Understanding the complexity of Aging and Health through interdisciplinary research: The Canadian Longitudinal Study on Aging (CLSA)

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Institute Advisory Board
London, Ontario
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McMaster University
McGill
Dalhousie University
Memorial University of Newfoundland
Université de Sherbrooke
University of Victoria
British Columbia Canada
University of Calgary
University of Manitoba
uOttawa

CLSA ELCV
The Canadian Longitudinal Study on Aging (CLSA)

A key component of the Canadian Lifelong Health Initiative, a strategic initiative of CIHR

- The Canadian National Birth Cohort
- The Canadian Longitudinal Study on Aging

More than 160 researchers - 26 institutions

Multidisciplinary - biology, genetics, medicine, psychology, sociology, demography, economics, epidemiology, nursing, nutrition, health services, biostatistics, population health
Innovation - Cell to Society

- Mid life to old age
- Quantitative traits
  - Physical
  - Social
  - Psychological
- Gene-environment interactions
- Disease, disability, psychosocial consequences
- Adaptation
CLSA Architecture

Data collection on 50,000 (at 10 sites)
Questionnaire, Biological, Database linkage
Follow-up over 20 years

Every 3 years age 40-79; Every year age 80+

Inception Cohort: 50,000
In-depth data collection on 30,000 (at 10 sites)
Clinical, Biological, Database linkage
### Focus of Measurement

<table>
<thead>
<tr>
<th>Biomedical</th>
<th>Psychosocial</th>
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</thead>
<tbody>
<tr>
<td>Activities of daily living/disability/injuries</td>
<td>Lifestyle/behaviours</td>
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<tr>
<td>Frailty/co-morbidities</td>
<td>Social networks and social support</td>
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<tr>
<td>Chronic diseases</td>
<td>Values and meaning</td>
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<tr>
<td>Cognitive function</td>
<td>Everyday competence, adaptive functioning, coping</td>
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<tr>
<td>Mental Health</td>
<td>Personality, emotion, psychopathology</td>
</tr>
<tr>
<td>Oral health</td>
<td>Work to retirement transitions</td>
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<tr>
<td>Vision, hearing</td>
<td>Structural inequalities</td>
</tr>
<tr>
<td>Medications</td>
<td>Built environments/physical environment</td>
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<tr>
<td>Health Care Use</td>
<td>Economics (wealth)</td>
</tr>
<tr>
<td>Institutional care</td>
<td>Healthy aging and well being</td>
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<tr>
<td>Genetics/Biomarkers</td>
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<tr>
<td>Nutrition</td>
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UPDATE

- Phase 1 studies
- Phase 2 Proposal
- Canada Foundation for Innovation (CFI)
Phase 1 Studies and progress

- 1. Exploring the acceptability and feasibility of conducting a large longitudinal population-based study in Canada---Complete

- 2. Testing the CCHS as a potential participant recruitment vehicle for the CLSA—Complete

- 3. Feasibility of blood and urine specimen collection and OGTT in private and hospital based clinical laboratories ---ongoing

- 4. Feasibility of accessing health care utilization databases--complete

- 5. Return of individualized test results to participants and/or nominated health care providers---complete
Phase 1 Studies and progress

6. Development and evaluation of disease ascertainment algorithms ---ongoing

7. Telephone cognitive tests as tools for the identification of eligible study subjects in population based research--ongoing

8. Assessment of the logistics of data collection methods and data transfer for text material---final

9. Exploring attitudes about mental incapacity and long term participation in the CLSA Protocol ---ongoing

10. Improving the informed consent process for complex population based research: finding the optimal information strategy---ongoing
Phase II Proposal

- **Recruitment Studies**
  - Statistics Canada
  - Health Care registration databases

- **Measurement Studies**
  - Systematic review to update
  - Delphi consensus
  - Translation
  - Reliability and validity studies
  - Finalize documentation (training modules etc.)
Canada Foundation for Innovation
Application for Infrastructure
The Vision

A national network of infrastructure to enable state-of-the-art longitudinal interdisciplinary population based research across Canada

Once in place this network will support the largest interdisciplinary research project in aging conducted to date: the **Canadian Longitudinal Study on Aging**
Core National Network of Facilities

National Coordinating Centre

Manage and Coordinate; Timelines; Develop Protocols, Procedures; Training & Documentation

Operations Data / Measures / Analyses

Interim Follow Up

Operations Data

Operations

Operations

Operations Data

Biological Sample Kits

Manage and Coordinate; Timelines; Develop Protocols, Procedures

Clumber Fluids
## Highly Qualified Personnel

<table>
<thead>
<tr>
<th></th>
<th>PI’s/Faculty</th>
<th>Postdoctoral Fellows</th>
<th>Graduate Students</th>
<th>Technicians</th>
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<tbody>
<tr>
<td>2006</td>
<td>10 -RI</td>
<td>5 HCSC-RI</td>
<td>10 HCSC-RI</td>
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<td>2 Recruits</td>
<td>45 National Affiliates</td>
<td>35-45 National Affiliates</td>
<td>14 Local Affiliates</td>
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<td>(2 repatriations)</td>
<td>3 Clinical Research Fellows</td>
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<td>3-5 Other (Collaborators)</td>
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<td></td>
<td>25 Local Affiliates</td>
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<tr>
<td></td>
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<td>2008</td>
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<td></td>
<td>29 Local Affiliates</td>
<td></td>
<td>35-45 National Affiliates</td>
<td>14 Affiliates</td>
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<tr>
<td></td>
<td></td>
<td>50 National Affiliates</td>
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<td>3-5 Other (Collaborators)</td>
</tr>
<tr>
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<td>4 Clinical Research Fellows</td>
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<tr>
<td>Total HQP</td>
<td>30 – 35</td>
<td>160 - 165</td>
<td>135 - 150</td>
<td>23 - 27</td>
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</tbody>
</table>

**IMPACT:**

300+ HQP trained within 3 years with unique expertise in Aging & Population Health
Formation of a premiere national Training Facility for the Study of Aging
International Links

- Womens Health and Aging Study - USA
- Aging & Sexuality - USA
- HRS - USA
- British Birth Cohort - UK
- UK Biobank - UK
- ELSA - UK
- ALSPAC - UK
- Cohorte Constances - FRANCE
- LASA - Amsterdam
- ILSA - Italy
- InChianti - Italy
Key Outcomes

**Advance**
the research agenda in aging, population health

**Enable**
new science leading to reduced disability and suffering among Canadians

**Inform**
social and health care policy, clinical and public health policy

**Provide**
a new framework for interdisciplinary, collaborative research

**Retain/Recruit**
outstanding researchers

**Train**
highly qualified personnel, graduate students, new researchers
Institutional Support

- Development of CLSA Protocol
- Cash contributions of $2,628,794
- Commitment to securing funds for ongoing operations and maintenance
- Full 30% institutional IOF funding
- Commitment to 6 CRCs
- Endowed Chairs in Population Health and Genetic Epidemiology
Email: CLSA@epid.jgh.mcgill.ca
Website: www.CLSA-ELCV.ca
Long term sustainability

- CLSA Funding (CIHR, Federal Government)
- National Centers for Excellence (NCE)
- CFI
- Provincial Funding (FRSQ)

Other national cohorts under development
  - Canadian National Birth Cohort
  - Cancer/chronic diseases cohort
  - Multi-generational cohort

Other population health studies in Canada
  - CaMos
  - PURE
Sustainability through Research
Use of core facilities

Large cohorts in development stages - CIHR
- Canadian National Birth Cohort
- Cancer/chronic disease cohort
- Multi-generational cohort

Large population based research
- Canadian Multicentre Osteoporosis Study (CaMos)
- Prospective Urban and Rural Epidemiology Study (PURE)
- Panel Study of Lifecourse Dynamics (PSLD)

Smaller clinical/population research
- Investigator driven – e.g. Prevalence study of MS in Quebec
  (MS Latitude Project)