2021
EH Scan

National Collaborating Centre for Environmental Health
Centre de collaboration nationale en santé environnementale

ENVIRONMENTAL HEALTH RESEARCH SCAN

WITH COVID-19 SECTIONS

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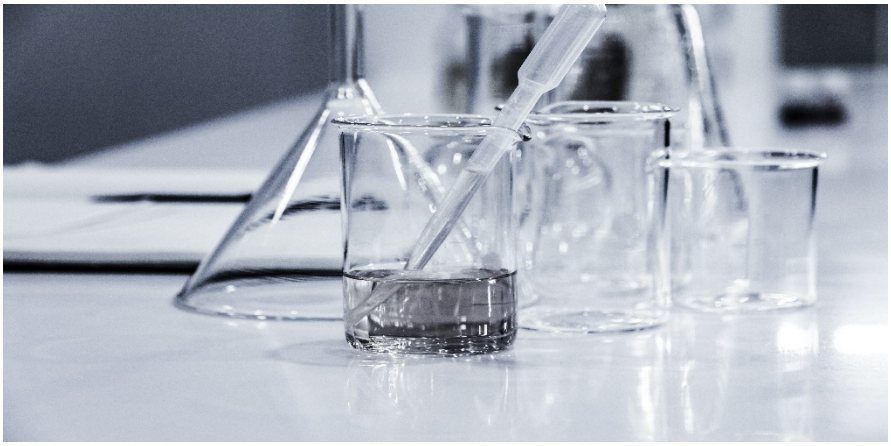

CONTENTS

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. "*We focus on health risks associated with the physical environment and identify evidence-based interventions to mitigate those risks*." This review is not official or 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. How to access the items? Click on the link related to each entry and it should take you to the item. 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 at the end of this issue.

EDITOR PICKS

The basics of SARS-CoV-2 transmission - updated [evidence review]

Juliette O'Keeffe (right), Shirra Freeman, Anne-Marie Nicol - Knowledge Translation Scientists, NCCEH

"This document has been updated to reflect new findings and provide additional information about the virus that may be relevant to the public health response. The evidence presented below is based on current knowledge on dominant variants known to be circulating"

Accessibility for persons with disabilities during the COVID-19 pandemic [blog]

Anna Chow, Knowledge Translation Scientist, NCCEH

"Prior to the COVID-19 pandemic, the design of existing facilities might already pose challenges to those with accessibility issues in public spaces. The pandemic brought additional obstacles to their safety and independence…more"

Fomites and the COVID-19 pandemic: an evidence review on its role in viral transmission [evidence review]

Tina Chen, Knowledge Translation Scientist, NCCEH

"This review will examine available epidemiological and research evidence on the infection risk of SARS-CoV-2 via fomites. Factors that influence SARS-CoV-2 transfer to and from fomites, as well as how environmental factors may influence the persistence of SARS-CoV-2 on environmental surfaces, will be discussed."

Contextualizing the risks of indirect COVID-19 transmission in multi-unit residential buildings [evidence review]

Angela Eykelbosh, Knowledge Translation Scientist, NCCEH

"This document is intended to help public health practitioners: 1) improve their understanding of how building systems may (or may not) contribute to transmission of SARS-CoV-2; 2) learn about the environmental or other analyses to complement a thorough epidemiological investigation if indirect transmission is suspected; and 3) communicate effectively about the relative risks of indirect transmission in a MURB [multi-unit residential building setting."

Health Resources for the COVID-19 Pandemic – updated [topic page]

National Collaborating Centre for Environmental Health

NCCEH has prepared a specially curated topic page on Covid-19. Visit http://www.ncceh.ca/environmental-health-canada/ncceh-health-agency-project/desc

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ENVIRONMENTAL HEALTH RESEARCH SCAN

SELECTED STAFF PUBLICATIONS

NCCEH

1. Chen T. **Fomites and the COVID-19 pandemic: An evidence review on its role in viral transmission [evidence review]**. Vancouver, BC: National Collaborating Centre for Environmental Health; 2021 Mar 24. Available from: https://ncceh.ca/documents/evidence-review/fomites-and-covid-19-pandemic-evidence-review-its-role-viral-transmission.
2. Chow A. **Accessibility for persons with disabilities during the COVID-19 pandemic [blog]**. Vancouver, BC: National Collaborating Centre for Environmental Health; 2021 Mar 24. Available from: https://ncceh.ca/content/blog/accessibility-persons-disabilities-during-covid-19-pandemic.
3. Eykelbosh A. **Contextualizing the risks of indirect COVID-19 transmission in multi-unit residential buildings [evidence review]**. Vancouver, BC: National Collaborating Centre for Environmental Health; 2021 Mar 24. Available from: https://ncceh.ca/documents/evidence-review/contextualizing-risks-indirect-covid-19-transmission-multi-unit.
4. National Collaborating Centre for Environmental Health. **Health impact assessments [topic page]**. Vancouver, BC: National Collaborating Centre for Environmental Health; 2021 Feb 24. Available from: https://ncceh.ca/environmental-health-in-canada/health-agency-projects/health-impact-assessments.
5. National Collaborating Centre for Environmental Health. **March research scan with COVID-19 sections [blog]**. Vancouver, BC: NCCEH; 2021 Mar 23. Available from: https://ncceh.ca/content/blog/march-research-scan-covid-19-sections.
6. National Collaborating Centre for Environmental Health. **Environmental health resources for the COVID-19 pandemic - updated [topic page]**. Vancouver, BC: National Collaborating Center for Environmental Health; 2021 Mar 24. Available from: https://ncceh.ca/environmental-health-in-canada/health-agency-projects/environmental-health-resources-covid-19.
7. National Collaborating Centre for Environmental Health. **NCCEH eNews (March 2021):** Contextualizing the risks of indirect COVID-19 transmission in multi-unit residential buildings; Fomites and the COVID-19 pandemic: An evidence review on its role in viral transmission; Accessibility for persons with disabilities during the COVID-19 pandemic and inclusion for future planning; more... Vancouver, BC: NCCEH; 2021 Mar 25. Available from: https://tinyurl.com/4tvur22s.
8. National Collaborating Centre for Environmental Health. **COVID-19 management during public health emergencies [topic page]**. Vancouver, BC: NCCEH; 2021 Apr 20. Forthcoming: https://ncceh.ca/environmental-health-in-canada/health-agency-projects/covid-19-management-during-public-health.
9. O'Keeffe J, Freeman S, Nicol A-M. **The basics of SARS-CoV-2 transmission [evidence review]**. Vancouver, BC: National Collaborating Centre for Environmental Health; 2021 Mar 21. Available from: https://ncceh.ca/documents/evidence-review/basics-sars-cov-2-transmission.

BCCDC

1. Bartlett S. **Uncovering SARS-CoV-2 Behind Bars: Understanding the Impact of the COVID-19 Pandemic in Correctional Settings**. Vancouver, BC: British Columbia Centre for Disease Control

(BCCDC); 2021 Mar 17. Available from: https://bccdcfoundation.org/uncovering-sars-cov-2-behind-bars-understanding-the-impact-of-the-covid-19-pandemic-in-correctional-settings/.

2. McVea DA, Cumming E, Rahim T, Kosatsky T. **A descriptive analysis of blood mercury test results in British Columbia to identify excessive exposures**. Can J Public Health. 2021;112(2):342-8. Available from: https://doi.org/10.17269/s41997-020-00340-3.

INDIGENOUS ENVIRONMENTAL HEALTH

1. Abernethy P, Waters S, Kulchyski T, Rolston D, Swinkels H, Luttrell G, et al. **Climate Change and Vibrio cholerae in Herring Eggs: The Role of Indigenous Communities in Public Health Outbreak Responses**. International Journal of Indigenous Health. 2021;16(2):13-35. Available from: https://jps.library.utoronto.ca/index.php/ijih/article/view/33236.
2. Lamichhane S, Gupta S, Akinjobi G, Ndubuka N. **Familial cluster of asymptomatic COVID-19 cases in a First Nation community in Northern Saskatchewan, Canada**. Can Commun Dis Rep. 2021;47(2):94-6. Available from: https://doi.org/10.4745/ccdr.v47i02a01.
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4. Public Health Agency of Canada. **What we heard: Indigenous Peoples and COVID-19: Public Health Agency of Canada's companion report**. Ottawa, ON: PHAC; 2021 Mar 3. Available from: https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19/indigenous-peoples-covid-19-report.html.

AGRICULTURAL OPERATIONS

1. Appolloni E, Orsini F, Specht K, Thomaier S, Sanyé-Mengual E, Pennisi G, et al. **The global rise of urban rooftop agriculture: A review of worldwide cases**. Journal of Cleaner Production. 2021;296:N.PAG-N.PAG. Available from: https://doi.org/10.1016/j.jclepro.2021.126556.
2. Buta M, Hubeny J, Zieliński W, Harnisz M, Korzeniewska E. Sewage sludge in agriculture – the effects of selected chemical pollutants and emerging genetic resistance determinants on the quality of soil and crops – a review. Ecotoxicol Environ Saf. 2021;214. Available from: https://doi.org/10.1016/j.ecoenv.2021.112070.

BIOLOGICAL AGENTS

BUILT ENVIRONMENT

1. Akaraci S, Feng X, Suesse T, Jalaludin B, Astell-Burt T. **Greener neighbourhoods, healthier birth outcomes? Evidence from Australia**. Environ Pollut. 2021;278. Available from: https://doi.org/10.1016/j.envpol.2021.116814.
2. Brazeau-Béliveau N, Cloutier G. **Citizen participation at the micro-community level: The case of the green alley projects in Quebec City**. Cities. 2021;112. Available from: https://doi.org/10.1016/j.cities.2020.103065.
3. Butt S, Smith SM, Moola F, Conway TM. The relationship between knowledge and community engagement in local urban forest governance: A case study examining the role of resident

association members in Mississauga, Canada. Urban Forestry & Urban Greening. 2021;60. Available from: https://doi.org/10.1016/j.ufug.2021.127054.
4. Centre for Cities. **Building back better: How to recover from Covid-19**. London, UK: Centre for Cities; 2021 Mar. Available from: https://www.centreforcities.org/publication/building-back-better-how-to-recover-from-covid-19/.
5. Nieuwenhuijsen MJ. **Green Infrastructure and Health**. Annu Rev Public Health. 2021;42(1):317-28. Available from: https://www.annualreviews.org/doi/abs/10.1146/annurev-publhealth-090419-102511.
6. The Atkinson. **Building smart smart cities privacy, equity and democracy in a digital age**. Toronto, ON: The Atkinson; 2021. Available from: https://theatkinson.ca/site/uploads/2021/03/AFPP_BuildingSmartSmartCities_FINAL.pdf.
7. Ye Y, Qiu H. **Using urban landscape pattern to understand and evaluate infectious disease risk**. Urban forestry & urban greening. 2021;62:127126. Available from: https://doi.org/10.1016/j.ufug.2021.127126.
8. Zipper D. **Can Shared Mobility Survive the Pandemic?** Bloomberg. 2021 Mar 18. Available from: https://www.bloomberg.com/news/articles/2021-03-18/post-covid-ride-hail-users-may-spurn-shared-trips.

CHEMICAL AGENTS – METALS, GENERAL

General

1. Ruiz-Azcona L, Fernández-Olmo I, Expósito A, Markiv B, Paz-Zulueta M, Parás-Bravo P, et al. Impact of Environmental Airborne Manganese Exposure on Cognitive and Motor Functions in Adults: A Systematic Review and Meta-Analysis. Int J Environ Res Public Health. 2021;18(8):4075. Available from: https://www.mdpi.com/1660-4601/18/8/4075.
2. Yadav D, Rangabhashiyam S, Verma P, Singh P, Devi P, Kumar P, et al. **Environmental and health impacts of contaminants of emerging concerns: Recent treatment challenges and approaches**. Chemosphere. 2021;272. Available from: https://doi.org/10.1016/j.chemosphere.2020.129492.

BPA, other

1. Li N, Liu Y, Papandonatos GD, Calafat AM, Eaton CB, Kelsey KT, et al. **Gestational and childhood exposure to per- and polyfluoroalkyl substances and cardiometabolic risk at age 12 years**. Environ Int. 2021;147:106344. Available from: https://www.sciencedirect.com/science/article/pii/S0160412020322996.
2. Wang Y, Perera F, Guo J, Riley KW, Durham T, Ross Z, et al. **A methodological pipeline to generate an epigenetic marker of prenatal exposure to air pollution indicators**. Epigenetics. 2021:1-9. Available from: https://doi.org/10.1080/15592294.2021.1872926.

CHEMICAL AGENTS – PESTICIDES

CHEMICAL AGENTS – SHALE GAS

CHILDREN'S ENVIRONMENTAL HEALTH

1. Bullard J, Funk D, Dust K, Garnett L, Tran K, Bello A, et al. **Infectivity of severe acute respiratory syndrome coronavirus 2 in children compared with adults**. Can Med Assoc J.

2021:cmaj.210263. Available from: https://www.cmaj.ca/content/cmaj/early/2021/04/09/cmaj.210263.full.pdf.
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6. Teixeira MT, Vitorino RS, da Silva JH, Raposo LM, de Aquino LA, Ribas SA. **Eating habits of children and adolescents during the COVID-19 pandemic: the impact of social isolation**. J Hum Nutr Diet. 2021. Available from: https://www.ncbi.nlm.nih.gov/pubmed/33811690.
7. Yates S, Dickinson H. Navigating Complexity in a Global Pandemic: The Effects of COVID-19 on Children and Young People with Disability and Their Families in Australia. Public Adm Rev. 2021. Available from: https://www.ncbi.nlm.nih.gov/pubmed/33821041.

CLIMATE CHANGE

1. Ebi KL, Vanos J, Baldwin JW, Bell JE, Hondula DM, Errett NA, et al. **Extreme Weather and Climate Change: Population Health and Health System Implications**. Annu Rev Public Health. 2021;42(1):293-315. Available from: https://www.annualreviews.org/doi/abs/10.1146/annurev-publhealth-012420-105026.

COMMUNICABLE AND INFECTIOUS DISEASES

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

DRINKING WATER

1. Clopper BR, Kunz JM, Salandy SW, Smith JC, Hubbard BC, Sarisky JP. A Methodology for Classifying Root Causes of Outbreaks of Legionnaires' Disease: Deficiencies in Environmental Control and Water Management. Microorganisms. 2021;9(1):89. Available from: https://www.mdpi.com/2076-2607/9/1/89.
2. Gouin T, Cunliffe D, De France J, Fawell J, Jarvis P, Koelmans AA, et al. Clarifying the absence of evidence regarding human health risks to microplastic particles in drinking-water: High quality robust data wanted. Environ Int. 2021;150. Available from: https://doi.org/10.1016/j.envint.2020.106141.
3. Health Canada. **Overview of the Microbiological Aspects of Drinking Water Quality** Ottawa, ON: Government of Canada; 2021 Mar. Available from: https://www.canada.ca/en/health-

canada/services/environmental-workplace-health/reports-publications/water-quality/guidance-document-overview-microbiological-aspects-drinking-water-quality.html

4. US Centers for Disease Control and Prevention. Water Management Gaps and Legionnaires' Disease Outbreaks. Findings from a review of CDC-led Legionnaires' disease outbreak investigations, 2015–2019. Atlanta, GA: US CDC; 2021 [updated Mar 24]; Available from: https://www.cdc.gov/nceh/ehs/activities/water-mgt-gaps-ld-outbreaks.html.

EMERGENCY PREPAREDNESS

1. Gochfeld M. **Evidence-based practice for public health emergency preparedness and response**. Choice: Curr Rev Acad Lib. 2021;58(8):792-. Available from: https://www.nap.edu/catalog/25650/evidence-based-practice-for-public-health-emergency-preparedness-and-response.
2. Lucchese S, Bellicos D, Dang K, Witz I. **Promoting Safety: Behavioural Emergency Response during the COVID-19 Pandemic**. Healthc Q. 2021;24(1):50-3. Available from: https://doi.org/10.12927/hcq.2021.26465.
3. Sheek-Hussein M, Abu-Zidan FM, Stip E. **Disaster management of the psychological impact of the COVID-19 pandemic**. Int J Emerg Med. 2021;14(1):19. Available from: https://doi.org/10.1186/s12245-021-00342-z.
4. Wang X, Wu F, Zhao X, Zhang X, Wang J, Niu L, et al. **Enlightenment from the COVID-19 Pandemic: The Roles of Environmental Factors in Future Public Health Emergency Response**. Engineering (Beijing). 2021. Available from: https://doi.org/10.1016/j.eng.2020.12.019.

ENVIRONMENTAL HEALTH SURVEILLANCE

1. Maharaj AS, Parker J, Hopkins JP, Gournis E, Bogoch, II, Rader B, et al. **The effect of seasonal respiratory virus transmission on syndromic surveillance for COVID-19 in Ontario, Canada**. Lancet Infect Dis. 2021. Available from: https://doi.org/10.1016/S1473-3099(21)00151-1.

ENVIRONMENTAL PLANNING

1. Fastiggi M, Meerow S, Miller TR. **Governing urban resilience: Organisational structures and coordination strategies in 20 North American city governments**. Urban Studies (Sage Publications, Ltd). 2021;58(6):1262-85. Available from: https://doi.org/10.1177%2F0042098020907277.
2. Ranjbari M, Shams Esfandabadi Z, Zanetti MC, Scagnelli SD, Siebers P-O, Aghbashlo M, et al. Three pillars of sustainability in the wake of COVID-19: A systematic review and future research agenda for sustainable development. Journal of Cleaner Production. 2021;297. Available from: https://doi.org/10.1016/j.jclepro.2021.126660.

FOOD

Safety

1. Dawson AL, Santana MFM, Miller ME, Kroon FJ. Relevance and reliability of evidence for microplastic contamination in seafood: A critical review using Australian consumption patterns as a case study. Environ Pollut. 2021;276. Available from: https://doi.org/10.1016/j.envpol.2021.116684.
2. Rose-Martel M, Tompkins E, Rutley R, Romero-Barrios P, Buenaventura E. **Exposure Profile of SARS-CoV-2 in Canadian Food Sources**. J Food Prot. 2021. Available from: https://doi.org/10.4315/JFP-20-492.

3. Zhou Y, Zhou Z, Lian Y, Sun X, Wu Y, Qiao L, et al. Source, transportation, bioaccumulation, distribution and food risk assessment of perfluorinated alkyl substances in vegetables: A review. Food Chem. 2021;349:129137. Available from: https://doi.org/10.1016/j.foodchem.2021.129137.

Nanoparticles/Nanoplastics

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2. Hayward K. **Filling the microplastics knowledge gap**. The Source. 2021 Feb 22. Available from: https://www.thesourcemagazine.org/filling-the-microplastics-knowledge-gap/.
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GENERAL

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Health Policy

1. Asian Development Bank. **Responding to the COVID-19 Pandemic: Leaving No Country Behind**. Mandaluyong City, Metro Manila, Philippines: Asian Development Bank; 2021 Mar. Available from: https://www.adb.org/publications/responding-covid-19-pandemic.
2. Jewett RL, Mah SM, Howell N, Larsen MM. Social Cohesion and Community Resilience During COVID-19 and Pandemics: A Rapid Scoping Review to Inform the United Nations Research

Roadmap for COVID-19 Recovery. Int J Health Serv. 2021:0020731421997092. Available from: https://doi.org/10.1177/0020731421997092.

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HEALTH EQUITY

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6. Oickle D. **Movement-building as intersectoral action to achieve health equity**. Antigonish, NS: National Collaborating Centre for Determinants of Health, St Xavier University; 2021 Feb 28. Available from: https://nccdh.ca/blog/entry/movement-building-as-intersectoral-action-to-achieve-health-equity?mc_cid=deb23ed0cd&mc_eid=04816d6ac3.
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HEALTH IMPACT ASSESSMENT

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National Collaborating Centre for Environmental Health

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COVID-19 ADDITIONAL TOPICS & GUIDANCE

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