



**Tobacco Use Among High School Students in Contra Costa County:
Findings from the 2019–20 California Student Tobacco Survey**

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INTRODUCTION

Located in the northern portion of the East Bay region of the San Francisco Bay, Contra Costa County is primarily suburban. Its approximately 1.2 million residents represent about 3% of the state's population.¹ The county has a rich culture with diverse racial/ethnic groups. The three largest racial/ethnic groups in the County are White (42.7%), Hispanic or Latino (26.0%), and Asian (18.3%).¹

More than one-fifth (22.4%) of Contra Costa County's population is under the age of 18. In the 2019–2020 school year, 99,266 students enrolled in grades 6-12 were attending 160 schools from 19 districts.² The racial/ethnic composition of these students is also diverse, but distributed differently than the County as a whole, with the three largest racial/ethnic groups being: Hispanic or Latino (36.9%), White (30.8%), and Asian (15.9%).² The racial/ethnic composition of youth can foreshadow the County's racial/ethnic distribution in the future.

This report presents the main results from a school-based survey: the 2019–2020 California Student Tobacco Survey (CSTS). It reports findings from the 2019–20 CSTS that are specific to Contra Costa County and is intended to serve a broad spectrum of the County's tobacco-control community. It aims to facilitate the understanding of adolescent tobacco use behavior in the current, rapidly changing tobacco landscape—wherein the use of cigarettes, vapes, and their co-use with marijuana is in flux. The findings presented in this report can assist the development of tobacco-control interventions to reduce tobacco use and secondhand exposure among youth in Contra Costa County.

EXECUTIVE SUMMARY

This report summarizes the main findings from the 2019–20 California Student Tobacco Survey (CSTS) for Contra Costa County. The survey was administered to 8th, 10th, and 12th grade students from September 2019 to March 2020. Schools were randomly selected within Contra Costa County. Survey administration was planned to end in April 2020 but ended in March 2020 as schools across the state began to close due to the COVID-19 pandemic. While closures occurred on different dates, most schools closed between March 13-18, 2020.³ Despite school closures, administration of the survey was considered complete as the majority of schools sampled for the survey had completed it prior to the closures. Throughout the 2019–20 academic year, 4,587 students from 9 schools (7 high and 2 middle) in Contra Costa County participated in the survey. The survey was administered online during the school day at each of the schools by the University of California San Diego (UC San Diego).

The survey was designed to assess the use of, knowledge of, and attitudes towards cigarettes and other tobacco products, including vapes, little cigars or cigarillos (LCC), big cigars, hookah, smokeless tobacco, and heated tobacco products (HTP). The survey included questions that assessed the use of each tobacco product, the use of flavors, perceptions of vaping and smoking, social and environmental exposure to products, access to vapes, and factors known to be associated with use. Marijuana was also included in the survey since the co-use of marijuana and tobacco products is common, and potentially of concern given the intersection of vaping nicotine and vaping marijuana.

This report focuses on high school students (10th and 12th graders; 4,086 students). Key results for 8th graders (501 students), who were sampled separately from 10th and 12th graders, are presented in Appendix A.

Key Findings

Tobacco Use Behavior

- In 2019–20, 32.5% of high school students in Contra Costa County had ever used a tobacco product and 14.3% had used tobacco in the last 30 days.
- The current cigarette smoking prevalence in Contra Costa reached a historical low, as only 1.3% of students reported smoking in the last 30 days.
- The use of all other combustible tobacco products among high school students was also very low. In 2019–20, the prevalence of current use was 2.7%, 0.8%, and 0.7%, for LCC, hookah, and big cigars, respectively.
- Vapes were the most popular tobacco product, with 28.9% of high school students having ever used them and 12.8% being current users.
- Use of multiple tobacco products was common, representing about one-quarter (24.5%) of all current users.

- Students who rated their mental health as poor had over twice the current tobacco use prevalence (25.6%) compared to those who rated their mental health as good to excellent (11.1%).
- More than half of vapers were infrequent users: 54.2% of current vapers reported using vapes on either 1-2 days or 3-5 days in the last 30 days. Less than one in four (23.7%) current vapers used vapes on 20 or more days of the last 30 days.
- The vast majority (92.0%) of current tobacco users reported using a flavored tobacco product, with the highest use of flavored products being among vapers (95.8%). Two in five (40.6%) current cigarette smokers reported using menthol cigarettes. Flavored tobacco product use was high across all genders, races/ethnicities, and grades. *Fruit* (56.3%) and *mint* (28.8%) were the most frequently reported flavors used by vapers.

Perceptions of Vaping and Smoking

- The majority of students (89.2%) believed that the reason people their age used vapes with nicotine or just flavoring was because their friends did.
- Almost all students believed adults who were important to them would feel negatively about the student vaping (97.0%) and smoking cigarettes (97.4%).
- While most students believed that their close friends and other students at school viewed smoking negatively (94.1% and 85.2%, respectively), fewer students believed vaping was viewed negatively by close friends and other students (71.9% and 34.6%, respectively).

Secondhand Exposure and Other Environmental Influences

- Most high school students in Contra Costa County reported having a complete home ban on vaping (87.6%) and tobacco smoking (88.4%).
- Despite high rates of home bans, the rate of exposure to secondhand vapor was still high: more than one-third of students were exposed to secondhand vapor in a room (38.1%) in the last 2 weeks. The rate of exposure to secondhand tobacco smoke in a room (7.9%) was lower.
- Less than one-third of students reported that their parent or guardian had talked with them about the risks of vape (32.7%) and cigarette use (21.5%) in the last 30 days.
- A substantial percentage of students were exposed to advertisements related to vapes (73.6%) and cigarettes (51.7%) in the last 30 days, with greater percentages of students perceiving the ads to be discouraging rather than promoting the use of the products.

Access to Vapes

- Among current vapers, half (50.0%) reported not paying for their vapes and half (50.0%) reported paying for them.
- Out of those who did not pay for their vapes, more than half (59.7%) reported being given vapes. Out of those who paid for their vapes, 42.1% bought vapes from someone and 26.0% bought vapes from a store.

- Among current vapers who reported buying vapes from a store, *tobacco or smoke shops* (48.7%) and *vape shops* (34.5%) were the most popular store types for purchasing vapes.
- More than one-third (36.2%) of all students reported being offered a vape in the last 30 days, with almost a quarter (24.2%) of those who had never used vapes having been offered one.

Marijuana Use and Tobacco Co-Use

- One-third (33.1%) of high school students in Contra Costa County reported having tried marijuana, while 18.4% reported using it in the last 30 days.
- More than half of current marijuana users (55.4%) co-used marijuana with at least one tobacco product.

LIST OF TERMS

Tobacco Products and Marijuana

Vapes: Electronic devices like vape pens, e-cigarettes, e-hookah, hookah pens, e-vaporizers, tanks, pods, or mods used to inhale a vapor. Can be used to vape many things, like nicotine, marijuana, or just flavoring. Popular brands are Juul, Suorin, SMOK, Starbuzz E-Hookah, Zodiac Constellation, Stiiizy, Brass Knuckles, and Heavy Hitters. Questions about hookah pens were asked separately to ensure that students who reported using a hookah pen, but not a vape were captured. For prevalence estimates in this report, vape use included students who reported vaping or using a hookah pen with nicotine or just flavoring (not vaping marijuana).

Cigarettes: Sold in packs and cartons. Popular brands include Marlboro, Newport, Pall Mall, Camel, and Winston.

Little cigars or cigarillos (LCC): Tobacco wrapped in tobacco leaf or brown paper, about the size of a cigarette. May be flavored. Popular brands are Swisher Sweets, Backwoods, Dutch Masters, Captain Black, Prime Time, White Owl, and Black & Mild. Little cigars or cigarillos were abbreviated to LCC throughout this report.

Big cigars: Tobacco wrapped in a tobacco leaf, much larger than LCC. Popular brands are Romeo Y Julieta, Cohiba, Davidoff, and Ashton.

Hookah: Water pipe used to smoke tobacco (shisha) or something else. Popular brands are Starbuzz, Al Fakher, Samba, Fumari, Nakhla, and Social Smoke.

Smokeless tobacco (chew, dip, snuff, or snus): Loose leaf or ground tobacco leaves. It comes in a large pouch (bag) or in tins. Popular brands are Red Man, Copenhagen, Grizzly, Skoal, Swedish Match, and Klondike. Snus comes in a small pouch (like a tea bag). Popular brands are General, Marlboro, and Camel. Smokeless tobacco was abbreviated to smokeless throughout this report.

Heated tobacco products (HTP; also known as heat-not-burn tobacco products): Tobacco in the form of heat-sticks or capsules that is heated, instead of being combusted or burned, using an electronic device. These are different from vapes because they include tobacco. Popular brands include IQOS, glo, and Ploom Tech. For prevalence estimates in this report, HTP use was limited to students who reported the use of a known HTP brand because of 1) the possible confusion among respondents in differentiating HTP from vapes; and 2) the limited and identifiable number of HTP brands at the time of survey administration. Heated tobacco products were abbreviated to HTP throughout this report.

Marijuana (including joints, blunts, vapes, and edibles): Commonly known as cannabis, weed, pot, hash, grass, THC, or CBD. It can be smoked (joint, blunt, bong), vaped, eaten (baked goods, candies), drank (tea, cola, alcohol), or dabbed. For prevalence estimates in this report, marijuana use included students who reported using marijuana in any of these ways. It also included those who reported using marijuana “in some other way.”

Product Use

Ever use: Used within a lifetime.

Current use: Used within the last 30 days.

Poly use: Used two or more tobacco products within the last 30 days.

Flavored tobacco product use: Used a flavored tobacco product within the last 30 days

Mint/menthol flavored product use: Used any menthol-flavored cigarettes (the only flavor available for cigarettes) or used mint flavor most often when using any other flavored tobacco product within the last 30 days.

Co-use: Used marijuana and at least one tobacco product within the last 30 days. For this report, co-use was not limited to the simultaneous use of products.

Never user: A student who reported never using the tobacco product(s).

Former user: A student who reported ever using the tobacco product(s), but not within the last 30 days (this included those who had quit using).

Current user: A student who reported using the tobacco product(s) within the last 30 days.

Other Terms

Identified in another way: Respondents who reported their gender identity as:

- *female-to-male (FTM)/transgender male/trans man;*
- *male-to-female (MTF)/transgender female/trans woman;*
- *genderqueer, neither exclusively male nor female; or*
- *additional gender category or other.*

Sexual and/or gender minority (SGM): Respondents who were categorized as identifying their gender in another way (see above definition) and/or reported their sexual orientation as:

- *lesbian, gay, or homosexual;*
- *bisexual;*
- *something else; or*
- *did not know their sexual orientation.*

Non-SGM: Respondents who reported:

- their gender identity as *male / female;* and
- their sexual orientation as *straight or heterosexual.*

Unclear SGM status: Respondents who did not provide enough information about their gender identity and/or sexual orientation to classify their SGM status. This included those who:

- identified as binary (*male / female*) / chose not to disclose their gender identity, and did not know / chose not to disclose their sexual orientation; or

- chose not to disclose their gender identity, and identified their sexual orientation as *straight or heterosexual*.

Hispanic: Responded *yes* to the ethnicity question: “Are you of Spanish or Hispanic (Latino or Latina) origin?”, regardless of race(s) reported.

Non-Hispanic single race (American Indian or Alaska Native [AI/AN]; Asian; African American/Black; Native Hawaiian or Other Pacific Islander [NHOPI]; White): Responded *no* to the ethnicity question (see above definition) and reported one of the following races: *American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; or White*, when asked “How do you describe yourself?”

Multiple race: Responded *no* to the ethnicity question and reported two or more races.

Other race: Responded *no* to the ethnicity question and reported Other race. Non-Hispanic AI/AN and NHOPI were also categorized as Other race due to the small sample sizes.

Complete home ban on vaping: Indicated that *vaping is not allowed anywhere or at any time inside my home* when asked about the rules about vaping inside their home.

Complete home ban on tobacco smoking: Indicated that *tobacco smoking is not allowed anywhere or at any time inside my home* when asked about the rules about smoking cigarettes or other tobacco products inside their home.

Exposure to secondhand vapor in a room: Indicated being in a room *when someone was using a vape* in the last 2 weeks.

Exposure to secondhand vapor in a car: Indicated being in a car *when someone was using a vape* in the last 2 weeks.

Exposure to secondhand tobacco smoke in a room: Indicated being in a room *when someone was smoking a cigarette, little cigar, or cigarillo* in the last 2 weeks.

Exposure to secondhand tobacco smoke in a car: Indicated being in a car *when someone was smoking a cigarette, little cigar, or cigarillo* in the last 2 weeks.

Offers of tobacco products: Responded *yes* to the question: “In the last 30 days, has anyone offered you” tobacco products (vapes).

Exposure to tobacco ads: Indicated having seen ads that either promoted or discouraged the use of a tobacco product (vapes or cigarettes) in the last 30 days.

A Word of Caution on Interpreting Rates and Proportions

All estimates of rates and proportions should be interpreted in reference to their 95% confidence intervals. Although estimates are roughly the median of this interval, the range of the confidence interval is the best descriptive measure for statistical accuracy. Therefore, estimates with wide confidence intervals should be interpreted with caution. Data that are statistically unreliable because the coefficient of variation (also known as relative variance) is greater than 30% are marked with a dagger symbol (†) in the tables. Please pay special attention when estimates are based on small sample sizes.

CHAPTER 1 – Tobacco Use Behavior

Highlights

- Among high school students in Contra Costa County, 32.5% had ever used a tobacco product in their lifetime, with 14.3% classified as current users (i.e., used in the last 30 days).
- Vapes were the most popular tobacco product, with 28.9% of students having ever used them and 12.8% being current users.
- Only 5.2% of students reported having ever smoked cigarettes and 1.3% were classified as current smokers.
- Current use of all other tobacco products was low (less than 3%).
- More than half of current vapers (54.2%) reported using vapes infrequently (on 1-2 or 3-5 days in the last 30 days).
- About one-quarter of current tobacco users (24.5%) reported using more than one tobacco product.
- Students who rated their mental health as poor had more than twice the rate of current tobacco use (25.6%) compared to those who rated their mental health as good to excellent (11.1%).

Tobacco Product Categories

Since the previous survey in 2017–18, e-cigarette devices and the language used to refer to these devices changed rapidly. To increase the validity of these questions, the term “e-cigarette” was replaced with “vape” in the 2019–20 CSTS. The accompanying image and definition of vapes were also updated to include common devices and brands. Since these devices can be used to vape different substances, the survey included separate questions on vaping nicotine, marijuana, and just flavoring (i.e., without nicotine or marijuana) to determine prevalence estimates. Some questions asked about vapes more generally (e.g., questions about perceptions, exposure to secondhand vapor). Questions about hookah pens were asked separately to ensure that students who reported using a hookah pen, but not a vape were captured. For the prevalence estimates included in this report, vape use included students who reported vaping or using a hookah pen with nicotine or just flavoring. Due to the changes to this measure, vape data presented in this report are not directly comparable to e-cigarette data from earlier CSTS cycles.

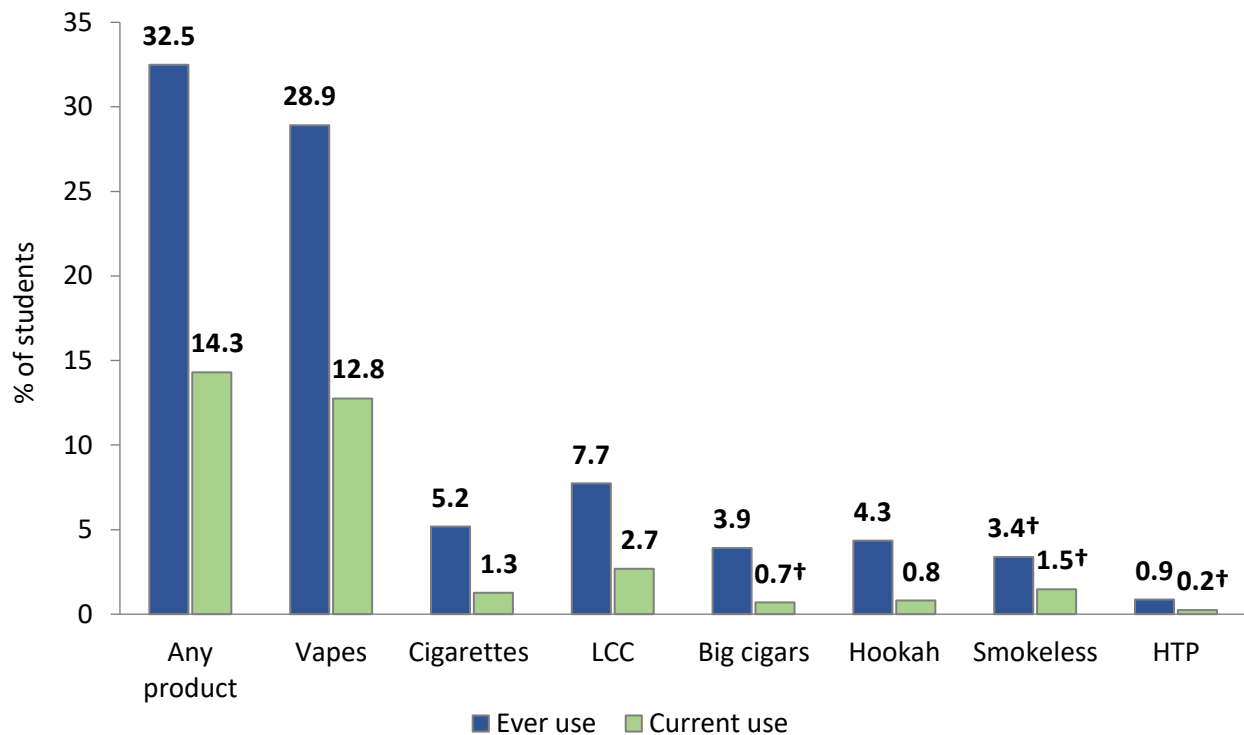
Heated tobacco products (HTP), new to the U.S. market in 2019, were included in the 2019–20 CSTS for the first time. Only those users who reported the use of a known HTP brand were defined as HTP users because of 1) the possible confusion among respondents in differentiating HTP from vapes; and 2) the limited and identifiable number of HTP brands at the time of survey administration.

Tobacco Product Use Among High School Students

Figure 1 presents ever and current use of tobacco products among high school students. *Ever use* is defined as use within a lifetime and *current use* is defined as use within the last 30 days. In Contra Costa County, 32.5% of high school students had used any tobacco product in their lifetime, while 14.3% reported currently using a tobacco product. In both cases, the majority of use was attributed to vapes, with 28.9% and 12.8% of students reporting ever and currently using the product, respectively. By contrast, only 5.2% of students had ever tried cigarettes and 1.3% reported currently smoking cigarettes. The current use rate for all other tobacco products (LCC, big cigars, hookah, smokeless tobacco, and HTP) were each less than 3%.

Due to the low prevalence of use for all tobacco products besides vapes and the resulting instability of estimates, subgroup analyses in this report were limited. Specifically, HTP was not reported in subgroup analyses and, in some cases, only vape data were reported. However, HTP use was included in the overall estimates of tobacco use.

Figure 1. Prevalence of ever and current use of tobacco products among high school students



Note: Refer to Table A in Appendix C – Supplementary Tables to view estimates with confidence intervals.

Abbreviations: LCC = little cigars or cigarillos; HTP = heated tobacco products.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Demographic Categories

For race/ethnicity, survey participants were first grouped by whether they were of Spanish or Hispanic (Latino) origin (ethnicity). Those classified as *non-Hispanic* were further divided into

specific races with which they identified. If respondents selected more than one race, they were classified as *Multiple* race. There was also an option for *Other* race. Due to the small sample sizes for some of the racial/ethnic groups in the survey, *Native Hawaiian or other Pacific Islander*, *American Indian or Alaska Native*, and non-standard entries were all combined in the *Other* category in this report.

For the question on gender, the following response options were provided in addition to *male* and *female*: *female-to-male (FTM)/transgender male/trans man*; *male-to-female (MTF)/transgender female/trans woman*; *genderqueer, neither exclusively male nor female*; and *additional gender category or other*. Students could also select *choose not to disclose*. For this report, response options other than *male*, *female*, and *choose not to disclose* were combined and classified as *identified in another way* due to the small sample sizes. Approximately 2.8% of participating students in Contra Costa County indicated that they identified their gender in a way other than *male* or *female*, and 2.1% declined to answer the gender-identity question.

It should be noted that the previous, 2017–18 CSTS included an option for *I prefer not to answer* throughout the survey, with the percentages of students endorsing this option varying considerably. In the 2019–20 CSTS, this response option was removed from all questions except those asking about students' gender identity and sexual orientation. As a result, data on demographic subgroups presented in this report are not directly comparable to those from the 2017–18 CSTS.

Prevalence of Tobacco Use by Demographics

Tobacco use among high school students in Contra Costa County was examined across participant demographics. Table 1 shows that the overall tobacco use behavior between male and female students was similar, with 12.6% of males and 14.9% of females reporting current use. Students who identified their gender in another way tended to have higher rates of tobacco use, while students who declined to answer had similar tobacco use rates relative to male and female students.

By racial/ethnic demographics, students who were White, Multiple, and Other race/ethnicity reported the highest current tobacco use rates (16.6%, 16.0%, and 17.4%, respectively). Asian students reported the lowest current use rate (6.6%). Not surprisingly, tobacco use tended to be higher among 12th graders compared to 10th graders.

Table 1. Prevalence of tobacco use by gender, race/ethnicity, and grade among high school students

	N	Ever use % (95% CI)	Current use % (95% CI)
Overall	4086	32.5 (27.7-37.3)	14.3 (10.8-17.8)
Gender			
Male	1842	30.0 (25.9-34.0)	12.6 (9.8-15.5)
Female	2006	33.8 (28.0-39.6)	14.9 (10.6-19.1)
Identified in Another Way	114	42.9 (38.1-47.6)	23.8 (21.0-26.6)
Declined to Answer	84	29.5 (23.3-35.8)	13.6 (4.2-23.0)†
Race/Ethnicity			
White	1541	35.7 (30.0-41.4)	16.6 (12.3-20.9)
African American/Black	199	25.1 (19.3-30.8)	11.0 (6.7-15.4)
Hispanic	1057	33.7 (28.7-38.8)	13.3 (10.1-16.5)
Asian	567	18.0 (11.4-24.6)	6.6 (4.1-9.0)
Other	160	40.4 (32.1-48.7)	17.4 (12.4-22.3)
Multiple	514	34.2 (29.3-39.1)	16.0 (10.9-21.2)
Grade			
Grade 10	2332	26.1 (21.9-30.2)	12.1 (9.3-14.9)
Grade 12	1754	39.6 (32.8-46.3)	16.8 (12.2-21.3)

Note: With the exception of Hispanic, all ethnicities are classified as Non-Hispanic. Race/Ethnicity category Other includes Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and non-standard entries.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Use of Specific Tobacco Products by Demographics

Table 2 shows the use of specific tobacco products, in addition to the rate of overall tobacco use, by gender among high school students. Gender differences were evident in the use of specific tobacco products. For example, males tended to have higher rates of current use than females for all tobacco products besides vapes. Those who identified their gender in another way tended to report the highest rates of use for all tobacco products.

Table 2. Prevalence of current tobacco product use by gender among high school students

	Male	Female	Identified in Another Way	Declined to Answer
	N=1842	N=2006	N=114	N=84
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Any of the below	12.6 (9.8-15.5)	14.9 (10.6-19.1)	23.8 (21.0-26.6)	13.6 (4.2-23.0)†
Vapes	11.1 (8.2-14.0)	13.8 (8.9-18.6)	16.4 (11.7-21.0)	12.4 (4.3-20.6)†
Cigarettes	1.8 (1.3-2.3)	0.7 (0.2-1.3)†	3.3 (0.4-6.1)†	0.0
LCC	3.2 (2.2-4.1)	1.7 (0.8-2.6)	8.7 (5.2-12.2)	3.5 (0.4-6.6)†
Big cigars	0.9 (0.2-1.6)†	0.0 (0.0-0.1)†	8.2 (5.0-11.4)	0.0
Hookah	0.7 (0.4-1.0)	0.6 (0.3-0.9)	6.8 (0.0-14.0)†	1.2 (0.0-2.8)†
Smokeless	2.1 (0.0-4.2)†	0.5 (0.0-1.1)†	7.8 (4.1-11.5)	2.3 (0.0-5.5)†

Abbreviations: LCC = little cigars or cigarillos.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Table 3 presents the current use of tobacco products by race/ethnicity. Differences in the use of specific tobacco products tended to replicate differences in the overall rates of use, though unstable estimates prevent firm conclusions.

Table 3. Prevalence of current tobacco product use by race/ethnicity among high school students

	White	African American/Black	Hispanic	Asian	Other	Multiple
	N=1541	N=199	N=1057	N=567	N=160	N=514
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Any of the below	16.6 (12.3-20.9)	11.0 (6.7-15.4)	13.3 (10.1-16.5)	6.6 (4.1-9.0)	17.4 (12.4-22.3)	16.0 (10.9-21.2)
Vapes	15.4 (11.2-19.6)	9.1 (5.3-12.9)	11.5 (7.8-15.2)	5.9 (3.3-8.5)	13.3 (8.9-17.7)	14.4 (9.3-19.6)
Cigarettes	1.5 (1.0-1.9)	1.5 (0.6-2.4)†	1.2 (0.6-1.8)	0.6 (0.2-1.0)†	2.7 (0.9-4.6)†	0.9 (0.1-1.6)†
LCC	2.2 (1.1-3.3)	3.7 (1.2-6.3)†	3.9 (2.7-5.0)	0.5 (0.0-0.9)†	4.3 (1.2-7.5)†	2.5 (0.9-4.1)†
Big cigars	0.8 (0.3-1.3)†	0.6 (0.0-1.7)†	0.6 (0.1-1.1)†	0.0	1.9 (0.1-3.6)†	0.6 (0.0-1.3)†
Hookah	0.6 (0.3-0.8)	0.0	0.9 (0.4-1.4)	0.8 (0.2-1.3)†	3.3 (0.9-5.8)†	1.0 (0.0-1.9)†
Smokeless	2.0 (0.2-3.9)†	0.6 (0.0-1.7)†	1.3 (0.6-2.0)	0.2 (0.0-0.4)†	2.8 (1.0-4.7)†	1.2 (0.0-2.6)†

Note: With the exception of Hispanic, all ethnicities are classified as Non-Hispanic. Race/Ethnicity category Other includes Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and non-standard entries.

Abbreviations: LCC = little cigars or cigarillos.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Table 4 presents current tobacco product use by grade among high school students. As expected, current use of all tobacco products generally increased with grade. Vapes were consistently the most popular product used by both 10th and 12th grade students, and the prevalence of use of other tobacco products was low.

Table 4. Prevalence of current tobacco product use by grade among high school students

	Grade 10 N=2332 % (95% CI)	Grade 12 N=1754 % (95% CI)
Any of the below	12.1 (9.3-14.9)	16.8 (12.2-21.3)
Vapes	10.7 (7.9-13.5)	15.0 (9.8-20.2)
Cigarettes	0.7 (0.4-1.0)	1.9 (1.4-2.4)
LCC	2.1 (1.3-2.8)	3.3 (1.8-4.9)
Big cigars	0.6 (0.0-1.3) [†]	0.8 (0.2-1.3) [†]
Hookah	0.5 (0.2-0.8)	1.2 (0.7-1.6)
Smokeless	1.0 (0.1-2.0) [†]	2.0 (0.5-3.5) [†]

Abbreviations: LCC = little cigars or cigarillos.

[†]Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Use of Specific Tobacco Products by Sexual and/or Gender Minority Status

Students were asked to indicate their sexual orientation and gender identity in two separate questions. Using responses from these questions, three groups were created: a sexual and/or gender minority (SGM) group, a non-SGM group, and an unclear SGM status group (see List of Terms). Table 5 presents current tobacco product use by SGM status. Students who identified as SGM (20.8%) had a higher rate of overall tobacco use than those who did not identify with this group (13.7%, $p < 0.05$), and those of unclear SGM status (8.7%). Consistent with previous results, vapes were the most commonly used product across all groups.

Table 5. Prevalence of current tobacco product use by SGM status among high school students

	SGM N=477 % (95% CI)	Non-SGM N=3260 % (95% CI)	Unclear SGM Status N=299 % (95% CI)
Any of the below	20.8 (17.4-24.1)	13.7 (9.7-17.7)	8.7 (5.5-11.8)
Vapes	18.0 (14.1-21.8)	12.3 (7.9-16.7)	8.1 (5.2-11.1)
Cigarettes	2.1 (1.4-2.8)	1.2 (0.6-1.7)	0.9 (0.2-1.5) [†]
LCC	4.8 (3.8-5.8)	2.3 (1.4-3.1)	2.4 (0.5-4.3) [†]
Big cigars	2.6 (0.7-4.4) [†]	0.4 (0.2-0.7) [†]	0.3 (0.0-0.9) [†]
Hookah	2.2 (0.9-3.5) [†]	0.6 (0.4-0.8)	0.9 (0.3-1.5) [†]
Smokeless	3.2 (1.6-4.8)	1.2 (0.0-2.6) [†]	1.4 (0.1-2.7) [†]

Abbreviations: LCC = little cigars or cigarillos.

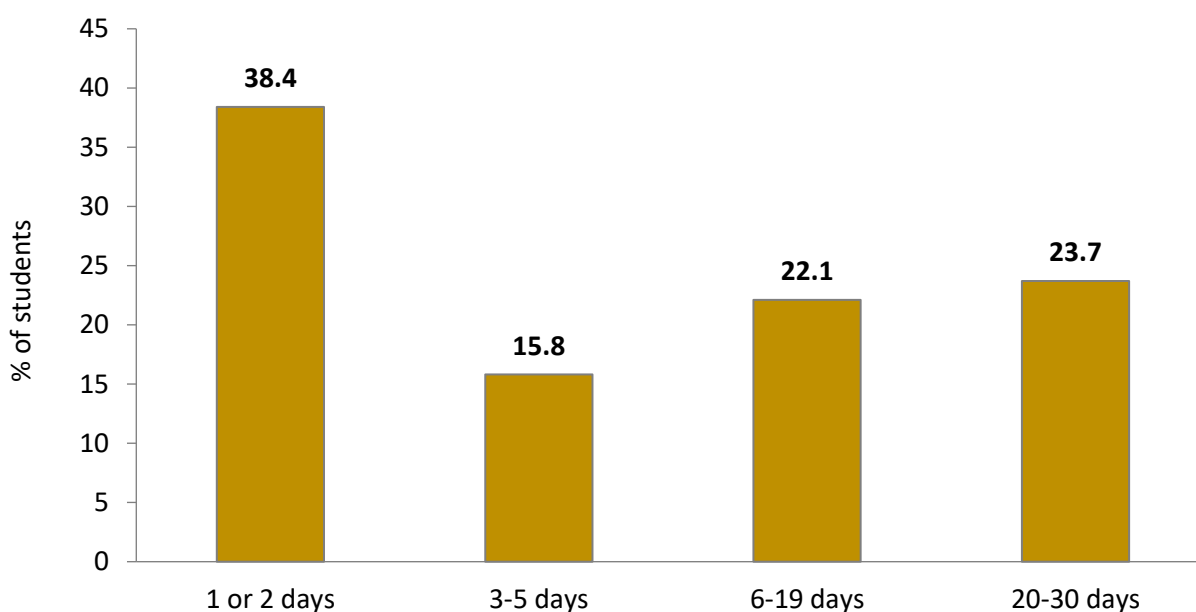
[†]Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Frequency of Current Vape Use

The 2019–20 CSTS asked current users of a tobacco product to indicate how many days they used the product within the last 30 days. Figure 2 presents the frequency of vape use among current vapers. Data were restricted to vapes due to the small sample sizes and resulting instability of estimates for other tobacco products.

About half of current vapers reported infrequent usage: 54.2% reported using vapes on either 1–2 days or 3–5 days (38.4% + 15.8% = 54.2%). Almost one in four (23.7%) current vapers used vapes on 20 or more days of the past 30 days.

Figure 2. Frequency of current vape use among those high school students who were current vapers



Note: Refer to Table B in Appendix C – Supplementary Tables to view estimates with confidence intervals.

Multiple Tobacco Product Use

Table 6 presents the current use of multiple tobacco products, often referred to as poly use, by participant demographics. Overall, 3.5% of students reported using two or more tobacco products, representing about one-quarter (24.5%) of current users. Differences in poly use by demographic characteristics varied in ways one would expect based on tobacco use behavior (i.e., those who had higher rates of using specific products were also the ones who had higher rates of poly use). For example, those who identified their gender in another way had higher rates of poly use than males and females. A notable difference between males and females was that fewer female students reported poly use (2.0%) than male students (4.3%) despite similar rates of overall tobacco use. Additionally, the rate of poly use was generally higher among 12th graders compared to 10th graders.

Table 6. Prevalence of current use of at least one product and of multiple tobacco products by gender, race/ethnicity, and grade among high school students

	N	Used at least one product % (95% CI)	Used two or more tobacco products % (95% CI)
Overall	4086	14.3 (10.8-17.8)	3.5 (2.4-4.6)
Gender			
Male	1842	12.6 (9.8-15.5)	4.3 (2.7-6.0)
Female	2006	14.9 (10.6-19.1)	2.0 (1.3-2.7)
Identified in Another Way	114	23.8 (21.0-26.6)	13.7 (9.1-18.3)
Declined to Answer	84	13.6 (4.2-23.0)†	4.6 (0.3-9.0)†
Race/Ethnicity			
White	1541	16.6 (12.3-20.9)	4.0 (2.1-5.8)
African American/Black	199	11.0 (6.7-15.4)	2.8 (1.3-4.3)
Hispanic	1057	13.3 (10.1-16.5)	3.8 (2.7-5.0)
Asian	567	6.6 (4.1-9.0)	1.0 (0.5-1.5)
Other	160	17.4 (12.4-22.3)	5.8 (2.4-9.2)
Multiple	514	16.0 (10.9-21.2)	2.9 (1.0-4.8)†
Grade			
Grade 10	2332	12.1 (9.3-14.9)	2.5 (1.2-3.7)
Grade 12	1754	16.8 (12.2-21.3)	4.6 (3.3-5.9)

Note: With the exception of Hispanic, all ethnicities are classified as Non-Hispanic. Race/Ethnicity category Other includes Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and non-standard entries.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Tobacco Use by General Mental Health

Table 7 presents students ever and current tobacco use according to reported general mental health (see List of Terms). Students who rated their mental health as poor had the highest rate of current tobacco use (25.6%), followed by those who rated their mental health as fair (17.2%). Students who rated their mental health as good to excellent had the lowest current use rate (11.1%).

Table 7. Prevalence of tobacco use by general mental health among high school students

	N	Ever use % (95% CI)	Current use % (95% CI)
Good to excellent	2656	28.3 (23.5-33.1)	11.1 (7.8-14.4)
Fair	893	36.6 (28.4-44.8)	17.2 (12.7-21.7)
Poor	499	47.2 (43.7-50.6)	25.6 (21.5-29.7)

CHAPTER 2 – Use of Flavored Tobacco Products

Highlights

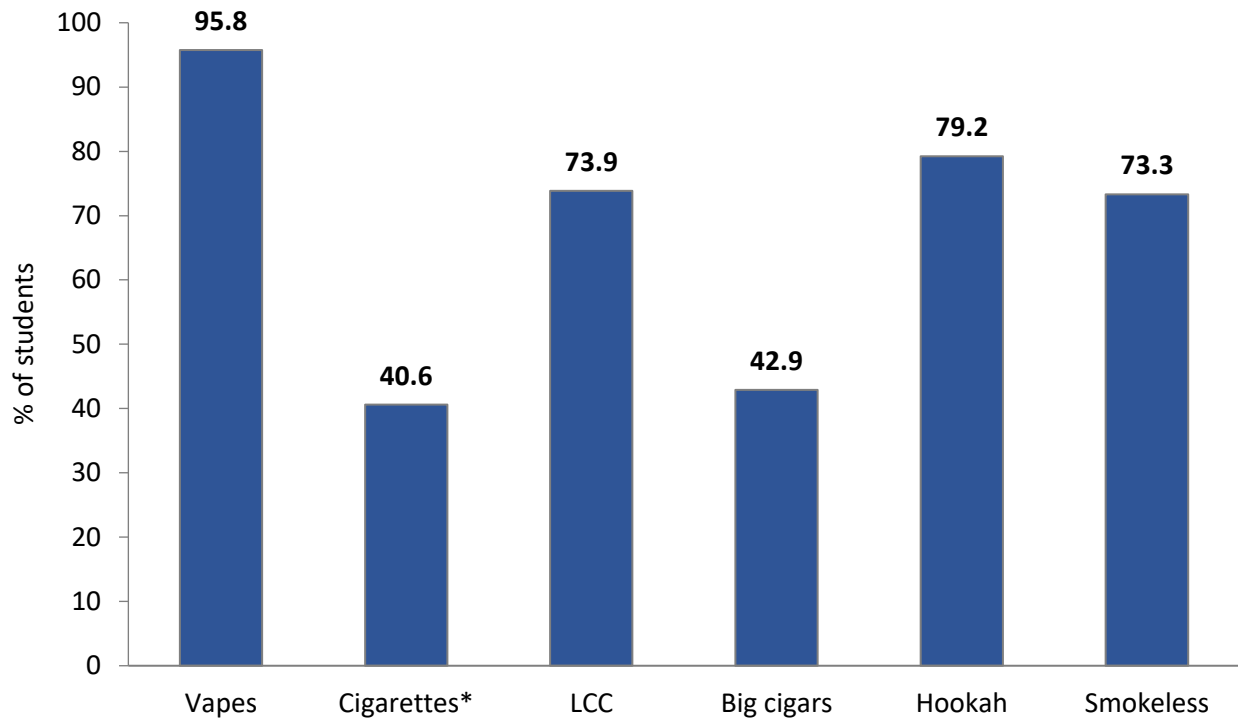
- The vast majority (92.0%) of high school students in Contra Costa County who were current tobacco users reported using a flavored tobacco product.
- The highest use of flavored tobacco products was among current vapers (95.8%).
- Two in five (40.6%) current cigarette smokers reported using menthol cigarettes in the last 30 days.
- *Fruit* (56.3%) and *mint* (28.8%) were the most frequently reported flavors used by vapers.

This chapter presents the proportion of current tobacco users who used flavored products. The use of flavored tobacco products is a concern because it may increase susceptibility, initiation, and progression to regular use.⁴⁻⁶ It also presents the use of specific flavors among current vapers. It should be noted that the flavored vape use reported in this chapter includes students who reported using flavored vapes with nicotine or vapes with just flavoring.

Flavored Tobacco Product Use

Overall, 92.0% of students in Contra Costa County who were current tobacco users reported using a flavored tobacco product in the last 30 days (data not shown in figure). Use of flavored products was widespread across *all* tobacco products (Figure 3). Flavored tobacco product use was the most prevalent for vapes (95.8%), followed by hookah (79.2%), LCC (73.9%), and smokeless tobacco (73.3%). The least prevalent flavored products used were cigarettes (40.6%), for which menthol is the only flavor available, and big cigars (42.9%).

Figure 3. Proportion using flavored tobacco products among those high school students who were current users of a given tobacco product



Note: Refer to Table C in Appendix C – Supplementary Tables to view estimates with confidence intervals.

Abbreviations: LCC = little cigars or cigarillos.

**Menthol* was the only available flavor for cigarettes.

Flavored Tobacco Use by Demographics

Table 8 presents the current use of any flavored tobacco product by participant demographics. Across gender, race/ethnicity, and grade, the vast majority of current users reported using a flavored tobacco product in the last 30 days.

Table 8. Proportion using flavored tobacco among those high school students who were current tobacco users by gender, race/ethnicity, and grade

	N	Current use % (95% CI)
Overall	557	92.0 (90.0-94.1)
Gender		
Male	220	90.2 (88.3-92.2)
Female	284	94.3 (91.2-97.3)
Identified in Another Way	28	86.8 (78.1-95.5)†
Declined to Answer	12	94.7 (83.6-100.0)†
Race/Ethnicity		
White	245	90.7 (88.9-92.4)
African American/Black	21	88.4 (78.2-98.6)†
Hispanic	137	89.4 (82.6-96.3)†
Asian	34	100.0
Other	28	94.7 (88.3-100.0)†
Multiple	77	99.2 (97.7-100.0)†
Grade		
Grade 10	274	90.5 (88.1-92.9)
Grade 12	283	93.3 (91.1-95.4)

Note: With the exception of Hispanic, all ethnicities are classified as Non-Hispanic. Race/Ethnicity category Other includes Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and non-standard entries.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Use of Specific Vape Flavor Types

Students who used a flavored tobacco product in the last 30 days were asked to indicate the flavor type they used most often. Possible flavor types included *fruit*, *candy or sweet*, *mint*, *liquor*, *tobacco*, and *other*. Due to the small sample sizes, *alcohol or liquor* and *other* flavors were combined. Only the specific flavors used by current vapers were presented due to the small sample sizes and resulting instability of estimates for other tobacco products.

As shown in Table 9, *fruit* (56.3%) was by far the most popular flavor used by vapers in Contra Costa County. Another commonly used vape flavor was *mint* (28.8%). Few vapers reported use of *candy or sweet* (8.8%) and *other* (5.1%) flavors. Almost no vapers reported use of *tobacco* (0.9%) flavored vapes.

Table 9. Proportion using flavored vape products among those high school students who were current vapers, by flavor type

	Vapes N=474 % (95% CI)
Fruit	56.3 (51.1-61.5)
Candy or sweet	8.8 (4.7-13.0)
Mint	28.8 (19.6-38.1)
Tobacco	0.9 (0.2-1.6)†
Other*	5.1 (4.0-6.2)

Note: Students who (1) vaped just flavoring, (2) vaped nicotine, or (3) used a hookah pen with nicotine or just flavoring, were asked about their use of flavor for each product. If students used at least two of the above, their flavor type was considered in the following order: the flavor type they used when they (1) vaped just flavoring, (2) vaped nicotine, (3) used a hookah pen with nicotine or just flavoring.

**Alcohol or liquor* and *other* flavors were combined.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

CHAPTER 3 – Perceptions of Vaping and Smoking

Highlights

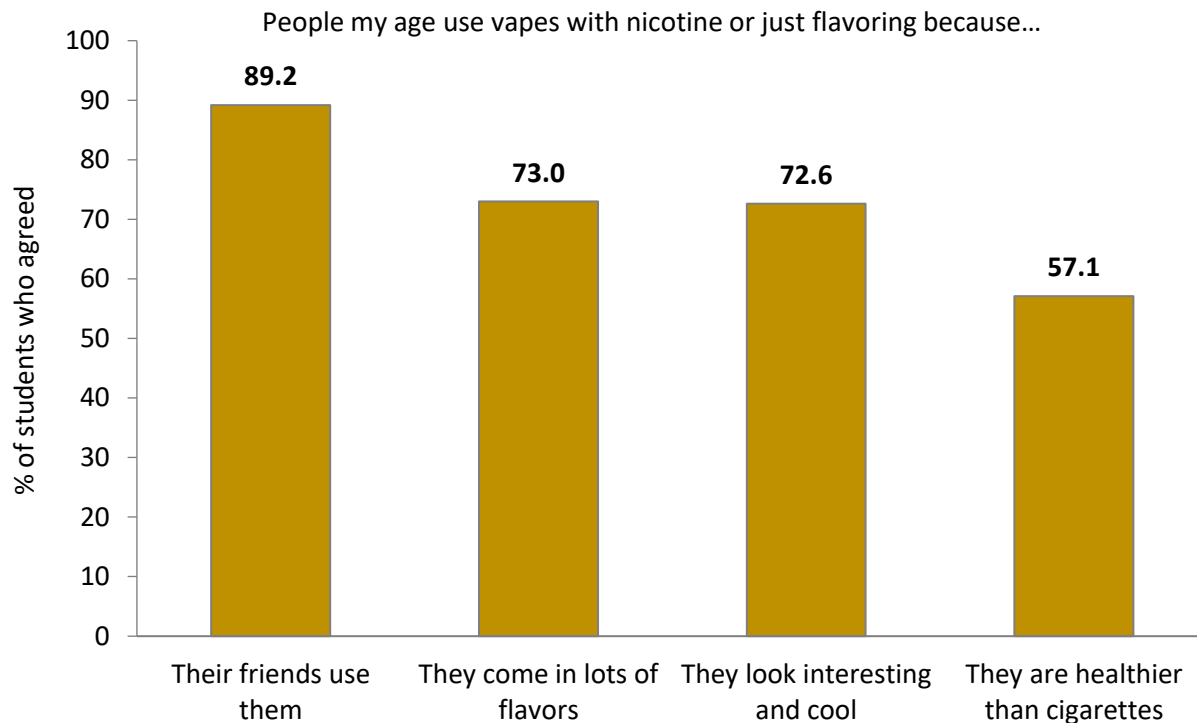
- The majority (89.2%) of students believed that the reason people their age used vapes with nicotine or just flavoring was because their friends did.
- Almost all students believed that adults important to them would feel negatively about the student vaping (97.0%) or smoking cigarettes (97.4%).
- While the large majority of students believed that their close friends (94.1%) and other students at school (85.2%) viewed smoking cigarettes negatively, fewer students believed that vaping was viewed negatively among close friends (71.9%) and other students (34.6%).
- Over three-fourths of students believed that vaping companies were part of the tobacco industry (81.5%) and that tobacco companies targeted people their age by advertising flavored tobacco products in stores and on social media (77.0%).

Perceived social norms have an important influence on tobacco use behavior, particularly among youth. Perceptions of peer and adult attitudes towards tobacco use can influence a student's use. The following chapter presents data on the perceived reasons for vaping among students. It also presents data on how students believed adults, peers or classmates, and friends perceived vaping and smoking cigarettes. Finally, students' opinions of the tobacco industry are reported. It should be noted that the questions about vapes reported in this chapter specified the type of substance in the vape (e.g., nicotine or just flavoring).

Perceived Reasons for Vaping

Students were asked about their level of agreement with four reasons why people their age used vapes with nicotine or just flavoring. Figure 4 shows the percentage of students who *strongly agreed* or *somewhat agreed* with each reason. Approximately, nine out of ten (89.2%) high school students agreed that people their age used vapes with nicotine or just flavoring because their friends did. Many students also agreed that people their age used vapes because they came in lots of flavors and looked interesting and cool (73.0% and 72.6%, respectively). Over half (57.1%) agreed that people their age used vapes with nicotine or just flavoring because they were healthier than cigarettes.

Figure 4. Perceived reasons for vaping among high school students



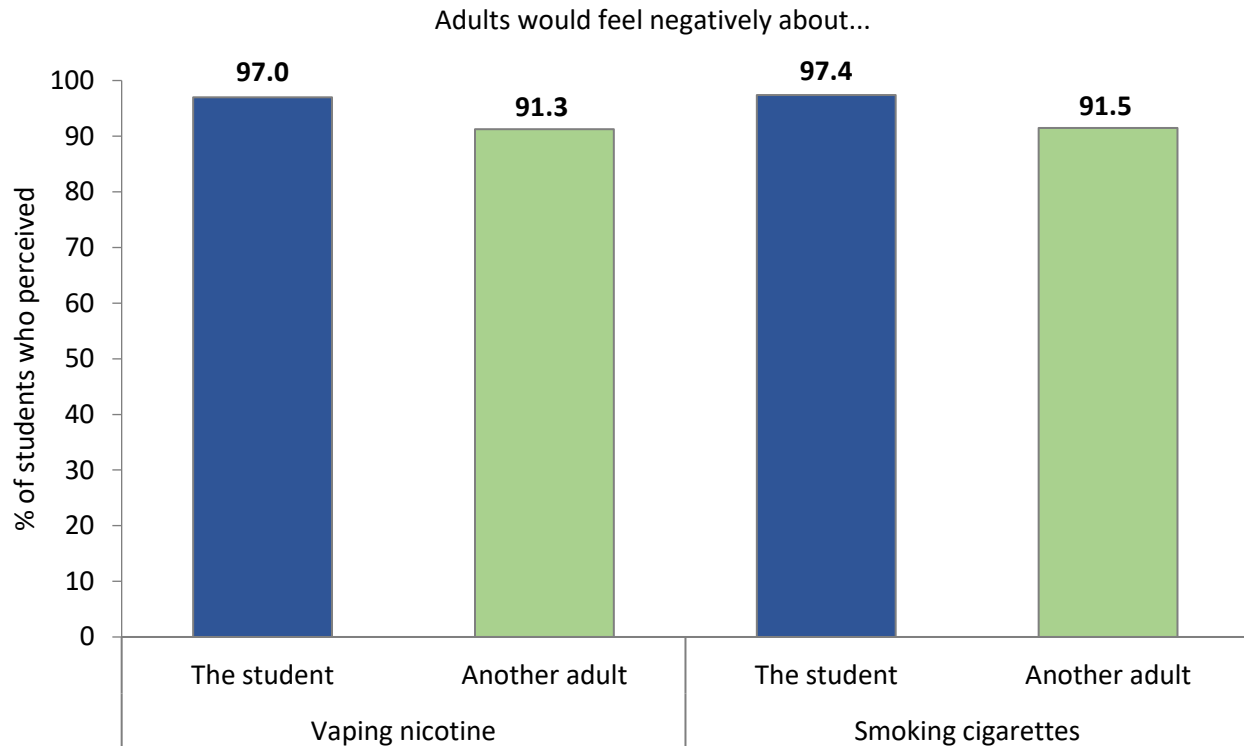
Note: Refer to Table D in Appendix C – Supplementary Tables to view estimates with confidence intervals.

Perceptions of Adults' Views on Vaping and Smoking

Students were asked how adults who were important to them (such as parents, teachers, coaches, or relatives) would feel about the student vaping nicotine. They were also asked how the same adults would feel about another adult vaping nicotine. Response options included *very positive*, *positive*, *negative*, and *very negative*. The same questions were asked about smoking cigarettes.

Figure 5 presents the percentage of students who reported that adults important to them would feel negatively (*negative* and *very negative*) about their own or another adults vape or cigarette use. Almost all students believed that adults important to them would feel negatively about the student vaping or smoking cigarettes (97.0% and 97.4%, respectively). A slightly lower percentage of students believed adults important to them would feel negatively about another adult vaping or smoking cigarettes (91.3% and 91.5%, respectively).

Figure 5. Percentage of high school students who believed that adults would feel negatively about them or another adult if they vaped or smoked



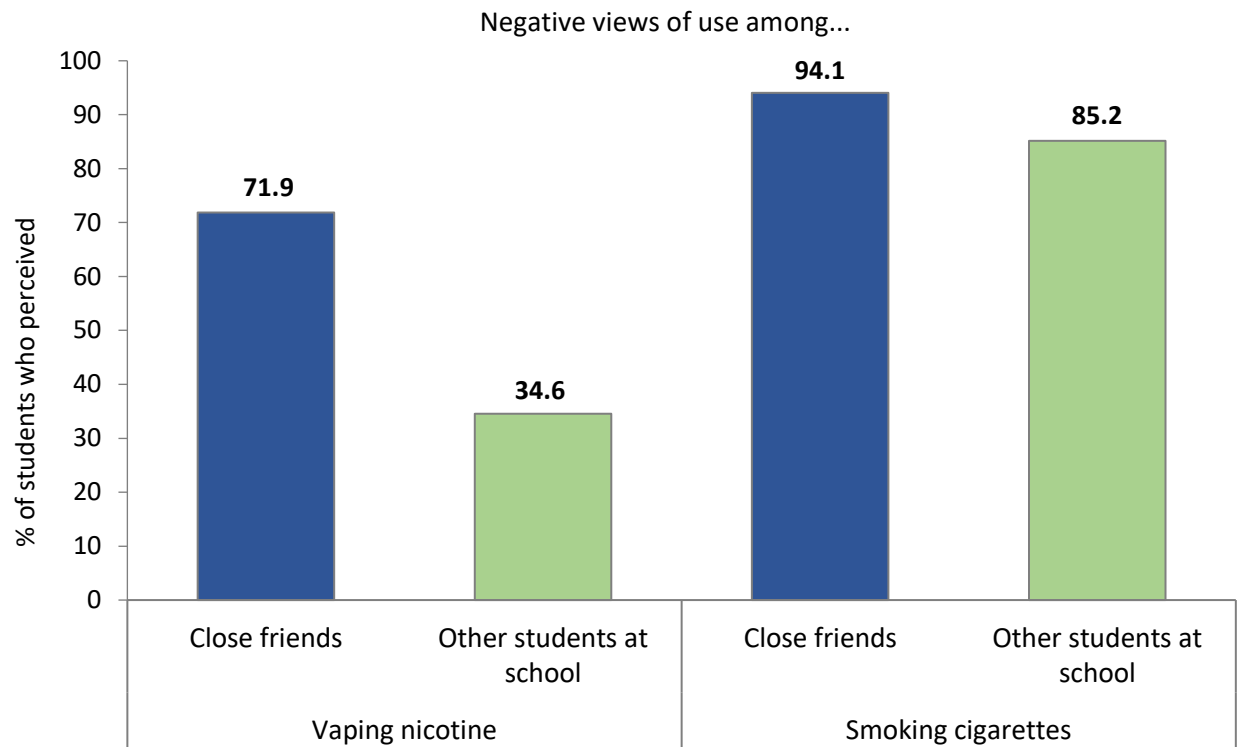
Note: Refer to Table E in Appendix C – Supplementary Tables to view estimates with confidence intervals.

Perceptions of Peers' Views on Vaping and Smoking

Students were asked how they would describe their close friends' views on using vapes with nicotine. They were also asked to describe the views of students at their school. Response options included: *very positive*, *positive*, *negative*, and *very negative*. The same questions were asked about smoking cigarettes.

Figure 6 presents the percentage of students who believed that their close friends or other students at their school would view vaping nicotine or smoking cigarettes negatively (*negative* and *very negative*). While most students believed that their close friends and other students at school viewed smoking cigarettes negatively (94.1% and 85.2%, respectively), fewer students believed vaping was viewed negatively by close friends and other students (71.9% and 34.6%, respectively).

Figure 6. Percentage of high school students who believed that their close friends or other students at their school would view vaping or smoking negatively



Note: Refer to Table F in Appendix C – Supplementary Tables to view estimates with confidence intervals.

Opinions of the Tobacco Industry

Table 10 shows the percentage of students who *strongly agreed* or *somewhat agreed* with three statements about the tobacco industry. Over three-fourths of students believed the vaping companies were part of the tobacco industry (81.5%), and that tobacco companies targeted youth through flavored product advertisements (77.0%). Over half (58.5%) agreed that tobacco companies targeted youth by selling tobacco in stores near schools.

Table 10. Opinions of the tobacco industry by use status among high school students

	Agreed N=4047 % (95% CI)
Vaping companies are part of the tobacco industry	81.5 (79.4-83.7)
Tobacco companies target people my age by advertising flavored cigarettes, LCC, or vapes in stores and on social media	77.0 (74.2-79.8)
Tobacco companies target people my age by selling cigarettes, LCC, or vapes in stores near schools	58.5 (53.8-63.1)

CHAPTER 4 – Secondhand Exposure and Other Environmental Influences

Highlights

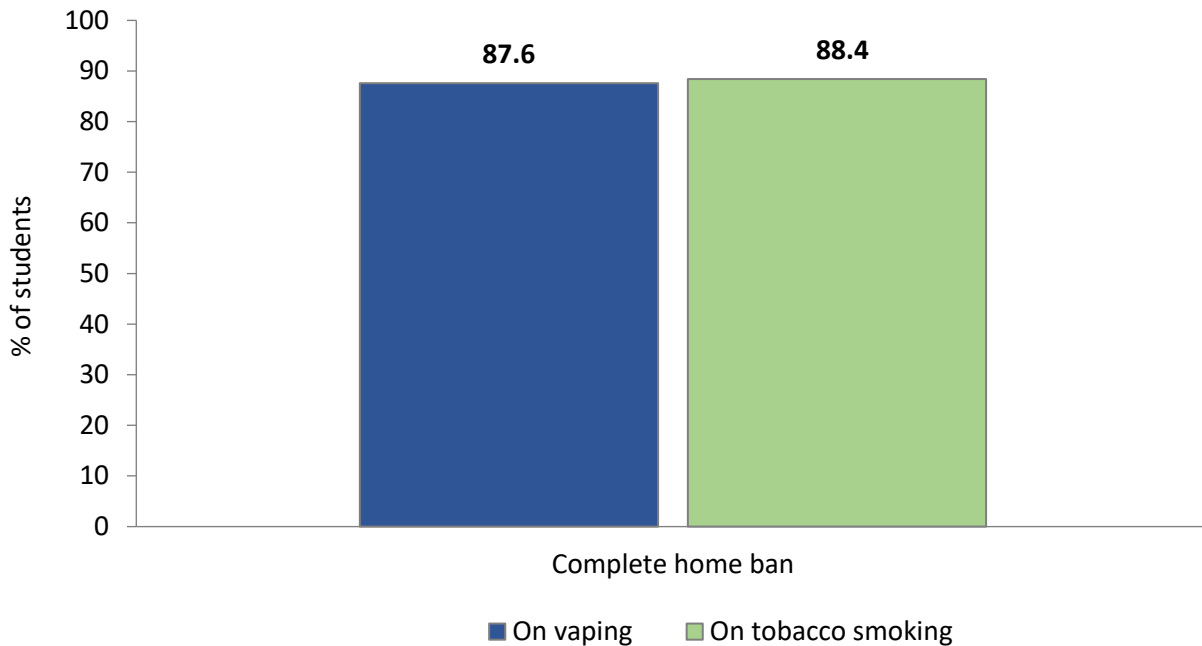
- Most high school students reported living in a home that had complete bans on tobacco smoking (88.4%) and vaping (87.6%).
- Close to two in five (38.1%) students were exposed to secondhand vapor in a room in the last 2 weeks. Students' secondhand exposure to tobacco smoke in a room (7.9%) was much lower. Exposure to secondhand vapor (22.9%) and tobacco smoke (5.0%) in a car in the last 2 weeks was also concerning.
- Less than one in three students reported that their parent or guardian talked with them about the risks of vape (32.7%) and cigarette use (21.5%) in the last 30 days.
- Almost three-fourths of high school students were exposed to vape ads (73.6%), with a greater percentage of students reporting they perceived these ads to be discouraging (47.5%) rather than promoting vape use (16.0%).
- Around half (51.7%) of high school students reported exposure to cigarette ads, with a greater percentage of students reporting they perceived these ads to be discouraging (35.8%) rather than promoting smoking cigarettes (8.0%).

This chapter focuses on several key environmental influences of tobacco use, all of which have been shown to affect use among youth.^{7,8} It presents whether students had home bans on vaping and tobacco smoking and their exposure to secondhand vapor and tobacco smoke. It also presents the prevalence of exposure to advertisements (ads) promoting or discouraging vape and cigarette use in the last 30 days. It should be noted that the questions about vapes reported in this chapter asked about vapes generally and did not specify the substance in the vape (e.g., nicotine, marijuana, or just flavoring). As a result, responses could include exposure to vapes with marijuana.

Home Bans on Vaping and Tobacco Smoking

Home bans indicate whether the student's home environment explicitly discourages vaping and smoking cigarettes or other tobacco products. Using two separate questions, students were asked to indicate which statement best described the rules about *vaping* or *tobacco smoking* in their home (see List of Terms). Figure 7 shows that the vast majority of students had a complete home ban on vaping and on tobacco smoking (87.6% and 88.4%, respectively).

Figure 7. Prevalence of complete home bans on vaping and tobacco smoking among high school students



Note: Refer to Table G in Appendix C – Supplementary Tables to view estimates with confidence intervals.

Table 11 provides data on the rates of complete home bans on vaping and tobacco smoking by race/ethnicity. Similar to the overall results reported in Figure 7, across racial/ethnic groups, students generally reported having similar rates of home bans on vaping and tobacco smoking, with Other race/ethnicity students having lower rates of home bans compared to other groups.

Table 11. Prevalence of complete home bans on vaping and tobacco smoking by race/ethnicity among high school students

	Vaping ban		Tobacco smoking ban	
	N	% (95% CI)	N	% (95% CI)
Overall	4048	87.6 (84.7-90.4)	4054	88.4 (85.8-91.1)
White	1538	90.0 (86.6-93.5)	1538	91.0 (87.6-94.3)
African American/Black	195	84.9 (78.0-91.8)	197	85.2 (79.2-91.2)
Hispanic	1050	85.5 (82.8-88.3)	1051	87.3 (85.6-89.0)
Asian	567	89.7 (86.5-92.8)	567	88.6 (86.6-90.5)
Other	159	77.0 (70.3-83.7)	160	72.3 (61.5-83.2)
Multiple	514	86.3 (81.4-91.2)	514	88.9 (84.7-93.0)

Note: With the exception of Hispanic, all ethnicities are classified as Non-Hispanic. Race/Ethnicity category Other includes Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and non-standard entries.

Exposure to Secondhand Vapor and Tobacco Smoke in the Last 2 Weeks

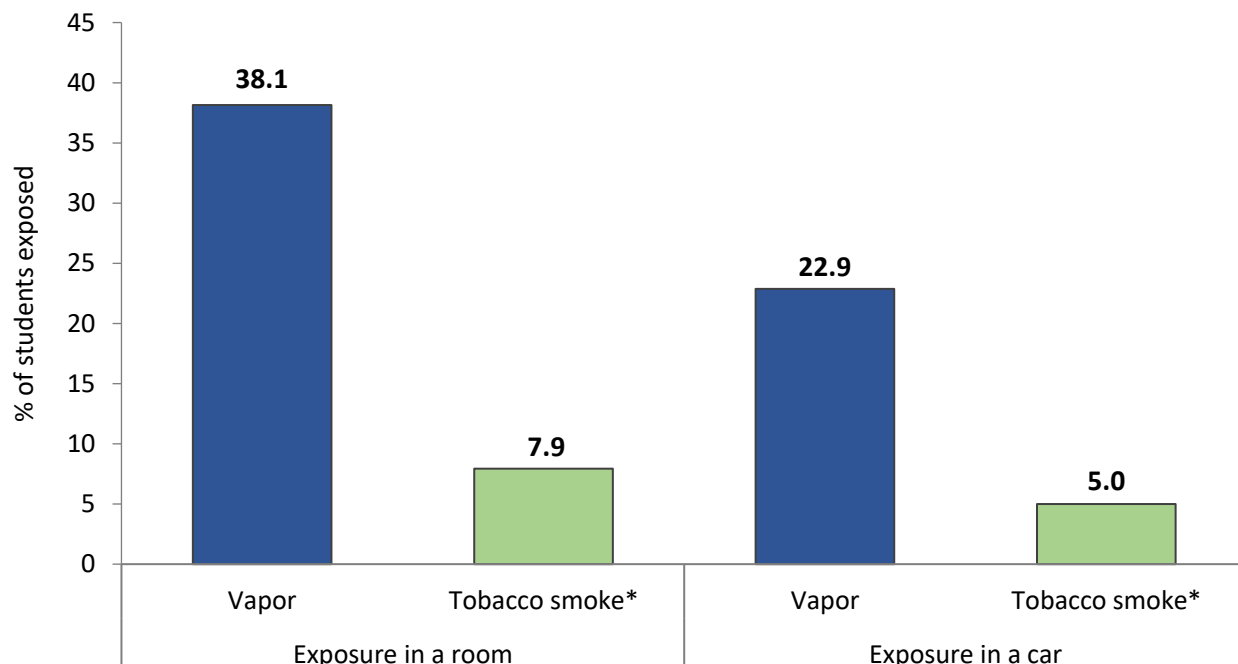
A primary avenue for achieving social norm change is through enactment of tobacco control policies, such as creating smoke-free environments. Creating smoke-free environments helps to

change social norms, which reduces the chances of youth starting to smoke while encouraging smokers to quit or reduce their tobacco use.⁹ Preventing youth exposure to secondhand tobacco products is an important issue in Contra Costa County.¹⁰ Contra Costa County has taken precautionary actions to prohibit tobacco smoking and vaping in all dwelling units of multi-unit housing residences, all indoor workplaces, and indoor area to the public that may increase the risk of secondhand tobacco smoke and vapor exposure among youth and other vulnerable population.¹¹ However, 44.3% of students had still been exposed to secondhand vapor or tobacco smoke, in a room or in a car, within the last 2 weeks (data not shown in figure).

The 2019–20 CSTS asked students about secondhand exposure to vapor in a room: “In the last 2 weeks, were you in a room when someone was using a vape?” Another question asked about secondhand exposure to tobacco smoke in a room: “In the last 2 weeks, were you in a room when someone was smoking a cigarette, little cigar, or cigarillo? Students were asked whether they have been exposed to vapor and tobacco smoke in a car in the same way. It should be noted that the timeframe referenced in the question was changed in 2019–20, from “in the last 30 days” to “in the last 2 weeks.” As a result, rates of secondhand exposure are not directly comparable to those of earlier CSTS surveys.

As shown in Figure 8, many students reported being exposed to secondhand vapor either in a room or in a car (38.1% and 22.9%, respectively) in the last 2 weeks. Fewer students reported being exposed to tobacco smoke in a room or in a car (7.9% and 5.0%, respectively) in the last 2 weeks.

Figure 8. Prevalence of last 2-week exposure to vapor and tobacco smoke* in a room and car among high school students



Note: Refer to Table H in Appendix C – Supplementary Tables to view estimates with confidence intervals.

*Two products: Cigarettes and little cigars or cigarillos (LCC).

Exposure to Vape and Cigarette Prevention Messages at Home in the Last 30 Days

Table 12 presents students who reported that their parent or guardian had talked with them about the risks of vape and cigarette use in the last 30 days, by use status. Close to one third (32.7%) of students reported that their parent or guardian had talked to them about the risks of vape use. Just over one-fifth (21.5%) of students reported that their parent or guardian had talked to them about the risks of smoking cigarettes. Current users reported that their parent or guardian talked to them about the risks of vape and cigarette use at the highest rates.

Table 12. Percentage of high school students whose parent/guardian talked to them about the risks of vape and cigarette use in the last 30 days, by use status

	Vapes		Cigarettes	
	N	% (95% CI)	N	% (95% CI)
Overall	4007	32.7 (23.7-41.7)	4009	21.5 (18.7-24.4)
Never users of the product	2909	30.1 (22.9-37.2)	3824	21.1 (18.3-24.0)
Former users of the product	621	33.1 (24.4-41.8)	140	24.7 (19.0-30.4)
Current users of the product	477	47.3 (30.9-63.7)	45	43.1 (35.0-51.3)

Exposure to Vape and Cigarette Ads in the Last 30 Days

Participants were asked whether they had seen ads that either promoted or discouraged the use of vapes or cigarettes within the last 30 days. Table 13 shows students' overall exposure to vape and cigarette ads. Overall exposure to vape ads (73.6%) was higher than exposure to cigarette ads (51.7%).

Table 13. Exposure to vape and cigarette ads in the last 30 days among high school students

Overall exposure to tobacco-related ads N=4055 % (95% CI)	
Vapes	73.6 (68.5-78.7)
Cigarettes	51.7 (49.5-53.8)

Those students who reported having seen ads for either of these products were asked whether the ads they saw *mostly promoted*, *mostly discouraged*, or *neither promoted nor discouraged* their use. There was also a response option for *I don't know*. Table 14 shows that ads that were perceived to be anti-tobacco were the most common type of ad seen for both products. A greater percentage of students reported seeing ads that were perceived to be anti-tobacco for vapes (47.5%) than for cigarettes (35.8%). Similarly, a greater percentage of students reported seeing ads that were perceived to be pro-tobacco for vapes (16.0%) than for cigarettes (8.0%).

Proportionally, about one in five vape-related ads were perceived to promote vape use (16.0% / 73.6% = 21.7%), while about three in five were considered to be discouraging its use (47.5% / 73.6% = 64.5%). The rest of the ads were not clearly perceived as being either for or against the product. Close to one in six cigarette-related ads were perceived to promote smoking cigarettes

(8.0% / 51.7% = 15.5%), while over four in six were considered to be discouraging their use (35.8% / 51.7% = 69.2%).

Table 14. Exposure to perceived types of vape and cigarette ads in the last 30 days among high school students

N=4052	Exposure to...			
	Pro-tobacco ads % (95% CI)	Anti-tobacco ads % (95% CI)	Neutral ads % (95% CI)	I don't know % (95% CI)
Vapes	16.0 (14.0-18.0)	47.5 (42.7-52.4)	3.4 (2.9-3.9)	6.7 (5.2-8.2)
Cigarettes	8.0 (6.5-9.4)	35.8 (32.1-39.5)	2.4 (2.0-2.7)	5.5 (3.8-7.3)

CHAPTER 5 – Access to Vapes

Highlights

- Among current vapers, half (50.0%) reported not paying for their vapes and half (50.0%) reported paying for them.
- Out of those who did not pay for their vapes, three in five (59.7%) reported being given vapes. Out of those who paid for their vapes, 42.1% bought them from someone and 26.0% bought them from the store themselves.
- Among those who reported buying from a store, *tobacco or smoke shops* (48.7%) and *vape shops* (34.5%) were the most popular store types for purchasing vapes.
- More than one-third of students (36.2%) were offered a vape in the last 30 days, with almost a quarter (24.2%) who had never used vapes having been offered one.

Limiting access to tobacco products among youth reduces opportunities to use such products, and age restrictions are intended to make it difficult for students to access tobacco products. The legal age to purchase tobacco products in California is 21 years old. Because of this, it is important to monitor how underage students obtain tobacco products, particularly through social sources. This chapter presents data on how students accessed vapes and on student offers of vapes. Students who were current vape users were asked whether they paid for their own vapes (or pods or e-liquid). They were then asked subsequent questions on how they obtained the product. Vape offers were measured by use status (e.g., never, former, and current users).

It should be noted that the questions about the acquisition and sources of vapes reported in this chapter asked about vapes with nicotine or just flavoring specifically; whereas the question about offers asked about vapes generally. As a result, responses to the question on offers could include vapes with marijuana. Data on access to tobacco products other than vapes were not presented due to the small sample size and resulting instability of estimates.

Acquisition of Vapes

Of current vapers, 50.0% reported not paying for their own vapes (or pods or e-liquid) and 50.0% reported paying for them (data not shown in table). Table 15 shows how those 50.0% of students usually got vapes (or pods or e-liquid) from social sources. About three-fifths (59.7%) of these students reported being given vapes. Over one-quarter (28.0%) of them reported asking someone for vapes.

Table 15. Acquisition of vapes (or pods or e-liquid) among those high school students who were current vapers, by social source

	Current vapers N=245 % (95% CI)
Did not pay for own vapes (or pods or e-liquid)	
Someone gives them to me	59.7 (54.5-64.9)
I ask someone for them	28.0 (26.2-29.8)
I take them from someone	3.9 (0.5-7.3)†
I get them some other way	8.4 (6.7-10.2)

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Table 16 presents the methods of purchase among those 50.0% of students who did pay for their vapes (or pods or e-liquid). About two in five (42.1%) of them bought vapes from someone else. Another 26.0% reported buying them from the store themselves and 19.4% asked someone to buy vapes for them. Few students (1.0%) reported buying vapes from the Internet (including apps).

Table 16. Acquisition of vapes (or pods or e-liquid) among those high school students who were current vapers, by purchase source

	Current vapers N=245 % (95% CI)
Paid for own vapes (or pods or e-liquid)	
I buy them from the store myself	26.0 (17.0-35.0)
I buy them from someone	42.1 (31.1-53.1)
I ask someone to buy them for me	19.4 (16.5-22.3)
I buy them from the Internet (including apps)	1.0 (0.0-2.4)†
I buy them some other way	11.5 (9.8-13.1)

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Sources of Vapes Among High School Students Purchasing from a Store

Students who reported buying vapes from the store were asked the specific store type where they bought the tobacco product. As shown in Table 17, among current vapers who bought vapes from a store, *tobacco or smoke shops* (48.7%) and *vape shops* (34.5%) were the most popular store types for purchasing vapes.

Table 17. Sources of vapes among those high school students who bought vapes from a store, by store type

	Bought vapes from a store N=58 % (95% CI)
Gas station or convenience store	7.9 (3.8-12.1)
Grocery store	0.0
Drugstore or pharmacy	2.2 (0.0-5.9)†
Liquor store	0.0
Tobacco or smoke shop	48.7 (37.8-59.5)
Vape shop	34.5 (24.1-45.0)
A mall or shopping center kiosk/stand	2.2 (0.0-4.8)†
Other	4.5 (0.6-8.3)†

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Offers of Vapes in the Last 30 Days

The 2019–20 CSTS assessed whether high school students were offered vapes in the last 30 days. Overall, more than one-third of students (36.2%) in Contra Costa County were offered a vape in the last 30 days (Table 18). Significantly more current vapers (87.1%) reported offers relative to never (24.2%) and former vapers (49.5%).

Table 18. Prevalence of offers of vapes in the last 30 days among high school students, by use status

	N	Vapes % (95% CI)
Overall	4060	36.2 (30.0-42.4)
Never vapers	2944	24.2 (21.6-26.8)
Former vapers	630	49.5 (41.0-58.1)
Current vapers	486	87.1 (82.8-91.5)

CHAPTER 6 – Marijuana and Tobacco Co-Use

Highlights

- One-third (33.1%) of high school students in Contra Costa County reported having tried marijuana, while 18.4% reported using it in the last 30 days.
- More than half of current marijuana users (55.4%) co-used marijuana with at least one tobacco product.

The legalization of both medicinal and recreational marijuana in California can present increased opportunities for youth to use marijuana, even though they have not reached the legal age to use it. Marijuana can be used alone and in conjunction with tobacco products. This chapter presents the use of marijuana and co-use of marijuana and any tobacco among high school students in Contra Costa County.

Marijuana Use

Table 19 presents the prevalence of ever and current marijuana use among high school students by demographic characteristics. In Contra Costa County, 33.1% of high school students had ever used marijuana, while 18.4% reported using it in the last 30 days. There was no significant difference when comparing current use rates of marijuana between males and females. Students who identified their gender in another way tended to have higher marijuana use rates. Asian students had the lowest rate of marijuana use (8.6%) of all racial/ethnic groups. The prevalence of current marijuana use was higher among 12th grade relative to 10th grade students (23.8% and 13.5%, respectively).

Table 19. Prevalence of marijuana use by gender, race/ethnicity, and grade among high school students

	N	Ever use % (95% CI)	Current use % (95% CI)
Overall	4086	33.1 (29.7-36.6)	18.4 (15.6-21.2)
Gender			
Male	1842	30.6 (28.2-33.1)	17.8 (15.0-20.6)
Female	2006	34.1 (30.2-37.9)	17.3 (14.3-20.2)
Identified in Another Way	114	44.8 (35.3-54.3)	30.7 (23.3-38.1)
Declined to Answer	84	37.2 (25.1-49.2)	25.0 (17.5-32.4)
Race/Ethnicity			
White	1541	34.0 (30.1-37.9)	20.4 (16.6-24.2)
African American/Black	199	33.3 (26.7-39.8)	16.3 (11.4-21.2)
Hispanic	1057	37.3 (31.1-43.6)	19.0 (15.5-22.5)
Asian	567	18.0 (12.4-23.5)	8.6 (5.0-12.3)
Other	160	29.5 (23.9-35.2)	19.1 (14.7-23.5)
Multiple	514	37.1 (34.0-40.1)	19.1 (15.6-22.6)
Grade			
Grade 10	2332	25.2 (21.2-29.2)	13.5 (11.0-16.0)
Grade 12	1754	41.9 (36.2-47.7)	23.8 (19.1-28.4)

Note: With the exception of Hispanic, all ethnicities are classified as Non-Hispanic. Race/Ethnicity category Other includes Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and non-standard entries.

Marijuana and Tobacco Co-Use

Table 20 further categorizes current marijuana use based on whether students used marijuana only or with any other tobacco product (i.e., co-use). Overall, one in ten (10.2%) high school students co-used marijuana with one or more tobacco product, representing more than half (10.2% / 18.4% = 55.4%) of current marijuana users.

Similar to the overall pattern, the prevalence rates of tobacco co-use across demographics tended to be higher than those of marijuana only use, except for Asians. Though differences by demographic subgroups did not necessarily reach statistical significance. It is also notable that nearly three in four (10.2% / 14.3% = 71.3%) current tobacco users co-used marijuana with tobacco.

Table 20. Prevalence of current marijuana only use and co-use of marijuana/any tobacco product, by gender, race/ethnicity, and grade among high school students

	Marijuana only use		Co-use of marijuana and any tobacco product
	N	% (95% CI)	% (95% CI)
Overall	4086	8.2 (7.4-9.0)	10.2 (7.7-12.7)
Gender			
Male	1842	8.1 (7.0-9.2)	9.7 (7.5-11.8)
Female	2006	7.4 (6.8-7.9)	9.9 (6.9-13.0)
Identified in Another Way	114	13.5 (9.1-17.9)	17.2 (13.2-21.3)
Declined to Answer	84	12.3 (5.2-19.5)	12.6 (2.5-22.7)†
Race/Ethnicity			
White	1541	9.0 (7.8-10.3)	11.4 (8.5-14.2)
African American/Black	199	6.9 (4.6-9.2)	9.5 (4.9-14.0)
Hispanic	1057	9.2 (7.3-11.1)	9.8 (7.2-12.4)
Asian	567	4.4 (2.5-6.2)	4.3 (1.8-6.8)
Other	160	6.6 (3.1-10.0)	12.5 (7.0-18.0)
Multiple	514	6.8 (5.8-7.8)	12.3 (8.6-16.0)
Grade			
Grade 10	2332	5.4 (4.3-6.5)	8.1 (6.2-9.9)
Grade 12	1754	11.3 (9.9-12.6)	12.5 (8.6-16.5)

Note: With the exception of Hispanic, all ethnicities are classified as Non-Hispanic. Race/Ethnicity category Other includes Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and non-standard entries.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

CONCLUSION

The most encouraging result from the 2019–20 CSTS is that current cigarette smoking (i.e., use in the last 30 days) among Contra Costa high school students has reached a historical low of 1.3%. This is lower than any report of adolescent current smoking prevalence in recent years.¹² The historically low rate of current cigarette smoking suggests that 30 years of campaigning against smoking since Proposition 99 have succeeded in changing the social norms against smoking. This is further evidenced by the overwhelming percentage of high school students (94.1%) who believed that their close friends viewed smoking cigarettes negatively. Thus, there is potential for this to be the first generation of Contra Costa youth who will be essentially smoke-free when they reach adulthood.

Much work remains, however, as almost one-third (32.5%) of high school students in Contra Costa have experimented with at least one type of tobacco product. Most of those experimenters tried vaping (28.9%), with 12.8% of high school students currently using vapes. Over one-third (36.2%) of students were offered a vape in the last 30 days, with almost one in four (24.2%) of those who had never used vapes having been offered one. Being offered these products through a youth's social framework could increase the rate of experimentation or the rate of transition from experimentation to regular use. The social norm for vaping is different from that of cigarette smoking, with vaping being more popular and acceptable. Almost two-thirds (65.4%) of the high school students in 2019–20 believed that their fellow students did not view vaping negatively.

There are interesting developments in student perceptions that suggest adolescents have grouped vaping with tobacco use when it comes to industry promotion. Over three-quarters of high school students believed that vaping companies were part of the tobacco industry and that tobacco companies targeted their age group by advertising flavored tobacco products in stores and on social media. The perception of a vaping company as part of the tobacco industry may mobilize youth against the use of their products because of the negativity associated with the latter, as an industry that has manipulated the facts to addict young people.^{13,14}

The intersection of vaping nicotine and vaping marijuana is a concern. Marijuana use in general was higher than vaping nicotine or just flavoring among high school students. New products for marijuana, including those using new vaping devices, can be appealing to youth. The public health community must be particularly vigilant in monitoring the impact of new vaping devices on the use of both nicotine and marijuana among adolescents.

In summary, findings from the 2019–20 CSTS reveal significant achievements, while also raising new questions about the next phase of the public health campaign. The very low smoking prevalence among high school students suggests that an end-game for the use of combustible tobacco is within sight. Vaping remains a challenge, and the public health community will have to be creative in developing new strategies in order to succeed in the next phase of tobacco control.

RESOURCES

- Find the *California Student Tobacco Survey Biennial Report 2019-2020* on the California Department of Public Health, California Tobacco Control Branch's website: <https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CTCB/Pages/Data.aspx>
- Learn about Tobacco-Use Prevention Education (TUPE) resources, news, and partnerships near you: <https://tupeca.org/>
- View anti-tobacco commercials at www.tobaccofreeca.com
- Connect students to the California Smokers' Helpline (1-844-8-NOVAPE, 1-800-NO-BUTTS) for free, evidence-based telephone counseling and online support to help quit vaping or smoking. Help is available for tobacco users and the people who care about them. Visit <http://www.nobutts.org/youthvaping> for more information.
- Learn about *Youth Vaping Alternative Program Education (YVAPE)*, an alternative to suspension program with telephone counseling and educational materials for California middle and high school students facing disciplinary action for vaping at school. Visit <https://yvape.org/> for more information.
- Download free, print-ready tobacco education materials through the Tobacco Education Clearinghouse of California at: www.tecc.org

APPENDIX A – 8th Grade Tobacco Use

Highlights

- Few 8th grade students (3.0%) reported using a tobacco product in the last 30 days.
- Vapes were the most prevalent product used (2.6%). The use of all other tobacco products was very low (less than 1%).
- Eighth grade students reported greater exposure to vapor compared to tobacco smoke, both in a room (17.1% and 9.6%, respectively) and in a car (10.7% and 7.0%, respectively).

The following section summarizes key tobacco use data for 8th grade students in Contra Costa County. It should be noted that the middle schools in this county were sampled as part of a statewide survey design without stratification by county. Therefore, the data for 8th grade students may not be representative of the 8th graders in the county and must be interpreted cautiously.

Tobacco Product Use Among 8th Grade Students

Table 21 presents the prevalence of current use of tobacco products among 8th grade students. The current tobacco use rate among 8th grade students was significantly lower than that of high school students; overall, 3.0% of 8th grade students in Contra Costa County reported currently using at least one tobacco product (compared to 14.3% of high school students). Vapes were the most commonly used product (2.6%) among 8th graders. The use of all other tobacco products was low.

Table 21. Prevalence of current tobacco product use among 8th grade students

	Current use N=501 % (95% CI)
Any of the below	3.0 (2.8-3.2)
Vapes	2.6 (2.5-2.7)
Cigarettes	0.4 (0.0-1.0) [†]
LCC	0.8 (0.3-1.2)
Big cigars	0.2 (0.0-0.5) [†]
Hookah	0.2 (0.0-0.5) [†]
Smokeless	0.2 (0.0-0.5) [†]

Abbreviations: LCC = little cigars or cigarillos.

[†]Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Secondhand Exposure to Vapor and Tobacco Smoke Among 8th Grade Students

Table 22 reports 8th grade students' exposure to secondhand vapor or tobacco smoke in a room and in a car in the last 2 weeks (see List of Terms). Overall, 8th grade students reported greater exposure to vapor compared to tobacco smoke, both in a room (17.1% and 9.6%, respectively) and in a car (10.7% and 7.0%, respectively). Regarding location of exposure, similar to high school students, 8th grade students were more likely to be exposed to secondhand vapor or tobacco smoke in a room than in a car. However, 8th grade students were significantly less likely to be exposed to vapor, compared to high school students.

Table 22. Prevalence of last 2-week exposure to vapor and tobacco smoke* in a room and car among 8th grade students

	Vapor		Tobacco smoke*	
	N	% (95% CI)	N	% (95% CI)
Exposure in a room	497	17.1 (15.9-18.3)	498	9.6 (9.3-10.0)
Exposure in a car	495	10.7 (9.9-11.5)	498	7.0 (6.2-7.8)

*Two products: Cigarettes and little cigars or cigarillos (LCC).

APPENDIX B – Survey Methodology

Survey Administration

The California Student Tobacco Survey (CSTS) is funded by the California Department of Public Health (CDPH) and has been conducted biennially since 2001–02. The 2015–16 CSTS was the first to be administered by the University of California San Diego (UC San Diego). For the 2019–20 CSTS, Local Lead Agencies (LLA) of the California Tobacco Control Program (CTCP) were given the opportunity to subcontract with UC San Diego to analyze survey data within the LLA’s health jurisdiction.

The main goal of the survey is to obtain statewide prevalence estimates for various tobacco products used by middle and high school students in California. The survey samples students from 8th, 10th, and 12th grades, similar to the well-known Monitoring the Future Survey. However, the CSTS focuses mainly on high school students, with 8th grade students sampled in smaller numbers. This appendix provides a brief overview of survey methodology for the 2019–20 CSTS specific to Contra Costa County. Additional details of the statewide report can be found in the *Results of the Statewide 2019–20 California Student Tobacco Survey Report* by S-H. Zhu, et al.¹⁵ Statewide survey methods can be found in the *Technical Report on Analytical Methods and Approaches Used in the California Student Tobacco Survey 2019–20* by S-H. Zhu, et al.¹⁶

Survey Content

The survey was designed to assess the use of, knowledge of, and attitudes toward cigarettes and emerging tobacco products (e.g., vapes, hookah, little cigars or cigarillos [LCC]). It also included questions about the use of and attitudes toward marijuana and alcohol. The survey contained 160 questions, including topics such as: awareness of and use of different tobacco products; history and patterns of tobacco use; tobacco purchasing patterns; knowledge of and participation in school tobacco prevention or cessation programs; perceptions of tobacco use (i.e., social norms); awareness of advertising; and susceptibility to future tobacco use.

Similar to previous years, the 2019–20 CSTS included images and product definitions with examples of common brands of tobacco products. The 2019–20 survey also referred to “e-cigarettes” as “vapes” to be consistent with changes in devices and the language used by youth to refer to these devices. The survey included separate questions on vaping nicotine, marijuana, and just flavoring to determine prevalence estimates; although, some questions asked about vapes more generally. Questions about hookah pens were also asked separately to ensure that students who reported using a hookah pen, but not a vape were captured.

Another major change in the 2019–20 survey was the removal of the *I prefer not to answer* response option. This response option was removed for all questions except for those that asked about students’ gender identity or sexual orientation.

Participation

To increase participation in the CSTS, schools were provided a \$500 Amazon gift card for administering the survey. Participating schools also received a brief report highlighting their school’s results. Teachers primarily acted as proctors for the survey, and, in some cases, other school staff proctored. UC San Diego provided proctors for schools that required additional support. Teachers and proctors were provided with directions for administering the survey. UC San Diego staff were available to answer questions from teachers and proctors.

The 2019–20 CSTS was administered online during the school day. The online survey included programmed skip logic to reduce participant burden and took a median of 21 minutes to complete. A few questions in the survey were mandatory, these asked about the respondents’ 1) willingness to participate in the survey; 2) school verification; and 3) grade level. The remaining survey questions were not mandatory, although an error message of “Oops, you didn’t answer” appeared if the question was unanswered. The student was allowed to move forward and skip the question if desired.

Student participation was voluntary and anonymous. Consent procedures were consistent with school district guidelines. In a passive consent protocol, parents could opt their children out of the survey if they did not want them to participate. In an active consent protocol, only students who returned a consent form signed by the parent could participate in the survey. All participating districts accepted passive consent. Consent forms were distributed to parents via the students one week before the survey. Spanish forms were available as needed. In addition to obtaining consent from parents, students were also asked to give their assent to participate in the survey.

Survey Sample 2019–20 CSTS

Table 23 provides information about the number of schools and students that participated in the 2019–20 survey for each of the three grades. The total sample included 4,587 students from nine schools. Grades 10 and 12 were considered high school, and grade 8 was considered middle school.

Table 23. Numbers of participating schools and students, Contra Costa County middle schools vs. high schools

	Middle school (8 th)	High school (10 th & 12 th)	Total
Number of schools	2	7	9
Number of students	501	4,086	4,587

Sampling Strategy

Contra Costa County conformed to the statewide CSTS sample for this report. The statewide sampling strategy used a two-stage sampling design, in which stage 1 was the random sampling of schools within regions and stage 2 was the sampling of classrooms within schools. Contra Costa

County was considered its own region (Region 26) in the 2019–20 CSTS. Sampling used the probability proportional to size (PPS) method and stratified by region with oversampling of schools in less densely populated (and more rural) regions, with higher African American enrollment, and with funding from the California Tobacco-Use Prevention Education (TUPE) program. Middle schools were sampled using simple statewide random sampling without stratification. Since the survey focuses on 10th and 12th graders, high schools were stratified by region. For high schools, the state was divided into 35 regions based on geographic contiguity and cultural similarity.

Participating middle schools were encouraged to survey all 8th graders, while high schools were encouraged to survey all 10th and 12th graders. For the minority of schools in Contra Costa that chose not to survey all students in the eligible grades (33% of schools), five class sections within a grade were randomly sampled for participation.

Analysis

The CSTS design utilized stratified random sampling and proper weighting to provide stable statewide prevalence rates. For high schools, Contra Costa County conformed to the statewide sampling strategy. Middle schools were sampled as part of the statewide survey without stratification by county. Therefore, the data for 8th grade students may not be representative of the 8th graders in the county and must be interpreted cautiously. Data are weighted to account for the study's sampling design, and the weighting procedure is described elsewhere.¹⁶ In addition, as more than 5% of the county's students participated in the survey, a finite population correction was applied in the analyses. All estimates include 95% confidence intervals in the report. A difference test was performed for two estimates with overlapping confidence intervals to determine a significant difference (i.e., $p < 0.05$) as needed.

Race/Ethnicity

The racial/ethnic background of students was determined using two primary questions. The first asked about Spanish or Hispanic (Latino) origin (i.e., ethnicity), and the second asked participants to indicate how they describe themselves (i.e., race) by marking all that apply: *American Indian or Alaska Native*, *Asian*, *Black or African American*, *Native Hawaiian or Other Pacific Islander*, *White*, or *Other*. The *Other* category included non-standard entries (such as Middle Eastern or Italian). Due to the small sample sizes of Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and Other groups, these groups were combined to form the *Other* category. In line with other surveys, students who identified as *Hispanic* were labeled as such regardless of the other races selected. Students who selected multiple races were grouped as *Multiple* in tables that included racial/ethnic categories.

Race/ethnicity categories of the CSTS are similar to those used by the California Department of Education (CDE), allowing us to compare the percentage of each race/ethnicity (Table 24). In many cases, the percentage of each race/ethnicity was similar between the CSTS and CDE enrollment data. Of note, the percentage of *Multiple* race/ethnicity was far higher in the CSTS

than reported by the CDE (13.4% vs. 4.8%, respectively). One possible reason for the difference is that the CSTS is based on student self-reporting, whereas the CDE is based on parent reporting of the child’s race/ethnicity. Students and parents may not have the same perspective regarding multi-racial identification. Because of the differences in how race/ethnicity was identified between the CSTS and CDE, student responses were not weighted by race/ethnicity. Given the ethnic diversity of Contra Costa County, and the increasing number of people who identify themselves as two or more races, the issue of how to analyze race/ethnicity data will continue to be relevant for the CSTS.¹⁷

Table 24. Percentage of race/ethnicity categories in the CSTS and CDE enrollment data

	CSTS Sample		CDE Enrollment	
	N=4536	(%)	N=39585	(%)
NH-White	1676	36.9	13155	33.2
NH-African American/Black	211	4.7	3598	9.1
Hispanic	1269	28.0	13146	33.2
NH-Asian	590	13.0	7205	18.2
NH-AI/AN	14	0.3	117	0.3
NH-NHOPI	34	0.7	263	0.7
NH-Other	135	3.0	214	0.5
NH-Multiple	607	13.4	1887	4.8

Note: CDE enrollment data were restricted to schools that were considered eligible to participate in the CSTS. Race/ethnicity data above are unweighted and should not be compared with weighted estimates throughout the report.

Abbreviations: NH = Non-Hispanic; AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

There are limitations with this method of classifying race/ethnicity. To provide a greater understanding of the impact of this classification of race/ethnicity, Table 25 compares how individuals were labeled using usual methods as to whether they endorsed a given race at all. It is clear that students tended to endorse multiple responses, and in particular, underrepresented races. For example, under the usual classification of labeling, the number of African American/Black students was 211 (i.e., non-Hispanic African American/Black who did not endorse any other racial identity). However, there were more than two times as many students (n=459) who indicated their race was African American/Black (including those who also indicated they were Hispanic or who selected at least one other racial category). This phenomenon was observed among Whites (n=1,676 vs. 2,665) and was even more striking for Native Hawaiian or Other Pacific Islanders (n=34 vs. 258), American Indian or Alaska Natives (n=14 vs. 211), and those of Other race/ethnicity (n=135 vs. 948).

Table 25. Percentage of labeled and endorsed race/ethnicity

	Labeled		Endorsed	
	N=4536	(%)	N=4536	(%)
White	1676	36.9	2665	59.4
African American/Black	211	4.7	459	10.2
Hispanic	1269	28.0	1269	28.0
Asian	590	13.0	1041	23.2
AI/AN	14	0.3	211	4.7
NHOPI	34	0.7	258	5.7
Other	135	3.0	948	21.1
Multiple	607	13.4	--	--

Note: The percent in endorsed does not add up to 100% because students could select more than one response. Race/ethnicity data above are unweighted and should not be compared with weighted estimates throughout the report.

Abbreviations: AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

APPENDIX C – Supplementary Tables

Table A. Prevalence of ever and current use of tobacco products among high school students

	Ever use N=4086 % (95% CI)	Current use N=4086 % (95% CI)
Any of the below	32.5 (27.7-37.3)	14.3 (10.8-17.8)
Vapes	28.9 (23.7-34.1)	12.8 (8.9-16.6)
Cigarettes	5.2 (4.1-6.3)	1.3 (0.9-1.7)
LCC	7.7 (6.7-8.7)	2.7 (1.8-3.6)
Big cigars	3.9 (2.1-5.7)	0.7 (0.3-1.1)†
Hookah	4.3 (3.7-5.0)	0.8 (0.6-1.0)
Smokeless	3.4 (1.1-5.6)†	1.5 (0.3-2.7)†
HTP	0.9 (0.7-1.1)	0.2 (0.1-0.4)†

Abbreviations: LCC = little cigars or cigarillos; HTP = heated tobacco products.

†Data are statistically unreliable because relative variance is greater than 30%. Interpret with caution.

Table B. Frequency of current vape use among those high school students who were current vapers

	Current vape use N=495 % (95% CI)
1 or 2 days	38.4 (31.4-45.4)
3-5 days	15.8 (13.4-18.2)
6-19 days	22.1 (19.8-24.4)
20-30 days	23.7 (17.7-29.8)

Table C. Proportion using flavored tobacco products among those high school students who were current users of a given tobacco product

	N	Flavored product use % (95% CI)
Vapes	495	95.8 (94.1-97.4)
Cigarettes*	47	40.6 (25.3-55.9)
LCC	105	73.9 (68.0-79.7)
Big cigars	27	42.9 (30.2-55.6)
Hookah	32	79.2 (69.4-89.1)
Smokeless	54	73.3 (70.7-75.9)

Abbreviations: LCC = little cigars or cigarillos.

**Menthol* was the only available flavor for cigarettes.

Table D. Perceived reasons for vaping among high school students

People my age use vapes with nicotine or just flavoring because...	Overall	
	N	% (95% CI)
their friends use them	4060	89.2 (86.7-91.7)
they come in lots of flavors	4063	73.0 (70.1-75.9)
they look interesting and cool	4063	72.6 (70.3-74.9)
they are healthier than cigarettes	4062	57.1 (56.2-57.9)

Table E. Percentage of high school students who believed that adults would feel negatively about them or another adult if they vaped or smoked

Adults would feel negatively about...	Vaping nicotine		Smoking cigarettes	
	N	% (95% CI)	N	% (95% CI)
the student	4056	97.0 (95.7-98.3)	4056	97.4 (96.2-98.6)
another adult	4041	91.3 (89.5-93.0)	4040	91.5 (89.6-93.4)

Table F. Percentage of high school students who believed that their close friends or other students at their school would view vaping or smoking negatively

Negative views of use among...	Vaping nicotine		Smoking cigarettes	
	N	% (95% CI)	N	% (95% CI)
close friends	4053	71.9 (69.5-74.3)	4052	94.1 (92.7-95.4)
other students at school	4036	34.6 (30.6-38.5)	4038	85.2 (82.1-88.2)

Table G. Prevalence of complete home bans on vaping and tobacco smoking among high school students

	Complete home ban	
	N	% (95% CI)
On vaping	4048	87.6 (84.7-90.4)
On tobacco smoking	4054	88.4 (85.8-91.1)

Table H. Prevalence of last 2-week exposure to vapor and tobacco smoke* in a room and car among high school students

	Vapor		Tobacco smoke*	
	N	% (95% CI)	N	% (95% CI)
Exposure in a room	4055	38.1 (28.8-47.5)	4057	7.9 (6.3-9.6)
Exposure in a car	4059	22.9 (15.7-30.1)	4059	5.0 (3.1-6.9)

*Two products: Cigarettes and little cigars or cigarillos (LCC).

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