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Cognition in the Canadian Longitudinal Study on Aging

Holly Tuokko, Lauren Griffith, Helena Kadlec, Megan O'Connell, Martine Simard, Vanessa Taler, & Stacey Voll

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Étude longitudinale canadienne sur le vieillissement

Cognition

- What is cognition?
- What are the implications of a change in cognitive functioning?

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Depth and Breadth of CLSA

PHYSICAL & COGNITIVE MEASUREMENTS

- Height & weight
- Waist and hip measurements
- Blood pressure
- Grip strength, timed up-and-go, chair raise, 4-m walk
- Standing balance
- Vision (retinal imaging, tonometer & visual acuity)
- Hearing (audiometer)
- Spirometry
- Body composition (DEXA)
- Bone density (DEXA)
- Aortic calcification (DEXA)
- ECG
- Carotid intima-media thickness (ultrasound)
- **Cognitive assessment (30-minute battery)**
- Biospecimen collection (blood and urine)

HEALTH INFORMATION

- Chronic disease symptoms (11 chronic conditions)
- Medication and supplement intake & compliance
- Women's health
- Self-reported health-care utilization
- Oral health
- Administrative data linkage health services, drugs and other administrative databases

PSYCHOSOCIAL

- Social participation
- Social networks and support
- Caregiving and care receiving
- Mood, psychological distress
- PTSD
- Injuries and consumer products
- Work-to-retirement transitions
- Personality traits
- Retirement planning
- Social inequalities
- Mobility-lifespace
- Built environments and contextual factors
- Income, wealth and assets

LIFESTYLE & SOCIODEMOGRAPHIC

- Smoking
- Alcohol consumption
- Physical activity (PASE)
- Nutrition (nutrition risk and food frequency)
- Ethnicity/race/gender
- Birth location
- Marital status
- Education

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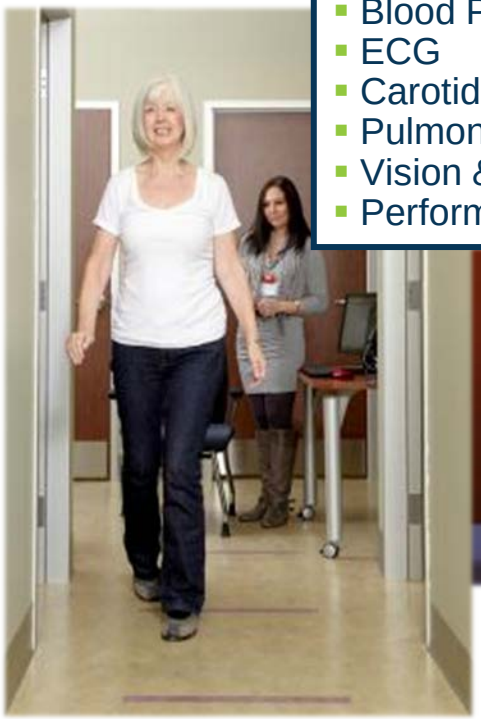
CLSA Data Collection

Data Collection Site

Physical Assessments:
- Height, Weight, BMI
- Bone Density, Body Composition, Aortic Calcification
- Blood Pressure
- ECG
- Carotid Intimal-Medial Thickness
- Pulmonary Function
- Vision & Hearing
- Performance testing



Biospecimen Collection:
- Blood
- Urine

Cognitive Assessments:
- **Neuropsychological Battery**
  - **Memory**
  - **Executive function**
  - **Reaction time**

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Our Team

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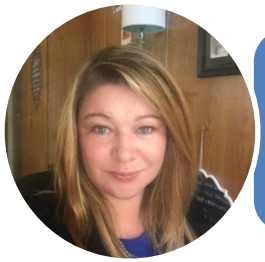

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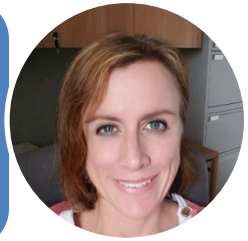

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Funding to examine cognitive data

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- Examine how Canadians typically perform on measures of cognitive functioning
- Understand the health and lifestyle factors that affect cognitive functions
- Develop Canadian comparison standards

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- Create computer algorithms and other tools for interpretation that can be used by health providers in clinical practice;

- Lay the foundation for refinement of this information when longitudinal data becomes available.

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Why are Canadian comparison standards needed?

- Existing normative standards based on non-Canadian samples
- Existing normative standards may be outdated
- Existing normative standards for measures may not cover the full spectrum of ages from mid-life to later life

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Why are Canadian comparison standards needed?

- Existing normative standards may not take into consideration important health and lifestyle factors
- Existing normative standards may be available for individual measures only

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The plan

- Select a neurologically healthy subsample
- Examine performance on each measure
  - Remove impossible scores
- Describe performance on each measure to identify possible important influences (e.g., age, sex, educational attainment, language, hearing, vision, etc)
- Characterize each measure taking into account important influences

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The plan, continued

- Combine the measures to minimize over-identification of poor performances and increase specificity as to typical performances
- Propose user-friendly tools for interpretation that can be used by health providers in clinical practice

The plan, continued

- Consult with health providers in clinical practice and researchers concerning the adequacy of our methods and tools
- Rework tools to address concerns and maximize their utility for easy access by clinicians and researchers

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Findings to date

- Comparisons with other studies
- Do medical conditions affect scores on measures of cognition?
- Remembering to remember

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Findings to date

- Comparisons with smaller studies
- Do medical conditions affect scores on measures of cognition?
- Remembering to remember

Ongoing Research

- Continue this line of investigation to:
  - Develop Canadian comparison standards;
  - Create computer algorithms and other tools for interpretation that can be used by researchers and health providers in clinical practice;
  - Lay the foundation for refinement of this information when longitudinal data becomes available.

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Thank you for supporting our research to benefit all Canadians!

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