



Message from the CLSA Research Team

As part of the journey that started in 2001, the Canadian Longitudinal Study on Aging (CLSA) was established as a major initiative of the Canadian Institutes of Health Research (CIHR) to address the need for high-quality research on aging.

It was an ambitious project – a platform designed to recruit and gather data from 50,000 Canadians aged 45 to 85 at baseline and then follow them for the next 20 years.

In those early days, we could hardly imagine the road ahead of us. But now, 15 years later, the CLSA has developed into Canada's leading research platform on health and aging, providing scientists with the opportunity to access the CLSA data and biospecimens for research projects aimed at improving the well-being of Canadians.

In 2015, the CLSA completed recruitment and baseline data collec-



In June 2015, government officials visited the CLSA in celebration of the study reaching its recruitment milestone of 50,000 participants.

tion from more than 50,000 men and women across the country. This major milestone was celebrated by the Government of Canada in a special event held in Hamilton, Ont., in June 2015.

The following month, the CLSA launched its first follow-up, which will continue through 2018. In addition to collecting the same measures as in the baseline, this follow-up will gather additional data on hearing, cognition, epilepsy, childhood experiences and elder abuse.

In this newsletter, you will read about the latest CLSA data release, which encompasses alphanumeric baseline data (collected 2012-2015) from more than 50,000 participants, as well as hematological biomarkers and physical assessment data from 30,000 participants who visited data collection sites. You will also learn about how CIHR is supporting CLSA research through a \$1.2-million Catalyst Grant program to analyze CLSA data.

We are grateful to the Government of Canada for its ongoing support. In 2015, CIHR renewed its commitment to the CLSA with a \$41.6-million grant that will allow the study to continue its work for the next five years. We would also like to thank our numerous partners and funders, our staff and research teams, and the participants who make this study possible.

Thank you for supporting Canadian research on aging.

New and Noteworthy

Major data release underway

Alphanumeric baseline data from 51,338 participants are now available for use by the research community. The available data include comprehensive physical assessment data and hematological biomarkers from 30,000 of the 51,338 participants.

Visit www.clsa-elcv.ca for information about the data available and how to apply for access.

CIHR funding opportunity

In May 2016, the Canadian Institutes of Health Research (CIHR) launched a \$1.2 million funding opportunity, inviting researchers to submit health research projects that will make use of CLSA data.

Approximately 17 grants will be funded to a maximum of \$70,000. The competition closed in August 2016. Successful applicants will be notified in March 2017.

New data access committee

Evaluation of applications for access to CLSA data and biospecimens is the responsibility of the Data and Sample Access Committee (DSAC), which is currently chaired by Dr. Joan Lindsay, co-principal investigator of the 10-year Canadian Study of Health and Aging. In May 2016, a new DSAC formed with members from a variety of research backgrounds. For the full membership, visit www.clsa-elcv.ca.

CLSA Team News

Dr. Patrick Davidson, associate professor at the University of Ottawa, will oversee the CLSA site in Ottawa while Dr. Vanessa Taler, local site principal investigator, is on sabbatical.

Dr. Jo Ann Miller has joined the CLSA as the Data Collection Site Coordinator for the University of Victoria site.



Dr. Lauren Griffith, associate scientific director of the CLSA, has been promoted to associate professor at McMaster University.



Dr. Christina Wolfson, co-principal investigator of the CLSA, has been appointed research integrity officer at McGill University.



Dr. Istvan Molnar-Szakacs has joined the CLSA Statistical Analysis Centre as the data access officer. His responsibilities involve the coordination of data access and special projects.



Dr. Parminder Raina, CLSA lead principal investigator, has been appointed scientific director of the McMaster Institute for Research on Aging.



Dr. Andrew Wister, local site principal investigator at Simon Fraser University, has been named director of the SFU Gerontology Research Centre.



Dr. Chris Verschoor, an assistant professor at McMaster University, has joined the CLSA as a research associate. He is actively involved in directing research and facilitating sample analyses in the BBC.



Dr. Harry Shannon, former lead of the Methodology Working Group, has retired. The CLSA thanks Dr. Shannon for his contributions.



Dr. Edwin van den Heuvel of the University of Technology, Eindhoven, the Netherlands, has been appointed the new lead of the CLSA Methodology Working Group.

Study Updates

Quality Improvement

To ensure the quality of CLSA data, a number of quality control and quality assurance initiatives have been undertaken, including the formation of a Quality Control Committee that develops policies and procedures in support of the CLSA Quality Management System. Some of the committee's activities include:

- A collaboration with Dr. Maureen MacDonald of McMaster University to assess and grade all baseline Carotid Intima Media Thickness (c-IMT) images. A rating tool has been developed and researchers who request c-IMT images will have access to a quality score and summary rating.

- A collaboration with Dr. Bill Leslie of the University of Manitoba to develop quality assurance procedures and a rating system for bone density by DEXA (DXA). Quality assurance processes include an ongoing random sample of dual hip, whole body and lateral spine images from each data collection site that are rated for quality on a regular basis. In addition, a random sample of approximately 100 baseline dual hip images was quality rated and re-analyzed centrally to assess agreement with original analysis at the data collection sites.

- A collaboration with Dr. David Owens of Diabetic Retinopathy Screening Service for Wales (DRSSW) to review a sample of baseline retinal images for quality

and grade for diabetic retinopathy and vascular changes. As a result, the CLSA has improved its data collection process and the quality of images for the first follow-up.

CLSA Working Groups

The CLSA continues to engage with various working groups to achieve the ongoing goals of the study. Some of the goals include: data collection, relevant content, developing statistical methodology and preparing for future biomarker analysis.

The next aim for the CLSA with respect to working groups is to engage all groups for the second follow-up, which is slated to begin in 2018.

CLSA Research in Action

Approved Projects

Since the first CLSA data release in 2014, more than 32 projects have been approved that span the disciplines of biological, clinical and social sciences and fulfill the CLSA's vision to enable interdisciplinary, population-based research. For the full list of projects, visit: www.clsa-elcv.ca/researchers/approved-project-summaries.

Grants relevant to CLSA

CLSA researchers Drs. David Hogan, Eric Smith, Teresa Liu-Ambrose, Verena Menec, Holly Tuokko, Vanessa Taler, Martine Simard and Andrew Costa are among the research team leading CLSA-related projects through the Broad and Deep Analyses in Neurodegeneration (BRAIN) initiative. BRAIN has been funded \$950,000 annually for five years through CIHR's Team Grant: Big Data on Dementia competition. The initiative will make use of three big datasets on dementia in Canada, including the CLSA.

Dr. Robert Dales of Health Canada has received a two-year grant of \$28,560 from the Clean Air Regulatory Agenda (CARA), Environment Canada, for the project, "Long-term Exposure to Ambient Air Pollution and Effects on Cardiovascular, Respiratory and Neurological Health in an Older Population:

The Canadian Longitudinal Study on Aging (CLSA)."

Dr. Holly Tuokko, lead of the CLSA psychological working group, received the ASRP/Pacific Alzheimer Research Foundation Grant for her project, "The development of comparison standards for the cognitive measures employed in Canadian Longitudinal Study on Aging." The grant will provide \$239,900 in funding over two years.

Dr. Michael Kobor, director of the CLSA Genetics and Epigenetics Centre, is the co-principal investigator of a \$1,097,060 CIHR project grant that will investigate the epigenetic signatures of successful aging.

Publications relevant to CLSA

Kirkland S, Griffith LE, Menec V, Wister A, Payette H, Wolfson C, Raina P. Mining a Unique Canadian Resource: The Canadian Longitudinal Study on Aging. *Canadian Journal on Aging*. Sep 2015; 34(3): 366-77.

Sohel N, Tuokko H, Griffith L, Raina P. Factors influencing discrepancies in self-reported memory and performance on memory recall in the Canadian Community Health Survey-Healthy Aging, 2008-09. *Age Ageing*. Dec 2015; 45(2): 280-286.

Enabling Units Update

The **Statistical Analysis Centre (SAC)** has been preparing and validating alpha-numeric data for the spring 2016 data release.

As the main point of contact for researchers currently using or interested in using CLSA data, the SAC prepares and sends datasets to approved users and updates as new data become available, and if there are amendments or changes to the data.

The SAC has been working closely with the National Coordinating Centre to launch an updated version of the DataPreview Portal and to ensure that the most current user documentation relating to data access and release is available at www.clsa-elcv.ca.

The **Biorepository and Bioanalysis Centre (BBC)** is now retrieving and shipping biospecimens to various laboratories for the analysis of baseline biomarkers. All 30,000 participants who had blood collected are having a panel of 14 biochemical tests performed by Calgary Laboratory Services. Genome-wide genotyping is being performed on a random sample of 10,000 subjects by the McGill University and Génome Québec Innovation Centre. Metabolomic analysis is also being conducted on a subset of 1,000 subjects.



Cryofreezers in the Biorepository and Bioanalysis Centre.

The release of baseline biomarker data will begin in 2017-18.

CLSA Webinar Series 2016-17

The CLSA webinar series features online presentations from researchers with an interest in aging. The webinars provide a forum to discuss the latest health and aging research in Canada.

Starting in September 2016, CLSA webinars will be broadcast using WebEx. Attendees will have the option to join by phone or connect via their computers or mobile devices.

The 2016-17 CLSA webinar series runs monthly from September to June. Fall 2016 talks focus on chronic disease prevention and CLSA research projects.

Upcoming Webinars:



Date: Nov. 1, 2016
Time: Noon ET
Dr. Katerina Maximova of the University of Alberta will discuss preventing chronic disease through lifestyle modification: longitudinal approaches.



Date: Nov. 22, 2016
Time: Noon ET
Dr. Verena Menec of the University of Manitoba will present a CLSA pilot study on loneliness and isolation in seniors.



Date: Dec. 6, 2016
Time: 1 p.m. ET
Ann M. Toohey, a PhD Candidate at the University of Calgary, will discuss her thesis research, which includes an analysis of CLSA data as part of a case study exploring the role of community services in enhancing benefits and addressing challenges of pet ownership for seniors.

To register, visit:
bit.ly/clsawebinars

To view recordings of recent presentations, visit:
www.clsa-elcv.ca

Partners and Supporters

The CLSA continues to develop partnerships to enrich the CLSA research platform, as well as promote and foster its development. Recent partnerships include:

Public Health Agency of Canada (PHAC)

In partnership with PHAC, the CLSA is measuring the impact of childhood maltreatment on well-being, as well as the burden of elder abuse in Canada.

Dementias Platform UK (DPUK)

The CLSA and DPUK are pursuing opportunities for collaborative research using big data to address the public health burden of dementia.

Calgary Laboratory Services (CLS)

The CLSA established a partnership with CLS for measuring a core set of clinical chemistry biomarkers in biospecimens from 30,000 CLSA participants.

Health Canada

In partnership with Health Canada, the CLSA has incorporated air pollution exposure measurements at the postal code level for all 50,000+ participants.

Global Alzheimer's Association Interactive Network (GAAIN)

The CLSA is a data partner in the GAAIN platform for searching and integrating data from Alzheimer's disease and other dementia research studies.

McGill University and Génome Québec Innovation Centre

The Canadian Longitudinal Study on Aging established a partnership with the McGill University and Génome Québec Innovation Centre for the extraction of DNA for genotyping of 10,000 biospecimens from CLSA participants.

Ontario Ministry of Transportation (MTO)

The CLSA continues to collect information from participants on driving behaviours and transportation modes for the first follow-up. The research is in partnership with the MTO.

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