What is Tobacco Smoking & Vaping?

Tobacco is produced by drying the leaves of tobacco plants. When used in smoking products, the tobacco burns, allowing the smoke to be tasted or inhaled. Although tobacco derives from a plant, it contains a toxic chemical called nicotine.[1] People use many methods to smoke tobacco; the most common are cigarettes. Cigarettes can either be rolled or purchased pre-made. The second most common and evolving product is electronic cigarettes (e-cigarettes), widely known as "vape pens." They are devices that deliver an aerosol (commonly known as “vapor”) by heating a liquid when inhaling it. The liquid, often known as "vape juice" or "e-liquid," may contain nicotine, appealing flavoring, and other addictive chemicals that users breathe into the lungs.

The tobacco and vape industries have created lab-made nicotine (synthetic nicotine) that provides a nicotine hit without containing tobacco and markets it as "tobacco-free nicotine.”[2] Other smoking tobacco products include but are not limited to: cigars, where tobacco is wrapped in a tobacco leaf or paper made from tobacco pulp, and pipes, where loose-leaf tobacco is smoked in a pipe.

The nicotine in tobacco smoking products is addictive as it is a stimulant, which speeds up the messages that travel between the brain and the body. As a result, many smokers and vapers find quitting challenging, mainly because 90% of adult daily smokers start smoking tobacco before 18, when the developing brain is most vulnerable to nicotine addiction.[3]

According to the Centers for Disease Control and Prevention (CDC), tobacco use is the leading cause of avoidable disease, disability, and death in the United States (U.S.). Data from 2019 suggests that there are 34 million adult smokers in the US, and everyday roughly 1,600 people under the age of 18 smoke their first cigarette, and 235 begin smoking cigarettes daily. In addition, 58 million non-smokers in the U.S. are exposed to secondhand smoke, and more than 16 million people suffer at least one smoking-related illness. Furthermore, male and female smokers have a mortality rate nearly three times greater than non-smokers with similar characteristics.[4]

Risk Factors for Tobacco Smoking & Vaping

High rates of smoking and the use of other tobacco products have resulted in severe health differences among vulnerable communities. As a result, the use of e-cigarettes by adolescents and young adults has become a significant public health concern.

Demographic Risk Factors

- *Age*
  - Tobacco use at a young age is associated with increased nicotine dependence and long-term tobacco use, leading to long-term health effects.[5]
  - In 2020, an estimated 30.8 million people currently smoked cigarettes, with the highest rate among adults aged 25-44 and 45-64.[6]
  - E-cigarettes have been the most commonly used tobacco product among youth since 2014.[7]
- *Race/Ethnicity*
  - In 2020, current cigarette smoking was highest among non-Hispanic American Indian/ Alaska Native adults and lowest among Hispanic and non-Hispanic Asian adults.[6]
  - In 2021, among youth of all race and ethnicity groups, non-Hispanic Black students reported the lowest percent of current cigarette tobacco use. [7]
- *Sex*
  - In 2020, men were more likely than women to currently smoke cigarettes.
    - About 14 out of every 100 adult men currently smoke cigarettes, compared to about 11 in every 100 adult women.[8]
  - Among youth in 2021, girls reported higher current use of e-cigarettes compared to boys. Cigarette use was the same among girls and boys.[7]
- *Sexual Orientation*[6]
  - In 2020, current cigarette smoking was higher among lesbian, gay, and bisexual adults than heterosexual/straight adults.
- *Socioeconomic Status*[6]
  - In 2020, current cigarette smoking was highest among people with a general education development (GED) certificate and lowest among those with a graduate degree.
  - In 2020, current cigarette and e-cigarette smoking was higher among people with a lower annual household income than those with higher annual household incomes.

Social and Physical Environment Risks[9]

- Youth are more prone to use tobacco products if they observe others their age doing so.
- Youth may be more inclined to use tobacco products if their parents do.
- The way the media portrays tobacco product use as a regular activity may entice youth to use these items.

Geographical Risk Factors[5]

- From 2019-2020, rural areas had higher and more significant smoking rates than urban areas.
- Rural residents were more likely to begin using tobacco products younger than suburban and city residents.
- The proportion of youth that started using cigarettes by age 13 was highest in youth from rural areas.

Intermediate Outcomes

Smoking and vaping increase the risk of diseases and complications. Some of these include:

Short-Term[10]

- Increased blood pressure, breathing, heart rate, and exposes the lungs to a variety of chemicals. Vaping also exposes the lungs to metallic vapors created by heating the coils in the device.

Long-Term

- Tobacco use has a wide range of diseases and harmful long-term effects. From 2015-2019, 19.1% of deaths among adults ages 35 years and older in San Diego County were smoking-attributable.[11] In addition, several lung diseases are associated with smoking cigarettes and vaping.
- *Lung Disease*
  - Lung cancer[12]
  - Popcorn lung: a rare condition that results from damage to the lungs' small airways. [13]
  - Chronic obstructive pulmonary disease (COPD) [12]
  - Chronic bronchitis and increased risk for tuberculosis.[12]
  - Collapsed lung: smoking and vaping can cause air blisters on top of the lungs, and when they rupture, they create tiny tears and release air from the lungs.[13]
- *Heart Disease*
  - Coronary heart disease (CHD): narrowing of the blood vessels that carry blood to the heart.[12]
  - Nicotine raises blood pressure and spikes adrenaline, which increases heart rate and the likelihood of having a heart attack. [14]
- *Cancer*[12]
  - Smoking can cause cancer almost anywhere in the body, mainly in the lungs, mouth, throat, esophagus, and larynx.
- *Alzheimer's Disease* [15]
  - Smoking increases the likelihood of Alzheimer's disease; studies reveal that 5.2% of Alzheimer's disease cases can be attributed to smoking.

3-4-50[16]

- 3-4-50 refers to three behaviors that contribute to four chronic diseases and result in 50% or more deaths worldwide.
  - Three behaviors including, poor diet, **tobacco use**, and physical activity that can lead to four chronic diseases such as cancer, heart disease and stroke, type II diabetes, and lung disease.
  - In 2020, 45% of all deaths in San Diego county were due to these four chronic diseases but were potentially preventable through modifying diet, physical activity, and **smoking behaviors.***

* *The COVID-19 pandemic was associated with increases in all-cause mortality. COVID-19 deaths have affected the patterns of mortality including those of 3-4-50 chronic diseases.*

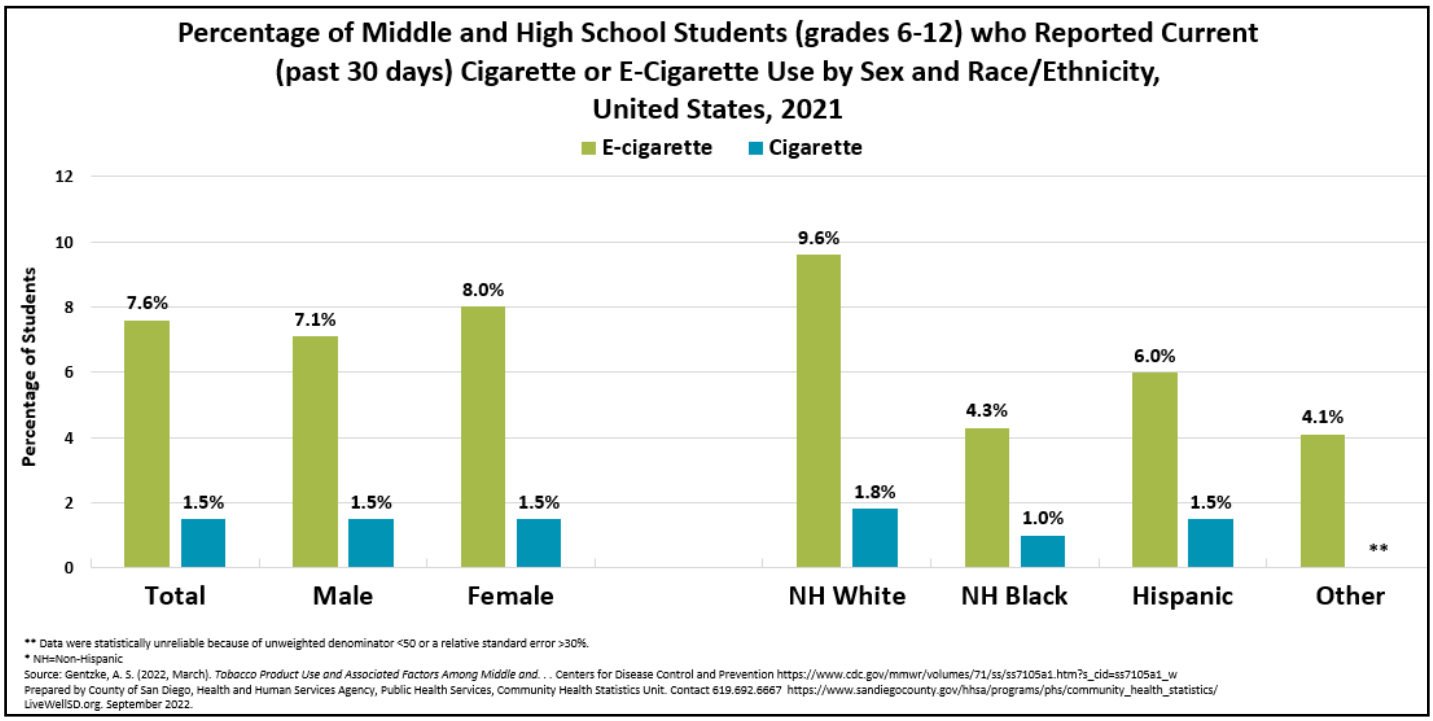
Additional Consequences[10]

- **Withdrawal Symptoms**: Irritability, attention and sleep problems, depression, and increased appetite.
- **Other Health-related Issues**:
  - Nicotine in teens it can affect the development of brain circuits that control attention and learning.
  - Tobacco use while pregnant can lead to miscarriage, low birth weight, stillbirth, and learning and behavior problems.
  - Vaping products: Some are mixed with the filler Vitamin E acetate and other chemicals, leading to severe lung illnesses and deaths.

National Statistics and Disparities: Youth

- In 2021, about 1 out of every 35 middle school students (2.8%) and about 1 of every 9 high school students (11.3%) reported that they had used e-cigarettes in the past 30 days.[8]
- Each day in the U.S., about 1,600 youth smoke their first cigarette, and nearly 200 youth start smoking every day.
- In 2021, about 1 of every 100 middle school students (1.0%) and nearly 2 of every 100 high school students (1.9%) reported that they had smoked cigarettes in the past 30 days.[8]
- According to the 2021 National Youth Tobacco Survey, 7.6% of middle and high school students in the U.S. were current e-cigarette users.[7]

Figure 1

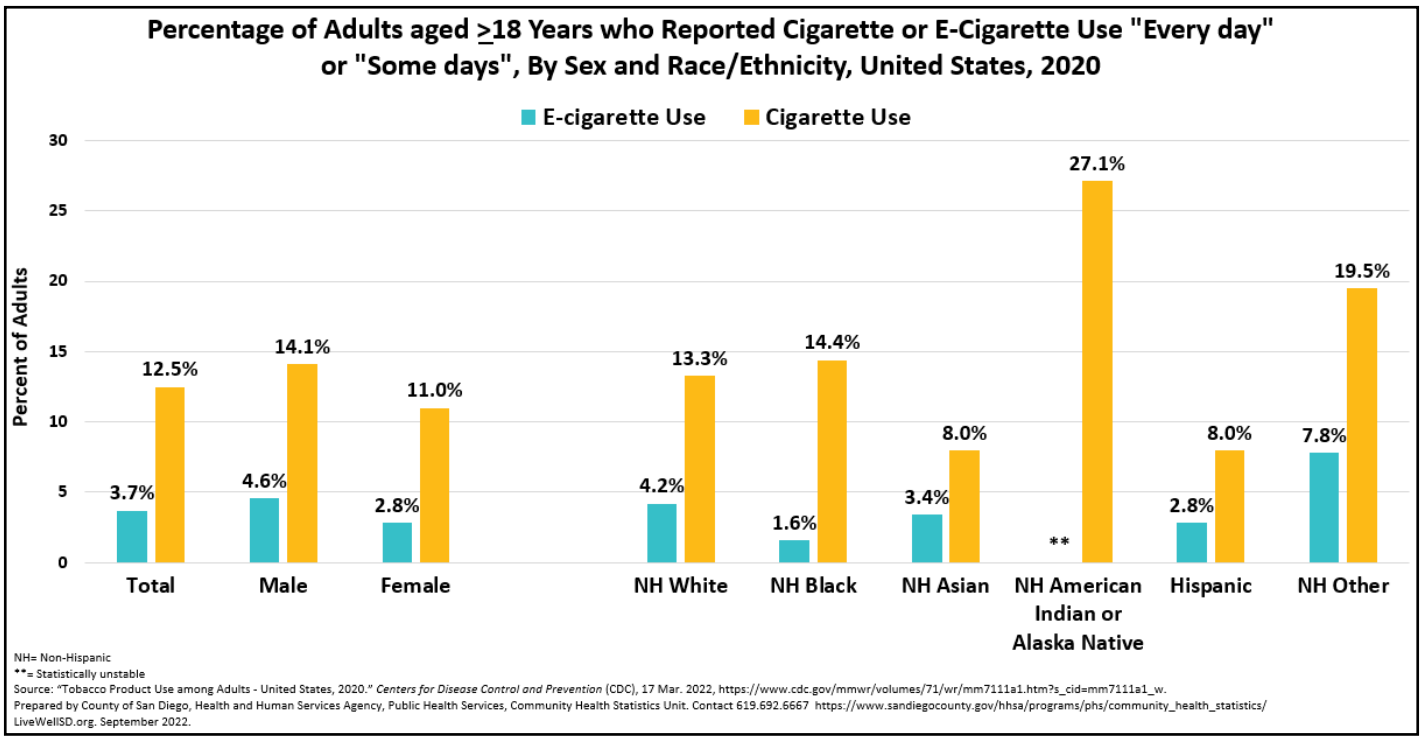


- In 2021, the percentage of current e-cigarette use among middle and high school females (8.0%) was higher than males (7.1%).[7]
- In 2021, among middle and high school students, non-Hispanic White (9.6%) students had a higher e-cigarette use percentage compared to other race and ethnicities.[7]
- In 2021, non-Hispanic Black (1%) middle and high school students had the lowest percentage of cigarette use.[7]

National Statistics and Disparities: Adult

- Nearly 9 out of 10 adults who smoke cigarettes daily first try smoking by age 18, and 99% first try smoking by age 26.[8]
- In 2020, 12.5% of U.S. adults (an estimated 30.8 million people) currently smoked cigarettes.

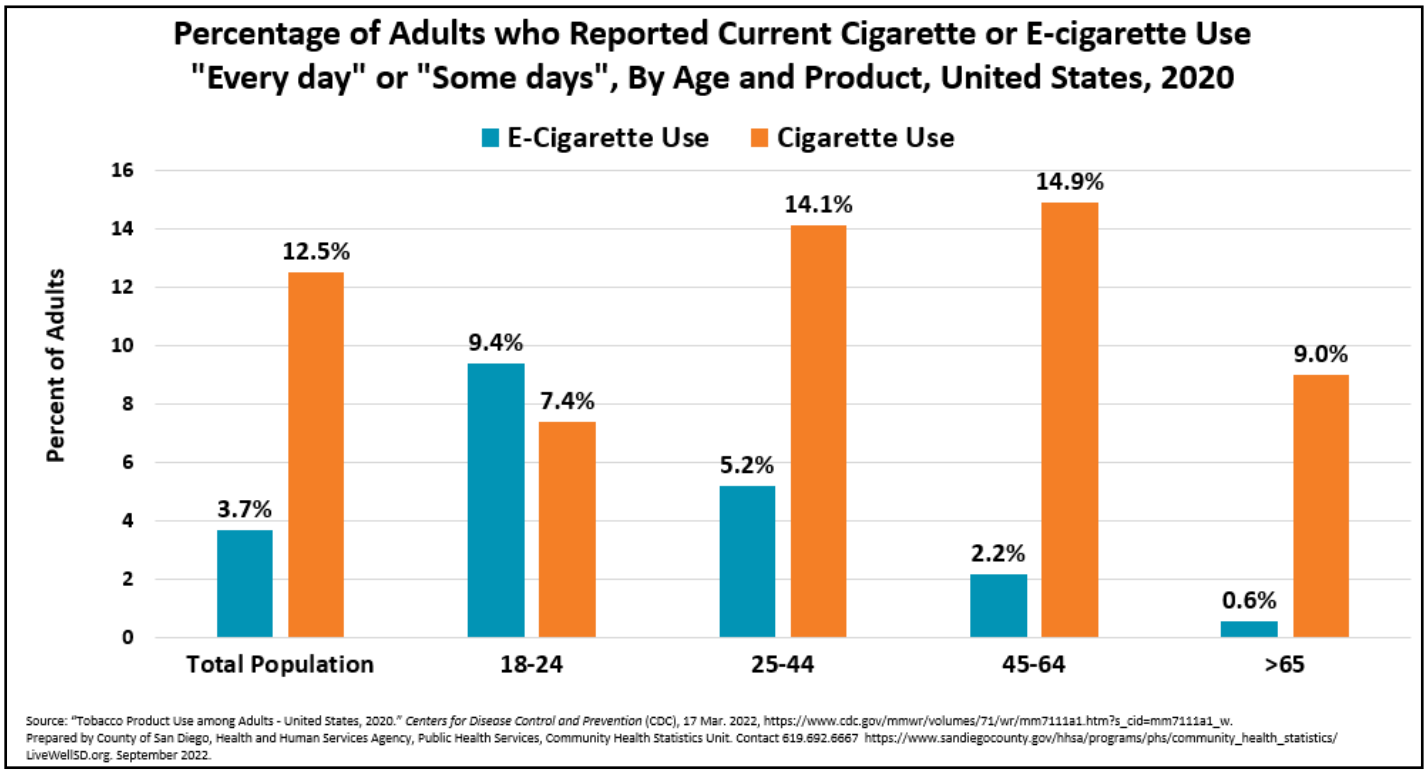
Figure 2



- Among U.S. adults aged 18 years and older, 12.5% were smoking cigarettes "every day" or "some days" in 2020.[6]
- In 2020, adult males had a higher percentage (4.6%) of e-cigarette use "every day" or "some days" compared to females (2.8%).[6]
- In 2020, non-Hispanic Other (7.8%) and non-Hispanic White (4.2%) had the highest percentage of e-cigarette use.[6]

National Statistics and Disparities: Adult

Figure 3



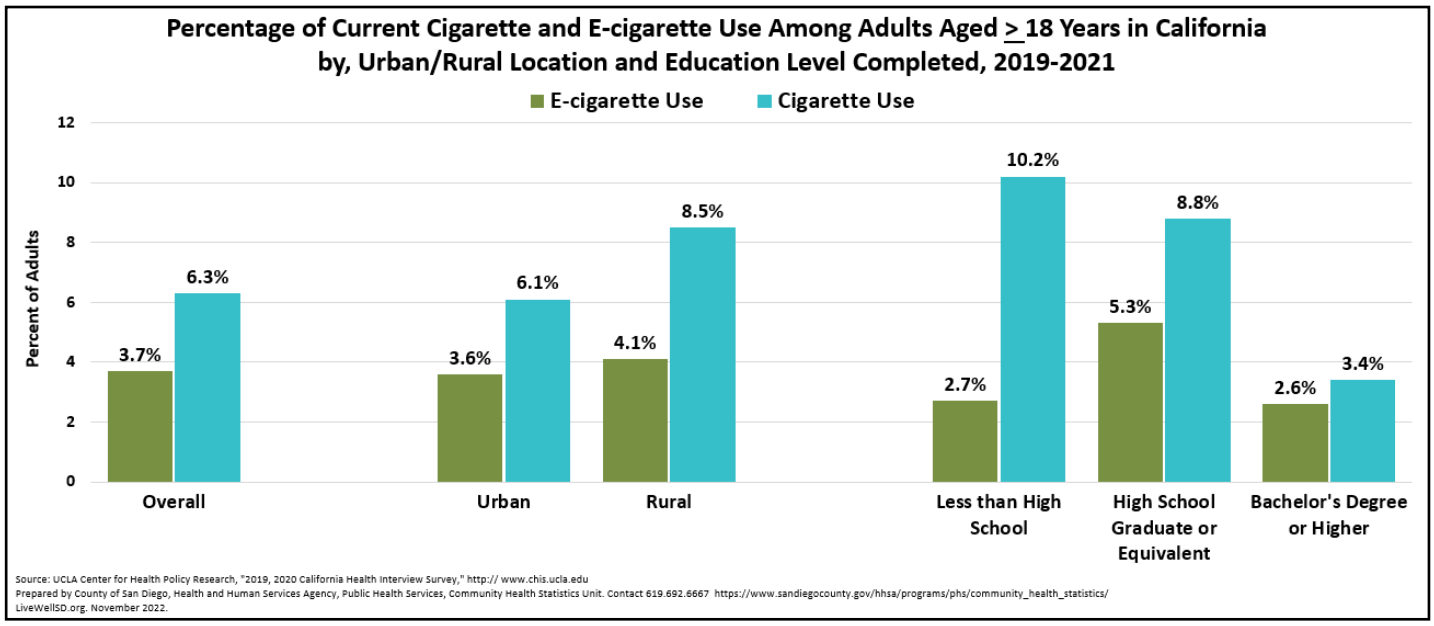
- According to the 2020 National Health Interview Survey, current e-cigarette use "every day" or "some days" was highest among those aged 18–24 years old (9.4%).[6]
- In 2020, current cigarette use "every day" or "some days" were highest among those aged 45-64 years (14.9%).[6]

Cost

- In 2018, cigarette smoking cost the U.S. more than $600 billion, including more than $240 billion in healthcare spending and nearly $372 billion in lost productivity.[17]
- From 2015 to 2018, the usage of e-cigarettes cost the U.S. $15 billion in healthcare expenses – more than $2,000 per person a year. [18]

State Statistics and Disparities: Adult

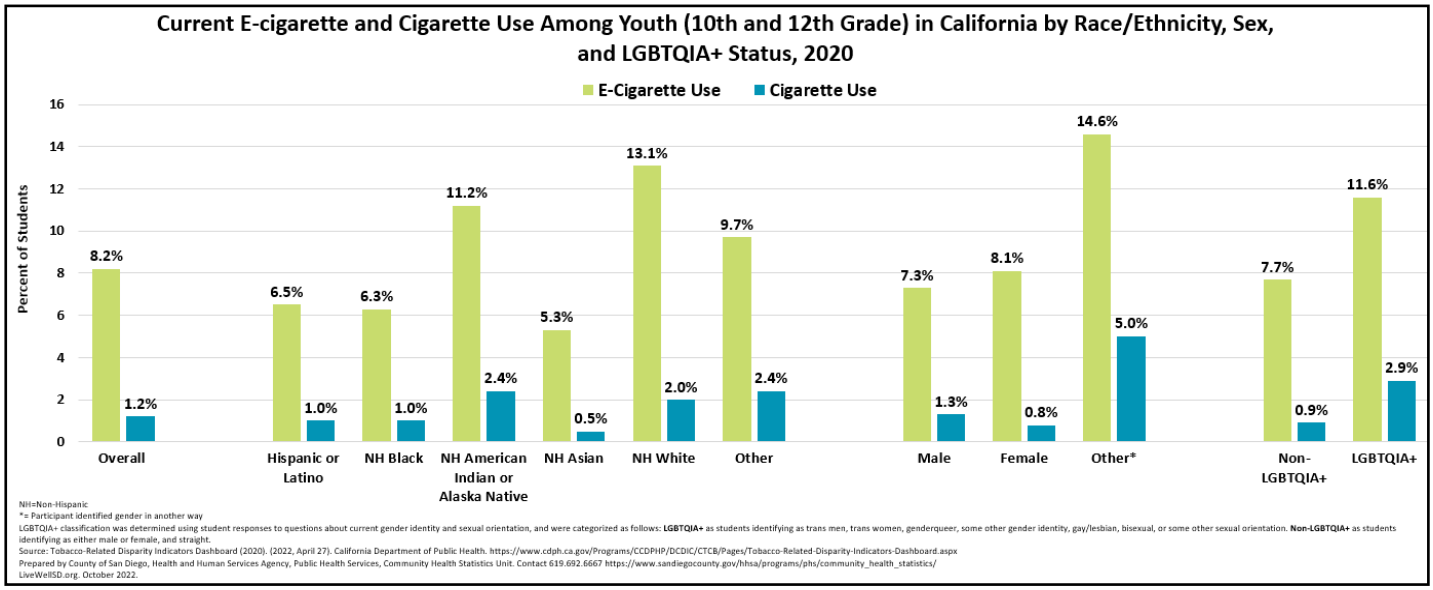
Figure 4



- From 2019-2021, California adults aged 18 years and older who live in rural areas (8.5%) had a higher percentage of cigarette smoking than those in urban areas (6.1%).[19]
- From 2019-2021, California adults aged 18 years and older with a completed education level of less than high school and high school graduate compared to California adults with a Bachelor's degree or higher had a higher cigarette and e-cigarette use.[19]

State Statistics and Disparities: Youth

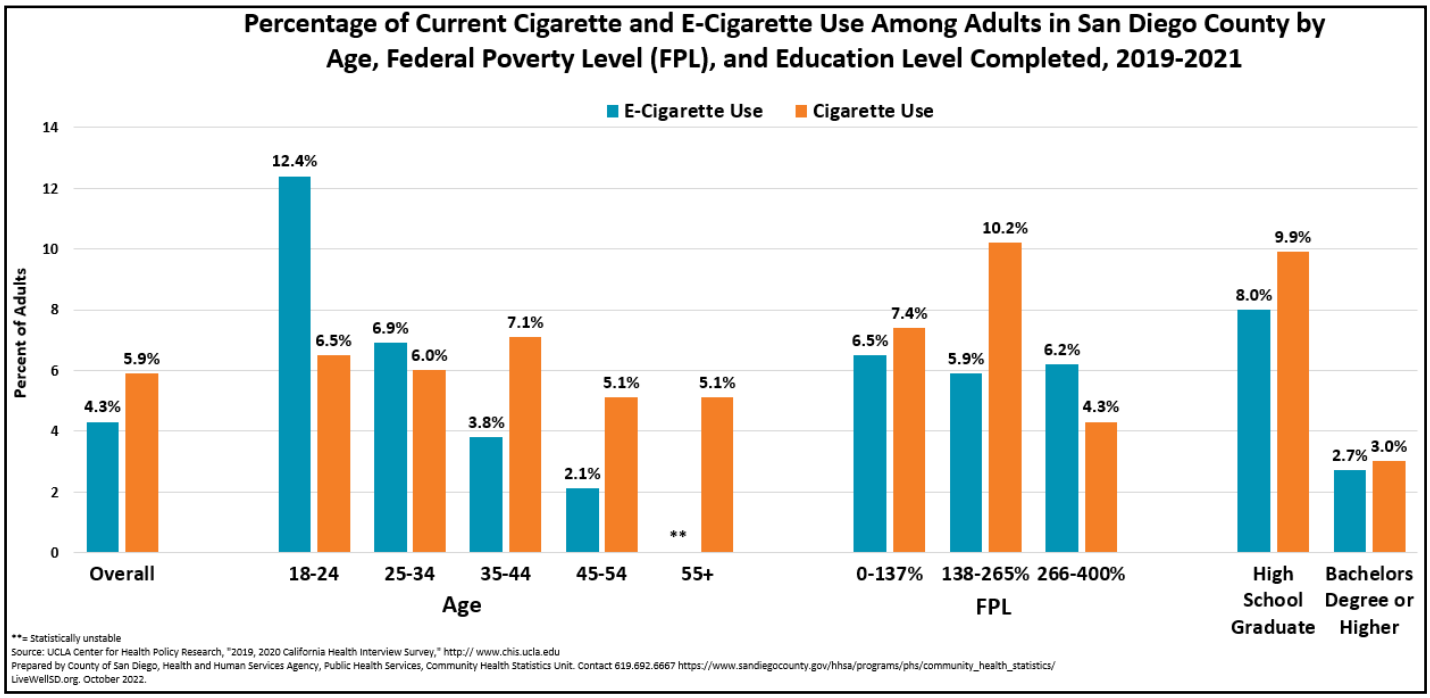
Figure 5



- In 2020, 8.2% of California 10th and 12th graders were current e-cigarette users.[19]
- In 2020, among 10th and 12th graders in California, non-Hispanic White (13.1%) and non-Hispanic American Indian or Alaska Native (11.2%) students had a higher percentage of e-cigarette use compared to other race/ethnicities, while non-Hispanic Asian students had the lowest percentage of e-cigarette (5.3%) and cigarette use (0.5%).[19]
- In 2020, 10th and 12th graders whose sex is "Other" had a higher percentage of e-cigarette and cigarette use.[19]

Local Statistics and Disparities: Adult

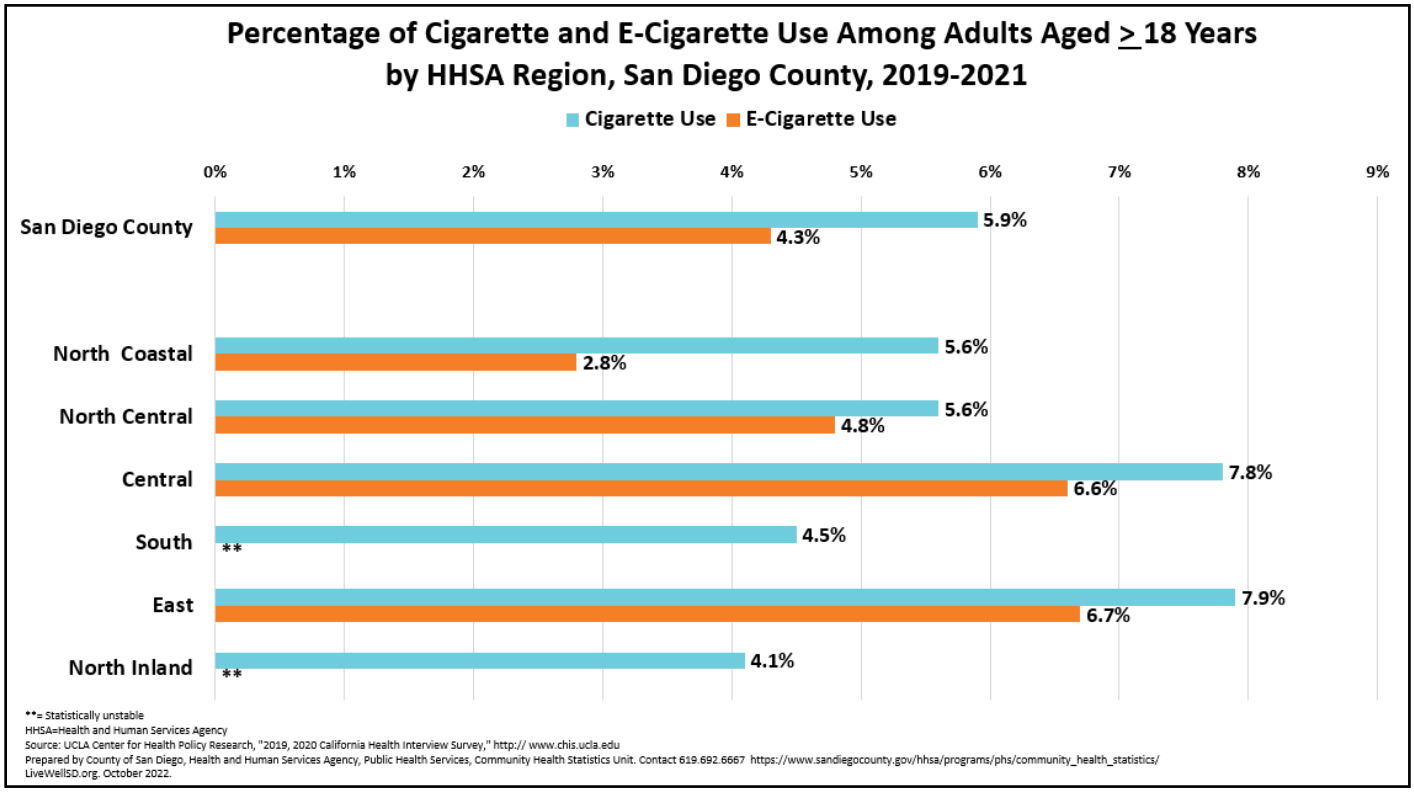
Figure 6



- From 2019-2021, e-cigarette use among those aged 18-24 years (12.4%) in San Diego was higher than in the older age groups.[20]
- From 2019-2021, cigarette smoking in San Diego was highest among those who were living 138-265% below the FPL.[20]
- From 2019-2021, cigarette smoking and e-cigarette use among adults in San Diego was higher among high school graduates compared to adults with a Bachelors degree or higher.[20]

Local Statistics and Disparities: Adult

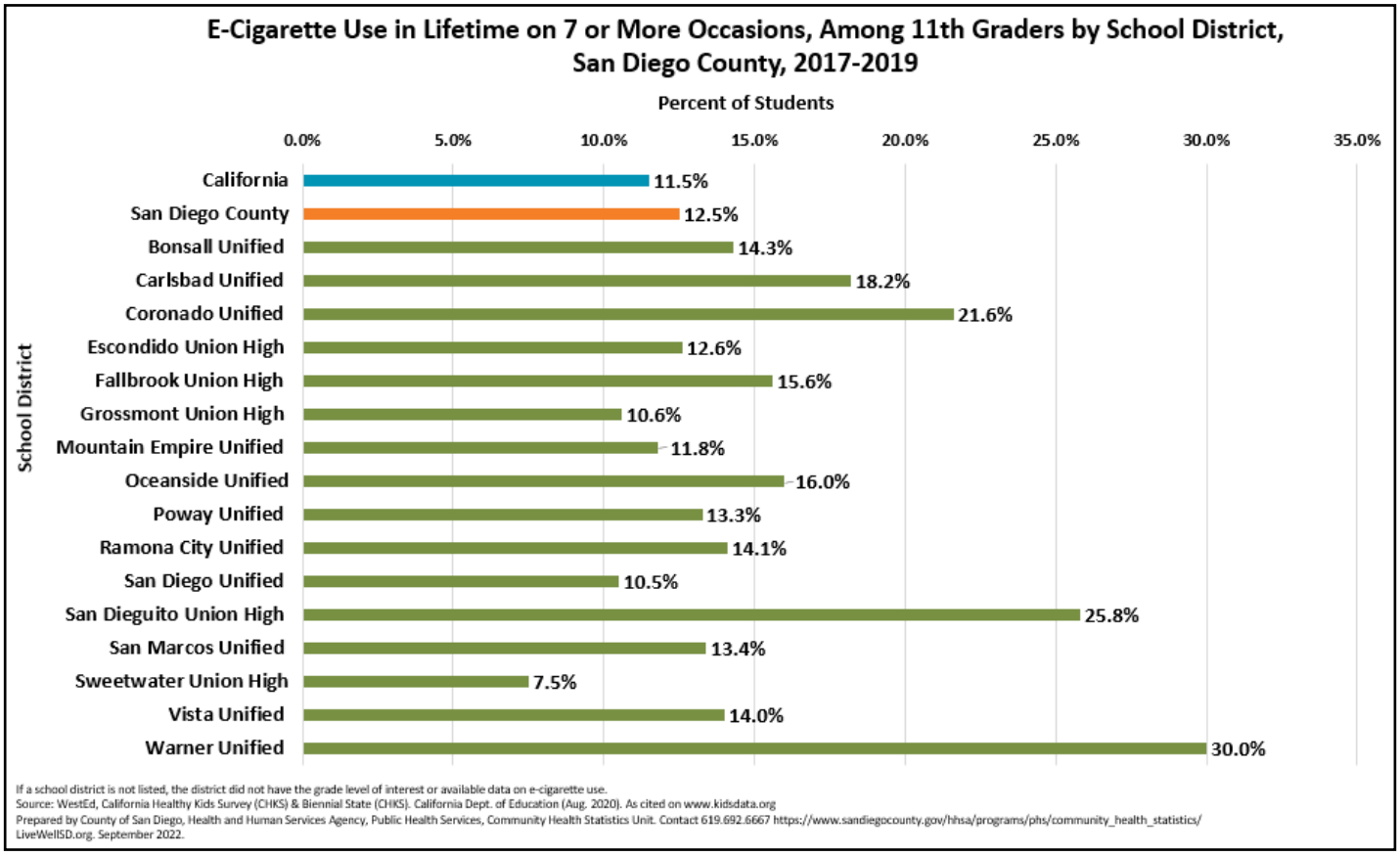
Figure 7



- From 2019-2021, the percentage of adults who smoked cigarettes (5.9%) was higher than those who smoked e-cigarettes (4.3%) in San Diego County.
- From 2019-2021, Central (7.8%) and East (7.9%) regions had the highest percentage of cigarette and e-cigarette use compared to the other HHSA regions.[20]

Local Statistics and Disparities: Youth

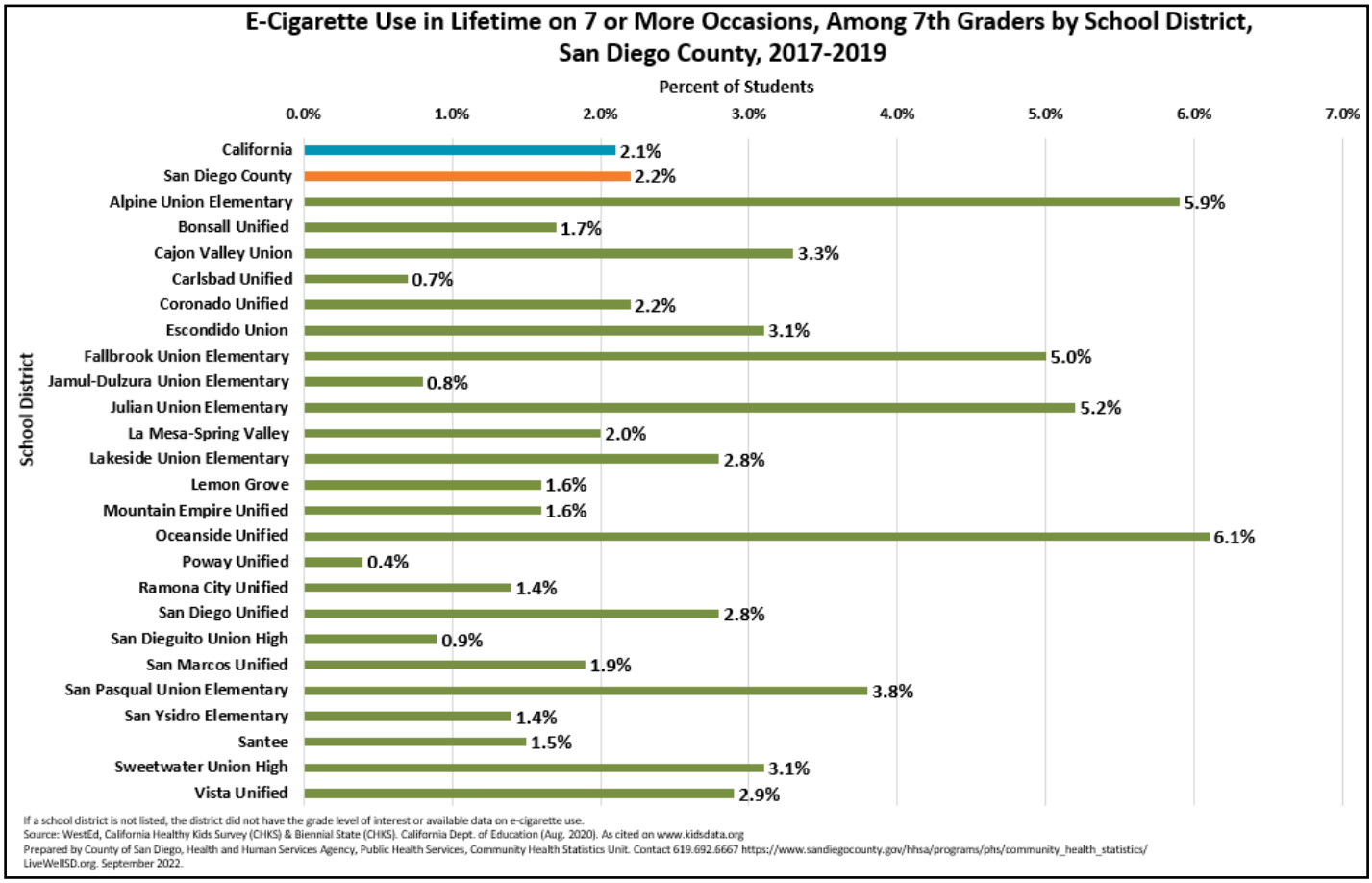
Figure 8



- From 2017-2019, Warner Unified (30%) and San Dieguito Union High (25.8%) had the highest percentage of e-cigarette use among 11th graders compared to other school districts in San Diego.[21]

Local Statistics and Disparities: Youth

Figure 9



- From 2017-2019, Oceanside Unified (6.1%) and Alpine Union Elementary (5.9%) had the highest percentage of e-cigarette use among 7th graders compared to other school districts in San Diego.[21]

Tobacco Smoking and Vaping: Quitting/Prevention for Individuals

- **Treatment Options**
  - **Medication**[10]
    - Bupropion (Zyban®)
    - Varenicline (Chantix®)
    - Nicotine replacement (gum, patch, lozenge)
  - **Behavioral Therapies**[10]
    - Cognitive-behavioral therapy (CBT)
    - Self-help materials
    - Mail, phone, and internet quitting resources

- **Kick it California** provides free telephone, text, and chat-based counseling
  - **Free Counseling Services**[22]
    - English: 1-800-300-8086
    - Spanish: 1-800-600-8191
    - Text "Quit Vaping" or "Quit Smoking" to **66819** to speak with a Quit Coach.
    - Asian Smokers' Quitline (Cantonese, Mandarin, Korean, Vietnamese)
    - Click here for additional information on quitting **vaping**
    - Click here for additional information on quitting **cigarettes**

- **San Diego County Smoking Cessation Programs**[22]
  - For listings of 25 cessation programs in San Diego County, click here
  - For more information, contact us at tobacco@sdcounty.ca.gov.

Prevention Tools for Public Health Professionals: Tobacco Smoking and Vaping Critical Pathway

There are many opportunities for public health professionals in the community to help reduce the risk of tobacco use and to improve the health outcomes of individuals who already smoke and vape. To assist in community health efforts, a Tobacco Smoking and Vaping Critical Pathway was developed.

The Tobacco Smoking and Vaping Critical Pathway is a tool to be used in health promotion and disease prevention efforts. Its purpose is to identify populations at greater risk for tobacco smoking and vaping and to identify prevention and early intervention opportunities. The Tobacco Smoking and Vaping Critical Pathway displays a diagram of the major risk factors and intermediate outcomes or related diseases that have an impact on, or result from, tobacco smoking and vaping. Risk factors are marked as non-modifiable (black striped bars), such as race/ethnicity or socioeconomic status, and modifiable (solid-colored bars), such as the prevalence of tobacco e-cigarette use.

Beneath the risk factors diagram is a data grid describing the San Diego resident population in relation to selected elements of the pathway. The data grid is designed to assist in quick identification of opportunities for interventions that might have a high impact on a particular disease. The data represent all San Diegans, not only those with a particular disease. The left axis (bar) indicates the percent of the population with a known risk factor or intermediate outcome. The right axis (diamond) indicates the rate of a particular medical encounter within the population that is specified. The data are described fully in the complete version of the *Critical Pathways*. [23]

In addition, the Community Health Statistics Unit website (www.SDHealthStatistics.com) provides detailed demographic, health and facility data including maps of geographically formatted health data. Also available are links to other County data sources, state and national sites of interest. For further assistance with data or interpretation, please contact the Community Health Statistics Unit.

Tobacco Smoking and Vaping Critical Pathway to Disease

Critical Pathway

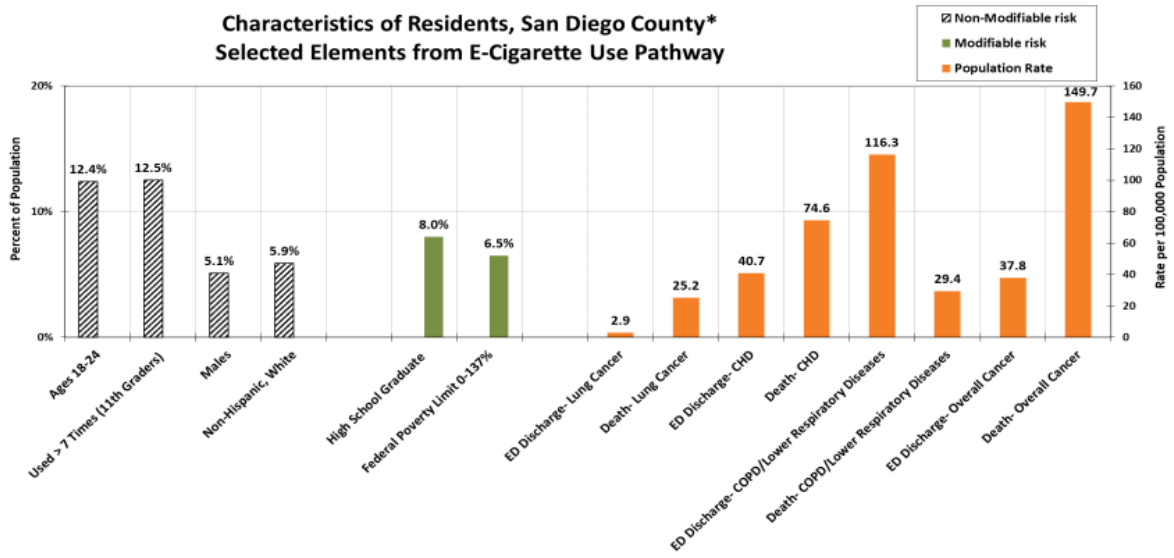
Tobacco Smoking and Vaping

OPPORTUNITIES FOR PREVENTION

	PRIMARY	SECONDARY	TERTIARY
Birth	**Demographic Risk Factors*** Age, Race/Ethnicity, Sex, Sexual Orientation	**Behavioral & Social Risk Factors*** Peer Pressure, Social Media, Parents Smoke	**Intermediate Outcomes** Lung Cancer, Heart Disease, Cancer, Alzheimer's
			Tobacco Use Death

*SOCIAL DETERMINANTS OF HEALTH

Characteristics of Residents, San Diego County*
Selected Elements from E-Cigarette Use Pathway



County of San Diego ■ Health and Human Services Agency ■ Public Health Services ■ Community Health Statistics Unit ■ www.SDHeathStatistics.com ■ (619) 692-6667 11/2022

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