



**C**annabis use  
**O**besity  
**M**ental health  
**P**hysical activity  
**A**lcohol use  
**S**moking  
**S**edentary behaviour

COMPASS is an ongoing longitudinal study (started in 2012) designed to follow a prospective cohort of grade 9 to 12 students attending a convenience sample of Canadian secondary schools to better understand how changes in school environment characteristics (policies, programs, built environment) and provincial, territorial, and national policies are associated with changes in youth health behaviours. This special edition of the COMPASS brochure highlights current trends of youth e-cigarette use in Canada using the COMPASS data.

### THE COMPASS STUDY

- The COMPASS study connects researchers with schools and youth across Canada to identify important youth health issues. Results will help schools, communities, and government agencies across Canada to develop and evaluate policies and programs aimed at promoting healthy lifestyles among Canadian youth.
- COMPASS offers multi-level, multi-year, comprehensive research paired with knowledge exchange and strategic health partnerships to help turn knowledge into action and action into positive results for youth, like no study has done before.
- Student responses are linked throughout all participating years giving researchers the ability to examine trajectories of different health behaviours.



## THE VALUE OF COMPASS DATA

**Student-level Data:** COMPASS annually collects individual level data on student behaviours across a number of health domains. Students are tracked using a unique anonymized code allowing researchers to understand how health outcomes develop and change over time.

**School Policies and Programs Data:** School administration provides details regarding the presence, absence, or any change to relevant school programs, policies, and/or resources related to student health for each of the behavioural domains measured by COMPASS. Data on school programs and policies are then linked back to student-level data to determine the impact the school environment has on youth health behaviours.

**Built Environment Data:** Built environment data are collected within the school and the surrounding community to measure the impact these characteristics and structures have on student health behaviours and outcomes.

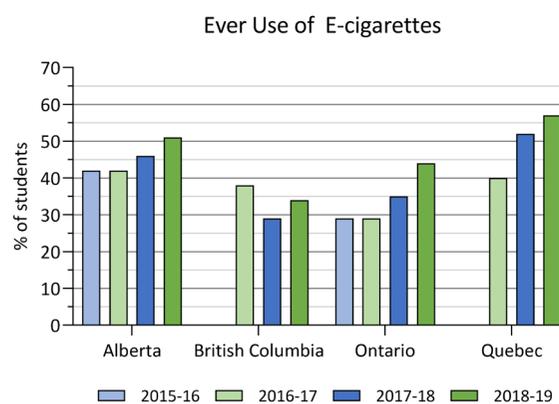
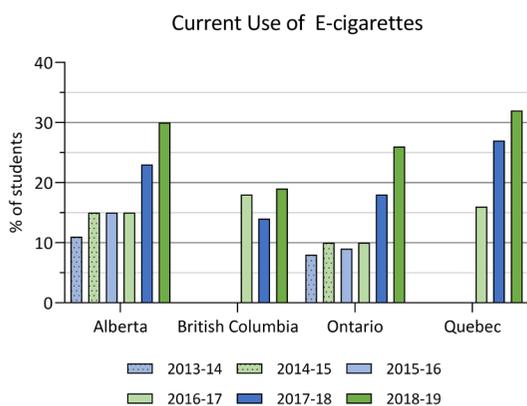
## CHANGES IN THE E-CIGARETTE ENVIRONMENT

- There have been rapid shifts in the language used to describe e-cigarette use (or vaping) behaviour and in the type of devices used by youth. COMPASS continuously monitors these shifts and revises questionnaire wording to reflect current terminology.
- Shifts in regulation of e-cigarette devices in Canada can impact use among youth. Devices containing nicotine have been legalized, increasing availability and advertising. COMPASS data can evaluate how changes in these regulations impact e-cigarette use behaviours and reasons for use among participating students.

## TRENDS IN E-CIGARETTE USE AMONG STUDENTS IN THE COMPASS STUDY

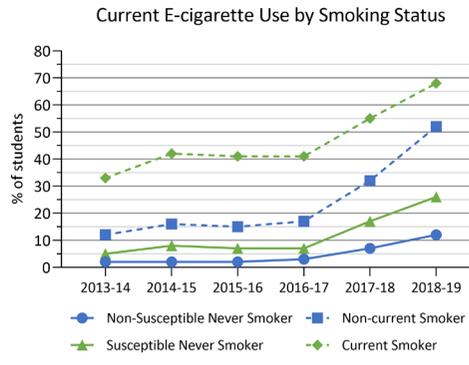
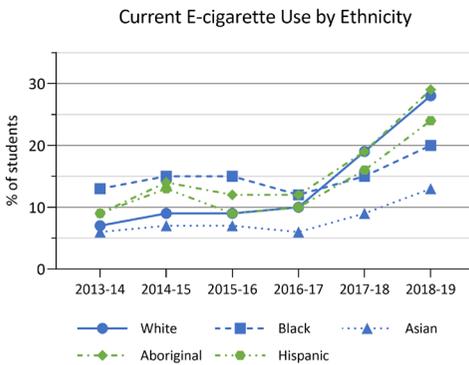
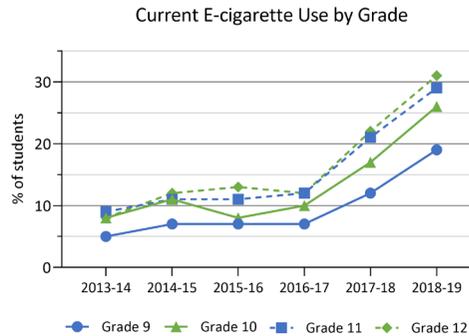
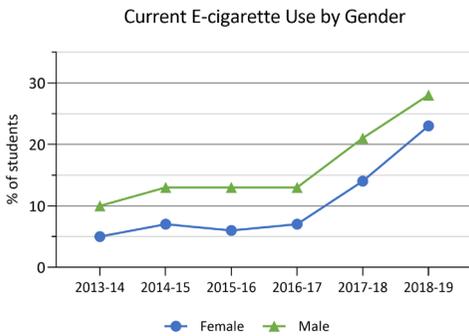
**AMONG ONTARIO STUDENTS PARTICIPATING IN COMPASS IN 2018/19, 28% OF MALES AND 23% OF FEMALES AGED 15-19 HAVE USED E-CIGARETTES AT LEAST ONCE IN THE LAST 30 DAYS.**

**CURRENT E-CIGARETTE USE HAS INCREASED FROM 8% IN 2013/14 TO 26% IN 2018/19 AMONG COMPASS PARTICIPANTS IN ONTARIO.**



CURRENT E-CIGARETTE USE IS DEFINED AS ANY USE IN PAST 30 DAYS  
SOURCE: 2013-14 TO 2018-19 COMPASS ONTARIO SCHOOLS

EVER USE IS DEFINED AS EVER HAVING TRIED E-CIGARETTES.



« E-CIGARETTE USE HAS INCREASED ACROSS ALL STUDENTS REGARDLESS OF THEIR GENDER, GRADE, ETHNICITY, OR SMOKING STATUS. »

SOURCE: 2013-14 TO 2018-19 COMPASS ONTARIO SCHOOLS

CURRENT E-CIGARETTE USE IS DEFINED AS ANY USE IN PAST 30 DAYS

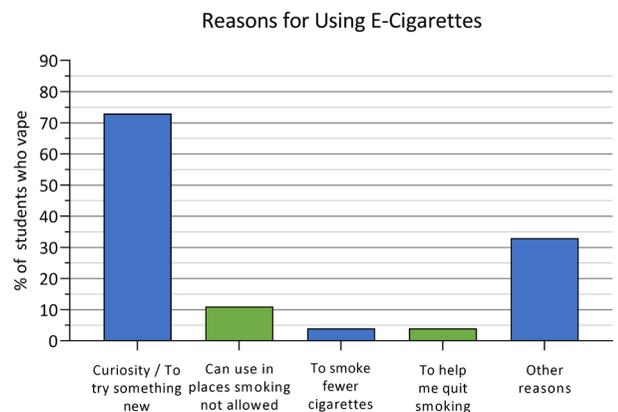
## RELATING YOUTH SMOKING TO E-CIGARETTE USE

- COMPASS results suggest that e-cigarettes are expanding the tobacco market by attracting low-risk youth who would otherwise be unlikely to initiate use of cigarettes. (ALEYAN, ET AL., IN PRESS)
- Recent COMPASS findings demonstrate a reciprocal relationship between cigarette and e-cigarette use and e-cigarette use was found to predict subsequent cigarette use. (ALEYAN, ET AL., 2018)
- E-cigarette use may contribute to the development of a new population of cigarette smokers. (ALEYAN, ET AL., 2018)

## OTHER HEALTH BEHAVIOURS ASSOCIATED WITH E-CIGARETTE USE

- COMPASS findings suggest that e-cigarette use is connected with the use of other substances such as cannabis, tobacco and alcohol (alcohol being the strongest link).
- Moreover, e-cigarette use has been found to be an important contributing factor in the use of multiple substances (poly-substance use). (ZUCKERMANN, ET AL., 2019)

## REASONS FOR USE AMONG E-CIGARETTE USERS IN 2018/19



\*Values do not add up to 100% as students could select more than one response.

## BUILT ENVIRONMENT AND E-CIGARETTES

- E-cigarette retailer proximity and density surrounding a school were not significantly associated with the likelihood of ever or currently using e-cigarettes.
- These findings suggest that students are accessing e-cigarettes through other sources. (COLE, ET AL., 2019)

« E-cigarette vaping appears to play a key role in shaping use of multiple substances. »

(ZUCKERMANN, ET AL., 2019)

« School-level policies banning the use of e-cigarettes on school property may be effective in reducing e-cigarette use (or preventing it) in their current form. »

(MILICIC, ET AL., 2018)

« E-cigarette use may contribute to the development of a new population of cigarette smokers. »

(ALEYAN, ET AL., 2018)

## RELATED COMPASS PUBLICATIONS

1. Aleyan S, Cole A, Qian W, Leatherdale ST. (2018). Risky Business: a longitudinal study examining cigarette smoking initiation among susceptible and non-susceptible e-cigarette users in Canada. *BMJ Open*, 8:e021080. doi: 10.1136/bmjopen-2017-021080
2. Aleyan S, Gohari M, Cole AG, Leatherdale ST. (2019). Exploring the bi-directional association between tobacco and e-cigarette use among youth in Canada. *International Journal of Environmental Research and Public Health*, 16(21). 4256; <https://doi.org/10.3390/ijerph16214256>.
3. Zuckermann AME, Williams G, Battista K, et al. (2019). Trends of poly-substance use among Canadian youth. *Addictive Behaviors Reports*. <https://doi.org/10.1016/j.abrep.2019.100189>.
4. Milicic S, DeCicca P, Pierard E, Leatherdale ST. (2018). An evaluation of school-based e-cigarette control policies' impact on the use of vaping products. *Tobacco Induced Diseases*, 16(35): 1-9. <https://doi.org/10.18332/tid/93594..>
5. Cole AG, Aleyan S, Leatherdale ST. (2019). Exploring the association between e-cigarette retailer proximity and density to schools and youth e-cigarette use. *Preventive Medicine Reports*. doi: <https://doi.org/10.1016/j.pmedr.2019.100912>

## ONGOING E-CIGARETTE RESEARCH PROJECTS

1. Butler A, Gohari M, Cole AG, Aleyan S, Romano I, Leatherdale ST. Examining the bidirectional associations between cannabis, e-cigarette and cigarette use among Canadian youth in the COMPASS study. Submitted to *Addiction*.
2. Cole AG, Aleyan S, Battista K, Leatherdale ST. (Under Review) Trends in youth e-cigarette and cigarette use between 2013 and 2019: Insights from repeat cross-sectional data from the COMPASS study
3. Williams GC, Burns KE, Battista K, de Groh M, Jiang Y, Leatherdale ST. High School Sport Participation as a Predictor of Substance use Among Students from the COMPASS Study.
4. Williams GC, Burns KE, Battista K, de Groh M, Jiang Y, Leatherdale ST. Sport involvement as a predictor of future substance use: a longitudinal analysis of students from the COMPASS Study.
5. Zuckermann AME, Williams GC, Battista K, Jiang Y, de Groh M, Leatherdale ST. (Under Review). Prevalence and Correlates of Youth Poly-Substance Use in the COMPASS Study.

**compass.uwaterloo.ca**

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