2023 EH Scan



National Collaborating Centre for Environmental Health

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ENVIRONMENTAL HEALTH RESEARCH SCAN WITH COVID-19 SECTIONS VOL 7 (2) FEBRUARY 2023



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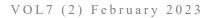
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Environmental Health (EH) Research Scan: Aims and Scope

NCCEH's EH Research Scan aims to expand awareness of topics in environmental health, in line with <u>NCCEH's vision</u> 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 This research scan is not peer reviewed; it does not cover all research, news, and information, and NCCEH is not responsible for the accuracy of the content from media or databases.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.

COVID-19 Publications are listed in the sections above and there are also COVID-19 Additional Topics.



EDITOR PICKS

Do-it-yourself air cleaners: FAQs and additional resources [blog] Angela Eykelbosh, NCCEH Knowledge Translation Scientist

"We compared the various DIY air cleaner designs in terms of cost effectiveness, energy efficiency, and noise generation. We also identified numerous considerations and resources to assist in building DIY air cleaners and deploying them safely in residential and non-residential settings... Here, we're sharing frequently asked questions."

Foodborne illness outbreaks: roles and responsibilities [evidence review] Ken Diplock, Professor at Conestoga College

"This paper introduces a responsibility matrix (RACI chart) for foodborne outbreak response, which can be used as a tool for identifying and planning the roles and responsibilities of various stakeholders and delineating accountability."

Climate change impacts on Canada's food supply cold chain [evidence reviewl

Kelsey James, NCCEH Knowledge Translation Scientist

"Environmental health practitioners can play a key role in effective data collection and utilization as a means to increase the resiliency of food supply cold chains to warmer temperatures and natural disasters."

The unprecedented Pacific Northwest heatwave of June 2021 [journal article]

Sarah Henderson, Scientific Director, NCCEH and Environmental Health Services, BCCDC, and co-authors

"The impacts of this event were catastrophic These impacts provide examples we can learn from and a vivid depiction of how climate change can be so devastating.'

Ticks in a changing climate [topic page] Leah Rosenkrantz, NCCEH Knowledge Translation Scientist

"The resources are intended to assist Environmental Public Health practitioners to understand and address the changing risk of tick-borne infections in Canada."



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NCCEH eNews (Jan 2023): Do-it-yourself air cleaners: evidence on the effectiveness and considerations for safe operation; more... National Collaborating Centre for Environmental Health

January research scan with COVID-19 sections [blog] National Collaborating Centre for Environmental Health



ENVIRONMENTAL HEALTH RESEARCH SCAN

SELECTED PUBLICATIONS

- Diplock K. Foodborne illness outbreaks: roles and responsibilities [evidence review]. Vancouver, BC: National Collaborating Centre for Environmental Health; 2023 Feb 15. Available from: <u>https://ncceh.ca/documents/evidence-review/foodborne-illness-outbreaks-roles-and-responsibilities</u>.
- Eykelbosh A. Do-it-yourself air cleaners: FAQs and additional resources [blog]. Vancouver, BC: National Collaborating Centre for Environmental Health; 2023 Feb 12. Available from: <u>https://ncceh.ca/content/blog/do-it-yourself-air-cleaners-faqs-and-additional-resources</u>.
- 3. James K. Food Safety Magazine. 2023;29(1). Available from: <u>https://digitaledition.food-</u> <u>safety.com/february-march-2023/table-of-contents/</u>.
- James K. Climate change impacts on Canada's food supply cold chain [evidence review]. Vancouver, BC: National Collaborating Centre for Environmental Health; 2023 Feb 15. Available from: <u>https://ncceh.ca/documents/evidence-review/climate-change-impacts-canadas-foodsupply-cold-chain</u>.
- National Collaborating Centre for Environmental Health. Jan research scan with COVID-19 sections [blog]. Vancouver, BC: NCCEH; 2023 Jan 18. Available from: <u>https://ncceh.ca/content/blog/january-research-scan-covid-19-sections-1</u>.
- National Collaborating Centre for Environmental Health. NCCEH eNews (Jan 2023): Do-it-yourself (DIY) air cleaners: evidence on effectiveness and considerations for safe operation; more... Vancouver, BC: NCCEH; 2023 Jan 19. Available from: <u>https://tinyurl.com/58bxcbph</u>.
- National Collaborating Centre for Environmental Health. Ticks in a changing climate [topic page]. Vancouver, BC: NCCEH; 2023 Feb 13. Available from: <u>https://ncceh.ca/environmental-health-in-canada/health-agency-projects/ticks-changing-climate</u>.
- 8. National Collaborating Centre for Environmental Health and Diplock K. **Interdisciplinary foodborne outbreak investigations**. Vancouver, BC: NCCEH; 2023 Feb 13. Available from:



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https://ncceh.ca/environmental-health-in-canada/health-agency-projects/interdisciplinary-foodborne-outbreak.

- 9. White RH, Anderson S, Booth JF, Braich G, Draeger C, Fei C, et al. The unprecedented Pacific Northwest heatwave of June 2021. Nature Communications. 2023;14(1):727. Available from: <u>https://doi.org/10.1038/s41467-023-36289-3</u>.
- Wyatt L, Cleland S, Wei L, Paul N, Patil A, Ward-Caviness C, et al. Long-term exposure to ambient O3 and PM2.5 is associated with reduced cognitive performance in young adults: A retrospective longitudinal repeated measures study in adults aged 18–90 years. Environ Pollut. 2023;320:121085. Available from: <u>https://doi.org/10.1016/j.envpol.2023.121085</u>.

INDIGENOUS ENVIRONMENTAL HEALTH

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- Maudrie TL, Colon-Ramos U, Harper KM, Jock BW, Gittelsohn J. A Scoping Review of the Use of Indigenous Food Sovereignty Principles for Intervention and Future Directions. Current Developments in Nutrition. 2021;5:1g+. Available from: <u>https://link.gale.com/apps/doc/A734263112/HRCA?u=ubcolumbia&sid=bookmark-HRCA&xid=52152b96</u>.

AGRICULTURAL OPERATIONS

 Augustsson A, Lundgren M, Qvarforth A, Hough R, Engström E, Paulukat C, et al. Managing health risks in urban agriculture: The effect of vegetable washing for reducing exposure to metal contaminants. Sci Total Environ. 2023;863. Available from: <u>https://doi.org/10.1016/j.scitotenv.2022.160996</u>.

BIOLOGICAL AGENTS

- Fisher MC, Alastruey-Izquierdo A, Berman J, Bicanic T, Bignell EM, Bowyer P, et al. Tackling the emerging threat of antifungal resistance to human health. Nat Rev Microbiol. 2022;20(9):557-71. Available from: <u>https://pubmed.ncbi.nlm.nih.gov/35352028/</u>.
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- World Health Organization. WHO fungal priority pathogens list to guide research, development and public health action. WHO; 2022 Oct. Available from: https://www.who.int/publications/i/item/9789240060241.



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BUILT ENVIRONMENT

- Boakye K, Bovbjerg M, Schuna J, Branscum A, Mat-Nasir N, Bahonar A, et al. Perceived built environment characteristics associated with walking and cycling across 355 communities in 21 countries. Cities. 2023;132. Available from: <u>https://doi.org/10.1016/j.cities.2022.104102</u>.
- Jarosz E. Direct Exposure to Green and Blue Spaces is Associated with Greater Mental Wellbeing in Older Adults. Journal of Aging and Environment. 2022:1-18. Available from: https://doi.org/10.1080/26892618.2022.2109792.
- Kim H, Shoji Y, Mameno K, Kubo T, Aikoh T. Changes in visits to green spaces due to the COVID-19 pandemic: Focusing on the proportion of repeat visitors and the distances between green spaces and visitors' places of residences. Urban For Urban Green. 2023;80:127828. Available from: <u>https://www.sciencedirect.com/science/article/pii/S1618866722003715</u>.
- Klompmaker JO, Laden F, Browning MHEM, Dominici F, Jimenez MP, Ogletree SS, et al. Associations of Greenness, Parks, and Blue Space With Neurodegenerative Disease Hospitalizations Among Older US Adults. JAMA Network Open. 2022;5(12):e2247664-e. Available from: <u>https://doi.org/10.1001/jamanetworkopen.2022.47664</u>.
- Krenz K, Dhanani A, McEachan RRC, Sohal K, Wright J, Vaughan L. Linking the Urban Environment and Health: An Innovative Methodology for Measuring Individual-Level Environmental Exposures. Int J Environ Res Public Health. 2023;20(3):1953. Available from: <u>https://www.mdpi.com/1660-4601/20/3/1953</u>.
- Lungman T, Cirach M, Marando F, Pereira Barboza E, Khomenko S, Masselot P, et al. Cooling cities through urban green infrastructure: a health impact assessment of European cities. The Lancet. 2023. Available from: <u>https://doi.org/10.1016/S0140-6736(22)02585-5</u>.
- Relph NK. Urban 'Microrewilding' Projects Provide a Lifeline for Nature. 2023 [Jan 30]; Available from: <u>https://therevelator.org/urban-microrewilding/</u>.
- Spence DS, Schuster-Wallace CJ, Lloyd-Smith P. Disparities in economic values for nature-based activities in Canada. Ecological Economics. 2023;205. Available from: <u>https://doi.org/10.1016/j.ecolecon.2022.107724</u>.
- Štrbac S, Kašanin-Grubin M, Pezo L, Stojić N, Lončar B, Ćurčić L, et al. Green Infrastructure Designed through Nature-Based Solutions for Sustainable Urban Development. Int J Environ Res Public Health. 2023;20(2):1102. Available from: <u>https://www.mdpi.com/1660-4601/20/2/1102</u>.
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- 11. Wu X, Lu Y, Jiang B. Built environment factors moderate pandemic fatigue in social distance during the COVID-19 pandemic: A nationwide longitudinal study in the United States. Landscape Urb Plan. 2023;233:104690. Available from: <u>https://doi.org/10.1016/j.landurbplan.2023.104690</u>.



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CHEMICAL AGENTS - METALS, GENERAL

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- Bălan SA, Andrews DQ, Blum A, Diamond ML, Fernández SR, Harriman E, et al. Optimizing Chemicals Management in the United States and Canada through the Essential-Use Approach. Environ Sci Tech. 2023;57(4):1568-75. Available from: <u>https://pubs.acs.org/doi/10.1021/acs.est.2c05932</u>.
- Gibson JC, Marro L, Brandow D, Remedios L, Fisher M, Borghese MM, et al. Biomonitoring of DEET and DCBA in Canadian children following typical protective insect repellent use. Int J Hyg Environ Health. 2023;248:114093. Available from: <u>https://doi.org/10.1016/j.ijheh.2022.114093</u>.
- Kerry GL, Ross KE, Wright JL, Walker GS. A Review of Methods Used to Detect Methamphetamine from Indoor Air and Textiles in Confined Spaces. Toxics. 2022;10(11):710. Available from: <u>https://www.mdpi.com/2305-6304/10/11/710</u>.
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- 8. Zahran S, Keyes C, Lanphear B. Leaded aviation gasoline exposure risk and child blood lead levels. PNAS Nexus. 2023;2(1). Available from: <u>https://doi.org/10.1093/pnasnexus/pgac285</u>.

CHEMICAL AGENTS – PESTICIDES

CHEMICAL AGENTS – SHALE GAS

CHILDREN'S ENVIRONMENTAL HEALTH

 Benevento SV. Communicating Climate Change Risk to Children: A Thematic Analysis of Children's Literature. Early Childhood Education Journal. 2023;51(2):201-10. Available from: <u>https://link.springer.com/article/10.1007/s10643-021-01294-y</u>.



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CLIMATE CHANGE

- Adams QH, Chan EMG, Spangler KR, Weinberger KR, Lane KJ, Errett NA, et al. Examining the Optimal Placement of Cooling Centers to Serve Populations at High Risk of Extreme Heat Exposure in 81 US Cities. Public health reports (Washington, DC : 1974). 2023:333549221148174. Available from: <u>https://doi.org/10.1177/00333549221148174</u>.
- Aitken WW, Brown SC, Comellas AP. Climate Change and Cardiovascular Health. J Am Heart Assoc. 2022;11(24):e027847. Available from: https://www.ahajournals.org/doi/abs/10.1161/JAHA.122.027847.

 Casson N, Cameron L, Mauro I, Friesen-Hughes K, Rocque R. Perceptions of the health impacts of climate change among Canadians. BMC Public Health. 2023;23(1):212. Available from: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-15105-z.

- Katal A, Leroyer S, Zou J, Nikiema O, Albettar M, Belair S, et al. Outdoor heat stress assessment using an integrated multi-scale numerical weather prediction system: A case study of a heatwave in Montreal. Sci Total Environ. 2023;865. Available from: https://doi.org/10.1016/j.scitotenv.2022.161276.
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- Martikainen M-V, Tossavainen T, Hannukka N, Roponen M. Pollen, respiratory viruses, and climate change: Synergistic effects on human health. Environ Res. 2023;219. Available from: <u>https://doi.org/10.1016/j.envres.2022.115149</u>.
- Mora C, McKenzie T, Gaw IM, Dean JM, von Hammerstein H, Knudson TA, et al. Over half of known human pathogenic diseases can be aggravated by climate change. Nature Climate Change. 2022;12(9):869-75. Available from: <u>https://doi.org/10.1038/s41558-022-01426-1</u>.
- Neumann I, Anto JM, Bousquet J, Schunemann HJ. The impact of climate change on health needs structured evidence assessment and an evidence to action framework to make decisions: A proposal to adopt the GRADE approach. J Clin Epidemiol. 2023. Available from: <u>https://www.ncbi.nlm.nih.gov/pubmed/36706871</u>.
- Rothschild J, Haase E. Women's mental health and climate change Part II: Socioeconomic stresses of climate change and eco-anxiety for women and their children. International Journal of Gynecology & Obstetrics. 2023;160(2):414-20. Available from: https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1002/ijgo.14514.
- Salvador Costa MJ, Leitão A, Silva R, Monteiro V, Melo P. Climate Change Prevention through Community Actions and Empowerment: A Scoping Review. Int J Environ Res Public Health. 2022;19(22):14645. Available from: <u>https://www.mdpi.com/1660-4601/19/22/14645</u>.
- 11. Smith JC, Whiley H, Ross KE. **Climate Change and Health: Local Government Capacity for Health Protection in Australia**. Int J Environ Res Public Health. 2023;20(3):1750. Available from: <u>https://www.mdpi.com/1660-4601/20/3/1750</u>.



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COMMUNICABLE AND INFECTIOUS DISEASES

See Covid 19 subsections in this issue and in the <u>COVID-19 Additional Topics and Guidance</u> section at the end of this issue (e.g., Occupational Guidance, Transit, Transmission)

DRINKING WATER

- Anderson DM, Bear AB, Zacher T, Endres K, Saxton R, Richards F, et al. Implementing a Community-Led Arsenic Mitigation Intervention for Private Well Users in American Indian Communities: A Qualitative Evaluation of the Strong Heart Water Study Program. Int J Environ Res Public Health. 2023;20(3):2681. Available from: <u>https://www.mdpi.com/1660-4601/20/3/2681</u>.
- Chhipi-Shrestha G, Mian HR, Mohammadiun S, Rodriguez M, Hewage K, Sadiq R. Digital water: artificial intelligence and soft computing applications for drinking water quality assessment. Clean Technologies and Environmental Policy. 2023 01 18. Available from: https://doi.org/10.1007/s10098-023-02477-4.
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EMERGENCY PREPAREDNESS

 Nomura Y, Newcorn JH, Ginalis C, Heitz C, Zaki J, Khan F, et al. Prenatal exposure to a natural disaster and early development of psychiatric disorders during the preschool years: stress in pregnancy study. J Child Psychol Psychiatry. 2023. Available from: <u>https://acamh.onlinelibrary.wiley.com/doi/abs/10.1111/jcpp.13698</u>.



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ENVIRONMENTAL HEALTH SURVEILLANCE

ENVIRONMENTAL PLANNING

- Barron S, Rugel EJ. Tolerant greenspaces: Designing urban nature-based solutions that foster social ties and support mental health among young adults. Environ Sci Pol. 2023;139:1-10. Available from: <u>https://doi.org/10.1016/j.envsci.2022.10.005</u>.
- Kleeman A, Giles-Corti B, Gunn L, Hooper P, Foster S. The impact of the design and quality of communal areas in apartment buildings on residents' neighbouring and loneliness. Cities. 2023;133. Available from: <u>https://doi.org/10.1016/j.cities.2022.104126</u>.
- Koh LY, Yuen KF. Consumer adoption of autonomous delivery robots in cities: Implications on urban planning and design policies. Cities. 2023;133. Available from: <u>https://doi.org/10.1016/j.cities.2022.104125</u>.
- Luo Y, Ruggiano N, Bolt D, Witt J-P, Anderson M, Gray J, et al. Community Asset Mapping in Public Health: A Review of Applications and Approaches. Social work in public health. 2023;38(3):171-81. Available from: <u>https://doi.org/10.1080/19371918.2022.2114568</u>.
- Zhang X, Warner ME. Linking Urban Planning, Community Environment, and Physical Activity: A Socio-Ecological Approach. Int J Environ Res Public Health. 2023;20(4):2944. Available from: <u>https://www.mdpi.com/1660-4601/20/4/2944</u>.
- Zhang Y, Liu N, Li Y, Long Y, Baumgartner J, Adamkiewicz G, et al. Neighborhood infrastructurerelated risk factors and non-communicable diseases: a systematic meta-review. Environ Health. 2023;22(1):1-15. Available from: <u>https://ehjournal.biomedcentral.com/articles/10.1186/s12940-022-00955-8</u>.

FOOD

Safety

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- Wakui N, Matsuoka R, Togawa C, Ichikawa K, Kagi H, Watanabe M, et al. Effectiveness of Displaying Traffic Light Food Labels on the Front of Food Packages in Japanese University Students: A Randomized Controlled Trial. Int J Environ Res Public Health. 2023;20(3):1806. Available from: https://www.mdpi.com/1660-4601/20/3/1806.

Security

- Brockington M, Beale D, Gaupholm J, Naylor A, Kenny T-A, Lemire M, et al. Identifying Barriers and Pathways Linking Fish and Seafood to Food Security in Inuit Nunangat: A Scoping Review. Int J Environ Res Public Health. 2023;20(3):2629. Available from: <u>https://www.mdpi.com/1660-4601/20/3/2629</u>.
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 Oldroyd L, Eskandari F, Pratt C, Lake AA. The nutritional quality of food parcels provided by food banks and the effectiveness of food banks at reducing food insecurity in developed countries: a mixed-method systematic review. J Hum Nutr Diet. 2022;35(6):1202-29. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1111/jhn.12994.

GENERAL

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Health Policy

- Berman P, Cameron MA, Gaurav S, Gotsadze G, Hasan MZ, Jenei K, et al. Improving the response to future pandemics requires an improved understanding of the role played by institutions, politics, organization, and governance. PLOS Global Public Health. 2023;3(1):e0001501. Available from: <u>https://doi.org/10.1371/journal.pgph.0001501</u>.
- Probst C, Buckley C, Lasserre AM, Kerr WC, Mulia N, Puka K, et al. Simulation of Alcohol Control Policies for Health Equity (SIMAH): Study Design and First Results. Am J Epidemiol. 2023. Available from: <u>https://www.ncbi.nlm.nih.gov/pubmed/36702471</u>.
- Quentin W, Achstetter K, Barros PP, Blankart CR, Fattore G, Jeurissen P, et al. Health Policy the best evidence for better policies. Health Policy. 2023:104708. Available from: <u>https://www.ncbi.nlm.nih.gov/pubmed/36669897</u>.
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HEALTH EQUITY

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COVID-19 ADDITIONAL TOPICS & GUIDANCE



CONTENTS

- <u>GUIDANCE</u> (cleaning, face masks, hand hygiene, more)
- HOMELESS, VULNERABLE POPULATIONS, HOUSING
- MENTAL HEALTH
- MULTI-UNIT BUILDINGS
- OCCUPATIONAL GUIDANCE, MISC
- PUBLIC FACILITIES
- SURVIVAL TIME
- TRANSIT, TRANSPORTATION
- TRANSMISSION



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GUIDANCE (for 'Occupational Guidance' – see separate topic heading)

HOMELESS, VULNERABLE POPULATIONS, HOUSING

MENTAL HEALTH

MULTI-UNIT BUILDINGS

OCCUPATIONAL GUIDANCE

PUBLIC FACILITIES

Transportation (see separate category, 'Transit, Transportation' SURVIVAL TIME

TRANSIT, TRANSPORTATION

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