

New study reveals alarming trend of nicotine vaping among Canadian high school students

April 4 2023, by Prabhjot Sohal



The study explores the prevalence of past-month nicotine vaping, nicotine-free vaping and dual-use vaping with correlations to sociodemographic and health-related differences among high school students. Credit: Olena Bohovyk/Pexels

A new study by Jamie Seabrook of Brescia University College and Evan R. Wiley of Western University has shown an alarming number of high school students—26%—in Canada reported having vaped in the previous month. And the researchers say what they are inhaling with vapes or e-cigarettes is even more worrying.

The researchers found that 12% of [high school students](#) reported having exclusively smoked vapes containing [nicotine](#) in the previous month, while 11.3% are using both nicotine and nicotine-free vapes and a small 2.5% are sticking exclusively to using nicotine-free vapes.

"Vapes were initially marketed as a potential solution to tobacco smoking with claims that they could be a less harmful alternative. While we are still trying to fully grasp the [long-term effects](#) of [vaping](#) on physical and [mental health](#), our study shows vapes are exposing youth to nicotine and putting them at risk of nicotine addiction," said Seabrook, who is chair of School of Food and Nutritional Sciences at Brescia University College.

"Youth who vape nicotine-free products tend to have a worse understanding of the risks of e-cigarette chemicals, which can translate to uninformed use and they may conclude that dangers of cigarette smoking are also exaggerated," said Seabrook.

The study, published in the journal *Children*, was based on a [national survey](#) of 38,299 students in grades 9 to 12. It explored the prevalence of past-month nicotine vaping, nicotine-free vaping and dual-use vaping with correlations to sociodemographic and health-related differences among high school students.

"Vape usage has been studied before, but we wanted to dive in deeper and see what it is that youth are vaping and how that correlates to age, gender and the use of other substances like alcohol, tobacco and cannabis," said Seabrook.

"Previous research tended to focus on vape use as a unitary behavior, despite the fact that some individuals vape with nicotine and others with nicotine-free products. Exploring potential differences between these groups can give [policy-makers](#) a better chance at implementing more

targeted interventions," said Wiley, a data analyst with the Program of Experimental Medicine (POEM) at Western's Schulich School of Medicine & Dentistry.

The study revealed male high school students had higher odds of being in each category of past-month vape users than females. Substance use was also linked to higher odds of students vaping with and without nicotine.

The study also found grade 10 and 11 students were more likely than grade 9 students to vape exclusively with nicotine, while grade 9 students were more likely than grade 11 and 12 students to vape with both nicotine and nicotine-free vapes.

Seabrook also points out that the higher likelihood of dual-use vaping among grade 9 students warrants further investigation, as it may be related to behavioral and cultural pressures associated with transitioning to high school. It could also mean that with age, more high school students are transitioning from dual-use vaping to exclusive nicotine vaping.

"Since this was a [cross-sectional analysis](#) and we studied all the different age groups at the same time, we could not establish that dual vaping is leading to an increase in exclusive nicotine vaping. Our findings do show that there is a possibility, but it needs careful investigation," said Seabrook.

More information: Evan R. Wiley et al, Nicotine and Nicotine-Free Vaping Behavior among a Sample of Canadian High School Students: A Cross-Sectional Study, *Children* (2023). [DOI: 10.3390/children10020368](#)

Provided by University of Western Ontario

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