

## EPID831 Chronic Disease Epidemiology Winter 2023

### Syllabus

Instructor: Kristan Aronson, PhD; Feel free to contact me by email: [aronson@queensu.ca](mailto:aronson@queensu.ca)

Time/location: Tuesdays 11am-2pm Carruthers 311 starting Jan 10 with a break for lunch

Notes: Official registration is required; no auditors. No class Feb 21 due to Reading Week.

### SGS Course Description:

"This course will provide an overview of the epidemiology of some of the leading non-infectious causes of morbidity and mortality in Canada and will highlight the key methodological considerations for the study of each disease or health problem."

PREREQUISITES: EPID-801 & EPID-821 or equivalents with permission of instructor

### Detailed description and rationale:

The approach in this elective course is to concentrate on major risk factors for several chronic diseases and injuries in Canada based on their impact on age-standardized disability-adjusted life years (DALYs) and other indicators, while integrating epidemiologic and public health principles to judge quality of the evidence and determine disparities by social constructs such as race, gender and socio-economic status. The risk factors we will concentrate on are poverty/living conditions, lack of physical activity, tobacco, alcohol, violence, and environmental pollutants. These risk factors impact many chronic diseases such as respiratory conditions, poor mental health, diabetes, cardiovascular disease, and cancer. With the approach through the major risk factors that affect the population of Canada and an emphasis on disparities, the major chronic diseases will be characterized by their prevalence and incidence, demographics, risk factors and prevention, and early detection. This course will reinforce epidemiological principles and methods, research skills, use of conceptual models/frameworks, and the public health concept of evidence to action in the investigation of risk factors and chronic diseases. We will also emphasize ethical conduct of research, professional issues that researchers encounter in this work, and the impact of research evidence on action such as reducing disparities, health policies, prevention and regulations. Students are encouraged to interrogate the evidence to identify disparities across groups defined by race, gender, socio-economic status etc., and if not possible, to identify why/how evidence should be derived for the identification of disparities. Ideally by the end of term, students will develop a framework for making their own decisions about when they think they should characterize disparities in exposure to risk factors and chronic diseases in their own work, and when they need to take action to address disparities.

### Competencies/ Learning outcomes:

Through presentations, class discussions, readings, quizzes, and thinking/writing assignments, students will be able to:

- choose topics within the relevant area, and delineate the scope of the topic for the purpose of class presentations
- survey and select relevant literature with the aim of presenting the balance of evidence
- evaluate the feasibility and scientific merit of various epidemiologic study designs and characteristics for identifying risk factors, chronic diseases and disparities while considering ethical issues
- reconsider the distribution and impact of exposures and chronic health conditions from a disparity point of view
- draw appropriate inferences from epidemiologic data and systematic reviews
- develop a framework for their own decisions about moving from characterizing to addressing disparities in risk factors and health

### Structure of class time/ Expectations:

Each class will consist of presentations by the instructor and/or students, and interactions via discussions and instructor-led or student-led questions. Please note that no recording is allowed. Methods used in risk factor and chronic disease epidemiology are examined critically through weekly readings, student presentations and class discussions in a graduate seminar format. About 10-12 hours a week of work outside of class time is required to fully participate in this course.

### Values/ Roles and responsibilities:

We look forward to working together in an atmosphere of mutual respect and promotion of diversity. We have made every effort to make this course accessible. We encourage active learning and critical thinking through a range of activities designed to engage learners. Students have a wide range of experiences and education that greatly contributes to the richness of our interactions. Respect for diversity and principles of equity are the foundations for learning in this course. Use of excellent listening and communication skills is encouraged. Slides must be of high quality and limited in number, and all formatting guidelines must be followed. Quality is valued much more than quantity or speed. Thoughtful reflection is encouraged. Active learning and interaction with peers and instructors are necessary in every class. We expect to work in a collegial, compassionate, and collaborative environment. **If you have any concerns, please contact Kristan as soon as possible.**

Assessment:

Quality of 30-min presentations (n=3)	40%
Assignments (n=3): Characterizing and addressing disparities in risk factors and health; Development of framework for making your own decisions about research and action in 2 parts	30%
Quality of participation in discussions (all classes)	20%
Engagement of peers/ peer interaction (all classes)	10%

Note: Students must submit their work to Turnitin prior to submitting to instructor. Learn about this in onQ course: Academic Integrity Support for Graduate Students.

See Schedule in separate doc for specific session content after students express their interests.

Course materials:

An understanding of epidemiology and biostatistics is assumed for this course at the level of successful completion of graduate level courses EPID801 and 821. The level of comprehension of epidemiologic principles expected for this course can be found in the following texts:  
Essential Epidemiology: An Introduction for Students and Health Professionals, 4th edition, by Penny Webb, Chris Bain, Andrew Page, Martyn Kirk, Adrian Sleigh, 2020.  
Epidemiology for Canadian Students, 3rd Ed. Principles, Methods, and Critical Appraisal by Dr. Scott Patten, 2021.

Required readings must be read before class and will be announced about one week prior to class. The following are examples:

*Assessment of the burden of diseases and injuries attributable to risk factors in Canada from 1990 to 2016: an analysis of the Global Burden of Disease Study* by Samiah Alam, Justin J. Lang, Aaron M. Drucker, Carolyn Gotay, Nicole Kozloff, Kedar Mate, Scott B. Patten, Heather M. Orpana, Ashkan Afshin and Leah E. Cahill. CMAJ 2019;7: E140-E148; DOI: <https://doi.org/10.9778/cmajo.20180137>

*Global Perspectives on Improving Chronic Disease Prevention and Management in Diverse Settings* GUEST EDITORIAL, Volume 18, 2021 by Collins O. Airhihenbuwa, Tung-Sung Tseng, Victor D. Sutton, LeShawndra Price. [https://www.cdc.gov/pcd/issues/2021/21\\_0055.htm](https://www.cdc.gov/pcd/issues/2021/21_0055.htm)

WHO (last updated April 2021): <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>

*Creating conditions for Canadian aboriginal health equity: the promise of healthy public policy* by Chantelle A. M. Richmond and Catherine Cook. Public Health Reviews 2016;37:2.

*Best in Health: Creating a Comprehensive Health Information Ecosystem* by Don Drummond, Duncan Sinclair and Philipp Gladkov. C.D. Howe Institute Working Paper August 10, 2021. [https://www.cdhowe.org/sites/default/files/attachments/research\\_papers/mixed/Best%20in%20Health%20-%20Drummon%20et%20al%20Working%20Paper.pdf](https://www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/Best%20in%20Health%20-%20Drummon%20et%20al%20Working%20Paper.pdf)

*Confronting Racism within the Canadian Healthcare System: Systemic Exclusion of First Nations from Quality and Consistent Care* by Wanda Phillips-Beck, Rachel Eni, Josée G. Lavoie, Kathi Avery Kinew, Grace Kyoon Achan and Alan Katz. *International Journal of Environmental Research and Public Health* 2020;22:8343. DOI: 10.3390/ijerph17228343

*Chronic disease multimorbidity among the Canadian population: prevalence and associated lifestyle factors* by Nigatu Regassa Geda, Bonnie Janzen and Punam Pahwa. *Archives of Public Health* 2021;79:60.

*Prioritizing Indigenous Elders' Knowledge for Intergenerational Well-being* by Gladys Rowe, Silvia Straka, Michael Hart, Ann Callahan, Don Robinson and Garry Robson. *Canadian Journal on Aging* 2020;39:156. DOI: 10.1017/S0714980819000631

*Understanding Systems: The 2021 report of the National Advisory Council on Poverty.* <https://www.canada.ca/en/employment-social-development/programs/poverty-reduction/national-advisory-council/reports/2021-annual.html>

*Just the facts. Canada without poverty.* <https://cwp-csp.ca/poverty/just-the-facts/>  
*The cost of poverty. Canada without poverty.* <https://cwp-csp.ca/poverty/the-cost-of-poverty/>

*Absolute Policy Brief on Poverty Reduction in Canada.* <https://static1.squarespace.com/static/5f9778ee38386e6ccf4efcdb/t/60b431fc92b2014f79c8fc72/1622422013070/Absolute+Policy+Brief+on+Poverty+Reduction+in+Canada.docx.pdf>

*Family income and health in Canada: a longitudinal study of stability and change* by Adam Vanzella-Yang and Gerry Veenstra. *BMC Public Health* 2021;21:333.

*Youth—but not adults—reported less physical activity during the COVID-19 pandemic* by Jenny Watt and Rachel C. Colley. *Stats Can* 2021. <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2021001/article/00032-eng.htm>

*New report card gives Canadians an "F" when it comes to physical activity* by Neetu Seupersadsingh, Nov 2021. <https://toronto.citynews.ca/2021/11/30/new-report-card-gives-canadians-an-f-when-it-comes-to-physical-activity/>

*Every Move Counts Video Campaign 2020:* <https://www.youtube.com/watch?v=jY7YvgIA92s>

*Strengthening public health nutrition: Findings from a situational assessment to inform system-wide capacity building in Ontario, Canada* by Rachel JL Prowse, Sarah A Richmond, Sarah Carsley, Heather Manson and Brent Moloughney. Public Health Nutrition 2020;23.

*VIOLENCE IN SOCIETY: A PUBLIC HEALTH PERSPECTIVE*. Canadian Public Health Association.  
<https://www.cpha.ca/violence-society-public-health-perspective>

*Developing an intersectional national framework that addresses the ongoing gender-based violence crisis in Canada: Policy brief* by Tasnim Abdi, Veronica Finamore and Kassandra Jutras. Public Health Youth Association of Canada, April, 2021.

*Substance Use in Canada Costs Almost \$46 Billion a Year According to Latest Data*. July 7, 2020  
<https://www.ccsa.ca/substance-use-canada-costs-almost-46-billion-year-according-latest-data>

*At-a-glance – The alcohol deficit: Canadian government revenue and societal costs from alcohol* by Adam Sherk, 2020. <https://www.canada.ca/en/public-health/services/reports-publications/health-promotion-chronic-disease-prevention-canada-research-policy-practice/vol-40-no-5-6-2020/alcohol-deficit-canadian-government-revenue-societal-costs.html>

*The challenge of pollution and health in Canada* by Niladri Basu and Bruce P. Lanphear. CJPB 2019; doi: [10.17269/s41997-019-00175-7](https://doi.org/10.17269/s41997-019-00175-7)

Video: [Unacceptable Risk: Margaret Kripke on Cancer and the Environment](#)  
Producer/Director, Cynthia McKeown, 2019 (15min)

*Rethinking Environmental Carcinogenesis* by Kripke M, Brody JG, E. Hawk, A.B. Hernandez, P.J. Hoppin, M.M. Jacobs, R.A. Rudel, T.R. Rebbeck. Cancer Epidemiology, Biomarkers & Prevention 2020;29(10): 1870-1875.

*Mercury exposure and premature mortality in the Grassy Narrows First Nation community: a retrospective longitudinal study* by Aline Philibert, Myriam Fillion and Donna Mergler. The Lancet Planetary Health 2020;4:e141. DOI: 10.1016/S2542-5196(20)30057-7.

*Cumulative air pollution indicators highlight unique patterns of injustice in urban Canada* by Amanda Giang and Kaitlin Castellani. Environmental Research Letters 2020;15:124063

Health Impacts of Air Pollution in Canada: Estimates of morbidity and premature mortality outcomes – 2021 Report. Organization: Health Canada or Public Health Agency of Canada. Published: by authority of the Minister of Health, 2021. Cat.: H144-51/2021E-PDF. ISBN: 978-0-660-37331-7. Pub.: 200423. <https://www.canada.ca/en/health-canada/services/publications/healthy-living/2021-health-effects-indoor-air-pollution.html>

The Systemic Risk Perspective: Social Perception of Uncertainty and Tipping Points by Ortwin Renn. [Strategies for Sustainability of the Earth System](#), pp 15-31, 2021.

Policies:

### **Statement on Academic Integrity**

**Please complete Academic integrity Tutorial:** <https://sass.queensu.ca/tutorials/>

Queen's students, faculty, administrators and staff all have responsibilities for upholding the fundamental values of academic integrity; honesty, trust, fairness, respect, responsibility and courage (see [www.academicintegrity.org](http://www.academicintegrity.org)). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see the Senate Report on Principles and Priorities <http://www.queensu.ca/secretariat/policies/senate/report-principles-and-priorities>).

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments and their behaviour conform to the principles of academic integrity. Information on academic integrity is available in the SGS Calendar (<https://www.queensu.ca/sqs/graduate-calendar/academic-integrity-policy>) and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery, falsification and unauthorized use of intellectual property, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

For example: Plagiarism

Regardless of how and where you retrieve information, the principles of academic integrity apply. Please visit these helpful websites to help you make sure that you are able to write things in your own words:

- <https://www.queensu.ca/academicintegrity/students/avoiding-plagiarismcheating>
- <https://integrity.mit.edu/handbook/academic-writing/avoiding-plagiarism-paraphrasing>
- [http://writing.wisc.edu/Handbook/QPA\\_paraphrase.html](http://writing.wisc.edu/Handbook/QPA_paraphrase.html)

### **Statement on Copyright of Course Materials**

Course materials created by the course instructor, including all slides, presentations, handouts, tests, exams, and other similar course materials are the intellectual property of the instructor. It is a departure from academic integrity to distribute, publicly post, sell or otherwise disseminate an instructor's course materials or to provide an instructor's course materials to anyone else for distribution, posting, sale or other means of dissemination without the instructor's express consent. A student who engages in such conduct may be subject to penalty for a departure from academic integrity and may also face adverse legal consequences for infringement of intellectual property rights.

### **Statement on Academic Accommodations for Students with Disabilities**

Queen's University is committed to achieving full accessibility for people with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. The Senate Policy for Accommodations for Students with Disabilities was approved at Senate in November 2016 (see <https://www.queensu.ca/secretariat/sites/webpublish.queensu.ca.uslclwww/files/files/policies/senatean>

[dtrustees/ACADACCOMMPOLICY2016.pdf](#)). If you are a student with a disability and think you may need academic accommodations, you are strongly encouraged to contact the **Queen's Student Accessibility Services (QSAS)** and register as early as possible. For more information, including important deadlines, please visit the QSAS website at: <http://www.queensu.ca/studentwellness/accessibility-services/>

### **Statement on Academic Consideration for Students with Extenuating Circumstances**

*Queen's University is committed to providing academic consideration to students experiencing extenuating circumstances that are beyond their control and are interfering with their ability to complete academic requirements related to a course for a short period of time.*

<https://www.queensu.ca/sqs/accommodation-and-academic-consideration>