

California Youth Tobacco Use Among Rural Communities and Geographic Region

Significant health disparities have been well established for people living in rural communities compared to individuals from urban areas.^{1,2} Residents of rural areas have higher rates of preventable diseases such as obesity, diabetes, and cancer,¹ and are also more likely to engage in risky behaviors.² Youth from rural communities are also at a higher risk for using tobacco products,^{3,4} and are also less likely to be protected by tobacco control policies.⁵

Using data from the [2023 California Youth Tobacco Survey \(CYTS\)](#),⁶ this factsheet explores differences in youth tobacco use based on rurality and geographic region. The CYTS is a representative annual statewide tobacco surveillance survey of California middle (8th grade) and high school (10th and 12th grade) students. This factsheet focuses on analyzing data for high school student respondents.

URBAN CLASSIFICATION (CITY, SUBURBAN, RURAL/TOWN)

In the 2023 CYTS, urban classification was determined using definitions from the [National Center for Education Statistics \(NCES\)](#), which classify geographic location and rurality based on the type of area where a respondent's school was located.⁷ School location categories were based on the following definitions:

- **Rural:** Respondent's school was in a fringe, distant, or remote town or rural area. Town was defined as a territory inside of an urban cluster, and the type of town is based on distance from an urbanized territory. Rural area was defined as a census-defined rural territory, and the type of rural area was based on distances from urbanized areas and urban clusters.
- **City/Suburban**
 - **City:** Respondent's school was in an a small, midsize, or large city. City was defined as a territory inside an urbanized area and inside a principal city, and size was determined by population.

- **Suburban:** Respondent's school was in a small, midsize, or large suburb. Suburb was a territory outside of a principal city and inside an urbanized area, and size was determined by population.

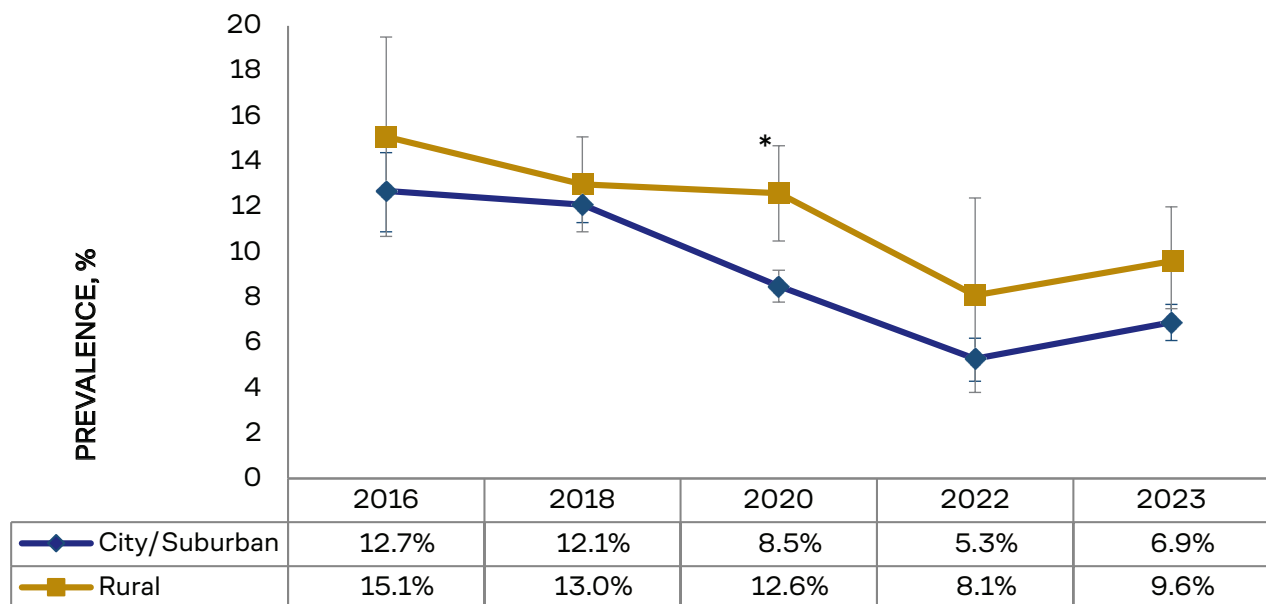
This factsheet compares tobacco use prevalence for youth that attended school in a **rural** area versus those that attended school in a **city/suburban** area. In 2023, approximately, 15.2% of students attended a school in a rural area.

CURRENT TOBACCO USE PREVALENCE, 2016-2023

Current Any Tobacco Use

- As shown in Figure 1. from 2016-2018 current (past 30-day use) any tobacco use was higher for rural youth compared to city/suburban youth.
- In 2020 there was a decline from 2018 in any tobacco use for city/suburban youth that likely contributed to a disparity gap. Specifically, in 2020, rural youth had a significantly higher any tobacco use prevalence compared to city/suburban youth.
- From 2022-2023, there was evidence that this disparity gap decreased, as there was no longer a significant difference in current any tobacco use for rural versus city/suburban youth.

Figure 1. Rural and city/suburban youth current any tobacco use prevalence, 2016-2023.



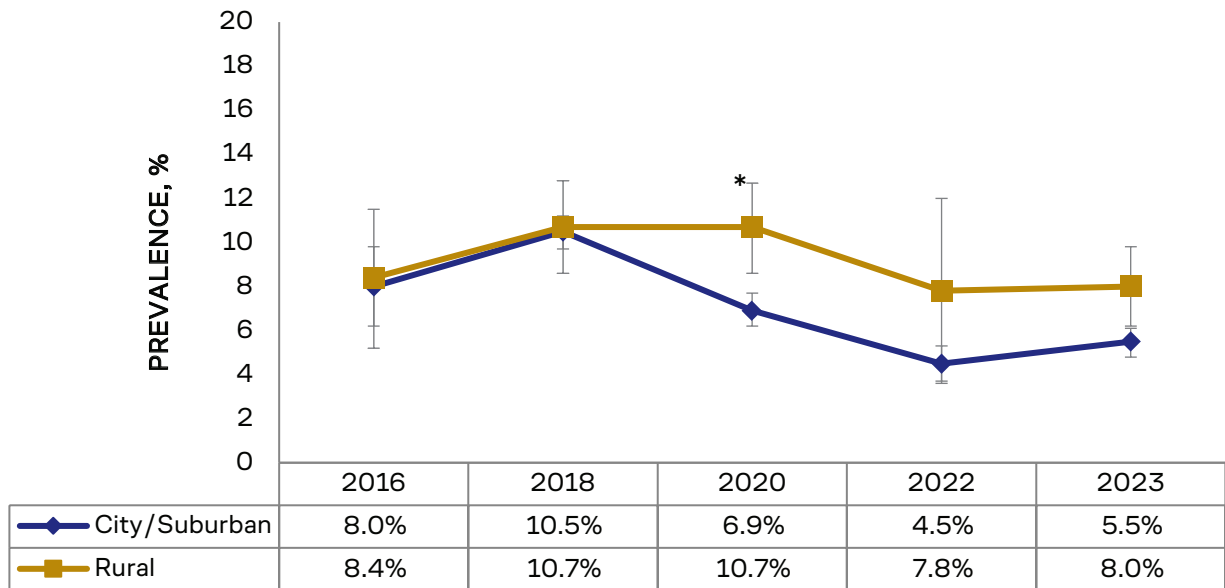
Note. Any tobacco product use includes students who reported using e-cigarettes/vapes, cigarettes, little cigars or cigarillos, big cigars, smokeless tobacco, hookah, and/or heated tobacco products in the past 30 days. In 2022 and 2023, nicotine pouches were also included in the definition of any tobacco use. Current use refers to using a product within the last 30 days. An asterisk (*) indicates that the difference between rural and urban/suburban youth was statistically significant for that data collection year. Error bars represent 95% confidence intervals. Comparisons across years should be interpreted with caution due to changes in methodology.

Data source. California Student Tobacco Survey (CSTS), 2016–2020; California Youth Tobacco Survey (CYTS), 2022–2023.

Current E-Cigarette/Vape Use

- As shown in Figure 2, there was a disparity in current e-cigarette/vape use in 2020. Current e-cigarette/vape use prevalence was significantly higher for rural youth compared to youth attending school in city/suburban areas.
- From 2022-2023, there was evidence that this disparity gap began to narrow, as there was no longer a significant difference in current e-cigarette/vape use for rural versus urban/suburban youth.

Figure 2. Rural and city/suburban youth current e-cigarette/vape prevalence, 2016-2023.



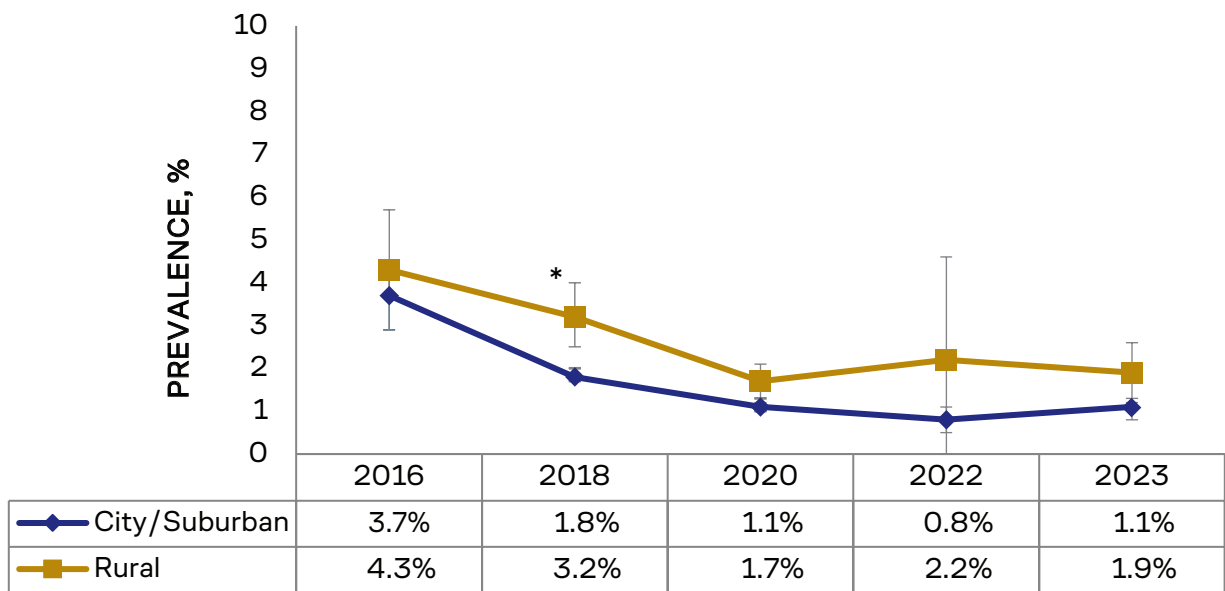
Note. Current use refers to using a product within the last 30 days. An asterisk (*) indicates that the difference between rural and urban/suburban youth was statistically significant for that data collection year. Error bars represent 95% confidence intervals. Comparisons across years should be interpreted with caution due to changes in methodology.

Data source. California Student Tobacco Survey (CSTS), 2016–2020; California Youth Tobacco Survey (CYTS), 2022–2023.

Current Cigarette Use

- In 2018, there was a disparity gap in current cigarette smoking (Figure 3). Current cigarette use prevalence was significantly higher for rural youth compared to youth attending school in city/suburban areas.
- From 2020-2023, there was evidence that this disparity gap began to close, as there was no longer a significant difference in current cigarette smoking for rural versus city/suburban youth.

Figure 3. Rural and city/suburban youth current cigarette prevalence, 2016-2023.



Note. Current use refers to using a product within the last 30 days. An asterisk (*) indicates that the difference between rural and urban/suburban youth was statistically significant for that data collection year. Error bars represent 95% confidence intervals. Comparisons across years should be interpreted with caution due to changes in methodology.

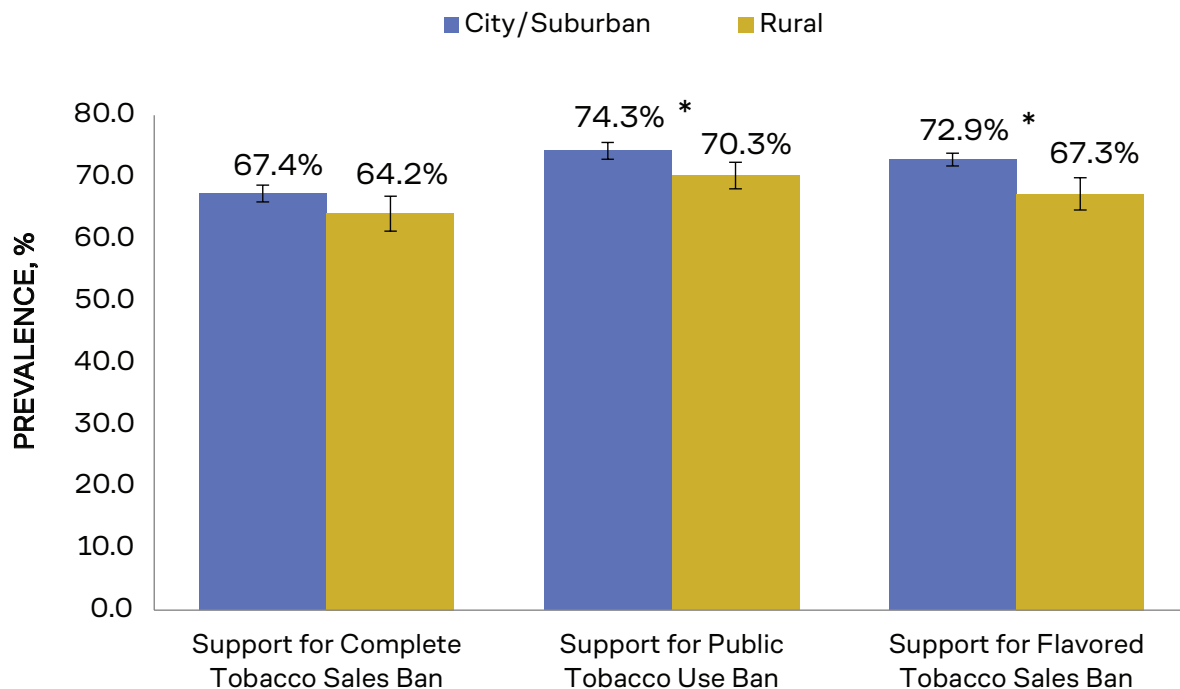
Data source. California Student Tobacco Survey (CSTS), 2016–2020; California Youth Tobacco Survey (CYTS), 2022-2023.

YOUTH SUPPORT FOR POLICIES RELATED TO ENDING THE TOBACCO EPIDEMIC, 2023

As part of the CYTS survey, respondents were asked their opinions about several tobacco-related policies. Specifically, they were asked to indicate how much they disagreed or agreed with a **Complete Tobacco Sales Ban** (the sale of all tobacco products [e.g., cigarettes, cigars, chew, vapes] should not be allowed), a **Public Tobacco Use Ban** (smoking cigarettes, little cigars, or cigarillos in all public places should not be allowed), and a **Flavored Tobacco Sales Ban** (the sale of flavored tobacco [e.g., cigarettes, chew, cigars, and vapes that taste like menthol or mint, fruit, or candy]). Response options were “strongly agree,” “agree,” “disagree,” and “strongly disagree.”

Although policy support remained high regardless of youth school location, rural youth were significantly less supportive of policies related to a public tobacco use ban and flavored tobacco sales ban compared to youth attending school in city/suburban areas (Figure 4).

Figure 4. Rural and city/suburban youth support for policies related to ending the tobacco epidemic, 2023.



Note. Respondents were considered supporting these policies if they responded “strongly agree” or “agree.” An asterisk (*) indicates that the difference between rural and urban/suburban youth was statistically significant. Error bars represent 95% confidence intervals.

Data source. California Youth Tobacco Survey (CYTS), 2023.

GEOGRAPHIC REGION

The 2023 CYTS was designed to enable county-level prevalence estimates for tobacco use by county or county grouping. For more information about the CYTS county sampling and grouping please refer to the [2023 California Youth Tobacco Survey \(CYTS\)](#) report.

Table 1 shows current use prevalence of any tobacco product, vapes, and cigarettes by California county or county grouping. In Table 1, significance tests compared the estimate for each individual county or county grouping with the state average. An asterisk (*) indicates that the difference between an individual county or county grouping is statistically different from the state average.

Current Any Tobacco Use

- As shown in Table 1, Marin and Napa counties (County group D; 17.4%), Shasta (16.8%), Del Norte, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Siskiyou, Tehama, and Trinity counties (County group A; 16.4%), Butte (15.4%), and San Luis Obispo (12.4%) had the highest current any tobacco use prevalence.
- Contra Costa (2.8%), Tulare (4.2%), Madera (4.2%), Merced (4.5%), and Los Angeles (5.0%) had the lowest prevalence of current any tobacco use.

Current Vape Use

- Shasta (14.8%), Butte County (13.9%†), Del Norte, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Siskiyou, Tehama, and Trinity counties (County group A; 13.3%), Marin and Napa counties (County group D; 12.8%†), and San Luis Obispo (10.0%) had the highest prevalence of current vape use.
- Contra Costa County (2.5%†), Madera (3.1%†), Merced (3.2%), Tulare (3.4%), and Los Angeles (3.5%) had the lowest prevalence of current vape use.

Current Cigarette Use

- Marin and Napa (County group D; 6.0%†), Santa Cruz (3.0%†), Del Norte, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Siskiyou, Tehama, and Trinity counties (County group A; 2.7%), Butte (2.7%†), and San Francisco (2.7%†) had the highest prevalence of current cigarette use.
- Tulare (0.4%), Sacramento (0.4%), Los Angeles (0.5%), Riverside (0.5%), and Contra Costa (0.5%) had the lowest prevalence of current cigarette use.

†please note that some estimates were unstable and should be interpreted with caution.

Table 1. Prevalence of current any tobacco, vape, and cigarette use by county/county grouping, 2023

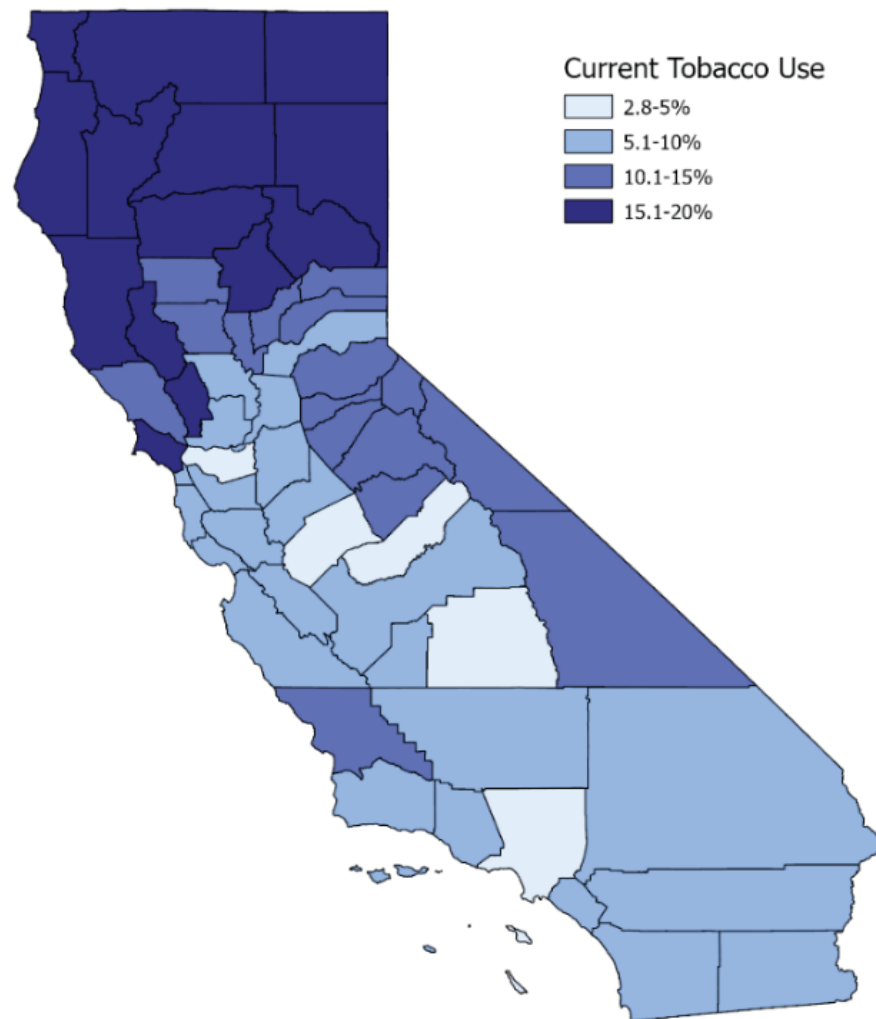
	Current Any Tobacco Use			Current Vape Use			Current Cigarette Use		
	N	%	(95% CI)	N	%	(95% CI)	N	%	(95% CI)
Overall	30,966	7.3	(6.5–8.1)	30,930	5.9	(5.3–6.5)	30,943	1.2	(0.9–1.5)
County Group									
County group A	810	16.4*	(13.2–20.1)	810	13.3*	(10.7–16.4)	810	2.7*	(1.3–4.9)
County group B	1,126	11.6	(6.9–17.8)	1,124	9.4	(5.6–14.6)	1,124	1.9	(0.7–4.0)
County group C	491	12.3*	(8.9–16.3)	491	9.7*	(5.7–15.2)	490	2.1	(0.6–5.3)
County group D	1,498	17.4*	(9.1–28.8)	1,497	12.8†*	(6.0–23.0)	1,496	6.0†*	(2.6–11.6)
County group E	607	5.5†	(2.1–11.4)	607	4.6†	(1.5–10.7)	607	0.5*	(0.1–1.5)
Alameda	622	7.7†	(3.0–15.5)	622	6.5†	(2.5–13.1)	622	2.1†	(0.5–5.6)
Butte	815	15.4*	(7.5–26.8)	815	13.9†*	(5.7–26.7)	815	2.7†	(0.7–6.7)
Contra Costa	472	2.8†*	(0.2–11.7)	471	2.5†	(0.1–12.9)	472	0.5*	(0.0–2.3)
Fresno	348	6.4†	(0.4–26.1)	347	5.1†	(0.5–18.8)	347	1.0	(0.3–2.3)
Imperial	868	6.1	(4.6–7.9)	868	5.7	(4.7–6.8)	868	0.7	(0.1–2.2)
Kern	572	7.1	(5.3–9.3)	572	5.8	(4.7–7.2)	572	1.3†	(0.1–5.9)
Kings	947	7.3	(4.8–10.6)	945	5.9	(3.6–8.9)	946	0.6*	(0.1–1.7)
Los Angeles	1,300	5.0*	(3.2–7.5)	1,298	3.5*	(2.2–5.3)	1,297	0.5*	(0.1–1.3)
Madera	925	4.2*	(2.4–6.6)	922	3.1†*	(1.1–6.8)	924	0.7†	(0.0–8.0)
Merced	1,181	4.5*	(2.4–7.6)	1,180	3.2*	(1.8–5.4)	1,180	1.1	(0.3–2.9)
Orange	1,075	9.5	(5.7–14.7)	1,072	7.2	(4.1–11.5)	1,074	2.2	(1.0–4.1)
Placer	966	9.3	(6.8–12.4)	964	7.8	(5.2–11.1)	963	1.7	(0.9–2.9)
Riverside	725	7.3	(3.8–12.4)	722	6.2	(3.1–10.7)	724	0.5*	(0.1–1.3)
Sacramento	1,434	5.6	(3.5–8.4)	1,434	4.8	(2.8–7.5)	1,433	0.4*	(0.2–0.7)
San Bernardino	524	9.0	(5.8–13.1)	524	7.6	(5.3–10.5)	524	2.3†	(0.5–6.2)
San Diego	1,100	9.0	(5.7–13.4)	1,100	7.8	(4.9–11.6)	1,100	1.2	(0.3–2.8)
San Francisco	212	6.0†	(0.1–34.3)	212	3.7†	(0.0–25.5)	212	2.7†	(0.0–18.7)
San Joaquin	907	8.1	(5.0–12.2)	904	6.1	(3.8–9.1)	907	0.8	(0.3–1.5)
San Luis Obispo	1,251	12.4*	(8.5–17.2)	1,248	10.0*	(6.8–13.9)	1,250	2.0*	(1.4–2.8)
San Mateo	1,101	7.4†	(3.3–13.8)	1,101	6.7†	(2.9–12.9)	1,101	1.6	(0.4–4.1)
Santa Barbara	1,786	6.0	(3.5–9.4)	1,784	4.2*	(2.7–6.1)	1,784	1.1	(0.2–3.2)
Santa Clara	1,056	5.8	(3.4–9.1)	1,056	5.2	(3.1–8.3)	1,056	0.6*	(0.2–1.5)
Santa Cruz	662	9.2†	(2.6–22.1)	659	6.5†	(1.8–15.8)	661	3.0†	(0.3–11.7)

Shasta	1,022	16.8*	(14.0–19.9)	1,021	14.8*	(11.7–18.3)	1,022	2.6*	(1.5–4.0)
Solano	568	8.8	(6.0–12.3)	568	7.7	(5.4–10.7)	568	1.0	(0.2–3.3)
Sonoma	168	10.5†	(0.2–49.2)	168	10.0†*	(0.8–35.3)	168	2.3*	(1.2–4.1)
Stanislaus	1,131	7.9	(5.3–11.3)	1,128	7.1	(4.9–9.8)	1,131	1.0	(0.4–2.0)
Tulare	962	4.2*	(2.6–6.5)	962	3.4*	(1.9–5.7)	961	0.4*	(0.1–1.1)
Ventura	909	7.9†	(3.6–14.7)	909	6.2†	(2.5–12.5)	909	1.2	(0.5–2.2)
Yolo	825	7.3	(5.9–9.0)	825	5.5	(3.9–7.5)	825	1.8	(0.6–4.1)

Note. County group A includes Del Norte, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Siskiyou, Tehama, and Trinity counties. County group B includes Colusa, Glenn, Sutter, and Yuba counties. County group C includes Alpine, Amador, Calaveras, El Dorado, Inyo, Mariposa, Mono, Nevada, Sierra, and Tuolumne counties. County group D includes Marin and Napa counties. County Group E includes Monterey and San Benito counties. CI = confidence interval. † The estimate is unreliable and should be interpreted with caution. An asterisk (*) indicates that the difference between an individual county or county grouping is statistically significant from the state average using independent two sample t-tests with unequal variance.

Figure 5 presents current use of any tobacco product by California county or county grouping and Figure 6 shows current any tobacco product use prevalence by region. Northern California had the highest prevalence of current any tobacco use.

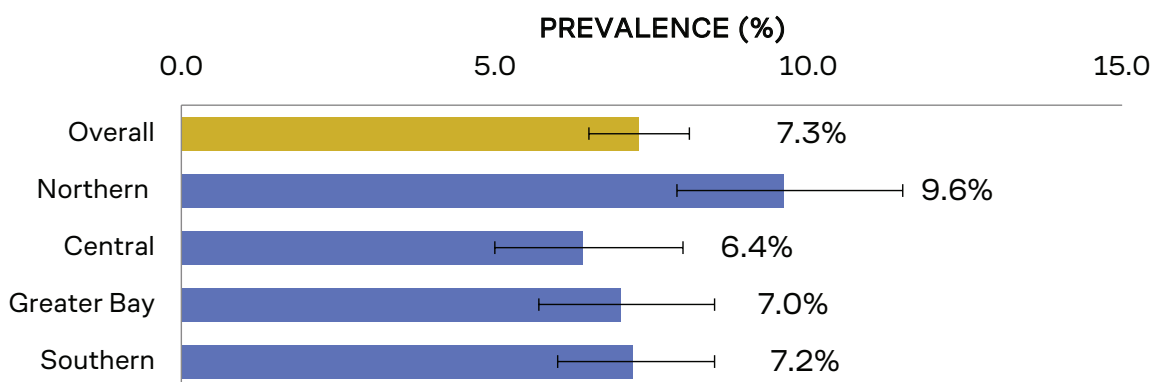
Figure 5. California high school student current (past 30 day) use of any tobacco product by county or county/grouping.



Data source. California Youth Tobacco Survey (CYTS), 2023.

Figure 6 shows the Northern region of California had the highest prevalence of current any tobacco use (9.6%), and the Central region had the lowest prevalence (6.4%).

Figure 6. California high school student current (past 30 day) use of any tobacco product by geographic region.



Note. The Northern region of California includes the following counties: Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Sutter, Tehama, Tuolumne, Trinity, Yolo, and Yuba. The Central region includes the following counties: Fresno, Inyo, Kern, Kings, Madera, Mariposa, Merced, Mono, Stanislaus, and Tulare. The Greater Bay Area includes Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, and Solano, Sonoma. The Southern region includes the following counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura.

Data source. California Youth Tobacco Survey (CYTS), 2023

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