

ENVIRONMENTAL HEALTH RESEARCH SCAN

WITH COVID-19 SECTIONS

VOL 5 (11) NOVEMBER 2022



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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 [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 This research scan is not peer reviewed; it does not cover all research, news, and information, and NCCEH is not responsible for the accuracy of the content from media or databases.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.

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

EDITOR PICKS

Residents' perception and worldview about radon control policy in Canada: a pro-equity social justice lens [journal article]

Anne-Marie Nicol, Knowledge Translation Scientist, NCCEH, and co-authors

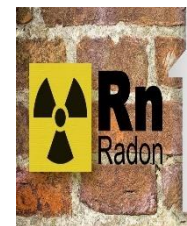
“Enacting radon control policy requires actions from all levels of governments and relevant stakeholders to ensure equal opportunities for all residents to take the preventive and adaptive measures.” ... more.



Focus on health in the balance of energy retrofits and indoor air quality [blog]

Anne-Marie Nicol, Knowledge Translation Scientist, NCCEH

“Energy renovations often change a home’s ventilation patterns, as buildings are tightened or sealed to reduce energy loss. This can have a direct consequence for indoor air quality. One contaminant in particular, radon gas, appears to be especially impacted by energy retrofits.” ... more.



Radon [topic page]

Anne-Marie Nicol, Knowledge Translation Scientist, NCCEH

“Radon levels indoors are influenced by:

- *Geography, as uranium and radon levels vary naturally in soils across the country*
- *Household construction methods and architectural design*
- *Natural ventilation options and ventilation systems”.... more*



Impacts of Canada’s changing climate change on West Nile Virus vectors [evidence review]

Leah Rosenkrantz, Knowledge Translation Scientist, NCCEH

“Reinforcing surveillance and proactive West Nile Virus control efforts will be critical to reducing risk, both now and under future climate scenarios.” ... more.



Post-disaster emergency response: supporting people who use substances [journal article]

Kelsey James, Knowledge Translation Scientist, NCCEH

“People who use substances have unique needs that are likely to be exacerbated in the aftermath of a natural disaster [...]. As Environmental Public Health Professionals are often on the front lines as part of emergency response, they can provide support for people who use substances.”... more.



**Odor, air quality, and well-being: understanding the urban
smellscape using crowd-sourced science, monitoring, and
modeling [journal article]**

Angela Eykelbosh, Knowledge Translation Scientist, NCCEH, and co-authors

“Results from this project provide evidence that human-centered approaches can enrich understanding of the impacts of odorous emissions on health and well-being.”...more



**Post-flooding community-level psychosocial impacts and priorities
in Canada: a preliminary report [evidence review]**

Nicole Glenn and Maxine Myre, Policywise for Children and Families

“Decision makers can support communities to recover from flooding by understanding community psychosocial and mental health impact.”...more



**Mobilizing public health action on climate change in Canada. Chief
Public Health Officer of Canada's report on the state of public
health in Canada**

Chief Public Health Officer of Canada

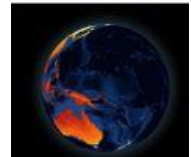
“This year's report focuses on the impacts of climate change in Canada and the role that public health systems can play in taking climate action.”...more



Human Climate Horizons [webpage]

World Health Organization and World Meteorological Organization

“Human Climate Horizons (HCH) is a data and insights platform providing localized information on future impacts of climate change across several dimensions of human development and human security.”...more



Indigenous knowledges, rights, and climate change in Canada

National Collaborating Centre for Indigenous Health

“Decision makers can support communities to recover from flooding by understanding community psychosocial and mental health impact.”...more



**Climate change and opportunistic pathogens (OPs) in the built
environment [archived webinar] Oct 26, 2022**

Juliette O’Keeffe, Knowledge Translation Scientist, NCCEH



**Air quality sensor lending libraries: bringing home public health
[upcoming webinar] Dec 7, 12-1pm PST**

Walter Zicha, Head of Acquisitions and Collection Management, North Vancouver City Library; Anne-Marie Nicol and Angela Eykelbosh, Knowledge Translation Scientists, NCCEH



ENVIRONMENTAL HEALTH RESEARCH SCAN

SELECTED PUBLICATIONS

1. Bhandari S, de Ferreyro Monticelli D, Xie K, Ramkairsingh A, Eykelbosh A, Henderson SB, et al. **Odor, air quality, and well-being: understanding the urban smellscape using crowd-sourced science, monitoring, and modeling.** Earth and Space Science Open Archive. 2022. Available from: <https://doi.org/10.1002/essoar.10512618.1>.
2. Eykelbosh A, Jones J. **Public health and public libraries in partnership to promote healthy indoor air quality.** Vancouver, BC: National Collaborating Centre for Environmental Health. 2022 Sep 14. Available from: <https://ncceh.ca/content/blog/public-health-and-public-libraries-partnership-promote-healthy-indoor-air-quality>.
3. Glenn N, Myre M. **Post-flooding community-level psychosocial impacts and priorities in Canada: a preliminary report [evidence review].** Vancouver, BC: National Collaborating Centre for Environmental Health; 2022 Nov 23. Available from: <https://ncceh.ca/documents/evidence-review/post-flooding-community-level-psychosocial-impacts-and-priorities-canada>.
4. James K. **Post-disaster emergency response: supporting people who use substances.** CIPHI British Columbia - BC Page. 2022. Available from: <https://ciphi.ca/wp-content/uploads/2022/10/BC-Page-Fall-2022.pdf>.
5. Khan SM, Gomes J, Nicol A-M. **Residents' perception and worldview about radon control policy in Canada: a pro-equity social justice lens.** Front Public Health. 2022;10. Available from: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.946652>.
6. National Collaborating Centre for Environmental Health. **Oct research scan with COVID-19 sections [blog].** Vancouver, BC: NCCEH; 2022 Oct 20. Available from: <https://ncceh.ca/content/blog/october-research-scan-covid-19-sections-1>.
7. National Collaborating Centre for Environmental Health. NCCEH eNews (Oct 2022): **Supporting foodborne outbreak investigations: a review of the use of whole genome sequencing and emerging technologies; more...** Vancouver, BC: NCCEH; 2022 Oct 20. Available from: <https://tinyurl.com/bdz6wfpc>.
8. National Collaborating Centre for Environmental Health. **Radon [topic page].** Vancouver, BC: National Collaborating Centre for Environmental Health; 2022 Nov 20. Available from: <https://ncceh.ca/environmental-health-in-canada/health-agency-projects/radon>.
9. Nicol A-M. **Focus on health in the balance of energy retrofits and indoor air quality [blog].** Vancouver, BC: NCCEH; 2022 Nov 23. Available from: <https://ncceh.ca/content/blog/focus-health-balance-energy-retrofits-and-indoor-air-quality>.
10. Rosenkrantz L. **Impacts of Canada's changing climate change on West Nile Virus vectors [evidence review].** Vancouver, BC: NCCEH; 2022 Nov 10. Available from: <https://ncceh.ca/documents/impacts-canadas-changing-climate-west-nile-virus-vectors>.
11. Zicha W, Nicol A-M. **Air quality sensor lending libraries: bringing home public health [webinar].** Vancouver, BC: National Collaborating Centre for Environmental Health; 2022 Dec 7. Register: <https://ncceh.ca/content/ncceh-environmental-health-seminar-series>.

INDIGENOUS ENVIRONMENTAL HEALTH

1. Crocetti AC, Cubillo B, Lock M, Walker T, Hill K, Mitchell F, et al. **The commercial determinants of Indigenous health and well-being: a systematic scoping review.** *BMJ Global Health.* 2022;7(11):e010366. Available from: <https://gh.bmj.com/content/bmigh/7/11/e010366.full.pdf>.
2. Dellinger MJ, Lyons M, Clark R, Olson J, Pingatore N, Ripley M. Culturally adapted mobile technology improves environmental health literacy in Laurentian, Great Lakes Native Americans (Anishinaabeg). *Journal of Great Lakes Research.* 2019;45(5):969-75. Available from: <https://www.sciencedirect.com/science/article/pii/S0380133019301194>.
3. Snook J, Cunsolo A, Ford J, Furgal C, Jones-Bitton A, Harper SL. **The connection between wildlife co-management and Indigenous well-being: What does the academic literature reveal?** *Wellbeing, Space & Society.* 2022:100116. Available from: <https://cdnsiencepub.com/doi/full/10.1139/as-2019-0015>.

AGRICULTURAL OPERATIONS

BIOLOGICAL AGENTS

BUILT ENVIRONMENT

1. Brook JR, Doiron D, Mckee A, Setton E. **HealthyDesign.City tools aim to help planners advance climate adaptation, public health and equity.** *Plan Canada.* 2022;62(3). Available from: https://www.cip-icu.ca/Files/Plan-Canada/plan-canada-issues/PlanCanada_Vol-62_No-3_Fall2022.aspx?utm_source=CANUE+Newsletter&utm_campaign=89b5e5e856-EMAIL_CAMPAIGN_2017_08_31_COPY_02&utm_medium=email&utm_term=0_3dbd1ae370-89b5e5e856-105383469#page=47.
2. Perrotta K. **Promoting Healthy Built Environments on Vancouver Island.** Ottawa, ON: Canadian Public Health Association; 2022 Oct 19. Available from: <https://www.cpha.ca/promoting-healthy-built-environments-vancouver-island>.
3. Shan W, Xiu C, Meng Y. **How to Design Greenway on Urban Land Utilization: Linking Place Preference, Perceived Health Benefit, and Environmental Perception.** *Int J Environ Res Public Health.* 2022;19(20):13640. Available from: <https://www.mdpi.com/1660-4601/19/20/13640>.
4. United Nations Environment Programme. **Beating the heat: a sustainable cooling handbook for cities.** New York, NY: UNEP; 2021. Available from: <https://reliefweb.int/sites/reliefweb.int/files/resources/Beating%20the%20heat%20-%20a%20sustainable%20cooling%20handbook%20for%20cities%20%28full%20report%29.pdf>.
5. Yi Y, Seo E, An J. **Does Forest Therapy Have Physio-Psychological Benefits? A Systematic Review and Meta-Analysis of Randomized Controlled Trials.** *Int J Environ Res Public Health.* 2022;19(17):10512. Available from: <https://www.mdpi.com/1660-4601/19/17/10512>.

CHEMICAL AGENTS – METALS, GENERAL

General

1. Chang C-J, O'Brien KM, Keil AP, Gaston SA, Jackson CL, Sandler DP, et al. **Use of Straighteners and Other Hair Products and Incident Uterine Cancer**. JNCI: Journal of the National Cancer Institute. 2022. Available from: <https://doi.org/10.1093/jnci/djac165>.
2. D'Ambrosio A. **Dry Shampoo Added to List of Products Contaminated With Benzene**. MedPage Today. 2022 Nov 2. Available from: https://www.medpagetoday.com/special-reports/features/101550?xid=nl_mpt_DHE_2022-11-02%26eun=g1187798d0r%26utm_source=Sailthru%26utm_medium=email%26utm_campaign=Daily%20Headlines%20Evening%202022-11-02%26utm_term=NL_Daily_DHE_dual-gmail-definition.
3. Hines M. **High Levels of BPA Were Found In Sports Bras and Athletic Shirts from Popular Brands**. 2022 [Oct 19]; Available from: <https://www.shape.com/bpa-found-in-workout-clothes-6752989>.
4. Lee H, Lee MW, Warren JR, Ferrie J. **Childhood lead exposure is associated with lower cognitive functioning at older ages**. Science Advances. 2022;8(45):eabn5164. Available from: <https://www.science.org/doi/abs/10.1126/sciadv.abn5164>.

CHEMICAL AGENTS – PESTICIDES

CHEMICAL AGENTS – SHALE GAS

CHILDREN'S ENVIRONMENTAL HEALTH

1. Dalla MDB, Ayala CO, de Abreu Quintela Castro FC, Neto FK, Zanirati G, Cañon-Montañez W, et al. **Environmental pollution and attention deficit hyperactivity disorder: A meta-analysis of cohort studies**. Environ Pollut. 2022;315:120351. Available from: <https://www.sciencedirect.com/science/article/pii/S0269749122015652>.
2. Walsh EI, Sargent G, Cevik-Compiegne B, Roberts M, Palfrey N, Gooyers-Bourke L, et al. **Bushfire Smoke and Children's Health—Exploring a Communication Gap**. Int J Environ Res Public Health. 2022;19(19):12436. Available from: <https://doi.org/10.3390/ijerph191912436>.

CLIMATE CHANGE

1. Barnett J, Bouw M. **Managing the Climate Crisis: Designing and Building for Floods, Heat, drought, and wildfire**. Washington, DC: Island Press; 2022. Available from: <https://islandpress.org/books/managing-climate-crisis>.
2. Chief Public Health Officer of Canada. **Mobilizing public health action on climate change in Canada. Chief Public Health Officer of Canada's report on the state of public health in Canada**. Ottawa, ON: Health Canada; 2022 Oct. Available from: <https://www.canada.ca/en/public->

- health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/state-public-health-canada-2022.html.
3. Di Napoli C, McGushin A, Romanello M, Ayeb-Karlsson S, Cai W, Chambers J, et al. **Tracking the impacts of climate change on human health via indicators: lessons from the Lancet Countdown**. BMC Public Health. 2022;22(1):663. Available from: <https://doi.org/10.1186/s12889-022-13055-6>.
 4. Ha S. **The Changing Climate and Pregnancy Health**. Curr Environ Health Rep. 2022;9(2):263-75. Available from: <https://doi.org/10.1007/s40572-022-00345-9>.
 5. Hajek A, König H-H. **Climate Anxiety, Loneliness and Perceived Social Isolation**. Int J Environ Res Public Health. 2022;19(22):14991. Available from: <https://www.mdpi.com/1660-4601/19/22/14991>.
 6. Kapwata T, Gebreslasie MT, Wright CY. **An analysis of past and future heatwaves based on a heat-associated mortality threshold: towards a heat health warning system**. Environ Health. 2022;21(1):112. Available from: <https://doi.org/10.1186/s12940-022-00921-4>.
 7. Koch M, Matzke I, Huhn S, Gunga H-C, Maggioni MA, Munga S, et al. **Wearables for Measuring Health Effects of Climate Change-Induced Weather Extremes: Scoping Review**. JMIR mHealth and uHealth. 2022;10(9):e39532. Available from: <https://doi.org/10.2196/39532>.
 8. Lancet Countdown. **The 2022 global report of the Lancet countdown**. Lancet Countdown; 2022. Available from: <https://www.lancetcountdown.org/2022-report/>.
 9. National Collaborating Centre for Indigenous Health. **Indigenous knowledges, rights, and climate change in Canada [fact sheet]**. Prince George, BC: National Collaborating Centre for Indigenous Health; 2022 Jun. Available from: https://www.nccih.ca/495/Fact_Sheet_-_Indigenous_Knowledges,_Rights,_and_Climate_Change_in_Canada_nccih?id=10382.
 10. Pétrin-Desrosiers C, Hackett F, Howard C, Halliday K, Buse CG, Kalogirou MR, et al. **The Lancet Countdown on Health and Climate Change. Policy brief for Canada**. Ottawa, ON: Canadian Public Health Association; 2022 Oct. Available from: https://cpa.ca/sites/default/files/uploads/advocacy/2022_lancet/2022_Lancet_Countdown_Canada_Policy_Brief_e.pdf.
 11. Romanello M, Di Napoli C, Drummond P, Green C, Kennard H, Lampard P, et al. **The 2022 report of the Lancet Countdown on health and climate change: health at the mercy of fossil fuels**. The Lancet. 2022. Available from: [https://doi.org/10.1016/S0140-6736\(22\)01540-9](https://doi.org/10.1016/S0140-6736(22)01540-9).
 12. Rosenkrantz L. **Impacts of Canada's changing climate change on West Nile Virus vectors [evidence review]**. Vancouver, BC: NCCEH; 20221103 Nov 10. Available from: <https://ncceh.ca/documents/impacts-canadas-changing-climate-west-nile-virus-vectors>.
 13. Segal TR, Giudice LC. **Systematic review of climate change effects on reproductive health**. Fertil Steril. 2022;118(2):215-23. Available from: <https://doi.org/10.1016/j.fertnstert.2022.06.005>.
 14. Stevens KM. **Coping with heat: community perceptions and experiences of urban forests in Metro Vancouver, Canada**. Vancouver, BC: University of British Columbia; 2022. Available from: <https://open.library.ubc.ca/soa/cIRcle/collections/ubctheses/24/items/1.0421392>.

15. World Health Organization, World Meteorological Organization. **Human Climate Horizons (HCH)**. WHO-WMO Joint Climate and Health; 2022; Available from: <https://climahealth.info/resource-library/human-climate-horizons-hch/>.

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)

1. Kilaru P, Hill D, Anderson K, Collins MB, Green H, Kmush BL, et al. **Wastewater Surveillance for Infectious Disease: A Systematic Review**. *Am J Epidemiol*. 2022. Available from: <https://doi.org/10.1093/aje/kwac175>.

DRINKING WATER

1. Cotruvo JA. **Algal Toxins in Drinking Water: Standards and Guidelines**. *Journal-American Water Works Association*. 2022;114(9):56-62. Available from: https://awwa.onlinelibrary.wiley.com/doi/abs/10.1002/awwa.1997?casa_token=rKyupmKTaGsAAAA:0OM12Pf94pb1iEJsrh5Js93jCpgeCtHJJiKfAWC2Fte6-cWzmwhFsaD3Fw92JrFy5KfjuloF2sYWA.
2. Lavallee S, Hynds PD, Brown RS, Majury A. Classification of sub-populations for quantitative risk assessment based on awareness and perception: A cross-sectional population study of private well users in Ontario. *Sci Total Environ*. 2023;857:159677. Available from: <https://www.sciencedirect.com/science/article/pii/S0048969722067778>.

EMERGENCY PREPAREDNESS

1. Evans J, Bansal A, Schoenaker DAJM, Cherbuin N, Peek MJ, Davis DL. **Birth Outcomes, Health, and Health Care Needs of Childbearing Women following Wildfire Disasters: An Integrative, State-of-the-Science Review**. *Environ Health Perspect*. 2022;130(8):86001. Available from: <https://doi.org/10.1289/ehp10544>.
2. Glenn N, Myre M. **Post-flooding community-level psychosocial impacts and priorities in Canada: a preliminary report [evidence review]**. Vancouver, BC: National Collaborating Centre for Environmental Health; 2022 11 23 Nov 23. Available from: <https://nceh.ca/documents/evidence-review/post-flooding-community-level-psychosocial-impacts-and-priorities-canada>.
3. James K. **Post-disaster emergency response: supporting people who use substances**. CIPHI British Columbia - BC Page. 2022 10 31. Available from: <https://ciphi.ca/wp-content/uploads/2022/10/BC-Page-Fall-2022.pdf>.
4. Ontario Agency for Health Protection and Promotion (Public Health Ontario). **Precautionary principle—applications relevant to public health emergency preparedness**. Toronto, ON: King's Printer for Ontario; 2022. Available from: https://www.publichealthontario.ca/-/media/Documents/P/2021/precautionary-principle-emergency-preparedness.pdf?sc_lang=en&cldee=s8bRXcSfrWiRTz-wH2M2yeBFPpbOlccASE-

[TtKBbJd9zYPaKnhGC4WUMTyYaqYz6&recipientid=contact-c7ccc0a5b4a2e611837d0050569e0009-ba6d0cbccf9545c4a0e0f6c9e01a4213&esid=cdaab843-8a54-ed11-8178-005056ad61b6.](https://doi.org/10.1016/j.jfsh.2021.12932)

5. Pierce G, Gabbe CJ, Rosser A. **Households Living in Manufactured Housing Face Outsized Exposure to Heat and Wildfire Hazards: Evidence from California.** *Natural Hazards Review.* 2022;23(3):04022009. Available from: <https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29NH.1527-6996.0000540>.
6. Skinner R, Luther M, Hertelendy AJ, Khorram-Manesh A, Sørensen J, Goniewicz K, et al. **A Literature Review on the Impact of Wildfires on Emergency Departments: Enhancing Disaster Preparedness.** *Prehospital Disaster Med.* 2022;37(5):657-64. Available from: <https://doi.org/10.1017/s1049023x22001054>.
7. Teague SJ, Shatte ABR, Weller E, Fuller-Tyszkiewicz M, Hutchinson DM. **Methods and Applications of Social Media Monitoring of Mental Health During Disasters: Scoping Review.** *JMIR Ment Health.* 2022;9(2):e33058. Available from: <https://doi.org/10.2196/33058>.

ENVIRONMENTAL HEALTH SURVEILLANCE

1. Nakayama SF, St-Amand A, Pollock T, Apel P, Bamai YA, Barr DB, et al. **Interpreting biomonitoring data: Introducing the international human biomonitoring (i-HBM) working group's health-based guidance value (HB2GV) dashboard.** *Int J Hyg Environ Health.* 2023;247:114046. Available from: <https://www.sciencedirect.com/science/article/pii/S1438463922001298>.

ENVIRONMENTAL PLANNING

FOOD

Food Safety

1. Belias A, Sullivan G, Wiedmann M, Ivanek R. **Factors that contribute to persistent Listeria in food processing facilities and relevant interventions: A rapid review.** *Food Control.* 2022;133:108579. Available from: <https://www.sciencedirect.com/science/article/pii/S0956713521007179>.
2. Health Canada. **Infantino 3-Pack Water Teethers recalled due to microbial contamination.** Ottawa, ON: Health Canada; 2022 Oct 14. Available from: <https://recalls-rappels.canada.ca/en/alert-recall/infantino-3-pack-water-teethers-recalled-due-microbial-contamination>.
3. Lu L-C, Quintela I, Lin C-H, Lin T-C, Lin C-H, Wu VCH, et al. A review of epidemic investigation on cold-chain food-mediated SARS-CoV-2 transmission and food safety consideration during COVID-19 pandemic. *Journal of Food Safety.* 2021;41(6):e12932. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/jfs.12932>.
4. Masotti F, Cattaneo S, Stuknytė M, Pica V, De Noni I. **Transmission routes, preventive measures and control strategies of SARS-CoV-2 in the food factory.** *Crit Rev Food Sci Nutr.* 2022;62(17):4821-31. Available from: <https://doi.org/10.1080/10408398.2021.1879728>.

5. Totoni S, Fabisiak JP, Beasley VR, Arnemo JM, Schulz JH, Terry MA, et al. **Biting the Bullet: A Call for Action on Lead-Contaminated Meat in Food Banks.** *Am J Public Health.* 2022;112(S7):S651-S4. Available from: <https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2022.307069>.

Food Security

1. Stauch J, Snowdon C. **The Right to Eat: Connecting Upstream and Downstream Food Security in Calgary.** Calgary, AB: Institute for Community Prosperity (Mount Royal University); YYC Food Security Fund; Place2Give Foundation; 2021. Available from: <https://www.homelesshub.ca/resource/right-eat-connecting-upstream-and-downstream-food-security-calgary>.
2. Young L. **Food environments and access to food: examples from Toronto.** Toronto, ON: PressBooks; 2022. Available from: <https://ecampusontario.pressbooks.pub/foodstudies/chapter/food-access/>.

GENERAL

Health Policy

1. Mantoura P. **The Roles of Public Health in Population Mental Health and Wellness Promotion—Guidance Report.** Montreal, QC: National Collaborating Centre for Healthy Public Policy; 2022 Oct. Available from: <https://ccnpps-ncchpp.ca/the-roles-of-public-health-in-population-mental-health-and-wellness-promotion/>.
2. Mantoura P. **The Roles of Public Health in Population Mental Health and Wellness Promotion—Synthesis Document.** Montreal, QC: National Collaborating Centre for Healthy Public Policy; 2022 Oct. Available from: <https://ccnpps-ncchpp.ca/the-roles-of-public-health-in-population-mental-health-and-wellness-promotion/>.

HEALTH EQUITY

1. Antonopoulos CA. **Heat, Wildfire and Energy Demand: An Examination of Residential Buildings and Community Equity** [Ph.D. thesis]. Ann Arbor: Portland State University; 2022. Available from: https://pdxscholar.library.pdx.edu/open_access_etds/5901/.
2. McGowan VJ, Bambra C. **COVID-19 mortality and deprivation: pandemic, syndemic, and endemic health inequalities.** *The Lancet Public Health.* 2022;7(11):e966-e75. Available from: [https://doi.org/10.1016/S2468-2667\(22\)00223-7](https://doi.org/10.1016/S2468-2667(22)00223-7).
3. National Collaborating Centre for Methods and Tools. Rapid Scoping Review: What is known about the role of public health in working with shelters serving people experiencing homelessness? Hamilton, ON: NCCMT; 2022 Oct 26. Available from: <https://www.nccmt.ca/rapid-evidence-service/48>.
4. Quinton J, Nesbitt L, Czekajlo A. **Wealthy, educated, and... non-millennial? Variable patterns of distributional inequity in 31 Canadian cities.** *Landscape Urb Plan.* 2022;227:104535. Available from: <https://www.sciencedirect.com/science/article/pii/S0169204622001840>.

5. Vitale M. **The social ecology of COVID-19 prevalence and risk in Montreal, QC, Canada.** Health Place. 2022;78:102919. Available from: <https://doi.org/10.1016%2Fj.healthplace.2022.102919>.

HEALTH IMPACT ASSESSMENT

1. US Environmental Protection Agency. **Cumulative Impacts Research: Recommendations for EPA's Office of Research and Development.** Washington, DC: US EPA; 2022 Sep. Available from: https://www.epa.gov/system/files/documents/2022-09/Cumulative%20Impacts%20Research%20Final%20Report_FINAL-EPA%20600-R-22-014a.pdf.

INDOOR AIR

1. Cadnum JL, Jencson AL, Memic S, Osborne AO, Torres-Teran MM, Wilson BM, et al. **Real-World Evidence on the Effectiveness of Plexiglass Barriers in Reducing Aerosol Exposure.** Pathog Immun. 2022;7(2):66-77. Available from: <https://doi.org/10.20411/pai.v7i2.533>.
2. Eykelbosh A, Nicol A-M. Air quality sensor lending libraries: bringing home public health [journal article: Environmental Health Review, CIPHI]. 2022;1103 Nov 3.
3. Multnomah County. **A Review of the Evidence Public Health and Gas Stoves.** Portland, OR: Multnomah County; 2022. Available from: https://multco-web7-psh-files-usw2.s3-us-west-2.amazonaws.com/s3fs-public/gas-stoves-health-risk-report-2022_0.pdf.
4. O'Dell K, Ford B, Burkhardt J, Magzamen S, Anenberg SC, Bayham J, et al. **Outside in: the relationship between indoor and outdoor particulate air quality during wildfire smoke events in western US cities.** Environmental Research: Health. 2023;1(1):015003. Available from: <https://dx.doi.org/10.1088/2752-5309/ac7d69>.
5. Salthammer T, Moriske H-J. **Requirements to minimize airborne infections related to virus aerosol contamination at indoor cultural events.** medRxiv. 2022:2022.11.07.22281932. Available from: <https://www.medrxiv.org/content/medrxiv/early/2022/11/13/2022.11.07.22281932.full.pdf>.
6. Srikrishna D. **Long-term experience with rapid air filtration (6 to 15 air changes per hour) in a K-5 elementary school using HEPA and Do-It-Yourself (DIY) air purifiers during the COVID-19 pandemic.** medRxiv. 2022. Available from: <https://www.medrxiv.org/content/medrxiv/early/2022/11/13/2022.11.05.22281734.full.pdf>.
7. Thornton GM, Kroeker E, Fleck BA, Zhong L, Hartling L. **The impact of heating, ventilation and air conditioning (HVAC) design features on the transmission of viruses, including SARS-CoV-2: an overview of reviews.** Interact J Med Res. 2022. Available from: <https://doi.org/10.2196/37232>.
8. Torres-Teran MM, Cadnum JL, Donskey CJ. **Is ventilation in grocery stores adequate to minimize the risk for airborne transmission of severe acute respiratory syndrome coronavirus 2?** Antimicrob Steward Healthc Epidemiol. 2022;2(1):e182. Available from: <https://doi.org/10.1017/ash.2022.322>.

NUISANCE CONTROL

OUTDOOR AIR

1. Abolhasani E, Hachinski V, Ghazaleh N, Azarpazhooh MR, Mokhber N, Martin J. **Air Pollution and Incidence of Dementia: A Systematic Review and Meta-analysis.** Neurology. 2022. Available

from:

<https://n.neurology.org/content/neurology/early/2022/10/26/WNL.000000000201419.full.pdf>

2. Basilio E, Chen R, Fernandez AC, Padula AM, Robinson JF, Gaw SL. Wildfire Smoke Exposure during Pregnancy: A Review of Potential Mechanisms of Placental Toxicity, Impact on Obstetric Outcomes, and Strategies to Reduce Exposure. *Int J Environ Res Public Health*. 2022;19(21):13727. Available from: <https://www.mdpi.com/1660-4601/19/21/13727>.
3. Fadadu RP, Green M, Jewell NP, Grimes B, Vargo J, Wei ML. **Association of Exposure to Wildfire Air Pollution With Exacerbations of Atopic Dermatitis and Itch Among Older Adults**. *JAMA network open*. 2022;5(10):e2238594. Available from: <https://doi.org/10.1001/jamanetworkopen.2022.38594>.
4. Lebel ED, Michanowicz DR, Bilsback KR, Hill LAL, Goldman JSW, Domen JK, et al. Composition, Emissions, and Air Quality Impacts of Hazardous Air Pollutants in Unburned Natural Gas from Residential Stoves in California. *Environ Sci Tech*. 2022. Available from: <https://doi.org/10.1021/acs.est.2c02581>.
5. Mirabelli MC, Vaidyanathan A, Pennington AF, Ye D, Trenga CA. **Wildfire smoke and symptoms affecting mental health among adults in the U.S. state of Oregon**. *Prev Med*. 2022:107333. Available from: <https://doi.org/10.1016/j.ypmed.2022.107333>.
6. Ong GJ, Sellers A, Mahadavan G, Nguyen TH, Worthley MI, Chew DP, et al. **“Bushfire Season” in Australia: Determinants of increases in risk of acute coronary syndromes and Takotsubo Syndrome**. *The American journal of medicine*. 2022. Available from: <https://doi.org/10.1016/j.amjmed.2022.08.013>.
7. Park J-H, Lee E, Fechter-Leggett ED, Williams E, Yadav S, Bakshi A, et al. Associations of Emergency Department Visits for Asthma with Precipitation and Temperature on Thunderstorm Days: A Time-Series Analysis of Data from Louisiana, USA, 2010–2012. *Environ Health Perspect*. 2022;130(8):087003. Available from: <https://ehp.niehs.nih.gov/doi/abs/10.1289/EHP10440>.
8. Rosenthal N, Benmarhnia T, Ahmadov R, James E, Marlier ME. **Population co-exposure to extreme heat and wildfire smoke pollution in California during 2020**. *Environmental Research: Climate*. 2022;1(2):025004. Available from: <https://dx.doi.org/10.1088/2752-5295/ac860e>.
9. Treves RJ, Liu E, Fischer SL, Rodriguez E, Wong-Parodi G. Wildfire Smoke Clean Air Centers: Identifying Barriers and Opportunities for Improvement from California Practitioner and Community Perspectives. *Soc Natur Resour*. 2022:1-20. Available from: <https://doi.org/10.1080/08941920.2022.2113487>.

PERSONAL SERVICE ESTABLISHMENTS

PEST CONTROL

PHYSICAL AGENTS

1. Bhandari S, de Ferreyro Monticelli D, Xie K, Ramkairsingh A, Eykelbosh A, Henderson SB, et al. **Odor, air quality, and well-being: understanding the urban smellscape using crowd-sourced science, monitoring, and modeling.** Earth and Space Science Open Archive. 2022 11 02. Available from: <https://doi.org/10.1002/essoar.10512618.1>.

RADIATION

1. [Forthcoming]. **Implications of COVID-19 pandemic in Canada on increasing residential radon gas exposure.** EvictRadon; 2022. Available from: <https://evictradon.org/publications/>.
2. City of Fort Collins. **Healthy Homes Radon Illustrated Video - What is radon?** Fort Collins, CO: City of Fort Collins. Available from: https://www.youtube.com/watch?v=Y_tfmWwUuh8.
3. Franklin M. **Not enough being done to mitigate radon in Canadian homes, joint Alberta-B.C. study suggests.** CTV News. 2022 Oct 20. Available from: <https://calgary.ctvnews.ca/not-enough-being-done-to-mitigate-radon-in-canadian-homes-joint-alberta-b-c-study-suggests-1.6117617>.
4. Goodarzii A, Carlson L, Peters C. **Radon exposure significantly affected by behaviour and socio-economic factors, study finds.** EurekAlert. 2022 Oct 20. Available from: <https://www.eurekalert.org/news-releases/968604>.
5. Health Canada. **Radon gas survey in homes built after 2000: Halifax region.** Ottawa, ON: Government of Canada; 2022 [updated Nov 9]; Available from: <https://www.canada.ca/en/health-canada/services/publications/health-risks-safety/radon-gas-survey-homes-built-after-2000-halifax-region.html>.
6. Igoe DP, Parisi AV, Downs NJ, Butler H. **A Case Study of UV Exposure Risk in Sydney during the 2019/2020 New South Wales Bushfires.** Photochem Photobiol. 2022;98(5):1236-44. Available from: <https://doi.org/10.1111/php.13603>.
7. Irvine JL, Simms JA, Cholowsky NL, Pearson DD, Peters CE, Carlson LE, et al. **Social factors and behavioural reactions to radon test outcomes underlie differences in radiation exposure dose, independent of household radon level.** Sci Rep. 2022;12(1):15471. Available from: <https://doi.org/10.1038/s41598-022-19499-5>.
8. Khan SM, Gomes J, Nicol A-M. **Residents' perception and worldview about radon control policy in Canada: a pro-equity social justice lens.** Front Public Health. 2022 08 23;10. Available from: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.946652>.
9. National Collaborating Centre for Environmental Health. **Radon [topic page].** Vancouver, BC: National Collaborating Centre for Environmental Health; 2022 11 20 Nov 20. Available from: <https://ncceh.ca/environmental-health-in-canada/health-agency-projects/radon>.

RECREATIONAL AND SURFACE WATER

1. Arsenych A. **New spa village near Toronto temporarily closes its pools after staph contamination.** CTV News. 2022 Oct 20. Available from: <https://toronto.ctvnews.ca/new-spa-village-near-toronto-temporarily-closes-its-pools-after-staph-contamination-1.6117743>.

2. Jalili F, Moradinejad S, Zamyadi A, Dorner S, Sauv  S, Pr vost M. **Evidence-Based Framework to Manage Cyanobacteria and Cyanotoxins in Water and Sludge from Drinking Water Treatment Plants.** *Toxins (Basel)*. 2022;14(6). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9228313/>.
3. Volk A, Lee J. **Cyanobacterial blooms: A player in the freshwater environmental resistome with public health relevance?** *Environ Res*. 2023;216:114612. Available from: <https://www.sciencedirect.com/science/article/pii/S0013935122019399>.

RISK ASSESSMENT, COMMUNICATION

1. Lowe M, Harmon SHE, Kholina K, Parker R, Graham JE. **Public health communication in Canada during the COVID-19 pandemic.** *Can J Public Health*. 2022. Available from: <https://doi.org/10.17269/s41997-022-00702-z>.
2. Shellington EM, Nguyen PDM, Rideout K, Barn P, Lewis A, Baillie M, et al. **Public Health Messaging for Wildfire Smoke: Cast a Wide Net.** *Front Public Health*. 2022;10:773428. Available from: <https://doi.org/10.3389/fpubh.2022.773428>.
3. Williamson R, Banwell C, Calex AL, LaBond C, Leach LS, Olsen A, et al. **'I didn't feel safe inside': navigating public health advice, housing and living with bushfire smoke.** *Crit Public Health*. 2022:1-11. Available from: <https://doi.org/10.1080/09581596.2022.2082923>.

SENIORS' ENVIRONMENTAL HEALTH

1. Alzheimer Society of Canada. **Navigating the path forward for dementia in Canada.** Toronto, ON: Alzheimer Society of Canada; 2022. Available from: <https://alzheimer.ca/sites/default/files/documents/Landmark-Study-1-Path-Forward-Alzheimer-Society-of-Canada-2022-wb.pdf>.
2. Chang AY, Tan AX, Nadeau KC, Odden MC. **Aging Hearts in a Hotter, More Turbulent World: The Impacts of Climate Change on the Cardiovascular Health of Older Adults.** *Curr Cardiol Rep*. 2022;24(6):749-60. Available from: <https://doi.org/10.1007/s11886-022-01693-6>.
3. Mahmood A, Patille R, Lam E, Mora DJ, Gurung S, Bookmyer G, et al. **Aging in the Right Place for Older Adults Experiencing Housing Insecurity: An Environmental Assessment of Temporary Housing Program.** *Int J Environ Res Public Health*. 2022;19(22):14857. Available from: <https://www.mdpi.com/1660-4601/19/22/14857/htm>.
4. O'Piela DR, Durisek Iii GR, Escobar Y-NH, Mackos AR, Wold LE. **Particulate matter and Alzheimer's disease: an intimate connection.** *Trends in Molecular Medicine*. 2022;28(9):770-80. Available from: <https://doi.org/10.1016/j.molmed.2022.06.004>.
5. Xu T, Nordin NA, Aini AM. **Urban Green Space and Subjective Well-Being of Older People: A Systematic Literature Review.** *Int J Environ Res Public Health*. 2022;19(21):14227. Available from: <https://www.mdpi.com/1660-4601/19/21/14227>.

TOBACCO, CANNABIS, VAPING

1. Sakamaki-Ching S, Schick S, Grigorean G, Li J, Talbot P. Dermal thirdhand smoke exposure induces oxidative damage, initiates skin inflammatory markers, and adversely alters the human plasma proteome. *eBioMedicine*. 2022;84. Available from: <https://doi.org/10.1016/j.ebiom.2022.104256>.
2. Seltenrich N. **What's in Your Gummy? State Cannabis Contaminant Rules Vary Widely**. *Environ Health Perspect*. 2022;130(10):104001. Available from: <https://ehp.niehs.nih.gov/doi/abs/10.1289/EHP12099>.
3. Walker ME. *The Impact of Recreational Cannabis Legalization and COVID-19 on Injury-related Emergency Department Visits and Hospitalizations in Canada*. Toronto, ON: University of Toronto; 2022. Available from: <https://tspace.library.utoronto.ca/handle/1807/125299>.

WASTE, WASTEWATER

1. Câmara AB, Bonfante J, da Penha MG, Cassini STA, de Pinho Keller R. **Detecting SARS-CoV-2 in sludge samples: A systematic review**. *Sci Total Environ*. 2022:160012. Available from: <https://doi.org/10.1016/j.scitotenv.2022.160012>.
2. Le C. **Sensitivity of wastewater surveillance: What is the minimum COVID-19 cases required in population for SARS-CoV-2 RNA to be detected in wastewater?** *Journal of Environmental Sciences*. 2023;125:851-3. Available from: <https://www.sciencedirect.com/science/article/pii/S1001074222004223>.
3. Li Q, Lee BE, Gao T, Qiu Y, Ellehoj E, Yu J, et al. **Number of COVID-19 cases required in a population to detect SARS-CoV-2 RNA in wastewater in the province of Alberta, Canada: Sensitivity assessment**. *Journal of Environmental Sciences*. 2023;125:843-50. Available from: <https://www.sciencedirect.com/science/article/pii/S1001074222002236>.
4. Masri NZ, Card KG, Caws EA, Babcock A, Powell R, Lowe CJ, et al. **Testing specificity and sensitivity of wastewater-based epidemiology for detecting SARS-CoV-2 in four communities on Vancouver Island, Canada**. *Environ Adv*. 2022;9:100310. Available from: <https://doi.org/10.1016/j.envadv.2022.100310>.
5. Pang X, Gao T, Ellehoj E, Li Q, Qiu Y, Maal-Bared R, et al. **Wastewater-Based Surveillance Is an Effective Tool for Trending COVID-19 Prevalence in Communities: A Study of 10 Major Communities for 17 Months in Alberta**. *ACS ES T Water*. 2022;2(11):2243-54. Available from: <https://doi.org/10.1021/acsestwater.2c00143>.

ZOONOSES

1. Canadian Animal Health Surveillance System. **Surveillance in Canada**. CAHSS. Available from: <https://cahss.ca/>.
2. Dentico N, Upham G, Germond A. **Untangling antimicrobial resistance (amr), the legacy of an unhealthy development model**. Geneva, Switzerland: Rosa Luxembourg Foundation; 2022 Oct 11. Available from: https://rosalux-geneva.org/wp-content/uploads/2022/10/2.-Untangling-Antimicrobial-Resistance-AMR-Report_Web-Version-1.pdf.

3. Eby P, Peel AJ, Hoegh A, Madden W, Giles JR, Hudson PJ, et al. **Pathogen spillover driven by rapid changes in bat ecology.** *Nature*. 2022. Available from: <https://doi.org/10.1038/s41586-022-05506-2>.
4. Le T. **The Effects of Climate Change on Vector-Borne Diseases in Canada Comic.** Winnipeg, MB: NCCID; 2022. Available from: <https://nccid.ca/publications/the-effects-of-climate-change-on-vector-borne-diseases-in-canada-comic/>.
5. Lee X, Maxson G-A, Paskewitz S. Single Mowing Event Does Not Reduce Abundance of *Ixodes scapularis* (Acari: Ixodidae) and *Dermacentor variabilis* (Acari: Ixodidae) on Recreational Hiking Trails. *J Med Entomol*. 2022. Available from: <https://doi.org/10.1093/jme/tjac164>.
6. Lemieux A, Colby GA, Poulain AJ, Aris-Brosou S. **Viral spillover risk in High Arctic increases with melting glaciers.** *bioRxiv*. 2021:2021.08.23.457348. Available from: <https://www.biorxiv.org/content/biorxiv/early/2021/08/23/2021.08.23.457348.full.pdf>.
7. Malta M, Mbala-Kingebeni P, Rimoin AW, Strathdee SA. **Monkeypox and Global Health Inequities: A Tale as Old as Time.** *Int J Environ Res Public Health*. 2022;19(20):13380. Available from: <https://www.mdpi.com/1660-4601/19/20/13380>.
8. National Collaborating Center for Infectious Diseases. **Iconic buildings and landmarks Go Blue for antimicrobial resistance throughout Canada.** Winnipeg, MB: NCCID; 2022 Nov 15. Available from: <https://nccid.ca/iconic-buildings-and-landmarks-go-blue-for-antimicrobial-resistance-throughout-canada/>.
9. Ontario Agency for Health Protection and Promotion (Public Health Ontario). **Monkeypox in Ontario: May 20, 2022 to October 18, 2022.** Toronto, ON: King's Printer for Ontario; 2022. Available from: https://www.publichealthontario.ca/-/media/Documents/M/2022/monkeypox-episummary.pdf?sc_lang=en&cldee=s8bRXcSfRWiRTz-wH2M2yeBFPpbOlccASE-TtKBbJd9zYPaKnhGC4WUMTyYaqYz6&recipientid=contact-c7ccc0a5b4a2e611837d0050569e0009-ba6d0cbccf9545c4a0e0f6c9e01a4213&esid=cdaab843-8a54-ed11-8178-005056ad61b6.
10. Parveen S, Garzon-Orjuela N, Amin D, McHugh P, Vellinga A. Public Health Interventions to Improve Antimicrobial Resistance Awareness and Behavioural Change Associated with Antimicrobial Use: A Systematic Review Exploring the Use of Social Media. *Antibiotics (Basel)*. 2022;11(5). Available from: <https://doi.org/10.3390/antibiotics11050669>.
11. Webb JLA, Jr. **The long arc of mosquito control.** In: Hall M, Tamir D, editors. *Mosquitopia: The Place of Pests in a Healthy World*. New York: Routledge; 2022. p. 49-60. Available from: <https://doi.org/10.4324/9781003056034-6>.
12. Willoughby UE. **Domesticated Mosquitoes: Colonization and the growth of mosquito habitats in North America.** In: Hall M, Tamir D, editors. *Mosquitopia: The Place of Pests in a Healthy World*. New York: Routledge. 2022. p. 61-72. Available from: <https://doi.org/10.4324/9781003056034-7>.

COVID-19 ADDITIONAL TOPICS & GUIDANCE



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

Face Masks, Distancing, etc

1. Gloekler LE, de Gandiaga EJ, Binczewski NR, Steimel KG, Massarsky A, Kozal J, et al. **Evaluation of the Safety and Efficacy of Hand Sanitizer Products Marketed to Children Available during the COVID-19 Pandemic.** Int J Environ Res Public Health. 2022;19(21):14424. Available from: <https://www.mdpi.com/1660-4601/19/21/14424>.
2. Schmitt J, Wang J. A critical review on the role of leakages in the facemask protection against SARS-CoV-2 infection with consideration of vaccination and virus variants. Indoor Air. 2022;32(10):e13127. Available from: <https://doi.org/10.1111/ina.13127>.
3. Shashina EA, Sannikova EA, Shcherbakov DV, Zhernov YV, Makarova VV, Isiutina-Fedotkova TS, et al. **Analysis of the Face Mask Use by Public Transport Passengers and Workers during the COVID-19 Pandemic.** Int J Environ Res Public Health. 2022;19(21):14285. Available from: <https://www.mdpi.com/1660-4601/19/21/14285>.

Schools

1. Tupper P, Pai S, Colijn C. **COVID-19 cluster size and transmission rates in schools from crowdsourced case reports.** Elife. 2022;11. Available from: <https://doi.org/10.7554/elife.76174>.

HOMELESS, VULNERABLE POPULATIONS, HOUSING

1. Levesque J, Babando J, Loranger N, Johnson S, Pugh D. **COVID-19 prevalence and infection control measures at homeless shelters and hostels in high-income countries: a scoping review.** Systematic Reviews. 2022;11(1):223. Available from: <https://doi.org/10.1186/s13643-022-02089-x>.

MENTAL HEALTH

1. Pongou R, Ahinkorah BO, Maltais S, Mabeu MC, Agarwal A, Yaya S. **Psychological distress during the COVID-19 pandemic in Canada.** PLoS ONE. 2022;17(11):e0277238. Available from: <https://doi.org/10.1371/journal.pone.0277238>.

MULTI-UNIT BUILDINGS

OCCUPATIONAL GUIDANCE

PUBLIC FACILITIES

SURVIVAL TIME

1. Farooq S, Tizaoui C. **A critical review on the inactivation of surface and airborne SARS-CoV-2 virus by ozone gas.** Critical Reviews in Environmental Science and Technology. 2023;53(1):87-109. Available from: <https://doi.org/10.1080/10643389.2022.2043094>.

TRANSIT, TRANSPORTATION

TRANSMISSION

1. Lai J, Coleman KK, Tai SS, German J, Hong F, Albert B, et al. **Exhaled Breath Aerosol Shedding by Highly Transmissible Versus Prior SARS-CoV-2 Variants**. Clin Infect Dis. 2022. Available from: <https://doi.org/10.1093/cid/ciac846>.
2. Meisner J, Baszler TV, Kuehl KE, Ramirez V, Baines A, Frisbie LA, et al. **Household Transmission of SARS-CoV-2 from Humans to Pets, Washington and Idaho, USA**. Emerg Infect Dis. 2022;28(3). Available from: https://wwwnc.cdc.gov/eid/article/28/12/22-0215_article?utm_source=Institut+national+de+sant%C3%A9+publique+du+Qu%C3%A9bec&utm_campaign=86d910a66f-VEILLE_SCI_COVID&utm_medium=email&utm_term=0_b5d9f3a57e-86d910a66f-446203185.
3. Wei H-Y, Chang C-P, Liu M-T, Mu J-J, Lin Y-J, Dai Y-T, et al. **Probable Aerosol Transmission of SARS-CoV-2 through Floors and Walls of Quarantine Hotel, Taiwan, 2021**. Emerg Infect Dis. 2022;28(12). Available from: https://wwwnc.cdc.gov/eid/article/28/12/22-0666_article?utm_source=Institut+national+de+sant%C3%A9+publique+du+Qu%C3%A9bec&utm_campaign=d7a0d6513e-VEILLE_SCI_COVID&utm_medium=email&utm_term=0_b5d9f3a57e-d7a0d6513e-446203185.

Variants, Vaccines

1. Daflos P. **B.C. monitoring a handful of ‘Scrabble variants’ of COVID-19 found in province**. CTV News. 2022 Oct 27. Available from: <https://bc.ctvnews.ca/b-c-monitoring-a-handful-of-scrabble-variants-of-covid-19-found-in-province-1.6126990>.
2. Ontario Agency for Health Protection and Promotion (Public Health Ontario). **Risk Assessment for Omicron Sub-Lineage BF.7 (as of October 11, 2022)** Toronto, ON: King’s Printer for Ontario; 2022 Oct.
3. Ontario Agency for Health Protection and Promotion (Public Health Ontario). **Risk Assessment for Omicron Sublineages BQ.1 and BQ.1.1 (as of October 20, 2022)** Toronto, ON: King’s Printer for Ontario; 2022 Oct.
4. Ontario Agency for Health Protection and Promotion (Public Health Ontario). **Risk Assessment for Omicron BA.4 and BA.4 Variant Sub-Lineages (as of Sept 23, 2022)**. Toronto, ON: King’s Printer for Ontario; 2022 Oct 4.

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