2023

South Dakota

Youth Tobacco Survey

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SECTION ONE: BACKGROUND

The landscape of youth tobacco use is ever changing. Combustible product use, such as cigarettes, pipes, and cigars, has declined among United States (U.S.) youth in the past two decades. The use of alternative tobacco products, including electronic cigarettes (e-cigarettes), nicotine pouches, and heated tobacco products became more prevalent in the 2010s. National data from 2023 shows a promising downward trend in use of e-cigarettes overall among youth. However, this data also showed that most of the decline was among high school age students, with middle school youth showing an increase in use. Nationally, ever use of e-cigarettes among middle school students increased from 7.3% in 2021 to 9.7% in 2023.[1,2] Similarly, current (past 30 day) use of e-cigarettes among middle school students also increased from 2.8% in 2021 to 4.6% in 2023.[1,2]

Overall, in 2023, 6.6% of middle school students nationally reported current use of a tobacco product, and 14.7% reported they had used a tobacco product at least once in their lifetime.[1] Current use of two or more tobacco products in the past 30 days was reported by 2.5% of middle school students, and 6.1% of middle school student reported they had ever tried two or more tobacco products.[1] Poly-tobacco use in youth has been shown to increase symptoms of nicotine dependence, increasing the likelihood nicotine use will continue into adulthood.[3] Initiation of tobacco use during adolescence is a primary indicator for adult smoking status, as nearly 90% of cigarette smokers report having first tried smoking by age 18.[4-5] Various factors within an adolescents' social and physical environment, biological and genetics factors, mental health, personal perceptions, and other influences are associated with the initiation and maintenance of tobacco use among youth.[6]

The Youth Tobacco Survey (YTS) began in 1997 to assess the prevalence of tobacco use and examine factors that contribute to tobacco use among school-age youth. Data from the YTS serves to enhance the capacity of state agencies and organizations to design, implement, and evaluate tobacco prevention and control programs. South Dakota (SD) began statewide youth tobacco surveillance in 2003 using the South Dakota Youth Tobacco Survey (SD YTS). The SD YTS is an adaptation of the national YTS and includes state-added questions specific to programming and youth tobacco use trends in SD. After the 2003 baseline survey, the SD YTS has been repeated bi-annually from 2005 to 2023, providing valuable data to track tobacco use trends among youth.

This section (section one) outlines the sampling, data collection and data weighting procedures, along with a description of the 2023 SD middle school survey population. Sections two through six of this report summarize current tobacco use patterns among SD youth and provides trend data from previous SD YTS administrations, as well as comparison with national trends.

Sample Selection and Weighting Procedures

Description of the South Dakota Sample

All regular public, private, and tribal schools in SD offering grades 6, 7, or 8 were included in the sampling frame. Eighteen schools with fewer than 10 students in grades 6 through 8 were removed from the sampling frame before sample selection. The advantage of removing small schools is to increase the precision of the estimates. The disadvantage is a small amount of coverage error, which was calculated to be less than 1%. The total student number in the 18 excluded schools was 95 (out of 34,005) students, leaving 33,910 students in 216 schools in the sample selection pool.

Stratified sampling is a survey sampling method frequently utilized in surveillance to enhance the representativeness of samples drawn from diverse populations. This technique, outlined by Cochran in 1977, involves partitioning the population into mutually exclusive subgroups or strata based on specific characteristics such as age, gender, income, or geographic location.[7] By stratifying the population, we aim to ensure that each subgroup is adequately represented in the sample, thus minimizing the risk of bias and improving the accuracy of estimates. This approach is particularly advantageous when dealing with populations with varying characteristics or when certain subgroups are underrepresented in the population. Stratified sampling facilitates more precise estimations by accounting for variability within different strata, thereby yielding more reliable outcomes.[7]

For the data in hand, we used two strata classified by the percent of students in the school with American Indian (AI) as reported race: (1) Less than 25% of student body in the school reported American Indian race (low American Indian density) and (2) 25% or more of the student body in the school reported American Indian race (high American Indian density), a definition obtained from the National Center for Education Statistics[8]. Fall 2022 school enrollment data was obtained from the SD Department of Education for use in the 2023 SD YTS.[9] The high American Indian density schools were over-sampled, increasing the size of the target sub-population and improving the reliability of the data in a small population. The student population of the schools with low American Indian density was between 11 to 1,050 students with a mean of 177.6 students. The student population of the schools with high American Indian density was between 10 to 537 students with a mean of 90.4 students.

We divided the data into three clusters (small, medium, and large) based on the total number of students attending the school. The small cluster contained schools with a student census between 10 to 161, with an average of 62.1 students. The medium cluster contained schools with a student census between 167 to 414, with an average of 267.7 students, and the large cluster contained schools with a student census between 473 to 1,050, with an average of 668.1 students. These clusters were obtained using the k-means clustering algorithm. There were 10,249 (49.3%), 6,959 (20.5%), and 16,702 (30.2%) students in small, medium, and large clusters, respectively.

The sample size calculation within each stratum, h, was calculated as

$$n_{h_i} = \frac{N_h}{N} \times \frac{Z^2 \times P_i\,(1 - P_i\,)}{E^2},$$

where n_{h_i} is the sample size needed within stratum h=1,2,3, and i=1,2 is the strata, N_h is the total number of clusters in stratum h, N is the total number of clusters in the population, Z is the Z-score corresponding to the desired confidence level, P_i is the estimated proportion of the characteristic of interest within strata i based on cluster-level statistics, and E is the desired margin of error or precision. It is important to note that in this two-stage sampling approach, the calculated sample sizes, n_{h_i}, for each stratum might not be whole numbers (since they are based on clusters), so we rounded up to the next whole number to ensure that we have a feasible sample size. In this study, $P_1 = 0.107$ and $P_2 = 0.304$, Z was chosen to be 2.0537 which is the 0.98 quantile of the standard normal distribution, and $E = 0.015$. The total sample size was chosen to be the sample size for each stratum divided by 0.65.

The total sample size was 3,713 in 45 schools, with 31 high American Indian density and 14 low American Indian density. There were 24 small, 9 medium size, and 12 large size schools.

	Small	Medium	Large
Low American Indian density	10	3	1
High American Indian density	14	6	11

A three-stage cluster sample design was used to produce a representative sample of students in grades 6-8. A sample was drawn using a three-stage cluster sample design:

1) Within each stratum, schools were selected with probability proportional to school enrollment size using a systematic selection procedure. (School Level)
2) Classes within schools were selected randomly, also using a systematic selection procedure, so that the overall probability of selection of each student is equal. Every eligible student in schools on the sampling frame has a chance of being selected. (Class Level)
3) All students were selected in each selected class. (Student Level)

Overall Response Rates

Schools - 82.22% 37 of the 45 sampled schools participated.

Students - 86.07% 2,503 of the 2,908 sampled students completed usable questionnaires.

Overall response rate - 82.22% * 86.07% = 70.8%

Weighting and Final Data Preparation

After collecting the survey data, we performed the weighting of the survey responses to correct for discrepancies between the sampled and the target population. This technique involved assigning numerical values or weights to individual survey responses based on predetermined criteria. These criteria often reflect the probability of selection for each respondent, as well as adjustments for non-response or oversampling in specific groups. Applying appropriate weights ensures that the survey results accurately reflect the characteristics of the target population, even if certain groups are underrepresented or overrepresented in the sample. Weighting also helps mitigate biases that may arise due to sampling methods or survey design, thereby enhancing the validity and generalizability of findings. Overall, weighting is a fundamental practice in public health surveillance, used to draw meaningful insights and make informed decisions based on representative data.[10] The weighted results from this project can be used to make important inferences concerning tobacco use risk behaviors of all regular public-school students in grades six through eight in South Dakota.

A weight was associated with each sample unit to reflect the likelihood of sampling each student and reduce the potential bias by compensating for differing patterns of non-response. The weight used for estimation is given by:

$$\mathbf{W = W1 * W2 * f1 * f2 * f3 * f4}.$$

W1 (school selection weight) = the inverse of the probability of selecting the school
W2 (class selection weight) = the inverse of the probability of selecting a classroom within the selected school
f1 = a school-level non-response adjustment factor calculated by school size category (small, medium, large).
f2 = a non-response class adjustment factor calculated by school
f3 = a student-level non-response adjustment factor calculated by class
f4 = a post-stratification adjustment factor calculated by grade—OR—adjustment factor calculated by grade and race

A non-response adjustment factor for a unit is the inverse of the estimated probability of the unit's response.

To properly weight the survey data, we calculated weights that adjust for the differences in the population sizes of the subgroups. The probabilities of schools being in the sample for each subgroup had already been calculated in the sampling process. The inverse of these probabilities were used as weights. The school selection weight (W1) is the inverse of the school sampling probability. The school sampling probability for each stratum *h* is calculated as the total number of students in that school divided by the total number of students in that stratum. Then the sampling was done using a proportional random sampling based on the probability. The W1 is the reverse of this probability. The class selection weight (W2) is the inverse of the class sampling rate. All classes in each school are equally likely to be chosen in the sample.

An adjustment was made for school non-response, class non-response, and student non-response. The purpose of the non-response adjustments is to refine the weights to adjust for bias from non-response.

Schools were placed into three categories (small, medium and large) using the cluster variable which was created in the sampling phase of the analysis. For each group, a school non-response adjustment (SNA) factor (f1) was calculated as follows:

$$SNA = \frac{\sum_{selected\ schools\ in\ group} school\ selection\ weight \times school\ enrollment}{\sum_{participating\ schools\ in\ group} school\ selection\ weight \times school\ enrollment},$$

Since all the classes that were chosen for the survey had participated in the analysis, we did not need to adjust for class non-response adjustment (f2). Within each class, a student-level adjustment is made for students who are non-respondents (f3). The adjustment is computed by doing the following:

$$SAF = \frac{\sum_{eligible\ students} student\ weight}{\sum_{completed\ the\ Survey} student\ weight},$$

For the post-stratification, the sample data was adjusted to match the school population data using statewide grade, gender, and race data from the SD Department of Education.[9] The post-stratification was done by grade-race-gender. For students who had missing data on grade, race or gender the values were imputed in the following manner:[12]

> For respondents missing gender, the respondent is randomly assigned as a 'male' or 'female' value based on a uniform distribution of random numbers. For respondents missing grades, the respondent is assigned a grade value based on the average grade (rounded) of the student's school. For respondents missing race, randomly assign the respondent a race value (White, Black, Hispanic, or Other) based on the empirical distribution of the data. For example, if the respondents were 60% white, 60% of the respondents who are missing race will be randomly classified as white. Note that the values are only imputed for weighting purposes. The imputed values are not retained in the final data set.

After calculating the inclusion weights and non-response rates and adjusting for the post-stratification, we normalized the weights for each sample using:

$$Normalized\ Weight_i = \frac{Weight_i}{\sum_i Weight_i} \times N,$$

where N is the total population size.

The weighted results can be used to make important inferences concerning tobacco use risk behaviors of all regular public-school students in grades six through eight in South Dakota.

Additional Methodology Notes

Data Collection

The SD YTS was conducted online in 2023 through a custom, web-based application. The application generated a unique survey link for each selected classroom. Identified school staff administered the survey in each selected classroom and provided the unique classroom link to each student to complete the survey during the specified class period. No IP address information was collected. The data file exported from the survey system contained survey question responses, school code, and classroom code. No personally identifying information was included.

2023 SD Survey Questions

The SD YTS questions included topics of tobacco use prevalence, access to tobacco, knowledge and attitudes about tobacco, cessation, advertisements, exposure to secondhand tobacco smoke and vapor, and experiences at home and school. New questions added in 2023 addressed type of e-cigarette used among those reporting use, middle schoolers perception on ease of tobacco purchase, quit intent among tobacco/vape users, perceptions of harm from tobacco/vape use, and social media content about tobacco. The 2023 YTS survey had a total of 89 survey questions. A full list of the 2023 YTS questions is available by submitting a request to the South Dakota Department of Health Tobacco Control Program.

Key Data Definitions

Categorization of Race/Ethnicity

The classification of students by race and ethnicity was conducted using modified methodology from the National Youth Tobacco Survey.[12] First, ethnicity was classified by response to the Hispanic or Latino ethnicity question. If only one of the races available was selected, students were classified into that race. If a student selected multiple races (or Hispanic/Latino was "yes" and a race selected), they were categorized using a minority prioritization hierarchy reflective of the minority populations of South Dakota: American Indian/Alaskan Native, Hispanic, Black, Asian, Native Hawaiian/Pacific Islander, and White. This prioritization order is different from the National Youth Tobacco Survey: Hispanic, White, Black, Asian, American Indian/Alaskan Native, and Native Hawaiian/Pacific Islander.[12] Comparisons by race to national data should consider the differences in prioritization.

To reflect the population demographics of South Dakota, a four-level race/ethnicity categorization ("White", "American Indian", "Hispanic" and "All other races") was created by merging Black, Asian, and Native Hawaiian and other Pacific Islander into a single category. Throughout the report, race/ethnicity that does not fall within the "White" or "American Indian" or "Hispanic" categorization is referred to as "other races".

Categorization of Any Tobacco Product

When specified throughout the report, the various tobacco products are at times combined to form a single dichotomous category, "any tobacco". This category was created using the National Youth Tobacco Survey methodology. [2] Any tobacco use was defined as use of electronic cigarettes (e-

cigarettes/vapes), cigarettes, cigars (cigars, cigarillos, and little cigars), smokeless tobacco (chewing tobacco, snuff, dip, snus, and dissolvable tobacco products), hookahs, pipe tobacco, bidis (small brown cigarettes wrapped in a leaf), heated tobacco products (HTPs), or nicotine pouches at least on one occasion.[2]

Categorization of Ever and Current Tobacco Use

Tobacco product use among middle school students was classified as either 'ever tobacco use' or 'current tobacco use'. Ever tobacco use is defined as use of a tobacco product, in any amount, on one occasion or more at any point in the past. Ever tobacco use is an indicator of the level of tobacco product experimentation among youth. Current tobacco use is defined as the use of a tobacco product on one or more days in the past 30 days. Current tobacco use is an indicator of the presence of recent use, which may indicate regular or ongoing use of tobacco products.

Data Analysis

To account for the complex survey design, weighted prevalence estimates and 95% confidence intervals were computed for all measures. Statistical analyses were conducted using SAS version 9.4. We performed significance tests at the $p<0.05$ level. In addition, results with unweighted denominator less than 35 or a relative standard error (RSE) >30% were noted as potentially unreliable throughout the report. Those with a raw number of responses at less than 10 in the specific category are noted as not reported.

Student write-in responses are included throughout the report. Write-in responses were not analyzed for re-classification into the existing response categories; responses were provided as the student provided, with edits only to spelling, punctuation, and to exclude profanity or specific persons/locations.

Historical South Dakota Youth Tobacco Survey Data

Throughout this report, historical data is provided from past survey years, biannually from 2013 to 2021. Except where noted, all this data is drawn from printed reports.[12] The actual data was not reanalyzed, so the authors rely on the accuracy of previous reports for this information.

Description of the Middle School Population

The 2023 SD YTS was administered to 2,908 middle school students (grades 6-8) in 37 schools during the fall of 2023, with 2,503 students completing valid questionnaires, for an overall response rate of 70.8%. Demographic information collected in the 2023 SD YTS included gender, race/ethnicity, and grade level, presented in Table 1. The SD YTS is conducted only with middle school students; therefore, 99.0% of the sample was between the ages of 11 and 14. Findings of the 2023 SD YTS were weighted to represent all sixth through eighth grade public, non-public, and tribal school students in SD.

In 2023, SD middle school students were asked about language spoke at home, with 15.6% of the population reporting a language other than English.

Table 1. Demographic Characteristics of the Weighted Middle School Sample, 2023

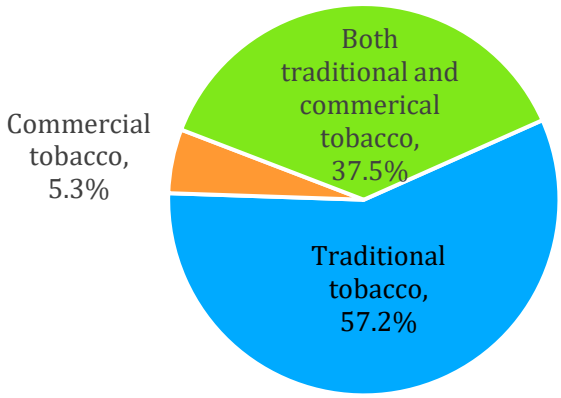
	Respondents %
Gender	
Male	48.4%
Female	51.6%
Race/Ethnicity	
White	68.0%
American Indian	12.4%
Hispanic	8.6%
Other	11.0%
Grade	
6th	38.6%
7th	29.7%
8th	31.7%

Ceremonial Use of Tobacco

Two questions on the 2023 SD YTS assessed the use of tobacco as an offering or during prayer or ceremony, asked of American Indian students. The purpose of these questions was two-fold. The first was to explicitly outline that use of commercial tobacco for ceremonial purposes should not be included when responding to the survey questions. Students indicating the use of tobacco for ceremony were shown a pop-up message within the online survey explaining this. The second purpose was to gather information on the portion of American Indian students using traditional or commercial tobacco for ceremonial purposes, as shown in Figure 1.

Figure 1. Type of Tobacco used among American Indian Students reporting Ceremonial Use, SD YTS 2023

Among American Indian students, **21.0%** reported using tobacco as an offering, or during **prayer or ceremony.**



SECTION TWO: PREVALENCE AND TRENDS IN TOBACCO USE

E-cigarette/Vape Use among Middle School Students

Electronic cigarettes (e-cigarettes) were the most commonly used tobacco product in the 2023 National Youth Tobacco Survey.[1] These battery-powered devices heat "juice" to an aerosol that is then inhaled. E-cigarettes are considered harmful to youth since most products contain nicotine, which is highly addictive, and often other toxic substances.[13] Nicotine use in adolescence has been shown to negatively impact brain development, and damage areas of the brain important for attention and learning.[13]

Key Findings

- Nearly one in 10 middle school students (8.1%) reported ever using an e-cigarette/vape.
- Current (past 30-day) use of e-cigarettes/vapes was reported by 3.4% of middle school students.
- Over half of current e-cigarettes users reported using flavored products (62.3%).
- Disparities in use by race remain, with racial minority students more than twice as likely to report ever use of e-cigarettes/vapes than White students.

Rate of E-Cigarette/Vape Use

Middle school students were asked if they had ever tried using an e-cigarette/vape on at least one occasion. Trends in ever e-cigarette/vape use from 2011 to 2023 are presented in Figure 2. Overall, 8.1% of middle school students reported use of an e-cigarette/vape on at least one occasion in 2023, a decrease from 2021 SD YTS data (11.6%), and lower than the national middle school ever e-cigarette/vape use rate at 9.7%.[1]

Current use is defined as having used the tobacco product one or more days in the last 30 days. Overall, 3.4% of middle school students reported current use of e-cigarettes/vapes in 2023, a decrease from 4.0% in 2021 as shown in Figure 2. National data showed an increase in current e-cigarettes/vape use among middle school students, from 3.3% in 2022 to 4.6% in 2023.[1]

Figure 2. Trends in Ever and Current E-cigarettes Use among SD Middle School Students, SD YTS, 2013-2023

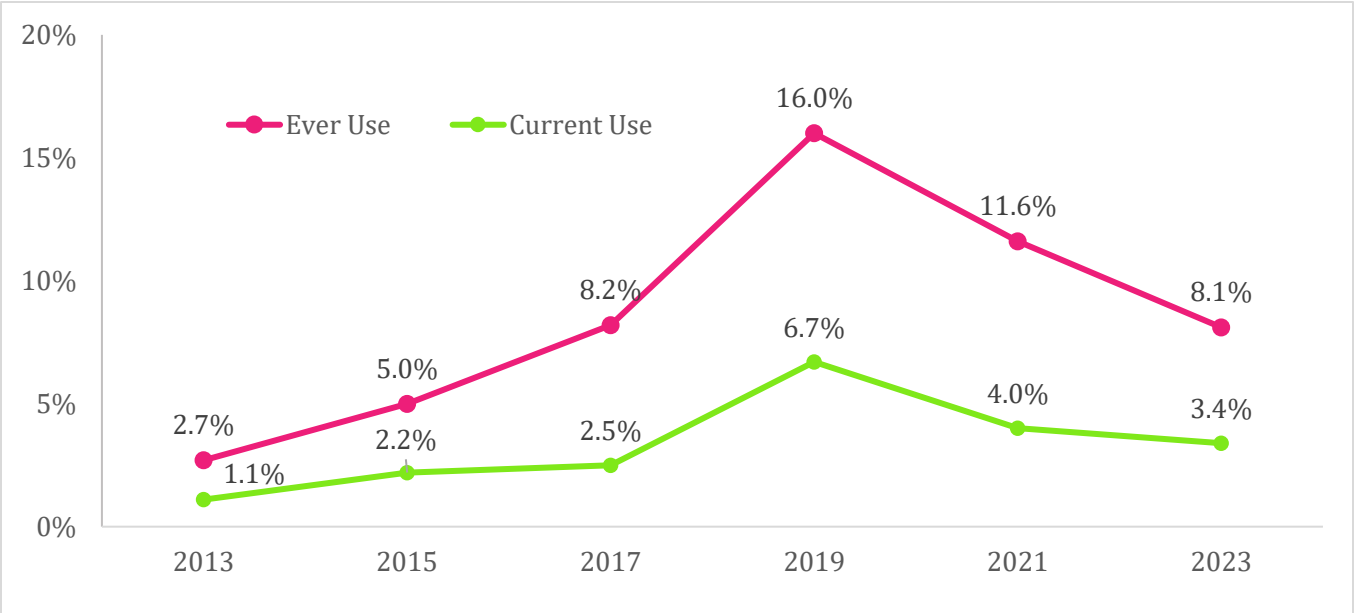


Table 2 shows rates of ever e-cigarette/vape use by gender, race/ethnicity, and grade. Both ever and current use of e-cigarettes/vapes were statistically higher among American Indian students than White students ($p<0.05$). Nearly one in five American Indian students report ever using an e-cigarette/vape. The prevalence of ever e-cigarette/vape use was also significantly higher among eighth grade students (11.6%) when compared to seventh (6.0%) and sixth grade students (6.9%) ($p<0.05$). No significant differences were found in ever or current use by gender.

Table 2. Ever and Current Use of E-cigarettes/Vapes by Gender, Race/Ethnicity, and Grade, SD YTS 2023

	Ever Use % (95% CI)	Current Use % (95% CI)
Gender		
Male	6.8 (4.7-8.8)	2.8 (1.6-3.9)
Female	9.4 (6.9-12.0)	3.9 (2.4-5.5)
Race/Ethnicity		
White	5.3 (3.6-7.0) **	2.2 (1.0-3.5) *
American Indian	18.1 (11.7-24.5) **	6.4 (3.8-9.1) *
Hispanic	10.7 (3.1-18.2) **	4.8 (0.6-9.0) *
Other	12.4 (6.6-18.3) **	5.8 (1.7-9.9) *
Grade		
6th	6.9 (4.4-9.4) *	3.5 (2.0-5.1)
7th	6.0 (3.8-8.3) *	2.3 (1.2-3.4)
8th	11.6 (7.7-15.4) *	4.2 (2.2-6.1)
Overall	**8.1 (6.4-9.8)**	**3.4 (2.4-4.3)**

*p-value < 0.05, **p<0.001 based on Rao-Scott chi-square test. CI =confidence interval

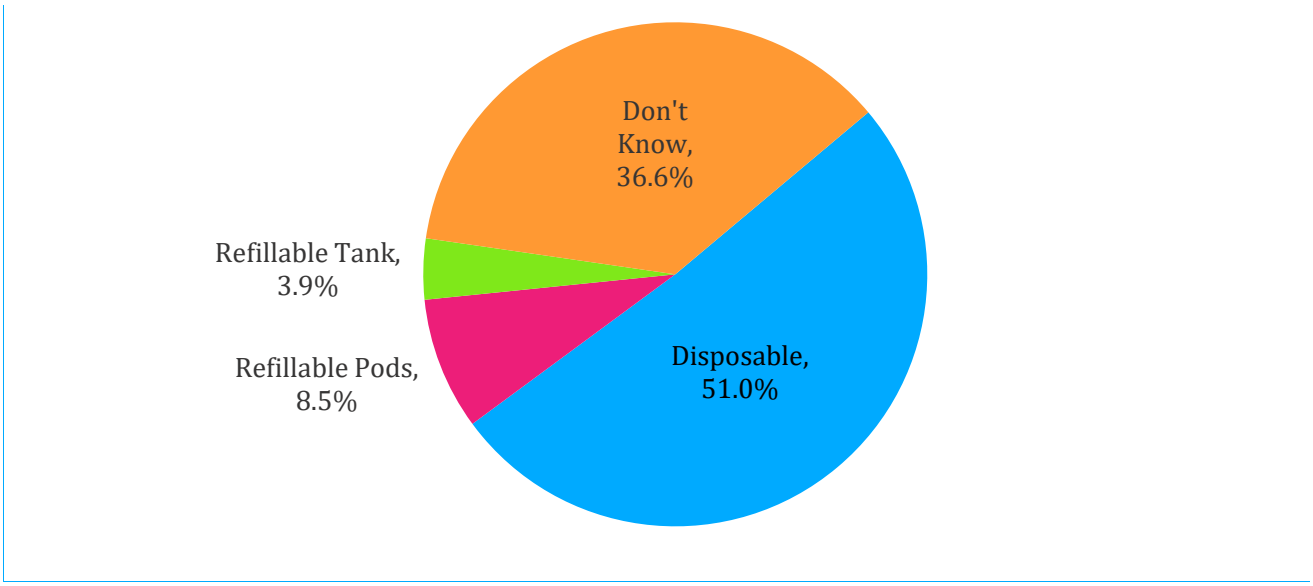
Frequency of E-Cigarette/Vape Use

Among students who ever used an e-cigarette/vape, the majority (79.4%) reported 20 or fewer days of use. Due to small numbers, no further categorization is reported for the number of days of use in the past 30 days.

Type of E-Cigarette/Vape Use

Among students who ever used an e-cigarette/vape, over half (51.0%) reported using a disposable product (Figure 3). Refillable tanks and pods were less commonly used. One in three reported they did not know what type of e-cigarette/vape they had used.

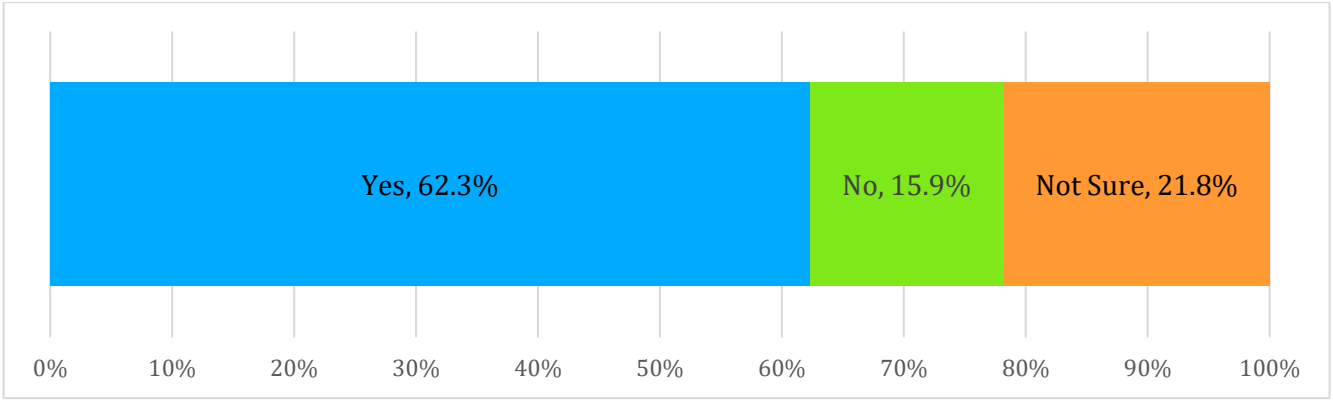
Figure 3. Type of E-cigarette/Vape Used by SD Middle School Students, SD YTS 2023



Use of Flavored E-Cigarettes/Vapes

Of the 8.1% of middle school students who ever used e-cigarettes/vapes, most (62.3%) reported using flavored products. Overall, 21.8% reported 'not sure' if the e-cigarettes/vapes used were flavored.

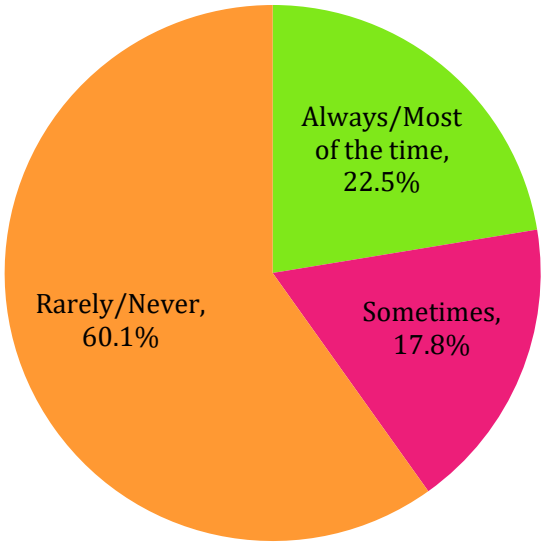
Figure 4. Ever E-cigarette/Vape Users who Reported Use of Flavored Products, SD YTS 2023



Use of Another Person's E-cigarette/Vape Device

Among middle school students who reported current use of e-cigarettes/vapes, 60.1% reported rarely or never using someone else's e-cigarette device (Figure 5). One in five reported frequently sharing devices.

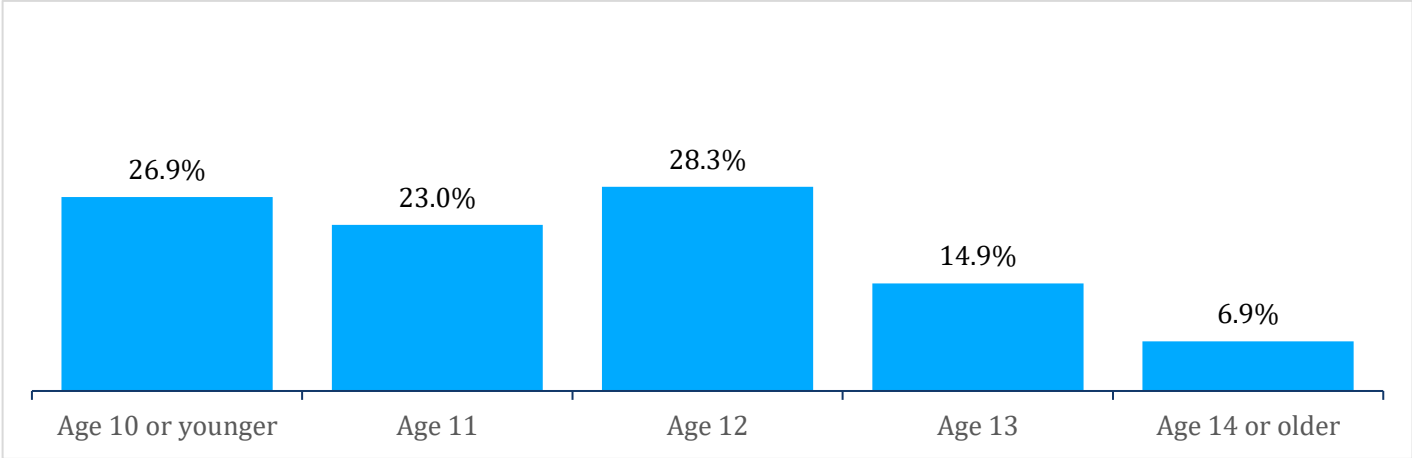
Figure 5. Frequency of Using Another Person's E-cigarette Device among Current E-cigarette/ Vape Users, SD YTS 2023



Age of First Use of E-Cigarettes/Vapes

The most common age of first use among middle school students who had ever used e-cigarettes/ vapes was age 12 (28.3%), with 49.9% reporting first use before age 12 (Figure 6).

Figure 6. Age of First Use among Ever E-cigarette/Vape Users, SD YTS 2023*

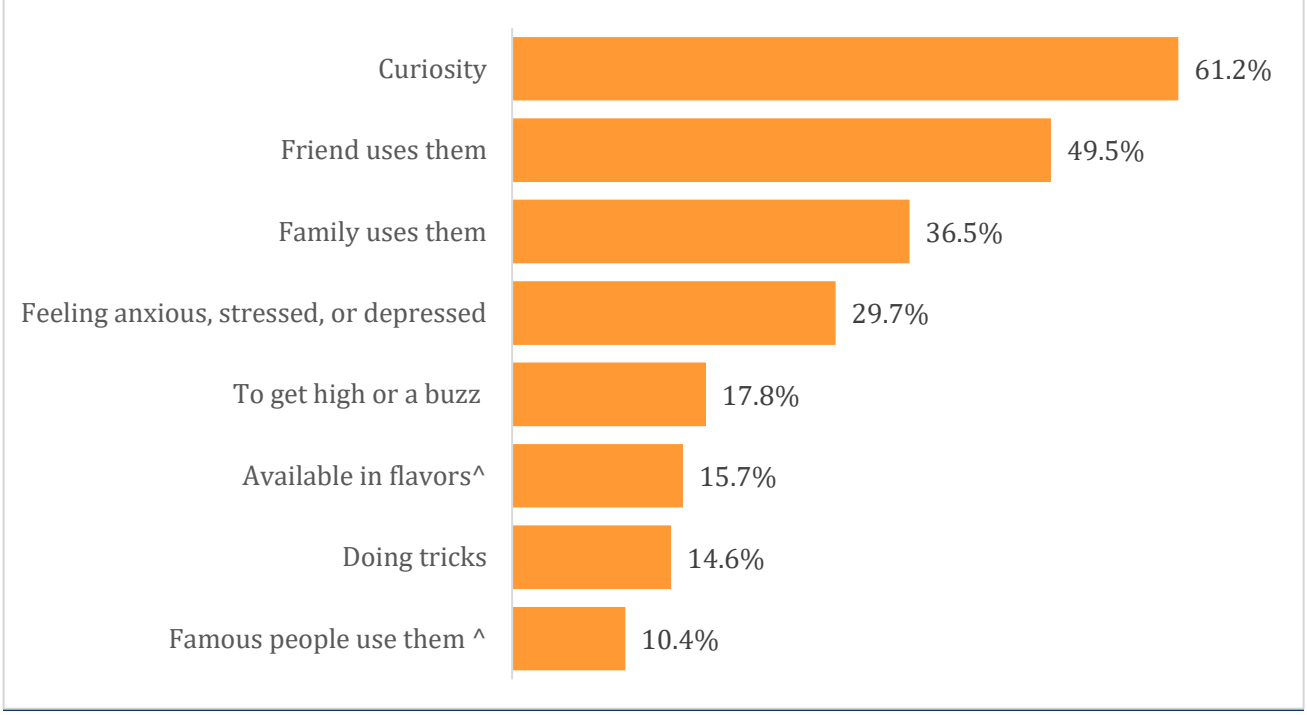


*Age of the sample was predominantly age 11 to 14.

Reasons for E-cigarette/Vape Use

Middle school students who reported ever using e-cigarettes/vapes, were asked to share their reasons for using. The top reasons are shown in Figure 7, with the most commonly reported as curiosity (61.2%), friend (49.5%) or family member (36.5%) use, and feelings of anxiety, stress, or depression (29.7%). Write-in responses for 'other reasons' included: "pressured", "my friends convinced me", "depression", "it seemed fun", "just for fun", "I feel addicted", "for fun", "I thought it was a machine that takes stuffiness", "I found it one time on the sidewalk", "my mom made me", "around people vaping at my old school", and "I lost a couple of family members and past trauma".

Figure 7. Top Reasons for E-cigarette/Vape Use among Ever Users, SD YTS 2023*



*Not equal to 100% as student could select more than one. ^Rates should be interpreted with caution due to small raw number of respondents (<35).

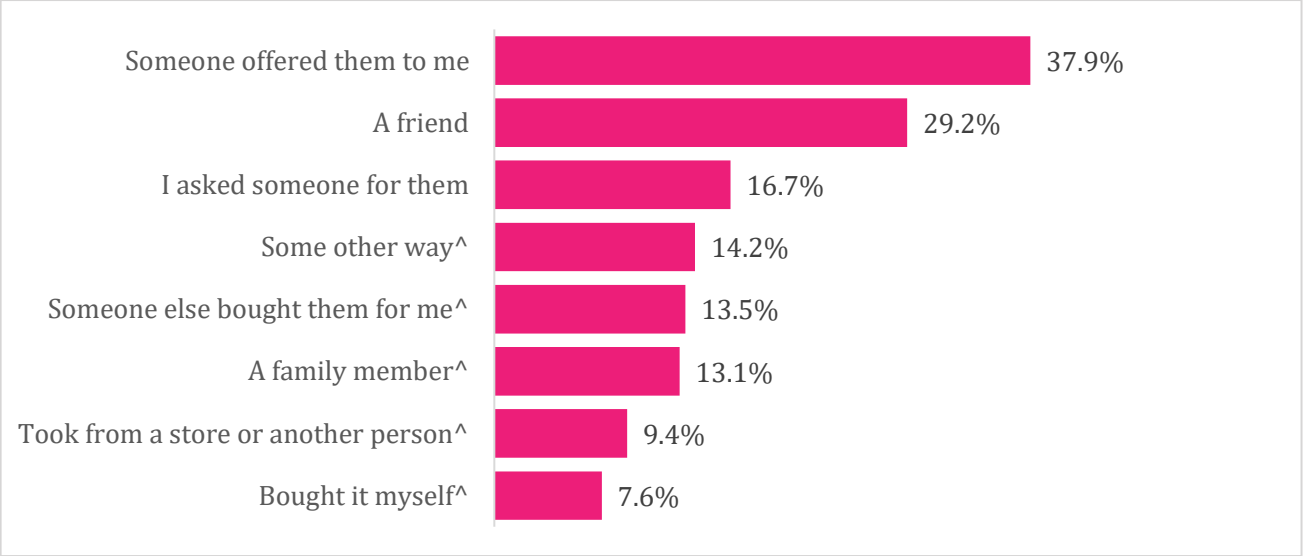
Obtaining E-cigarettes/Vapes

Current middle school e-cigarette/vape users were asked to indicate how they got the e-cigarette/vape or refills (Figure 8). Over one-third reported they obtained the product from someone else offering (37.9%), followed by from a friend (29.2%) and asking someone for them (16.7%). Write-in responses on other ways of obtaining e-cigarettes/vapes included:

- From friends/peers (n=9): "I bought one off of my friend", "a friend let me hit theirs one time", "my friend", "a friend got them for me", "my friend let me try it", "a friend told me to try it", "my friends", "a classmate offered me to take a puff of his vape", and "someone that was with my friend had one and I tried".
- Found in public (n=6): "on the floor on the street", "found it on the street", "I found it", "I found some", "found it laying on ground", and "I found it on a sidewalk - trashed it".

- From family (n= 5): “my dad vapes and he let me try so he buys it”, “my mom had them in her bathroom”, “my brother let me try his I never got my own”, “my sister had one and I was curious”, and “took it from a family member and put it back”.
- Other: “I used someone else”, “I stole it”, “I don’t have one” (n=2), and “behind my desktop”.

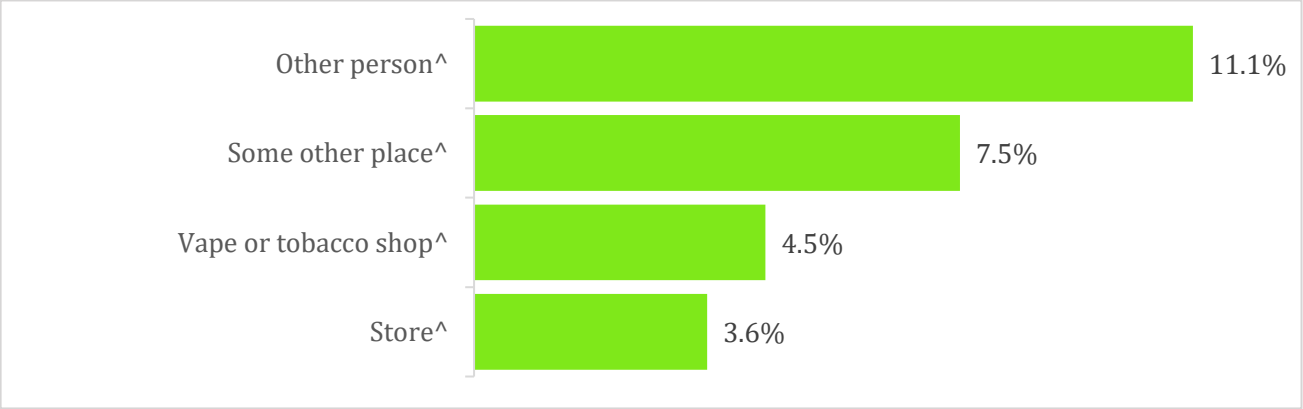
Figure 8. Path of Accessing E-cigarettes/Vapes for Current Users, SD YTS 2023*



*Not equal to 100% as student could select more than one. ^Rates should be interpreted with caution due to small raw number of respondents (<35).

When asked directly about purchasing e-cigarettes/vapes, nearly one in three (31.0%) ever e-cigarette/vape users in middle school reported purchasing the products themselves. As shown in Figure 9, the most common way to buy e-cigarettes/vapes was from another person. Open responses for the other place of purchase included: “family member let me try once”, “dad bought it because he vapes. I don’t no more”, “just tried a friends”, “from a friend but that was the last time”, “I don’t know” (n=3), “I don’t buy them” (n=2), and “I’ve never owned one”.

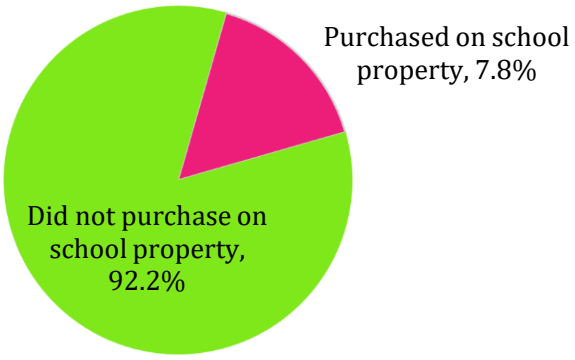
Figure 9. Purchase Locations of E-cigarettes/Vapes among Current Users, SD YTS 2023*



*Not equal to 100% as student could select more than one. ^Rates should be interpreted with caution due to small raw number of respondents (<35). Rates of ‘Internet, mail or delivery service’ are not reported as fewer than 10 raw responses for the item.

Ever e-cigarette/vape users were also asked if they had purchased an e-cigarette/vape device (including disposable devices), pod, cartridge, single hit, or e-liquid refill while at school or on school property. In 2023, 7.8% reported purchasing at school, which is a large decrease over 16.1% of students in 2021 (Figure 10).

Figure 10. Ever E-cigarette/Vape Users who Report Purchasing E-cigarettes/Vapes at School or on School Property, SD YTS 2023^

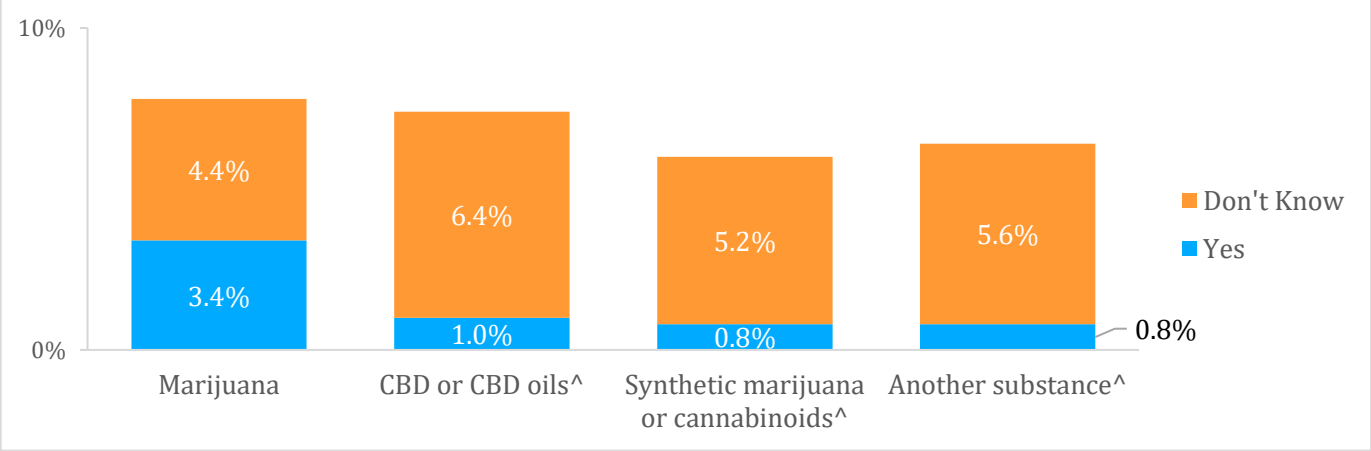


^Interpret rates with caution as fewer than 35 students responded yes.

Using E-cigarette/Vape Device for Other Substances

Nationally, an increase in vaping marijuana has been identified. In a 2019 national sample of eighth grade students, 3.9% reported past 30-day use of marijuana by vaping.[14] A question assessed use of the e-cigarette/vape device for other substances. Figure 11 shows that 3.4% of middle school students reported ever vaping marijuana, with an additional 4.4% responding "don't know". Vaping other substances was less common with 1.0% of students indicating they had vaped CBD or CBD oils, 0.8% synthetic marijuana, and 0.8% another substance. Write-in responses for another substance included: "cigarette", "crystal meth", "dad let me try once and that was it", "tobacco", "alcohol" (n=2), "sage", "molly", "medicine", and "smarties".

Figure 11. Use of E-cigarette/Vape Device for Marijuana and Other Substances, SD YTS 2023



^Interpret rate with caution as fewer than 35 students responded yes.

Cigarette Use among Middle School Students

In the 2023 National Youth Tobacco Survey, cigarettes were the second most commonly ever and currently used tobacco product, following e-cigarettes/vapes. Among middle school students nationally, 4.3% reported ever use of cigarettes and 1.1% reported current use of cigarettes.[1] In 2023 SD YTS, middle school students were asked if they had ever smoked a cigarette, even one or two puffs, and asked how many days they smoked cigarettes during the past 30 days.

Key Findings

- A continued downward trend in cigarette use among middle school students was observed. Ever use of cigarettes declined to 4.3% – the lowest rate in the past twelve years.
- Current (past 30-day) use of cigarettes increased slightly from 1.2% in 2021 to 1.5% in 2023.
- American Indian students had higher rates of ever cigarette use at 12.3% than White students at 2.1%, Hispanic students at 6.6%, and other race students at 7.1%.
- Over half of middle school students who report ever smoking first used a cigarette at age 10 or younger.

Rate of Cigarette Use

Overall, 4.3% of middle school students reported ever smoking a cigarette, a downward trend from 2021 SD YTS rate at 6.5% (Figure 12). Current (past 30-day use) of cigarettes among middle school students was 1.5%.

Figure 12. Trends in Ever and Current Cigarette Use, SD YTS 2013-2023

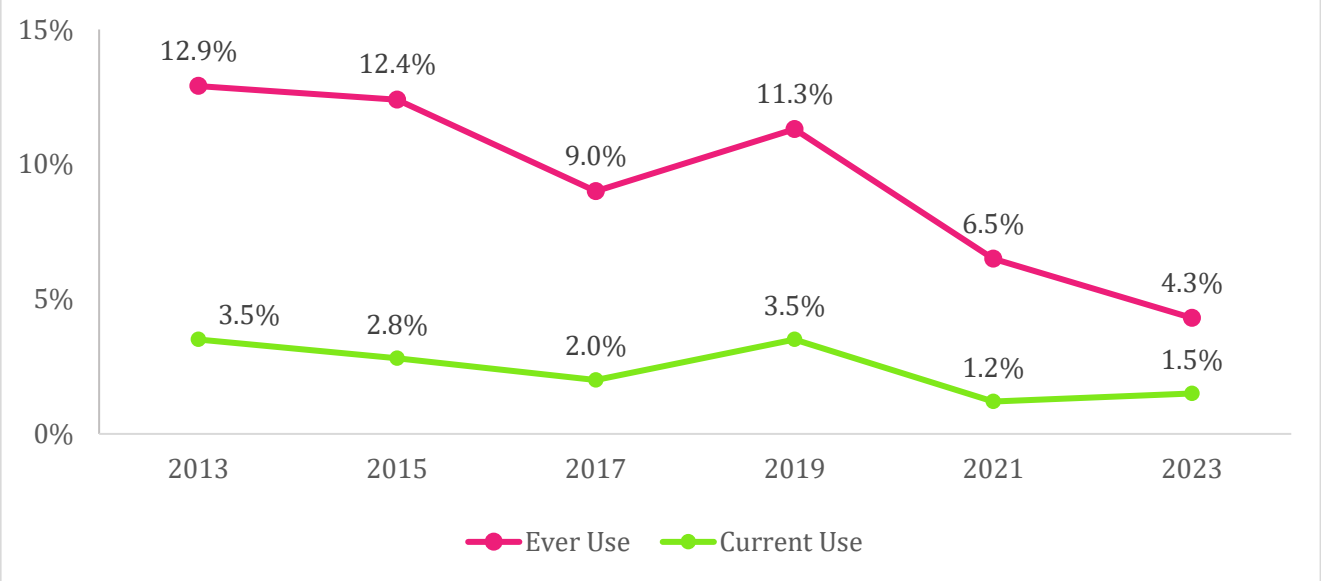


Table 3 shows rates of ever and current cigarette use by gender, race/ethnicity, and grade. No significant differences were found in cigarette use by gender or grade among ever cigarette users. American Indian students were more likely to report ever use of cigarettes than students of other races (p<0.001).

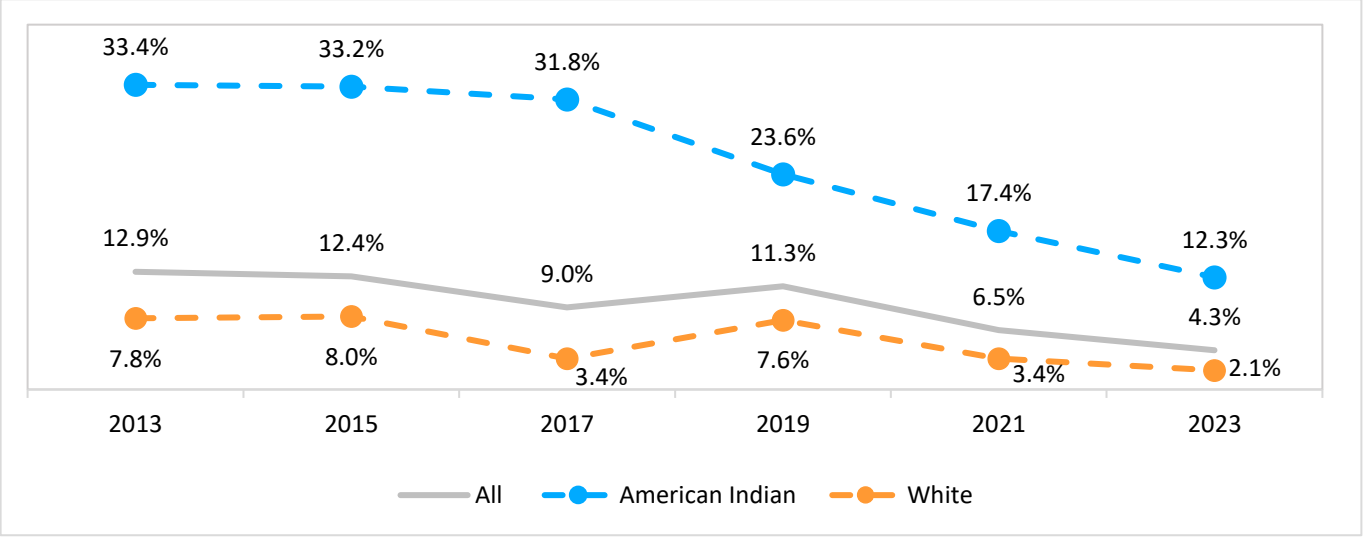
Table 3. Ever and Current Cigarette Use by Gender, Race/Ethnicity, and Grade, SD YTS 2023

	Ever Use % (95% CI)	Current Use % (95% CI)
Gender		
Male	3.8 (2.3-5.2)	1.3 (0.5-2.2)^
Female	4.8 (2.4-7.2)	1.6 (0.2-3.0)^
Race/Ethnicity		
White	2.1 (1.0-3.2) **	--
American Indian	12.3 (6.3-18.3) **	3.3 (1.6-5.0)^
Hispanic	6.6 (1.3-11.9) **	--
Other	7.1 (1.5-12.8)**	--
Grade		
6th	4.0 (1.2-6.8)	1.6 (0.0-3.2)^
7th	3.2 (1.9-4.4)	1.0 (0.2-1.7)^
8th	5.8 (3.4-8.1)	1.8 (0.6-3.0)^
Overall	**4.3 (3.0-5.6)**	**1.5 (0.7-2.2)**

**p<0.001 based on Rao-Scott chi-square test. CI =confidence interval
^Rates should be interpreted with caution due to small number of raw responses per subgroup (<35).
-- Not reported as fewer than 10 raw responses in the subgroup.

Significant differences in rate of ever cigarette use were also found by race, with White students having the lowest rate and American Indian students having the highest rates of ever cigarette use (p<0.001). Figure 13 shows the trend in rate of ever cigarette use by race. Although a disparity remains for American Indian students, the gap is closing, with 12.3% of American Indian students reporting ever cigarette use in 2023, a 5% decline over 2021.

Figure 13. Trends in Ever Cigarette Use by Race, SD YTS 2013-2023



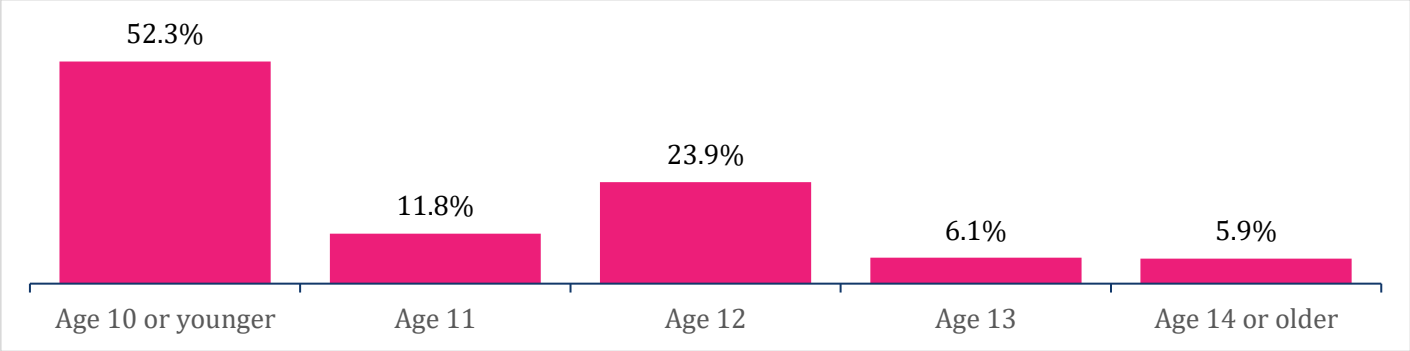
Use of Menthol Cigarettes

Ever cigarette users (4.3% of the SD middle school population) were asked if they smoked menthol cigarettes. Most (86.8%) reported they did not or were not sure if they used menthol cigarettes.

Age of First Use of Cigarettes

Figure 14 shows that over half of ever cigarette users reported first use at age 10 or younger (52.3%). Students using cigarettes reported a younger age of first use when compared to students reporting use of e-cigarettes/vapes who report starting most commonly at ages 11 to 12.

Figure 14. Age of First Use among Ever Cigarette Users, SD YTS 2023*

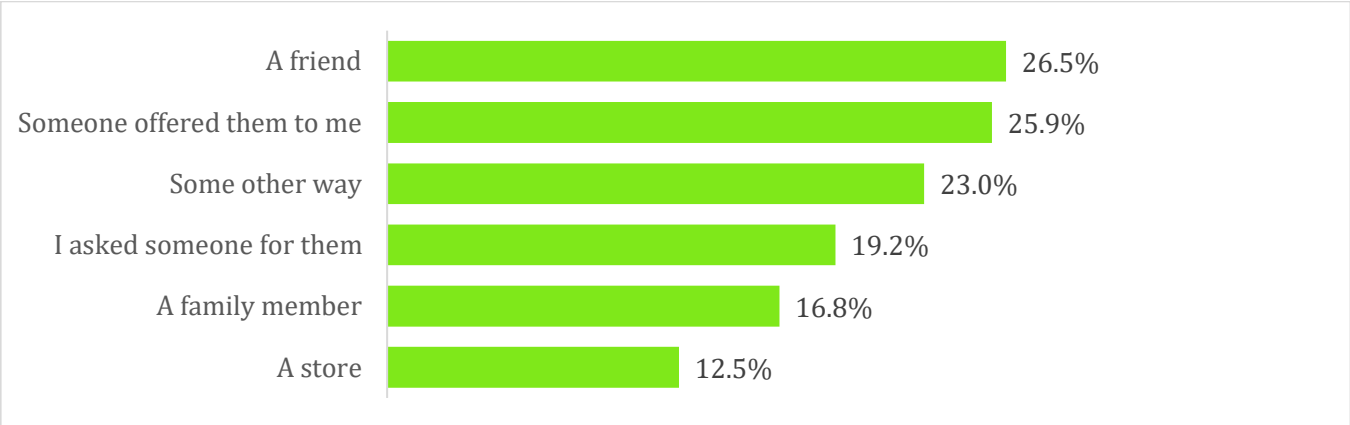


*Age of the sample was predominantly age 11 to 14.

Obtaining Cigarettes

Current cigarette users were also asked to indicate how they got their cigarettes (Figure 15). The main paths reported were a friend (26.5%), someone offered cigarettes (25.9%), and some other way (23.0%). Other ways of obtaining, a write-in response, included: "a former friend", "she gave it to me and I said no", "dad bought them for him", "I just tried it", "stole them", "took it from someone", "my older cousin", "I don't remember", "found one that someone I know used", "I found them" (n=2), "off the ground" (n=2), "stole from parent", "stole from my mom and dad", and "found on the floor".

Figure 15. Paths of Accessing Cigarettes among Ever Cigarette Smokers, SD YTS 2023*^



*Not equal to 100% as student could select more than one. ^Rates should be interpreted with caution due to small number of raw responses per item (<35). Rates of 'bought them myself' and 'someone else bought for me' are not reported as fewer than 10 raw responses for the item.

Ever cigarette users also reported where they bought cigarettes, with 65.6% reporting they did not buy them themselves. Due to small numbers per response option, no further categorization of cigarette purchase location is reported.

Smokeless Tobacco Use among Middle School Students

In the 2023 National Youth Tobacco Survey, 2.4% of middle school students reported ever use of smokeless tobacco.[1] Current use of smokeless tobacco was reported by 1.2% of middle school students nationally.[1] In the 2023 SD YTS, middle school students were asked if they had ever used chewing tobacco, snuff, or dip, even just a small amount, and asked how many days they used chewing tobacco, snuff, or dip during the past 30 days.

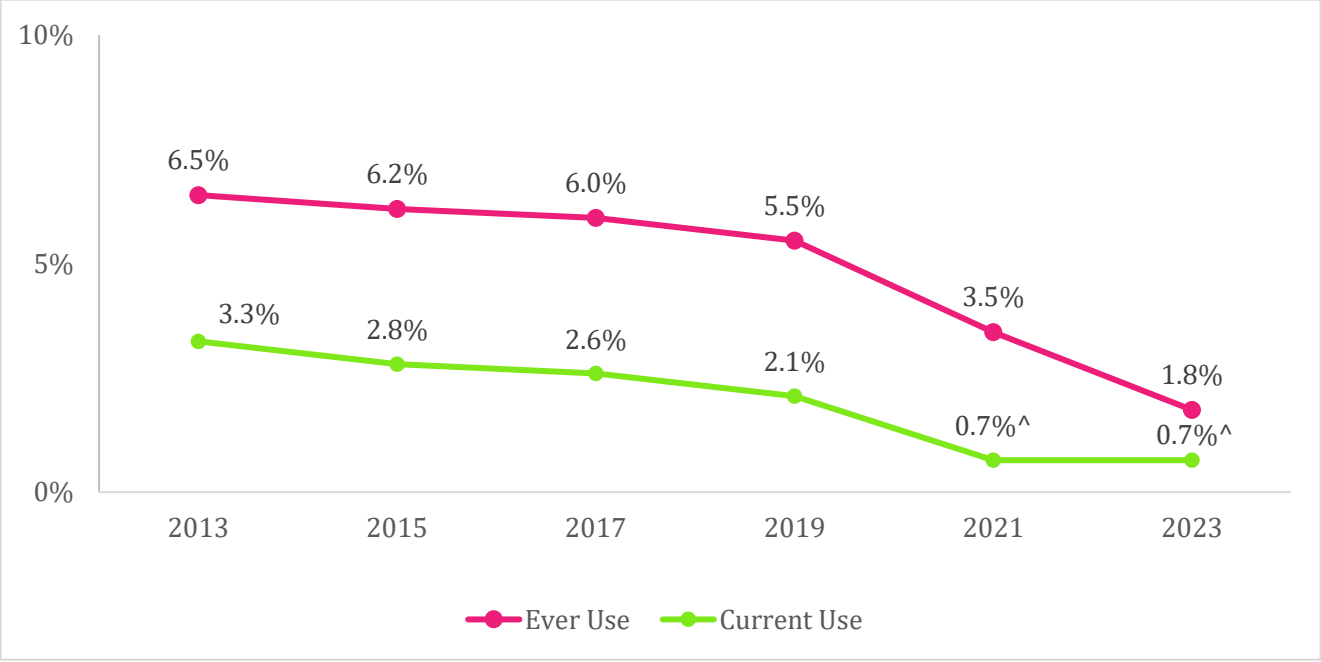
Key Finding

- The prevalence of smokeless tobacco ever use among middle school students declined from 3.5% in 2021 to 1.8% in 2023.

Rate of Smokeless Tobacco Use

Overall, 1.8% of middle school students report ever using smokeless tobacco, a decrease from 2021 findings at 3.5%. A downward trend in ever use of smokeless tobacco among middle school students continued in 2023 (Figure 16).

Figure 16. Trends in Ever and Current Smokeless Tobacco Use, SD YTS 2013-2023^

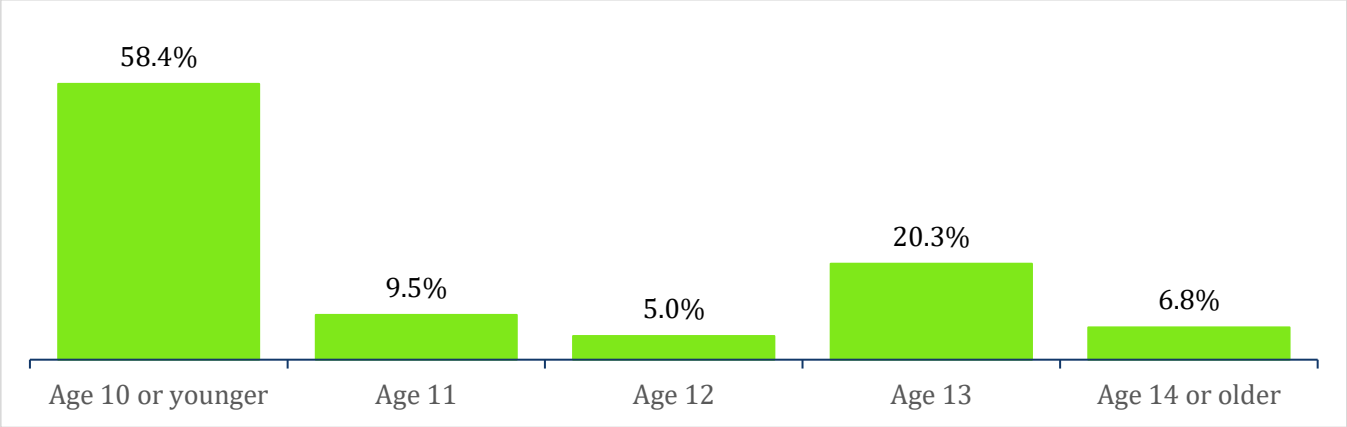


^Rates should be interpreted with caution due to small number of raw responses per group (<35).

Age of First Use of Smokeless Tobacco

Of the 1.8% of SD middle school students who had ever tried smokeless tobacco, 58.4% reported they did so before age 11 (Figure 17), an increase from 27.0% in 2021. Similar to cigarette use, students who report ever use of smokeless tobacco tend to first use at very young ages.

Figure 17. Age of First Use among Ever Smokeless Tobacco Users, SD YTS 2023*



*Age of the sample was predominantly age 11 to 14.

Other Tobacco Product Use among Middle School Students

To assess awareness of new and emerging tobacco products, the SD YTS also included questions on heated tobacco products and nicotine pouches. Both are relatively new products to the market.

Heated Tobacco Products

Similar to e-cigarettes/vapes, heated tobacco products use heat to produce vapor, but use tobacco sticks instead of a liquid. Brand names of heated tobacco products include iQOS, glo and Eclipse.

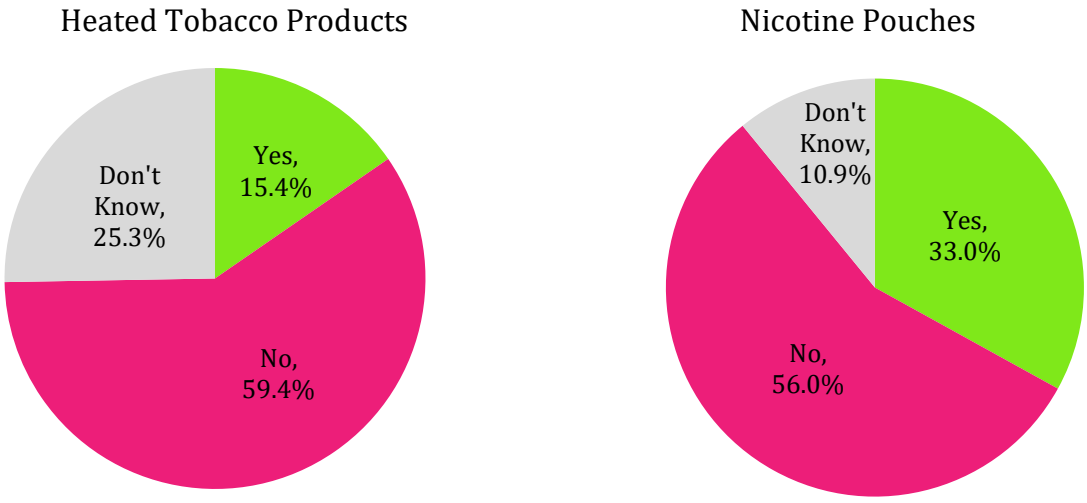
Figure 18 shows that 15.4% of middle school students were aware of heated tobacco products. Students were also asked if they had ever used a heated tobacco product. Less than one percent of students reported ever using a heated tobacco product.

Nicotine Pouches

Nicotine pouches are small pouches used similar to snus, but do not contain any nicotine leaf. These products do contain nicotine derived from tobacco, but no part of the leaf itself. Brand names of nicotine pouches include ZYN, on!, or VELO.

Awareness of nicotine pouches was higher, at one in three students reporting they had heard of the product (Figure 18). Students were also asked if they had ever used nicotine pouches, with less than one percent of students reporting ever use of nicotine pouches.

Figure 18. Middle School Students' Awareness of Heated Tobacco Products and Nicotine Pouches, SD YTS 2023



Other Tobacco Products

Cigars, cigarillos, or little cigars were the most reported other tobacco product used by SD middle school students, with 0.9% reporting ever use of cigars, cigarillos, or little cigars, a decrease from 2.5% in 2021 (Table 4).

Table 4. Ever and Current Prevalence of Other Tobacco Product Use, SD YTS 2023

	Ever Use % (95% CI)	Current use % (95% CI)
Cigars, cigarillos, or little cigars	1.4 (0.9-2.0)	0.3 (0.1-0.5)^
Dissolvable nicotine or tobacco products such as VELO, Ariva, or Camel orbs/sticks	1.1 (0.6-1.5)^	0.6 (0.2-0.9)^
Pipes filled with tobacco (not hookah, waterpipe, or traditional American Indian pipe)	1.0 (0.6-1.5)	0.4 (0.2-0.6)^
Roll-your-own cigarettes	0.9 (0.5-1.3)^	0.3 (0.0-0.6)^
Hookah or waterpipe	0.7 (0.4-1.1)^	0.3 (0.1-0.6)^
Snus, such as Camel Snus, Marlboro Snus, or General Snus	0.4 (0.1-0.6)^	0.3 (0.1-0.5)^
Bidis (small brown cigarettes wrapped in a leaf)	0.3 (0.1-0.5)^	--

CI=confidence interval
^Rates should be interpreted with caution due to small number of raw responses per group (<35).
-- Not reported as fewer than 10 raw responses in the subgroup.

Any Tobacco Product Use among Middle School Students

The 2023 National Youth Tobacco Survey defined 'any tobacco use' as use of e-cigarettes/vapes, cigarettes, cigars (cigars, cigarillos, and little cigars), smokeless tobacco (chewing tobacco, snuff, dip, snus, and dissolvable tobacco products), hookahs, pipe tobacco, bidis (small brown cigarettes wrapped in a leaf), heated tobacco products, and nicotine pouches at least on one occasion (ever) and in the past 30 days (current).[1] Any tobacco use, therefore, assesses the extent of tobacco use among middle school students, accounting for youth that are multi-product users. The 2023 SD YTS uses the national definition. Definitions of any tobacco use have varied, see footnote presented in Figure 19, to be inclusive of new products marketed to youth, and is considered reflective of product availability rather than a change in measure.

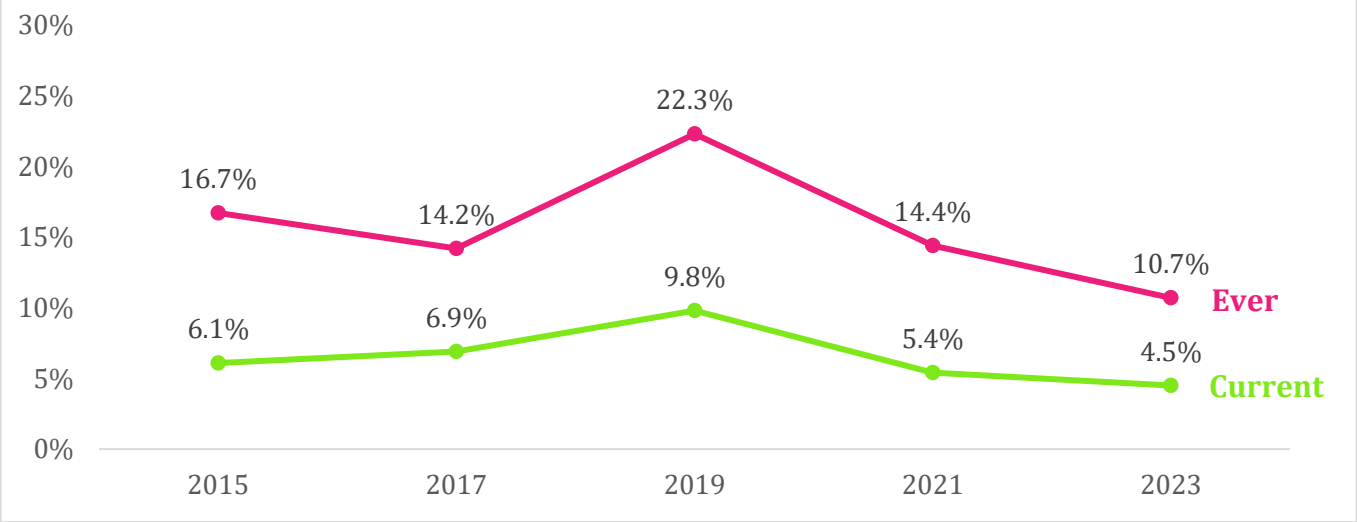
Key Findings

- Current use of any tobacco among middle school students declined to 4.5% in 2023, a decrease from 5.4% in 2021.
- American Indian students showed significantly higher rates of ever any tobacco use at 25.6% compared to White students at 7.1%.

Rate of Any Tobacco Use

Overall, 10.7% of middle school students in 2023 reported ever using any type of tobacco product on at least one occasion, a substantial decrease from 14.4% in 2021. Current use also declined from 5.4% among SD middle school youth in 2021 to 4.5% in 2023 (Figure 19). Middle school student use of tobacco products in SD is at the lowest rate in the past 8 years.

Figure 19. Trends in Ever and Current Any Tobacco Use, SD YTS 2015-2023



a. 2015: Any tobacco use was defined as use of cigarettes, smokeless tobacco, cigars, pipe, bidis, and kreteks at least on one occasion past 30 days.
b. 2017 & 2019: Any tobacco use was defined as use of cigarettes (including roll-your-own), cigars, smokeless tobacco (including chewing tobacco, snuff, dip, snus, and dissolvable tobacco), tobacco pipes, bidis, hookah, and electronic cigarettes at least on one occasion past 30 days.
c. 2021 & 2023: Any tobacco use was defined as use of electronic cigarettes (e-cigarettes), cigarettes, cigars (cigars, cigarillos, and little cigars), smokeless tobacco (chewing tobacco, snuff, dip, snus, and dissolvable tobacco products), hookahs, pipe tobacco, bidis (small brown cigarettes wrapped in a leaf), heated tobacco products (HTPs), and nicotine pouches at least on one occasion past 30 days.

Table 5 shows rates of any tobacco use by gender, race/ethnicity, and grade. Eighth grade students (14.3%) were more likely to have ever used any type of tobacco product than both seventh (9.2%) and sixth grade (9.0%) students ($p<0.05$). White students had the lowest rate of ever use of any tobacco product, and American Indian students had the highest rate of ever use ($p<0.001$). There were no differences by gender.

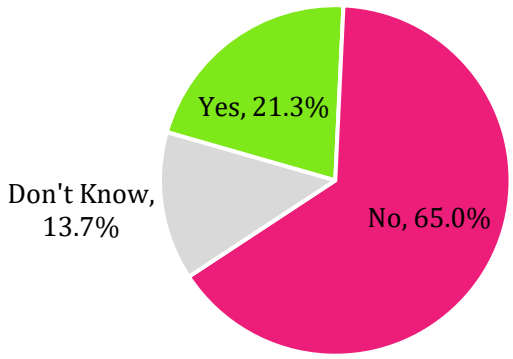
Table 5. Prevalence of Ever and Current Use of Any Tobacco Product by Gender, Race/Ethnicity, and Grade, SD YTS 2023

	Ever Use % (95% CI)	Current Use % (95% CI)
Gender		
Male	10.5 (8.0-12.9)	4.3 (2.8-5.8)
Female	11.0 (8.5-13.5)	4.6 (3.1-6.2)
Race/Ethnicity		
White	7.1 (5.4-8.9) **	2.8 (1.5-4.2)**
American Indian	25.6 (19.4-31.7) **	9.9 (6.8-12.9) **
Hispanic	12.4 (4.3-20.6)**	5.5 (1.0-9.9)^**
Other	14.9 (9.0-20.9)**	7.8 (3.5-12.2)^**
Grade		
6th	9.0 (6.5-11.5) *	4.4 (2.6-6.2)
7th	9.2 (6.6-11.8) *	3.5 (2.2-4.8)
8th	14.3 (10.2-18.4) *	5.5 (3.3-7.7)
Overall	**10.7 (8.9-12.6)**	**4.5 (3.4-5.6)**

*p-value < 0.05, **p<0.001 based on Rao-Scott chi-square test. CI =confidence interval
^Rates should be interpreted with caution due to small number of raw responses per subgroup (<35).
-- Not reported as fewer than 10 raw responses in the subgroup.

Students reporting current use of any tobacco product were also asked about cravings, using the question, "During the past 30 days, have you had a strong craving or felt like you really needed to use a tobacco product of any kind?" Cravings can be a sign of nicotine dependence.[15] Among current any tobacco users, 21.3% reporting experiencing a strong craving for nicotine (Figure 20).

Figure 20. Portion of Current Any Tobacco Users Reporting Nicotine Cravings, SD YTS 2023



Poly-tobacco Product Use among Middle School Students

In the 2023 National Youth Tobacco Survey, 6.1% of middle school students reported ever use of more than one type of tobacco (poly-tobacco use).[1] Current use of two or more types of tobacco was reported by 2.5% of middle school students nationally.[1] Using the SD YTS data, we examined the number of middle school youth who reported ever and current use of more than one type of tobacco. Poly-tobacco use has been shown to increase risk for nicotine dependence.[3]

Key Findings

- Ever use of more than one type of tobacco product was reported by 5.2% of middle school students, and 2.0% of middle school students reported current use of two or more types of tobacco products.
- American Indian students (13.5%) were more likely to report ever poly-tobacco use compared to students of other races.

Rate of Poly-Tobacco Use

Overall, 5.2% of middle school students reported ever use of two or more types of tobacco products. Current use (past 30-day use) of two of more types of tobacco was 2.0%. Table 6 shows rates of ever and current poly-tobacco use by gender, race/ethnicity, and grade. American Indian students (13.5%) were more likely to report ever poly-tobacco use compared to White students (3.1%) (p<0.001).

Table 6. Ever and Current Poly-Tobacco Use by Gender, Race/Ethnicity, and Grade, SD YTS 2023

	Ever Use % (95% CI)	Current Use % (95% CI)
Gender		
Male	5.0 (3.3-6.7)	2.3 (1.2-3.4)
Female	5.3 (3.0-7.6)	1.7 (0.3-3.1)^
Race/Ethnicity		
White	3.1 (2.0-4.2) **	1.3 (0.2-2.4)^
American Indian	13.5 (7.6-19.4) **	4.4 (2.6-6.3)^
Hispanic	5.3 (0.6-10.1)^**	--
Other	8.4 (2.6-14.2)^**	--
Grade		
6th	5.3 (2.9-7.7)	1.9 (0.4-3.4)^
7th	3.8 (2.5-5.1)	1.9 (0.9-3.0)^
8th	6.3 (3.7-8.8)	2.1 (0.8-3.5)^
Overall	**5.2 (3.9-6.4)**	**2.0 (1.2-2.8)**

**p<0.001 based on Rao-Scott chi-square test. CI =confidence interval
^Rates should be interpreted with caution due to small number of raw responses per subgroup (<35).
-- Not reported as fewer than 10 raw responses in the subgroup.

Type of Product First Used among Poly-Tobacco Users

Students using two or more types of tobacco in the past 30 days were also asked to report what type of tobacco they first tried. E-cigarettes/vapes were the most common first product used at 58.6% of ever users. The next most common first product was cigarettes at 13.7% followed by smokeless tobacco at 7.0%.

Tobacco Use among Middle School Students in SD Compared to the U.S.

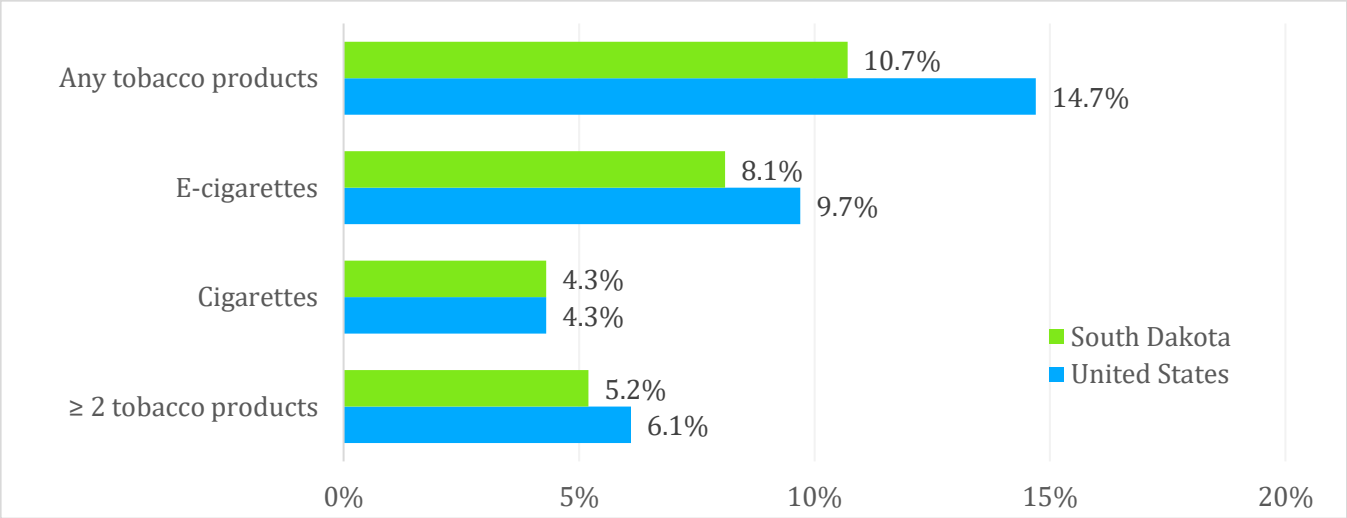
Rates of tobacco use among middle school students in SD were compared to national rates, for both ever use and current use by product type. Table 7 provides the rate and confidence intervals for each type of tobacco, in SD and the US, both ever and current use. Figure 21 displays ever use rates, with SD students reporting lower rates of use for every type of tobacco assessed as compared to the US rates,[1] a change from 2021 findings.

Table 7. Prevalence of Tobacco Use Among Youth Grades 6 to 8, by Product Type, SD (SD YTS 2023) and (NYTS 2023)[1]

Ever Use				
	South Dakota		United States	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
E-cigarettes	8.1	6.4-9.8	9.7	8.3-11.3
Cigarettes	4.3	3.0-5.6	4.3	3.3-5.5
Any tobacco products	10.7	8.9-12.6	14.7	12.5-17.1
Smokeless tobacco	1.8	1.1-2.5	2.4	1.8-3.3
Cigars	1.4	0.9-2.0	2.6	1.9-3.7
Pipe tobacco	1.0	0.6-1.5	1.1	0.7-1.6
≥ 2 tobacco products	5.2	3.9-6.4	6.1	4.9-7.5
Current Use				
E-cigarettes	3.4	2.4-4.3	4.6	3.6-5.8
Cigarettes	1.5	0.7-2.2	1.1	0.6-1.9
Any tobacco products	4.5	3.4-5.6	6.6	5.1-8.5
Smokeless tobacco	0.7^	0.3-1.0	0.7	0.5-1.2
Cigars	0.3^	0.1-0.5	1.1	0.7-1.8
Pipe tobacco	0.4^	0.2--0.6	0.4	0.2-0.6
≥ 2 tobacco products	2.0	1.2-2.8	2.5	1.8-3.5

^Rates should be interpreted with caution due to small number of raw responses per group (<35).

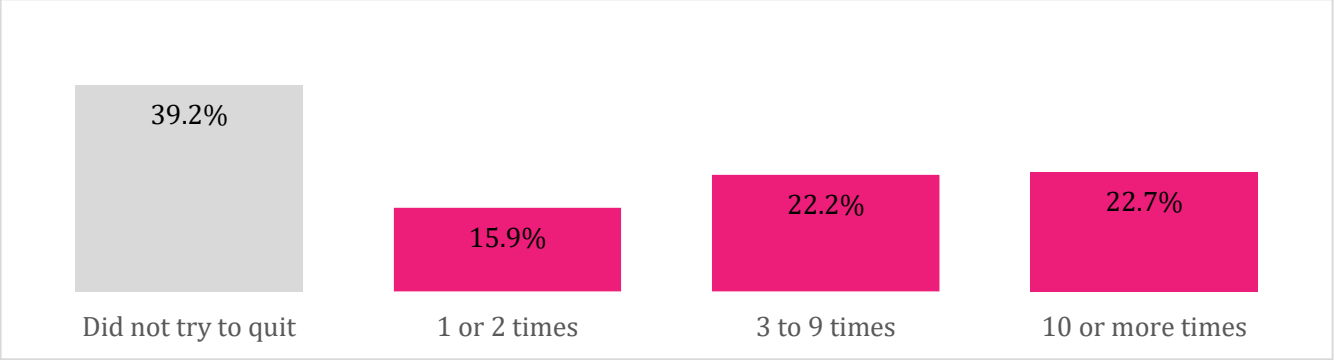
Figure 21. Prevalence of Ever Tobacco Use Among Youth Grades 6 to 8, by Product Type, SD (SD YTS 2023) and U.S.[1]



Tobacco Cessation

When asked about quitting, 71.9% of current users of any tobacco product said they had thought about quitting. Next, current users were asked if, in the past year, they had stopped using tobacco for a day or longer because they were trying to quit. Over 60% had made a quit attempt. Figure 22 shows the reported number of quit attempts, with nearly a quarter of current tobacco users reporting 10 or more attempts to quit tobacco.

Figure 22. Number of Past Year Quit Attempts among Current Tobacco Users, SD YTS 2023



Students who reported making a quit attempt were asked about resource(s) utilized in the past 12 months to assist with quitting tobacco. The main resources are reported in Table 8, with the most frequently reported help from peers or friends and quitting without help. Other ways of quitting (write-in responses) included: “none”, “just to stay away from it”, “I did nothing”, “I have not done any of this”, “just stopped buying”, “cousins”, “I quit and never did it again”, “I didn’t use anything to quit I just quit”, “my boyfriend”, “thrown it away”, “I just stopped doing it”, “I just don’t do it at all”, “on my own”, and “I tried vape one time because I found it”.

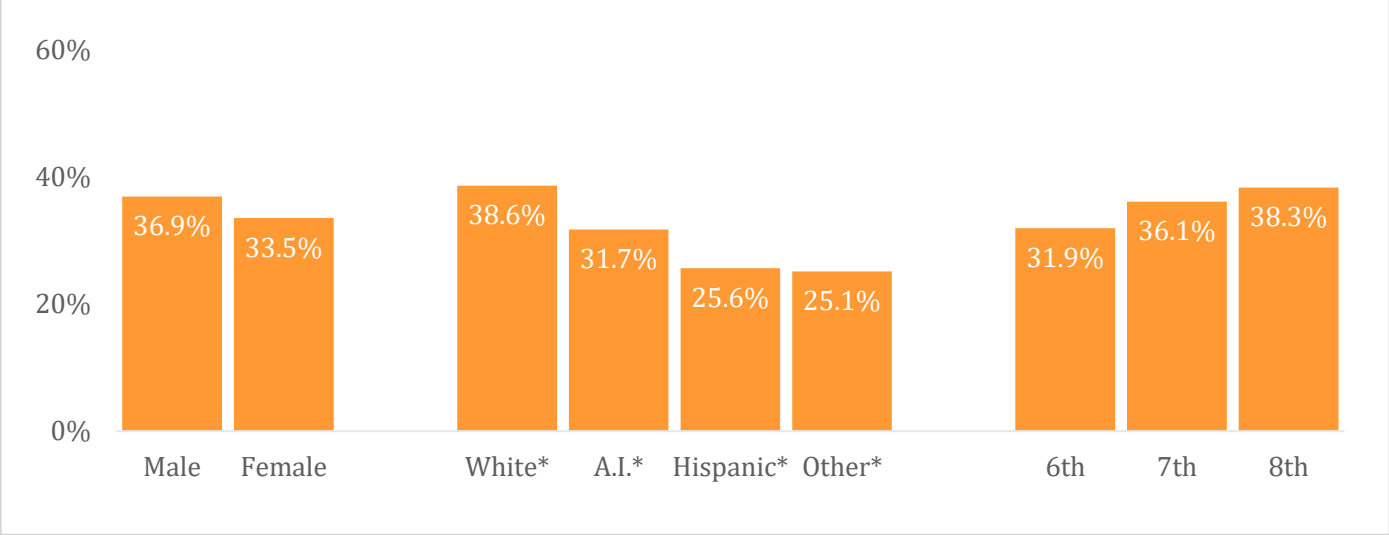
Table 8. Type of Quit Resources Utilized with a Past Year Quit Attempt, SD YTS 2023*

Resource	Current Tobacco Users % (CI)
Help or advice from a friend or peer	29.7 (13.4-46.1)^
Tried to quit on my own or quit "cold turkey"	27.9 (15.6-40.2)
Help or advice from a parent or caregiver	8.4 (2.9-13.9)^
Help or advice found on the internet	6.9 (1.6-12.2)^
Other	14.2 (6.1-22.4)^

*Students could select more than one. ^Rates should be interpreted with caution due to small number of raw responses per item (<35). Rates of the following response options are not reported as fewer than 10 raw responses were received for the item: help or advice from a teacher or coach; used nicotine gum or patch; a mobile app or texting program; help, advice, or counseling from a doctor or healthcare provider; called a telephone line or quitline; used medicine to help quit; and treatment from a hospital, medical center, or some other facility.

All students were asked if they had heard of the South Dakota QuitLine, a Department of Health Program that offers free services designed to help a person quit tobacco or e-cigarettes/vapes. Just one in three (35.2%) middle school students reported awareness of the SD Quitline. Awareness by demographic characteristics is shown in Figure 23. Significantly fewer American Indian (31.7%), Hispanic (25.6%), and other race students (25.1%) reported hearing about the SD QuitLine compared to White race students (p<0.05).

Figure 23. Percentage of Middle School Students Aware of the SD Quitline by Gender, Race/Ethnicity and Grade, SD YTS 2023



*p-value<0.05 based on Rao-Scott chi-square test

SECTION THREE: FACTORS PROMOTING TOBACCO USE

Key Findings

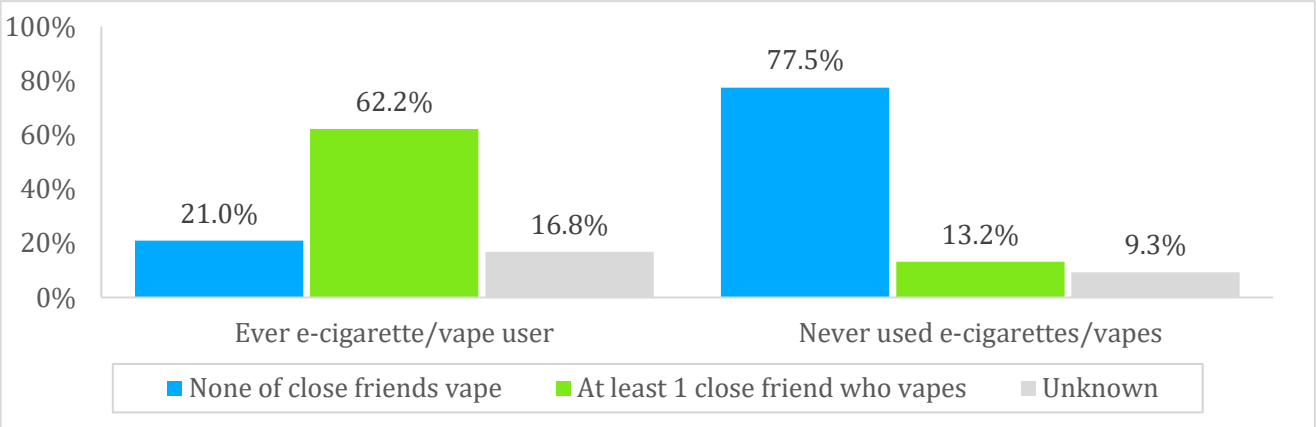
- Peer use was more common among ever e-cigarette/vape users with 62.2% reporting one or more of their closest friends vapes, compared to non-users with only 13.2% reporting the same.
- TikTok (59.2%), YouTube (56.5%), and Snapchat (40.0%) were the top three social media sites where middle school students reported viewing posts or content related to e-cigarettes/vapes.

Peer Tobacco Use

Experimentation and use of tobacco products has been linked to peer use and influence.[4] Middle school students were asked how many of their four closest friends use e-cigarettes/vapes and how many smoke cigarettes. Among the overall sample, most reported no close friends using an e-cigarette/vape (73.2%). This has increased over the 2021 rate at 65.2%, showing a match in self and peer reported use both declining from 2021 to 2023.

Among ever e-cigarette/vape users, most (62.2%) had at least one close friend that vapes. Among non-users, only 13.2% had at least one friend who vapes. Figure 24 shows a comparison of peer use by the responding student's own e-cigarette/vape use status. Among those using e-cigarettes/vapes, 14.2% reported all four of their four closest friends vaped.

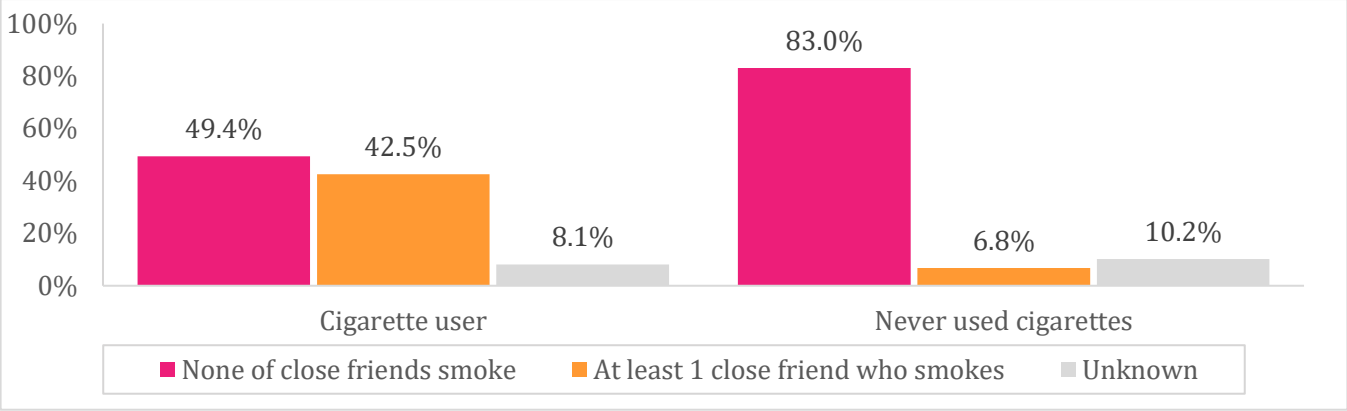
Figure 24. Friends' E-Cigarette/Vape Use, by Ever Use Status, SD YTS 2023



Most students also reported they did not have a close friend who smokes cigarettes (81.7%). Among ever cigarette users, many (42.5%) had at least one close friend who used cigarettes.

Among non-cigarette users, only 6.8% reported a friend who used cigarettes. Figure 25 shows a comparison of peer cigarette use by the responding student's own cigarette use status.

Figure 25. Friends' Cigarette Use by Ever Use Status, SD YTS 2023

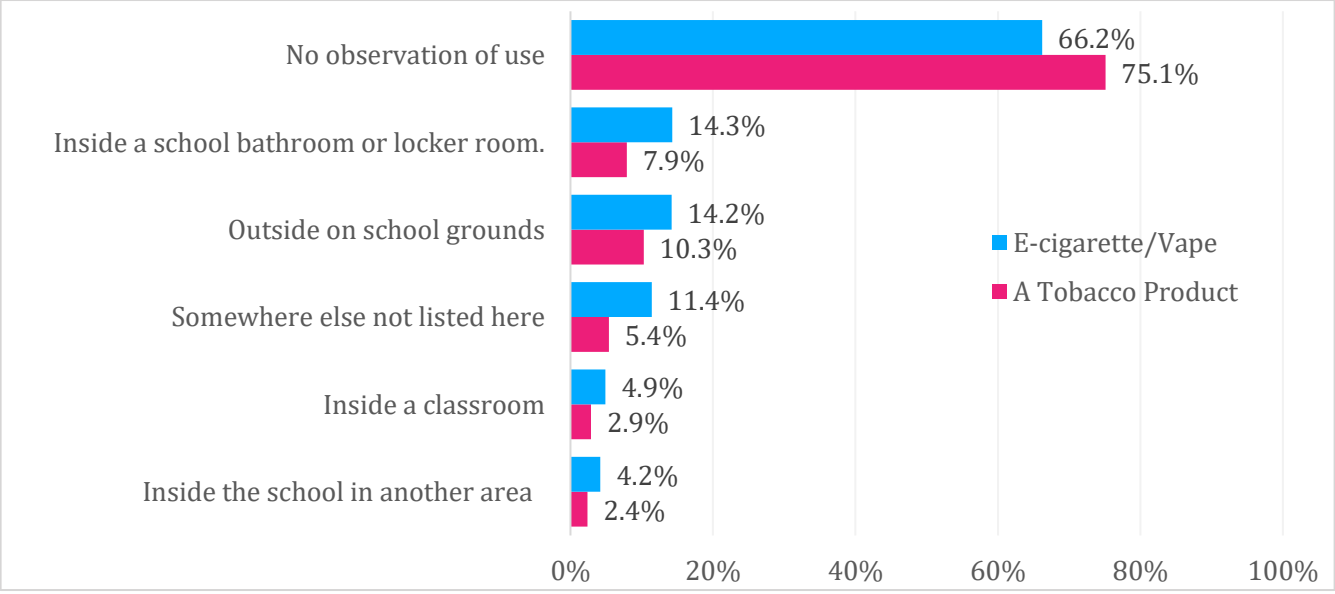


Observation of Use at School

Middle school students were asked if they had ever seen anyone using: 1) an e-cigarette/vape or 2) another tobacco product (not e-cigarette or vape), in any location in or around their school. One in three students (33.8%) reported seeing someone using an e-cigarette/vape and one in four students (24.9%) reported observing someone using a tobacco product in or around school grounds, despite most school districts banning the use of tobacco products onsite.

The most common locations where students report seeing e-cigarette/vape use was in a school bathroom or locker room, followed by outside of the school (Figure 26). The most common location students report observing tobacco product use was outside on school grounds, followed by in the bathroom or locker room.

Figure 26. Students' Observation of E-cigarette/Vape and Tobacco Product Use at School, SD YTS 2023



Other area noted listed was selected by 11.4% of students for e-cigarette/vape use, with numerous write-in responses including:

- by a hotel smoking area
- home (n=15)
- park (n=11)
- car (n=6)
- stores and parks
- in my backyard (n=2)
- sometimes on streets maybe
- yes inside a friend of a friend's house
- family members house (n=7)
- in public (n=5)
- park in *location omitted,* post office and cap office
- home, parks, outside in other city sidewalks
- the *name omitted* mall
- in another class
- parking lot (n=3)
- camping, ranching
- home/family
- roads
- band practice rooms
- at the local rec center
- parking lots at church
- my house (n=5)
- someone's house
- gym
- a young couple at a park
- Lake *name omitted*
- I saw someone's vape fallout of their locker
- airport gas station and a lot more… it's bad
- at my football practice at a park
- in a bus stop
- park market
- outside when I am shopping
- outside walking around the building
- at the *name omitted* Center
- inside a camper but it was months ago
- out at the local pool washrooms
- friend's house (n=5)
- downtown
- parks, sidewalks
- gas station (n=4)
- mall (n=2)
- neighbor
- the fast food stop
- outside store (n=6)
- my mom's friend's house and my house
- park, swimming pool, and house
- stores, other events mainly on reservations
- behind the city pool
- Walmart (n=2)
- In/around town (n=4)
- outside school
- sometimes down the streets
- on a video at their house
- a year ago (my dad)
- in the PDR after school
- at their house not mine
- outside (n=3)
- on a school field trip
- rodeo
- inside of their car while driving off school area
- everywhere (n=2)
- sporting events
- bus (n=12)
- nurse's office
- in an alleyway (n=2)
- lockers (n=2)
- vehicle and in front of their house
- the mart
- a carnival (n=2)
- fairgrounds
- on a sidewalk in *name omitted*
- at parties
- playground
- camping (n=4)
- a janitor right outside the school
- Dairy Queen
- my grandpa's backyard
- at a concert
- places but any schools
- stores (n=4)
- somewhere
- outside of my house (n=2)
- my older brother used to vape then he moved out
- sports games
- outside of school grounds (n=8)
- YMCA
- Streets (n=2)
- store parking lots (n=3)
- at the mall, carnival and my mom's house
- when I was driving on the sidewalk
- football games
- stairway
- outside of school but never in school
- in the showers in the girl's locker room
- camping, public areas, adults
- the gym at the volleyball game
- Las Vegas
- paint ball field and broken one at a park
- random people I don't know/outside of places
- outside stores and restaurants
- neighborhood
- on the phone
- 2 girls vaping in the waterpark bathroom
- at stores or downtown in cars
- park and in the mall parking lot
- airport
- in PE, locker rooms
- in a locker room
- at the top of the playground at school
- wrestling room during a wrestling tournament
- behind the school
- outside my classroom door/door frame
- show
- McDonalds parking lot

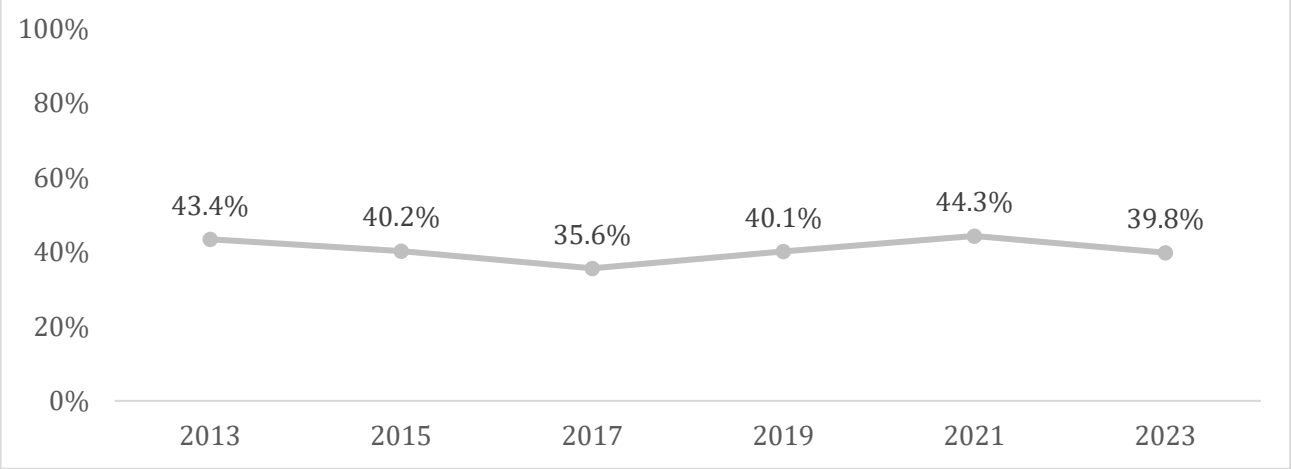
"Other place" of observing tobacco use was selected by 5.4% of students, with write-in responses as follows:

- Family members house (n=4)
- in public
- in another class
- parking lot and inside stores
- yes at home or family
- my neighbors smoke often
- band practice rooms
- outside of store (n=3)
- Walmart parking lot
- Someone's house
- *name of park omitted*
- out of school grounds
- outside (n=3)
- in a parking lot (n=3)
- gas station (n=2)
- on vacation
- park, swimming pool and my house
- cheese market
- a park (n=2)
- camper in backyard
- my neighborhood
- in public
- the gym inside the school
- home (n=5)
- on the bus ride home
- further away from the school
- my mom
- home and friend house
- home, in the car
- in a vehicle (n=2)
- at parties
- just in town (n=2)
- a house
- a janitor right outside the school
- at supermarkets
- my grandpa smokes in his backyard
- everywhere
- on their yard around the school
- in playgrounds and parking lots
- outside of gas stations and stores
- my dad's employ
- out of school
- football games
- store parking lots
- my brothers work
- out of school but never in school
- the school bus
- my neighbors
- gym
- Las Vegas
- some of my family over the age of 21
- Walmart
- on the bus
- stores
- Super foods
- seen in someone's backpack
- on a sidewalk
- recess
- shopping malls
- wrestling room during a wrestling tournament
- into a locker
- city park
- outside of restaurants

Household Tobacco Use

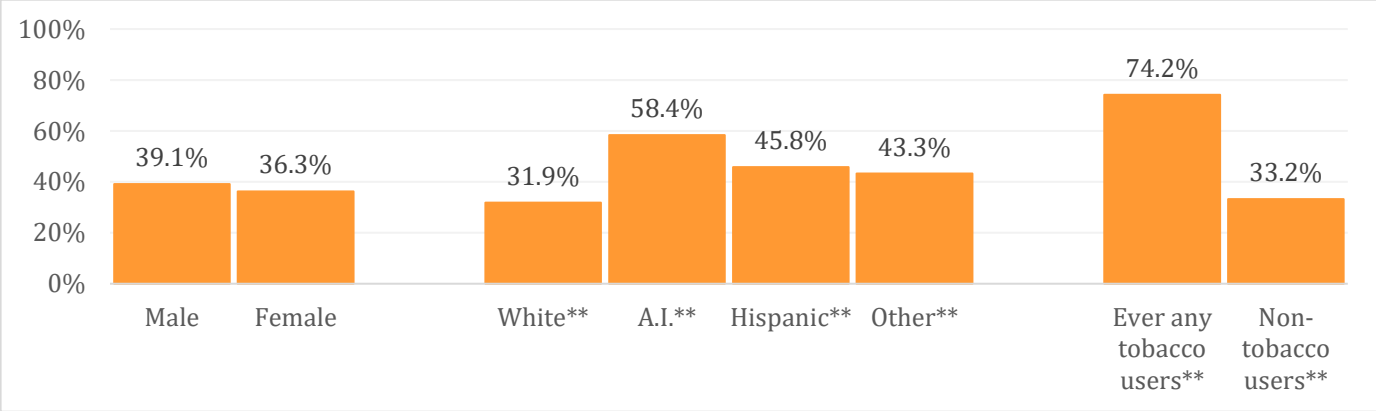
Over half (60.2%) of middle school students in 2023 reported no one in their household uses a tobacco product. The rate of reported household use has remained mostly unchanged over the past ten years (Figure 27).

Figure 27. Reported Household Tobacco Use Rate, SD YTS 2013-2023



Rates of household use were examined by gender, race/ethnicity and tobacco use status. As shown in Figure 28, students who reported any tobacco use were significantly more likely to report a household member using tobacco, compared to students not using tobacco ($p<0.001$). American Indian students were also more likely to report a household member using tobacco compared to students of all other races ($p<0.001$).

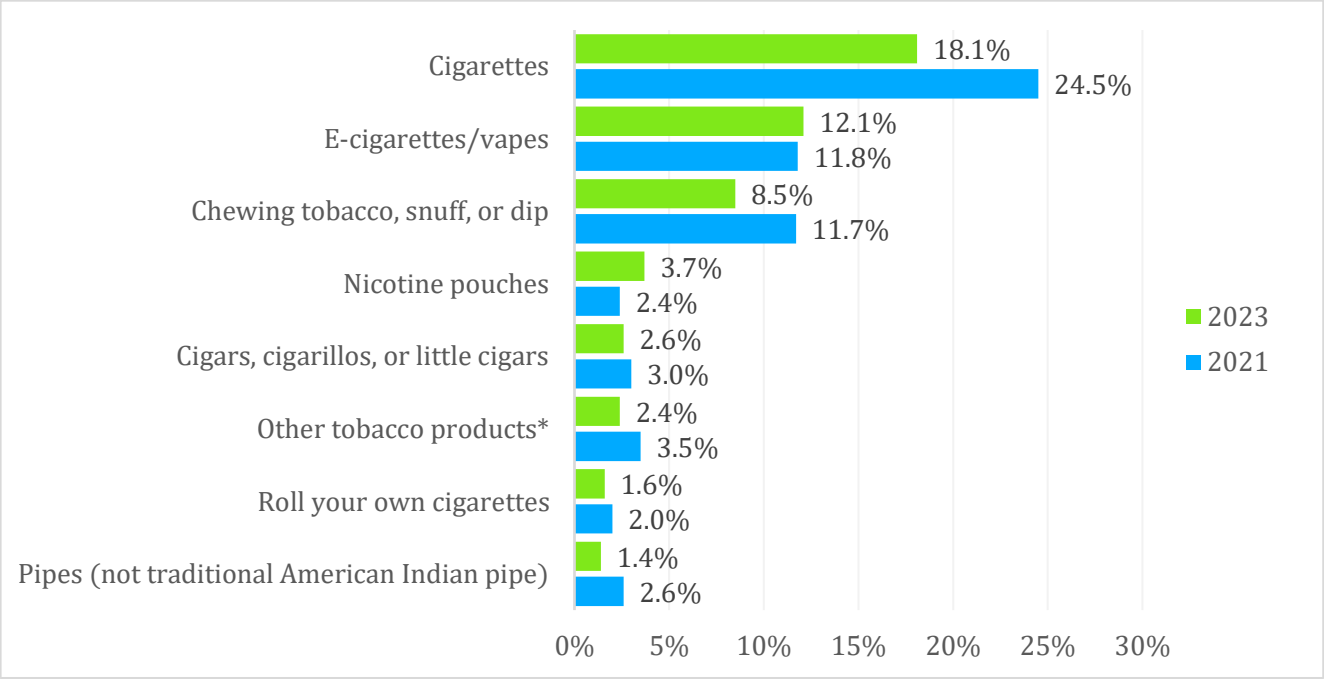
Figure 28. Reported Household Tobacco Use Rate by Gender, Race/Ethnicity, and Ever Any Tobacco Use Status, SD YTS 2023



**p-value < 0.001, based on Rao-Scott chi-square test

Approximately one out of five middle school students reported someone who lives with them smokes cigarettes, the most common type of product used by household members. E-cigarettes/ vapes were the next most common at 12.1%, and 8.5% reported someone using chewing tobacco, snuff, or dip (Figure 29).

Figure 29. Household Tobacco Use, by Product Type, SD YTS 2021-2023†



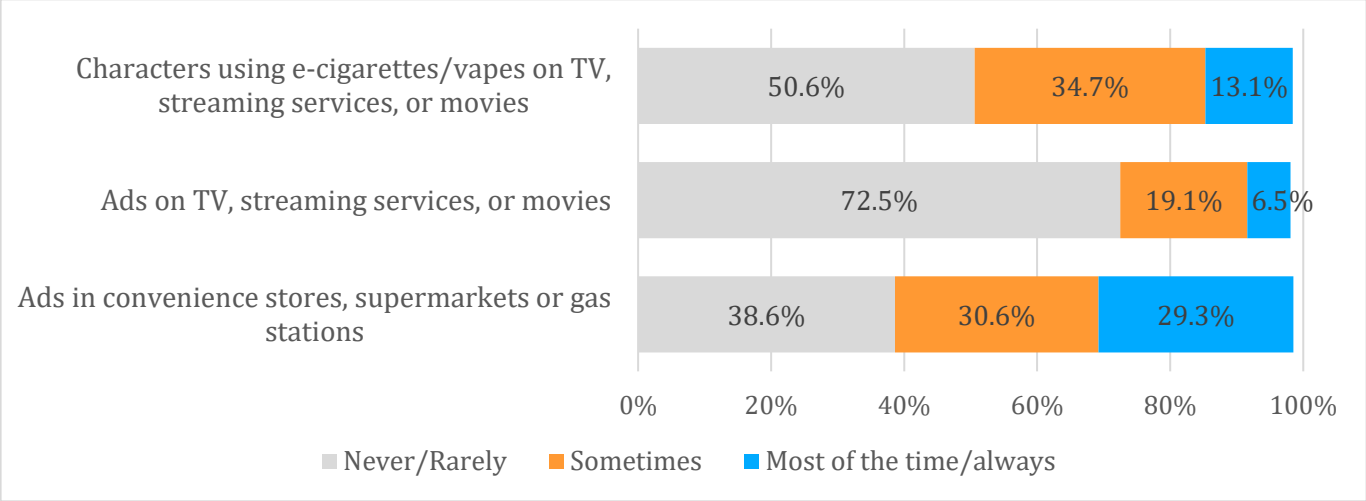
*Other included hookah or waterpipe, dissolvable tobacco products, heated tobacco products, snus, and bidis.
†Not equal to 100% as student could select more than one.

Tobacco Product Marketing

Students were also asked where, if anywhere, they had seen tobacco product marketing. Potential sources of tobacco product marketing included convenience stores, supermarkets, or gas stations, television or streaming services, and movies.

Overall, 59.9% of middle school students reported viewing e-cigarette/vape advertising at least sometimes in convenience stores, supermarkets, or gas stations (Figure 30). Viewing of e-cigarette/vape ads on TV or steaming services, or at the movies was less frequent than observation in retail environments, with 25.6% of students reporting sometimes or more often seeing ads for e-cigarettes/vapes. Observation of actors using e-cigarettes/vapes was reported more frequently than ads with 47.8% reporting sometimes or more often. Students who use e-cigarettes/vapes more frequently reported viewing ads on TV, streaming services, or movies than non-users ($p<0.05$), with no differences found between users and non-users in observation of actors use, or ads in stores.

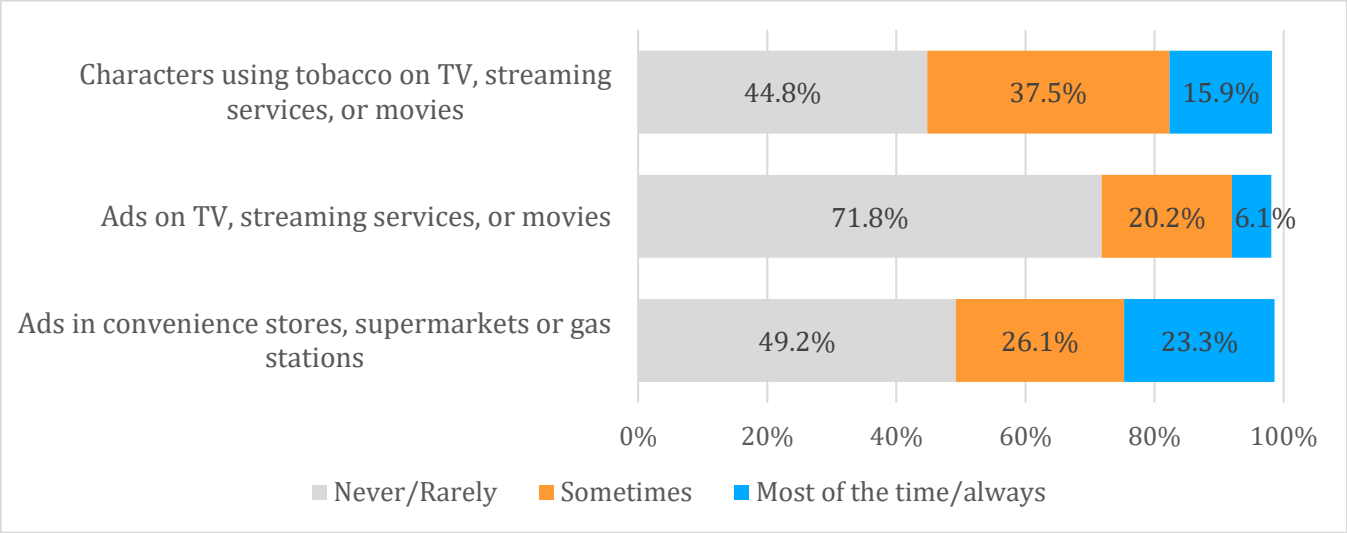
Figure 30. Frequency of Viewing E-cigarette/Vape Product Promotion in Stores, TV, Streaming Services, or Movies, SD YTS 2023*



*1.5% of students reported never going to a convenience store, supermarket, or gas station; 1.9% of students reported never watching TV or streaming services or going to a movie when asked about e-cigarettes/vape ads; and 1.6% of students reported never watching TV or streaming services or going to a movie when asked about characters using e-cigarettes/vapes.

Viewing ads for tobacco products sometimes or more often was reported by 49.4% of middle school students, lower than reported rates of viewing e-cigarette/vape product ads in stores (Figure 31). Viewing of tobacco products ads on TV or steaming services, or at the movies was less frequent than observation at retail environments, with 26.3% of students reporting sometimes or more often seeing ads for tobacco products. Observation of actors using tobacco products was reported at 53.4% sometimes or more often, making this the most common type of promotion for tobacco products. Middle school students using any type of tobacco more frequently reported viewing ads on TV, streaming services, or movies than non-users ($p<0.001$), and more frequently reported viewing actors using tobacco products than non-users ($p<0.01$). No differences were found between users and non-users in observation of tobacco product ads in stores.

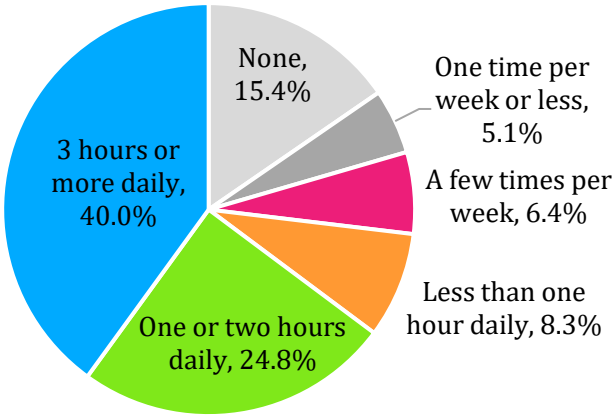
Figure 31. Frequency of Viewing Tobacco Product Promotion in Stores, TV, Streaming Services, or Movies, SD YTS 2023*



*1.4% of students reported never going to a convenience store, supermarket, or gas station; 1.9% of students reported never watching TV or streaming services or going to a movie when asked about tobacco product ads; and 1.8% of students reported never watching TV or streaming services or going to a movie when asked about characters using tobacco products.

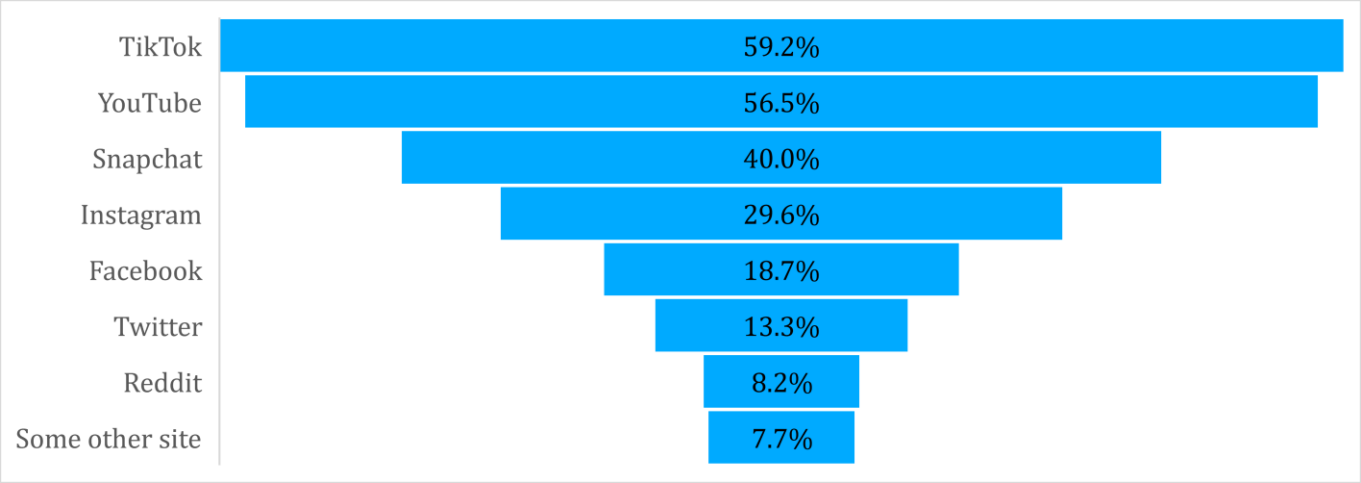
To assess the extent of tobacco promotion and content on social media, middle school students were first asked to report their frequency of social media use. Among middle school students, 73.1% report using social media daily (Figure 32).

Figure 32. Frequency of Social Media Use among SD Middle School Students, SD YTS 2023



Next, reported exposure to tobacco promotion (ads, posts, or other content) was assessed among those who reported using social media at least a few times per week or more (79.5% of the overall population). Among middle school social media users, 31.0% of students reported never seeing posts or content related to e-cigarettes/vapes, 45.6% report seeing content monthly or less often, 15.2% weekly, and 8.2% daily. Middle school students were also asked on which social media sites they have seen posts or content related to e-cigarettes/vapes. TikTok (59.2%), YouTube (56.5%), and Snapchat (40.0%) were the most frequently reported social media platforms for e-cigarette/ vape posts or content (Figure 33).

Figure 33. Portion of Middle School Social Media Users Who Report Seeing Posts or Content for E-cigarettes/Vapes by Social Media Platform, SD YTS 2023*



*Not equal to 100% as student could select more than one.

Write-in responses for the other social media platforms showcasing e-cigarette/vape posts or content included: "YouTube shorts", "YouTube music", "YouTube kids", "WWE", "viso", "Twitch" (n=4), "TV", "tiya", "TikTok" (n=2), "the safari", "the fediverse", "store sites like Amazon", "Spotify" (n=5), "spacehey", "some others", "Snapchat", "Roblox" (n=2), "rec room", "random ads that pop up on my lock screen", "Pinterest" (n=10), "Omegle", "Netflix" (n=3), "movies" (n=2), "Microsoft store", "Messenger" (n=2), "Likee", "Like tweet apps", "Lifetime", "just around the internet", "it was on a friends phone", "Internet", "idk"/"I don't know" (n=6), "google giggles", "google" (n=5), "gaming websites like crazy games", "games" (n=2), "failure", "discord" (n=7), "DEUTCH TV", "CapCut" (n=2), "cable tv", "BeReal (n=2), "Bad sites", "almost all of the sites" (n=2), and "ads for tv" (n=2).

Middle school social media users were also asked on who usually posted the content they saw related to e-cigarettes/vape use on their social media. E-cigarette brands or sellers (43.4%), celebrities or social media influencers (34.6%), and public health campaigns (26.9%) were the most frequently reported content sources (Table 9).

Table 9. Source of Content for Social Media Posts on E-cigarettes/Vapes, SD YTS 2023*

Source	Social Media Users % (CI)
E-cigarette brands or sellers	43.4 (40.0-46.8)
Celebrities or social media influencers	34.6 (31.6-37.6)
Public health campaigns (e.g., Truth Initiative, Real Cost)	26.9 (23.5-30.4)
People I know in real life	15.4 (12.4-18.4)
Online news articles	15.1 (13.2-16.9)
Other	14.2 (11.1-17.2)
Online friends I have not met in real life	10.4 (8.2-12.7)

* Not equal to 100% as student could select more than one.

Write-in responses for other under who posted content for e-cigarettes/vapes included: "Youtubers that I didn't meet in person", "YouTubers and tiktokers", "youtubers and other kinds of people", "you-tubers" (n=8), "YouTube Creator", "well some celebrities", "Unknown Person", "tv" (n=2), "toturrentony", "to quit vaping or smoking", "tiktokers", "streamers", "strangers" (n=6), "South Dakota Quitline", "some people I don't know" (n=2), "Social Media Influencers", "Roblox", "randoms" (n=2), "Random strangers", "random show ads", "Random people" (n=51), "random people that vape during school mainly high school though", "Random people just doing it because they think it looks cool.", "Random influencers no one knows", "Promoting not vaping", "people who use e-cigarettes" (n=3), "People who smoke and vape like Andrew Tate", "people who are trying to get other people to smoke or vape", "people trying to stop others from buying vapes", "People trying to stop it all", "People trying to quit", "People trying to promote a business", "People that I don't know" (n=12), "people that are sponsored", "People showing how to hit e-cigarettes in stores and in public", "people saying how bad it is", "people from school that I don't really know", "On ads", "Not sure", "Lots of people I just have added", "like scams and people that are trying to encourage", "kids whose dad and moms don't watch and let them vape in front of a cam or even live streams", "just some random posters", "Just saw them posted up by different people", "It just pops up at random and no one seems to notice.", "idk"/"I don't know" (n=17), "I just scroll past them idrk who posts them bruh", "I am not sure I go past those ones.", "Gangsters", "gang members", "Friends of My parents that I have never met", "Fortnite", "Doctors that say not to vape", "content creators" (n=4), "Commercials", "Bad people.", "Artists", "Anonymous", "ads say not to vape", "ads" (n=6), and "a girl on YouTube her name is MIA".

SECTION FOUR: PERCEPTIONS OF TOBACCO USE

Middle school students were asked questions about their view on the dangers of all tobacco products. Questions were designed to examine any potential differences in perceptions between the dangers of tobacco products and e-cigarettes/vape products, as well as to assess the perception of nicotine use.

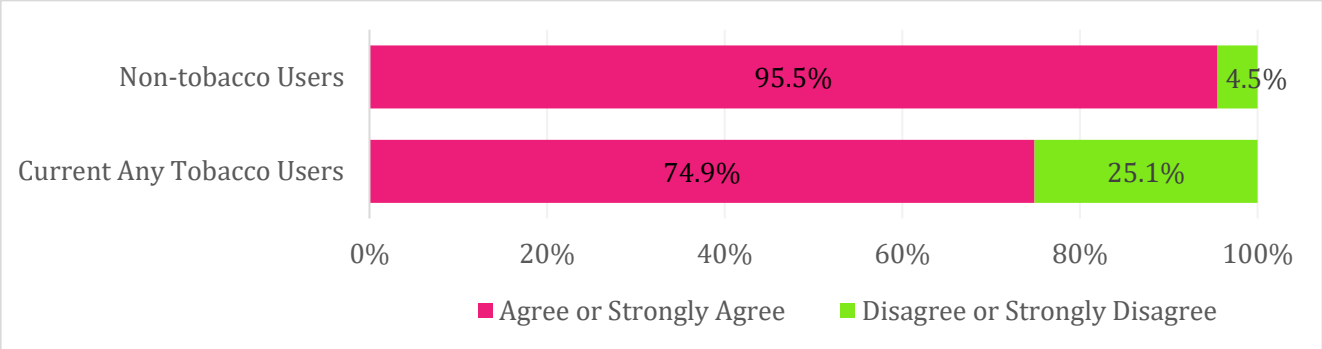
Key Findings

- Overall, 9 in 10 students (94.6%) reported agreement that all tobacco products are dangerous.
- Among current tobacco users, the agreement that tobacco products are dangerous was significantly lower (74.9%) than the level of agreement among non-tobacco users (95.5%).
- Tobacco users perceived significantly higher numbers of students were smoking and vaping compared to non-users.

Perception of Harm of Tobacco Use

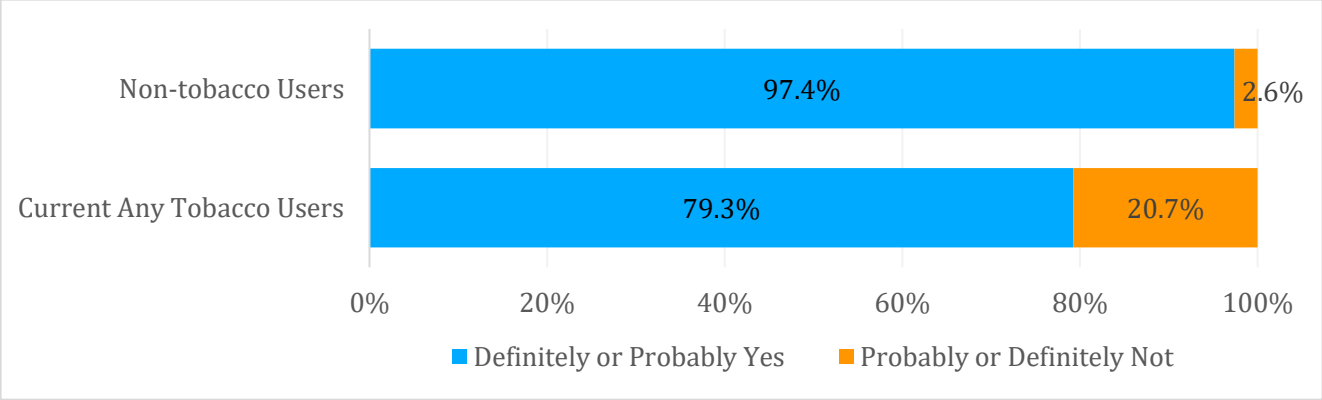
Middle school students were asked questions about their perception of harm related to tobacco use. Most middle school students (94.6%) agreed with the statement, "All tobacco products are dangerous." This perception was not significantly different by gender and varied slightly across grade level with 95.6% of sixth grade students reporting agreement compared to 95.5% of seventh grade students and 92.4% of eighth grade students ($p<0.001$). There was significant difference by race/ethnicity with the highest rates of agreement among White students at 96.4% and the lowest rates among other race students at 88.2% ($p<0.001$). As shown in Figure 34, rates also varied significantly by current any tobacco use status, with 95.5% of non-tobacco users reporting agreement that all tobacco products are dangerous compared to only 74.9% of current any tobacco users ($p<0.001$).

Figure 34. Agreement that Tobacco Products are Dangerous, by Tobacco Use Status, SD YTS 2023



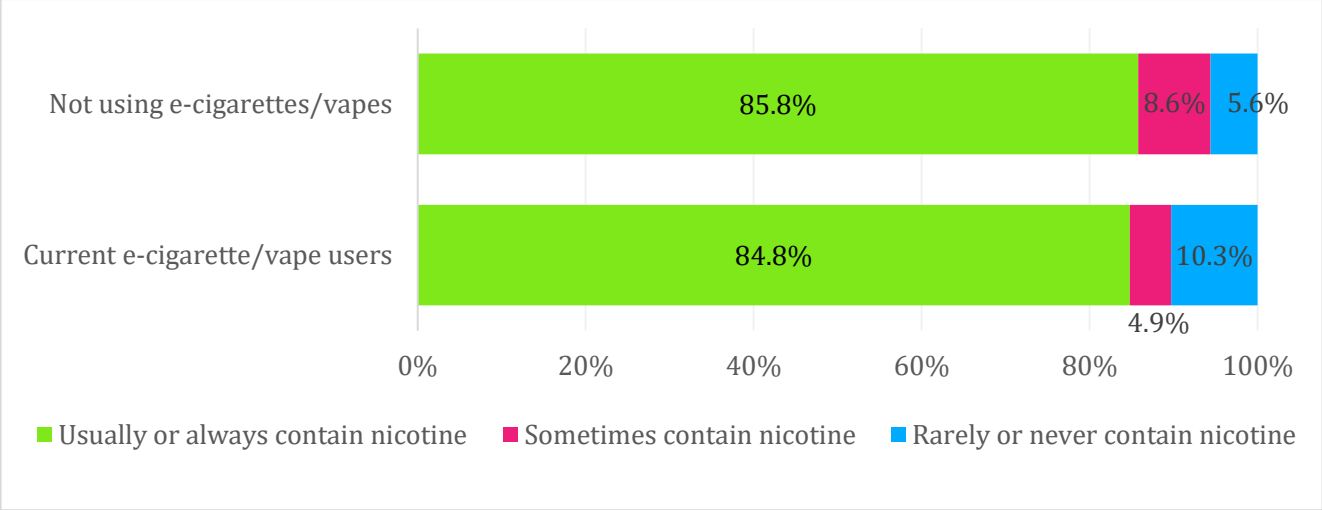
Similarly, students were asked if they believed nicotine is harmful to health, with 96.6% of middle school students reporting "definitely yes" or "probably yes". There were no statistical differences by gender and grade. Statistical differences were also found by race/ethnicity with a higher number of White students reporting agreement (98.8%) compared to American Indian students (96.7%), Hispanic students (90.3%), and other race students (87.2%) ($p<0.001$). Current any tobacco users were less likely to agree with the statement that nicotine is harmful to health (79.3%) compared to non-tobacco users at 97.4% ($p<0.001$) (Figure 35).

Figure 35. Perceptions of Nicotine Harm to Health, by Tobacco Use Status, SD YTS 2023



Middle school students were asked how often they thought e-cigarettes/vapes contained nicotine, with 85.7% indicating e-cigarettes/vapes usually or always contained nicotine. White students were more likely to state that e-cigarettes/vapes usually or always contained nicotine at 90.0% compared to American Indian students at 82.9%, other race students at 77.2%, and Hispanic students the least likely to agree at 66.7% ($p<0.001$). Female students were less likely to agree that e-cigarettes/vapes usually or always contained nicotine at 79.5% compared to males at 88.0% ($p<0.05$). No statistical difference was found between users and non-users in views on nicotine content in e-cigarettes/vapes (Figure 36).

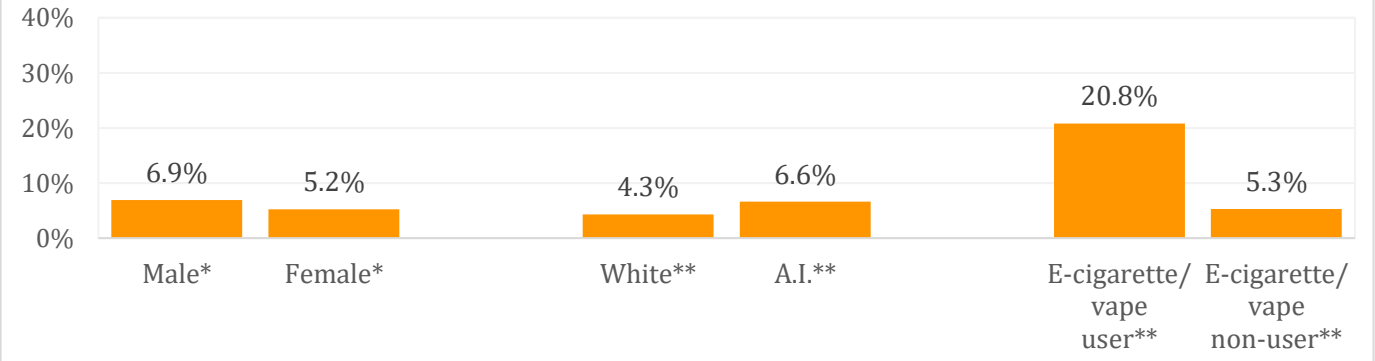
Figure 36. Nicotine Content in E-cigarettes/Vapes, by Use Status, SD YTS 2023



Students were also asked if they believed that that e-cigarettes/vapes were less, equally, or more addictive than cigarettes, with 31.3% of students indicating they had not heard of or did not know enough about the products to respond. These students were excluded from the analysis for this question.

Nearly nine out of ten students (94.0%) reported that e-cigarettes/vapes are equally or more addictive than cigarettes. This significantly varied by gender with more males reporting e-cigarettes/vapes were less addictive ($p<0.05$), and by grade with more sixth grade students reporting these are less addictive ($p<0.01$). American Indian students (6.6%) and other race students (13.4%) more frequently reported e-cigarettes/vapes as less addictive ($p<0.01$). Current e-cigarette/vape users were much more likely to report that e-cigarettes/vapes are less addictive than cigarettes at 20.8% compared to non-users at 5.3% ($p<0.01$) (Figure 37).

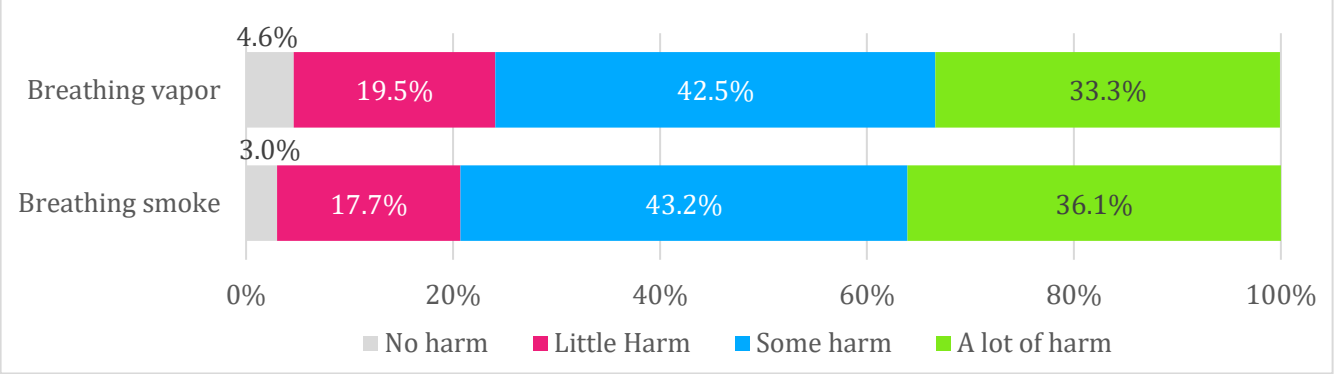
Figure 37. Portion of Middle School Students Who Reported E-cigarettes/Vapes are Less Addictive than Cigarettes, by Select Characteristics, SD YTS 2023



*p-value<0.05, **p-value < 0.01, based on Rao-Scott chi-square test.

Next, students were asked questions about perceptions related to second-hand exposure to cigarette smoke and e-cigarette/vape vapor. Many students perceived breathing vapor as harmful, with 33.3% of middle school students reporting 'a lot of harm' from breathing vapor. Similarly, many students reported breathing smoke as harmful, with 36.1% of middle school students reporting 'a lot of harm' from breathing smoke (Figure 38). There were no significant differences in second-hand smoke and vapor exposure harm by product use.

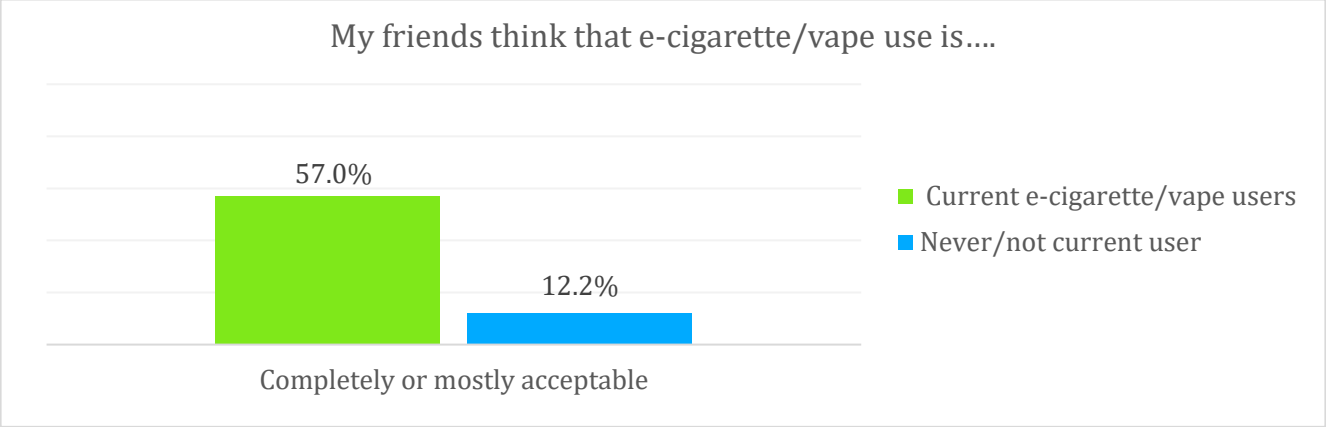
Figure 38. Reported Harm Level of Breathing Smoke and Vapor, All Students, SD YTS 2023



Perceptions of Peer Tobacco Use

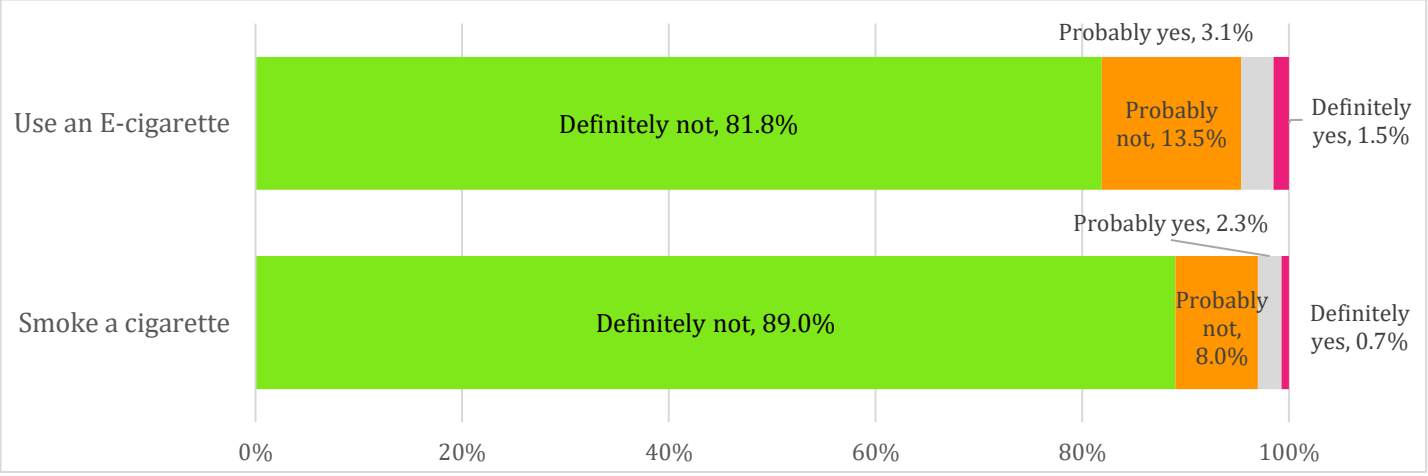
Students were asked about their friends' acceptance of e-cigarette/vape use. Overall, 69.7% of middle school students reported that their friends viewed vaping as not acceptable, an increase over 60.3% in 2021. This did significantly vary by gender ($p<0.05$) with males more likely to report friends view vaping as not acceptable, and also varied significantly by grade level ($p<0.01$) with younger students reporting their friends think vaping is not acceptable more frequently than older students. Significant differences found by race/ethnicity, with a higher number of White students (92.1%) reported that their friends viewed vaping as not acceptable compared to American Indian students (69.5%), Hispanic students (85.4%), and other race students (70.1%) ($p<0.001$). Students using e-cigarettes/vapes were far more likely to report that their friends view vaping as acceptable compared non-vape users (Figure 39).

Figure 39. Acceptance of E-Cigarette/Vape Use among Friends, by Use Status, SD YTS 2023



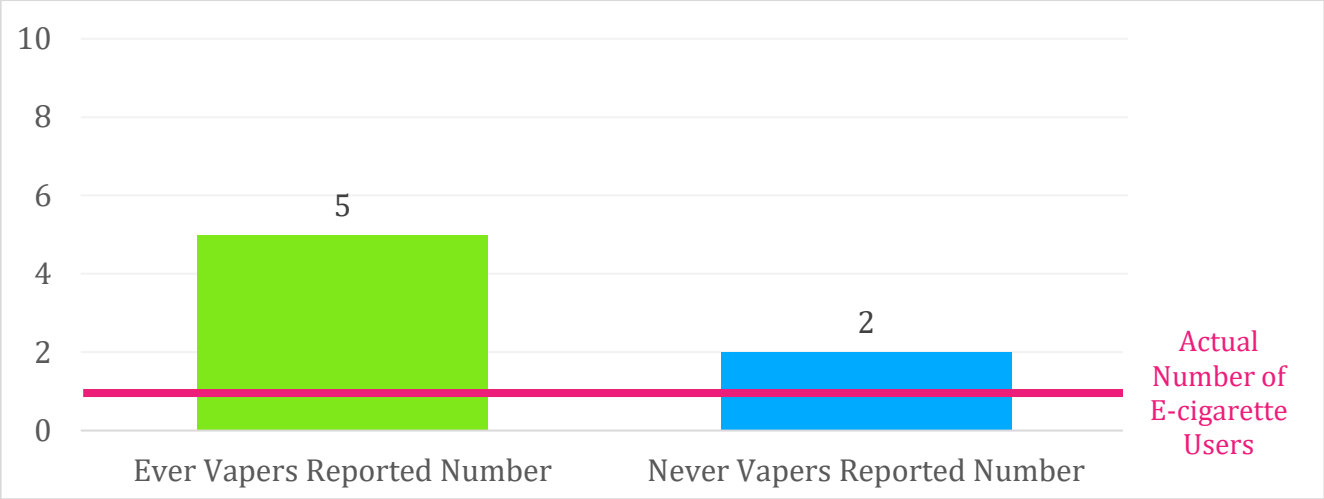
Students were also asked how likely they would be to use an e-cigarette/vape if a close friend offered them one. Most middle school students (95.3%) students reported they probably or definitely would not use an e-cigarette/vape provided by their close friends. Likewise, 97.0% of middle school students indicated they would probably or definitely not use a cigarette offered by a close friend (Figure 40).

Figure 40. Likelihood of Using Product Offered by Close Friend, SD YTS 2023



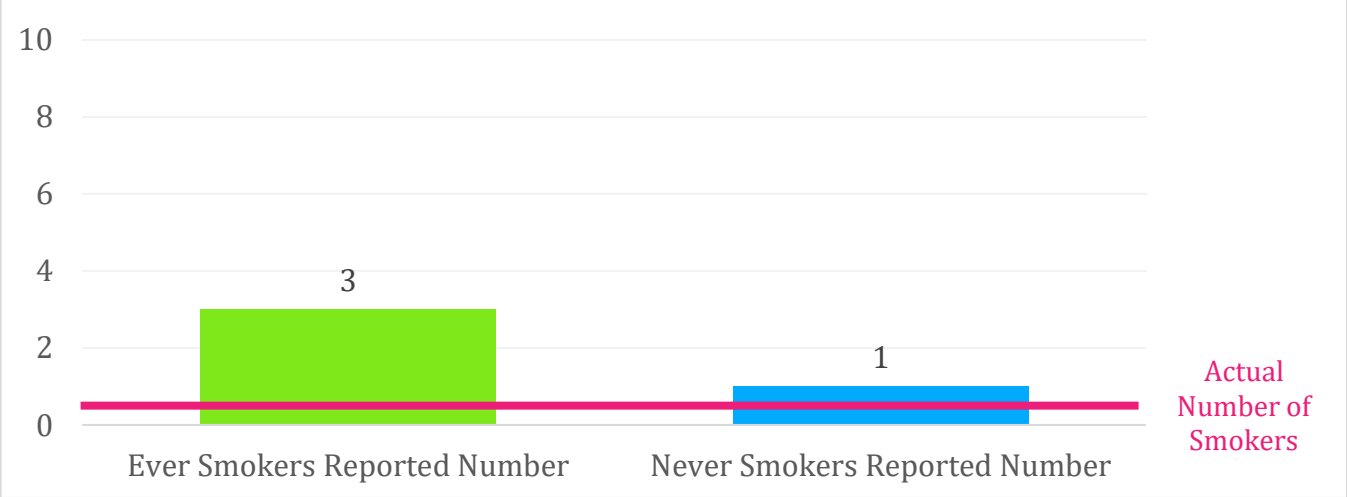
When asked how many of 10 students in their grade use e-cigarette/vapes, ever users reported that they thought 5 of every 10 students in their grade at school used e-cigarettes/vapes, and never users reported that they thought 2 of every 10 students in their grade at school used e-cigarettes/vapes. Based on the overall prevalence, the actual number of users is estimated to be 1 of every 10 middle school students ever using e-cigarettes/vapes, showing that students overestimate the actual number of peers using these products (Figure 41).

Figure 41. SD Middle School Students Perception of the Number of Student Using E-cigarettes/Vapes, SD YTS 2023



When asked how many of 10 students in their grade smoke cigarettes, ever smokers reported that they thought 3 of every 10 students in their grade at school smoked cigarettes, and never smokers reported that they thought 1 of every 10 students in their grade at school smoked. Based on the overall prevalence, the actual number of users is estimated at 4.3%, or less than 1 of every 10 middle school students smoking cigarettes (Figure 42). Ever smokers reported more students are smoking than non-users or the actual number of smokers in middle school.

Figure 42. SD Middle School Student's Perception on Smoking Cigarettes, SD YTS 2023



SECTION FIVE: ANTI-TOBACCO EDUCATION AND MESSAGING

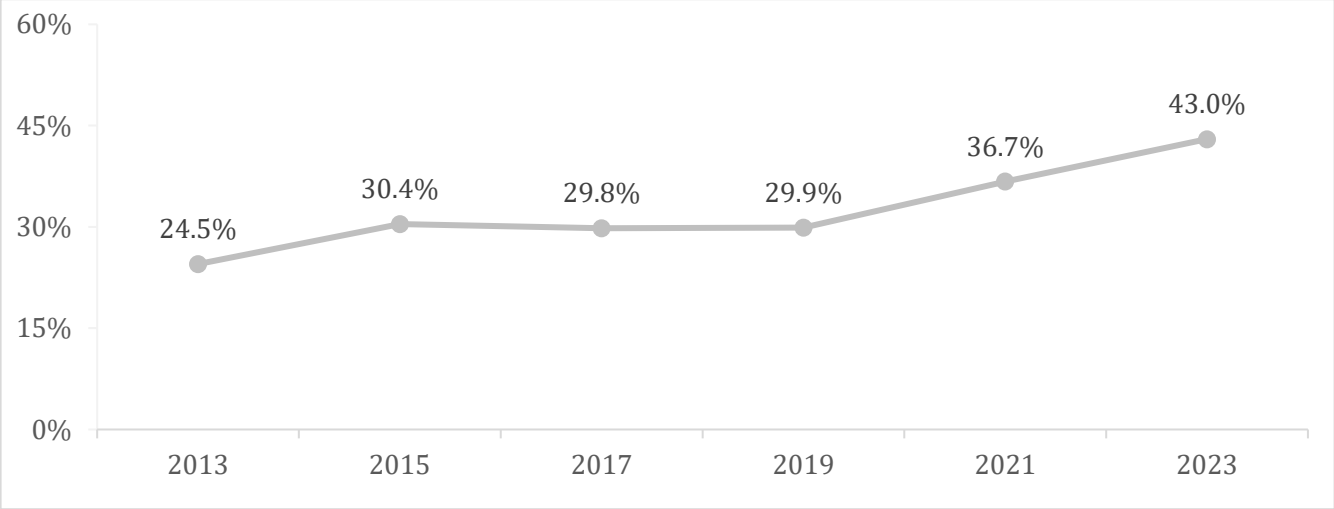
Key Findings

- Among those who had seen a healthcare professional, only 43.0% said the provider asked about use of tobacco products and 44.8% reported being advised against using tobacco.
- Anti-tobacco education at school was common, with 73.6% of middle school students reporting receipt of education in 2023.
- More than half (53.1%) reported discussing dangers of tobacco with their parent(s).

Healthcare Professional Messaging about Tobacco Use

Clinical practice guidelines recommend that clinicians ask both pediatric and adolescent patients about tobacco use and provide abstinence advice.[16] Students were asked about discussions with healthcare providers (including doctors, dentists, nurses, or other health professionals) regarding tobacco or vaping products. Most students (87.2%) reported seeing a healthcare provider in the past year. Among those who had seen a healthcare professional, only 43.0% said this provider asked about use of tobacco products (Figure 43), which demonstrated improvement over prior years' rates.

Figure 43. Trend in Number of Students Asked about Use of Tobacco Products by a Health Professional, SD YTS 2013-2023*

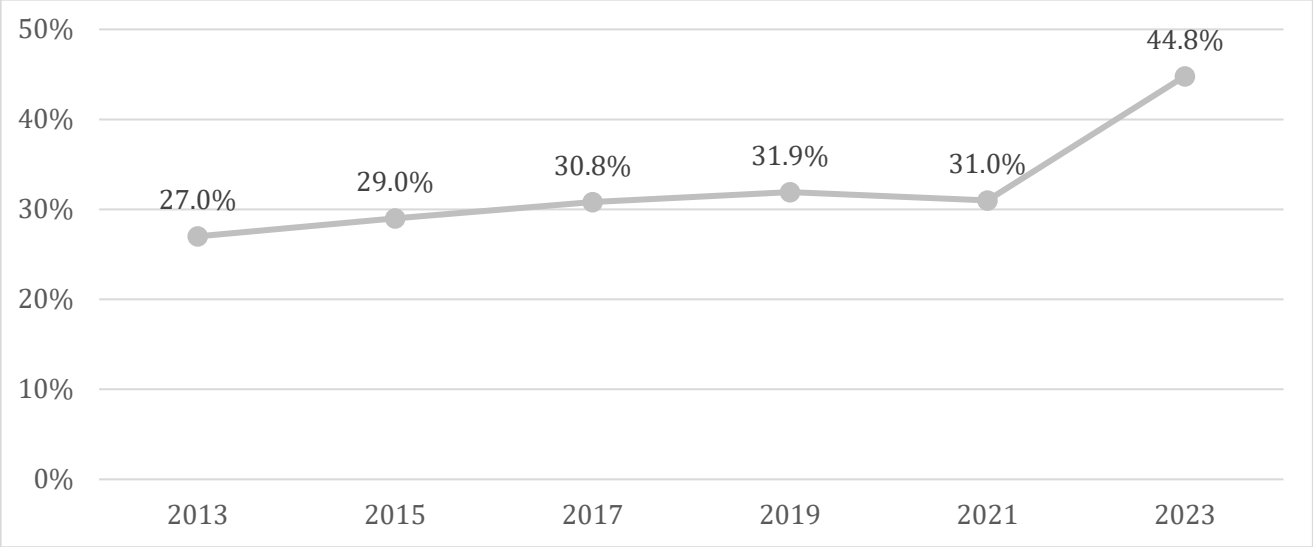


* 2013-2019 doctor, dentist or nurse; 2021-2023, doctor, dentist, nurse or other health professional

Healthcare provider assessment of tobacco use did not vary by gender, race/ethnicity, or grade level. Among eighth graders, 49.1% reported a healthcare provider asked about use, 44.9% of seventh grade students, and 36.4% of sixth grade students reported the same. No significant difference was found by tobacco use status with 43.6% of current tobacco users asked 43.1% of non-users.

Students were also asked if a healthcare professional had advised them not to use tobacco or vaping products. Among those who had seen a healthcare professional in the past year, 44.8% reported this person advised against the use of tobacco products (Figure 44). Advice against tobacco did not vary by gender, grade, or by race/ethnicity. No significant difference was found by tobacco use status with 58.9% of current tobacco users asked and 44.4% of non-users.

Figure 44. Trend in Number of Students Advised Against the Use of Tobacco Products by A Health Professional, SD YTS 2013-2023*



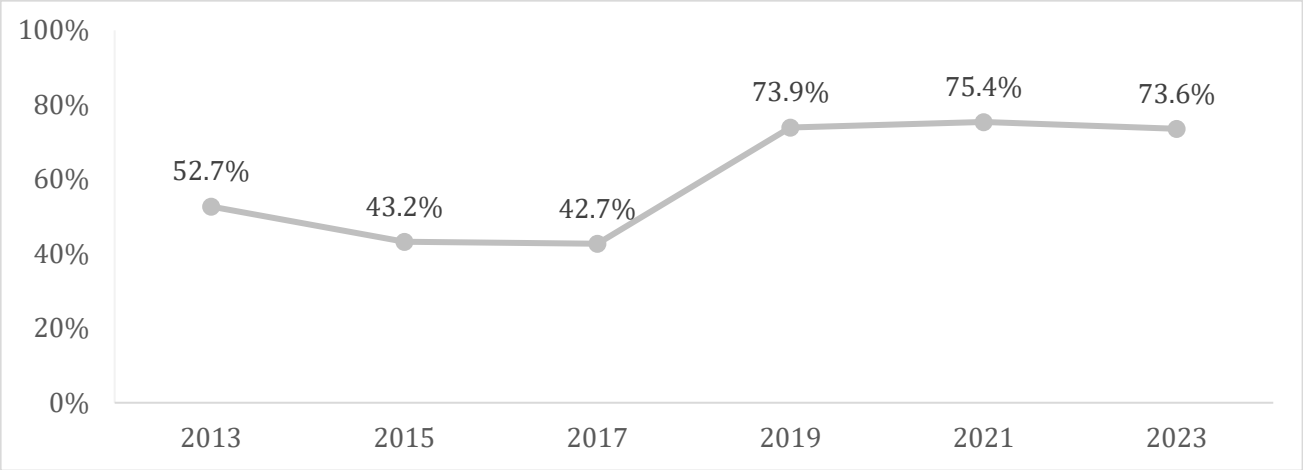
* 2013-2019 doctor, dentist or nurse; 2021-2023, doctor, dentist, nurse or other health professional

Tobacco Education at School

An increase was noted in the number of middle school students receiving education at school on the dangers of tobacco use. In 2023, 73.6% of students reported anti-tobacco education at school, similar to 2021 at 75.4%, and higher than previous years ranging from 43% to 60% (Figure 45). The highest rate to date of school-based anti-tobacco education was achieved in 2021.

Anti-tobacco education did not vary by gender or grade (sixth grade at 69.9%, seventh grade at 76.2%, and eighth grade at 75.6%). Significant differences by race/ethnicity were found with more White students reporting receipt of anti-tobacco education at 77.2% compared to American Indian students at 69.1%, and Hispanic students at 62.4%, and other race students at 64.5% ($p<0.001$). No significant difference was found in receiving education in school by those currently using any tobacco (63.8%) and those not using any of tobacco (74.0%).

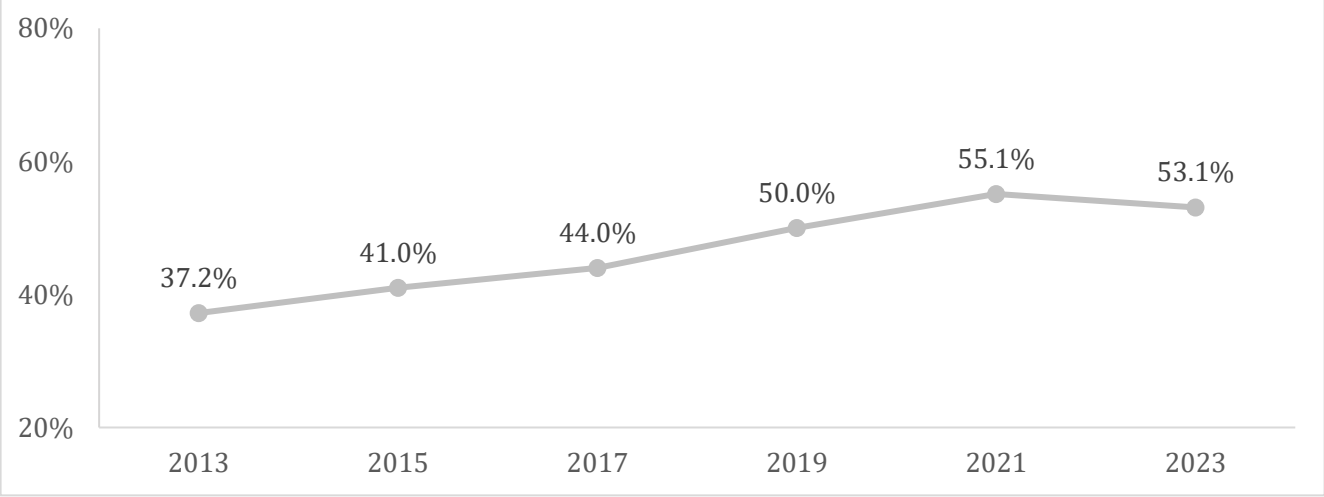
Figure 45. Trends in Number of Students Receiving School-based Education about the Dangers of Tobacco Use, SD YTS 2013-2023



Parental Messaging about Tobacco Use

Among middle school students, 53.1% reported a parent had talked with them about not using tobacco in the past year, a slight decrease from the 2021 YTS data at 55.1%. Trends in parental discussion against tobacco use have increased over the past ten years (Figure 46). No statistically significant differences in parental discussion of tobacco use were found by gender or race/ethnicity. There were also no statistically significant differences found in parental messaging by any tobacco use status, with 59.4% of current any tobacco users reporting a parent discussion of tobacco use and 52.8% of non-users.

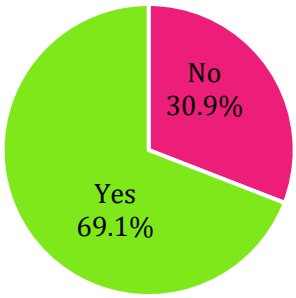
Figure 46. Trends in Parent(s) Discussing the Dangers of Tobacco Use, SD YTS 2013-2023



Anti-Tobacco Media

Middle school students were asked if they believed that tobacco companies (including e-cigarettes/vape companies) try to get young people under 18 to use tobacco products. The frequencies of the responses from students are shown in Figure 47.

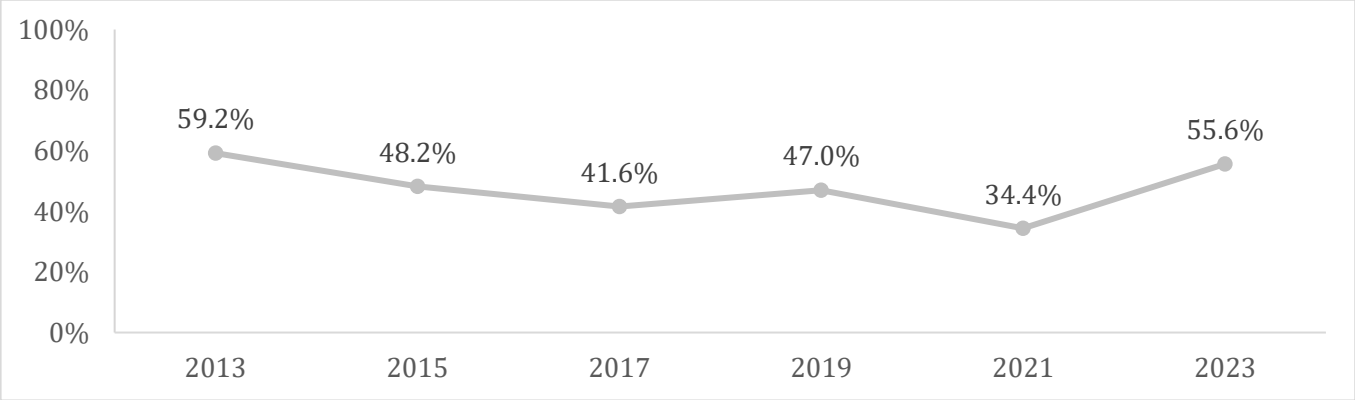
Figure 47. Middle School Student's Agreement that Tobacco Companies Target Youth, SD YTS 2023



The SD Department of Health Tobacco Control Program has designed media aimed at providing information about the dangers of tobacco use, cessation information, and how tobacco companies target youth. At the time of this report, this media is available online at https://quittobaccosd.com/, with a youth focused campaign, "Vaping Sucks.".

Among all SD middle school students, 55.6% reported hearing the "Vaping Sucks." slogan. No statistically significant differences were found in awareness by gender or race/ethnicity. Grade level differences were identified with 48.7% of 6th graders, 58.2% of seventh graders, and 61.7% of eight graders indicating awareness of the slogan ($p<0.001$). No statistically significant difference was found in awareness of the "Vaping Sucks." slogan by tobacco use status, with 51.4% of current tobacco users reporting awareness of the slogan and 55.8% of non-tobacco users. Awareness of the SD Department of Health anti-tobacco youth campaign has increased from 2021 to 2023 with the change in slogan (Figure 48).

Figure 48. Trends in Student Awareness of the "Rethink It. Seriously." And "Vaping Sucks." Slogan, SD YTS 2013-2023*



* 2013-2021 "Rethink It. Seriously"; 2023, "Vaping Sucks."

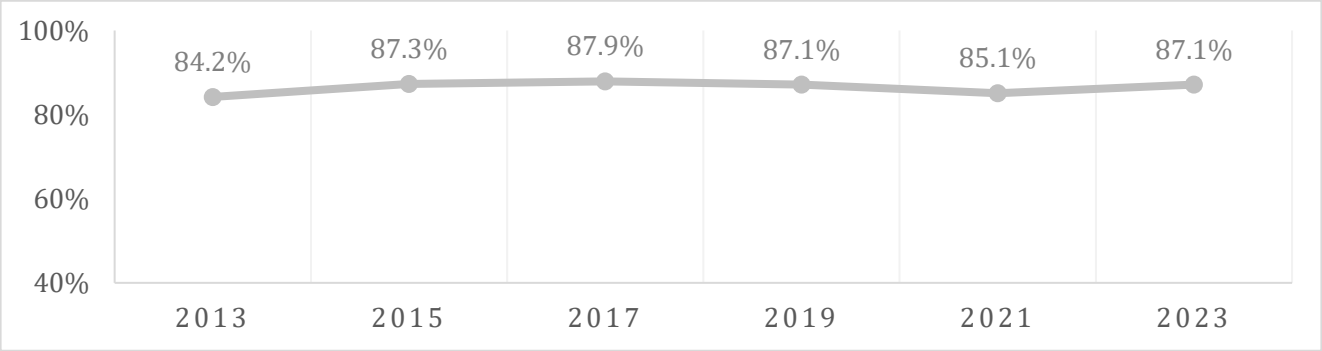
Indoor Smoking Rules

Home rules that prohibit smoking tobacco products indoors and in vehicles aid in reducing, but do not eliminate, the health impact to youth. Home rules about smoking indoors were assessed as both a protective factor in preventing secondhand smoke exposure, and as a message against the use of tobacco products.

Home Rules about Smoking Indoors

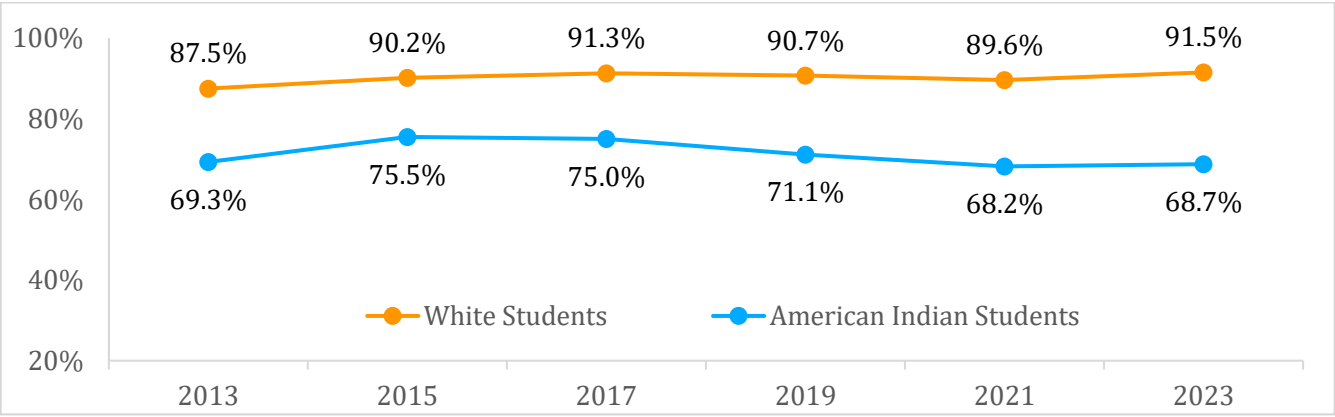
Among all middle school students, most (87.1%) reported that they lived in a home where smoking was never allowed inside, an increase from 2021 data at 85.1%. The trends in home rules prohibiting smoking indoors by year from 2013 to 2023 are presented in Figure 49.

Figure 49. Trends in Home Rules Prohibiting Smoking Indoors, by Year, SD YTS 2013-2023



There were no statistically significant differences in home smoking rules by gender or grade, but statistically significant differences existed by race/ethnicity. Among American Indian students, just 68.7% reported home rules prohibiting smoking indoors, followed by other race students at 82.1% reporting a home rule, Hispanic students at 86.7%, and White students at 91.5% ($p<0.001$). The trends in home rules prohibiting smoking indoor by race from 2013 to 2023 are presented in Figure 50.

Figure 50. Trends in Home Rules Prohibiting Smoking Indoors, by Race, SD YTS 2013-2023

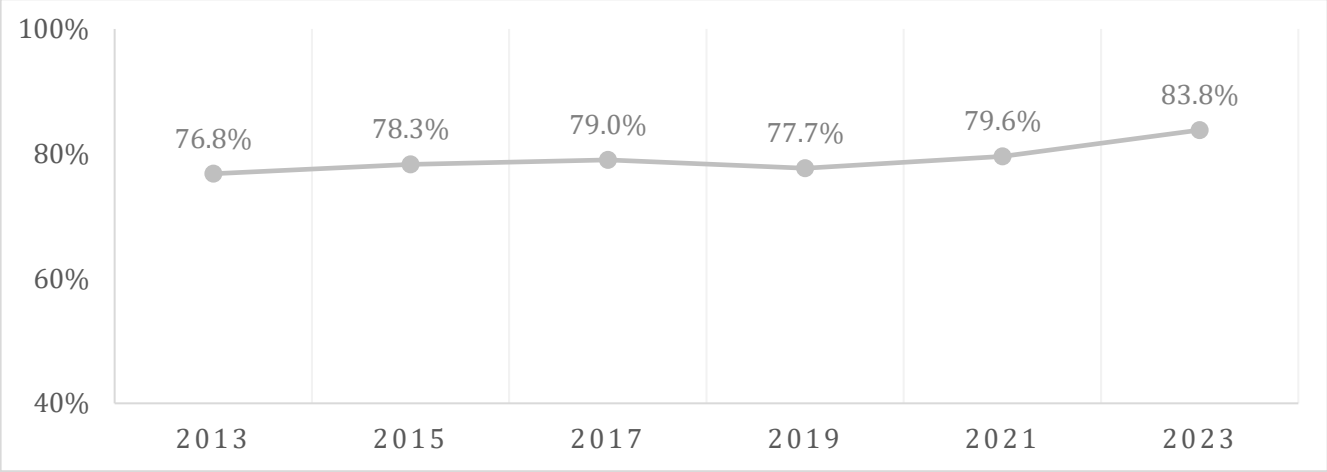


Differences between current cigarette users and non-users are not reported due to low raw numbers in the current cigarette use group.

Rules about Smoking Inside Vehicles

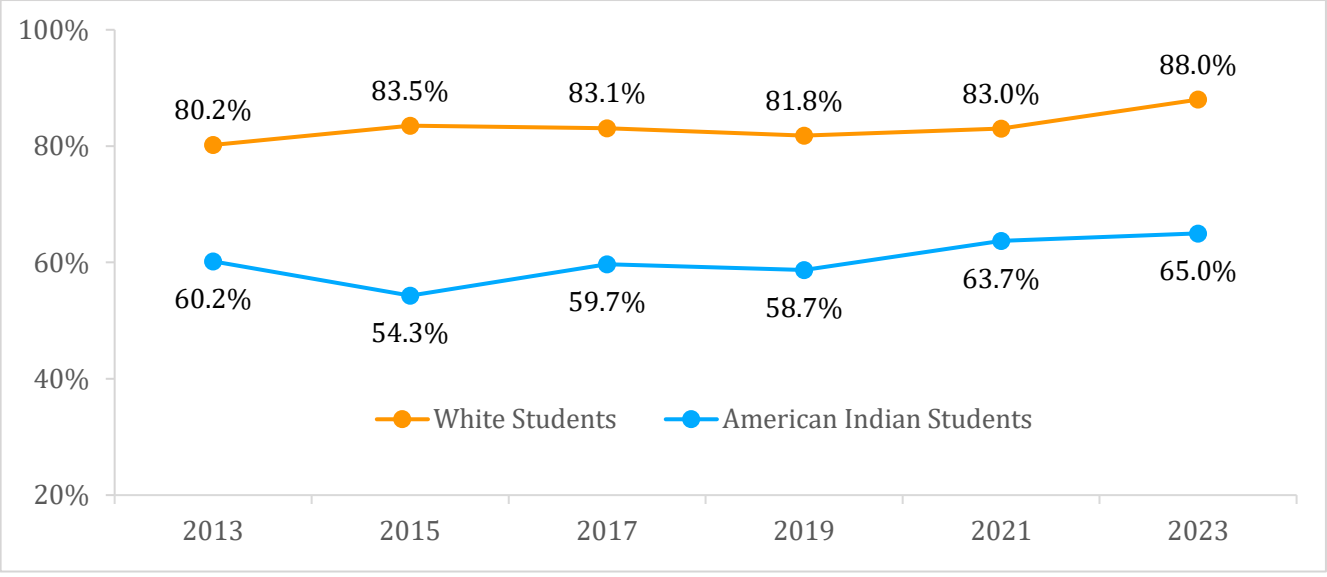
Overall, 83.8% of middle school students reported a rule that prohibited smoking inside vehicles, an increase over the 2021 rate at 79.6%. The trends in rules prohibiting smoking inside vehicles by year are presented in Figure 51.

Figure 51. Trends in Rules Prohibiting Smoking Inside Vehicles, by Year, SD YTS 2013-2023



Again, there were no statistically significant differences in rules prohibiting smoking inside vehicles by gender or grade, but there were statistically significant differences in smoking inside vehicles by race/ethnicity ($p<0.001$). Among American Indian students, only 65.0% reported rules prohibiting smoking inside vehicles, followed by 78.7% of other race students, 85.5% of Hispanic students, and 88.0% of White students. The trend in vehicle smoking ban from 2013 to 2023 is presented in Figure 52. Differences between current cigarette users and non-users are not reported due to low raw numbers in the current cigarette use group.

Figure 52. Trends in Rules Prohibiting Smoking Inside Vehicles, by Race, SD YTS 2013-2023*



*Trend data not available for other races.

SECTION SIX: SECOND-HAND SMOKE AND VAPOR EXPOSURE

Key Findings

- Twice as many American Indian students reported secondhand exposure at home or in a vehicle when compared to White students.
- Exposure to secondhand smoke on school property was reported by 5.8% of middle school students, and 6.5% reported exposure to secondhand vapor.

Secondhand smoke exposure is an attributable factor in the development of numerous diseases, particularly cardiovascular and respiratory diseases in children.[17] Exposure, even without direct use of tobacco, can lead to chronic health issues, and even death.[17] Middle school students were asked about exposure to secondhand smoke and secondhand vapor from e-cigarette/vape products.

Involuntary Exposure to Tobacco Smoke

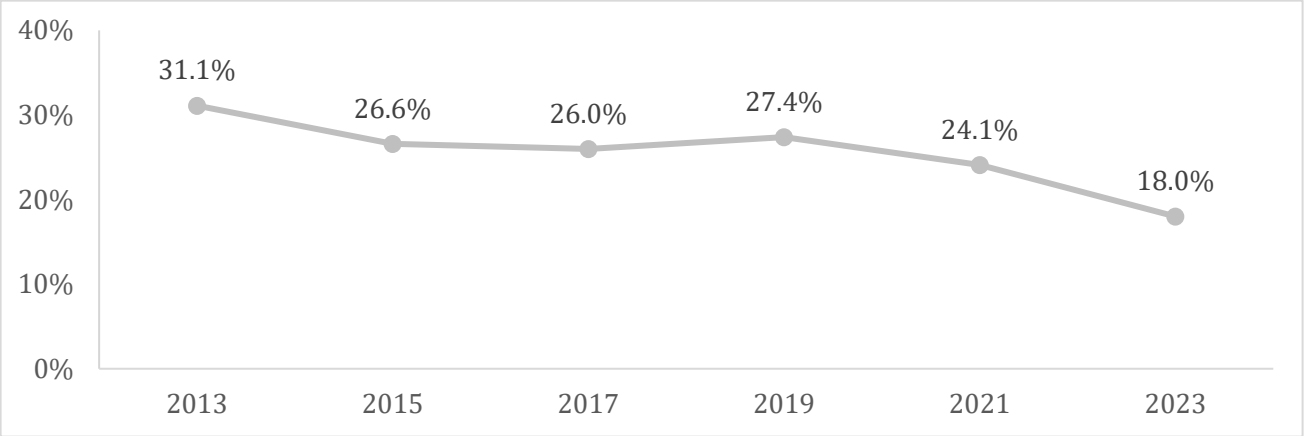
One in seven (14.7%) middle school students reported exposure to secondhand smoke at home in the past week. Secondhand smoke exposure in vehicles (12.3%) was reported slightly less frequently than exposure at home.

Among middle school students in South Dakota, 14.7% were exposed to secondhand smoke at home in the past week.

Overall, 18.0% of middle school students reported exposure to secondhand smoke at home or in a vehicle, a decline from 2021 at 24.1%, and the lowest rate in the past 10 years (Figure 53). Students who were current tobacco users more frequently reported secondhand exposure in the past week at home or in a vehicle at 60.4% compared to non-users at 16.0% ($p<0.001$).

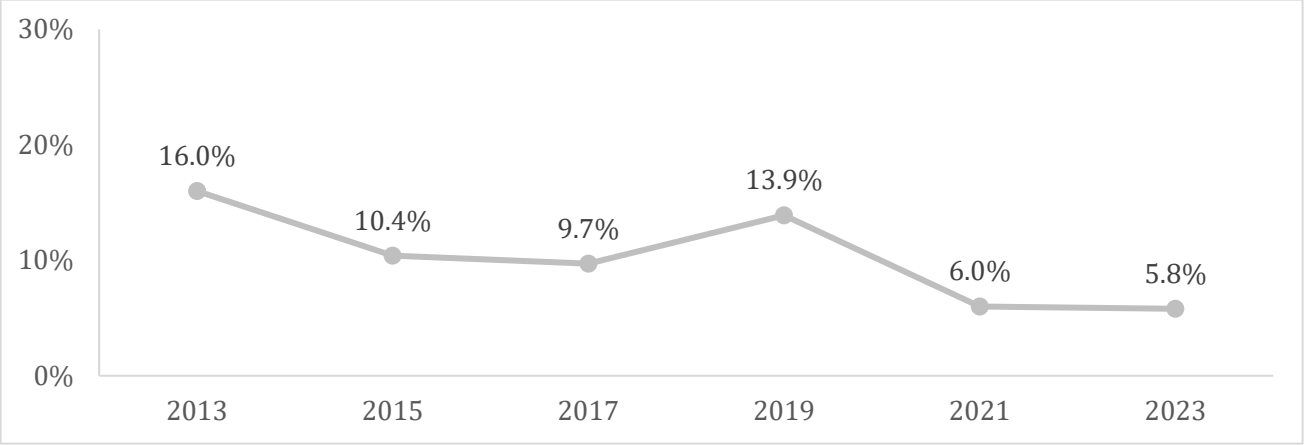
Significant differences were also found in secondhand smoke exposure by race/ethnicity. Among American Indian students, 38.7% reported exposure to secondhand smoke at home or in a vehicle in the past week, compared to 14.8% of White students, 12.7% of Hispanic students, and 18.3% of other race students ($p<0.001$). No differences were found in secondhand smoke exposure by gender or grade level.

Figure 53. Exposure to Secondhand Smoke at Home or in a Vehicle in the Past Week, SD YTS 2013-2023



Middle school students in SD were also asked about other places where secondhand smoke exposure could occur. When asked about exposure at school, including school buildings, school grounds, and school parking lots, 5.8% of middle school students indicated they were exposed to secondhand smoke on school property in the past week, similar to the rate in 2021 (Figure 54).

Figure 54. Exposure to Secondhand Smoke on School Property in the Past Week, SD YTS 2013-2023



Significant differences were found in secondhand smoke exposure on school property by gender and race/ethnicity. Female students more frequently reported exposure at 6.9% compared to male students at 4.6% ($p<0.05$). Among American Indian students, 7.0% reported exposure to secondhand smoke at the school property in the past week, compared to 4.7% of White students ($p<0.05$).

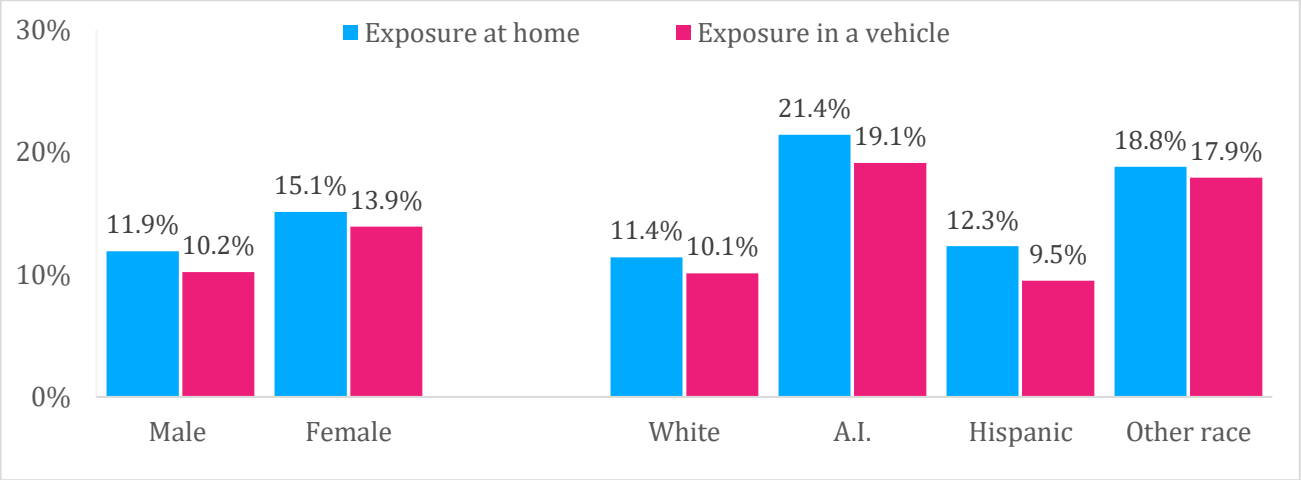
Students were also asked about breathing smoke from someone else smoking a tobacco product in a park or other outdoor recreation facility, with 13.4% of middle school students reporting exposure in these locations over the past week. There were no significant differences found in secondhand smoke exposure at a park or other outdoor recreation facility in the past week by gender, race/ethnicity, or grade level.

Involuntary Exposure to E-cigarette/Vape Vapor

Middle school students were asked about exposure to secondhand vapor from an e-cigarette/vape for the first time in 2021. Overall, 13.6% of middle school students reported exposure to secondhand vapor at home in the past week, an increase from the 11.3% reported in 2021. Secondhand vapor exposure in vehicles was at 12.1% in 2023 compared to 11.2% in 2021.

Significant differences were found in secondhand vapor exposure at home by race/ethnicity (Figure 55). American Indian students were more likely to report secondhand vapor exposure at home at 21.4%, compared to 11.4% of White students, 12.3% of Hispanic students, and 18.8% of other race students ($p<0.01$). No differences were found by gender or grade level in vapor exposure at home. Differences also existed in exposure to vapor in a vehicle with female students more likely to be exposed to vapor in a vehicle ($p<0.05$) and American Indian and other race students more likely to report vapor exposure in a vehicle ($p<0.01$).

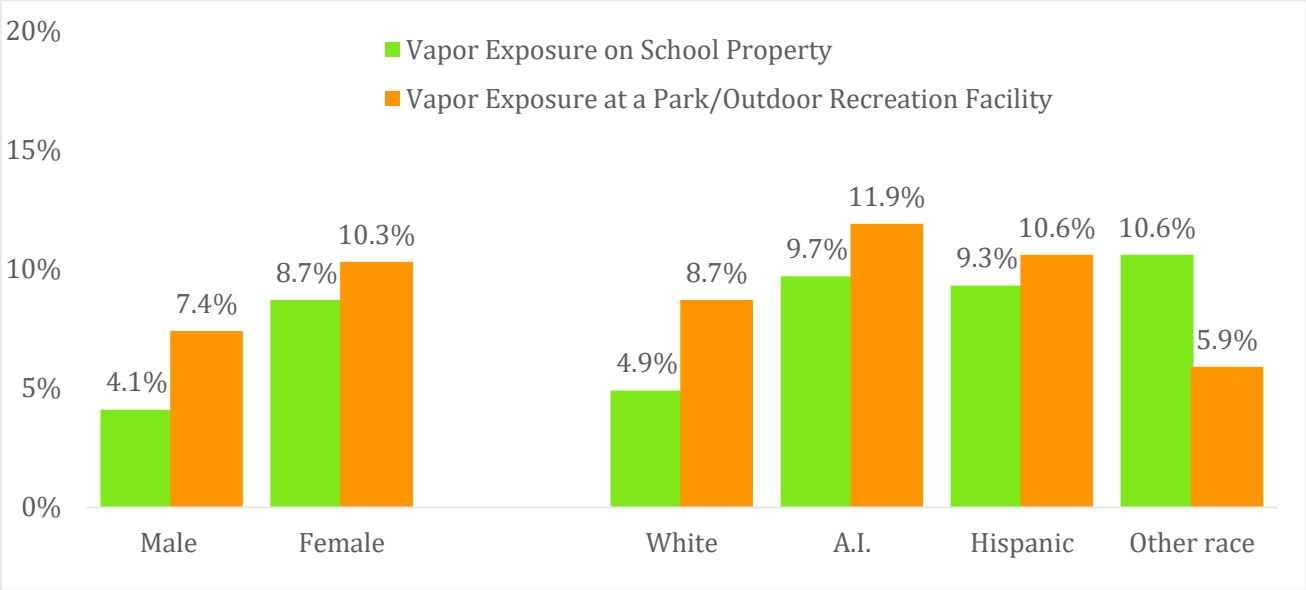
Figure 55. Exposure to Secondhand Vapor at Home and in a Vehicle in the Past Week, by Gender and Race/Ethnicity, SD YTS 2023



Middle school students were also asked about other places where secondhand vapor exposure occurred starting with school property, including school buildings, grounds, and parking lots. Six percent (6.5%) reported secondhand vapor exposure at school. Significant differences were found in secondhand vapor exposure on school property by gender and race/ethnicity as presented in Figure 56. More female students reported breathing secondhand vapor on school property compared to male students ($p<0.001$), and White students were less likely to report secondhand vapor exposure at school than American Indian ($p<0.05$).

Students were then asked about secondhand vapor exposure in a park or other outdoor recreation facility, with 8.9% of middle school students reporting exposure in these locations in the past week. No significant differences were found in secondhand vapor exposure at parks or other outdoor recreation facilities by gender, grade level, or race/ethnicity as shown in Figure 56.

Figure 56. Exposure to Secondhand Vapor at School or at a Park/Outdoor Recreation Facility, by Gender and Race/Ethnicity, SD YTS 2023



SUMMARY:
KEY FINDINGS AND RECOMMENDATIONS

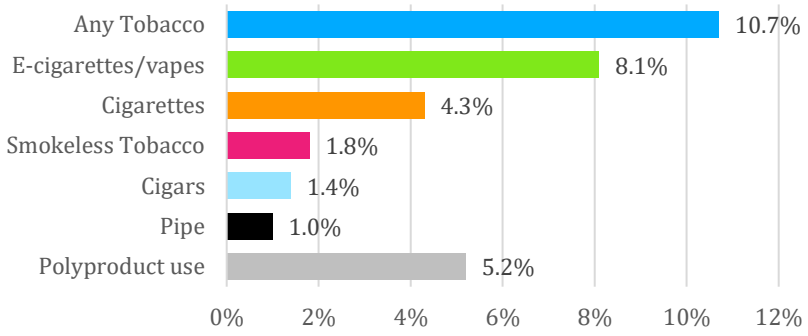
Youth Tobacco Use Prevalence

In 2023, e-cigarettes were the most commonly used tobacco product among middle school students.

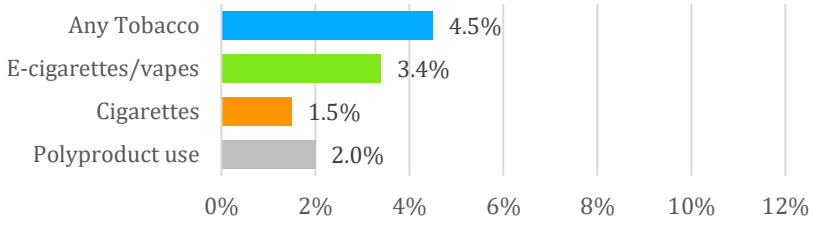
Following the national trend in which declines in e-cigarette/vape use among youth in 2023, the number of middle school students in SD that have ever used e-cigarettes/vapes decreased from 11.6% in 2021 to 8.1%, and current use of e-cigarettes/vapes decreased to from 4.0% to 3.4%.

Prevalence of tobacco use (lifetime use/current) among SD middle school students 2021-2023

Lifetime Use (Ever)



Current Use (past 30 days)



RECOMMENDATION: Continued efforts to prohibit and inhibit access to and marketing of e-cigarettes and cigarettes among youth are needed.

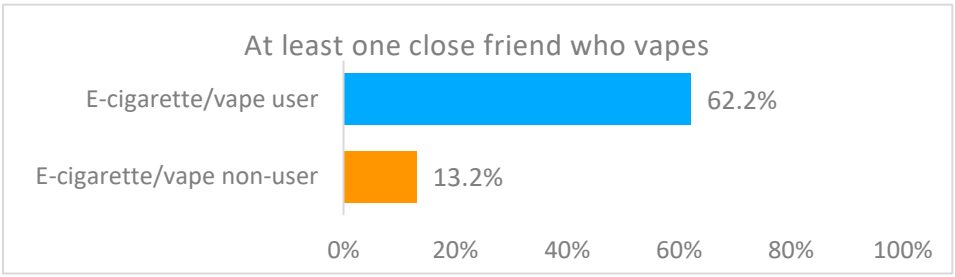
- Monitor and address rapidly changing marketing methods aimed at promoting use of e-cigarettes and new tobacco products to youth, including influencers on social media, advertising at youth events, and discounts.

Factors Promoting Tobacco Use

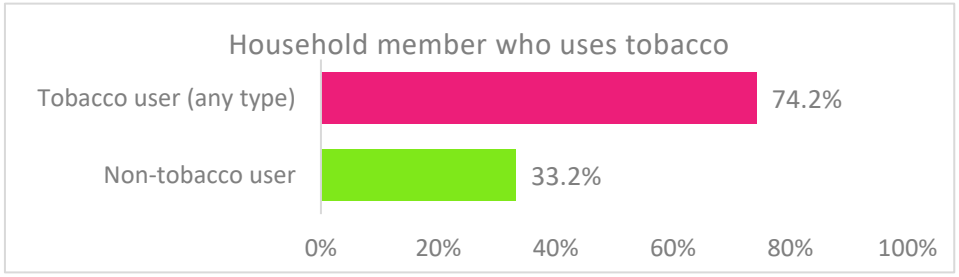
In 2023, one in three students reported seeing someone using an e-cigarette/vape on school property in the past week.

Youth who reported use of e-cigarettes/vapes were more likely to also report having a close friend that vapes and living with someone who uses a tobacco product. Stores (convenience, grocery, or gas stations) continue to be the most common place students report seeing advertising for tobacco and e-cigarette/vape products.

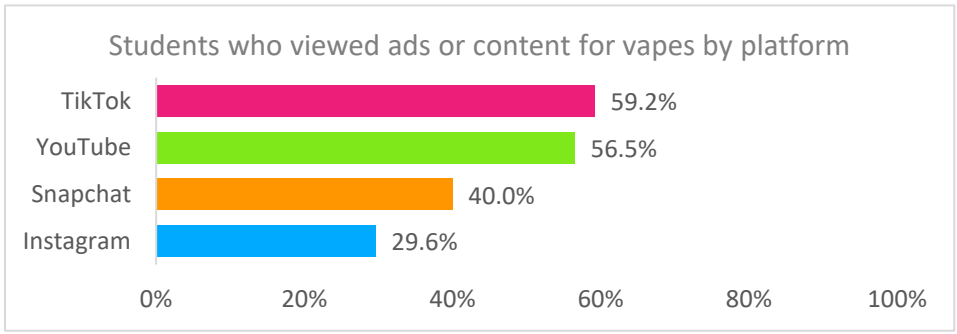
Peer Use



Household Member Use



Social Media Users



RECOMMENDATIONS: Normalization of tobacco use is a factor in the initiation and maintenance of use among youth.

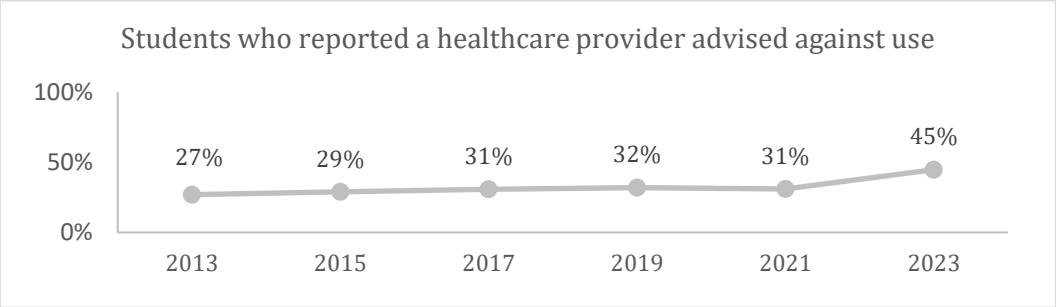
- Stronger enforcement of school policies prohibiting use of e-cigarettes/vapes and tobacco products are needed. One in three students reported seeing someone using an e-cigarette on school property in the past week.
- Promoting parental cessation should continue to be a focus. Among middle school students using tobacco, 40% had a household member that used tobacco.
- Over one in four students reported seeing a public health campaign on social media. Enhance anti-tobacco content on social media, as over 70% of middle school students reported daily use.

Tobacco Education and Messaging

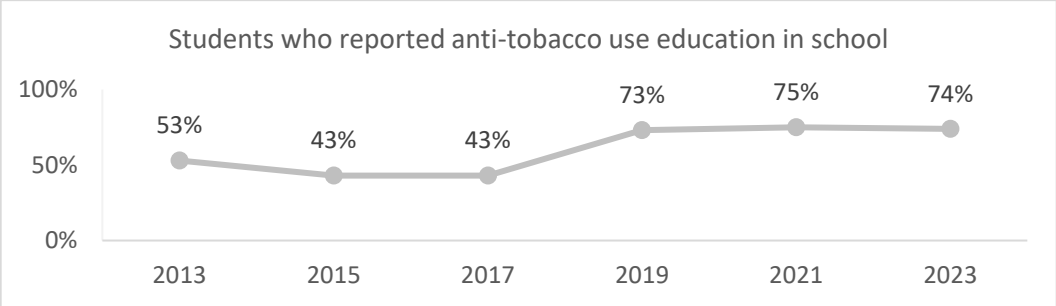
In 2023, the number of students reporting a healthcare professional asked about the use of tobacco or advised against tobacco use increased.

School-based education and the number of students who reported their parents talked with them about not using tobacco products did not change from 2021 to 2023. Advice against use increased to 44.8% of students who saw a healthcare provider.

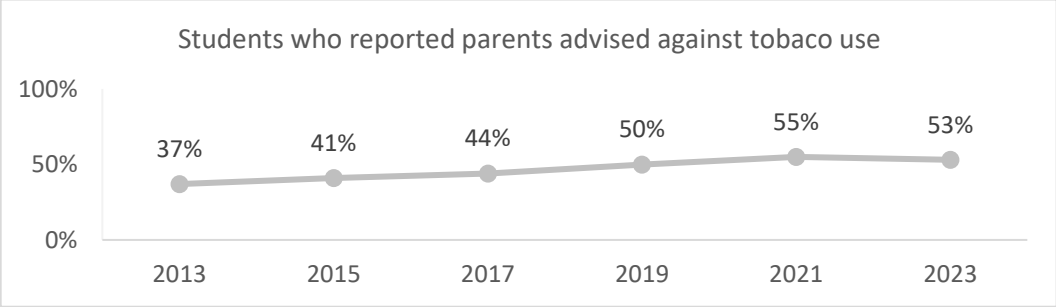
Healthcare Provider Advice



School-based Education



Parental Advice



RECOMMENDATIONS: Assessment of tobacco use and education on the dangers or use aid in tobacco use prevention.

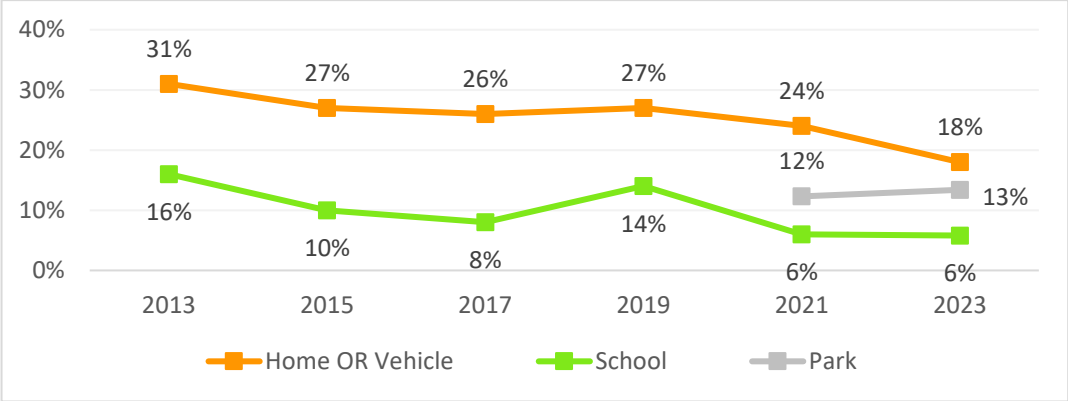
- Target healthcare providers to deliver brief interventions tailored to youth patients, including health risks associated with tobacco use, guidance on cessation strategies, and referrals to appropriate support services.
- Continue support for school-based anti-tobacco education programs.
- Continue to provide resources to parents about how to talk to their children about not using tobacco.

Secondhand Smoke Exposure

In 2023, nearly one in four middle school students reported exposure to secondhand smoke at home or in a vehicle.

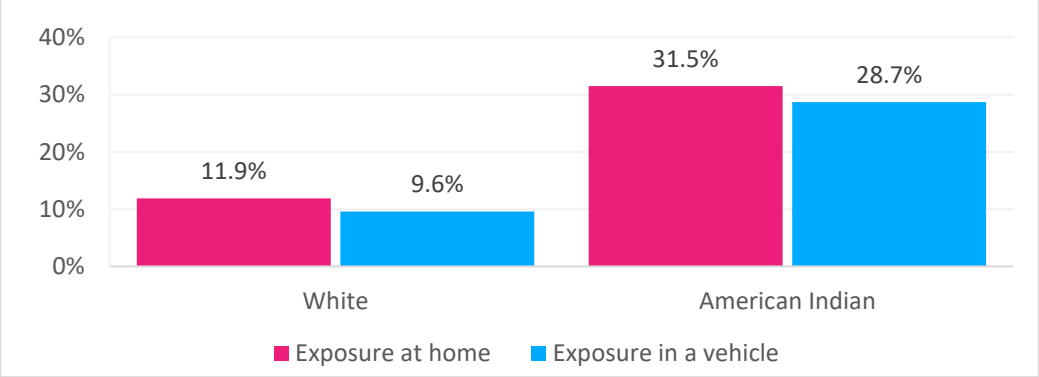
In 2023, the overall number of students reporting exposure to secondhand smoke either decreased or remained similar to 2021 data. Significant differences were identified by race, with American Indian students more frequently reporting exposure to secondhand smoke.

Secondhand Smoke Exposure



American Indian students more commonly reported secondhand smoke exposure at home and in vehicles.

Secondhand Smoke Exposure by Race



RECOMMENDATIONS: Secondhand smoke exposure is an attributable factor in the occurrence of numerous diseases, particularly cardiovascular and respiratory diseases in children. Exposure, even without direct use of tobacco, can lead to death and the development of chronic diseases.

- Educate parents on the harms of secondhand exposure for youth and provide support for tobacco cessation.
- Establish campaigns dedicated to raising awareness about the dangers of secondhand smoke and promoting smoke-free policies and environments.

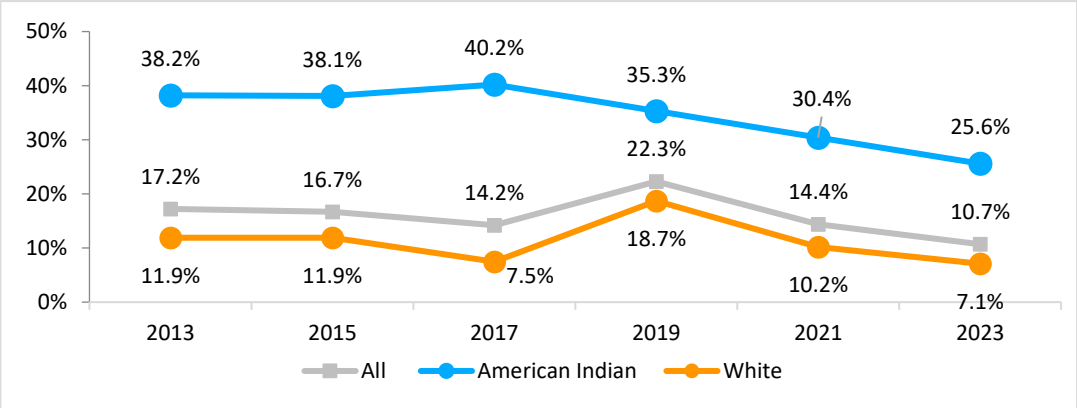
Racial disparities in tobacco use remain.

American Indian students were more likely to report, as compared to White students:

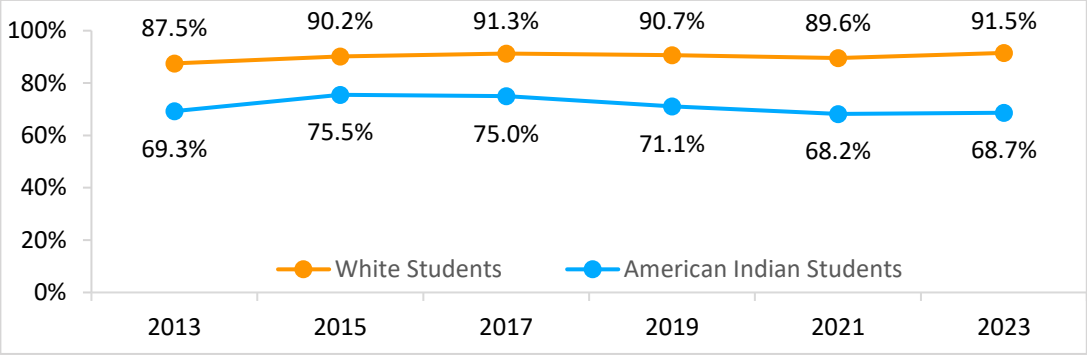
- Ever use of e-cigarettes, cigarettes, any tobacco product, and use of more than one tobacco product;
- Secondhand smoke exposure at home, in a vehicle or at school;
- Household tobacco use.

American Indian students were also less likely to report awareness of the SD QuitLine and receipt of anti-tobacco education at school.

Ever Use of Any Tobacco Product



Indoor Home Smoking Ban



RECOMMENDATIONS: Tobacco use is a preventable cause of morbidity and mortality in youth. Racial disparities in tobacco use are well documented suggesting that some racial groups may be more vulnerable to tobacco use initiation and addiction.

- Tailored strategies to address racial disparities in tobacco use among youth are needed.
- Encourage anti-tobacco education and mentorship within tribal communities to reduce e-cigarette and smoking prevalence.
- Encourage American Indian parents' involvement in education on the harms of secondhand exposure for youth and provide support for smoking cessation.

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