Transforming Everyday Life into Extraordinary Ideas
Canadian Longitudinal Study on Aging: A Platform for Interdisciplinary Research

Lauren Griffith, PhD
Istvan Molnar-Szakacs, PhD
Mark Oremus, PhD

Canadian Society for Epidemiology and Biostatistics Meeting
Banff, Alberta
May 31, 2017
Talk Outline

• CLSA Study Design and Methodology (LG)

• Accessing CLSA Data (IMS)

• CLSA Projects: Perspectives from data users (MO+LG)
What is the Canadian Longitudinal Study on Aging (CLSA)?

“The Canadian Longitudinal Study on Aging is the largest most comprehensive research platform and infrastructure available for aging research with longitudinal data that will span 20 years from over 50,000 Canadians over the age of 45”

A research platform – infrastructure to enable state-of-the-art, interdisciplinary population-based research and evidenced-based decision-making that will lead to better health and quality of life for Canadians
51,338 women and men aged 45 - 85 at baseline

Tracking (21,241) Randomly selected 10 provinces

Comprehensive (30,097) Randomly selected 25-50 km of 11 sites in 7 provinces

Questionnaire • By telephone Interviews

Questionnaire In home Interviews And Physical Assessments Blood, Urine • At Data Collection Site

20 year study: Full follow up every 3 years, maintaining contact in between

Data Linkage with health care, mortality and disease registries
Exclusion Criteria at Baseline

1. Residents of the 3 territories
   - i.e. Northwest Territories, Nunavut, Yukon
2. Living in an institution
3. Living on a First Nation Reserve
4. Full time members of the armed forces
5. Temporary visa holders

CLSA Added Criteria
- Cognitively impaired
- Unable to communicate in French or English

1 to 5 exclude <4% of the target population
Recruitment & Data Collection

Telephone Interviews

- Recruitment of 21,241 participants for telephone interviews:
  - Statistics Canada CCHS on Healthy Aging
  - Provincial Health Care Registries
  - Random Digit Dialing

- Baseline data collection is completed!
- Data are now available to research community
- Maintaining contact interviews initiated in 2013 (completed in early 2016, retention rate 95%)
- First follow-up began 2015 and will be completed in late summer of 2018
Recruitment & Data Collection
Home Interviews and Data Collection Site Visits

- Recruitment of 30,097 for Home Interviews and Data Collection Site Visits:
  - Provincial Health Care Registries
  - Random Digit Dialing
- Baseline data collection 2012 to 2015: Data collection completed
- Data are now available to the research community
- Maintaining Contact Interviews initiated in 2014 (completed, retention rate 96%)
- First follow-up began 2015 and will be completed in mid-summer of 2018
CLSA Questionnaire modules
All 51,338 participants

Demographic/Lifestyle
- Age
- Gender
- Education
- Marital status
- Sexual orientation
- Language
- Ethnicity
- Wealth/income
- Veteran Identifier
- Smoking, alcohol
- Nutritional risk
- Physical activity
- Health care utilization
- Medication use
- Supplement use

Health
- General health
- Women’s health
- Chronic conditions
- Disease symptoms
- Sleep
- Oral health
- Injuries, falls
- Mobility
- Pain, discomfort
- Functional status
- ADL, IADL
- Cognition
- Depression
- PTSD
- Life Satisfaction
- Nutritional Risk

Social
- Social networks
- Support
- Participation
- Inequality
- Online communication
- Care receiving
- Care giving
- Retirement status
- Labour force participation
- Retirement planning
- Transportation
- Mobility, Migration
- Built environments
- Home ownership
CLSA Data Collection

Data Collection Site

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

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

Biospecimen Collection:
- Blood
- Urine
Biospecimens
42 aliquots per participant
### Biomarker data in the CLSA

<table>
<thead>
<tr>
<th>Data Collection Sites</th>
<th>30,000</th>
<th>10,000</th>
<th>2,000</th>
<th>1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hematology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Collection Sites</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calgary Laboratory Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Albumin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Alanine Aminotransferase</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Creatinine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ferritin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Free T4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hemoglobin A1c</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• C-reactive protein</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cholesterol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Genome-wide Genotyping</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McGill University and Génome Québec</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• DNA extracted on all 30,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 820K UK Biobank Axiom Array (Affymetrix)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DNA Methylation Profiling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UBC Genetics and Epigenetics Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• PBMCs used for DNA extraction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 850K Infinium MethylationEPIC BeadChip (Illumina)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metabolomics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kyoto, Japan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Mass spectrometry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Also increasing the sample size for Epigenetics to make this a largest resource at the population level**
CLSA Data Available on Chronic Diseases:

- Diabetes
- Chronic Airway Obstruction
- Parkinsonism
- Ischemic Heart Disease
- Stroke/Cerebrovascular Event
- Hypertension
- Depression
- Hyperthyroidism/Hypothyroidism
- Osteoarthritis of the Hand
- Osteoarthritis of the Hip
- Osteoarthritis of the Knee
- Osteoporosis
- Over 40 Self-Reported Chronic Conditions
CLSA Infrastructure

4 Enabling Units

National Coordinating Centre (NCC)
Director: Parminder Raina

Biorepository and Bioanalysis Centre (BBC)
Director: Cynthia Balion

Genetics and Epigenetics Centre (GEC)
Directors: Michael Kobor and Michael Hayden

Statistical Analysis Centre (SAC)
Director: Christina Wolfson
## Demographic Characteristics of the CLSA Participants

<table>
<thead>
<tr>
<th></th>
<th>Tracking N=21,241</th>
<th>Comprehensive N=30,097</th>
<th>Total N=51,338</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-54</td>
<td>5832 (27.5)</td>
<td>7595 (25.2)</td>
<td>13427 (26.2)</td>
</tr>
<tr>
<td>55-64</td>
<td>6564 (30.9)</td>
<td>9856 (32.7)</td>
<td>16420 (32.0)</td>
</tr>
<tr>
<td>65-74</td>
<td>4634 (21.8)</td>
<td>7362 (24.5)</td>
<td>11996 (23.4)</td>
</tr>
<tr>
<td>75-85</td>
<td>4211 (19.8)</td>
<td>5284 (17.6)</td>
<td>9495 (18.5)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10835 (51.0)</td>
<td>15320 (50.9)</td>
<td>26155 (50.9)</td>
</tr>
<tr>
<td>Male</td>
<td>10406 (49.0)</td>
<td>14777 (49.1)</td>
<td>25183 (49.1)</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>17483 (82.3)</td>
<td>24291 (80.7)</td>
<td>41774 (81.4)</td>
</tr>
<tr>
<td>French</td>
<td>3758 (17.7)</td>
<td>5806 (19.3)</td>
<td>9564 (18.6)</td>
</tr>
<tr>
<td>Born in Canada</td>
<td>18513 (87.2)</td>
<td>24644 (81.9)</td>
<td>43099 (84.0)</td>
</tr>
</tbody>
</table>
### Social Participation and Loneliness by Age & Gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total % (age 45-85)</th>
<th>Age 65+ %</th>
<th>Males Age 65+ %</th>
<th>Females Age 65+ %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire to participate in more activities (Yes)</td>
<td>41.7</td>
<td>31.7</td>
<td>29.7</td>
<td>33.5</td>
</tr>
<tr>
<td>How often participant feels lonely (Sometimes or more)</td>
<td>22.7</td>
<td>23.7</td>
<td>19.1</td>
<td>28.5</td>
</tr>
</tbody>
</table>

### Community-related Activities by Age & Gender

<table>
<thead>
<tr>
<th>Frequency of any community-related activity participation</th>
<th>Total % (age 45-85)</th>
<th>Age 65+ %</th>
<th>Males Age 65+ %</th>
<th>Females Age 65+ %</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least once per day (daily)</td>
<td>15.5</td>
<td>16.1</td>
<td>16.3</td>
<td>16.0</td>
</tr>
<tr>
<td>At least once per week (weekly)</td>
<td>66.6</td>
<td>67.8</td>
<td>65.6</td>
<td>69.7</td>
</tr>
<tr>
<td>At least once per month or less (monthly or less)</td>
<td>17.9</td>
<td>16.3</td>
<td>18.2</td>
<td>14.3</td>
</tr>
</tbody>
</table>
## Social Participation Types by Age & Gender

<table>
<thead>
<tr>
<th>Frequency of participation in past 12 months</th>
<th>Total % (age 45-85)</th>
<th>Age 65+ %</th>
<th>Males Age 65+ %</th>
<th>Females Age 65+ %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports or physical activities with others</td>
<td>50.3</td>
<td>47.9</td>
<td>47.3</td>
<td>48.5</td>
</tr>
<tr>
<td>Family/friends activities outside household</td>
<td>50.2</td>
<td>46.2</td>
<td>47.0</td>
<td>52.9</td>
</tr>
<tr>
<td>Religious activities</td>
<td>22.4</td>
<td>32.3</td>
<td>28.2</td>
<td>35.9</td>
</tr>
<tr>
<td>Volunteer or charity work</td>
<td>16.9</td>
<td>22.1</td>
<td>18.1</td>
<td>25.7</td>
</tr>
<tr>
<td>Educational or cultural activities</td>
<td>10.3</td>
<td>11.6</td>
<td>10.1</td>
<td>12.9</td>
</tr>
<tr>
<td>Neighbourhood, community or social association activities</td>
<td>8.3</td>
<td>10.9</td>
<td>8.5</td>
<td>12.7</td>
</tr>
<tr>
<td>Service clubs or fraternal organization activities</td>
<td>5.2</td>
<td>7.2</td>
<td>7.5</td>
<td>6.8</td>
</tr>
</tbody>
</table>
### Perceived Barriers to Social Participation, by Age & Gender

<table>
<thead>
<tr>
<th>Reason(s) preventing more participation</th>
<th>Total % (age 45-85)</th>
<th>Age 65+ %</th>
<th>Males Age 65+ %</th>
<th>Females Age 65+ %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too busy</td>
<td>51.7</td>
<td>31.4</td>
<td>33.3</td>
<td>28.3</td>
</tr>
<tr>
<td>Health condition/limitation</td>
<td>15.9</td>
<td>23.2</td>
<td>20.4</td>
<td>25.3</td>
</tr>
<tr>
<td>Personal responsibilities</td>
<td>15.8</td>
<td>14.1</td>
<td>10.8</td>
<td>16.7</td>
</tr>
<tr>
<td>Going alone</td>
<td>10.2</td>
<td>12.2</td>
<td>12.0</td>
<td>12.5</td>
</tr>
<tr>
<td>Cost</td>
<td>8.7</td>
<td>7.4</td>
<td>7.9</td>
<td>7.0</td>
</tr>
<tr>
<td>Lack of activities in area</td>
<td>7.8</td>
<td>9.0</td>
<td>8.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Transportation problems</td>
<td>3.5</td>
<td>5.3</td>
<td>2.3</td>
<td>7.5</td>
</tr>
<tr>
<td>Location accessibility</td>
<td>1.4</td>
<td>1.8</td>
<td>1.2</td>
<td>2.4</td>
</tr>
<tr>
<td>Language reasons</td>
<td>0.4</td>
<td>0.6</td>
<td>0.7</td>
<td>0.5</td>
</tr>
</tbody>
</table>
## Retirement Status

<table>
<thead>
<tr>
<th>Retirement Status</th>
<th>45-64</th>
<th>65-85</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Completely Retired</td>
<td>19.6%</td>
<td>25.3%</td>
</tr>
<tr>
<td>Partly Retired</td>
<td>10.5%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Not Retired</td>
<td>69.9%</td>
<td>65.3%</td>
</tr>
<tr>
<td>Retired and Returned to Work</td>
<td>9.6%</td>
<td>8.1%</td>
</tr>
</tbody>
</table>

**Of those retired:**

- **Voluntary Retirement**
  
  n = 9,633 (78.7%)

- **Health/Disability/Stress contributed to decision to retire**
  
  n = 2,922 (23.5%)
# Prevalence of Chronic Diseases (%) in the CLSA by Age and Sex (n=51,338)

## Males (n=25,183)

<table>
<thead>
<tr>
<th>Disease</th>
<th>45-54</th>
<th>55-64</th>
<th>65-74</th>
<th>75-89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>13.3</td>
<td>13.9</td>
<td>12.7</td>
<td>14.1</td>
</tr>
<tr>
<td>Arthritis</td>
<td>18.4</td>
<td>29.7</td>
<td>36.5</td>
<td>42.0</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>1.1</td>
<td>2.4</td>
<td>4.2</td>
<td>5.4</td>
</tr>
<tr>
<td>HBP</td>
<td>20.8</td>
<td>36.4</td>
<td>48.5</td>
<td>54.0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>10.0</td>
<td>17.7</td>
<td>23.0</td>
<td>25.9</td>
</tr>
<tr>
<td>CVD</td>
<td>5.6</td>
<td>13.3</td>
<td>23.4</td>
<td>33.4</td>
</tr>
<tr>
<td>Cancer</td>
<td>5.2</td>
<td>10.7</td>
<td>18.8</td>
<td>30.2</td>
</tr>
<tr>
<td>GI</td>
<td>11.0</td>
<td>11.0</td>
<td>13.8</td>
<td>13.3</td>
</tr>
<tr>
<td>Stroke or CVA</td>
<td>0.8</td>
<td>1.4</td>
<td>2.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>1.4</td>
<td>3.1</td>
<td>6.9</td>
<td>12.5</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>0.8</td>
<td>3.0</td>
<td>6.4</td>
<td>9.3</td>
</tr>
<tr>
<td>Mood/Anxiety</td>
<td>17.8</td>
<td>16.4</td>
<td>12.3</td>
<td>7.7</td>
</tr>
</tbody>
</table>

## Females (n=26,155)

<table>
<thead>
<tr>
<th>Disease</th>
<th>45-54</th>
<th>55-64</th>
<th>65-74</th>
<th>75-89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>16.5</td>
<td>17.9</td>
<td>17.5</td>
<td>17.2</td>
</tr>
<tr>
<td>Arthritis</td>
<td>24.9</td>
<td>42.7</td>
<td>51.9</td>
<td>57.9</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>4.5</td>
<td>13.0</td>
<td>23.2</td>
<td>30.0</td>
</tr>
<tr>
<td>HBP</td>
<td>16.7</td>
<td>30.7</td>
<td>45.6</td>
<td>59.0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>9.4</td>
<td>14.5</td>
<td>17.3</td>
<td>18.2</td>
</tr>
<tr>
<td>CVD</td>
<td>3.6</td>
<td>7.3</td>
<td>13.1</td>
<td>21.5</td>
</tr>
<tr>
<td>Cancer</td>
<td>8.4</td>
<td>14.2</td>
<td>19.9</td>
<td>22.7</td>
</tr>
<tr>
<td>GI</td>
<td>14.1</td>
<td>16.0</td>
<td>17.4</td>
<td>18.5</td>
</tr>
<tr>
<td>Stroke or CVA</td>
<td>0.4</td>
<td>1.3</td>
<td>1.7</td>
<td>2.9</td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>7.8</td>
<td>10.5</td>
<td>13.4</td>
<td>18.4</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>1.5</td>
<td>2.8</td>
<td>6.0</td>
<td>11.3</td>
</tr>
<tr>
<td>Mood/Anxiety</td>
<td>24.9</td>
<td>26.9</td>
<td>20.4</td>
<td>14.5</td>
</tr>
</tbody>
</table>

*Ranking*
Number of Chronic Condition in the CLSA by Age and Sex (n=51,338)

Broad inclusion of CCs
CLSA Funders and Partners
Questions?
Data Access in the CLSA: We’re open for research!

Istvan Molnar-Szakacs, PhD
Data Access Officer
Canadian Longitudinal Study on Aging
Did you know?

- 20 years
- 26 Canadian universities
- 160 collaborators
- 51,338 participants
- 140,000 telephone interviews
- 210,000 home interviews
- 5 million bio-specimen aliquots
- 126 million questions asked during telephone interviews
- 300 million anticipated data points that will form the CLSA research platform
What data are available?

• The CLSA platform includes data on health status, diseases, cognition, psychological well-being and mental health, social well-being, economic aspects of aging, physical assessments and blood-based biological markers.

• The Baseline alphanumeric dataset is currently available, including:
  • Questionnaire data on all 51,338 participants
  • Comprehensive physical assessment data and basic haematology results on approximately 30,000 participants

• Biospecimen availability is planned for 2018.

• Follow-up 1 is currently under way. Follow-up data collection events will be repeated every three years for 20 years.
How to access CLSA data?

- What are the principles of data access?
  - Privacy, Security & Benefit to All

- Who can apply?
  - Researchers
  - Graduate students & Post-doctoral fellows

- How do I apply?
  - Application paper-based
  - Available for download on our website: www.clsa-elcv.ca
Components of the Application – Part 1:

- Project Team
- Lay Summary
- Project Description (3 pages)
- Timeline
- Ethics Approval
- Scientific Review
- Fee Waiver
- Signatures
## CLSA Data Checklist – Part 2

<table>
<thead>
<tr>
<th>Interview module</th>
<th>Tracking</th>
<th>Comprehensive</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Module de l'entrevue</em></td>
<td><em>(Telephone Interview)</em></td>
<td><em>(Face-to-face Interview)</em></td>
</tr>
<tr>
<td><em>Évaluation de surveillance</em></td>
<td><em>(Entrevue téléphonique)</em></td>
<td><em>(In-home or DCS visit)</em></td>
</tr>
<tr>
<td><strong>Medications / Médicaments (MEDI)</strong></td>
<td>Not applicable / Ne s'applique pas</td>
<td>Not yet available / Pas encore disponible</td>
</tr>
<tr>
<td><strong>Functional Status / Capacités fonctionnelles (FUL)</strong></td>
<td></td>
<td>N = 137 (DCS by telephone / DCS par téléphone)²</td>
</tr>
<tr>
<td><strong>Life Space Index / Évaluation de l'aire de mobilité (LSI)</strong></td>
<td>Not applicable / Ne s'applique pas</td>
<td></td>
</tr>
<tr>
<td><strong>Sleep / Sommatisation (SLE)</strong></td>
<td>Not applicable / Ne s'applique pas</td>
<td></td>
</tr>
<tr>
<td><strong>Basic Activities of Daily Living / Activités de base de la vie quotidienne (ADL)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Instrumental Activities of Daily Living / Activités instrumentales de la vie quotidienne (IAL)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cognition – metadata &amp; scores / Cognition – métadonnées et cotation (COG)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>REYI / REYI</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Animal Fluency Test / Test de fluence (animaux)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mental Alternation Test / Test d’alternance mentale</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data Access Timeline

- Submission
  - Administrative & Statistical Review: 6-9 weeks
  - Access Agreement Signed; Ethics Approval; Variable Time Frame
    - DSA Committee Review: Up to 12 weeks
  - Dataset Preparation & Release: 5-7 days
  - Monitoring (CLSA) - Annual Report: 1 year

- Plan on receiving data 6 months after submission deadline
Data Access Fees

• Costing (Alphanumeric Data)
  • Partial Cost Recovery Model
  • $3,000 for a prepared raw alphanumeric dataset
  • Graduate student - No cost for dataset to be used solely for thesis research
  • Postdoctoral fellow – No cost for one dataset to be used solely for the postdoctoral project

• Biospecimen Costing
  • In development
What do you get?

- Alphanumeric data on all 51,338 participants
- Additional raw data on certain variables may be requested (cognition, ECG, spirometry, etc.)
- De-identified open text for selected variables
- Sampling weights
- Additional data (i.e. linked Air Pollution, Meteorological data, Forward Sortation Areas) may be requested
Data Access – Resources for Researchers
www.clsa-elcv.ca
Information for Researchers

Researchers

The CLSA provides documents online to facilitate understanding of the study and how we are gathering and managing the data.

Protocols

CLSA Protocol – Executive Summary
CLSA Protocol – Full Study Design and Baseline (2008)
CLSA Protocol – First Follow-up (2015)

The protocols listed are based on the applications CLSA submits to CIHR for each funding cycle. As the CLSA data collection progresses, occasionally, some measurements are changed. Updated versions of the protocols will be posted as necessary. Please refer to the Data Collection Tools section to review the specific questions and measurements gathered at each phase of the study.

Data Collection Tools

Over the course of 20 years, the CLSA will be conducting full data collection every three years. At each major data collection event, the questionnaires and physical assessments remain largely the same for consistency, but there will be some additions to the data collection to further enhance the CLSA platform.

Physical Assessments

To ensure that physical assessment data are collected, processed, and stored in a consistent, professional, and structured manner at all CLSA sites across the country, Standard Operating Procedures (SOPs) help maintain the integrity of the data collection and data management.
Tools for Researchers

Data Collection Tools

Below are links to all of the questionnaires used by CLSA since it began data collection in 2011. Among the more than 51,000 participants in the study, data are collected from more than 21,000 people through telephone interviews only, also referred to as the tracking assessment. The remaining 30,000+ participants provide data through in-home interviews and data collection site visits, also referred to as the comprehensive assessment. All participants are also contacted 18 months after each full telephone or in-home interview to maintain contact. During the Baseline phase of data collection, this interview was known as the Maintaining Contact Questionnaire (MCQ), and included some additional data collection:

Baseline

- Telephone interview - (60 minutes, data collected from September 2011 to May 2014)
- Telephone interview - (30 minutes, data collected from September 2013 to December 2015)
- In-home, face-to-face interview - (90 minutes, data collected from May 2012 to May 2015)
- Data Collection Site visit interview - (2.5 hours, May 2012 to May 2015, including Contraindications, Neuropsychological Battery and Disease Symptoms)
Data Preview Portal

SMART TIPS

- Click the 'Help' button on the right to see a step-by-step guide to using the DPP
- Use the main Search Bar on this page to search for predetermined Areas of Information or Scales only
- For a more detailed search, select 'Variable Properties' under the 'Variable' tab on the left. Expand 'Name' and 'Label' to view search boxes for Variable Names and Variable Labels

<table>
<thead>
<tr>
<th>Variable</th>
<th>Dataset</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Variable properties</td>
<td></td>
</tr>
<tr>
<td>&gt; Additional information</td>
<td></td>
</tr>
<tr>
<td>▼ Areas of Information</td>
<td></td>
</tr>
<tr>
<td>▼ Socio-demographic and economic characteristics</td>
<td></td>
</tr>
<tr>
<td>▼ Lifestyle and health behaviours</td>
<td></td>
</tr>
<tr>
<td>▼ Health status and functional limitations</td>
<td></td>
</tr>
<tr>
<td>▼ Diseases</td>
<td></td>
</tr>
<tr>
<td>▼ Symptoms and signs</td>
<td></td>
</tr>
<tr>
<td>▼ Medication and supplements</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Label</th>
<th>Dataset</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLS_CONDNEG_COM</td>
<td>SWLS scale: Disagree life conditions excellent</td>
<td>COM</td>
</tr>
<tr>
<td>SLS_CONDNEG_TRM</td>
<td>SWLS scale: Disagree life conditions excellent</td>
<td>TRM</td>
</tr>
<tr>
<td>SLS_CONDPOS_COM</td>
<td>SWLS scale: Agree life conditions excellent</td>
<td>COM</td>
</tr>
<tr>
<td>SLS_CONDPOS_TRM</td>
<td>SWLS scale: Agree life conditions excellent</td>
<td>TRM</td>
</tr>
<tr>
<td>SLS_COND_COM</td>
<td>SWLS scale: Life conditions excellent</td>
<td>COM</td>
</tr>
</tbody>
</table>
Need More Information?

Still have questions?
Email us:
access@clsa-elcv.ca
We’re Open for Research!

• The CLSA platform is up and running
• Baseline data and biospecimens have been collected
• Alphanumeric data from questionnaires, physical assessments and basic haematology results on 51,338 participants from across Canada are now available
  • These data are free for student thesis research and for postdoctoral fellow projects
Questions?

(Come see us at the Exhibitor Booths!)
CLSA Projects: Perspectives from data users

Lauren Griffith, PhD  
McMaster University

Mark Oremus, PhD  
University of Waterloo
Who has applied for data?

Approved Projects Cluster by City:
- Hamilton: 15
- Winnipeg: 8
- Montreal: 8
- Halifax: 6
Selected Approved Projects 2016

- A Comparison of Functional Status in Rural and Urban Community Dwelling Older Adults
  University of Saskatchewan

- Accumulation of Health Deficits Frailty Index in Wave 1 of the CLSA
  Dalhousie University

- Understanding inequalities and inequities in health and wellness among older Canadians
  Dalhousie University

- Factors associated with social participation and community ambulation in older adults with stroke and osteoarthritis
  University of Manitoba

- Health Profile of Francophone Seniors in Manitoba: Canadian Longitudinal Study on Aging
  Universite de Saint-Boniface

- The “Motoric Cognitive Risk” syndrome in the Canadian population: Analysis of baseline assessment of the Canadian Longitudinal Study on Aging
  McGill University

- Investigating relationships between nutrition, exercise, mood and hippocampus-dependent cognition in older adults in the Canadian Longitudinal Study on Aging
  McMaster University

- Relationship between sarcopenia and low back pain in older adults - A cross-sectional analysis of the Canadian Longitudinal Study on Aging data
  University of Ottawa
Selected Approved Projects 2016

- The early retiree divests the workforce: A quantitative analysis of early retirement among health professionals
  University of Alberta
- Long-term Exposure to Ambient Air Pollution and Effects on Cardiovascular, Respiratory and Neurocognitive Health
  Health Canada
- The clinical implications of spirometric impairment in the elderly
  McMaster University
- Association between air pollution and chronic bronchitis in two elderly populations
  Research Institute of the MUHC
- Sleep and its Covariates in the CLSA
  McGill University
- The Prevalence of Visual Impairment, its Risk Factors, and its Consequences in Canada
  University of Ottawa
- Defining age appropriate BMI cut points for the aging population
  McMaster University
- Assistive device use and its impact on social participation in Canada
  Dalhousie University
- A Multi-National Study to Understand the Upstream Risk Factors for Atrial Fibrillation
  McMaster University
- The burden of neurological disease in an older Canadian population
  Université de Montréal
Selected Approved Projects 2017

- The gender difference in vascular risk factors, early cognitive impairment and progression to dementia
  University of Calgary
- Exploring the Associations between Lung Function and Sedentary Time among Middle-Aged and Older Canadian Men and Women
  University of Ontario Institute of Technology
- What makes people live long and keep well? Advancing the science of ‘healthy aging’ through examining the lay perspectives of older adults in the Canadian Longitudinal Study on Aging (CLSA)
  Dalhousie University
- A tale of eight cities, Age Friendliness and the CLSA
  University of Ottawa
- Examining Personal and Environmental Factors Associated with Social Isolation and Loneliness Among Canadians
  University of Manitoba
- A Biopsychosocial Approach to Understanding the Impact of Osteoarthritis on Social Participation: A Population-based Study
  Krembil Research Institute
- Examining the relationship between oral health, nutrition, and frailty in older adults
  McMaster University
Questions?

&

Discussion