Co-operators Insurance**

CanDRIVE Research

- 64 Peer reviewed papers (published or in press)
- 181 local/national/international scientific and educational presentations

CanDRIVE Research

- A CIHR-funded and Ministry of Transportation Ontario (MTO)-partnered pilot study as a precursor to a multi-centre prospective cohort study (CASADS, see below) (Marshall, Stiell, Man-Son-Hing);
- A CIHR-funded Consensus Conference that identified Key Components of a Comprehensive Driving Evaluation (Korner-Bitensky, Gélinas, Marshall, Man-Son-Hing);
- A CIHR-funded study determining the Metric Properties of a Driving Simulator for the Assessment of Driving for People with Alzheimer's (Vanier, Gélinas, Man-Son-Hing);
- A CIHR-funded study Quantifying Mobility in Older Adults. (Porter, Bédard, Myers, Tuokko);
- An Alzheimer Society-funded trial to determine the efficacy of a support intervention for older persons who have lost their license (B. Dobbs, A. Dobbs);
- A Physicians' Service Incorporated Foundation-funded case-control study to identify risk factors for crashes in older persons (Man-Son-Hing, Marshall, Finestone);
- A Canadian Stroke Network-funded study evaluating Driving after Stroke: Validity and Reliability of a Driving Stimulator (Vanier, Gélinas, Mazer, A. Dobbs, Audet);
- An AUTO21-funded randomized controlled trial of the efficacy of the 55 Alive training program (Bédard, Polgar, Marshall, Porter);
- An Ontario Neurotrauma Foundation-funded evaluation of the validity and reliability of computerized monitoring of driving exposure (Marshall, Man-Son-Hing, Wilson, Blair); and
- A Réseau Provincial de Recherche en Adaption-réadaptation-funded study determining the Test-Retest Reliability of the DriveABLE (Korner-Bitensky, Gélinas, Man-Son-Hing).

CanDRIVE Research

- **Education and Mentorship**
 - CanDRIVE members actively involved in revision of the Canadian Medical Association Physicians' Guide to Determining Medical Fitness to Drive
 - 2006 Canadian Consensus Conference on Dementia
 - To date CanDRIVE bursary program has supported
 - 1 PhD candidate
 - 6 Master's candidates
 - 10 Summer students

CanDRIVE

- **Other activities**
 - **Transport Canada**
 - Donation of simulator
 - Thanks to Brian Jonah, Paul Boase and Peter Burns
 - **Second Scientific Conference Jan 21-22, 2005 in Ottawa**
 - Keynote speakers: Peter Kissinger and Bella Dihn-Zarr (AAA Foundation) and Peter Frise (AUTO21)
 - **Consensus conference**
 - Key components of a comprehensive driving evaluation – Edmonton, May 2004 (funder: CIHR)
 - **Establishment of web-searchable driving research database (www.CanDRIVE.ca)**
 - >1400 articles in hard copy
 - **Bursary program**
 - Salary support for 1 PHD, 5 MSc and 7 summer students

CanDRIVE

Major Objective

To develop a screening tool that will allow clinicians to identify older persons with health-related reasons that make them unsafe to drive

- All available tools and guidelines: based on consensus, not scientific evidence
- Most scientifically valid method:
 - Identify a representative cohort of drivers
 - Measure and re-measure their pertinent demographic, medical, cognitive, behavioral and driving characteristics
 - Follow them to the ultimate outcome of crash

Canadian Safe Driving Pilot Study

- 100 drivers age 70 or greater followed for 1 Year in Ottawa
 - Pilot study supports feasibility of completing a large prospective cohort study to develop a risk stratification tool based on at-fault crash as outcome
 - Successful recruitment is possible with endorsement from organizations representing older drivers
 - Driving exposure is best obtained with electronic monitoring devices

CIHR CanDRIVE II

- Proposal to Canadian Institutes of Health Research for a CIHR Team Grant
- Funding period 2007-2012
- Team Grants aim to fund research that require a team approach to answer complex questions

AIM of CanDRIVE II

The **overall goal** is to enhance the safety and quality-of-life of Canada's older drivers

CIHR CanDRIVE II Objectives

1. *To develop and implement into standard clinical practice a methodologically sound, empirically-based, easy-to-use **clinical decision rule** (screening tool) that will allow practitioners to identify older drivers with medical conditions who are unsafe to continue operating a motor vehicle.*

CIHR CanDRIVE II Objectives

2. ***Formation of collaborative research partnerships amongst researchers and agencies** interested in health-related safety, quality-of-life and independence issues related to driving in older persons.*
3. *To identify, analyze and address the **psychosocial, cultural, societal, legal, technological, health care resources and political aspects** of ensuring the safety and quality-of-life of older drivers.*
4. *To **provide training and mentorship** for the next generation of researchers.*

The Canadian Safe Driving Study (CASADS)

- This prospective study will serve as the core study of the CIHR CanDRIVE II Team Grant
- Primary Objective:
 - To develop a risk stratification tool for health care professionals to identify drivers who are at increased risk for at-fault crash

The Canadian Safe Driving Study (CASADS)

- **Co-Team Leaders and Co-Principal Investigators**
- Malcolm Man-Son-Hing MD MSc FRCPC (Geriatric Medicine/Epidemiology, University of Ottawa)
- Shawn Marshall MD MSc FRCPC (Physical Medicine and Rehabilitation/Epidemiology, U. of Ottawa)
- **Co-investigators**
- Michel Bédard PhD (Psychology, Lakehead University)
- Paul Boase (Chief, Road Safety, Transport Canada)
- Anna Byszewski MD FRCPC (Geriatric Medicine, University of Ottawa)
- Larry Chambers PhD (Epidemiology, University of Ottawa)
- Ann Cranney MD MSc FRCPC (Rheumatology/Epidemiology, University of Ottawa)
- Allen Dobbs PhD (Psychology, University of Alberta)
- Bonnie Dobbs PhD (Gerontology [Psychology, Medicine, and Human Ecology], University of Alberta)
- Hillel Finestone MD FRCPC (Physical Medicine/Rehabilitation, University of Ottawa)
- Sylvain Gagnon PhD (Psychology, University of Ottawa)
- Isabelle Gélinas PhD (Occupational Therapy, McGill University)
- Nicol Korner-Bitensky PhD (Occupational Therapy, McGill University)
- Barbara Mazer PhD (Occupational Therapy, McGill University)
- Anita Myers PhD (Health Studies & Gerontology, University of Waterloo)
- Gary Naglie MD FRCPC (Geriatric Medicine, University of Toronto)
- Jan Polgar PhD (Occupational Therapy, University of Western Ontario)
- Michelle Porter PhD (Psychology, University of Manitoba)
- Mark Rapaport MD FRCPC (Psychiatry, University of Toronto)
- Ian Stiell MD MSc FRCPC (Emergency Medicine/Epidemiology University of Ottawa)
- Holly Toukko PhD (Psychology, University of Victoria)
- Marie Vanier PhD (Psychology, University of Montreal)
- Keith Wilson PhD (Psychology, University of Ottawa)

The Canadian Safe Driving Study (CASADS)

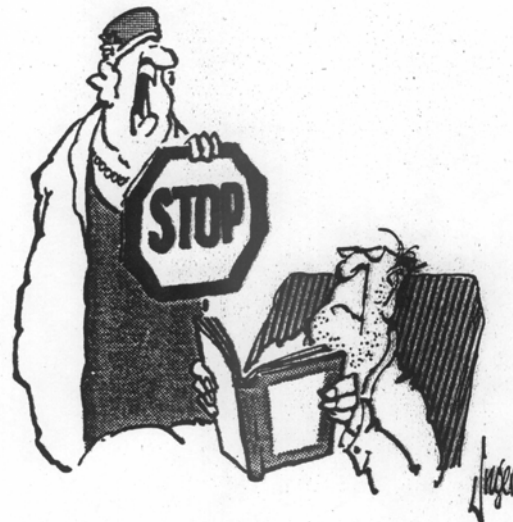
- 1500 drivers aged 75 and older
- Multiple sites including Ottawa, Toronto, Thunder Bay, Montreal, Edmonton and Vancouver/ Victoria (4 provinces)
- Followed prospectively for 5 years
- Annual comprehensive clinical assessments
- Primary Outcome of police reported at-fault crash

The Canadian Safe Driving Study (CASADS)

- CASADS Sub Studies
 - Will answer important older driver research and policy questions
 - CASADS infrastructure will allow completion of these studies which would otherwise not likely be completed

CASADS Sub Studies

- Older Driver Driving Patterns (Porter)
 - Electronic data logging devices with GPS
- Voluntary Driving Cessation and Driving Restriction (B. Dobbs, Tuokko, Myers)
- Driving Simulator Prediction of Driving ability and Correlation with actual driving habits (Gagnon, Vanier, Bédard)
- Comprehensive On-Road Driver Examination prediction of driving ability and correlation with actual driving habits (Korner-Bitensky, Gélinas, Mazer)
- Predictors of driving ability for specific medical diagnostic sub-groups of Dementia, Arthritis, Stroke and impaired vision (Byszewski, Rapoport, Finestone, Cranney, Naglie)
- Evaluation of New Safety Measures Targeting Older Drivers (B. Dobbs and A. Dobbs)
- On-Road Driving Assessment and Crash Outcomes (A. Dobbs, B. Dobbs, & I. Gillespie)



"What's the big idea sticking this on the back wall of the garage?"