

## Publication and Promotion Policy for CLSA Approved Users

### 1.0 INTRODUCTION

The Canadian Longitudinal Study on Aging (CLSA) is a national research platform collecting data and biospecimens from more than 50,000 participants over 20 years. The fundamental goal of the CLSA is to mobilize experts in the research community to generate the scientific content that will enable interdisciplinary, population-based research and evidence-based decision-making that will lead to better health and quality of life for Canadians.

As a publicly funded research platform, the CLSA endeavours to promote the availability of research based on CLSA data and/or biospecimens to the widest possible audience. To this end, the CLSA publishes a summary of each approved application on its website, as well as the findings from the project once completed. The CLSA also expects that Approved Users<sup>1</sup> will publish their research in peer-reviewed journals to support dissemination of their results.

This document outlines the CLSA's policy on publishing research derived from the use of CLSA data and/or biospecimens.

#### 1.1 Policy Objective

The objective of this policy is to enable dissemination of research results arising from the use of CLSA data and/or biospecimens by 1) clarifying the requirements for publications based on the analysis of CLSA data and/or biospecimens, and 2) providing guidelines for the promotion of these publications.

### 2.0 GUIDING PRINCIPLES

#### 2.1 Open Access Publication

The CLSA expects Approved Users to publish their findings in peer-reviewed journals as per the [Tri-Agency Open Access Policy on Publications](#).

#### 2.2 Proposed Manuscripts and Other Proposed Primary Research Outputs

Final drafts of all **primary research outputs**<sup>2</sup> (including submissions for pre-prints on servers such as medRxiv, bioRxiv, NutriXiv), manuscripts, reports, and other types of media prepared using CLSA data and/or biospecimens must be submitted to the CLSA, by the Approved User for review at least 15 working days prior to the anticipated submission to a peer-reviewed journal or publication (outside of the peer-review process). Submit all text-based outputs for review through the CLSA's online application system, [Magnolia](#), in accordance with the CLSA Access Agreement and the Publication and Promotion Policy. Submit any other types of outputs for review to [access@clsa-elcv.ca](mailto:access@clsa-elcv.ca). The goal of this review is to ensure that participants cannot

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<sup>1</sup> *Approved Users are researchers who have been approved to use CLSA data and/or biospecimens.*

<sup>2</sup> *Primary research outputs include all peer-reviewed publications, reports, working papers, and clinical guidelines published outside of the peer-review process, AND any other types of outputs created as per the objectives of the original approved project.*

be identified in research outputs, and that results are presented in a scientifically accurate manner in relation to the CLSA design and data collection methods. The research outputs will also be checked to ensure that the research presented matches the objectives of the approved project. This review is not a substitute for peer review. We have also created the '*Checklist for the preparation of manuscripts and publications by CLSA Approved Users*' included in *Appendix 1*, to help Approved Users prepare manuscripts and to facilitate review by the CLSA. Should the review take longer than expected, the Approved User will be advised. Once the review is completed, feedback will be sent to the Approved User. Please note: the Approved User's right to publish shall end upon termination of the CLSA Access Agreement.

### **2.3 Abstracts, Posters and Presentations**

Drafts of abstracts, posters, and presentations do not need to be sent to the CLSA for review but should consider the Guiding Principles outlined in this document, such as *Acknowledgements (Section 2.4)* and *Supplementary Conditions of Use (Section 2.6)*. The CLSA appreciates being advised of these publications for reporting and knowledge translation purposes as described in *Section 2.8*, below.

### **2.4 Acknowledgements**

Full acknowledgement of the source of CLSA data and biospecimens must be included in any publications that arise from the use of CLSA data and biospecimens. This acknowledgement must identify the sources of funding for the CLSA and the platform, the dataset version number and the Data Access Application Number of the request to use the CLSA data and/or biospecimens.

#### **All publications must include the following acknowledgement:**

This research was made possible using the data/biospecimens collected by the Canadian Longitudinal Study on Aging (CLSA). Funding for the Canadian Longitudinal Study on Aging (CLSA) is provided by the Government of Canada through the Canadian Institutes of Health Research (CIHR) under grant reference: LSA 94473 and the Canada Foundation for Innovation, as well as the following provinces, Newfoundland, Nova Scotia, Quebec, Ontario, Manitoba, Alberta, and British Columbia. This research has been conducted using the CLSA dataset [*insert Dataset name and version number here*], under Application Number [*insert your CLSA project number here*]. The CLSA is led by Drs. Parminder Raina, Christina Wolfson and Susan Kirkland. The authors gratefully acknowledge the time and commitment of the CLSA participants, without whom this research would not be possible.

#### **If the manuscript was produced as part of a trainee project that was awarded a Trainee Fee Waiver, please include the following in your Acknowledgement Statement:**

"[Insert Trainee Name] was the recipient of a CLSA Data Access Trainee Fee Waiver."

#### **If Seroprevalence data were used, please include the following in your Acknowledgement Statement:**

This project was supported by funding from the Government of Canada, through the COVID-19 Immunity Task Force.

**If the COVID-19 Questionnaire Study data were used, please include the following in your Acknowledgement Statement:**

Funding for support of the CLSA COVID-19 questionnaire-based study is provided by the Juravinski Research Institute, Faculty of Health Sciences, McMaster University, the Provost Fund from McMaster University, the McMaster Institute for Research on Aging, the Public Health Agency of Canada/CIHR grant reference CMO 174125 and the government of Nova Scotia.

The specific wording of the acknowledgement will be checked and finalized during the pre-publication review of your manuscript.

**2.5 Data Availability Statement**

Some journals stipulate that the data used for the analyses be deposited with the journal or otherwise be made available to replicate the findings. The CLSA’s privacy and confidentiality requirements do not permit Approved Users to share CLSA data beyond their research team, so this requirement cannot be met. Approved Users should communicate this to the journal by providing the following statement:

*“Data are available from the Canadian Longitudinal Study on Aging ([www.clsa-elcv.ca](http://www.clsa-elcv.ca)) for researchers who meet the criteria for access to de-identified CLSA data.”*

**2.6 Small Cell Size Restriction (adapted from the CanPath Publications Policy)**

In keeping with standard guidelines for de-identification and aggregation of data, all cell sizes with a numerical value less than 6 must be suppressed prior to sharing results outside of the research team. This includes any results represented as counts, rates, percentages, or any other form, including tables, maps, and graphs, that are based upon numerators or underlying data points representing less than 6.

Cell size suppression examples:

5 out of 200 subjects must be changed to “less than 6” or “<6”

If represented as a percentage, 5 out of 200 subjects must be represented as “less than 2.5%” even if the numerical denominator or sample size is not reported in the publication.

Each bar of a bar chart must have a minimum of 6 counts for each outcome before it can be shared as a finding. This is because it is possible for the reader to determine the original value of the masked cell based on context.

Example: In the following data analysis, it is possible to determine the numerical value of cell 1 to be 5 even though it is masked. This is not acceptable.

BMI<25	BMI≥25	Total
<6	15	20

To prevent secondary disclosure, both cells 1 and 2 in the above example must be masked as “less than 15” even though the largest cell is above the minimum small cell size threshold. The example below would be acceptable.

BMI<25	BMI≥25	Total
<15	<15	20

Or, a larger category may be used to report outcomes, which will result in groups large enough to prevent secondary disclosure from happening (i.e., instead of reporting for each age year, it is for groups of age ranges instead). The examples below would be acceptable.

BMI<30	BMI≥30	Total
19	11	30
BMI<30	BMI≥30	Total
≥20	<10	30

## 2.7 Supplementary Conditions of Use

The use of some CLSA data comes with supplementary Conditions of Use that must be appropriately addressed in publications. These may include a requirement to cite specific publications or acknowledge a group or an entity. The supplementary Conditions of Use are included in *Appendix 2: Conditions of Use Associated with Scales, Tests and Measures in the CLSA*. It is the responsibility of the Primary Applicant to ensure that the Conditions of Use are respected, including but not limited to Section 8 of the CLSA Access Agreement.

## 2.8 Communication and Media

As a strategic initiative of CIHR, the CLSA research team works to inform CLSA participants, the scientific research community, CLSA partners and members of the public about how the platform is being used by promoting approved projects and their findings through the CLSA website ([www.clsa-elcv.ca](http://www.clsa-elcv.ca)) and other communications channels (e.g., news and scientific media, newsletters, presentations and social media).

Approved Users may wish to discuss their CLSA research with the media, or present in public forums, such as the [CLSA Webinar Series](#). The CLSA is happy to work with researchers and their institutional public relations offices to ensure the best approach to publicity. Researchers are encouraged to discuss their work with their own public relations offices before engaging with the media.

The CLSA encourages researchers to promote their approved projects and findings on social media platforms, such as LinkedIn. To amplify the reach of your dissemination efforts, please tag the CLSA (on [LinkedIn](#), [X](#) (formerly Twitter), [Instagram](#), or [Canadian Longitudinal Study on Aging](#) or [Étude longitudinale canadienne sur le vieillissement](#) on facebook). Researchers are also encouraged to use the hashtag #CLSAFindings.

Please contact [access@clsa-elcv.ca](mailto:access@clsa-elcv.ca) if you wish to discuss the promotion of your CLSA research project.

## 2.9 Policy Review

The CLSA will review and modify this policy as needed.

## 2.10 Additional Information

Should you have further questions or require additional information, please contact us via [access@clsa-elcv.ca](mailto:access@clsa-elcv.ca).

## References

CanPath Publications Policy: <https://canpath.ca/wp-content/uploads/2024/12/CanPath-Publications-Policy.pdf>. Queried on January 14, 2025.

Tri-Agency Open Access Policy on Publications: <http://www.cihr-irsc.gc.ca/e/32005.html>. Queried on Dec 8, 2017.

**APPENDIX 1: CHECKLIST FOR THE PREPARATION OF MANUSCRIPTS AND OTHER PRIMARY PUBLICATIONS BY CLSA APPROVED USERS**

Please ensure that you have included the following items in your proposed manuscript and other primary publications (reports, briefs, reviews, etc.) *before* uploading the final draft to the CLSA's online application system, [Magnolia](#), for review.

Should you have any questions, please email [access@clsa-elcv.ca](mailto:access@clsa-elcv.ca).

- The abbreviation 'CLSA' must be included in the title of the manuscript, or the name of the platform fully spelled out as 'Canadian Longitudinal Study on Aging' may also be used.
- The abbreviation 'CLSA' must be included as a keyword in the manuscript.
- Results presented in the manuscript must be in accordance with the research objectives of the approved project.
- Reference must be made to the following core CLSA publication:

Raina P, Wolfson C., Kirkland S, Griffith L.E., Balion C., Cossette B., Dionne I., Hofer S., Hogan D., van den Heuvel E.R., Liu-Ambrose T., Menec V., Mugford G., Patterson C., Payette H., Richards B., Shannon H., Sheets D., Taler V., Thompson M., Tuokko H., Wister A., Wu C., Young L. (2019) Cohort profile: The Canadian Longitudinal Study on Aging (CLSA). *International Journal of Epidemiology*, Volume 48, Issue 6, 1752-1753j, <https://doi.org/10.1093/ije/dyz173>

**The article below must be referenced if the study was conducted using CLSA Genomic data.**

Forgetta V, Li R, Darmond-Zwaig C, et al. Cohort profile: genomic data for 26 622 individuals from the Canadian Longitudinal Study on Aging (CLSA). *BMJ Open* 2022;12:e059021. doi: 10.1136/bmjopen-2021-059021 <https://bmjopen.bmj.com/content/12/3/e059021>

- CLSA design features (inclusion/exclusion criteria, sampling strategy, data collection procedures, etc.), if included in the manuscript, must be described accurately. Please refer to the relevant CLSA Protocol available for download under the Researcher Resources section of our website (<https://www.clsa-elcv.ca/researcher-resources/>).
- The approved acknowledgement statement(s), found in *Section 2.4 of the Publication and Promotion Policy for CLSA Data Users* must be included and will be checked for accuracy during the review.
- The following disclaimer must be included: 'The opinions expressed in this manuscript are the author's own and do not reflect the views of the Canadian Longitudinal Study on Aging.'
- If required by the journal, include the following data availability statement: 'Data are available from the Canadian Longitudinal Study on Aging ([www.clsa-elcv.ca](http://www.clsa-elcv.ca)) for researchers who meet the criteria for access to de-identified CLSA data.'
- Supplementary Conditions of Use, as outlined in *Appendix 2: Conditions of Use Associated with Scales, Tests, and Measures in the CLSA* must be respected, as applicable.

## APPENDIX 2: CONDITIONS OF USE ASSOCIATED WITH SCALES, TESTS AND MEASURES IN THE CLSA

This document outlines the Conditions of Use associated with certain scales, tests and measures (Modules) included in the Canadian Longitudinal Study on Aging (CLSA). If you have been approved to use CLSA Data, it is your responsibility to respect the CLSA Publication and Promotion Policy for CLSA Approved Users, including the Conditions of Use outlined below, as per your CLSA Access Agreement. Should you have any questions, you can contact us via [access@clsa-elcv.ca](mailto:access@clsa-elcv.ca).

Modules	Condition of Use Information
<b>Cognition (COG)</b>	
<i>Mental Alternation Test (MAT)</i>	<p><b>Cite:</b></p> <p>Teng, E. (1995). The Mental Alternations Test (MAT). <i>The Clinical Neuropsychologist</i>, 9(3), 287</p>
<i>Stroop Neuropsychological Screening Test© (Victoria)</i>	<p><b>Cite (for English version):</b></p> <p>[1] Troyer, A.K., Leach, L. &amp; Strauss, E. (2006). Aging and Response Inhibition: Normative Data for the Victoria Stroop Test. <i>Aging, Neuropsychology, and Cognition</i>, 13(1), 20-35, DOI: 10.1080/138255890968187</p> <p>[2] Bayard, S., Erkes, J., Moroni, C. &amp; CPCN-LR (2011). Victoria Stroop Test: normative data in a sample group of older people and the study of their clinical applications in the assessment of inhibition in Alzheimer's disease. <i>Archives of Clinical Neuropsychology</i>, 26(7),653-661, DOI:10.1093/arclin/acr053</p> <p><b>Cite (for French version):</b></p> <p>[1] Moroni, C., &amp; Bayard, S. (2009). Processus d'inhibition: quelle est leur évolution après 50 ans? <i>Psychologie &amp; NeuroPsychiatrie du vieillissement</i>, 7(2), 121-129, DOI:10.1684/pnv.2009.0155</p> <p>[2] Bayard, S., Erkes, J., Moroni, C. &amp; CPCN-LR (2009). Test du Stroop Victoria-Adaptation francophone. <i>Collège des Psychologues Cliniciens spécialisés en Neuropsychologie du Languedoc Roussillon (CPCN-LR)</i>, Gignac, France</p> <p>[3] Bayard, S., Erkes, J., Moroni, C. &amp; CPCN-LR (2011). Victoria Stroop Test: normative data in a sample group of older people and the study of their clinical applications in the assessment of inhibition in Alzheimer's disease. <i>Archives of Clinical Neuropsychology</i>, 26(7), 653-661, DOI:10.1093/arclin/acr053</p>
<i>Normative Data</i>	<p><b>Cite:</b></p> <p>O'Connell, M. E., Kadlec, H., Maimon, G., Taler, V., Simard, M., Griffith, L., Tuokko, H., Voll, S., Wolfson, C., Kirkland, S., &amp; Raina, P.</p>

Modules	Condition of Use Information
	<p>(2021). Methodological considerations when establishing reliable and valid normative data: Canadian Longitudinal Study on Aging (CLSA) neuropsychological battery. <i>The Clinical Neuropsychologist</i>. <a href="https://doi.org/10.1080/13854046.2021.1954243">https://doi.org/10.1080/13854046.2021.1954243</a></p>
<p><b>Lifestyle &amp; Behaviour</b></p>	
<p><i>Nutrition (NUT)</i></p> <p><i>(Short Diet Questionnaire – SDQ)</i></p>	<p><b>Cite:</b></p> <p>Shatenstein B., &amp; Payette H. (2015). Evaluation of the relative validity of the Short Diet Questionnaire for assessing usual consumption frequencies of selected nutrients and foods. <i>Nutrients</i>, 7(8), 6362-6374, DOI:10.3390/nu7085282</p> <p><b>Acknowledge:</b></p> <p>The development, testing and validation of the Short Diet Questionnaire (SDQ) were carried out among NuAge study participants as part of the Canadian Longitudinal Study on Aging (CLSA) Phase II validation studies, CIHR 2006-2008.</p> <p>The NuAge study was supported by the Canadian Institutes for Health Research (CIHR), Grant number MOP-62842, and the Quebec Network for Research on Aging, a network funded by the Fonds de Recherche du Québec-Santé.</p> <p><i>Please refer to <u>Nutrition: Short Diet Questionnaire (NUT) Module</u> document under Data Support Documents section of the CLSA website for additional information.</i></p>
<p><i>Nutritional Risk (NUR)</i></p> <p><i>(AB SCREEN™ II)</i></p>	<p><b>Acknowledge:</b></p> <p>The AB SCREEN™ II assessment tool is owned by Dr. Heather Keller. Use of the AB SCREEN™ II assessment tool was made under license from the University of Guelph.</p> <p><i>Please refer to <u>Derived Variables – Nutritional Risk (NUR)</u> document under the Data Support Documents section of the CLSA website for additional information.</i></p>
<p><b>Physical Health</b></p>	
<p><i>Machine Learning Abdominal Aortic Calcification 24 Point Scores (ML-AAC24)</i></p>	<p>Researchers using the ML-AAC24 scores and any of the variables derived from those scores should cite the paper describing the development of the algorithms.</p> <p><b>Cite (as appropriate):</b></p>

Modules	Condition of Use Information
	<p><b>Version 1.0:</b> Sharif N, Gilani SZ, Suter D, et al. Machine learning for abdominal aortic calcification assessment from bone density machine-derived lateral spine images. <i>EBioMedicine</i> 2023; 94: 104676.</p> <p><b>Version 1.1:</b> Saleem, Afsah, et al. "SCOL: Supervised Contrastive Ordinal Loss for Abdominal Aortic Calcification Scoring on Vertebral Fracture Assessment Scans." <i>International Conference on Medical Image Computing and Computer-Assisted Intervention</i>. Cham: Springer Nature Switzerland, 2023.</p> <p><b>Aorta Cropping (yes/no):</b> Z Ilyas, A Saleem, D Suter, J Schousboe, W Leslie, JR Lewis, SZ Gilani, "A Hybrid CNN-Transformer Feature Pyramid Network for Granular Abdominal Aortic Calcification Detection from DXA Images", In International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2024. (FOR when the Aorta Cropping yes or no at various adjacent vertebral column widths is used)</p> <p><b>Aorta Cropping (% and region):</b> Z Ilyas, A Maqsood, A Saleem, E Zhang, D Suter, P Raina, JM Hodgson, JT Schousboe, WD Leslie, JR Lewis, SZ Gilani, "VerteNet -- A Multi-Context Hybrid CNN Transformer for Accurate Vertebral Landmark Localization in Lateral Spine DXA Images", Feb 2025, Arxiv, <a href="https://doi.org/10.48550/arXiv.2502.02097">https://doi.org/10.48550/arXiv.2502.02097</a>. * to be updated when published.</p>
<p><b>Psychological Health</b></p>	
<p><i>Psychological Distress (K10)</i>  (Kessler 10-item Psychological Distress Scale)</p>	<p><b>Cite:</b>  Kessler, R.C., Barker, P.R., Colpe, L.J., Epstein, J.F., Gfroerer, J.C., Hiripi, E., Howes, M.J, Normand, S-L.T., Manderscheid, R.W., Walters, E.E., Zaslavsky, A.M. (2003). Screening for serious mental illness in the general population. <i>Archives of General Psychiatry</i>, 60(2), 184-189, DOI:10.1001/archpsyc.60.2.184</p> <p><b>Advise:</b>  The authors request that users send them citations to all publications that use the scale (<a href="mailto:ronkadm@hcp.med.harvard.edu">ronkadm@hcp.med.harvard.edu</a>).</p> <p><i>Please refer to the <u>Derived Variables – Psychological Distress (K10)</u> document under the Data Support Documentation section of the CLSA website for additional information.</i></p>
<p><i>Satisfaction with Life Scale (SLS)</i>  (Satisfaction with Life Scale – SWLS)</p>	<p><b>Cite:</b>  Diener, E., Emmons, R.A., Larsen, R.J., Griffin, S. (1985). The satisfaction with life scale. <i>Journal of Personality Assessment</i>, 49(1), 71-75, DOI: 10.1207/s15327752jpa4901_13</p>

Modules	Condition of Use Information
	<p>Please refer to the <i>Derived Variables – Satisfaction with Life (SLS)</i> document under the <i>Data Support Documentation</i> section of the CLSA website for additional information.</p>
<p><b>Labour Force</b></p>	
<p><i>Work Limitations Questionnaire (WLQ)</i></p>	<p><b>Cite:</b>            Lerner, DJ., Amick III, B.C., Rogers, W.H., Malspeis, S., Bungay, K. (2001). The Work Limitations Questionnaire: A Self-Administered Instrument for Assessing On-The-Job Work Disability. <i>Medical Care</i>, 39(1), 72-85, DOI: 10.1097/00005650-200101000-00009</p>
<p><b>Social Health</b></p>	
<p><i>Transportation, Mobility and Migration (TRA)</i></p>	<p><b>Acknowledge:</b>            “This research used data from the CLSA supported in part by the Ontario Ministry of Transportation”.</p> <p>This statement must be included in addition to the acknowledgements required by the CLSA, as described in the CLSA Publication and Promotion Policy.</p> <p>Please refer to the <i>Transportation, Mobility, Migration (TRA) Module</i> document under the <i>Data Support Documentation</i> section of the CLSA website for additional information.</p>
<p><i>Genomics Data</i></p>	<p><b>Cite:</b>            Forgetta V, Li R, Darmond-Zwaig C, et al. Cohort profile: genomic data for 26 622 individuals from the Canadian Longitudinal Study on Aging (CLSA). <i>BMJ Open</i> 2022;12:e059021. doi: 10.1136/bmjopen-2021-059021. <a href="https://bmjopen.bmj.com/content/12/3/e059021">https://bmjopen.bmj.com/content/12/3/e059021</a></p>
<p><b>Linked Data-Environmental Indicators</b></p>	<p><b>Please refer to the Data Use Conditions on the <a href="#">CANUE website</a> for the most up to date requirements for each variable used.</b></p>
<p><i>Nitrogen Dioxide</i></p>	<p><b>Cite:</b></p> <p>[1] Hystad P, Setton E, Cervantes A, Poplawski K, Deschenes S, Brauer M, et al. 2011. Creating National Air Pollution Models for Population Exposure Assessment in Canada. <i>Environ. Health Perspect.</i> 119:1123–1129; doi:10.1289/ehp.1002976.</p> <p>[2] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015.</p> <p>[3] Weichenthal S, Pinault L, Burnett RT. (2017) Impact of Oxidant Gases on the Relationship Between Outdoor Fine Particulate Air Pollution and Nonaccidental, Cardiovascular, and Respiratory</p>

Modules	Condition of Use Information
	<p>Mortality. Scientific Reports 7, Article number: 16401. Doi:10.1038/s41598-017-16770-y</p> <p><b>Acknowledge:</b></p> <p>1. Nitrogen dioxide data were indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</p> <p><i>Please refer to the <u><a href="#">Air Pollution &amp; Meteorological Exposure Data Document</a></u> under the Data Support Documentation section of the CLSA website for Conditions of Use.</i></p>
Sulfur Dioxide	<p><b>Cite:</b></p> <p>[1] Environment and Climate Change Canada. (2017). Air Quality Research Division, Toronto, Canada. Data files: OMI_Ground-Level_SO2_NA_2005.nc to OMI_Ground-Level_SO2_NA_2015.nc inclusive, generated 2017-07-05</p> <p>[2] McLinden, C.A., Fioletov, V., Boersma, K.F., Kharol, S.K., Krotkov, N., Lamsal, L., Makar, P.A., Martin, R.V., Veefkind, J.P., Yang, K. (2014). Improved satellite retrievals of NO<sub>2</sub> and SO<sub>2</sub> over the Canadian oil sands and comparisons with surface measurements, <i>Atmospheric Chemistry and Physics</i>, 14, 3637-3656, DOI:10.5194/acp-14-3637-2014</p> <p>[3] Kharol, S.K., McLinden, C.A., Sioris, C.E., Shephard, M.W., Fioletov, V., van Donkelaar, A., Philip, S., Martin, R.V. (2017). OMI satellite observations of decadal changes in ground-level sulfur dioxide over North America, <i>Atmospheric Chemistry and Physics</i>, 17, 5921-5929, DOI:10.5194/acp-17-5921-2017</p> <p>[4] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015</p> <p><b>Acknowledge:</b></p> <p>SO<sub>2</sub> metrics indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</p> <p><i>Please refer to the <u><a href="#">Annual Sulfur Dioxide dataset documentation</a></u> available under the Data section of the CANUE website (<a href="http://www.canue.ca">www.canue.ca</a>) for additional information.</i></p>
Ozone	<p><b>Cite:</b></p> <p>[1] Environment and Climate Change Canada. (2017). Air Quality Research Division, Toronto, Canada. Data files: CHRONOS_Ground-</p>

Modules	Condition of Use Information
	<p>Level_O3_NA_2002.nc to CHRONOS_Ground-Level_O3_NA_2009.nc inclusive, generated July 2017</p> <p>[2] Environment and Climate Change Canada. (2017). Air Quality Research Division, Toronto, Canada. Data files: GEMMACH_Ground-Level_O3_NA_2010.nc to GEMMACH_Ground-Level_O3_NA_2015.nc inclusive, generated July 2017</p> <p>[3] Robichaud, A., &amp; Ménard, R. (2014). Multi-year objective analyses of warm season ground-level ozone and PM 2.5 over North America using real-time observations and Canadian operational air quality models. <i>Atmospheric Chemistry and Physics</i>, 14(4), 1769-800, DOI: 10.5194/acp-14-1769-2014</p> <p>[4] Robichaud, A., Ménard, R., Zaitseva, Y., Anselmo, D. (2016). Multi-pollutant surface objective analyses and mapping of air quality health index over North America. <i>Air Quality, Atmosphere &amp; Health</i>. 9(7), 743-59, DOI: 10.1007/s11869-015-0385-9</p> <p><b>Acknowledge:</b></p> <p>Calculated ozone metrics indexed to DMTI Spatial Inc. postal codes were provided by CANUE (Canadian Urban Environmental Health Research Consortium)</p> <p><i>Please refer to the <u>Annual Ozone</u> dataset documentation available under the Data section of the CANUE website (<a href="http://www.canue.ca">www.canue.ca</a>) for additional information.</i></p>
<p><i>Fine Particulate Matter (PM2.5 V1)</i></p>	<p><b>Cite:</b></p> <p>[1] van Donkelaar, A., R. V. Martin, R. J. D. Spurr and R. T. Burnett, High-resolution satellite-derived PM2.5 from optimal estimation and geographically weighted regression over North America, <i>Environ. Sci. and Tech.</i>, doi 10.1021/acs.est.5b02076</p> <p>[2] Boys, B.L., Martin, R.V., van Donkelaar, A., MacDonell, R., Hsu, N.C., Cooper, M.J., Yantosca, R.M., Lu, Z., Streets, D.G., Zhang, Q., Wang, S.W. (2014). Fifteen-year global time series of satellite-derived fine particulate matter, <i>Environmental Science &amp; Technology</i>, 48(19), 11109-11118, DOI:10.1021/es502113p</p> <p>[3] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015</p> <p><b>Acknowledge:</b></p> <p>PM2.5 metrics, indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium)</p> <p><i>Please refer to the <u>Annual Fine Particulates: NEW VERSION</u> dataset</i></p>

Modules	Condition of Use Information
	<p><i>documentation available under the Data section of the CANUE website (<a href="http://www.canue.ca">www.canue.ca</a>) for additional information.</i></p>
<p><i>Fine Particulate Matter (PM2.5 V3)</i></p>	<p><b>Cite:</b></p> <p>[1] Hammer, M. S.; van Donkelaar, A.; Li, C.; Lyapustin, A.; Sayer, A. M.; Hsu, N. C.; Levy, R. C.; Garay, M. J.; Kalashnikova, O. V.; Kahn, R. A.; Brauer, M.; Apte, J. S.; Henze, D. K.; Zhang, L.; Zhang, Q.; Ford, B.; Pierce, J. R.; and Martin, R. V., Global Estimates and Long-Term Trends of Fine Particulate Matter Concentrations (1998-2018)., Environ. Sci. Technol, doi: 10.1021/acs.est.0c01764, 2020.</p> <p>[2] CanMap Postal Code Suite (various years). [computer files] Markham, ON: DMTI Spatial Inc.</p> <p><b>Acknowledge:</b></p> <p>PM2.5 metrics, indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</p>
<p><i>Smoke Exposure</i></p>	<p><b>Cite:</b></p> <p>[1]. Paul N, Henderson S. Canadian Optimized Statistical Smoke Model (CanOSSEM) daily PM2.5 estimates 2010 - 2019. Environmental Health Services, British Columbia Centre for Disease Control. 2021.</p> <p><b>Acknowledge:</b></p> <p>PM2.5 metrics, indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</p>
<p><i>Material and Social Deprivation Indices</i></p>	<p><b>Cite:</b></p> <p>[1] Pampalon, R., Hamel, D., Gamache, P., Philibert, M.D., Raymond, G., Simpson, A. (2012). An Area-Based Material and Social Deprivation Index for Public Health in Québec and Canada. <i>Canadian Journal of Public Health / Revue Canadienne De Santé Publique</i>, 103, S17–S22, <a href="https://www.ncbi.nlm.nih.gov/pubmed/23618066">https://www.ncbi.nlm.nih.gov/pubmed/23618066</a></p> <p>[2] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015</p> <p><i>Please refer to the <u>Material and Social Deprivation Indices</u> dataset documentation available under the Data section of the CANUE website (<a href="http://www.canue.ca">www.canue.ca</a>) for additional information.</i></p>

Modules	Condition of Use Information
<p><i>Canadian Active Living Environments</i></p> <p><i>(Can-ALE) Data</i></p>	<p><b>Cite:</b></p> <p>[1] Ross, N., Wasfi, R., Herrmann, T., and Gleckner, W. (2018). Canadian Active Living Environments Database (Can-ALE) User Manual &amp; Technical Document. Geo-Social Determinants of Health Research Group, Department of Geography, McGill University. <a href="http://canue.ca/wp-content/uploads/2018/03/CanALE_UserGuide.pdf">http://canue.ca/wp-content/uploads/2018/03/CanALE_UserGuide.pdf</a></p> <p><b>Acknowledge:</b></p> <p>Canadian Active Living Environments Index (Can-ALE), indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</p> <p><i>Please refer to the <u>Active Living Environments Indices</u> dataset documentation available under the Data section of the CANUE website (<a href="http://www.canue.ca">www.canue.ca</a>) for additional information.</i></p>
<p><i>Nighttime Light</i></p>	<p><b>Cite:</b></p> <p>[1] Gorelick, N., Hancher, M., Dixon, M., Ilyushchenko, S., Thau, D., Moore, R. (2017). Google Earth Engine: Planetary-scale geospatial analysis for everyone. <i>Remote Sensing of Environment</i>, 202, 18-27, DOI:10.1016/j.rse.2017.06.031</p> <p><b>Acknowledge:</b></p> <p>DMSP-OLS metrics, indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium)</p> <p><i>Please refer to the <u>Annual Nighttime Light</u> dataset documentation available under the Data section of the CANUE website (<a href="http://www.canue.ca">www.canue.ca</a>) for additional information.</i></p>
<p><i>Canadian Access to Employment</i></p>	<p><b>Cite:</b></p> <p>[1] Allen J, Farber S. (2018). Generating measures of access to employment for Canada’s eight largest urban regions. Technical Report (V2). (available at <a href="https://osf.io/huj65/">https://osf.io/huj65/</a>)</p> <p>[2] CanMap Postal Code Suite v2016.3. [Computer file] Markham: DMTI Spatial Inc., 2016.</p> <p><b>Acknowledge:</b></p> <p>[1] Access to Employment metrics, indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</p>

Modules	Condition of Use Information
<p><i>Canadian Marginalization Index</i></p>	<p><b>Cite:</b></p> <p>[1] Matheson et al. "Development of the Canadian Marginalization Index: a new tool for the study of inequality." <i>Canadian Journal of Public Health</i>, 2012;103(Suppl. 2):S12-S16.</p> <p>[2] CanMap Postal Code Suite v2016.3. [Computer file] Markham: DMTI Spatial Inc., 2016.</p> <p><b>Acknowledge:</b></p> <p>[1] Canadian Marginalization Index (CAN-Marg), indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</p>
<p><i>Noise</i></p>	<p><b>Cite:</b></p> <p>[1] Liu Y, Goudreau S, Oiamo T, Rainham D, Hatzopoulou M, Chen H, Davies H, Tremblay M, Johnson J, Bockstael A, Leroux T, Smargiassi A. Comparison of land use regression and random forests models on estimating noise levels in five Canadian cities. <i>Environ Pollut.</i> 2020 Jan;256:113367. doi: 10.1016/j.envpol.2019.113367. Epub 2019 Oct 10. PMID: 31662255.</p> <p>[2] CanMap Postal Code Suite. [computer files] Markham: DMTI Spatial Inc., 2015, 2016, 2017, 2018 and 2019.</p> <p><b>Acknowledge:</b></p> <p>[1] Noise metrics, indexed to DMTI Spatial Inc. postal codes were provided by CANUE (Canadian Urban Environmental Health Research Consortium)</p> <p>[2] Map data copyrighted OpenStreetMap contributors and available from <a href="https://www.openstreetmap.org">https://www.openstreetmap.org</a></p>
<p><i>Canadian Food Environment Dataset (Can-FED)</i></p>	<p><b>Cite:</b></p> <p>[1]. Government of Canada SC. Canadian Food Environment Dataset: Data File and User Guide [Internet]. 2022 [cited 2023 Jul 27]. Available from: <a href="https://www150.statcan.gc.ca/n1/pub/13-20-0001/132000012022001-eng.htm">https://www150.statcan.gc.ca/n1/pub/13-20-0001/132000012022001-eng.htm</a></p> <p>[2]. CanMap Postal Code Suite v2016.3. [Computer file] Markham: DMTI Spatial Inc., 2016.</p> <p><b>Acknowledge:</b></p> <p>Can-FED metrics were obtained via the Canadian Urban Environmental Health Research Consortium (CANUE) Data Portal: <a href="https://www.canuedata.ca/">https://www.canuedata.ca/</a></p>

Modules	Condition of Use Information
<i>Proximity to Roads</i>	<p><b>Cite:</b></p> <p>[1] Distance to Roads, prepared by the Canadian Urban Environmental Health Research Consortium</p> <p>[2] CanMap Postal Code Suite 2015, 2016, 2017, 2018 and 2019 [computer file] Markham: DMTI Spatial Inc.</p> <p>[3] CanMap Road files 1996, 2001, 2006, 2011, 2016 and 2019 [computer file] Markham: DMTI Spatial Inc.</p> <p><b>Acknowledge:</b></p> <p>[1] The following [dataset name(s)] were accessed via the Canadian Urban Environmental Health Research Consortium (CANUE) Data Portal: <a href="https://www.canuedata.ca/">https://www.canuedata.ca/</a></p>
<i>Spatial Accessibility Measures</i>	<p><b>Acknowledge:</b></p> <p>[1] Active and Public Transportation Spatial Accessibility Measures (2023). [computer files]. Ottawa, ON. Data Exploration and Integration Lab, Centre for Special Business Projects, Statistics Canada</p> <p>[2] CanMap Postal Code Suite (2021). [computer files]. Markham ON: DMTI Spatial Inc.</p>
<i>Public Transportation</i>	<p><b>Cite:</b></p> <p>[1] OpenStreetMap contributors. (2019) . Retrieved from Planet OSM May 2021 at <a href="https://planet.openstreetmap.org/">https://planet.openstreetmap.org/</a></p> <p>[2] CanMap Postal Code Suite v2019.3. [Computer file] Markham: DMTI Spatial Inc., 2019.</p> <p><b>Acknowledge:</b></p> <p>[1] The following [dataset name(s)] were accessed via the Canadian Urban Environmental Health Research Consortium (CANUE) Data Portal: <a href="https://www.canuedata.ca/">https://www.canuedata.ca/</a></p>
<i>Landsat Greenness</i>	<p><b>Cite:</b></p> <p>[1] Gorelick, N., Hancher, M., Dixon, M., Ilyushchenko, S., Thau, D., Moore, R. (2017). Google Earth Engine: Planetary-scale geospatial analysis for everyone. <i>Remote Sensing of Environment</i>, 202, 18-27, DOI:10.1016/j.rse.2017.06.031</p> <p>[2] USGS Landsat 5 TM TOA Reflectance (Orthorectified), 1984 to 2011, accessed July 2017, from</p>

Modules	Condition of Use Information
	<p><a href="https://explorer.earthengine.google.com/#detail/LANDSAT%2FT5_L1T_TOA">https://explorer.earthengine.google.com/#detail/LANDSAT%2FT5_L1T_TOA</a></p> <p>[3] USGS Landsat 8 TOA Reflectance (Orthorectified), 2013 to 2017, accessed July 2017, from <a href="https://explorer.earthengine.google.com/#detail/LANDSAT%2FC8_L1T_TOA">https://explorer.earthengine.google.com/#detail/LANDSAT%2FC8_L1T_TOA</a></p> <p>[4] Landsat 5 TM Annual Greenest-Pixel TOA Reflectance Composite, 1984 to 2012, accessed July 2017, from <a href="https://explorer.earthengine.google.com/#detail/LANDSAT%2FT5_L1T_ANNUAL_GREENEST_TOA">https://explorer.earthengine.google.com/#detail/LANDSAT%2FT5_L1T_ANNUAL_GREENEST_TOA</a></p> <p>[5] Landsat 8 Annual Greenest-Pixel TOA Reflectance Composite, 2013 to 2015, accessed July 2017, from <a href="https://explorer.earthengine.google.com/#detail/LANDSAT%2FC8_L1T_ANNUAL_GREENEST_TOA">https://explorer.earthengine.google.com/#detail/LANDSAT%2FC8_L1T_ANNUAL_GREENEST_TOA</a></p> <p>[6] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015</p> <p><b>Acknowledge:</b></p> <p>NDVI metrics, indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium)</p> <p><i>Please refer to the <a href="#">Annual Landsat NDVI (greenness) dataset documentation available under the Data section of the CANUE website (<a href="http://www.canue.ca">www.canue.ca</a>) for additional information.</a></i></p>
<p><i>Normalized Difference Vegetation Index (NDVI)</i></p>	<p><b>Cite:</b></p> <p>[1] Latifovic, R., Trishchenko, A., Chen, J., Park, W., Khlopenkov, K., Fernandes, R., Pouliot, D., Ungureanu, C., Luo, Y., Wang, S., Davidson, A., and Cihlar, J. 2005. Generating historical AVHRR 1-km baseline satellite data records over Canada suitable for climate change studies. <i>Canadian Journal of Remote Sensing</i>, vol. 31:324-34.</p> <p>[2] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015.</p> <p><b>Acknowledge:</b></p> <p>NDVI metrics, indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium)</p>

Modules	Condition of Use Information
<p><i>Tree Canopy Coverage</i></p>	<p><b>Cite:</b></p> <p>[1] Sexton, J. O., Song, X.-P., Feng, M., Noojipady, P., Anand, A., Huang, C., Kim, D.-H., Collins, K.M., Channan, S., DiMiceli, C., Townshend, J.R.G. (2013). Global, 30-m resolution continuous fields of tree cover: Landsat-based rescaling of MODIS Vegetation Continuous Fields with lidar-based estimates of error. <i>International Journal of Digital Earth</i>, 130321031236007.</p> <p>[2] Gorelick, N., Hancher, M., Dixon, M., Ilyushchenko, S., Thau, D., and Moore, R. (2017). Google Earth Engine: Planetary-scale geospatial analysis for everyone. <i>Remote Sensing of Environment</i>.</p> <p>[3] CanMap Postal Code Suite v2010 and v2015. [computer file] Markham: DMTI Spatial Inc., 2010 and 2015.</p> <p><b>Acknowledge:</b></p> <ol style="list-style-type: none"> <li>1. Tree Canopy metrics, indexed to DMTI Spatial Inc. postal codes , were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</li> <li>2. Intellectual property rights to this dataset belong to University of Maryland, Department of Geographical Sciences and NASA.</li> </ol>
<p><i>Vegetative Greenness Fractions</i></p>	<p><b>Cite:</b></p> <p>[1] Czekajlo, A.; Coops, N.C.; Wulder, M.A.; Hermosilla, T.; Lu, Y.; White, J.C.; van den Bosch, M. The urban greenness score: A satellite-based metric for multi-decadal characterization of urban land dynamics. <i>International Journal of Applied Earth Observation and Geoinformation</i>, 93, p. 102210. 10.1016/j.jag.2020.102210</p> <p>[2] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015.</p> <p><b>Acknowledge:</b></p> <ol style="list-style-type: none"> <li>1. The vegetative greenness fraction data were developed through the Integrated Remote Sensing Studio (in the Department of Forest Resources Management, University of British Columbia), under the supervision of Prof. Nicholas Coops, in collaboration with the Canadian Forest Service.</li> <li>2. The vegetative greenness fraction data were indexed to DMTI Spatial Inc. postal codes by CANUE (Canadian Urban Environmental Health Research Consortium).</li> </ol>

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<p><i>Climate Metrics</i></p>	<p><b>Cite:</b></p> <p>[1] Customized spatial climate data files prepared for the Canadian Urban Environmental Health Research Consortium by the Canadian Forest Service of Natural Resources Canada, October 2017</p> <p>[2] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015</p> <p><b>Acknowledge:</b></p> <p>Weather-related indicators, based on custom data from Natural Resources Canada, were indexed to DMTI Spatial Inc. postal codes and provided by CANUE (Canadian Urban Environmental Health Research Consortium)</p> <p><i>Please refer to the <u>Annual Weather dataset documentation</u> available under the <u>Data</u> section of the <u>CANUE website</u> (<a href="http://www.canue.ca">www.canue.ca</a>) for additional information.</i></p>
<p><i>Local Climate Zone</i></p>	<p><b>Cite:</b></p> <p>[1] Bechtel, B.; Alexander, P.J.; Böhner, J.; Ching, J.; Conrad, O.; Feddema, J.; Mills, G.; See, L.; Stewart, I. Mapping Local Climate Zones for a Worldwide Database of the Form and Function of Cities. ISPRS Int. J. Geo-Inf. 2015, 4, 199-219.</p> <p>[2] METHODS report - CANUE staff in preparation (please contact <a href="mailto:info@canue.ca">info@canue.ca</a> for citation information).</p> <p>[3] CanMap Postal Code Suite v2015.3. [computer file] Markham: DMTI Spatial Inc., 2015.</p> <p><b>Acknowledge:</b></p> <p>[1] Local Climate Zone metrics, indexed to DMTI Spatial Inc. postal codes, were provided by CANUE (Canadian Urban Environmental Health Research Consortium).</p>