

UNDERSTANDING TOBACCO USE AND VAPING AMONG BC YOUTH

Findings from the BC Adolescent Health Survey



McCreary
Centre Society

Understanding tobacco use and vaping among BC youth

Findings from the BC Adolescent Health Survey

Copyright: McCreary Centre Society, 2020
ISBN: 978-1-926675-75-6

McCreary Centre Society
3552 East Hastings Street
Vancouver, BC V5K 2A7

Copies of this report are available at: www.mcs.bc.ca.
For enquiries about this report, please email: mccreary@mcs.bc.ca.

PROJECT TEAM

Annie Smith

Executive Director

Colleen Poon

Senior Research Associate

Maya Peled

Director of Evaluation

Stephanie Martin

Community Development Manager

Karen Forsyth

BC AHS Coordinator/Research Associate

Zainab Thawer

Research Associate

Garrett Jones

Research and Evaluation Analyst

Danielle Mahdal

Research Assistant

Sophie Reinhart

Research Assistant

Allysha Ram

Administrative Assistant

Report layout: Stephanie Martin

ADVISORY COMMITTEE

Laurie Cheung

Regional Tobacco Reduction Coordinator, Richmond, Health Protection, Vancouver Coastal Health

Jacqueline Duncan

Tobacco and Vapour Prevention and Control, Population Health, Interior Health

Jessica Gill

District Substance Use Prevention and Health Promotion Worker, Burnaby School District

Maria Janicker

Senior Policy Analyst, Tobacco Cessation, Healthy Living and Health Promotion Branch, Population and Public Health Division, BC Ministry of Health

Dr. Hasina Samji

Senior Scientist, BC Centre for Disease Control, Provincial Health Services Authority; Assistant Professor, Faculty of Health Sciences, Simon Fraser University; Research Associate, Centre for Applied Research in Mental Health and Addictions

Cheryl Sidenberg

Tobacco Vape Reduction Coordinator, Tobacco and Vapour Prevention and Control, Interior Health

Art Steinmann

Manager, Substance Use Health Promotion and SACY, Vancouver School Board

Dr. Laura Struik

Assistant Professor, Faculty of Health and Social Development, School of Nursing, The University of British Columbia (Okanagan Campus)

Gerald Thomas

Director, Alcohol, Tobacco, Cannabis and Gambling Policy and Prevention, BC Ministry of Health

Heather Wallman

Policy Analyst, Lifecourse Prevention, BC Ministry of Health

FUNDERS



Funding for this report was provided by BC Ministry of Health.

Citation: Smith, A., Peled, M., Poon, C., Jones, G., Mahdal, D., & McCreary Centre Society. (2020). *Understanding tobacco use and vaping among BC youth: Findings from the BC Adolescent Health Survey*. McCreary Centre Society.

Table of contents

Key findings	4
Introduction	6
Youth who had smoked tobacco	10
Products used.....	14
Recent and regular smoking	19
Length of time youth smoked.....	21
Youth who tried to quit smoking.....	23
Youth who vaped	25
Tobacco use and vaping.....	28
Youth at greater risk of smoking and vaping.....	30
Factors that reduce the likelihood of smoking and vaping.....	49
Supporting youth who currently smoke and vape	62
Conclusion	64
Resources	65
Appendices.....	66
References	72
Index	75

Key findings

- In 2018, 19% of BC students aged 12–19 had ever smoked tobacco. This was a decrease from previous years. For example, around a quarter (26%) had smoked in 2008 and around a third (34%) in 2003.
- Reflecting the picture over the past 15 years, students in the Fraser and Vancouver Coastal regions were less likely to have smoked than students in the Interior, Northern, and Vancouver Island regions.
- Youth were more likely to have vaped in the past month than to have ever tried smoking tobacco (27% vs. 19%).
- Reflecting the pattern for smoking, rural-based youth were more likely than those from urban areas to have vaped (33% vs. 27%). However, unlike tobacco use, where youth in the Interior were as likely to have smoked as those in the Northern and Vancouver Island regions, youth in the Interior were the most likely to have vaped.
- In the month before taking the survey, 6% of youth had both vaped and smoked cigarettes; 21% had vaped and not smoked cigarettes; and 1% had smoked cigarettes and not vaped.
- Among youth who smoked tobacco in the past month, around half had been smoking for at least two years, including 19% who had first smoked at least four years earlier.
- Youth who vaped recently (and did not smoke cigarettes) were less likely to engage in other risk behaviours compared to those who smoked recently or both smoked and vaped. For example, 16% of those who vaped exclusively in the past month had skipped classes on at least three days that month, compared to 25% of those who smoked cigarettes exclusively, and 33% who both vaped and smoked cigarettes in the past month. However, youth who vaped exclusively were more likely to skip classes than those who had neither smoked cigarettes nor vaped (4%).
- Some youth were more likely to have smoked and/or vaped than others, including youth with a history of physical or mental health challenges, addiction, and adverse experiences (including abuse, housing instability, government care, discrimination, bereavement, and poverty and deprivation). For example, 53% of youth who had been sexually abused had vaped in the past month, compared to 24% of those who had not experienced this type of abuse.

- Self-harm, suicidal thoughts, and suicide attempts were also associated with smoking and vaping. For example, youth who had attempted suicide in the past year were almost twice as likely to have vaped in the past month (50% vs. 26% of those who had not attempted suicide).
- Overall, regular sports and exercise involvement was associated with an increased likelihood that youth would vape, and a decreased likelihood that they would smoke. However, when different types of sports were considered separately, weekly involvement in extreme sports was a risk factor for both smoking and vaping.
- Taking part in other types of weekly extracurricular activities (e.g., cultural/traditional activities, or clubs/groups) was associated with a reduced likelihood of vaping but not of smoking in the past month. One exception was that youth who volunteered in the community on a weekly basis were less likely to smoke recently than youth who volunteered less often (38% vs. 45%; among those who had ever smoked).
- Youth (and particularly females) were less likely to smoke and/or vape when they felt connected to their family, school, and community. Feeling connected to the land or nature was also protective against smoking and vaping for females.
- Youth of all genders who felt their activities were meaningful and that their ideas were listened to and acted upon were less likely to smoke than those who did not feel this way. Females were also less likely to vape.
- Many protective factors that reduced the likelihood that youth would have smoked or vaped recently also reduced the likelihood that youth who smoked would smoke daily. These included having caring adults and friends and finding the activities they engaged in to be meaningful.
- Youth who lacked protective factors in one area of their life (such as those without family supports) were less likely to smoke or vape if they had protective factors in other areas (such as supports at school or in their community). The more areas youth had protective factors in, the less likely they were to smoke or vape.

Introduction

This report uses data from the BC Adolescent Health Survey (BC AHS). The BC AHS is a comprehensive youth health survey completed every five years since 1992 by students aged 12–19 in school districts across BC. In 2018, over 38,000 Grade 7–12 students in 58 of BC's 60 school districts completed the survey. For more details about the survey methodology, visit www.mcs.bc.ca.

BACKGROUND

This report considers smoking and vaping among youth in British Columbia (BC). The BC government warns that smoking during adolescence can affect a person's appearance, fitness and stamina level, and can cause serious health problems. These include respiratory problems, such as a chronic cough, shortness of breath, wheezing and upper respiratory infections; increased risk for heart disease, cancer, stroke, and emphysema; and reproductive health issues (Healthwise, 2019; <https://www.healthlinkbc.ca/health-topics/uq2423>).

While less is known about the long-term harmful effects of vaping, it can increase the user's exposure to harmful chemicals and to nicotine, which is addictive (Government of Canada, 2020; https://www.cdc.gov/tobacco/data_statistics/sgr/2020-smoking-cessation/fact-sheets/adult-smoking-cessation-e-cigarettes-use/).

Youth tobacco smoking rates have declined across Canada, as has daily use among those who smoke (Government of Canada, 2019; Hammond et al., 2019). Within Canada, BC has one of the lowest youth smoking rates in the country (Government of Canada, 2019). However, while smoking has declined, vaping has increased substantially (Government of Canada, 2019; Hammond, Reid, Cole, & Leatherdale, 2017). Also, whilst BC has lower than average smoking rates, 42% of BC youth in Grades 7–12 have tried e-cigarettes (with or without nicotine), which is higher than the Canadian average of 34% (Government of Canada, 2019).

Youth appear to perceive vaping as less harmful to themselves and those around them than cigarette use (Mehra, Keethakumar, Bohr, Abdullah, & Tamim, 2019). For example, 66% of Canadian students agreed that smoking cigarettes on a regular basis was a 'great risk,' compared to 42% who felt the same about vaping with nicotine (Government of Canada, 2019).

E-cigarettes were originally marketed for adults as a tobacco cessation product. However, their effectiveness in this regard is unknown (Centres for Disease Control & Prevention, 2020). Also, 42% of Canadian youth who had vaped reported never having smoked cigarettes (Government of Canada, 2019). A systematic review concluded '*that the content and placement of e-cigarette advertisements are accessible and attractive to youth*' (Collins et al., 2019, p. 16).

Youth vaping has been linked to a greater likelihood of smoking tobacco later in life (Aleyan, Cole, Qian, & Leatherdale, 2018; Aleyan, Gohari, Cole, & Leatherdale, 2019; Hammond et al., 2017). It has also been suggested that vaping may predict other forms of substance use among adolescents who would not typically be considered at risk of using those substances (Wills, 2017).

The decline in smoking among youth has partially been credited to an increase in taxation (Lovato et al., 2013), as well as to stricter controls and greater compliance among retailers to refrain from selling and marketing tobacco to minors (Minaker, Soni, Nguyen, & Manske, 2015). The use of plain packaging, graphic health warnings on cigarette packages, a ban on point-of-sale displays, and school-based tobacco cessation efforts have also been credited with reducing youth smoking (Drovadni, Teague, Teague, Glass, & Malau-Aduli, 2019; Ford et al., 2019; Lovato et al., 2013; Shang, Huang, Li, & Chaloupka, 2015). In contrast, over half of Canadian youth reported it would be easy to access vaping products and 65% of those who vaped got their supplies from a social source, such as peers or family (Government of Canada, 2019).

This report therefore considers BC youth's vaping in comparison to their use of tobacco and other nicotine-related products, and looks at the risk and protective factors associated with smoking and vaping. In addition to identifying protective factors which are associated with a reduced likelihood that youth will smoke (including becoming daily smokers) or vape, it also considers protective factors which can support youth who recently smoked or vaped to experience more positive health and well-being, as well as how to support youth who lack key protective factors in their life.

ABOUT THE ANALYSES IN THIS REPORT

This report considers BC youth who indicated that they had ever smoked tobacco, as well as those who smoked or vaped in the past month. However, smoking and vaping were measured differently on the survey.

Youth who reported ever smoking were asked additional questions including on how many days they had smoked in the past month. For this reason, all analyses for youth who smoked in the past month are among those who had ever smoked. There was no such filter for vaping as youth were not asked if they had ever vaped and the question about vaping in the past month was asked of all youth. For readability, the report talks about youth who vaped and smoked in the past month, but the measurement differences mean the percentages should not be compared to each other.

The BC AHS asked youth about vaping with and without nicotine. Overall, 27% of youth reported they had vaped. This included 21% who reported vaping with nicotine and 19% who reported vaping without nicotine. For this report, the focus was on any vaping (with or without nicotine), as feedback from young people indicated they are often vaping with nicotine when they believe their vape to be nicotine-free.

Also, youth often quickly move to vaping with nicotine even if they begin vaping without nicotine.

All reported comparisons in this report are statistically significant at least at $p < .05$. This means there is less than a 5% likelihood these results occurred by chance.

Where it is not obvious, a note is added to a table or chart if there is no statistically significant difference between two percentages.

Any percentage that is marked with an asterisk (*) should be interpreted with caution, as it has a higher than expected standard error, but is still within the releasable range.

The report provides associations and does not attribute causation.

To provide context to the findings, the report includes quotes from youth who completed the 2018 BC AHS. It also includes comments from youth who participated in focus groups about vaping. These focus groups took place between December 2019 and February 2020, and included a diverse mix of over 100 youth. The purpose of the groups was to ascertain young people's perspectives on the support they need to make healthy decisions about vaping.

LIMITATIONS

The data in this report is considered representative of over 95% of BC youth aged 12–19 who were attending mainstream schools in the province. However, it does not capture the health picture of youth who were not attending public school or who were not in school on the day the survey was administered. Youth with certain disabilities, and literacy or comprehension challenges, may also have been excluded.

As a broad health survey, the BC AHS addresses a number of health topics, including tobacco and vaping, but it was not designed to be an in-depth survey on these topics. Therefore, it may not have asked students about some issues that may be relevant to fully understanding youth's use of vapes, tobacco, and other nicotine-related products. Additionally, as previously noted, the survey asked about having ever smoked and recent (past month) smoking, while it did not ask youth if they had ever vaped, but rather asked if they had used vaping products (with or without nicotine) in the past month.

In 2003 and 2008, the BC AHS asked about ever smoking cigarettes. In 2013 and 2018, the survey item asked about ever smoking a 'cigarette, cigar, or cigarillo' (excluding the use of ceremonial tobacco). It is unknown how these changes may have affected trend comparisons.

Non-binary youth were included in all 2018 BC AHS analyses but due to the small percentage of BC youth who identified as non-binary, results could not always be reported separately. Additionally, trends could only be reported for males and females as these were the only available gender responses in previous survey years.

TERMS USED IN THIS REPORT

Extreme sports include activities such as backcountry skiing and BMX.

Government care refers to youth who had experienced a foster home, group home, custody centre, or Kith and Kin Agreement (which is an agreement where a member of a youth's extended family or other person known to them provides care and financial support). It also included youth with experience of alternatives to care, such as a Youth Agreement (among those who were age eligible).

Health Authorities are health regions in BC. The five geographical regions considered in this report are Fraser, Interior, Northern, Vancouver Coastal, and Vancouver Island.

Health Service Delivery Areas (HSDAs) are smaller geographical health regions. Each of the 16 HSDAs is part of one of BC's five Health Authority regions.

Informal sports are sports without a coach, such as skateboarding and hiking.

Nicotine-related products include cigarettes, vapes, cigars/cigarillos, chewing tobacco, and a hookah.

Non-binary youth include those who identified as neither male nor female, as well as those who were not yet sure of their gender identity.

Organized sports are sports with a coach such as school teams and swimming lessons.

Rural or rural-based refers to youth whose school was located in an area where the population was less than 10,000 and where less than half of the labour force commuted to an urban centre.

Smoked refers to ever having smoked tobacco (such as a cigarette, cigar, or cigarillo), and does not include ceremonial tobacco.

Smoked daily refers to smoking tobacco every day in the month before completing the survey (among youth who had ever smoked).

Smoked recently refers to smoking tobacco in the month before completing the survey (among youth who had ever smoked).

Urban or urban-based refers to youth whose school was located in an area where the population of the urban core was at least 10,000 and included neighbouring municipalities where at least half of the labour force commuted to the urban core.

Vaped/vaped recently refers to using a vape pen/stick or e-cigarette with or without nicotine in the past month.

Where the terms 'ideas listened to,' 'felt meaningfully engaged,' 'felt connected,' 'felt their family understood them,' 'felt safe at school,' etc. are used, these refer to youth who felt this way 'quite a bit' or 'very much,' or who 'agreed' or 'strongly agreed,' unless otherwise stated.

Youth who had smoked tobacco

“ I don't smoke cigs but I do smoke cigars and vape. ”

In 2018, around 1 in 5 BC students (19%) aged 12–19 had ever smoked tobacco, compared to around a quarter in 2008, and around a third in 2003.

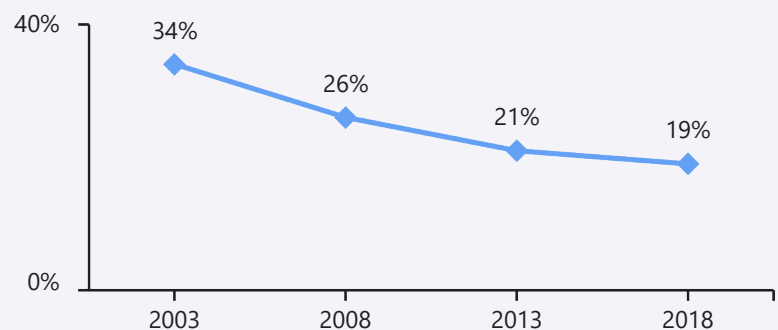
GENDER IDENTITY AND SEXUAL ORIENTATION

In 2003 and 2008, females were more likely than males to have smoked. However, in 2013 males were more likely than females to have smoked, and in 2018 there was no difference between the two.

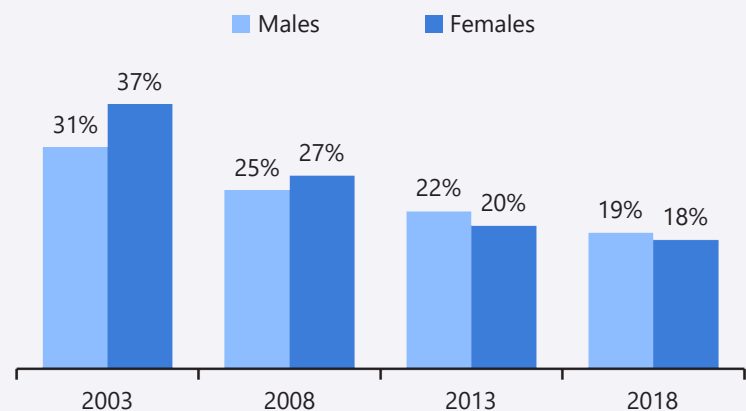
In 2018, non-binary youth were more likely than males and females to have smoked (25% vs. less than a fifth of males and females).

Sexual minority youth may be at an increased risk of smoking compared to their heterosexual peers (Fish, 2019). This appeared to be the case in BC as 30% of lesbian, gay, and bisexual students had smoked, compared to 18% of those who identified as straight.

Youth who had smoked tobacco



Youth who had smoked tobacco



Note: The difference between males and females was not statistically significant in 2018.

The percentage of BC students who had ever smoked tobacco continued to decrease. However some youth were more likely to smoke, including sexual minority and non-binary youth.

“ I am 16 years old and I HATE tobacco! ”

“ I first smoked at 7 or 8 years old. ”

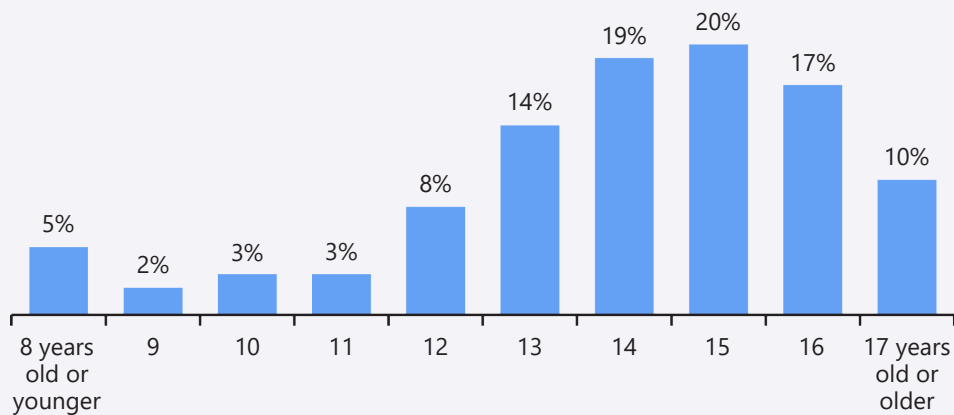
AGE

As might be expected, the older youth were, the more likely they were to have smoked. For example, 7% of 13-year-olds had tried tobacco, compared to 19% of 15-year-olds and 30% of 17-year-olds.

The most common ages for youth to first smoke were between 14 and 16. However, among those who had tried smoking, youth were more likely to wait until they were at least 16 years old to first try it than youth five years earlier (27% vs. 24% in 2013).

Females were the least likely to have smoked at the youngest ages. For example, among youth who had smoked, 18% of females first did so before the age of 13, compared to 22% of males, and 37% of non-binary youth.

Age youth first smoked (among those who had smoked tobacco)

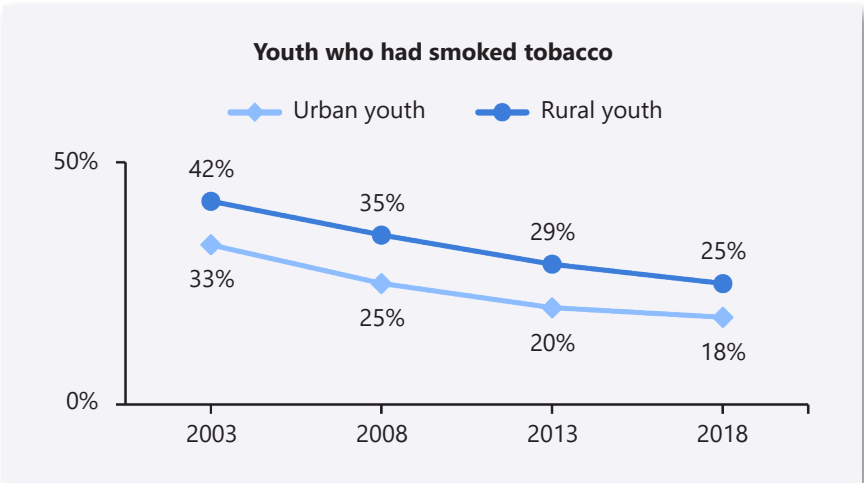


Note: Percentages do not equal 100% due to rounding.

REGIONAL DIFFERENCES

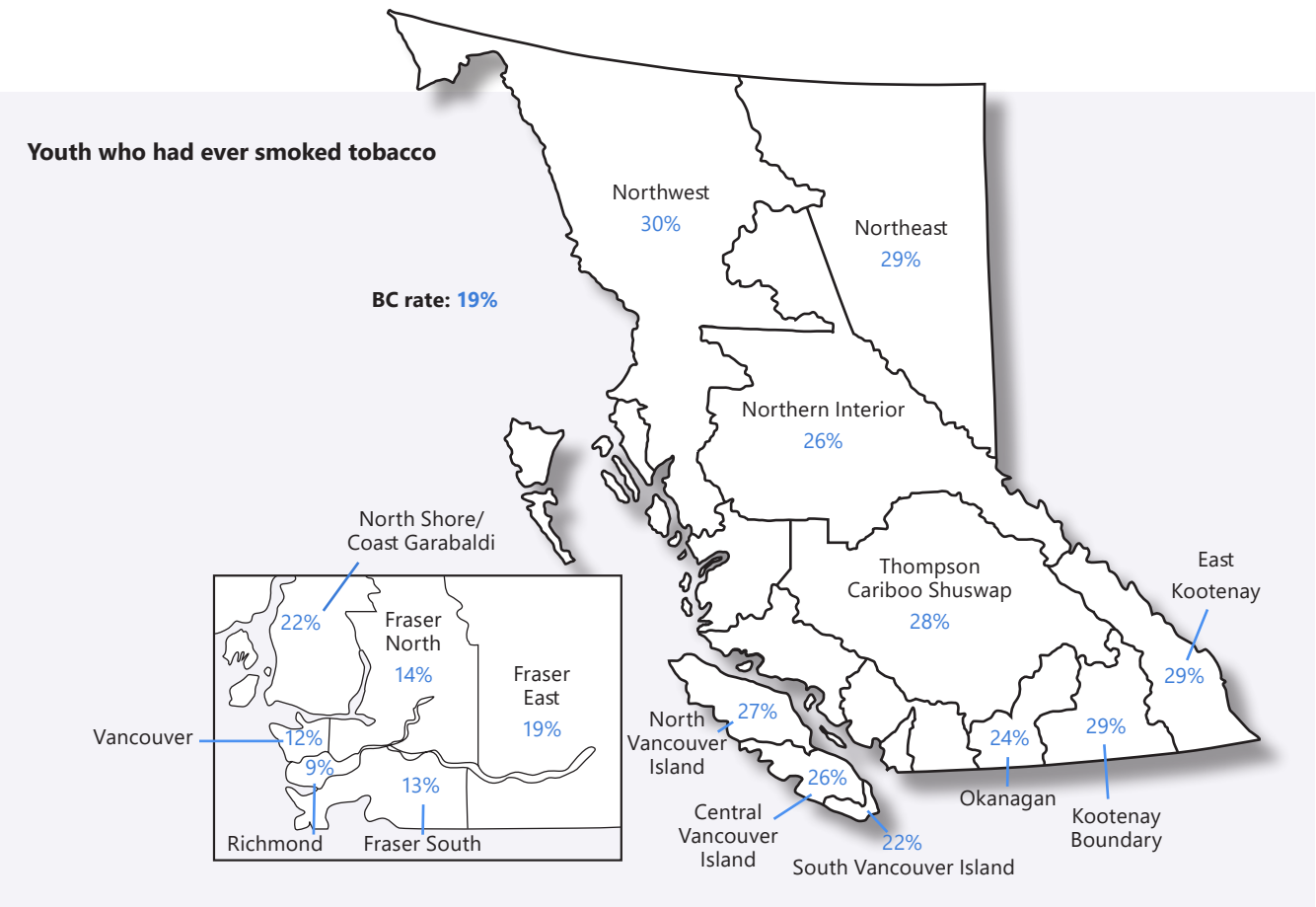
As in previous years, rural-based youth were more likely to have smoked than urban-based youth. Also, urban-based youth were more likely to wait until they were at least 15 years old to first smoke (49% vs. 39% of rural-based youth; among those who had smoked).

Reflecting the picture over the past 15 years, students in the Fraser and Vancouver Coastal regions were less likely to have smoked than students in the Interior, Northern, and Vancouver Island regions (See Appendix 1).



At the Health Service Delivery Area (HSDA) level, smoking rates ranged from 9% in Richmond to 30% in the Northwest, with rates declining

from previous years across BC, except in the Northeast, Northwest and Fraser East (See Appendix 2).



Note: Not all differences between HSDAs were statistically significant.

IMMIGRATION

Communities with higher percentages of immigrant youth generally have lower rates of smoking (Lovato et al., 2013). In BC, Vancouver Coastal and Fraser regions had the lowest smoking rates and also the highest percentages of immigrant youth. For example, in Vancouver Coastal, 31% of students were born outside of Canada and 14% of youth had smoked, compared to the Northern region where the percentage of immigrant youth was lower (7%) and the percentage who had smoked was higher (28%).

Provincially, youth born outside Canada were less likely than those born in Canada to have smoked tobacco (17% vs. 19%). However, among immigrant youth who had smoked, those who moved to Canada less than two years earlier were more likely than those who had lived in Canada longer to have smoked daily (8% vs. 4% of those who had lived in Canada for two or more years). Youth from East and South Asian backgrounds who emigrated to Canada were generally less likely to have ever smoked. For example, among immigrant youth, 8% of those of South Asian heritage (e.g., East Indian, Pakistani, Sri Lankan) had smoked, compared to 29% of European heritage (e.g., Dutch, Irish, German, Russian).

Youth who arrived in Canada as refugees or as international students smoked at rates comparable to Canadian-born youth.

Among youth who had lived in Canada less than two years, the majority (58%) started smoking before they emigrated, with males more likely than females to have done so (64% vs. 49%; among those who had ever smoked). Youth who started smoking before they arrived in Canada were more likely to have smoked recently. For example, 50% had smoked cigarettes in the past month compared to 37% who started smoking after they immigrated (among recent immigrants who had ever smoked).

Reflecting findings from another BC study (Sawatzky, Ratner, Johnson, & Marshall, 2008), youth who spoke a language other than English at home most of the time were less likely to smoke (15% vs. 23% of those who never spoke another language at home).

Immigrant youth were less likely to have smoked than Canadian-born youth.

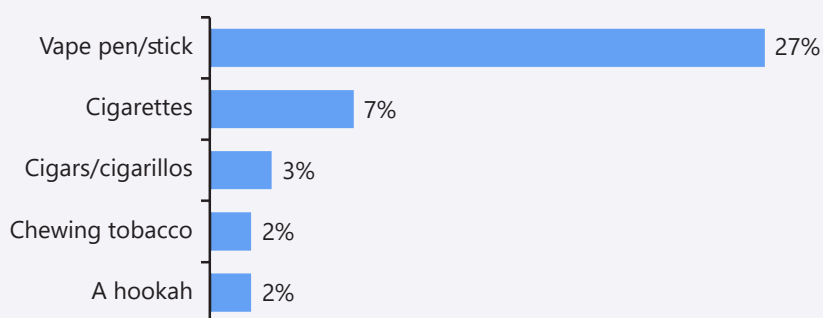
Products used

Analyses in this section are among all BC youth.

Around 3 in 10 BC youth (29%) had used at least one nicotine-related product in the month prior to completing the 2018 BC AHS. Products included a vape pen/stick, cigarettes, cigars/cigarillos, chewing tobacco, and a hookah. Youth were nearly four times as likely to have used a vape pen or stick than any other product. Vaping is discussed in more detail on [page 25](#).

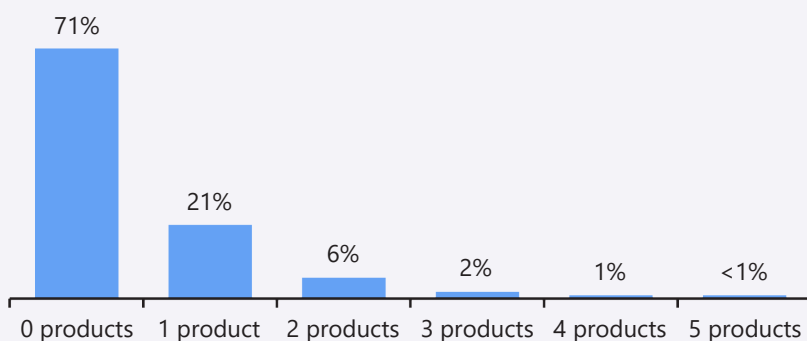
Around 1 in 10 youth (9%) had used multiple products, including 1% who had used at least four nicotine-related products (e.g., a vape pen/stick, cigarettes, chewing tobacco, and a hookah).

Nicotine-related products youth used in the past month



Note: Youth could choose more than one response.

Number of nicotine-related products youth used in the past month



Note: Percentages do not equal 100% due to rounding.

Note: Products include vapes, cigarette, cigars/cigarillos, chewing tobacco and a hookah.

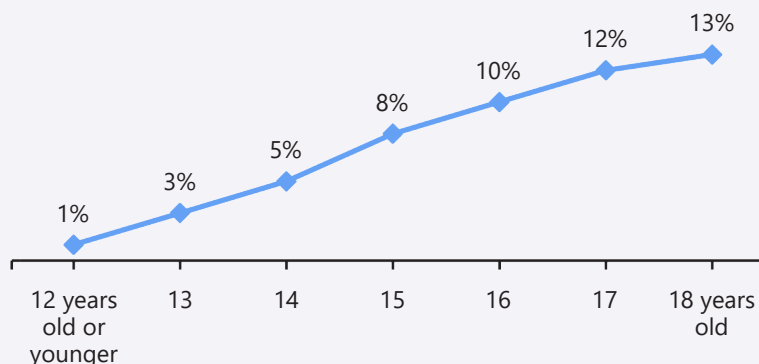
CIGARETTES

Overall, 7% of youth had smoked cigarettes in the past month, with similar rates among males and females.

Youth were more likely to have smoked cigarettes in the past month if they:

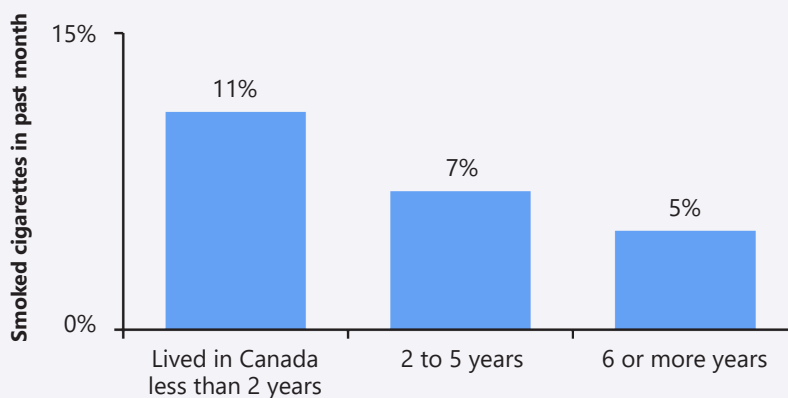
- Lived in a rural community (10% vs. 7% of those in urban communities).
- Lived in the Northern, Interior, or Vancouver Island regions (10% vs. 6% of those who lived in Vancouver Coastal or Fraser).
- Were in Canada as international students (10% vs. 8% of those born in Canada).
- Vaped in the past month (22% vs. 2% of those who had not vaped).
- Used other nicotine-related products (i.e., cigars/cigarillos, chewing tobacco, or a hookah; 47% vs. 5% of those who had not used these products).
- Worked at a paid job during the school year (11% vs. 6% of those who had not worked).

Youth who had smoked cigarettes in the past month



Note: The difference between youth aged 17 and 18 was not statistically significant.

Immigrant youth who smoked cigarettes in the past month



CIGARS/CIGARILLOS

Overall, 3% of BC youth had smoked cigars or cigarillos in the month before taking the survey, with females the least likely to have done so (2% of females vs. 4% of males and non-binary youth). Most youth (62%) who had smoked cigars/cigarillos in the past month also smoked cigarettes during that time.

As with cigarettes, older youth were more likely than younger youth to have smoked cigars/cigarillos. For example, 5% of youth aged 16 or older had smoked cigars/cigarillos, compared to 2% of 14- or 15-year-olds, and 1% of those aged 13 or younger.

Also reflecting the pattern for cigarettes, rural-based youth were slightly more likely to have smoked cigars/cigarillos (4% vs. 3% of urban-based youth); and those in Vancouver Coastal and Fraser were less likely to have smoked them than youth in other parts of the province. For example, 2% of Vancouver Coastal youth had smoked cigars/cigarillos in the past month, compared to 5% of youth in the Interior.

Youth of Asian descent were less likely than youth of other backgrounds to smoke cigars/cigarillos. For example, 1% of students who identified as East Asian (e.g., Japanese, Chinese, Korean) had smoked cigars/cigarillos in the past month compared to 4% of students who identified as European.

Youth born outside of Canada were slightly less likely to have smoked cigars/cigarillos (2% vs. 3% of those born in Canada).

“ “ *I smoke cigars and cigarillos during the summer.* ” ”

CHEWING TOBACCO

Overall, 2% of BC youth used chewing tobacco in the month before taking the survey, with females the least likely to have done so (e.g., 1% of females vs. 4% of males). Half of students (50%) who used chewing tobacco in the past month also smoked cigarettes.

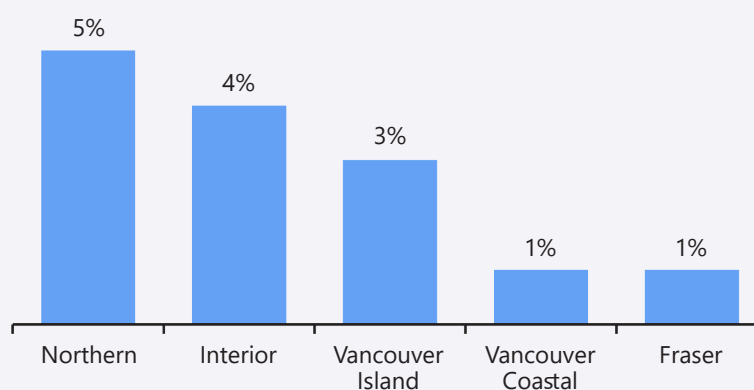
As with cigarettes and cigars/cigarillos, chewing tobacco was more common among rural-based youth (4% vs. 2% of urban youth), older youth (e.g., 3% of those aged 16 or older vs. 1% of youth aged 13 or younger), and those in the Northern and Interior regions.

Youth born in Canada were twice as likely as those born abroad to have used chewing tobacco in the past month (2% vs. 1%). Chewing tobacco was more popular among youth from some backgrounds than others. For example, 3%–4% of youth who identified as Indigenous, European, African, and/or Australian/Pacific Islander used chewing tobacco, compared to 1% of South, Southeast, East and West Asian youth.

Chewing tobacco has been used by young athletes as it is perceived to enhance performance, including through improving concentration, and supporting relaxation and weight control (Chagué, et al., 2015).

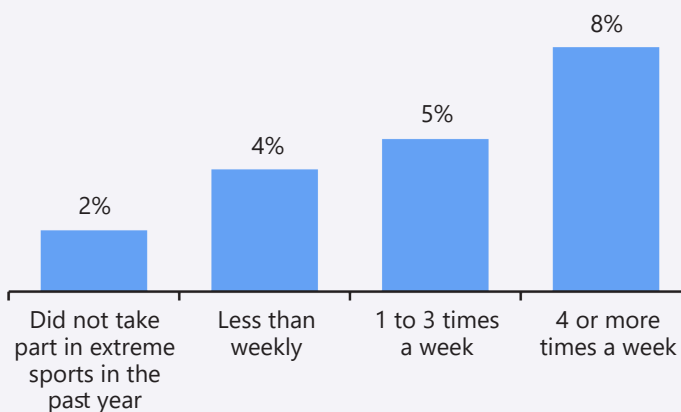
As in 2013, youth who played informal, organized, or extreme sports on a weekly basis were more likely to use chewing tobacco than their peers who did not take part as regularly.

Youth who used chewing tobacco in the past month



Note: The difference between Northern and Interior was not statistically significant.

Youth who used chewing tobacco in the past month in relation to how often they engaged in extreme sports



HOOKAH

Two percent of youth had used a hookah in the past month. As with other products, younger students were less likely than older students to have used a hookah. For example, 1% of youth aged 13 or younger had used a hookah recently, compared to 2% of those aged 14 or 15, and 3% of those aged 16 or older.

However, the profile of youth who had used a hookah otherwise looked different than for those who used cigarettes, cigars/cigarillos, and chewing tobacco. For example, students attending schools in urban areas were twice as likely as those in rural areas to have used a hookah (2% vs. 1%), and youth in the Fraser region were the most likely to have used one (e.g., 3% vs. 1% of those in the Vancouver Island region).

Youth who identified as West Asian (e.g., Afghani, Iranian, Kazakhstani) were the most likely to have used a hookah (e.g., 10% vs. 2% of students who identified as European). Among youth who identified as West Asian, those born outside of Canada were more likely than those born in Canada to have used a hookah in the past month (15% vs. 6%).

Nearly a third of youth had used at least one nicotine-related product in the past month, including a vape pen/stick (27%), cigarettes (7%), cigars/cigarillos (3%), chewing tobacco (2%), and a hookah (2%). Around 1 in 10 had used multiple products.

Recent and regular smoking

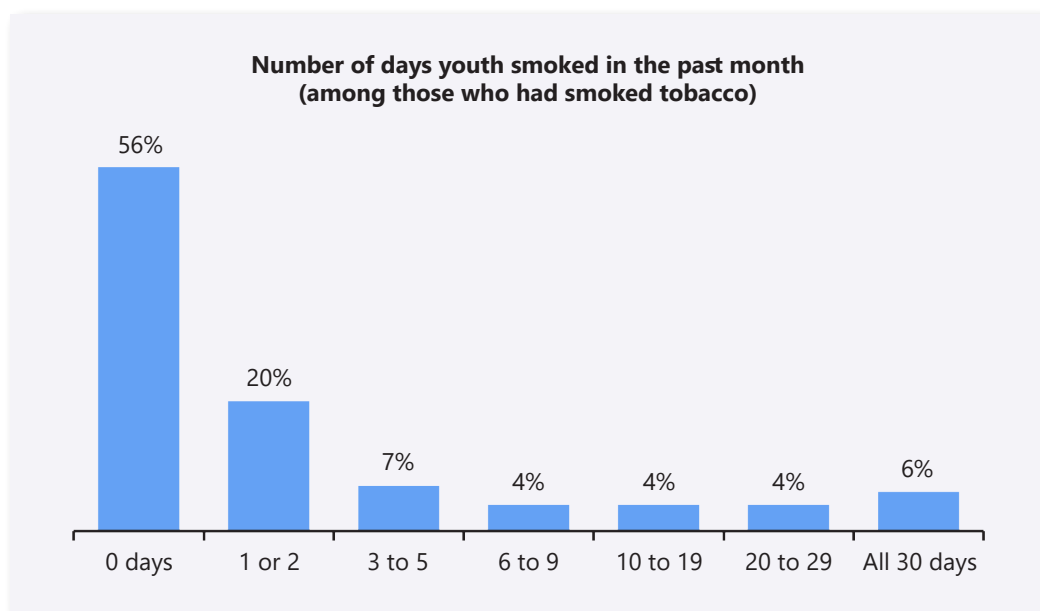
All analyses in this section are among the 19% of BC youth who had ever smoked tobacco.

Having considered who had tried smoking and what products they used, we looked at recent and regular smoking.

SMOKED RECENTLY

Among youth who had ever smoked, over half (56%) had not smoked recently (in the past month), and those who had done so most commonly smoked on one or two days (20%).

As in 2003, there were no gender differences in youth who had smoked in the past month, whereas in 2008 and 2013, males were more likely than females to have smoked recently.



Note: Percentages do not equal 100% due to rounding.

“ I only smoke at parties and when I am drinking. ”

Despite the overall decline in the percentage of youth who had ever smoked, there was an increase from 2003 to 2013 in youth who had smoked recently. This pattern did not continue in 2018, as the percentage who had smoked in the past month decreased.

Although older students were more likely than younger ones to have ever smoked tobacco, they were no more likely to have smoked recently. There were also no urban-rural differences in having smoked in the past month.

Among youth who had smoked, there were few differences in past month smoking rates across BC’s five health regions. However, at the HSDA level, rates ranged from 39% in Vancouver to 52% in East Kootenay.

Compared to five years earlier, youth in the Northern, Interior, and Vancouver Coastal regions were less likely to have smoked in the past month. There was no such decrease among youth in the Vancouver Island or Fraser regions (See **Appendix 3**).

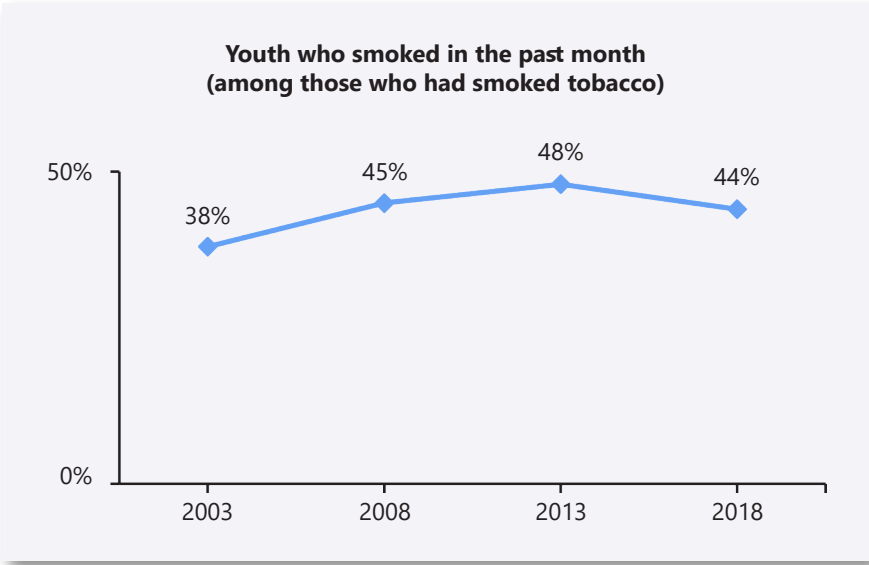
SMOKED DAILY

In 2018, 6% of students who had smoked did so every day in the past month, with no gender or urban-rural differences. This was a decrease from 7% in 2013 and 10% in 2008 and 2003.

Daily smoking rates ranged from 4% in Vancouver Coastal to 7% in the Northern and Vancouver Island regions (See **Appendix 4**). At the HSDA level, the range was greater as 4% of youth in Vancouver, Richmond, and Fraser South smoked daily, compared to 12% in East Kootenay (See **Appendix 5**).

Older youth who had smoked were more likely than younger ones to have smoked daily in the past month (e.g., 4% of youth aged 13 or younger smoked daily vs. 6% of 16- to 18-year-olds; among those who smoked).

Most youth who smoked on a daily basis smoked cigarettes (91%), and 79% vaped in the past month. Also, 37% smoked cigars or cigarillos, 22% used chewing tobacco, and 20% used a hookah. Around 1 in 6 youth (17%) who smoked every day also used a product to help them quit smoking in the past month.



Note: The difference between 2008 and 2018 was not statistically significant.

Although rural-based youth were more likely than urban youth to have ever smoked, they were no more likely to have smoked recently or to smoke daily.

Length of time youth smoked

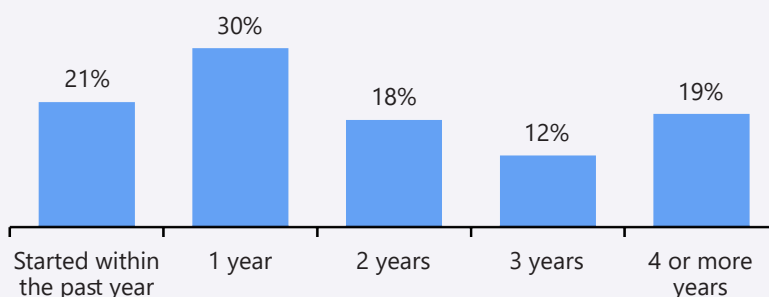
All analyses in this section are among the 8% of BC youth who smoked recently (in the past month).

This section considers the age when youth who smoked recently first started smoking to establish how long they had been smoking. For example, a 16-year-old who started smoking at age 14 was considered to have been smoking for two years.

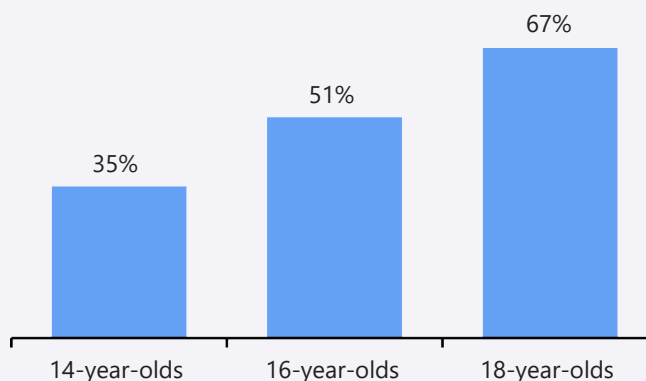
Among youth who smoked in the past month, around half had been smoking for at least two years, including 19% who had been doing so for at least four years. Non-binary youth were more likely than males or females to have smoked for four or more years (e.g., 33%* of non-binary youth vs. 20% of males).

Although older youth were generally more likely than younger ones to have been smoking for a longer period of time, over a third of 14-year-olds who had smoked recently had been smoking for at least two years.

**Length of time youth had been smoking
(among youth who smoked in the past month)**



**Youth who had been smoking for at least 2 years
(among those who smoked in the past month)**

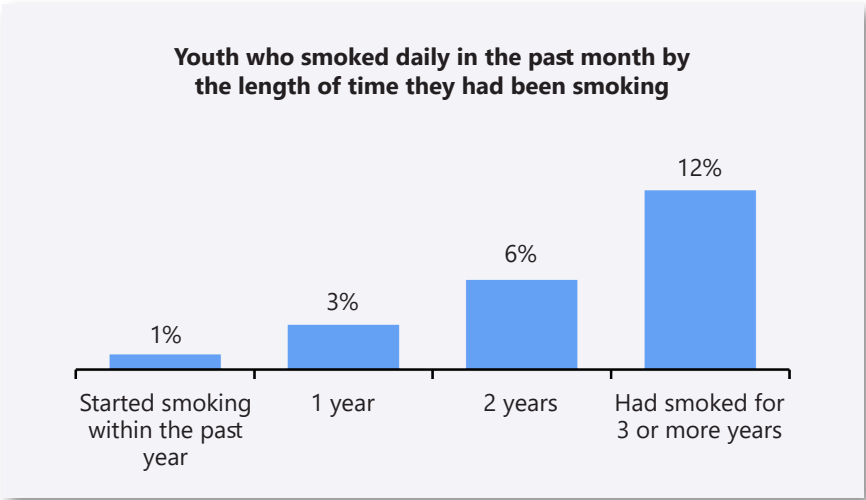


Youth in some parts of the province were more likely to have been smoking for a longer period of time (See **Appendix 6** and **7**). At the HSDA level, youth in the Northwest were over twice as likely as those in Richmond, Central Vancouver Island, and Fraser North to have been smoking for four or more years (e.g., 34% in Northwest vs. 14% in Central Vancouver Island).

The more years youth had smoked, the more likely they were to smoke regularly in the past month. For example, 38% who had been smoking for four or more years smoked on 20 or more days in the past month, compared to 24% who had been smoking for two years, and 4% who had been smoking for less than a year. There was a similar pattern for smoking daily.

Youth who had been smoking for two or more years were more likely than those who started smoking within the past year to have both vaped and smoked recently (69% vs. 60%).

In addition, youth who had been smoking for two or more years were more likely to have specifically used cigarettes in the past month (85% vs. 75% of youth who had been smoking for less than two years), as well as cigars/cigarillos (31% vs. 25%), chewing tobacco (15% vs. 11%), and a hookah (13% vs. 8%). They were also more likely to have used multiple nicotine-related products in the past month (80% vs. 76%).



Youth who tried to quit smoking

“ Me! I want help to quit smoking. ”

Among youth who had ever smoked, 9% had used a product to help them quit in the past month, including 2% who had not smoked cigarettes, cigars/cigarillos, chewing tobacco, or a hookah during that month.

There were no regional, urban-rural, or age differences in having used a product to help quit smoking. However, there were gender differences with males and non-binary youth more likely than females to have used such a product.

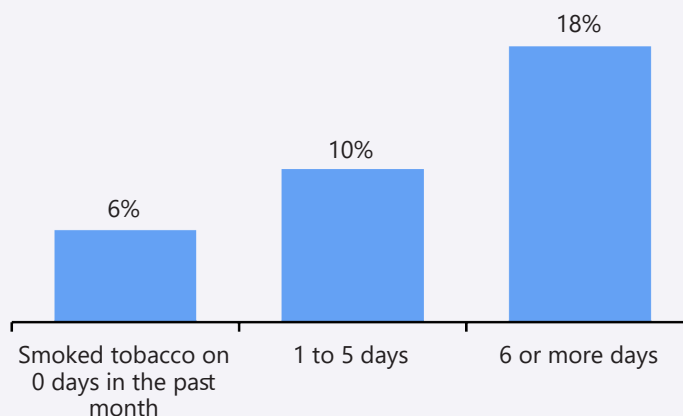
Youth were more likely to have used a product to help them quit if they:

- Had smoked recently (13% vs. 6% of youth who had not smoked in the past month; among those who had ever smoked).
- Had smoked regularly (18% of those who smoked on 20 or more days in the past month vs. 8% of those who smoked less frequently; among those who had ever smoked).
- Used chewing tobacco, cigarettes, cigars/cigarillos, a hookah, and vapes in the past month (45%* vs. 22% who had used three of these five products, and 6% who had used one product).
- Had been smoking for at least two years (15% vs. 12% of those who had been smoking for less than two years; among those who had smoked in the past month).

“ I quit cigs recently, haven't had one in 2 months. ”

Youth were more likely to have used a product to help them quit if they had been smoking for at least 2 years.

Youth who used a product to help them quit smoking in relation to their frequency of smoking in the past month (among those who had smoked tobacco)



It is unknown how many BC youth used vaping products for tobacco cessation. However, 92% of those who reported using a product to help them stop smoking had vaped in the past month.

Previous research has found that most youth who experience mental health challenges have smoked and also tried to quit (Catchpole, McLeod, Brownlie, Allison, & Grewal, 2016). In BC, youth with

mental health challenges were more likely than their peers to have smoked (see [page 36](#)) and were also more likely to have used a product to help them quit. For example, 19% of youth with Post-Traumatic Stress Disorder (PTSD) who had smoked in the past month had used a product to help them stop smoking during that time, compared to 13% of youth without this condition.

“ I quit smoking and bought a vape. ”

Youth who vaped

“ I vape everyday. ”

“ I will vape when I'm 18. ”

Reasons for why vaping is more popular than smoking among adolescents include a belief that it is healthier than smoking, the range of flavours available, the more affordable price, the greater social acceptance, and it being easier to conceal use (Schneider & Diehl, 2016).

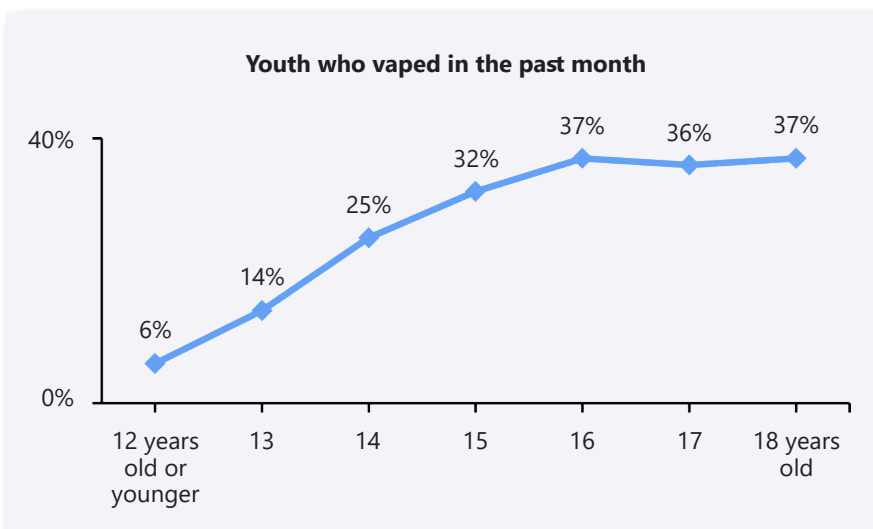
In 2018, 27% of BC youth vaped in the month prior to completing the BC AHS. Students aged 16 and older were more likely than younger ones to have vaped. There was generally little difference in vaping rates based on sexual orientation or gender identity.



Among youth who took part in focus groups across BC, most of those who vaped reported they would not smoke cigarettes.

"I've never smoked a dart [cigarette] and I never will."

"We grow up knowing smoking is bad, and it's just like, 'ew'."



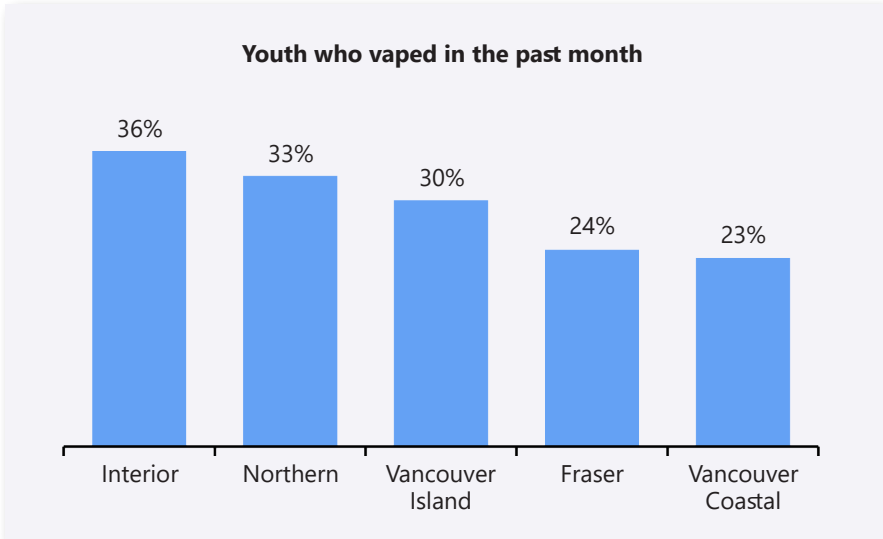
Note: There were no statistically significant differences between youth aged 16, 17, and 18.

“ I was a bad child and started vaping hard at the age of 12. Guess what? I enjoy this and I am never going to stop vaping!!! ”

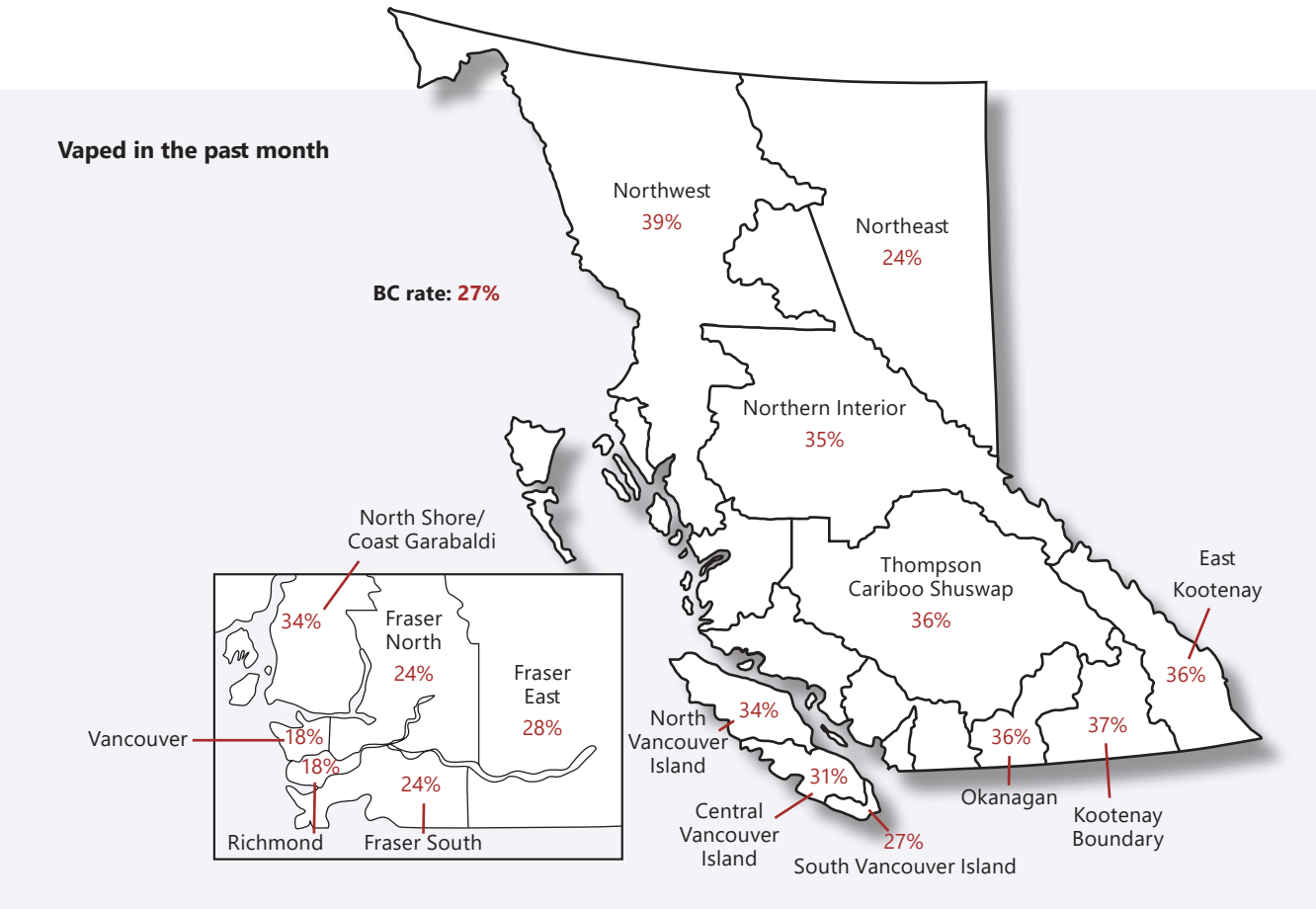
REGIONAL DIFFERENCES

Reflecting the pattern for smoking, rural-based youth were more likely than those from urban areas to have vaped (33% vs. 27%), and youth in Vancouver Coastal and Fraser were the least likely to have vaped. However, unlike tobacco use, where youth in the Interior were as likely to have smoked as those in the Northern and Vancouver Island regions, youth in the Interior were the most likely to have vaped.

At the HSDA level, vaping rates ranged from 18% in Vancouver and Richmond to 39% in the Northwest (See Appendix 8).



Note: The difference between Fraser and Vancouver Coastal was not statistically significant.



Note: Not all differences between HSDAs were statistically significant.

FAMILY BACKGROUND

East, Southeast, and South Asian youth were generally less likely to have vaped in the past month than youth from other backgrounds. For example, over a third of youth of Indigenous or European heritage had vaped in the past month, compared to 21% of those who identified as South Asian, and 12% who identified as East Asian.

IMMIGRATION

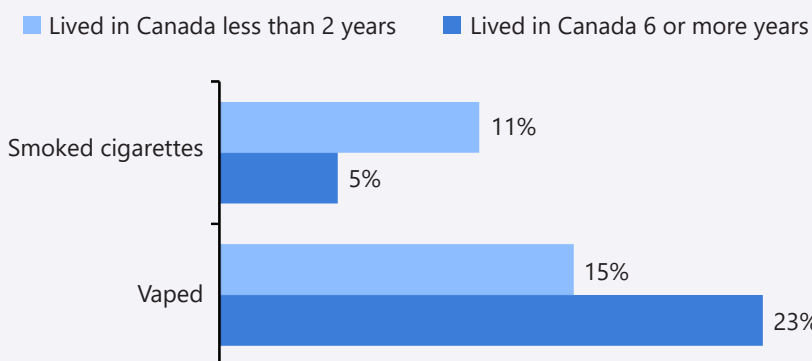
Reflecting the picture for tobacco use, youth born in Canada were more likely to have vaped than those born abroad (30% vs. 18%). Males and females born in Canada were equally likely to have vaped. However, among those born abroad, females were less likely than males to have vaped (16% vs. 20%).

Youth who emigrated to Canada who were of Southeast, South, and/or East Asian heritage were generally less likely to have vaped than youth from other parts of the world. For example, 9% of immigrant youth of East Asian descent had vaped in the past month, compared to around 30% of immigrant youth of European or Latin/Central/South American descent.

The longer immigrant youth had lived in Canada, the more likely they were to have vaped and the less likely they were to have smoked.

Among youth who were in Canada as international students, 13% had vaped in the past month (16% of males vs. 11% of females). This was lower than the rate among youth born in Canada or among those who arrived in Canada under different circumstances, such as refugees (22%).

Immigrant youth who used nicotine-related products in the past month



Tobacco use and vaping

“ I’m amazed by how many students at my school drink, vape, and smoke. It’s super annoying how they just get away with it on school property, seems like our teachers and other staff don’t care at all. It’s my least favourite thing here. ”



There is some evidence that the use of vaping products with higher nicotine concentrations may increase the frequency and intensity of smoking and vaping among youth (e.g., Goldenson, Leventhal, Stone, McConnell, & Barrington-Trimis, 2017). The BC AHS did not ask about the amount of nicotine youth used. However, youth with vaping experience who participated in focus groups across BC spoke about rapidly increasing their nicotine intake, often to a point where they wished they could cut down.

“First you’re using zero, then three, then six, then 50 nic [units of nicotine] all of a sudden.”

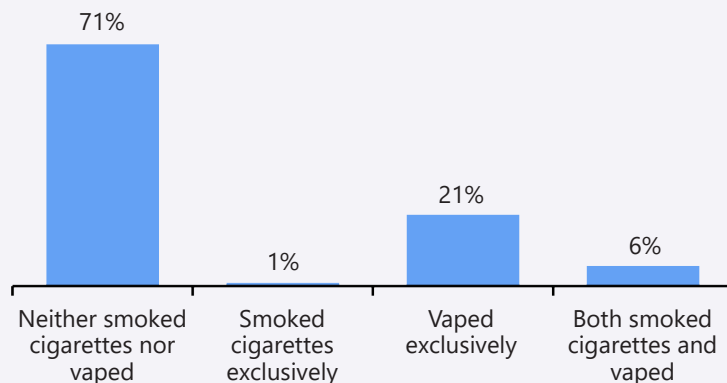
“You don’t see how far in you are.”

“Youth aren’t aware how fast you can get addicted.”

Overall, youth were more likely to have vaped in the past month than to have ever smoked tobacco (27% vs. 19%). This was also the case in each of the five regions and in every HSDA except the Northeast (See **Appendix 9**).

A U.S. study found that 16% of youth vaped exclusively, 3% smoked cigarettes exclusively, and 8% both smoked and vaped (Demissie, Jones, Clayton, & King, 2017). The pattern was similar in BC. Youth were more likely to have vaped exclusively than to have used both cigarettes and vapes, and they were more likely to have used both cigarettes and vapes than to have smoked cigarettes exclusively in the past month.

Youth who smoked cigarettes and/or vaped in the past month



Note: Percentages do not equal 100% due to rounding.

There was no gender difference among BC youth who both smoked cigarettes and vaped, but older youth were generally more likely than younger youth to have used both products. For example, 9% of youth aged 16–18 both smoked cigarettes and vaped in the past month, compared to 7% of 15-year-olds, and 2% of 13-year-olds.

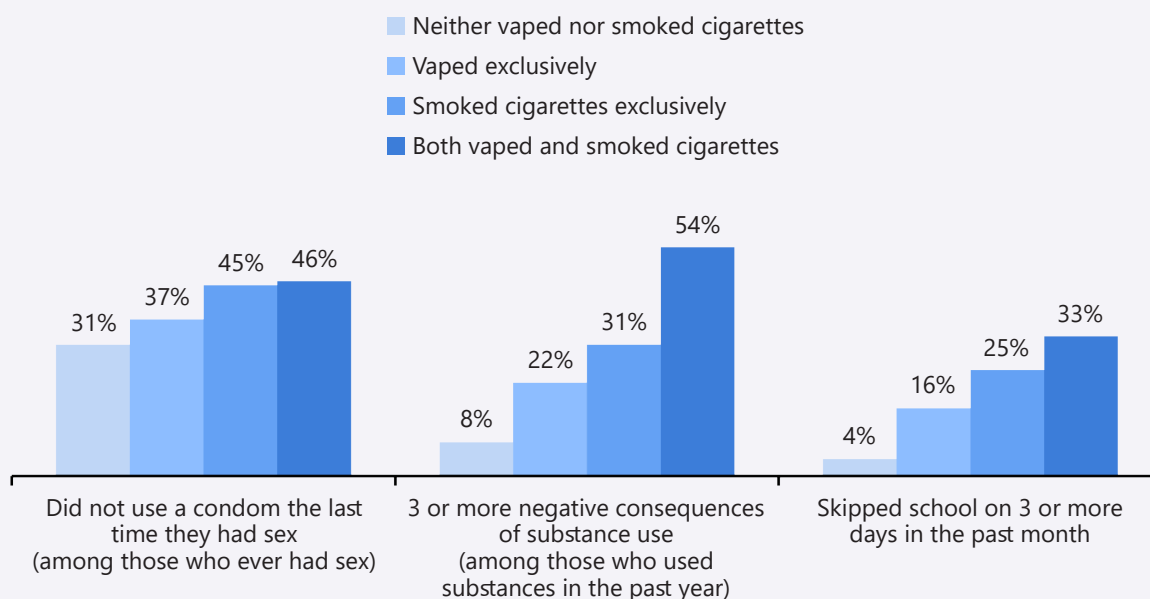
Current and former tobacco smokers have been shown to be more likely to vape than youth who have never smoked (Czoli, Hammond,

Reid, Cole, & Leatherdale, 2015; Mehra et al., 2019; Shiplo, Czoli, & Hammond, 2015). In BC, 83% of those who had smoked in the past month had also vaped during this time, as had 62% of youth who had ever smoked but had not done so recently. In contrast, 17% of those who had never smoked tobacco vaped in the past month.

Youth who use cigarettes exclusively or who use both cigarettes and vapes have been found to be more likely to engage in health risk behaviours than youth who

exclusively vape (Demissie, et al., 2017). In BC, youth who smoked cigarettes were generally more likely to engage in other risk behaviours compared to those who vaped, and youth who used both products were the most likely to engage in those behaviours. For example, in comparison to youth who smoked exclusively or smoked and vaped, youth who exclusively vaped were less likely to binge drink, skip school, and experience negative consequences after using substances, such as unwanted sexual activity.

Potential health risk behaviours by cigarette and vape use in the past month



Note: The difference between 'smoked cigarettes exclusively' and 'both vaped and smoked cigarettes' was not statistically significant for condom use.

Note: Negative consequences of substance use included passing out, getting injured, getting into fights, unwanted sexual activity, etc.

Youth at greater risk of smoking and vaping

Due to the different ways that vaping and smoking were measured on the BC AHS, percentages for smoked in the past month are among youth who had ever smoked; percentages for vaped in the past month are among all youth.

It has been reported that youth smoking is usually connected to experiencing social inequities; living in disadvantaged communities; and health risk behaviours. Youth smoking has also been connected to mental health challenges, as well as alcohol and other substance use disorders (Frohlich, Mykhalovskiy, Poland, Haines-Saah, & Johnson, 2012). The link to vaping is still being explored but it has been suggested that this link may not be as strong as it is for smoking (Demissie et al., 2017).

GOVERNMENT CARE

Studies with the BC AHS and internationally have shown that youth with government care experience are more likely to have smoked and vaped than their peers (e.g., Braciszewski & Colby, 2015; Huddleston, Pritchard, & Ratschen, 2016; Youth Researchers, 2019).

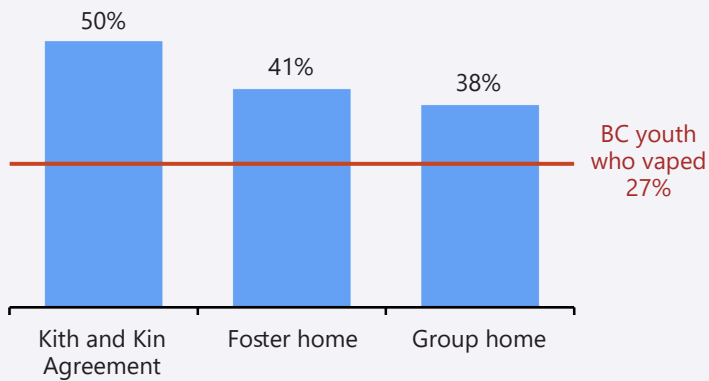
Youth who had been in government care or an alternative to care were more likely to have ever smoked tobacco (42% vs. 18% of those who had never been in care), and to have smoked in the past month (54% vs. 43%). Also, 42% of youth with care experience had vaped in the past month.

Among youth with care experience, females were more likely than males to have ever smoked (46% vs. 35%) and to have vaped in the past month (48% vs. 36%).

Type of care did not appear to be associated with smoking rates but was linked to vaping. Youth who had experienced a Kith and Kin Agreement were more likely to have vaped in the past month than youth who had been in a foster home or group home, and vaped at similar rates to youth who had stayed in a custody centre.

Youth with a history of adverse experiences such as housing instability, abuse, bereavement, and poverty and deprivation were more likely to have smoked or vaped than those without these experiences.

Youth who vaped in the past month in relation to their government care experience



Note: The difference between foster home and group home was not statistically significant.

HOUSING INSTABILITY

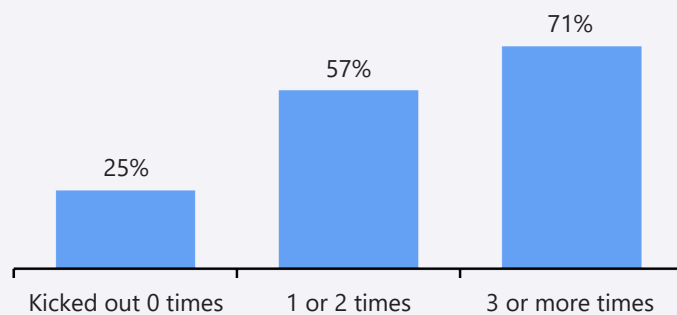
Youth who are homeless or have run away from home have been shown to smoke cigarettes and smoke daily at higher rates than youth who have not experienced these types of housing instability (Thompson, 2004; Wenzel, Tucker, Jolinelli, Green & Zhou, 2010).

BC youth who had run away or been kicked out of their home in the past year were more likely to have smoked and vaped recently. For example, 59% of youth who were kicked out of their home in the past year smoked in the past month (vs. 42% of youth who were not kicked out) and the same percentage vaped (59% vs. 25%).

For females, the more often they had been kicked out, the more likely they were to have vaped. Females who moved in the past year were also more likely to have

recently vaped (29% vs. 26% of females who had not moved) and smoked tobacco (51% vs. 41%). These differences were not seen among males or non-binary youth.

Females who vaped in the past month in relation to how many times they had been kicked out in the past year



SCHOOL-RELATED CHALLENGES



Youth in focus groups across BC spoke about the different measures their schools were taking to prevent youth vaping, including in-school and out-of-school suspensions for youth caught vaping on school property. Participants said that while this might deter youth from smoking on school property, it did not address the problems associated with vaping (including addiction challenges), and instead made them more stressed and their school work more challenging.

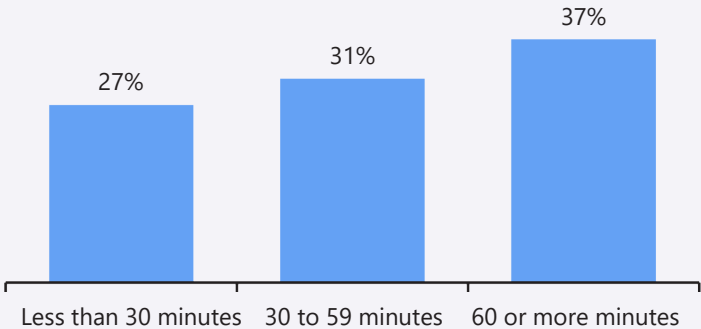
Youth who are in school can face educational and disciplinary consequences associated with smoking and vaping, particularly if they use these substances on school property. This can be challenging for youth who are nicotine-dependent, who may struggle to concentrate when abstaining from nicotine use during school. As a result, they often fare worse on standardized tests and have a reduced likelihood of going on to post-secondary education (Sabado, Haynie, Gilman, Simons-Morton, & Choi, 2017). School disengagement has also been associated with an increased likelihood of smoking, particularly among females (Perra, Fletcher, Bonell, Higgins, & McCrystal, 2012).

COMMUTE TO SCHOOL

Active commuting (e.g., walking or cycling to school) has previously been associated with smoking among Canadian youth (Bookwala, Elton-Marshall, & Leatherdale, 2014). This was not the case in BC. However, students who usually took the school bus or public transit to school were more likely to smoke recently than youth who traveled to school by car (48% vs. 42%). There was no such difference among youth who vaped. Students who usually walked, biked, or skateboarded to school were the least likely to have vaped (21%).

Length of commute was associated with smoking and vaping. Students were more likely to smoke in the past month if their commute to school was at least 30 minutes (52% vs. 43% of those with a shorter commute), and youth with a commute that was two or more hours were generally the most likely to vape (55%*).

Youth who vaped in the past month in relation to length of commute to school



“ Vaping is rebellious, and it's fun to get away with. ”

SKIPPING SCHOOL

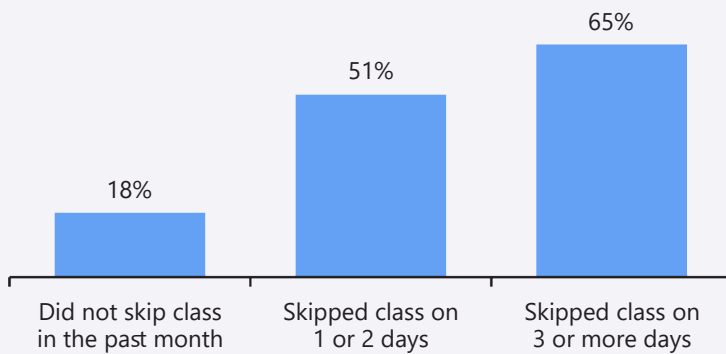
Youth who skipped classes in the past month were more likely to have smoked in that time period (51% vs. 36% of youth who did not skip school), and to have vaped (55% vs. 18%).

The more days of school youth skipped, the more likely they were to have vaped and smoked. For example, 59% of youth who skipped on three or more days had smoked in the past month, compared to 45% of those who skipped on one or two days, and 36% of those who did not skip school in the past month.

NOT EXPECTING TO GRADUATE

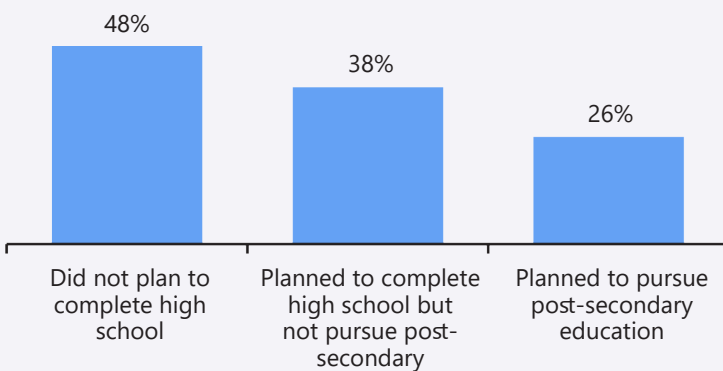
Students who did not expect to graduate from high school were more likely than those who expected to graduate to have smoked in the past month (60% vs. 43%). There was a similar pattern for vaping.

Youth who vaped in the past month in relation to skipping class



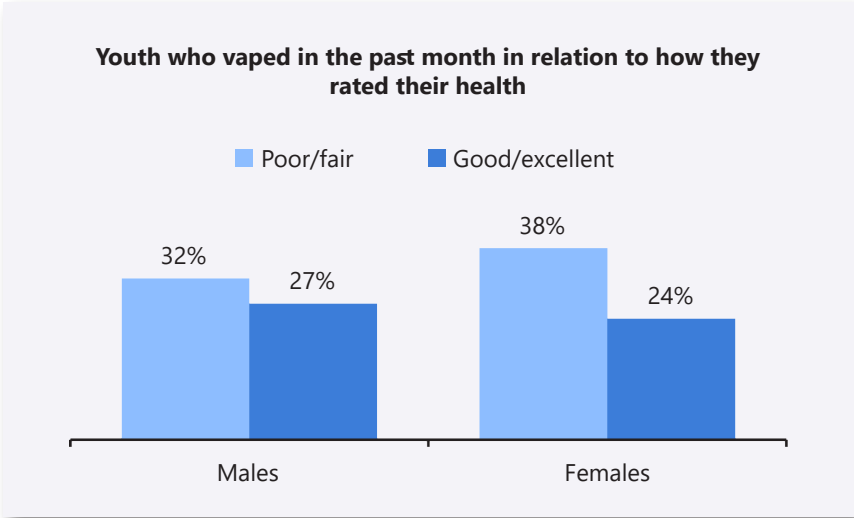
“ E-cigarettes/vaping are very popular with teens mostly from age 13–17. A lot of kids at our school leave/skip class to go vape. ”

Youth who vaped in the past month in relation to their school plans



HEALTH CHALLENGES

Youth who rated their overall health as poor or fair were more likely than youth who rated it as good or excellent to have smoked in the past month (54% vs. 40%), as well as to have vaped during that time (35% vs. 26%).



HEALTH CONDITIONS

There were no differences in recent smoking and vaping rates between youth with a physical or sensory disability compared to youth without these conditions. However, youth who reported having a learning disability were more likely to have recently smoked tobacco (51% vs. 44% of those without a learning disability) and vaped (42% vs. 27%). Also, youth with a long-term or chronic medical condition (e.g., asthma) were more likely than their peers without such a condition to have vaped in the past month (31% vs. 27%).

Youth with a long-term/chronic health condition who reported that their condition was debilitating were not at increased risk for smoking. However, females whose

condition was debilitating were more likely to have vaped (36% vs. 29% of females who indicated their long-term condition was not debilitating).



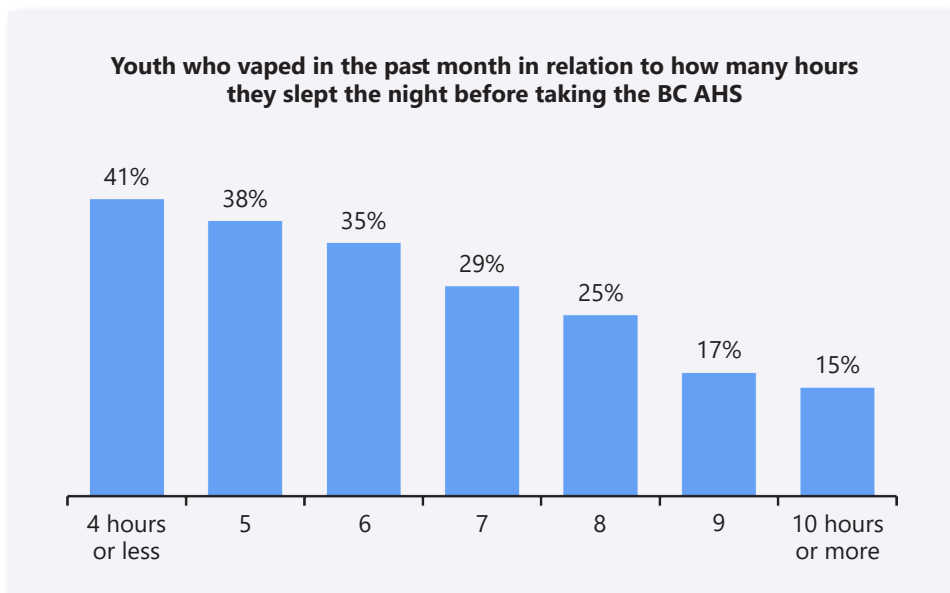
BC youth who took part in focus groups explained that youth with respiratory conditions such as asthma may prefer vaping to smoking because they believe it is less harmful to their lungs. They further explained that youth may not equate vaping with smoking-related health risks because the initial messaging about vaping was that it was not as bad for health as smoking.

"The government told us that vaping was better than smoking."

SLEEP

The fewer hours students slept the night before taking the survey, the more likely they were to have smoked or vaped recently. For example, around a fifth (21%) of youth who slept for at least eight hours had vaped, compared to a third (33%) of those who slept for less than eight hours.

“ I vape at 2 am. ”



Note: The percentage for 5 hours was not significantly different from 6 hours or 4 hours or less.

MENTAL HEALTH CHALLENGES



Youth who participated in focus groups were asked why they thought youth might be vaping. Consistently, one of the first reasons they gave was to help them cope with challenges to their mental health.

"A lot of people—a friend of mine—it helps her numb things. It helps her quite a bit."

"People don't vape for no reason."

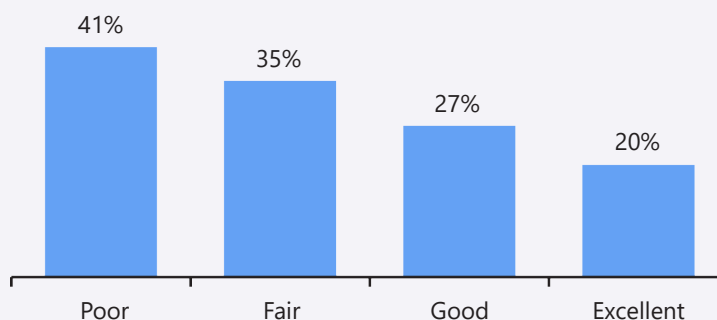
There is an established link between poorer mental health and smoking. For example, youth who experience mental health challenges are more likely to smoke and to start smoking at an early age (Catchpole et al., 2016).

Vaping has also been found to be more likely among college students who have a history of mental health conditions, including Attention Deficit Hyperactivity Disorder (ADHD), PTSD, and anxiety, as well as low self-esteem and impulsive traits (Grant, Lust, Fridberg, King, & Chamberlain, 2019).

MENTAL HEALTH RATINGS

BC youth who rated their mental health as poor or fair were more likely than those who rated it as good or excellent to have ever smoked (29% vs. 15%), and to have smoked in the past month (51% vs. 39%) including on a daily basis (9% vs. 4%). Similarly, the less positively youth rated their mental health, the more likely they were to have vaped.

Youth who vaped in the past month in relation to how they rated their mental health



Youth who experienced mental health challenges were more likely to smoke and to vape than youth who experienced more positive mental health.

“ Regarding the smoking, my parents were going through a custody battle when I started and now I'm trying to quit. ”

STRESS AND DESPAIR

Youth who did not feel they managed stress well were more likely to smoke and vape. For example, youth who felt they managed their stress poorly or only fairly well were more likely than those who felt they managed it well or very well to have smoked in the past month (48% vs. 39%).

The more stressed students felt in the past month, the more likely they were to have smoked and vaped during that time. Youth who experienced such extreme levels of stress that they could not function properly were the most likely to have recently smoked (52% vs. 42% of those who experienced less stress) and vaped (43% vs. 25%).

Similarly, the more despair students felt in the past month, the more likely they were to smoke and vape during that time. Those who felt the highest levels of sadness, hopelessness, or discouragement were the most likely to smoke (54% vs. 42% of those who did not experience this level of despair) and to vape (42% vs. 26%), with similar patterns for males and females.

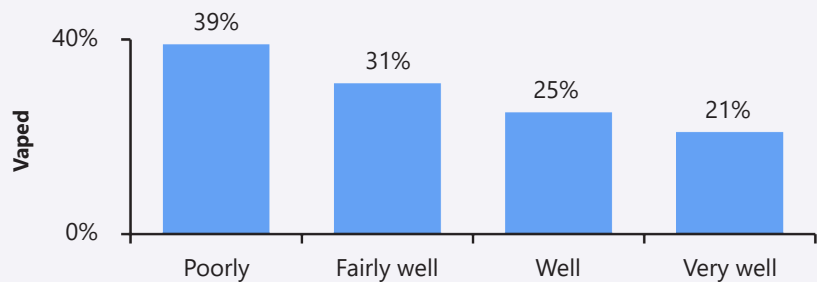


Youth who participated in focus groups across BC stated that one of the main reasons young people are vaping is because they believe it can alleviate stress.

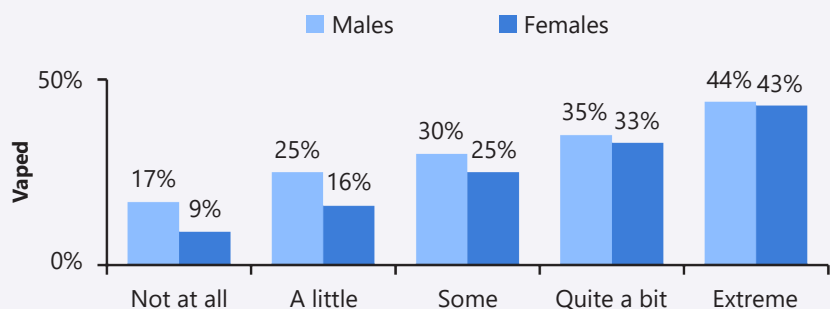
"It becomes what you need to do when you are stressed."

"I heard from friends who vape that nicotine helps relieve stress, and I hear it in [combination] with them thinking it's not addictive."

Youth who vaped in the past month by how well they managed their stress



Youth who vaped in the past month by how much stress they felt in the past month



Note: The differences between males and females who experienced 'quite a bit' and 'extreme' stress were not statistically significant.

SELF-HARM AND SUICIDALITY

Smoking has been associated with suicidal ideation and suicide attempts among youth in North America (Bae, Ye, Chen, Rivers, & Singh, 2005; MacKinnon & Colman, 2016).

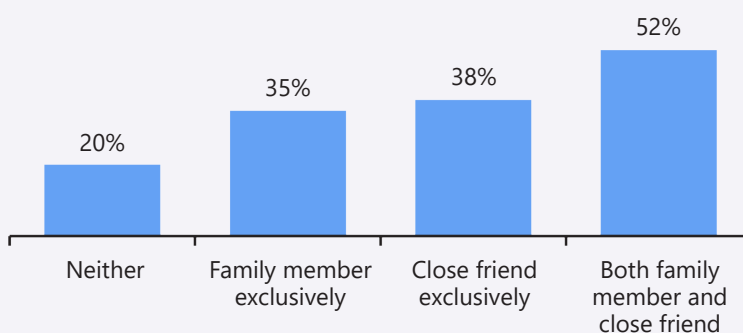
Youth who had deliberately hurt themselves without trying to kill themselves in the past year were twice as likely to have ever smoked tobacco (32% vs. 16% of youth who had not self-harmed); and females were more likely to have smoked in the past month (53% vs. 38% of females who did not self-harm in the past year).

Youth who self-harmed in the past year were also more likely to have vaped in the past month (40% vs. 25% of youth who had not self-harmed in the past year).

Seriously considering suicide and attempting suicide were also associated with smoking and vaping. For example, youth who had attempted suicide in the past year were more likely to have smoked (58% vs. 42% who had not attempted suicide) and vaped (50% vs. 26%) in the past month.

Youth of all genders who had a family member or close friend attempt or die by suicide in the past year were more likely than those who did not have this experience to have smoked in the past month (50% vs. 41%) and vaped (43% vs. 23%). Youth who had both a family member and friend attempt suicide were the most likely to have smoked and/or vaped recently.

Youth who vaped in the past month in relation to whether they had a family member and/or close friend attempt or die by suicide



Youth who had attempted suicide in the past year were almost twice as likely to have vaped in the past month as those who had not attempted suicide.

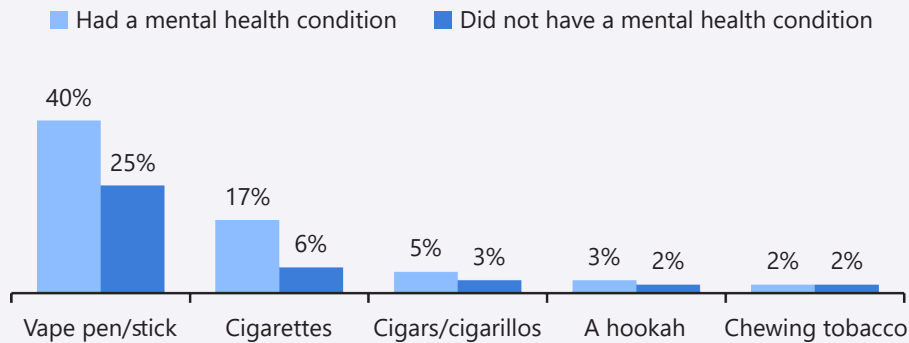
MENTAL HEALTH CONDITIONS

Youth who reported having a mental health condition (such as Anxiety Disorder, Depression, or PTSD) were more likely than their peers who did not have such a condition to have smoked in the past month (52% vs. 41%) and to have vaped. However, students who reported having Asperger's or Autism Spectrum Disorder were less likely to vape than those without this condition (17% vs. 28%).

Youth with a mental health condition were specifically more likely to have smoked cigarettes, cigars/cigarillos, and a hookah in comparison to youth without a mental health condition.

In addition, use of chewing tobacco was higher among youth with Depression (3% vs. 2% of youth without the condition), ADHD (5% vs. 2%), and PTSD (4% vs. 2%).

Nicotine-related products youth used in the past month in relation to having a mental health condition



EATING-DISORDERED BEHAVIOUR

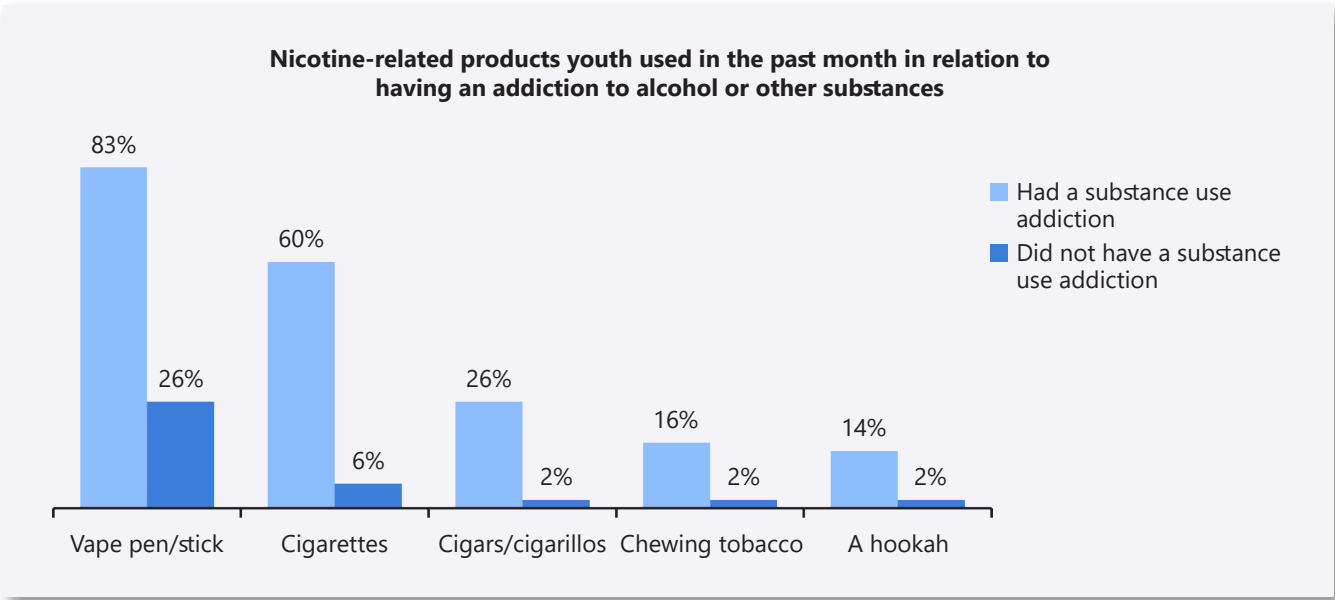
A U.S. study of over 13,000 high school students found that disordered eating was associated with current smoking (Pisetsky, Chao, Dierker, May, & Striegel-Moore, 2008). In BC, eating-disordered behaviour was associated with smoking and vaping for youth of all genders.

Youth who vomited on purpose after eating (purged) in the past year were more likely to have smoked (55% vs. 41% of those who did not purge during this time) and vaped (43% vs. 25%) in the past month. Rates of smoking and vaping were highest among youth who purged on a weekly basis, with 63% of these youth having smoked in the past month and 49% having vaped.

ADDICTIVE BEHAVIOURS

Addictions to gambling and substances have been linked to vaping (Grant et al., 2019). BC youth who reported needing help for their gambling were more likely to have smoked and vaped. For example, 35% who reported they needed help for their gambling behaviour in the past year had ever smoked (vs. 18% without such addictive behaviour) and 47% had vaped in the past month (vs. 27%).

Youth who reported having an addiction to alcohol or another substance were more likely than those without such an addiction to have ever smoked tobacco (85% vs. 17%), and to have smoked in the past month (76% vs. 40%) including on a daily basis (22% vs. 4%). In addition, they were over three times as likely to have vaped and to have used other tobacco products.



SUBSTANCE USE

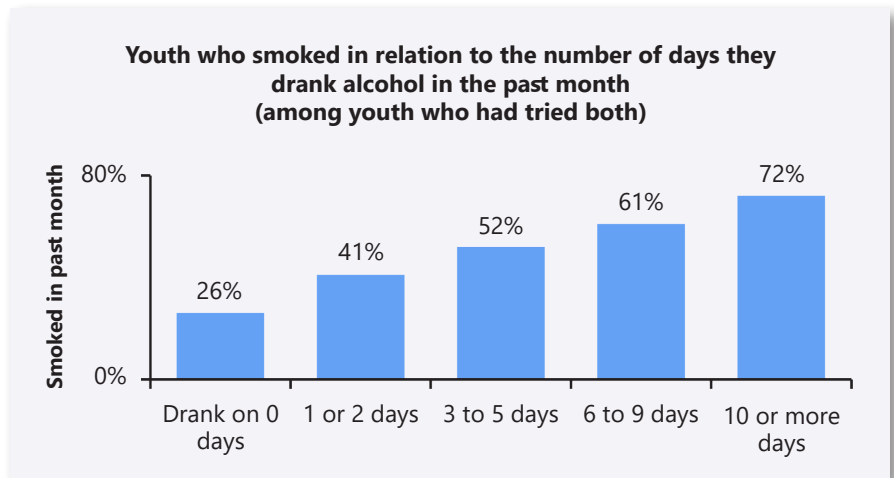
Use of alcohol and cannabis has been found to increase the likelihood of youth using tobacco (Okoli, Richardson, Ratner, & Johnson, 2009; Yang, Leatherdale, & Ahmed, 2011). Cannabis use has also been linked to an increased likelihood of vaping (Mehra et al., 2019).

ALCOHOL

Four in 10 youth (40%) who had tried alcohol had also smoked tobacco, compared to 2% of youth who had never tried alcohol.

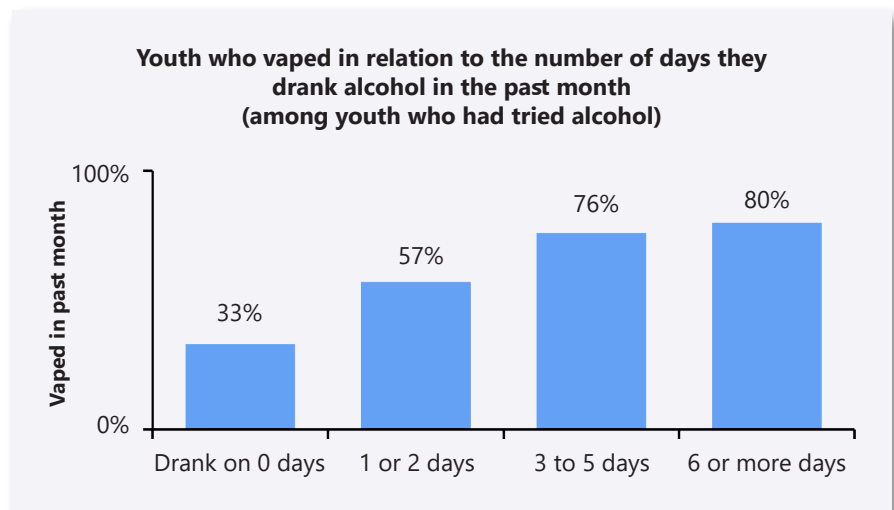
Recent alcohol use was also associated with recent smoking (51% smoked recently vs. 26% of youth who did not drink in the past month; among those who had tried alcohol and tobacco).

The more days on which youth drank alcohol in the past month, the more likely they were to smoke. Also, around half of youth (51%*) who drank every day in the past month smoked on a daily basis (vs. 6% of youth who drank alcohol less frequently; among those who had tried both alcohol and tobacco).



Similarly, youth who had tried alcohol were more likely to vape in the past month (54% vs. 6% of those who had never used alcohol). Youth who drank recently were twice as likely to vape as

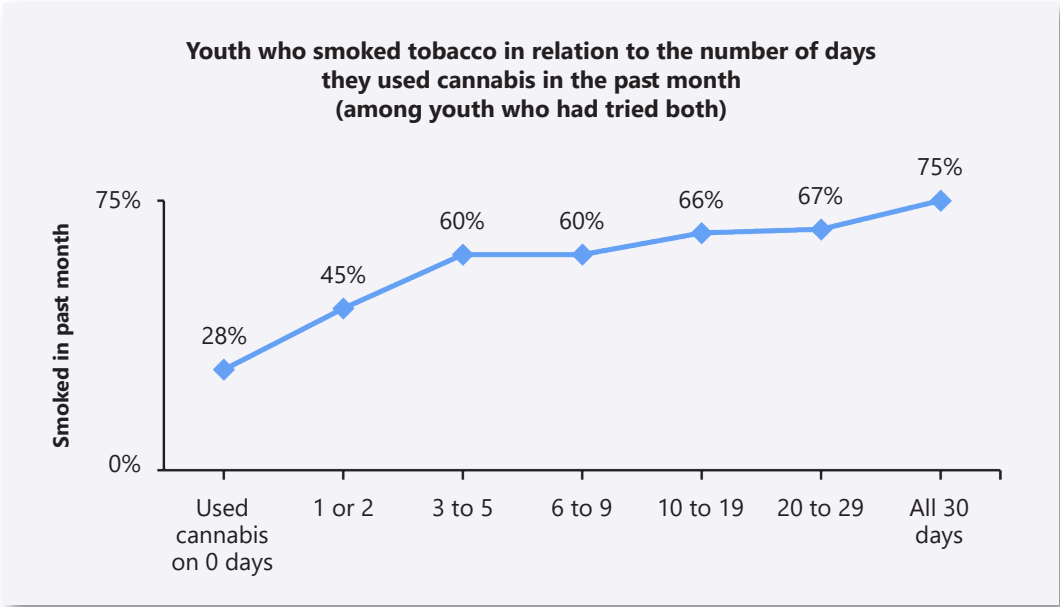
youth who did not drink recently (66% vs. 33%; among those who had tried alcohol). As with smoking, the more days on which youth drank in the past month, the more likely they were to vape.



CANNABIS

Reflecting the pattern with alcohol, youth who had used cannabis were more likely to have ever smoked tobacco (60% vs. 5% who had never used cannabis), and to have vaped in the past month (72% vs. 12%).

Generally, the more days on which youth used cannabis in the past month, the more likely they were to have smoked tobacco and vaped that month. Also, youth who used cannabis daily were more likely to have smoked tobacco daily (34% vs. 4% of those who used cannabis less frequently; among youth who used both substances).



Note: Not all differences were statistically significant.

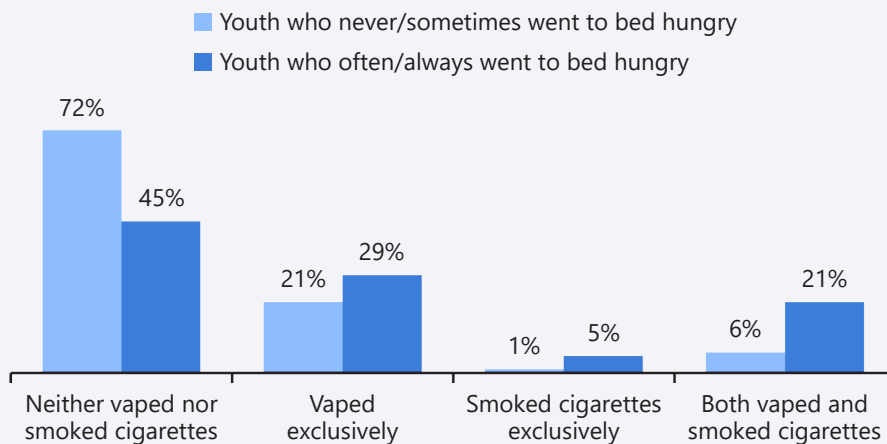
POVERTY AND DEPRIVATION

A U.S. study found that lower socioeconomic status (SES) was associated with youth smoking, and higher SES was associated with vaping (Simon, et al., 2018). This reflected findings with adults (Carrieri & Jones, 2016).

In BC, students who went to bed hungry at least sometimes because there was not enough money for food at home were more likely than youth who never went to bed hungry to have smoked in the past month (51% vs. 43%).

Going to bed hungry was also associated with a greater likelihood of vaping in the past month. Half of youth (50%) who often or always went to bed hungry because there was not enough money for food at home had vaped, compared to 41% who sometimes went to bed hungry, and 26% who never went to bed hungry.

Youth who vaped and/or smoked cigarettes in the past month in relation to how often they went to bed hungry because there was not enough money for food at home



The fewer meals youth ate on school days, the more likely they were to smoke and vape. For example, 48% of students who ate only one meal had smoked recently, compared to 36% of youth who always ate breakfast, lunch, and dinner.

Feeling deprived of items their peers had was also linked to smoking and vaping; and the greater number of items youth were deprived of, the more likely they were to smoke and vape. For example, youth deprived of three or more items were more likely to have ever smoked (33% vs. 18% who were not deprived of any items). Similarly, 37% of youth who felt deprived of three or more items had vaped in the past month, compared to 27% of those who were not deprived of any items.

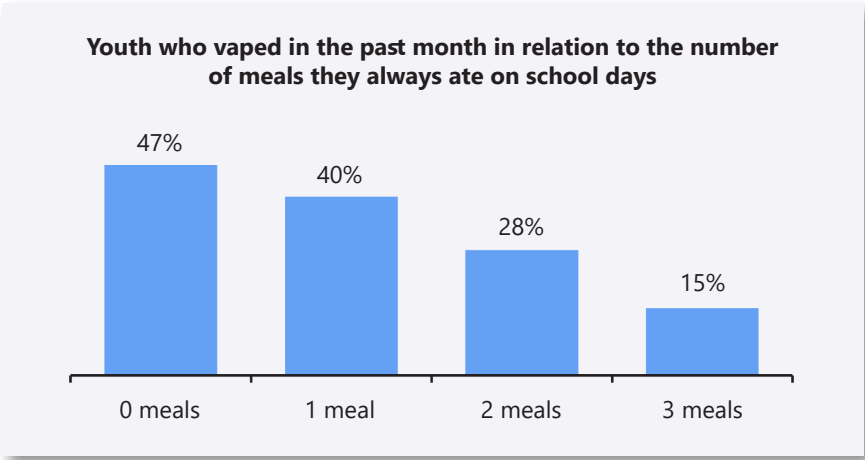
Among youth who felt deprived of three or more items, females were more likely than males to have vaped in the past month (43% vs. 32%) and to have ever smoked tobacco (38% vs. 28%).

Also, students who could not afford to participate in extracurricular activities were more likely to have ever smoked (28% vs. 17%) and to have vaped in the past month (36% vs. 26%).

VIOLENCE AND DISCRIMINATION

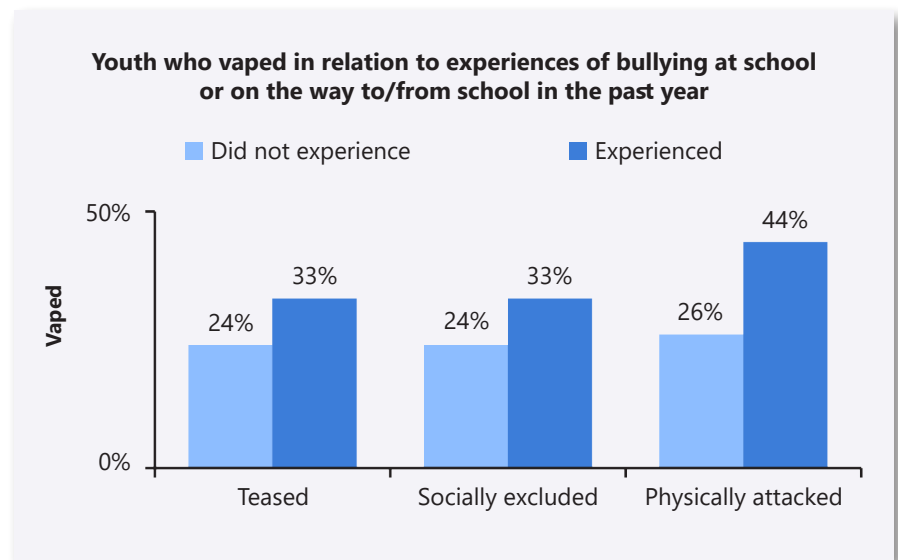
Youth who experienced violence and discrimination were more likely to smoke and vape. For example, youth who had been bullied at school or on their way to or from school in the past year were more likely than those who had not been bullied to have recently smoked and vaped.

Experiencing discrimination in the past year was also linked to recent smoking and vaping. For example, youth who had been discriminated against for their race, ethnicity, or skin colour were more likely to have ever smoked (23% vs. 18% of youth who had not been discriminated against for this reason) and to have recently vaped (34% vs. 26%).



Females who experienced violence and discrimination were generally more likely to smoke and vape than males who had these experiences. For example, among youth who were physically abused, females were more likely than males to have vaped in the past month (43% vs. 38%).

Experiencing cyberbullying in the past year was not linked to recent smoking for males, but was for females (51% smoked in the past month vs. 41% of females who had not been cyberbullied). Youth of all genders who had been cyberbullied were more likely to vape than those who had not been cyberbullied (43% vs. 25%), and females who had this experience were more likely than males to have vaped (48% vs. 37%).



Smoking and vaping in relation to whether youth had experienced violence or abuse				
	Smoked tobacco in the past month (among those who had ever smoked)		Vaped in the past month	
	Experienced this type of violence/abuse	Had not experienced this type of violence/abuse	Experienced this type of violence/abuse	Had not experienced this type of violence/abuse
Physically abused	50%	42%	41%	25%
Sexually abused	52%	41%	53%	24%
Physically sexually harassed (in the past year)	49%	41%	48%	21%
Discriminated against (in the past year)	47%	42%	35%	22%

BEREAVEMENT

Around 3 in 10 BC youth (31%) who had lost someone close to them had vaped in the past month, compared to 20% of youth who had not been bereaved (with no gender differences). Also, youth were at least twice as likely to vape if they had been bereaved due to suicide (50% vs. 25% of those who had not been bereaved for this reason), a fentanyl overdose (62% vs. 27%), or another type of overdose (55% vs. 26%).

EMPLOYMENT AND DISPOSABLE INCOME

Having higher amounts of spending money available—such as through paid employment—has been shown to increase youth’s risk of tobacco use (Leatherdale, Rios, Elton-Marshall, & Burkhalter, 2011; Lovato et al., 2013) and vaping (Czoli et al., 2015). Even among groups of youth who are less likely to smoke than their peers, having paid employment increases their likelihood of smoking (Sawatzky et al., 2008).

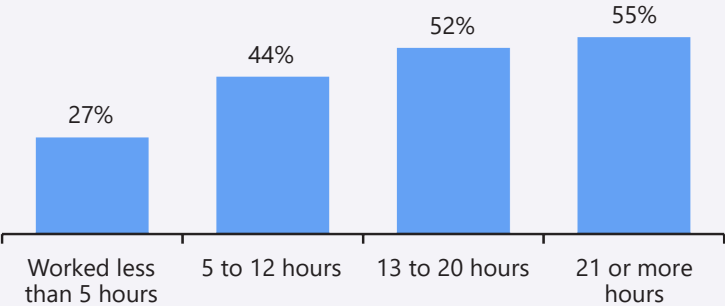
Having a paid job in the past year did not increase the likelihood of BC youth smoking recently. However, among youth who worked, those who worked more hours each week were more likely to smoke (e.g., 50% who worked 21 or more hours had smoked in the past month vs. 39% who worked less than five hours).

Working more hours was also linked to a greater likelihood of smoking daily. For example, 11% of youth who worked 21 or more hours each week had smoked tobacco daily, compared to 4% who worked less than five hours a week.

Youth of all genders who worked at a paid job were more likely to vape (42% vs. 20% of those who were not employed); and the more hours youth worked, the more likely they were to vape.

Immigrant youth typically had lower smoking and vaping rates than Canadian-born youth, but 26% of immigrant youth who were employed in the past year had smoked (including 44% of those who worked in excess of 20 hours a week), compared to 14% of immigrant youth who had not worked during this time. Also, 32% who worked had vaped (vs. 13% of immigrant youth who did not work), with a similar pattern for males and females.

Youth who vaped in the past month in relation to how many hours a week they worked at a paid job during the school year (among those who worked)



REGULAR SPORTS AND EXERCISE INVOLVEMENT

Youth who vape are more likely than youth who smoke tobacco to be engaged in team and competitive sports (Milicic, Piérard, DeCicca, & Leatherdale, 2019).



Youth who participated in focus groups across BC suggested that young people are aware that smoking can harm athletic performance but do not have the same awareness about vaping. Also, vaping is easier to hide from coaches than smoking.

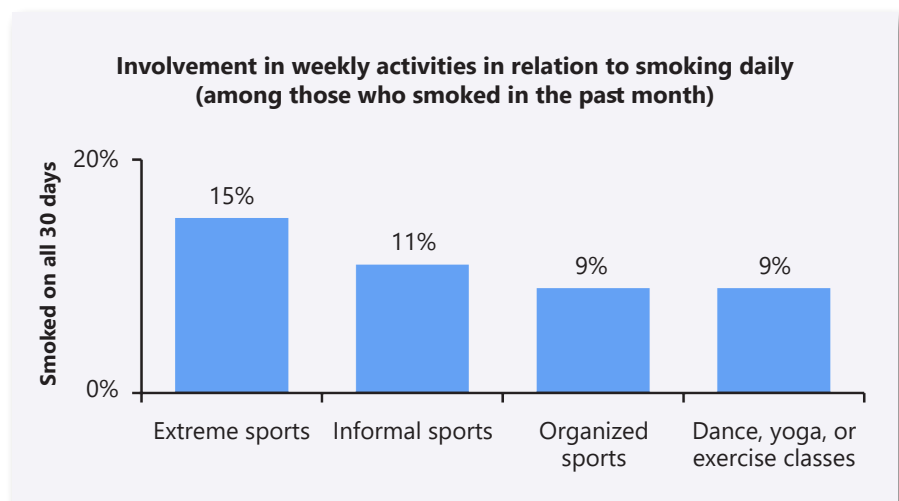
Youth also suggested that athletes in high performance sports programs can feel pressure to succeed and might vape to manage this stress. They also suggested that vaping and extreme sports are both appealing because of the high or rush they can create.

There were differences among BC youth between vaping and smoking in relation to sports and exercise involvement. For example, youth who were involved in at least one form of weekly sports or exercise class (e.g., organized sports or dance/yoga/exercise classes) were less likely to have smoked in the past month (43% vs. 48% who were not involved this regularly), but were more likely to have vaped during that time (29% vs. 22%).

There were no gender differences for smoking, but males who were involved in at least one weekly physical activity were more likely

than females to vape (30% vs. 28%).

When the different types of weekly physical activity were considered individually, youth who took part in extreme sports were more likely than those who took part in other activities to smoke in the past month (e.g., 49% smoked recently vs. 42% of youth who took part in weekly informal sports) and to smoke daily. Also, 43% of those who participated in weekly extreme sports vaped, compared to 31% of those who played informal sports, and 29% who played organized sports.



Note: The differences between informal sports, organized sports, and dance/yoga/exercise classes were not statistically significant.

“ [I] used to vape but stopped in December due to reduced performance in hockey. ”

Youth who took part in weekly extreme sports were more likely to smoke recently than those who took part less often or not at all (49% vs. 43%). They were also more likely to vape (43% vs. 26%), with males more likely to do so (46% vs. 36% of females who participated weekly).

Also, youth who took part in weekly extreme sports were more likely than those who took part less often to have recently used all the different nicotine-related products they were asked about, including cigarettes (12% vs. 7%), cigars/cigarillos (8% vs. 3%), chewing tobacco (6% vs. 2%), and a hookah (3% vs. 2%).

Weekly organized and informal sports participation was not a risk factor for smoking, but youth were more likely to vape if they took part in weekly informal sports (31% vs. 24% of those who took part less often). Also, males (but not females) were more likely to vape if they played weekly organized sports (30% vs. 25% of males who took part less often).

The BC AHS asked youth on how many days in the past week they had participated in an hour of moderate to vigorous exercise. Those who exercised on three or more days that week were more likely to have vaped in the past month than those who exercised on two or fewer days (29% vs. 23%).

EXPOSURE TO SECOND-HAND SMOKE

Youth who are exposed to family members who smoke are more likely to smoke (Azagba & Asbridge, 2013). The 2018 BC AHS did not ask about family members who smoke. However, 21% of youth who completed the 2013 BC AHS were exposed to tobacco smoke in their home or family vehicle, and 6% were exposed almost daily or daily. These youth were more likely than their peers to smoke and vape.

Also, the more frequently youth were exposed to second-hand smoke, the more likely they were to have smoked themselves. For example, 50% of those who were exposed daily or almost daily had ever smoked, compared to 31% who were sometimes exposed, and 17% who were never exposed.

Regular participation in sports and exercise was generally associated with a decreased likelihood that youth would smoke and an increased likelihood that they would vape. However, weekly involvement in extreme sports was a risk factor for both smoking and vaping.

Factors that reduce the likelihood of smoking and vaping

Due to the different ways that vaping and smoking were measured on the survey, percentages for smoked in the past month are among youth who had ever smoked; percentages for vaped in the past month are among all youth.

Protective factors that have been found to lower the chances that young people will use substances such as alcohol and cannabis, and that have been associated with more positive health and well-being, were considered to see if they might be associated with a reduced likelihood that youth would smoke and/or vape.

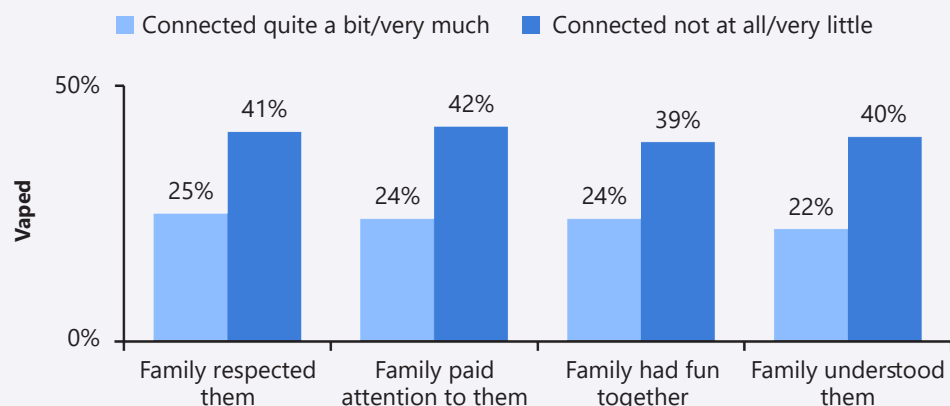
POSITIVE FAMILY RELATIONSHIPS

FAMILY CONNECTEDNESS

Youth of all genders who felt their family respected them, paid attention to them, understood them, and had fun together were less likely to have ever smoked or to have smoked or vaped in the past month, in comparison to youth who did not feel this way about their family. For example, 13% of youth who felt their family understood them had ever smoked, compared to 31% who did not feel this way.

Although there was no gender difference in vaping overall, females were less likely than males to smoke or vape recently when they felt connected to their family. For example, females were less likely than males to vape if they felt their family understood them (19% vs. 24%), respected them (23% vs. 26%), paid attention to them (23% vs. 26%), and had fun together (23% vs. 25%).

Youth who vaped in the past month in relation to family connectedness

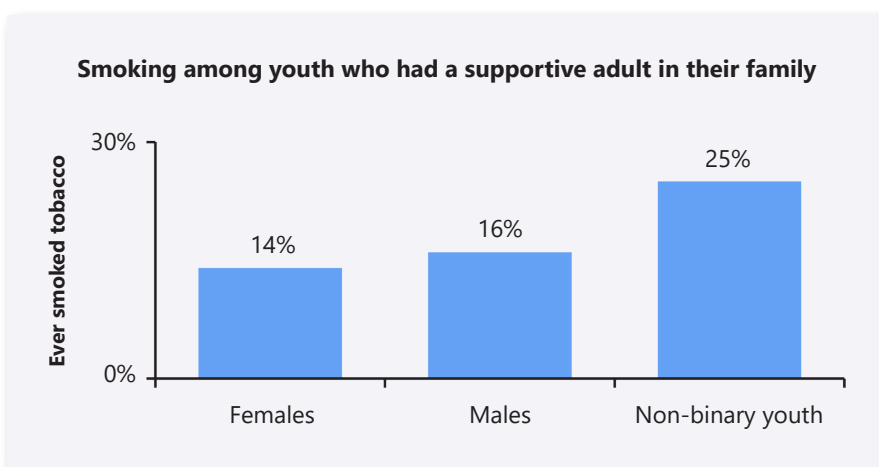


Youth were less likely to smoke or vape when they felt connected to their family, and when they had an adult in their family they could turn to for support.

TURNING TO AN ADULT RELATIVE FOR SUPPORT

Having a supportive adult in their family reduced the likelihood that youth would smoke or vape. For example, 15% of youth who had an adult inside their family they could talk to if they had a serious problem had ever smoked, compared to 27% of those without such an adult. This pattern was seen across genders, but females were the least likely to smoke when they had a supportive adult in their family.

Additionally, 41% of youth with a supportive adult in their family had recently smoked (vs. 49% without such an adult) and 24% had vaped (vs. 36%). Among youth with a supportive adult in their family, females were less likely than males to smoke (38% vs. 43%) or vape (23% vs. 25%) in the past month.



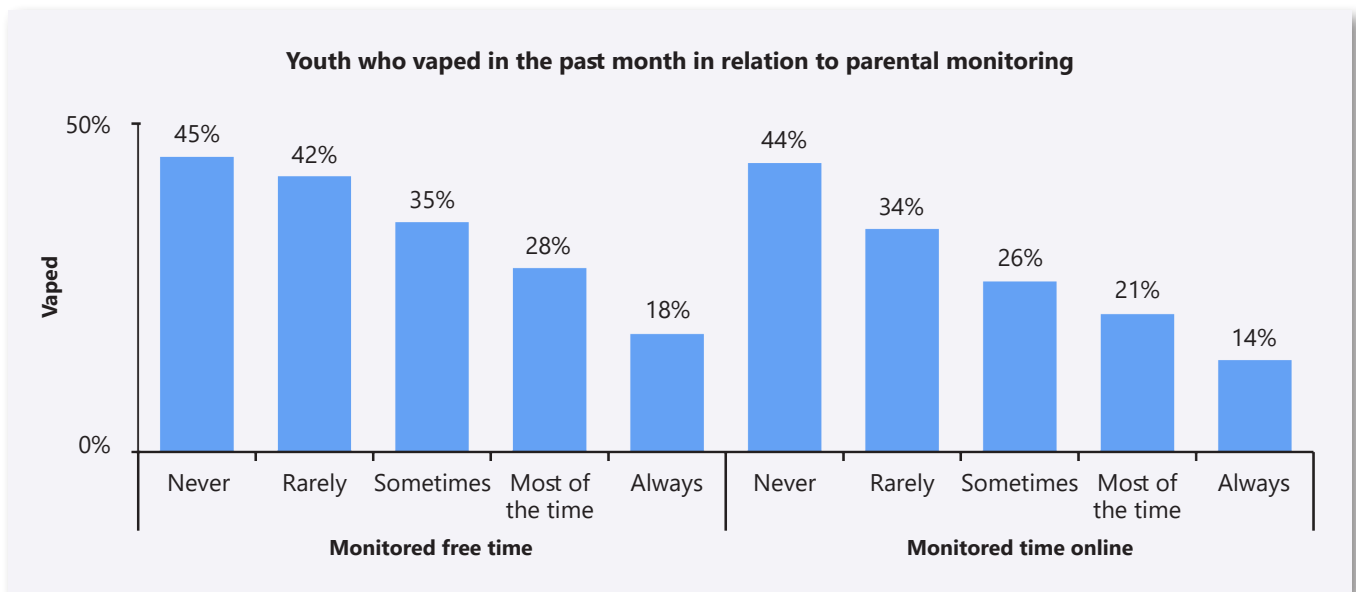
PARENTAL MONITORING

Youth whose parents or guardians monitored their free time and their time online were less likely to have ever smoked, and to have smoked or vaped in the past month. For example, among those who had ever smoked, 39% of youth whose parents mostly or always monitored what they were doing in their free time had smoked in the past month, compared to 47% whose parents sometimes monitored their time, and 55% of those whose parents never or rarely monitored their free time.

TIME WITH FAMILY

As with parental monitoring, youth who felt they had the right amount of time to spend with their family were less likely to have ever smoked tobacco (17% vs. 25% who felt they had insufficient time with their family), or to have recently smoked (42% vs. 47%) or vaped (26% vs. 33%).

This was the case for both males and females, but females were less likely than males to vape when they had the right amount of time with family (25% vs. 27%).



Note: For 'free time,' the difference between never and rarely was not statistically significant.

SCHOOL CONNECTEDNESS

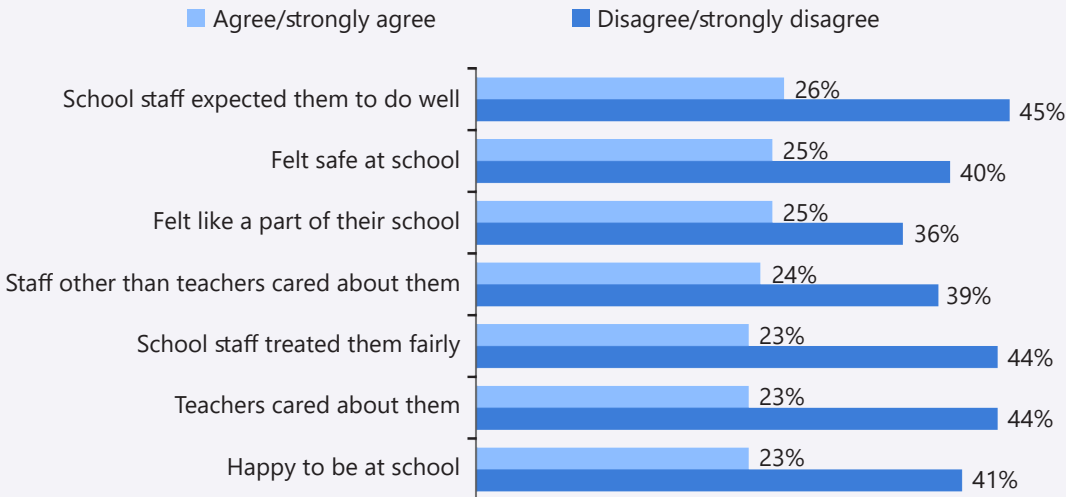
“ I think if teachers talked to their students more about drugs and alcohol, especially how much it affects students in high school when kids are at the point where people around them start vaping or drinking, they are able to say no! Anyways that's what happened to me. ”

Feeling connected to school has been found to be a key protective factor in reducing substance use for male and female youth in BC (e.g., Géczy, Saewyc, Poon, & Homma, 2019). Studies have also shown that students who attain higher academic success are less likely to smoke (Azagba & Asbridge, 2013; Okoli et al., 2009). Schools that offer tobacco prevention policies and programs have also seen lower smoking rates in comparison to schools that do not have such policies (Lovato et al., 2010).

Among youth in BC, the more connected they felt to school, the less likely they were to have ever smoked and to have recently smoked or vaped. For example, they were less likely to smoke recently when they felt like a part of their school (39% vs. 52% of those who did not feel this way), felt their teachers cared about them (41% vs. 50%), and felt safe at school (42% vs. 52%).

School connectedness appeared particularly protective for females, as they were less likely than males to vape if they felt like a part of their school (23% vs. 27% of males who felt this way), were happy to be at school (21% vs. 24%), and felt safe there (24% vs. 26%).

Youth who vaped in the past month in relation to school connectedness



CONNECTIONS TO THE COMMUNITY AND LAND

CONNECTION TO COMMUNITY

Reflecting the pattern for family and school connectedness, the more connected youth felt to their community, the less likely they were to have ever smoked tobacco. For example, 14% of youth who felt very much like a part of their community had smoked, compared to 19% who felt somewhat connected, and 28% who felt not at all connected. However, community connectedness was not associated with a lower likelihood of recent smoking among males in the way that it was for females.

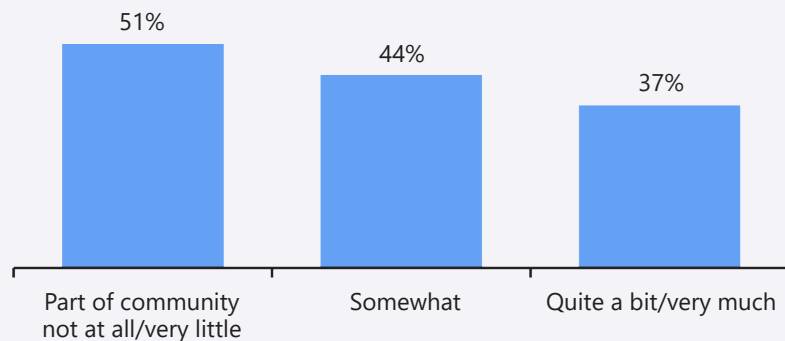
Among youth of all genders, feeling connected to their community was associated with a reduced likelihood of vaping (25% who felt quite/very connected had vaped vs. 30% who felt not at all/very little connected). However, females who felt connected to their community were less likely to vape than males who felt connected (23% vs. 27%).

CONNECTION TO THE LAND/NATURE

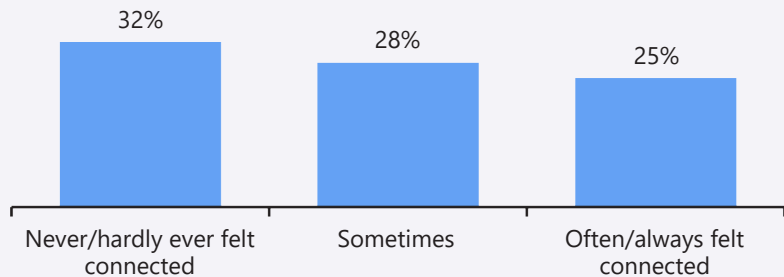
Feeling connected to the land or nature was protective, but only for females. Females who felt connected to the land or nature at least sometimes were less likely to have ever smoked than females who never or hardly ever felt connected (18% vs. 22%), or to have vaped recently.

Youth who felt they had the right amount of time to spend in nature were less likely than those who felt they had insufficient time in nature to have ever smoked (17% vs. 20%) or to have vaped in the past month (26% vs. 30%), but were equally likely to have smoked in the past month.

Females who smoked tobacco in the past month in relation to how much they felt like a part of their community (among those who had ever smoked)



Females who vaped in the past month in relation to how connected they felt to the land/nature



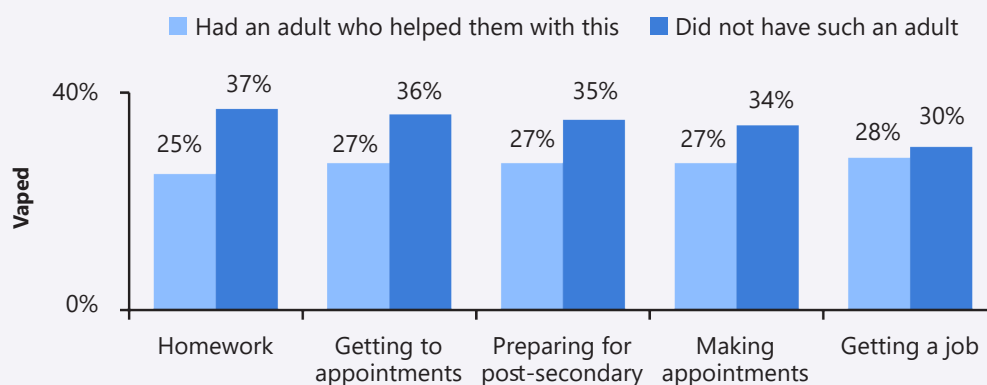
SUPPORTIVE ADULTS

Youth who had adults in their life who helped them with tasks (such as homework, and making and getting to appointments) were less likely to have ever smoked or to have smoked or vaped recently than students without such adults in their life. For example, 43% of youth who had an adult who helped them get to appointments had smoked in the past month, compared to 53% of those without such an adult in their life (among those who had ever smoked).

Among youth who approached adults for help in the past year, those who found the assistance helpful were less likely to smoke or vape recently. For example, youth were less likely to smoke in the past month when they found helpful the support they received from a teacher (41% vs. 51%) and sports coach (39% vs. 49%).

Youth who vaped in the past month (among those who asked an adult for help in the past year)		
	Found support helpful	Did not find it helpful
Spiritual leader	22%	38%
Teacher	22%	43%
Online community/online support group	24%	34%
School staff (other than teacher, school counsellor, or Aboriginal Education Worker)	24%	40%
Family member	25%	38%
Aboriginal Education Worker	28%	38%
Indigenous Elder	28%	38%
Doctor	28%	41%
School counsellor	29%	38%
Sports coach	29%	38%
Telephone helpline	29%	39%
Social worker	30%	45%
Nurse	30%	46%
Friend's parent	34%	34%
Mental health counsellor	36%	41%
Youth worker	36%	44%

Youth who vaped in the past month in relation to whether they had an adult who helped them with...



Note: For 'getting a job,' the difference was not statistically significant.

HEALTHY PEER RELATIONSHIPS

In Canada, peer influence has been identified as among the strongest predictors of smoking initiation (Okoli et al., 2009).

Youth with friends who would be upset with them if they used cannabis, got drunk, or engaged in other health risk behaviours were less likely to have smoked or vaped than those whose friends would not be upset with them for these reasons. For example, youth were less likely to vape when they had friends who would be upset with them for using cannabis (11% vs. 47% of those whose friends would not be upset for this reason) and if they got drunk (9% vs. 43%).

Feeling they had the right amount of time to spend with their friends reduced youth's risks of smoking and vaping. For example, 26% of youth who felt they had the right amount of time to do what they wanted with their friends had vaped in the past month, compared to 29% who felt they had insufficient time, and 34% who felt they spent too much time with their friends.

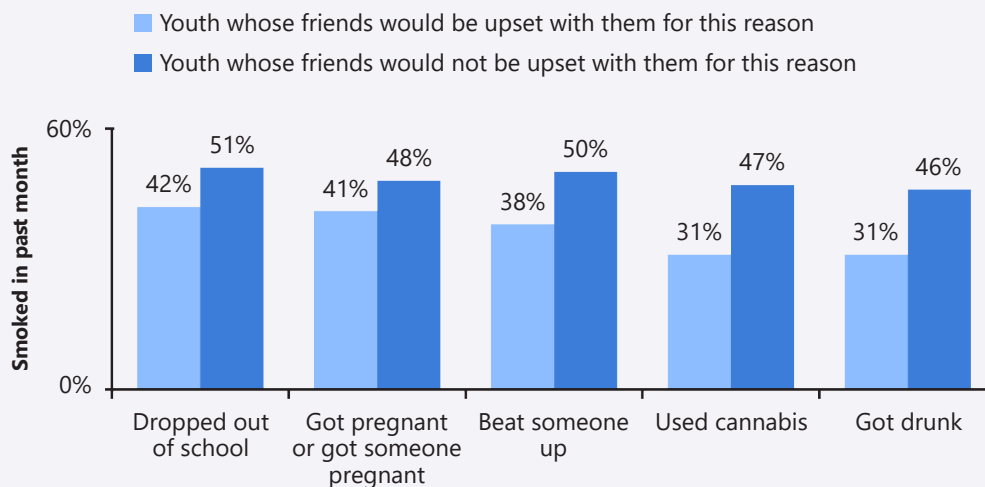


Youth who participated in focus groups across BC stated that one of the main reasons young people are vaping is because their friends are doing it. If they are in a social circle where their friends do not vape, they are less likely to vape.

"It's a popularity thing."

"You never start something because you're bullied into it, you start something because your best friend tells you it's a good idea."

Youth who smoked in the past month in relation to having friends with prosocial attitudes (among those who smoked tobacco)



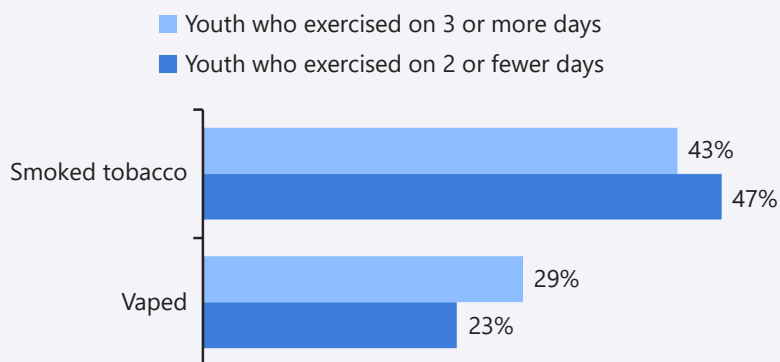
Youth who took part in weekly sports or exercise classes were generally less likely to have smoked recently than those who were not involved in such activities.

REGULAR SPORTS AND EXERCISE PARTICIPATION

Overall, participation in weekly sports and exercise classes was a risk factor for vaping but not for smoking, and some types of exercise participation were protective against smoking. Youth were less likely to smoke in the past month if they participated weekly in informal sports (42% vs. 46% of youth who participated less often) or organized sports (39% vs. 48%).

Youth who participated in at least an hour of moderate to vigorous exercise on three or more days in the past week were less likely than those who exercised on fewer days to smoke tobacco in the past month (43% vs. 47%), including on a daily basis (5% vs. 7% of those who exercised on fewer days).

Number of days youth exercised in the past week in relation to smoking and vaping in the past month



INVOLVEMENT IN OTHER ACTIVITIES

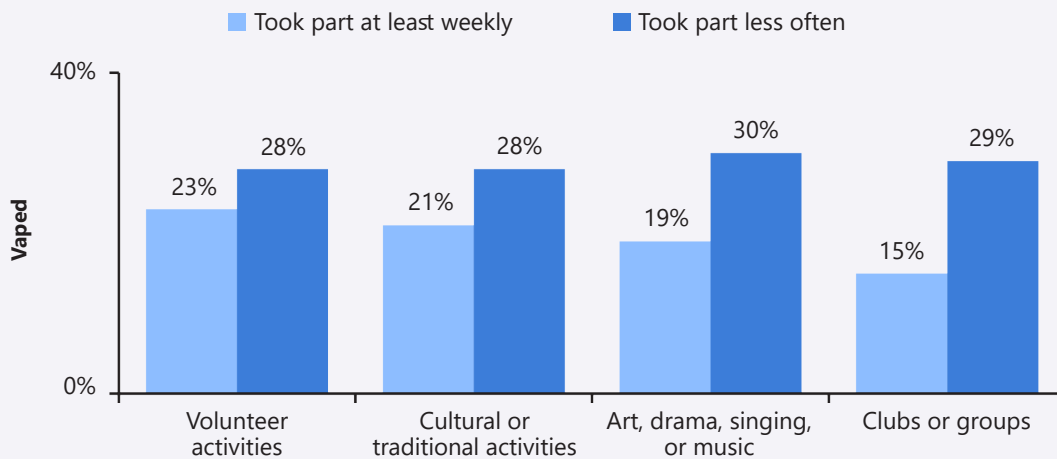
Unlike the picture for weekly sports participation, taking part in other types of weekly extra-curricular activities (e.g., cultural or traditional activities, clubs or groups) was associated with a reduced likelihood of vaping but not of smoking in the past month. One exception was that youth who volunteered in the community on a weekly basis were less likely than youth who volunteered less often to recently smoke (38% vs. 45%) and vape.

MEANINGFUL ENGAGEMENT IN ACTIVITIES

The more youth found the activities they were involved in to be meaningful and their ideas listened to and valued within those activities, the less likely they were to have ever smoked tobacco or to have smoked recently. For example, 39% of youth who felt their activities were meaningful had smoked recently (vs. 52% who did not feel this way), and 40% who felt their ideas were listened to and acted upon in their activities had smoked recently (vs. 51% who did not feel this way).

Females—but not males—were also less likely to vape in the past month if they felt their activities were meaningful to them (25% vs. 34% who did not feel this way) and that their ideas were listened to and acted upon (24% vs. 33%).

Youth who vaped in the past month in relation to involvement in extracurricular activities



SUPPORTING YOUTH TO BUILD SKILLS AND RESILIENCY



BC youth who participated in focus groups were eager for more in-depth information about vaping and how to quit or reduce the amount of nicotine they used. They also suggested teaching youth alternative ways to relieve stress or to cope with challenges.

"Suggest a way that can relieve stress and anxiety in a safe way."

"Saying 'don't do it, it's not good for you' has never worked."

FEELING SKILLED AND CONFIDENT

Youth of all genders who usually felt good about themselves were less likely than those who did not feel this way to recently smoke (39% vs. 50%) and vape (24% vs. 36%).

Youth who could identify something they were really good at were less likely to smoke recently (42% vs. 50% of youth who could not identify anything they were good at); and females were less likely to vape (25% vs. 32% of females who did not identify something they were good at).

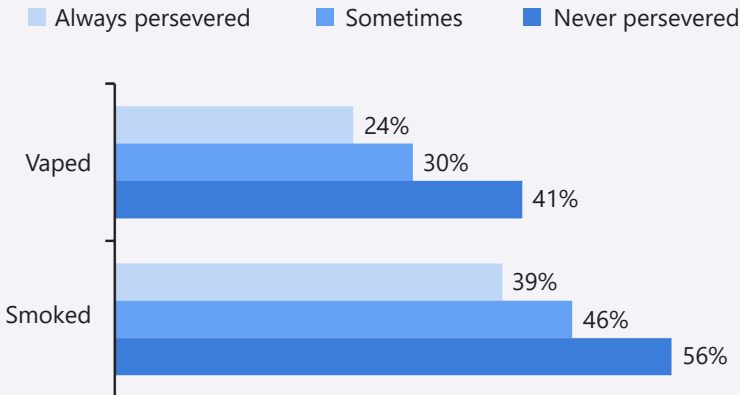
PERSEVERANCE

The more often students pushed themselves to achieve their goals when things went wrong, the less likely they were to have ever smoked tobacco, or to have smoked or vaped recently.

TIME ON THEIR OWN

Youth who felt they had the right amount of time to do what they wanted on their own were less likely than those with insufficient time on their own to have ever smoked tobacco (17% vs. 24%) and to have smoked in the past month (43% vs. 47%). They were also less likely to have vaped (26% vs. 33% of those with insufficient time on their own).

Youth who persevered when things went wrong in relation to smoking and vaping in the past month



ACCESSING HEALTH INFORMATION AND HEALTH SERVICES

Youth who are more knowledgeable about health issues have been found to be less likely to smoke (Elton-Marshall, Wijesingha, Kennedy, & Hammond, 2018).

Youth who were able to access the medical care they needed in the past year were less likely to have ever smoked (19% vs. 36% of those who did not get the care they needed), and to have recently smoked (42% vs. 53%) or vaped (29% vs. 44%).



Youth who participated in focus groups said they knew smoking could be bad for their health, but were generally unsure of the effects of vaping and wanted more information. Rather than simply being told not to vape, they wanted to hear from people who had experienced negative consequences from vaping. They also wanted to be presented with resources which they could access for more information, particularly about how to deal with a nicotine addiction or how to quit.

"[Adults] just say there are consequences. Show us resources."

"We know it's not good but we don't know the long-term effects."

“ I want to learn more about vaping as new info comes out and experiments are conducted. ”

HAVING DIFFERENT TYPES OF PROTECTIVE FACTORS

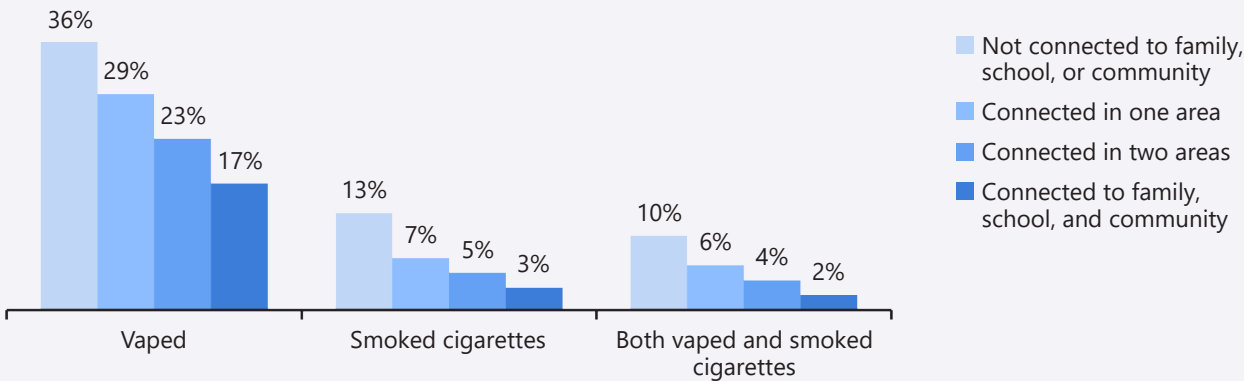
The previous section showed that youth who felt connected to the people and places in their lives were less likely to vape and smoke than those who did not feel connected. Also, the more areas in which youth felt connected, the less likely they were to vape or smoke. For example, those who felt connected to family, school, and community were less likely to vape or smoke than those who felt connected to only one or two of these.

BENEFITS OF HAVING DIFFERENT TYPES OF PROTECTIVE FACTORS

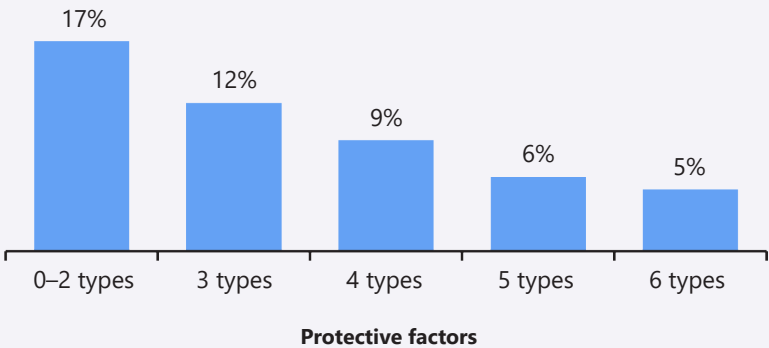
One percent of youth had no protective factors in any area (family, school, peers, community, extra-curricular activities, and access to services), whereas 28% had at least one protective factor in each of these areas. In general, the more different types of protective factors youth had, the less likely they

were to have smoked or vaped recently. For example, 24% of youth with at least one protective factor in all six areas had vaped, compared to 31% with protective factors in four areas, and 38% with protective factors in less than three areas.

Youth who vaped and smoked cigarettes in the past month in relation to connectedness



Youth who smoked cigarettes in the past month in relation to the number of different types of protective factors they had



SUPPORTING YOUTH WHO LACK PROTECTIVE FACTORS IN ONE AREA

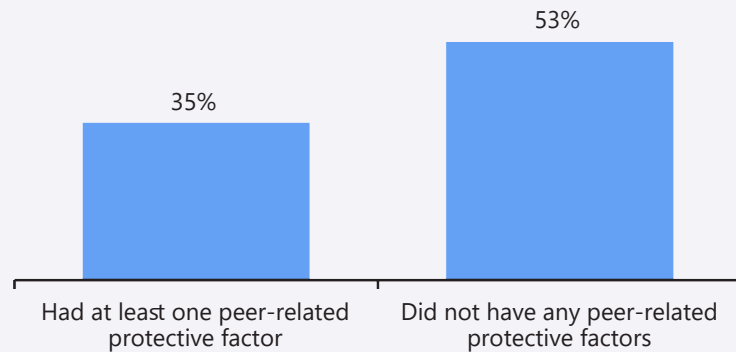
Having supports in different areas reduced the likelihood of youth smoking and vaping. However, not all youth have access to supports across all these areas. For example, 7% of youth did not have any family-related protective factors, such as having an adult in their family they could turn to for support, feeling connected to their family, having parents who monitored their free time, or spending the right amount of time with their family.

Youth who did not have any family-related protective factors were still less likely to have smoked and vaped if they had other protective factors in their life, such as at least one school-related protective factor (e.g., feeling connected to school or having a helpful adult in their school). For example, among youth with no family-related protective factors, 39% of those who had at least one school-related protective factor had vaped, compared to 44% who did not have any school-related protective factors.

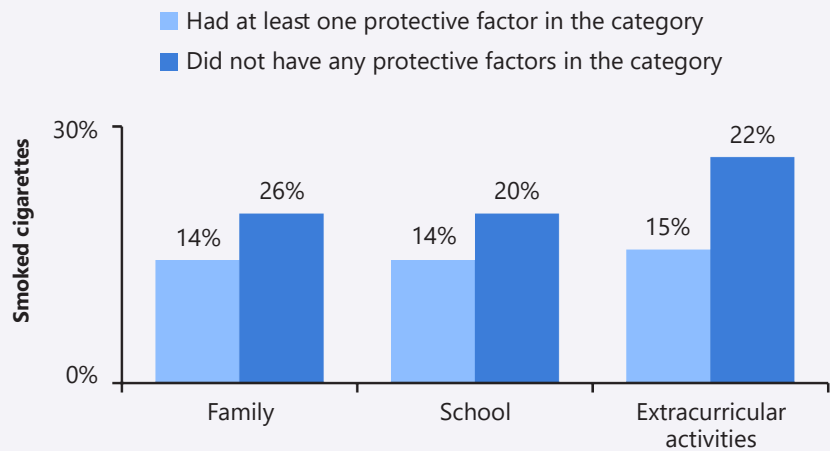
Also, youth with no family-related protective factors were less likely to have smoked cigarettes in the past month if they participated in weekly extracurricular activities and/or found their activities meaningful (16% vs. 23% of youth who did not have these protective factors), and if they had prosocial peers or felt they had the right amount of time to spend with their friends (14% vs. 26% who did not have these peer-related protective factors).

Similarly, youth who did not have peer-related protective factors were less likely to have vaped when they had protective factors at school (44% vs. 52% of those without school-related protective factors) or within their family (46% vs. 53%).

**Vaped in the past month
(among youth who had no family-related protective factors)**



**Smoked cigarettes in the past month in relation to different types of protective factors
(among youth who had no peer-related protective factors)**



Supporting youth who currently smoke and vape



Youth who took part in focus groups across BC unanimously suggested that to reduce vaping, it would be important to address the reasons that youth turn to vaping to manage their stress and mental health challenges.

"I don't think vaping's the problem. It's the symptom of the deeper problems that we are all dealing with."

"We need more access to counselling services."

When youth vaped to cope with stressful situations, they most commonly mentioned family problems (including parental divorce or financial difficulties) and problems with peers and peer pressure.

"Go outside and ask the vaping kids how many of their parents are still together and you'll maybe find two."

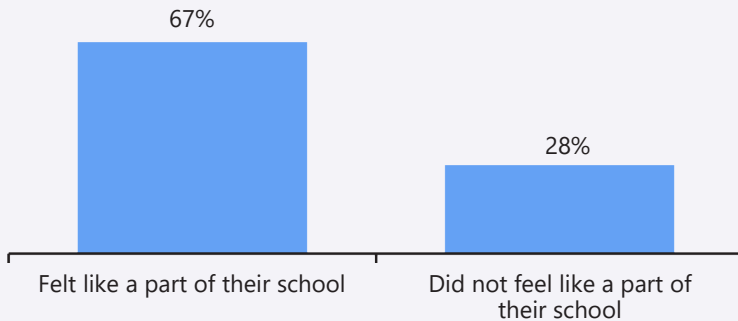
This report has highlighted some of the factors that can reduce the chances youth will start to smoke or be currently smoking or vaping. It has also shown that youth who are dealing with challenges in their life might be using these products as a way to cope with those challenges, and as such might not feel ready or able to cut down their use or quit.

This section briefly explores the protective factors which can support youth who are currently smoking or vaping to experience more positive health and well-being, and which are associated with a reduced likelihood they will become daily smokers.

Youth who had smoked or vaped recently experienced more positive mental health and well-being, and were more likely to have plans to finish high school or pursue post-secondary education when:

- They felt connected to their family, school, and community.
- Their parents (or guardians) knew what they were doing in their free time and online.
- School staff were supportive and helpful.
- The activities they engaged in were meaningful to them and they felt listened to and valued within those activities.
- They had an adult in their neighbourhood (outside their family or school) who cared about them.
- They had an adult outside their family they could turn to for support.
- They had an adult who helped them with tasks such as preparing for post-secondary or making appointments.
- They got enough time with their friends and on their own.
- They had friends and their friends were supportive.

**Youth who rated their mental health as good/excellent
(among youth who smoked in the past month)**



The more areas youth had protective factors in, the less likely they were to smoke or vape.

Youth who smoked in the past month were less likely to smoke daily when they had a supportive and caring environment around them. For example, they were less likely to smoke every day when they:

- Had a supportive adult in their family to turn to (12% vs. 15% of those without this support).
- Had at least one close friend in their school or neighbourhood (13% vs. 26%).
- Felt like a part of their school (8% vs. 21%).
- Felt their family respected them (11% vs. 20%).
- Had parents/guardians who usually knew what they were doing in their free time (12% vs. 17%).
- Felt they had the right amount of time to do the things they wanted on their own (11% vs. 15%), with their friends (11% vs. 16%), and with their family (10% vs. 18%).
- Felt like a part of their community (11% vs. 17% of those who did not feel connected).
- Felt listened to and valued in their activities (11% vs. 18%).
- Participated weekly in extracurricular activities such as informal sports (11% vs. 15% of those who took part less frequently or not at all); organized sports (9% vs. 15%); and dance, yoga or exercise classes (9% vs. 14%).

Conclusion

While the long-term health effects of smoking are well documented, those for vaping are not yet known. However, nicotine is known to be highly addictive and there are growing concerns that vaping may also have serious health implications.

This report has shown that over a quarter of youth have vaped in the past month and that more than 1 in 20 had both smoked and vaped during that time period. The data available through the BC AHS appears to show a link between adverse experiences, stress, risk taking, and the use of these products. There may also be other links which were not captured in the survey.

Despite sharing some common risk factors, there were some differences between smoking and vaping. For example, regular sports and exercise involvement increased the risk of vaping while it generally decreased the risk of smoking. However, the report has also shown that youth who feel safe, supported, and connected are less likely to smoke or vape. It has also highlighted the supports that may be effective for youth who are not yet ready or able to quit.

Advice from the BC Lung Association and other health specialists suggests some key ways we can support youth around vaping:

- Take opportunities to talk about vaping and other substances with youth.
- Be patient, open, and non-judgemental.
- Connect youth with other supportive adults and trusted health care providers who can talk to them about these substances.
- Be prepared to have an ongoing dialogue (rather than a single conversation) and return to the subject as often as needed.

The data from this report supports these recommendations and shows the role that supportive adults can play for youth who vape, as well as those who smoke.

The results also show the need to understand the similarities and differences between the two products, including in relation to sports and exercise, and to further explore this with young people.

Future research should consider the role of adults, including sports coaches and employers, and how these adults could be trained to support and educate youth about smoking, vaping, and how to access resources if they wish to quit.

Factors such as the effects of the coronavirus pandemic which began in 2020 may mean vaping and smoking rates have changed since the data was collected for this report. For this reason, McCreary is partnering with the BC Ministry of Health and with youth across BC to collect current data about vaping. To learn more about this project, visit www.mcs.bc.ca.

Resources

Posters using data from this report



Five regional posters sharing local smoking and vaping data

have been released to accompany this report. An infographic poster of the data about smoking, vaping and physical activity participation is also available. The posters can be found at www.mcs.bc.ca/download_resources.

Vaping and COVID survey

To gain a better understanding of youth vaping during the COVID-19 pandemic, youth aged 12–19 have an opportunity to complete an online survey. The survey asks about their experiences with vaping (including if they have never vaped). The third and final survey will be available in December 2020 and results will be published in early 2021. The link to the survey is available at www.mcs.bc.ca.

Presentations and workshops

McCreary staff are available to offer presentations and workshops for youth and adult audiences on a range of health topics including smoking and vaping. Email mccreary@mcs.bc.ca.

Clearing the Air: A youth-led research project about vaping



Over two days, youth discussed their views on vaping; generated ideas to support youth who vape and

to share the potential risks of vaping with their peers; analyzed data from the BC Adolescent Health Survey; and presented their findings and key messages to stakeholders.

Download the report and infographic poster at www.mcs.bc.ca/download_resources.

Youth Action Grants



The Youth Action Grants (YAG) were created by McCreary's Youth Advisory & Action Council (YAC).

The purpose of the YAGs is to provide BC youth (ages 12–19) from school districts that participated in the 2018 BC Adolescent Health Survey the opportunity to deliver a project to improve youth health in their school or community. Applications from youth wishing to address smoking, vaping, or other health topics are currently being accepted.

Learn more about the YAGs and download the application at www.mcs.bc.ca/youth_action_grants.

Additional resources

QUITNOW

QuitNow is BC's quit smoking service, funded by the government of British Columbia and delivered by the BC Lung Association. The service is available free-of-charge to all BC residents.

www.quitnow.ca

HEALTHLINKBC

HealthLinkBC has a number of resources for people wanting to quit nicotine-related products.

www.healthlinkbc.ca

Appendices

APPENDIX 1

Youth who had ever smoked tobacco by Health Authority				
	2003	2008	2013	2018
Northern (A)	43% ^{C,D,E}	34% ^{C,D,E}	31% ^{C,D,E}	28% ^{C,D,E}
Interior (B)	41% ^{C,D,E}	33% ^{C,D,E}	29% ^{C,D,E}	26% ^{D,E}
Vancouver Island (C)	36% ^{A,B,D,E}	28% ^{A,B,D,E}	24% ^{A,B,D,E}	24% ^{A,D,E}
Vancouver Coastal (D)	29% ^{A,B,C}	19% ^{A,B,C,E}	18% ^{A,B,C}	14% ^{A,B,C}
Fraser (E)	31% ^{A,B,C}	24% ^{A,B,C,D}	17% ^{A,B,C}	15% ^{A,B,C}

Note: Superscripts indicate Health Authority regions for which the percentage estimate was statistically different. For example, in 2018 Vancouver Island (C), Vancouver Coastal (D), and Fraser (E) youth were less likely than youth in the Northern (A) region to report having smoked tobacco. However, there were no statistically significant differences between the Northern (A) and Interior (B) regions.

Note: With regards to trends within each region, all differences between survey years were statistically significant with the exception of Vancouver Coastal where the difference between 2008 and 2013 was not statistically significant. In 2003 and 2008, the survey item asked about 'smoking a cigarette'. In 2013 and 2018, the survey item asked about 'smoking a cigarette, cigar or cigarillo'. It is not known how this change may affect trend comparisons.

APPENDIX 2

Youth who had ever smoked tobacco by Health Service Delivery Area (HSDA)			
	2008	2013	2018
Northern HSDAs			
Northwest	31%	33%	30%
Northeast	NA	33%	29%
Northern Interior	36% ^{13,18}	29% ⁰⁸	26% ⁰⁸
Interior HSDAs			
Thompson Cariboo Shuswap	35% ^{13,18}	27% ⁰⁸	28% ⁰⁸
Okanagan	29% ¹⁸	29% ¹⁸	24% ^{08,13}
Kootenay Boundary	38% ^{13,18}	32% ⁰⁸	29% ⁰⁸
East Kootenay	38% ^{13,18}	29% ⁰⁸	29% ⁰⁸
Vancouver Island HSDAs			
North Vancouver Island	32% ¹⁸	29%	27% ⁰⁸
Central Vancouver Island	30% ^{13,18}	25% ⁰⁸	26% ⁰⁸
South Vancouver Island	25% ^{13,18}	21% ⁰⁸	22% ⁰⁸
Vancouver Coastal HSDAs			
North Shore/Coast Garibaldi	25% ¹⁸	25% ¹⁸	22% ^{08,13}
Vancouver	16% ¹⁸	15% ¹⁸	12% ^{08,13}
Richmond	18% ^{13,18}	14% ^{08,18}	9% ^{08,13}
Fraser HSDAs			
Fraser North	25% ^{13,18}	17% ^{08,18}	14% ^{08,13}
Fraser South	23% ^{13,18}	17% ^{08,18}	13% ^{08,13}
Fraser East	NA	18%	19%

Note: Superscripts refer to the last two digits of the BC AHS survey year (i.e., 08 = 2008, 13 = 2013, and 18 = 2018), and indicate the years for which there were statistically significant differences. For example, 26% of youth in Northern Interior had smoked tobacco in 2018 and this was statistically different from the percentage in 2008. An absence of superscripts indicates there were no statistically significant differences. In 2008, the survey item asked about 'smoking a cigarette'. In 2013 and 2018, the survey item asked about 'smoking a cigarette, cigar or cigarillo'. It is not known how this change may affect trend comparisons.

Note: Vancouver HSDA used different consent procedures in 2008 to those used in 2013 and 2018. This may have led to under-reporting of tobacco use in 2008.

NA: No data or insufficient data available for this HSDA for this survey year.

APPENDIX 3

Youth who smoked tobacco in the past month (among those who had ever smoked tobacco)				
	2003	2008	2013	2018
Northern	36% ^{08,13,18}	46% ⁰³	48% ^{03,18}	43% ^{03,13}
Interior	39% ^{08,13,18}	48% ^{03,18}	51% ^{03,18}	44% ^{03,08,13}
Vancouver Island	37% ^{08,13,18}	47% ⁰³	50% ⁰³	48% ⁰³
Vancouver Coastal	39% ^{08,13}	45% ⁰³	47% ^{03,18}	41% ¹³
Fraser	38% ^{08,13,18}	43% ⁰³	46% ⁰³	44% ⁰³

Note: Superscripts refer to the last two digits of the BC AHS survey year (i.e., 03 = 2003, 08 = 2008, 13 = 2013, and 18 = 2018), and indicate the years for which there were statistically significant differences. For example, the 2018 BC AHS results indicated 43% of youth in the Northern region had smoked tobacco in the past month and this was statistically significantly different from the percentages in 2003 and 2013 (among those who had ever smoked tobacco). In 2003 and 2008, the survey item asked about smoking 'cigarettes'. In 2013 and 2018, the survey item asked about smoking 'a cigarette, cigar, or cigarillo'. It is not known how this change may affect trend comparisons.

APPENDIX 4

Youth who smoked tobacco daily in the past month (among those who had ever smoked tobacco)				
	2003	2008	2013	2018
Northern	11% ¹⁸	13% ^{13,18}	9% ⁰⁸	7% ^{03,08}
Interior	12% ¹⁸	12% ¹⁸	10% ¹⁸	6% ^{03,08,13}
Vancouver Island	10% ¹⁸	12% ^{13,18}	8% ⁰⁸	7% ^{03,08}
Vancouver Coastal	9% ^{13,18}	9% ^{13,18}	5% ^{03,08}	4% ^{03,08}
Fraser	9% ^{13,18}	9% ^{13,18}	5% ^{03,08}	5% ^{03,08}

Note: Superscripts refer to the last two digits of the BC AHS survey year (i.e., 03 = 2003, 08 = 2008, 13 = 2013, and 18 = 2018), and indicate the years for which there were statistically significant differences. For example, the 2018 BC AHS results indicated 7% of youth in the Northern region had smoked tobacco daily in the past month and this was statistically significantly different from the percentages in 2003 and 2008 (among those who had ever smoked tobacco). In 2003 and 2008, the survey item asked about smoking 'cigarettes'. In 2013 and 2018, the survey item asked about smoking 'a cigarette, cigar, or cigarillo'. It is not known how this change may affect trend comparisons.

APPENDIX 5

Youth who smoked daily in the past month by Health Service Delivery Area (HSDA) (among those who ever smoked tobacco)	
Northern	
Northwest (F)	6% ^H
Northeast (G)	6% ^H
Northern Interior (H)	9% ^{F,G}
Interior	
Thompson Cariboo Shuswap (I)	7% ^L
Okanagan (J)	5% ^L
Kootenay Boundary (K)	5% ^L
East Kootenay (L)	12% ^{I,J,K}
Vancouver Island	
North Vancouver Island (M)	8%
Central Vancouver Island (N)	7%
South Vancouver Island (O)	7%
Vancouver Coastal	
North Shore/Coast Garibaldi (P)	5%
Vancouver (Q)	4%
Richmond (R)	4%
Fraser	
Fraser North (S)	6%
Fraser South (T)	4%
Fraser East (U)	6%

Note: Superscripts indicate HSDAs for which the percentage estimate was statistically different. Differences between HSDAs are noted only for HSDAs within the same Health Authority. For example, in the North, youth in Northern Interior (H) were more likely than those in the Northwest (F) and Northeast (G) to smoke daily, but Northwest (F) and Northeast (G) were not statistically significantly different. An absence of superscripts indicates there were no statistically significant differences.

APPENDIX 6

Youth who smoked tobacco for two or more years by Health Authority (among those who smoked in the past month)	
Northern (A)	55% ^{C,E}
Interior (B)	51% ^E
Vancouver Island (C)	48% ^A
Vancouver Coastal (D)	51% ^E
Fraser (E)	44% ^{A,B,D}

Note: Superscripts indicate Health Authority regions for which the percentage estimate was statistically different. For example, Vancouver Island (C) and Fraser (E) youth were less likely than youth in the Northern (A) region to report having smoked tobacco for two or more years. However, there were no statistically significant differences between the Northern (A) and Interior (B) or Vancouver Coastal (D) regions.

APPENDIX 7

Youth who smoked tobacco for two or more years by Health Service Delivery Area (among those who smoked in the past month)	
Northern	
Northwest (F)	58% ^G
Northeast (G)	43% ^{F,H}
Northern Interior (H)	62% ^G
Interior	
Thompson Cariboo Shuswap (I)	55%
Okanagan (J)	46%
Kootenay Boundary (K)	56%
East Kootenay (L)	54%
Vancouver Island	
North Vancouver Island (M)	49%
Central Vancouver Island (N)	47%
South Vancouver Island (O)	48%
Vancouver Coastal	
North Shore/Coast Garibaldi (P)	55% ^R
Vancouver (Q)	49%
Richmond (R)	40% ^P
Fraser	
Fraser North (S)	43%
Fraser South (T)	43%
Fraser East (U)	48%

Note: Superscripts indicate HSDAs for which the percentage estimate was statistically different. Differences between HSDAs are noted only for HSDAs within the same Health Authority. For example, in the North, youth in the Northeast (G) were less likely than those in the Northwest (F) and Northern Interior (H) to have smoked tobacco for two or more years (among those who smoked in the past month), but Northwest (F) and Northern Interior (H) were not statistically significantly different. An absence of superscripts indicates there were no statistically significant differences.

APPENDIX 8

Youth who had vaped in the past month by Health Service Delivery Areas (HSDA)	
Northern	
Northwest (F)	39% ^G
Northeast (G)	24% ^{F,H}
Northern Interior (H)	35% ^G
Interior	
Thompson Cariboo Shuswap (I)	36%
Okanagan (J)	36%
Kootenay Boundary (K)	37%
East Kootenay (L)	36%
Vancouver Island	
North Vancouver Island (M)	34% ^O
Central Vancouver Island (N)	31%
South Vancouver Island (O)	27% ^M
Vancouver Coastal	
North Shore/Coast Garibaldi (P)	34% ^{Q,R}
Vancouver (Q)	18% ^P
Richmond (R)	18% ^P
Fraser	
Fraser North (S)	24%
Fraser South (T)	24% ^U
Fraser East (U)	28% ^T

Note: Superscripts indicate HSDAs for which the percentage estimate was statistically different. Differences between HSDAs are noted only for HSDAs within the same Health Authority. For example, in Vancouver Island, youth in North (M) were more likely than those in South (O) to vape, but North (M) and Central (N) were not statistically significantly different. An absence of superscripts indicates there were no statistically significant differences.

APPENDIX 9

Youth who vaped compared to smoked			
	Vaped in the past month	Ever smoked tobacco	Smoked in the past month (among those who had ever smoked tobacco)
British Columbia	27%	19%	44%
Health Authorities			
Northern	33%	28%	43%
Interior	36%	26%	44%
Vancouver Island	30%	24%	48%
Vancouver Coastal	23%	14%	41%
Fraser	24%	15%	44%
Health Service Delivery Areas			
Northwest	39%	30%	46%
Northeast	24%	29%	42%
Northern Interior	35%	26%	41%
Thompson Cariboo Shuswap	36%	28%	43%
Okanagan	36%	24%	42%
Kootenay Boundary	37%	29%	46%
East Kootenay	36%	29%	52%
North Vancouver Island	34%	27%	47%
Central Vancouver Island	31%	26%	48%
South Vancouver Island	27%	22%	49%
North Shore/Coast Garibaldi	34%	22%	44%
Vancouver	18%	12%	39%
Richmond	18%	9%	42%
Fraser North	24%	14%	45%
Fraser South	24%	13%	42%
Fraser East	28%	19%	45%

Note: All percentages for vaped in the past month were higher than for ever smoked tobacco, except for the Northeast where ever smoked was higher than vaped in the past month.

Note: Differences between smoking in the past month (among those who had ever smoked) and vaping in the past month (among all youth) were statistically significant for each region.

References

Bolded article used BC AHS data

- Aleyan, S., Cole, A., Qian, W., & Leatherdale, S. T. (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
- Aleyan, S., Gohari, M. R., Cole, A. G., & Leatherdale, S. T. (2019). Exploring the bi-directional association between tobacco and e-cigarette use among youth in Canada. *International Journal of Environmental and Public Health*, 16(21), 4256. doi:10.3390/ijerph16214256
- Azagba, S., & Asbridge, M. (2013). School connectedness and susceptibility to smoking among adolescents in Canada. *Nicotine & Tobacco Research: Official Journal of the Society for Research on Nicotine and Tobacco*, 15(8), 1458–1463. doi:10.1093/ntr/nts340
- Bae, S., Ye, R., Chen, S., Rivers, P. A., & Singh, K. P. (2005). Risky behaviors and factors associated with suicide attempt in adolescents. *Archives of Suicide Research*, 9(2), 193–202. doi:10.1080/13811110590904034
- Bookwala, A., Elton-Marshall, T., & Leatherdale, S. T. (2014). Factors associated with active commuting among a nationally representative sample of Canadian youth. *Canadian Journal of Public Health = Revue canadienne de sante publique*, 105(5), e348–e353. doi:10.17269/cjph.105.4139
- Braciszewski, J. M., & Colby, S. M. (2015). Tobacco use among foster youth: Evidence of health disparities. *Children and Youth Services Review*, 58, 142–145. doi:10.1016/j.childyouth.2015.09.017
- Carrieri, V., & Jones, A. (2016). Smoking for the poor and vaping for the rich? Distributional concerns for novel nicotine delivery systems. *Economics Letters*, Elsevier, 149, 71–74.
- Catchpole, R. E. H., McLeod, S. L., Brownlie, E. B., Allison, C. J., & Grewal, A. (2016). Cigarette smoking in youths with mental health and substance use problems: Prevalence, patterns, and potential for intervention. *Journal of Child and Adolescent Substance Abuse*, 26(1), 41–55. doi:10.1080/1067828X.2016.1184600
- Centers for Disease Control. (2020, January 23). Adult smoking cessation—The use of e-cigarettes. https://www.cdc.gov/tobacco/data_statistics/sgr/2020-smoking-cessation/fact-sheets/adult-smoking-cessation-e-cigarettes-use/
- Chagué, F., Guenancia, C., Gudjoncik, A., Moreau, D., Cottin, Y., & Zeller, M. (2015). Smokeless tobacco, sport and the heart. *Archives of Cardiovascular Disease*, 108(1), 75–83. doi:10.1016/j.acvd.2014.10.003
- Collins, L., Glasser, A. M., Abudayyeh, H., Pearson, J. L., & Villanti, A. C. (2019). E-cigarette marketing and communication: How e-cigarette companies market e-cigarettes and the public engages with e-cigarette information. *Nicotine & Tobacco Research*, 21(1), 14–24. doi:10.1093/ntr/ntx284
- Czoli, C. D., Hammond, D., Reid, J. L., Cole, A. G., & Leatherdale, S. T. (2015). Use of conventional and alternative tobacco and nicotine products among a sample of Canadian youth. *Journal of Adolescent Health*, 57(1), 123–125. doi:10.1016/j.jadohealth.2015.03.006
- Demissie, Z., Jones, S. E., Clayton, H. B., & King, B. A. (2017). Adolescent risk behaviors and use of electronic vapor products and cigarettes. *Pediatrics*, 139(2). doi:10.1542/peds.2016-2921
- Drovandi, A., Teague, P., Glass, B., & Malau-Aduli, B. (2019). A systematic review of the perceptions of adolescents on graphic health warnings and plain packaging of cigarettes. *Systematic Reviews*, 8(1), 1–15. doi:10.1186/s13643-018-0933-0
- Elton-Marshall, T., Wijesingha, R., Kennedy, R. D., & Hammond, D. (2018). Disparities in knowledge about the health effects of smoking among adolescents following the release of new pictorial health warning labels. *Preventative Medicine*, 111, 358–365. doi:10.1016/j.ypmed.2017.11.025
- Fish, J. N., Watson, R. J., Gahagan, J., Porta, C. M., Beaulieu-Prévost, D., & Russell, S. T. (2019). Smoking behaviours among heterosexual and sexual minority youth? Findings from 15 years of provincially representative data. *Drug and Alcohol Review*, 38(1), 101–110. doi:10.1111/dar.12880
- Ford, A., MacKintosh, A. M., Moodie, C., Kuipers, M. A., Hastings, G. B., & Bauld, L. (2020). Impact of a ban on the open display of tobacco products in retail outlets on never smoking youth in the UK: Findings from a repeat cross-sectional survey before, during and after implementation. *Tobacco Control*, 29(3), 282–288. doi:10.1136/tobaccocontrol-2018-054831

- Frohlich, K. L., Mykhalovskiy, E., Poland, B. D., Haines-Saah, R., & Johnson, J. (2012). Creating the socially marginalised youth smoker: The role of tobacco control. *Sociology of Health & Illness*, 34(7), 978–993. doi:10.1111/j.1467-9566.2011.01449.x
- Géczy, I., Saewyc, E. M., Poon, C. S., & Homma, Y. (2019). Health-risk behaviours and protective factors among adolescents in rural British Columbia. *The Journal of Rural Health*, 36(1). doi:10.1111/jrh.12389**
- Goldenson, N. I., Leventhal, A. M., Stone, M. D., McConnell, R. S., & Barrington-Trimis, J. L. (2017). Associations of electronic cigarette nicotine concentration with subsequent cigarette smoking and vaping levels in adolescents. *JAMA Pediatrics*, 171(12), 1192–1199. doi:10.1001/jamapediatrics.2017.3209
- Government of Canada. (2019). *Canadian student tobacco, alcohol and drugs survey*. <https://www.canada.ca/en/health-canada/services/canadian-student-tobacco-alcohol-drugs-survey.html>
- Government of Canada. (2020, June). <https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html>
- Grant, J. E., Lust, K., Fridberg, D. J., King, A. C., & Chamberlain, S. R. (2019). E-cigarette use (vaping) is associated with illicit drug use, mental health problems, and impulsivity in university students. *Annals of Clinical Psychiatry*, 31(1), 27–35.
- Hammond, D., Reid, J. L., Cole, A. G., & Leatherdale, S. T. (2017). Electronic cigarette use and smoking initiation among youth: A longitudinal cohort study. *CMAJ: Canadian Medical Association Journal*, 189(43), 1328–1336. doi:10.1503/cmaj.161002
- Hammond, D., Reid, J. L., Rynard, V. L., Fong, G. T., Cummings, K. M., McNeill, A., Hitchman, S., Thrasher, J. F., Goniewicz, M. L., Bansal-Travers, M., O'Connor, R., Levy, D., Borland, R., Gray, N., & White, C. M. (2019). Prevalence of vaping and smoking among adolescents in Canada, England, and the United States: Repeat national cross-sectional surveys. *British Medical Journal*, 365. doi:10.1136/bmj.l2219
- Healthwise. (2019, July 4). Teenage tobacco use. <https://www.healthlinkbc.ca/health-topics/uq2423>
- Huddleston, L., Pritchard, C., & Ratschen, E. (2016). Smoking and looked-after children: A mixed-methods study of policy, practice, and perceptions relating to tobacco use in residential units. *International Journal of Environmental Research and Public Health*, 13(6), 593. <https://doi.org/10.3390/ijerph13060593>
- Leatherdale, S. T., Rios, P., Elton-Marshall, T., & Burkhalter, R. (2011). Cigar, cigarillo, and little cigar use among Canadian youth: Are we underestimating the magnitude of this problem? *The Journal of Primary Prevention*, 32(3), 161–170. doi:10.1007/s10935-011-0248-6
- Lovato, C., Watts, A., Brown, K. S., Lee, D., Sabiston, C., Nykiforuk, C., Eyles, J., Manske, S., Campbell, H. S., & Thompson, M. (2013). School and community predictors of smoking: A longitudinal study of Canadian high schools. *American Journal of Public Health*, 103(2), 362–368. doi:10.2105/AJPH.2012.300922
- Lovato, C. Y., Zeisser, C., Campbell, H. S., Watts, A. W., Halpin, P., Thompson, M., Eyles, J., Adlaf, E., & Brown, K. S. (2010). Adolescent smoking: Effect of school and community characteristics. *American Journal of Preventive Medicine*, 39(6), 507–514. doi:10.1016/j.amepre.2010.08.019
- MacKinnon, N., & Colman, I. (2016). Factors associated with suicidal thought and help-seeking behaviour in transition-aged youth versus adults. *The Canadian Journal of Psychiatry*, 61(12), 789–796. doi:10.1177/0706743716667417
- Mehra, V. M., Keethakumar, A., Bohr, Y. M., Abdullah, P., & Tamim, H. (2019). The association between alcohol, marijuana, illegal drug use and current use of e-cigarette among youth and young adults in Canada: Results from Canadian Tobacco, Alcohol and Drugs Survey 2017. *BMC Public Health*, 19(1), 1208–10. doi:10.1186/s12889-019-7546-y
- Milicic, S., Piérard, E., DeCicca, P., & Leatherdale, S. T. (2019). Examining the association between physical activity, sedentary behavior and sport participation with e-cigarette use and smoking status in a large sample of Canadian youth. *Nicotine & Tobacco Research*, 21(3), 285–292. doi:10.1093/ntr/ntx238
- Minaker, L. M., Soni, S., Nguyen, N., & Manske, S. (2015). Youth retail tobacco access in Canada: Regional variation, perceptions, and predictors from YSS 2010/2011. *Addictive Behaviours*, 51, 1–6. doi:10.1016/j.addbeh.2015.06.047
- Okoli, C. T. C., Richardson, C. G., Ratner, P. A., & Johnson, J. L. (2009). Non-smoking youths' "perceived" addiction to tobacco is associated with their susceptibility to future smoking. *Addictive Behaviours*, 34(12), 1010–1016. doi:10.1016/j.addbeh.2009.06.010
- Perra, O., Fletcher, A., Bonell, C., Higgins, K., & McCrystal, P. (2012). School-related predictors of smoking, drinking and drug use: Evidence from the Belfast Youth Development Study. *Journal of Adolescence*, 35(2), 315–324. doi:10.1016/j.adolescence.2011.08.009
- Pisetsky, E. M., Chao, Y. M., Dierker, L. C., May, A. M., & Striegel-Moore, R. H. (2008). Disordered eating and substance use in high-school students: Results from the youth risk behavior surveillance system. *International Journal of Eating Disorders*, 41(5), 464–470. doi:10.1002/eat.20520

- Sabado, M. D., Haynie, D., Gilman, S. E., Simons-Morton, B., & Choi, K. (2017). High school cigarette smoking and post-secondary education enrollment: Longitudinal findings from the NEXT Generation Health Study. *Preventative Medicine, 105*, 250–256. doi: 10.1016/j.ypmed.2017.09.025
- Sawatzky, R., Ratner, P. A., Johnson, J. L., & Marshall, S. (2008). Toward an explanation of observed ethnic differences in youths' tobacco use. *Journal of Ethnicity in Substance Abuse, 6*(3-4), 95–112. doi:10.1300/J233v06n03_04
- Schneider, S. & Diehl, K. (2015). Vaping as a catalyst for smoking? An initial model on the initiation of electronic cigarette use and the transition to tobacco smoking among adolescents. *Nicotine & Tobacco Research*. doi:10.1093/ntr/ntv193
- Shang, C., Huang, J., Li, Q., & Chaloupka, F. J. (2015). The association between point-of-sale advertising bans and youth experimental smoking: Findings from the global youth tobacco survey (GYTS). *AIMS Public Health, 2*(4), 832–843. doi:10.3934/publichealth.2015.4.832
- Simon, P., Camenga, D. R., Morean, M. E., Kong, G., Bold, K. W., Cavallo, D. A., & Krishnan-Sarin, S. (2018). Socioeconomic status and adolescent e-cigarette use: The mediating role of e-cigarette advertisement exposure. *Preventive Medicine, 112*, 193–198. doi:10.1016/j.ypmed.2018.04.019
- Shiplo, S., Czoli, C. D., & Hammond, D. (2015). E-cigarette use in Canada: Prevalence and patterns of use in a regulated market. *BMJ Open, 5*(8), e007971 doi:10.1136/bmjopen-2015-007971
- Thompson, S. J. (2004). Risk/protective factors associated with substance use among runaway/homeless youth utilizing emergency shelter services nationwide. *Substance Abuse, 25*(3), 13–26. doi:10.1300/J465v25n02_02
- Wenzel, S. L., Tucker, J. S., Golinelli, D., Green Jr., H. D., & Zhou, A. (2010). Personal network correlates of alcohol, cigarette, and marijuana use among homeless youth. *Drug and Alcohol Dependence, 112*(1), 140–149. doi:10.1016/j.drugalcdep.2010.06.004
- Wills, T.A. (2017). E-cigarettes and adolescents' risk status. *Pediatrics, 139*(2). doi:10.1542/peds.2016-3736
- Yang, W. S., Leatherdale, S. T., & Ahmed, R. (2011). Smoking susceptibility among never-smokers: Data from the 2006–07 National Youth Smoking Survey. *Canadian Journal of Public Health, 102*(4), 254–257. doi:10.1007/BF03404043
- Youth Researchers. (2019). *Clearing the Air: A youth-led research project about vaping*. Vancouver: McCreary Centre Society.**

Index

- Abuse, 4, 30, **45**
- Access to information and health services, 54, 58, **59**, 60, 62, 64
- Addictions, 4, 32, **40**, 59
- Age, **11**–12, 15–18, 20–21, 23, 25, 29, 33, 36
- Age first smoked, **11**
- Appendices, **66–71**
- Background, **6–7**
- Bereavement, 4, 30, **46**
- Binge drink, 29
- Bullying, **44–45**
- Canadian-born youth, 13, 15–18, 27, 46
- Conclusion, **64**
- Connection
 - Community, 5, **53**, 57, 60, 62–63
 - Culture, 5, **57**
 - Family, 5, 9, **49–50**, 53, 60–64
 - Land/Nature, 5, **53**
 - School, 5, 9, 32, **52–53**, 60–64
- Cyberbullying, **45**
- Different types of protective factors, 5, **60–61**
- Disabilities, 8, 34
- Discrimination, 4, **44–45**
- Eating disordered behaviour
 - Purged, **40**
- Employment and disposable income, 15, **46**, 64
- Exercise, 5, **47–48**, **56**, 63–64
- Extracurricular activities, 5, 44, **57**, 60–61, 63–64
- Extreme sports, 5, 9, 17, **47–48**
- Family background
 - African, 17
 - Australian/Pacific Islander, 17
 - East Asian, 13, 16–17, 27
 - European, 13, 16–18, 27
 - Indigenous, 17, 27
 - Latin/Central/South American, 27
 - South Asian, 13, 17, 27
 - West Asian, 17–18
- Feeling skilled and confident, **58**
- Gambling, **40**
- Gender identity
 - Female, 5, 8, 10–11, 13, 15–17, 19, 21, 23, 27, 30–32, 34, 37–38, 44–53, 57–58
 - Male, 8, 10, 13, 15–17, 19, 21, 23, 27, 30–31, 34, 37, 44–53, 57
 - Non-binary, 8–11, 16, 21, 23, 31, 50
- Glossary, **9**
- Government care, 4, 9, **30–31**
- Health Authorities
 - Fraser, 4, 9, 12, 13, 15–18, 20, 26, 28, **66–71**
 - Interior, 4, 9, 12, 15–17, 20, 26, 28, **66–71**
 - Northern, 4, 9, 12–13, 15, 17, 20, 26, 28, **66–71**
 - Vancouver Coastal, 4, 9, 12–13, 15–17, 20, 26, 28, **66–71**
 - Vancouver Island, 4, 9, 12, 15, 17–18, 20, 26, 28, **66–71**
- Health challenges
 - Health conditions, **34**
- Health risk behaviours, 4, **29–30**, 55
- Health Service Delivery Areas (HSDAs), 9, 12, 20, 22, 26, 28, **67**, **69–70**
- Housing instability, 4, 30–31
- Immigration
 - Immigrant youth, **13**, 15–18, **27**, 46
 - Length of time in Canada, 13, 15, 27
- Informal sports, 9, 17, **47–48**, **56**, 63
- International students, 13, 15, 27
- Introduction, **6–9**
- Key findings, **4–5**
- Language, 13
- Meaningful engagement, 5, 9, **57**, 61–63
- Mental health challenges, 4, 24, 30, **36**, **39**, 62–63
- Mental health conditions, 24, 36, **39**, 58
- Mental health ratings, **36**, 63
- Nicotine-related products
 - Chewing tobacco, 9, 14–15, **17–18**, 20, 22–24, 39–40, 48

- Cigarettes, 4, 6, 8–9, 13–**15**, 16–18, 20, 22–25, 27–29, 31, 39–40, 43, 48, 60–61, 68
- Cigars/cigarillos, 9–10, 14–**16**, 17–18, 20, 22–24, 39–40, 48
- Hookah, 9, 14–15, **18**, 20, 22–24, 39–40, 48
- Multiple products, 14, 18, 22
- Vape pen/stick, 4–10, 14–15, 18, 20, 22–24, **25–27**, 28–64
- Organized sports, 9, **47–48**, **56**, 63
- Overdose, 46
- Peer relationships, 5, 37–38, **55**, 61–63
- Perseverance, **58**
- Physical abuse, **45**
- Physical health, 4, 6–7, **34**
- Positive family relationships
 - Parental monitoring, **51**, 61–63
 - Supportive adult in family, **50**, 54, 61, 63–64
 - Time with family, **51**, 61, 63
- Poverty and deprivation, 4, 30, **43–44**
- Product to quit smoking, 20, **23–24**, 58–59, 62, 64
- Protective factors, 5, 7, **49–63**
- References, **72–74**
- Refugees, 13, 27
- Regional differences, 4, **12–13**, 15–18, 20, 22–23, **26**, 28, **66–71**
- Resources, **65**
- Risk factors, 4–7, 29, **30–48**, 56, 64
- Rural or rural-based, 4, 9, 12, 15–18, 20, 23, 26
- School
 - Commute, **32**
 - School plans, 32–33, **62**
 - Not expecting to graduate, **33**
 - Skiping classes, 4, 29, **33**
- Second-hand smoke, **48**
- Self-harm, 5, **38**
- Sexual abuse, 4, **45**
- Sexual orientation, **10**, 25
- Skills and resiliency, **58**
- Sleep, **35**
- Smoking
 - Length of time youth smoked, **21–22**, 69–70
 - Smoked daily, 5–7, 9, 13, **20**, 22, 31, 36, 40–42, 46–47, 56, 62–63, 68–69
 - Smoked recently (in the past month), 4, 7, 9, 13, **19–22**, 23–24, 29–31, 33–34, 36–41, 43–44, 46–47, 49, 51, 53–58, 63, 69–71
 - Smoked tobacco (ever), 4, 7, 9, **10–13**, 19–20, 28–30, 38, 40–42, 44, 50–51, 53, 57–58, 66–68, 71
- Sports, 5, 9, 17, **47–48**, 54, **56–57**, 63–64
- Stress and despair, 32, **37**, 47, 58, 62, 64
- Substance use
 - Alcohol, 29–30, 40–**41**, 42, 49, 52, 55
 - Cannabis, 41, **42**, 49, 55
 - Negative consequences, 29
- Suicide thoughts and attempts, 5, **38**, 46
- Supporting youth,
 - Currently smoke and vape, **62–63**
 - Lack protective factors in one area, 5, 7, **61**
- Supportive adults, 5, 50, **54**, 61–64
- Supportive adults outside family, 5, **54**, **62**, 64
- Survey (BC Adolescent Health)
 - About the analyses, **7**
 - Limitations, **8**
- Time on their own, **58**, 62–63
- Tobacco (see smoking)
 - Tobacco use and vaping, **28–29**
- Unwanted sexual activity, 29
- Urban or urban-based, 4, 9, 12, 15–18, 20, 23, 26
- Vaping
 - Vaped/vaped recently, 4–10, 14–15, 18, 20, 22–24, **25–27**, 28–64
- Violence, 4, 30, **44–45**
- Youth comments
 - 2018 BC AHS, 10–11, 16, 19, 23–25, 28, 33, 35, 37, 47, 52, 59
 - Vaping focus groups, 25, 28, 32, 34, 36–37, 47, 55, 58–59, 62

