

ENVIRONMENTAL HEALTH RESEARCH SCAN

VOL 7 (10) OCTOBER 2023



<p><u>AIR QUALITY</u></p> <ul style="list-style-type: none"> • Indoor air • Outdoor air • Radon, Other 	<p><u>CLIMATE CHANGE</u></p> <ul style="list-style-type: none"> • Extreme weather • Flooding • Sea level rise • Wildfires, Other 	<p><u>DISEASES, VECTORS, PESTS</u></p> <ul style="list-style-type: none"> • COVID-19 • Animal vectors • Insect vectors • Pests, Other
<p><u>FOOD</u></p> <ul style="list-style-type: none"> • Food safety • Food security • Growing food, Other 	<p><u>BUILT ENVIRONMENT</u></p> <ul style="list-style-type: none"> • Green & blue spaces • Housing • Noise • Planning & design • Transportation, Other 	<p><u>PUBLIC HEALTH FUNDAMENTALS</u></p> <ul style="list-style-type: none"> • Communication • Health promotion • Health impact assessment • Health equity • One Health, Other
<p><u>WATER</u></p> <ul style="list-style-type: none"> • Drinking water • Recreational water • Small water systems • Wastewater, Other 	<p><u>NON-CLIMATE RELATED DISASTERS</u></p> <ul style="list-style-type: none"> • Earthquakes • Marine • Terrestrial, Other 	<p><u>OTHER TOPICS</u></p> <ul style="list-style-type: none"> • Cannabis products • Tobacco, nicotine products • Ionizing, non-ionizing radiation • Personal services establishments, Other
<p><u>SPECIFIC POPULATIONS</u> (children, Indigenous Peoples, older adults, other)</p>		

Environmental Health (EH) Research Scan: Aims and Scope

NCCEH's EH Research Scan aims to expand awareness of topics in environmental health, in line with [NCCEH's vision](#) to be the indispensable online resource for environmental health practitioners and policy-makers across Canada. This research scan is not peer reviewed; it does not cover all research, news, and information, and NCCEH is not responsible for the accuracy of the content from media or databases. Not all links are open access; some are abstract links where paid journal subscription is required.

EDITOR PICKS

Fermented foods safety guidance: a new resource for public health practitioners [blog].

Kelsey James

“Fermented food safety is a shared challenge for many public health practitioners across Canada. While many of these foods are generally safe, emerging fermentation trends such as the selling of fermented foods at farmers’ markets or the preparation of fermented foods at food premises, may exacerbate food safety risks...” more



Fermented foods safety guidance.

BC Centre for Disease Control

Best practices for a variety of fermented foods will assist food safety staff (health inspectors) with evaluating the safety of fermented foods and fermentation processes encountered during inspections [...] A national working group of health inspectors, food safety specialists, and industry fermentation experts worked together to create guidance on fermented foods. Each fermented food review includes:

- background on the food,
- a description of the food preparation,
- a food flow chart,
- a review of the potential issues with the food preparation, and
- food safety control points.



Can we reduce inevitable exposures to chemicals of concern? [webinar]

Miriam L Diamond – Oct 25, 2023, 12:00-1:00 PT

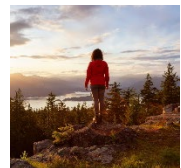
Dr. Diamond will present four reasons for, and offer five solutions to redress this failure of chemicals management, ranging from promoting hazard and not risk assessment, to putting a hard cap on chemical production.



Climate Ready BC.

Government of British Columbia

“ClimateReadyBC is a new approach from the B.C. government to learn lessons from past emergencies; address disaster and climate risk; build capacity and resilience...”



September research scan [blog].

National Collaborating Centre for Environmental Health

This monthly Research Scan highlights recent environmental health publications by topic and provides easy access to article abstracts and report summaries to support public health professionals, researchers, planners, students, and others working in public health.



NCCEH eNews (September 2023): Urban rewilding and public health considerations; more...

National Collaborating Centre for Environmental Health



This monthly eNews highlights recent environmental health publications, research scans, webinars and other events and resources.

ENVIRONMENTAL HEALTH RESEARCH SCAN

SELECTED PUBLICATIONS

1. Diamond ML. **Can we reduce inevitable exposures to chemicals of concern? [webinar]**. Vancouver, BC: National Collaborating Centre for Environmental Health; 2023 Oct 25. Available from: <https://ncceh.ca/events/upcoming-webinars/can-we-reduce-inevitable-exposures-chemicals-concern>.
2. James K. **Fermented foods safety guidance: A new resource for public health practitioners [blog]**. Vancouver, BC: National Collaborating Centre for Environmental Health; 2023 Oct 6. Available from: <https://ncceh.ca/resources/blog/fermented-foods-safety-guidance-new-resource-public-health-practitioners>.
3. National Collaborating Centre for Environmental Health. **September research scan**. Vancouver, BC: NCCEH; 2023 Sep 21. Available from: <https://ncceh.ca/sites/default/files/2023-09/NCCEH%20Research%20Scan%20-202309.pdf>.
4. National Collaborating Centre for Environmental Health. **NCCEH eNews (September 2021): Urban rewilding and public health considerations; more...** Vancouver, BC: NCCEH; 2023 Sep 21. Available from: <https://app.cyberimpact.com/newsletter-view-online?ct=NCYF5II09gSdZ5nNrfWCY72WUutD2QjRhWy0PFRRirWWLK9295JhgeovdWqVnyNFPIb-gsLo5ZJCUPIo0K4zSg~~>.

1. AIR QUALITY

INDOOR AIR

1. Pertegal V, Riquelme E, Lozano-Serra J, Cañizares P, Rodrigo MA, Sáez C, Lacasa E. **Cleaning technologies integrated in duct flows for the inactivation of pathogenic microorganisms in indoor environments: A critical review of recent innovations and future challenges**. J Environ Manage. 2023;345. Available from: <https://doi.org/10.1016/j.jenvman.2023.118798>.
2. Sanchez-Fernandez A, Coll-Aliaga E, Lerma-Arce V, Lorenzo-Saez E. **Evaluation of different natural ventilation strategies by monitoring the indoor air quality using CO(2) Sensors**. Int J Environ Res Public Health. 2023;20(18). Available from: <https://www.ncbi.nlm.nih.gov/pubmed/37754617>.
3. US Environmental Protection Agency. **Schools as cleaner air and cooling centers: tips for facility managers, principals, teachers, and parents and caregivers**. Washington, DC: US EPA; 2023 [updated Sep 19]; Available from: <https://www.epa.gov/schools/schools-cleaner-air-and->

[cooling-centers-tips-facility-managers-principals-teachers-and?utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=#Factsheets.](#)

OUTDOOR AIR

1. Sidney BT, Chandras S, Campbell SM, Salma J, Yamamoto SS. **Health-related impacts of climate change and air pollution on older adult, child, and adolescent immigrants and refugees globally: a scoping review.** J Public Health. 2023. Available from: <https://doi.org/10.1007/s10389-023-02103-z>.
2. Tran HM, Tsai F-J, Lee Y-L, Chang J-H, Chang L-T, Chang T-Y, et al. **The impact of air pollution on respiratory diseases in an era of climate change: A review of the current evidence.** Sci Total Environ. 2023;898:166340. Available from: <https://www.sciencedirect.com/science/article/pii/S0048969723049653>.
3. Zhang B, Weuve J, Langa KM, D'Souza J, Szpiro A, Faul J, et al. **Comparison of particulate air pollution from different emission sources and incident dementia in the US.** JAMA Internal Medicine. 2023. Available from: <https://doi.org/10.1001/jamainternmed.2023.3300>.

RADON, OTHER

1. BC Lung Foundation. **Radon Detector Library Lending Program.** Vancouver, BC: BC Lung Foundation; 2023; Available from: <https://bclung.ca/radon-detector-library-lending-program>.

2. FOOD

FOOD SAFETY

1. British Columbia Centre for Disease Control. **Fermented foods safety guidance** Vancouver, BC: BCCDC; 2023. Available from: <http://www.bccdc.ca/health-professionals/professional-resources/fermented-foods>.
2. Fatemi M, Niyayati M, Rouhani S, Karamati SA, Mirjalali H, Karanis P. **Contamination of fresh vegetables in municipal stores with pathogenic Acanthamoeba genotypes; a public health concern.** Int J Environ Health Res. 2023;33(10):1010-21. Available from: <https://doi.org/10.1080/09603123.2022.2067328>.
3. Harris RA, Tchao C, Prystajecy N, Weedmark K, Tcholakov Y, Lefebvre M, Austin JW. **Foodborne Botulism, Canada, 2006-2021(1).** Emerg Infect Dis. 2023;29(9):1730-7. Available from: <https://doi.org/10.3201/eid2909.230409>.
4. Health Canada. **Policy on Listeria monocytogenes in ready-to-eat foods.** Ottawa, ON: Government of Canada; 2023 Oct 1. Available from: https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/pdf/legislation/pol/listeria-monocytogenes-ready-eat-foods-eng.pdf.

5. Perry KV, Kelton DF, Dufour S, Miltenburg C, Sedo SGU, Renaud DL. **Risk factors for Salmonella Dublin on dairy farms in Ontario, Canada.** J Dairy Sci. 2023. Available from: <https://www.sciencedirect.com/science/article/pii/S0022030223005659>.
6. Raut R, Maharjan P, Fouladkhah AC. **Practical preventive considerations for reducing the public health burden of poultry-related salmonellosis.** Int J Environ Res Public Health. 2023;20(17):6654. Available from: <https://www.mdpi.com/1660-4601/20/17/6654>.
7. Tang C, Gómez Ramos MJ, Heffernan A, Kaserzon S, Rauert C, Lin C-Y, et al. **Evaluation and identification of chemical migrants leached from baby food pouch packaging.** Chemosphere. 2023;340. Available from: <https://doi.org/10.1016/j.chemosphere.2023.139758>.

FOOD SECURITY

1. Charlebois S. **Eliminating plastics should not jeopardize food security.** 2023 Sep 19. Available from: <https://torontosun.com/opinion/columnists/charlebois-eliminating-plastics-should-not-jeopardize-food-security>.
2. Holloway TP, Jayasinghe S, Dalton L, Kilpatrick ML, Hughes R, Patterson KAE, et al. **Enhancing food literacy and food security through school gardening in rural and regional communities.** Int J Environ Res Public Health. 2023;20(18):6794. Available from: <https://www.mdpi.com/1660-4601/20/18/6794>.

GROWING FOOD, OTHER

1. Canadian Agri-Food Policy Institute. **Canadian agri-food resilience: a toolbox for managing crises.** Ottawa, ON: Canadian Agri-Food Policy Institute; 2023 Sep. Available from: <https://capi-icpa.ca/wp-content/uploads/2023/09/2023-09-13-Canadian-Agri-Food-Resilience-CAPI-EN.pdf>.

3. WATER

DRINKING WATER

1. Hile TD, Dunbar SG, Sinclair RG. **Microbial contamination analysis of drinking water from bulk dispensers and fast-food restaurants in the Eastern Coachella Valley, California.** Water Supply. 2023;23(9):3578-96. Available from: <https://doi.org/10.2166/ws.2023.200>.
2. Jankowski C, Isaacson K, Larsen M, Ley C, Cook M, Whelton AJ. **Wildfire damage and contamination to private drinking water wells.** AWWA Water Science. 2023;5(1):e1319. Available from: <https://awwa.onlinelibrary.wiley.com/doi/abs/10.1002/aws2.1319>.
3. Levin R, Villanueva CM, Beene D, Craddock AL, Donat-Vargas C, Lewis J, et al. **US drinking water quality: exposure risk profiles for seven legacy and emerging contaminants.** J Expo Sci Environ Epidemiol. 2023. Available from: <https://doi.org/10.1038/s41370-023-00597-z>.
4. Ontario Agency for Health Protection and Promotion (Public Health Ontario). **Per-and poly-fluoroalkyl substances (PFAS).** Toronto, ON: PHO; 2023 May. Available from: https://www.publichealthontario.ca/-/media/Documents/P/2023/pfas-per-poly-fluoroalkyl-substances.pdf?rev=69beeade3f0949ee9b089bb2ee36b3e3&sc_lang=en.

5. US Environmental Protection Agency. **Per- and Polyfluoroalkyl Substances (PFAS). Proposed PFAS National Primary Drinking Water Regulation.** Washington, DC: US EPA; 2023 [updated 2023 Sep 22]; Available from: <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>.
6. Walkerton Clean Water Centre. **Impact of wildfires on drinking water sources.** Walkerton, ON: Walkerton Clean Water Centre; 2023 [updated 2023 Jun 6]; Available from: <https://wcwc.ca/dwrl/impact-of-wildfires-on-drinking-water-sources/>.
7. Walkerton Clean Water Centre. **Asbestos-cement pipes and drinking water.** Walkerton, ON: Walkerton Clean Water Centre; 2023 [updated 2023 Mar 29]; Available from: <https://wcwc.ca/dwrl/asbestos-cement-pipes-and-drinking-water/>.

RECREATIONAL WATER

1. Erratt KJ, Creed IF, Lobb DA, Smol JP, Trick CG. **Climate change amplifies the risk of potentially toxigenic cyanobacteria.** *Global Change Biology.* 2023;29(18):5240-9. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/gcb.16838>.
2. Heilgeist S, Sahin O, Sekine R, Stewart RA. **Catching nano: Evaluating the fate and behaviour of nano-TiO₂ in swimming pools through dynamic simulation modelling.** *J Environ Manage.* 2023;345. Available from: <https://doi.org/10.1016/j.jenvman.2023.118786>.
3. Kovtun D. **U of A engineering student develops a device to help predict algae blooms.** Canadian Broadcasting Corporation. 2023. Available from: <https://www.cbc.ca/news/canada/edmonton/u-of-a-engineering-student-develops-a-device-to-help-predict-algae-blooms-1.6985942>.
4. Macklin MG, Thomas CJ, Mudbhalkar A, Brewer PA, Hudson-Edwards KA, Lewin J, et al. **Impacts of metal mining on river systems: a global assessment.** *Science.* 2023;381(6664):1345-50. Available from: <https://www.science.org/doi/10.1126/science.adg6704>.
5. Pinto A, Botelho MJ, Churro C, Asselman J, Pereira P, Pereira JL. **A review on aquatic toxins - Do we really know it all regarding the environmental risk posed by phytoplankton neurotoxins?** *J Environ Manage.* 2023;345. Available from: <https://doi.org/10.1016/j.jenvman.2023.118769>.

SMALL WATER SYSTEMS

1. Wiebe AJ, McKenzie JM, Hamel E, Rudolph DL, Mulligan B, de Grandpré I. **Groundwater vulnerability in the Yukon and Northwest Territories, Canada.** *Hydrogeology Journal.* 2023. Available from: <https://doi.org/10.1007/s10040-023-02720-8>.

WASTEWATER, OTHER

1. Centre for Health Informatics. **The COVID-19 response. Alberta wastewater.** Calgary, AB: University of Calgary; 2023. Available from: <https://covid-tracker.chi-csm.ca/>.
2. Iyer P. **Water Dilemmas: The cascading impacts of water insecurity in a heating world.** Oxfam International; 2023 Sep 29. Available from: <http://hdl.handle.net/10546/621548>.

4. CLIMATE CHANGE

EXTREME WEATHER

1. C40 Cities. **Cities taking action to address health, equity and climate risks.** C40 Cities; 2023 Oct 16. Available from: <https://www.c40.org/news/cities-taking-action-to-address-health-equity-and-climate-risks/>.
2. ClimateReadyBC. **Resources search tool.** Victoria, BC: Government of British Columbia; 2023. Available from: <https://experience.arcgis.com/experience/e6e03f5294c447309b7d8311f1620ba7/page/CRBC-Search---Full-Page/>.
3. Coldwell Banker Richard Ellis (CBRE). **Creating Resilience. North American City Sustainability Study 2023. Achieving a Low Carbon Future.** Dallas, TX: CBRE; 2023 Aug. Available from: <https://www.cbre.com/insights/reports/north-american-city-sustainability-study-2023>.
4. Federation of American Scientists. **An open call for policy ideas to tackle the extreme heat crisis.** Washington, DC: Federation of American Scientists; 2023 Sep. Available from: <https://fas.org/accelerator/extreme-heat-policy-challenge/>.
5. Flores EC, Brown LJ, Kakuma R, Eaton J, Dangour A. **Mental health and wellbeing co-benefits of climate change mitigation and adaptation strategies: a systematic review.** SSRN. 2023. Available from: <http://dx.doi.org/10.2139/ssrn.4517171>.
6. Harper SL, Cunsolo A, Aylward B, Clayton S, Minor K, Cooper M, Vriezen R. **Estimating climate change and mental health impacts in Canada: A cross-sectional survey protocol.** PLoS ONE. 2023;18(10):e0291303. Available from: <https://doi.org/10.1371/journal.pone.0291303>.
7. Island Health. **Climate Change & Sustainability Roadmap 2023-2028.** Kelowna, BC: Island Health; 2023. Available from: <https://www.interiorhealth.ca/about-ih/climate-change-approach/climate-change-and-sustainability-roadmap-2023-2028#:~:text=The%20Climate%20Change%20and%20Sustainability,provider%20and%20key%20community%20member>.
8. Quantz D, Lubik A, Newhouse E, Pastrana S. **Opportunities for health system action on climate change.** British Columbia Medical Journal. 2023. Available from: <https://bcmj.org/blog/opportunities-health-system-action-climate-change>.
9. Richmond JG, Hill R. **Rethinking local resilience for extreme heat events.** Public Health. 2023;218:146-8. Available from: <https://www.sciencedirect.com/science/article/pii/S0033350623000872>.
10. Weichenthal S, Lavigne E, You H, Pollitt K, Shin T, Kulka R, et al. **Daily Summer Temperatures and Hospitalization for Acute Cardiovascular Events: Impact of Outdoor PM2.5 Oxidative Potential on Observed Associations across Canada.** Epidemiology. 2023;10.1097/EDE.0000000000001651. Available from: https://journals.lww.com/epidem/fulltext/9900/daily_summer_temperatures_and_hospitalization_for.176.aspx.

FLOODING

SEA LEVEL RISE

1. Logan TM, Anderson MJ, Reilly AC. **Risk of isolation increases the expected burden from sea-level rise.** *Nature Climate Change.* 2023;13(4):397-402. Available from: <https://doi.org/10.1038/s41558-023-01642-3>.

WILDFIRES, OTHER

1. Chen K, Ma Y, Bell ML, Yang W. **Canadian wildfire smoke and asthma syndrome emergency department visits in New York City.** *JAMA.* 2023. Available from: <https://doi.org/10.1001/jama.2023.18768>.
2. Jung J, Wilkins JL, Schollaert CL, Masuda YJ, Flunker JC, Connolly RE, et al. **Advancing the community health vulnerability index for wildland fire smoke exposure.** *Sci Total Environ.* 2024;906:167834. Available from: <https://www.sciencedirect.com/science/article/pii/S0048969723064616>.
3. Sun R. **The science of smoke and health.** Pullman, WA2023 [Sep 21]; Available from: <https://www.nwpb.org/2023/09/21/the-science-of-smoke-and-health/>.

5. BUILT ENVIRONMENT

GREEN & BLUE SPACES

1. Pasanen TP, White MP, Elliott LR, van den Bosch M, Bratman GN, Ojala A, et al. **Urban green space and mental health among people living alone: The mediating roles of relational and collective restoration in an 18-country sample.** *Environ Res.* 2023;232:116324. Available from: <https://www.sciencedirect.com/science/article/pii/S0013935123011283>.
2. Woodward A, Hinwood A, Bennett D, Gear B, Vardoulakis S, Lalchandani N, et al. **Trees, climate change, and health: an urban planning, greening and implementation perspective.** *Int J Environ Res Public Health.* 2023;20(18):6798. Available from: <https://www.mdpi.com/1660-4601/20/18/6798>.

HOUSING

1. Brown EM, Moinuddin R, Hapsari A, Gozdyra P, Durant S, Pinto AD. **Eviction filings during bans on enforcement throughout the COVID-19 pandemic: an interrupted time series analysis.** *Can J Public Health.* 2023;114(5):745-54. Available from: <https://doi.org/10.17269/s41997-023-00813-1>.

NOISE, other

1. Ribeiro Pimenta A, Kamruzzaman M, Currie G. **Long-term effects of autonomous vehicles on the built environment: a systematic scoping review towards conceptual frameworks.** *Transport*

Reviews. 2023;43(6):1083-117. Available from:
<https://doi.org/10.1080/01441647.2023.2189325>.

2. Welch D, Shepherd D, Dirks KN, Reddy R. **Health effects of transport noise**. Transport Reviews. 2023;43(6):1190-210. Available from: <https://doi.org/10.1080/01441647.2023.2206168>.

PLANNING & DESIGN

1. Caporale A, Fast H. **The Burden of Concern - The Healthy Environment, Healthy Neighbourhood Project**. Winnipeg, MB: Canadian Centre For Policy Alternatives; 2023 Mar 30. Available from: <https://policyalternatives.ca/publications/reports/burden-concern#:~:text=The%20HEHN%20project%20documented%20first,in%20Point%20Douglas%20and%20St.>
2. Rashidfarokhi A, Danivska V. **Managing crises ‘together’: how can the built environment contribute to social resilience?** Building Res Inform. 2023;51(7):747-63. Available from: <https://doi.org/10.1080/09613218.2023.2191922>.

TRANSPORTATION, OTHER

1. National Research Council (US). **E-Scooter Safety: Issues and Solutions**. Washington, DC: The National Academies Press; 2023. Available from: <https://nap.nationalacademies.org/catalog/27252/e-scooter-safety-issues-and-solutions>.
2. National Research Council (US). **E-Scooter Safety Toolbox**. Washington, DC: The National Academies Press; 2023. Available from: <https://nap.nationalacademies.org/catalog/27253/e-scooter-safety-toolbox>.

6. NON-CLIMATE RELATED DISASTERS

EARTHQUAKES

1. Pratiti R. **An Ecological Approach to Disaster Mitigation: A Literature Review**. Cureus. 2023;15(9). Available from: <https://www.cureus.com/articles/156318-an-ecological-approach-to-disaster-mitigation-a-literature-review#!/>.

MARINE

TERRESTRIAL, OTHER

7. DISEASES, VECTORS, PESTS

COVID-19, Infectious Diseases General

1. Bien MB, Whitton A, Meehan A, Thornhill L, Ellis K, Leopold J, et al. **Strengthening public health capacity to address infectious diseases: lessons from 3 centers of excellence in public health and homelessness.** J Public Health Manag Pract. 2023;29(6):775-9. Available from: https://journals.lww.com/jphmp/fulltext/2023/11000/strengthening_public_health_capacity_to_address.3.aspx.
2. Biro S, Scott K, Nagy E, Slipp N, Beck K, Catley C, Hart E. **Tracking emergency response actions during COVID-19 leads to development of an innovative public health evaluation tool.** Can J Public Health. 2023;114(5):737-44. Available from: <https://doi.org/10.17269/s41997-023-00811-3>.
3. Boulos L, Curran JA, Gallant A, Wong H, Johnson C, Delahunty-Pike A, et al. **Effectiveness of face masks for reducing transmission of SARS-CoV-2: a rapid systematic review.** Philos Trans A Math Phys Eng Sci. 2023;381(2257):20230133. Available from: <https://doi.org/10.1098%2Fsta.2023.0133>.
4. Braën-Boucher C, Roberge M-C. **Promoting mental health in a post-pandemic context: factors to target and actions to prioritize at the municipal and community levels.** Montreal, QC: Institut national de santé publique; 2023 Apr. Available from: <https://www.inspq.qc.ca/en/publications/3317>.
5. Chan YLE, Irvine M, Prystajecky N, Sbihi H, Taylor M, Joffres Y, et al. **Emergence of SARS-CoV-2 Delta variant and effect of nonpharmaceutical interventions, British Columbia, Canada.** Emerging Infectious Disease journal. 2023;29(10):1999. Available from: https://wwwnc.cdc.gov/eid/article/29/10/23-0055_article.
7. Chen Y, Beattie H, Simpson A, Nicholls G, Sandys V, Keen C, Curran AD. **A COVID-19 Outbreak in a Large Meat-Processing Plant in England: Transmission Risk Factors and Controls.** Int J Environ Res Public Health. 2023;20(19):6806. Available from: <https://www.mdpi.com/1660-4601/20/19/6806>.
8. Craig SG, Robillard CL, Ames ME, Feldman S, Pepler DJ. **Adherence to and motivations for complying with public health measures among adolescents during the coronavirus disease (COVID-19) Pandemic in Canada.** Psychol Rep. 2023:332941231201355. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/37732514>.
9. Forsyth J, Wang L, Thomas-Bachli A. **COVID-19 case rates, spatial mobility, and neighbourhood socioeconomic characteristics in Toronto: a spatial-temporal analysis.** Can J Public Health. 2023;114(5):806-22. Available from: <https://doi.org/10.17269/s41997-023-00791-4>.
10. Guan C, Tan J, Li Y, Cheng T, Yang J, Liu C, Keith M. **How do density, employment and transit affect the prevalence of COVID-19 pandemic? A study of 3,141 counties across the United States.** Health Place. 2023;84:103117. Available from: <https://www.sciencedirect.com/science/article/pii/S1353829223001545>.
11. Horne J, Dunne N, Singh N, Safiuddin M, Esmaeili N, Erenler M, et al. **Building parameters linked with indoor transmission of SARS-CoV-2.** Environ Res. 2023;238:117156. Available from: <https://www.sciencedirect.com/science/article/pii/S0013935123019606>.
12. Houweling L, Maitland-Van der Zee A-H, Holtjer JCS, Bazdar S, Vermeulen RCH, Downward GS, Bloemsma LD. **The effect of the urban exposome on COVID-19 health outcomes: A systematic review and meta-analysis.** Environ Res. 2023:117351. Available from: <https://www.sciencedirect.com/science/article/pii/S0013935123021552>.

13. Kingsley J, Donati K, Litt J, Shimpo N, Blythe C, Vávra J, et al. **Pandemic gardening: A narrative review, vignettes and implications for future research.** Urban For Urban Green. 2023;87:128062. Available from: <https://www.sciencedirect.com/science/article/pii/S1618866723002339>.
14. Lekić Glavan O, Nikolić N, Folić B, Vitošević B, Mitrović A, Kosanović S. **COVID-19 and City Space: Impact and Perspectives.** Sustainability. 2023 09 13;14(3):1885. Available from: <https://www.mdpi.com/2071-1050/14/3/1885>.
15. Lin SY, Sun JS, Hung MC, Chang JZC. **Effectiveness of mouth rinses against COVID-19: a systematic review and network meta-analysis.** J Hosp Infect. 2023;139:175-91. Available from: <https://doi.org/10.1016/j.jhin.2023.06.022>.
16. Littlecott H, Herd C, O'Rourke J, Chaparro LT, Keeling M, James Rubin G, Fearon E. **Effectiveness of testing, contact tracing and isolation interventions among the general population on reducing transmission of SARS-CoV-2: a systematic review.** Philos Trans A Math Phys Eng Sci. 2023;381(2257):20230131. Available from: <https://doi.org/10.1098/rsta.2023.0131>.
17. Madhusudanan A, Iddon C, Cevik M, Naismith JH, Fitzgerald S. **Non-pharmaceutical interventions for COVID-19: a systematic review on environmental control measures.** Philos Trans A Math Phys Eng Sci. 2023;381(2257):20230130. Available from: <https://doi.org/10.1098/rsta.2023.0130>.
18. Pasquale DK, Welsh W, Olson A, Yacoub M, Moody J, Barajas Gomez BA, et al. **Scalable strategies to increase efficiency and augment public health activities during epidemic peaks.** Journal of public health management and practice : JPHMP. 2023;29(6):863-73. Available from: <https://doi.org/10.1097/phh.0000000000001780>.
19. Raja S, Raja A. **Hand sanitizers with possible risks: problems and recommendations.** Can J Public Health. 2023;114(5):882-3. Available from: <https://doi.org/10.17269/s41997-023-00799-w>.
20. Royal Society. **COVID-19: examining the effectiveness of non-pharmaceutical interventions. Full report.** London, UK: Royal Society; 2023 Aug. Available from: <https://royalsociety.org/-/media/policy/projects/impact-non-pharmaceutical-interventions-on-covid-19-transmission/the-royal-society-covid-19-examining-the-effectiveness-of-non-pharmaceutical-interventions-report.pdf>.
21. Royal Society. **COVID-19: examining the effectiveness of non-pharmaceutical interventions. Executive summary.** London, UK: Royal Society; 2023 Aug. Available from: <https://royalsociety.org/-/media/policy/projects/impact-non-pharmaceutical-interventions-on-covid-19-transmission/covid-19-examining-the-effectiveness-of-non-pharmaceutical-interventions-executive-summary.pdf>.
22. Shi L, Gao D, Wang X, Lin J, Chen D, Li T, et al. **Community resilience enhances epidemic prevention: Moderating role of residents' participation in community-based epidemic prevention.** International Journal of Disaster Risk Reduction. 2023;97:104040. Available from: <https://www.sciencedirect.com/science/article/pii/S2212420923005204>.

ANIMAL VECTORS

1. de Cock MP, de Vries A, Fonville M, Esser HJ, Mehl C, Ulrich RG, et al. **Increased rat-borne zoonotic disease hazard in greener urban areas.** *Sci Total Environ.* 2023;896. Available from: <https://doi.org/10.1016/j.scitotenv.2023.165069>.
2. Djokic V, Freddi L, de Massis F, Lahti E, van den Esker MH, Whatmore A, et al. **The emergence of *Brucella canis* as a public health threat in Europe: what we know and what we need to learn.** *Emerging Microbes Infect.* 2023;12(2):2249126. Available from: <https://doi.org/10.1080/22221751.2023.2249126>.
3. Gottdenker NL, Nascimento Ramos RA, Hakimi H, McHale B, Rivera S, Miller BM, et al. **Angiostrongylus cantonensis Infection in Brown Rats (*Rattus norvegicus*), Atlanta, Georgia, USA, 2019–2022.** *Emerg Infect Dis.* 2023;29(10):2167–70. Available from: <https://doi.org/10.3201/eid2910.230706>.
4. Jakobek B, Berhane Y, Nadeau M-S, Embury-Hyatt C, Lung O, Xu W, Lair S. **Influenza A(H5N1) Virus infections in 2 free-ranging black bears *Ursus americanus*, Quebec, Canada.** *Emerging Infectious Disease journal.* 2023;29(10). Available from: https://wwwnc.cdc.gov/eid/article/29/10/23-0548_article.
5. Mundell E. **Rat-borne parasite that can cause brain disease spreading in southern U.S.** *Consumer HealthDay*; 2023 Sep 20. Available from: <https://consumer.healthday.com/rat-borne-parasite-that-can-cause-brain-disease-spreading-in-southern-u-s-2665635294.html>.
6. Qiu Y, Guitian J, Webster JP, Musallam I, Haider N, Drewe JA, Song J. **Global prioritization of endemic zoonotic diseases for conducting surveillance in domestic animals to protect public health.** *Philos Trans R Soc Lond B Biol Sci.* 2023;378(1887):20220407. Available from: <https://doi.org/10.1098/rstb.2022.0407>.
7. Robinson S, Borlang J, Himsforth C, Pearl D, Weese JS, Dibernardo A, et al. **Rat Hepatitis E Virus in Norway Rats, Ontario, Canada, 2018–2021.** *Emerging Infectious Disease journal.* 2023;29(9):1890. Available from: https://wwwnc.cdc.gov/eid/article/29/9/23-0517_article.
8. Van Hemert C, Ballweber LR, Sinnott DR, Atwood TC, Fischbach A, Gustine DD, Pabilonia KL. **Giardia and Cryptosporidium in resident wildlife species in Arctic Alaska.** *Food and Waterborne Parasitology.* 2023;32:e00206. Available from: <https://www.sciencedirect.com/science/article/pii/S2405676623000197>.

INSECT VECTORS (also ticks)

1. Bergevin MD, Ng V, Menzies P, Ludwig A, Mubareka S, Clow KM. **Cache a Killer: Cache Valley virus seropositivity and associated farm management risk factors in sheep in Ontario, Canada.** *PLoS ONE.* 2023;18(8):e0290443. Available from: <https://doi.org/10.1371/journal.pone.0290443>.
2. Canadian Broadcasting Corporation. **Manitoba's 1st case of West Nile virus this year identified in person in Winnipeg area.** 2023. Available from: <https://www.cbc.ca/lite/story/1.6948067>.
3. Eisen L, Eisen RJ. **Changes in the geographic distribution of the blacklegged tick, *Ixodes scapularis*, in the United States.** *Ticks Tick Borne Dis.* 2023;14(6):102233. Available from: <https://doi.org/10.1016/j.ttbdis.2023.102233>.
4. Foster E, Maes SA, Holcomb KM, Eisen RJ. **Prevalence of five human pathogens in host-seeking *Ixodes scapularis* and *Ixodes pacificus* by region, state, and county in the contiguous United**

- States generated through national tick surveillance.** Ticks Tick Borne Dis. 2023;14(6):102250. Available from: <https://doi.org/10.1016/j.ttbdis.2023.102250>.
5. Klingelhöfer D, Braun M, Kramer IM, Reuss F, Müller R, Groneberg DA, Brüggmann D. **A virus becomes a global concern: research activities on West-Nile virus.** Emerging Microbes Infect. 2023;12(2):2256424. Available from: <https://doi.org/10.1080/22221751.2023.2256424>.
 6. Logan JJ, Hoi AG, Sawada M, Knudby A, Ramsay T, Blanford JJ, et al. **Risk factors for Lyme disease resulting from residential exposure amidst emerging Ixodes scapularis populations: A neighbourhood-level analysis of Ottawa, Ontario.** PLoS ONE. 2023;18(8):e0290463. Available from: <https://doi.org/10.1371/journal.pone.0290463>.
 7. Nawrocki CC, Piedmonte N, Niesobecki SA, Rowe A, Hansen AP, Kaufman A, et al. **Acceptability of 4-poster deer treatment devices for community-wide tick control among residents of high Lyme disease incidence counties in Connecticut and New York, USA.** Ticks Tick Borne Dis. 2023;14(6):102231. Available from: <https://doi.org/10.1016/j.ttbdis.2023.102231>.
 8. Saavedra I, Rabadán-González J, Aragonés D, Figuerola J. **Can citizen science contribute to Avian Influenza surveillance?** Pathogens. 2023;12(9).

PESTS, OTHER (including Antimicrobial Resistance, Interventions)

1. Costa MM, Cardo M, Ruano Z, Alho AM, Dinis-Teixeira J, Aguiar P, Leite A. **Effectiveness of antimicrobial interventions directed at tackling antimicrobial resistance in animal production: A systematic review and meta-analysis.** Prev Vet Med. 2023;218:106002. Available from: <https://doi.org/10.1016/j.prevetmed.2023.106002>.
2. Council of Canadian Academies. **Overcoming Resistance - Expert Panel on Antimicrobial Availability.** Ottawa, ON: CCA, Expert Panel on Antimicrobial Availability; 2023 Sep 6. Available from: https://www.cca-reports.ca/wp-content/uploads/2023/09/Overcoming-Resistance_digital_FINAL_2.pdf.

8. PUBLIC HEALTH FUNDAMENTALS

COMMUNICATION

1. Bharel M, Auerbach J. **Using public health tools to alleviate homeless encampments.** J Public Health Manag Pract. 2023;29(6). Available from: https://journals.lww.com/jphmp/fulltext/2023/11000/using_public_health_tools_to_alleviate_homeless.1.aspx.

HEALTH PROMOTION

1. Public Health Ontario. **Foundations of health promotion.** Toronto, ON: PHO; 2023 Aug. Available from: https://www.publichealthontario.ca/-/media/Documents/F/2023/focus-on-foundations-health-promotion.pdf?_cldee=BLQZZxrzaIXf-Cc2SZ-Kj63nyqyVIHLhtRfN-

[fDTvxX22gJLxaPet_YEEtWb8Udc&recipientid=contact-c7ccc0a5b4a2e611837d0050569e0009-140b2908d12b4180a52bb5dbbe602f22&esid=d994f4a8-1254-ee11-818a-005056ad61b6.](https://doi.org/10.1137/2023-0009-140b2908d12b4180a52bb5dbbe602f22&esid=d994f4a8-1254-ee11-818a-005056ad61b6)

HEALTH IMPACT ASSESSMENT

1. Jarvis T, Smith RW, Sandhu HS, Mac-Seing M, O’Neill M, Rosella L, et al. **Promise and peril: how health system reforms impacted public health in three Canadian provinces.** *Can J Public Health.* 2023;114(5):714-25. Available from: <https://doi.org/10.17269/s41997-023-00785-2>.

HEALTH EQUITY

1. Chaudhry D. **Climate change and health of the urban poor: The role of environmental justice.** *The Journal of Climate Change and Health.* 2023:100277. Available from: <https://www.sciencedirect.com/science/article/pii/S2667278223000767>.
2. Kapadia F. **Climate justice and health equity: a public health of consequence, October 2023.** *Am J Public Health.* 2023;113(10):1053-4. Available from: <https://doi.org/10.2105%2FAJPH.2023.307404>.
3. Lamarche L, Scallan E, Mak O, Howden J, Bodkin C, Nussey L, et al. **“They forgot about us”: experiences of the COVID-19 pandemic among people deprived of housing in an urban centre in Ontario, Canada.** *Can J Public Health.* 2023;114(5):796-805. Available from: <https://doi.org/10.17269/s41997-023-00793-2>.
4. National Collaborating Centre for Determinants of Health. **Learning from practice: promoting wellbeing and health equity among older adults.** Antigonish, NS: NCCDH, St. Francis Xavier University; 2023. Available from: <https://nccdh.ca/resources/entry/promoting-wellbeing-and-health-equity-among-older-adults>.
5. Percival V, Thoms OT, Oppenheim B, Rowlands D, Chisadza C, Fewer S, et al. **The Lancet Commission on peaceful societies through health equity and gender equality.** *The Lancet.* 2023. Available from: [https://doi.org/10.1016/S0140-6736\(23\)01348-X](https://doi.org/10.1016/S0140-6736(23)01348-X).
6. Public Health Association of British Columbia. **Promoting health equity for older adults.** Canada: Public Health Association of BC; 2023 May 3. Available from: <https://policycommons.net/artifacts/4544284/promoting-health-equity-for-older-adults/>.
7. Public Health Ontario. **Canadian health equity related glossaries.** Toronto, ON: PHO; 2023 Aug. Available from: https://www.publichealthontario.ca/-/media/Documents/H/2023/health-equity-glossaries-canada.pdf?_cldee=BLQZZxrzaIXf-Cc2SZ-Kj63nyqyVIHLhtRfN-fDTvxX22gJLxaPet_YEEtWb8Udc&recipientid=contact-c7ccc0a5b4a2e611837d0050569e0009-140b2908d12b4180a52bb5dbbe602f22&esid=d994f4a8-1254-ee11-818a-005056ad61b6.
8. Weeks C. **A comprehensive new set of guidelines is being released to promote health equity in Canada.** *Globe & Mail.* 2023 Sep 25. Available from: <https://www.theglobeandmail.com/canada/article-health-equity-guidelines/>.

ONE HEALTH, OTHER (Policy, Biomonitoring, Surveillance)

1. British Columbia Emergency Management and Climate Readiness. **New emergency management legislation, task force pave way for resilient communities**. Victoria, BC: Government of British Columbia; 2023 Oct. Available from: <https://news.gov.bc.ca/releases/2023EMCR0064-001534>.
2. National Collaborating Centre for Methods and Tools. **What are the latest innovations in public health surveillance?** . Winnipeg, MB: NCCMT; 2023 Sep. Available from: <https://www.nccmt.ca/pdfs/res/surveillance>.

9. OTHER TOPICS

CANNABIS PRODUCTS

1. Fischer B, Jutras-Aswad D, Hall W. **Outcomes associated with nonmedical cannabis legalization policy in Canada: taking stock at the 5-year mark**. Can Med Assoc J. 2023;195(39):E1351-E3. Available from: <https://www.cmaj.ca/content/cmaj/195/39/E1351.full.pdf>.
2. Hall W, Stjepanović D, Dawson D, Leung J. **The implementation and public health impacts of cannabis legalization in Canada: a systematic review**. Addiction (Abingdon, England). 2023;118(11):2062-72. Available from: <https://doi.org/10.1111/add.16274>.
3. Seltenrich N. **Untested, Unsafe? Cannabis users show higher lead and cadmium levels**. Environ Health Perspect. 2023;131(9):094001. Available from: <https://ehp.niehs.nih.gov/doi/abs/10.1289/EHP13519>.

TOBACCO, NICOTINE PRODUCTS

1. Cui T, Lu R, Liu Q, Jiang X, Li Y, Pan S. **PM1 exposure and spatial transmission of nicotine from the simulated second-hand vapor of pod-based electronic cigarettes**. Sci Total Environ. 2023;897. Available from: <https://doi.org/10.1016/j.scitotenv.2023.165355>.
2. Hamann SL, Kungskulniti N, Charoeng N, Kasemsup V, Ruangkanhasetr S, Jongkhajornpong P. **Electronic cigarette harms: aggregate evidence shows damage to biological systems**. Int J Environ Res Public Health. 2023;20(19):6808. Available from: <https://www.mdpi.com/1660-4601/20/19/6808>.
3. Public Health Ontario. **Ontario tobacco, vaping & cannabis by-law summary – 2023**. Toronto, ON: PHO; 2023 Aug. Available from: [https://www.publichealthontario.ca/-/media/Documents/O/2020/ontario-tobacco-vaping-cannabis-by-law.pdf?rev=e387dfa776e841e8b2e3e68d5069d091&sc_lang=en#:~:text=2nd%20Edition%3A%20August%202023&text=This%20Act%20made%20all%20enclosed,\)%20100%25%20smoke%2D%20free.](https://www.publichealthontario.ca/-/media/Documents/O/2020/ontario-tobacco-vaping-cannabis-by-law.pdf?rev=e387dfa776e841e8b2e3e68d5069d091&sc_lang=en#:~:text=2nd%20Edition%3A%20August%202023&text=This%20Act%20made%20all%20enclosed,)%20100%25%20smoke%2D%20free.)

IONIZING, NON-IONIZING RADIATION

PERSONAL SERVICES ESTABLISHMENTS, OTHER (nanomaterials, microplastics, chemical exposures)

1. Bhasin T, Lamture Y, Kumar M, Dhamecha R. **Unveiling the health ramifications of lead poisoning: a narrative review**. *Cureus*. 2023;15(10):e46727. Available from: <http://dx.doi.org/10.7759/cureus.46727>.
2. Lopez B, Wang X, Chen L-WA, Ma T, Mendez-Jimenez D, Cobb LC, et al. **Metal contents and size distributions of brake and tire wear particles dispersed in the near-road environment**. *Sci Total Environ*. 2023;883:163561. Available from: <https://www.sciencedirect.com/science/article/pii/S0048969723021800>.
3. Ontario Public Health Emergencies Science Advisory Committee. **Scientific report: strengthening Ontario's respiratory vital surveillance system**. Toronto, ON: King's Printer for Ontario; 2023 Sep. Available from: <https://www.publichealthontario.ca/-/media/Documents/S/2023/strengthening-Ontario-respiratory-viral-surveillance-system.pdf?rev=022e48e1f0264d9abc6952ea1c122efe&la=fr>.
4. Payne-Sturges DC, Taiwo TK, Ellickson K, Mullen H, Tchangalova N, Anderko L, et al. **Disparities in toxic chemical exposures and associated neurodevelopmental outcomes: a scoping review and systematic evidence map of the epidemiological literature**. *Environ Health Perspect*. 2023;131(9):096001. Available from: <https://ehp.niehs.nih.gov/doi/abs/10.1289/EHP11750>.
5. Robbins J. **Road hazard: evidence mounts on toxic pollution from tires**. New Haven, CT: Yale Environment 360; 2023 Sep 19. Available from: <https://e360.yale.edu/features/tire-pollution-toxic-chemicals>.
6. Tan Z, Berry A, Maria Charalambides, Mijic A, Pearse W, Porter A, et al. **Tyre wear particles are toxic for us and the environment**. Imperial College London, Imperial Zero Pollution; 2023. Available from: <https://spiral.imperial.ac.uk/bitstream/10044/1/101707/9/Tyre%20wear%20particles%20are%20toxic%20for%20us%20and%20the%20environment%200223-2.pdf>.
7. Yadav H, Khan MRH, Quadir M, Rusch KA, Mondal PP, Orr M, et al. **Cutting boards: an overlooked source of microplastics in human food?** *environ sci tech*. 2023;57(22):8225-35. Available from: <https://doi.org/10.1021/acs.est.3c00924>.

10. SPECIFIC POPULATIONS

CHILDREN

1. Urban Institute. **Where are children in head start exposed to environmental hazards?** Washington, DC: Urban Institute; 2023. Available from: <https://www.urban.org/data-tools/where-are-children-head-start-exposed-environmental-hazards>.

INDIGENOUS PEOPLES

1. Banerji A, Pelletier VA, Haring R, Irvine J, Bresnahan A, Lavallee B. **Food insecurity and its consequences in indigenous children and youth in Canada**. *PLOS Glob Public Health*. 2023;3(9):e0002406. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/37756390>.

2. Furgal CM, Boyd AD, Mayeda AM, Jardine CG, Driedger SM. **Risk communication and perceptions about lead ammunition and Inuit health in Nunavik, Canada.** *Int J Circumpolar Health.* 2023;82(1):2218014. Available from: <https://doi.org/10.1080/22423982.2023.2218014>.
3. Gray V, Gray B, Yanchapaxi MF, Bos K, Murphy M. **Data Colonialism in Canada's Chemical Valley: Aamjiwnaang First Nation and the Failure of the Pollution Notification System.** Toronto, ON: Yellowhead Institute; 2023 Sep. Available from: <https://yellowheadinstitute.org/data-colonialism-in-canadas-chemical-valley/>.

OLDER ADULTS

1. Ayalon L, de Mendonca Lima CA, Banerjee D, Rabheru K, Fitzgerald KG. **Older persons in climate change-induced hazards and building forward better:** International psychogeriatric association, world psychiatric association-section of old age psychiatry, and NGO Committee on Ageing in Geneva position statement. *Int Psychogeriatr.* 2023:1-3. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/37655740>.
2. Chua CMS, Chua JYX, Shorey S. **Effectiveness of home-based interventions in improving loneliness and social connectedness among older adults: a systematic review and meta-analysis.** *Aging Ment Health.* 2023:1-10. Available from: <https://doi.org/10.1080/13607863.2023.2237919>.
3. Li M, Rao W, Su Y, Sul Y, Caron G, D'Arcy C, et al. **Psychological interventions for loneliness and social isolation among older adults during medical pandemics: a systematic review and meta-analysis.** *Age Ageing.* 2023;52(6). Available from: <https://doi.org/10.1093/ageing/afad076>.

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