

Flavored and Mentholated Tobacco Products: Enticing a New Generation of Users

CMA White Paper

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Executive Summary

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Smoking has long been known to lead to tobacco-related diseases and harmful health outcomes, including heightened risk of cancer, stroke, and heart disease. Decades of research and public health efforts through prevention programs, education, and regulation have contributed to widespread awareness of these health impacts and the larger societal costs caused by tobacco use. California, in particular, has been a leader in tobacco use reduction and cessation, as evidenced by the 50 percent reduction in adult smoking rates over the past twenty-five year span.

However, introduction of novel tobacco products that are offered in a variety of flavors designed to appeal to children; such as bubblegum, grape, and chocolate; may present new public health threats to adolescents and young adults and threaten the progress achieved in tobacco control. Snuff, hookah, and liquid nicotine solution are just a few of the substances on the market that contain tobacco and tobacco-derived nicotine, but are not subject to the same strict flavor restrictions as traditional cigarettes. Notably, these products are sold in a variety of flavors and bright packaging which, complemented by targeted advertisements, appeal to youth, certain ethnic minorities, and other priority populations.

This white paper was prepared by the California Medical Association (CMA) and reviewed by its Council on Science and Public Health, a panel of physician experts, with input from subject matter researchers. These findings provide insight into the increasing consumption of flavored and mentholated tobacco products, specifically with regards to priority populations, and the resulting health effects. The paper assesses existing data and research regarding tobacco use by priority population and the types of flavored tobacco products on the market.

“[Flavored tobacco products] are widely considered to be ‘starter’ products, establishing smoking habits that can lead to a lifetime of addiction.”

Food and Drug Administration, Flavored Tobacco Product Fact Sheet

Key Points:

- Consumption of flavored tobacco products such as cigars, smokeless tobacco, hookah tobacco, and liquid nicotine solution (used in electronic smoking devices) have increased among youth in recent years, while menthol cigarettes continue to corner a large part of the U.S. cigarette market.
- Flavorings used in tobacco products do not reduce the health impacts and risks associated with tobacco use, and are not safer than non-flavored tobacco products.
- Flavored and mentholated tobacco products are “starter” products that help new users establish daily habits and promote addiction to tobacco products, make it harder to quit, and may result in the concurrent use of multiple tobacco products.
- The tobacco industry has marketed these flavored and mentholated tobacco products to account for user preferences that skew younger, and reinforce sociocultural messages with priority populations.
- Strong evidence supports the finding that youth, certain racial/ethnic groups, and other targeted priority populations (i.e., LGBT and women) are particularly vulnerable to sweet flavors and menthol, and are largely driving this increased uptake and sustained use of flavored tobacco products.

Acknowledgements and Disclaimers

This document was prepared by the California Medical Association and reviewed by its Council on Science and Public Health, a panel of physician experts, with input from subject matter researchers. It was approved by the CMA Board of Trustees on April 21, 2016.

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Introduction

The California Medical Association's (CMA) mission is "to promote the science and art of medicine, the care and well-being of patients, the protection of the public health and the betterment of the medical profession" and the organization has a similar core objective of advancing public health.

CMA has long recognized that tobacco use is a costly habit that often leads to illness and poor health; in 1963, CMA was the first among state medical societies to create policy to inform people about the harmful effects of cigarette smoking. Effective policy solutions that prevent and reduce tobacco use and the negative health impacts of these products should be guided by the current literature and research that indicates these interventions are necessary – namely, that there is a preponderance of evidence that highlights emerging issues and which can be used to help guide tobacco control efforts.

This report presents the evidence and research on the impact of flavored and mentholated tobacco products on public health, particularly among priority populations. Priority populations are groups that have higher rates of tobacco use than the general population, experience greater secondhand smoke exposure at work and at home, are disproportionately targeted by the tobacco industry, and have higher rates of tobacco-related disease compared to the general population.¹

Specifically, this report addresses:

- The evidence linking flavored and mentholated tobacco products with initiation of and sustained tobacco use by youth and other priority populations, and the resulting negative health effects.

Background

While great strides have been made in reducing tobacco use in California, tobacco use is still the leading preventable cause of premature death and disability in the state and nationally – more than 440,000 people die prematurely from tobacco-related disease.² Evidence indicates that lifelong smoking and other tobacco use begins early in life; in California, 63% of smokers start by the age of 18, and 97% start by age 26.³

Although the overall prevalence of youth smoking is declining in California, the introduction of novel tobacco products that are offered in a variety of flavors designed to appeal to children, such as bubblegum, grape, and chocolate, may present new public health threats to adolescents and young adults. Other evidence indicates that flavor additives, such as menthol, may impose additional threats, particularly among certain priority population groups that have relatively higher use rates.

The use of flavor and menthol additives in tobacco products has long been a popular industry strategy to mask the natural harshness and taste of tobacco, making initiation easier for younger and beginner smokers.⁴ Like all tobacco products, flavored and mentholated tobacco products have serious health risks and are not considered safe by the United States (U.S.) Food and Drug Administration (FDA).⁵

In 2009, the Family Smoking Prevention and Tobacco Control Act (FSPTCA) was signed into federal law, making it illegal to manufacture cigarettes that contained “characterizing flavors” other than that of tobacco. This included flavors like strawberry, grape, orange, clove, chocolate, and cinnamon. The FDA concluded that flavored cigarettes are a gateway for many children and young adults to become regular smokers.⁶

Notably, the federal ban on flavored cigarettes did not apply to mentholated cigarettes or other flavored tobacco products.⁷

Types of Flavored and Mentholated Tobacco Products

There are several types of flavored tobacco products on the market, including cigars, smokeless tobacco, hookah, liquid nicotine solutions (used in electronic smoking devices), and menthol cigarettes. These products come in a variety of candy and fruit flavors such as chocolate, watermelon, grape, cherry, apple, and wintergreen. This section describes each type of tobacco product and consumption patterns, as well as health impacts associated with use of these products.

Cigars

- Cigars are sold in a variety of candy, fruit, and alcohol-like flavors.
- Cigars are the second most common form of tobacco used by youth, and flavored cigars represent more than half of the cigar market.
- Cigar smoke contains many of the same carcinogens as cigarette smoke, and may even be more toxic.
- Cigars pose significant morbidity and mortality risks to users.



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Cigar Products and Market Share

Cigars tend to vary in terms of size and the quantity of tobacco used in their products. There are three types of cigar sizes sold in the United States:

- **Large or Premium Cigars:** Contain between 5 and 20 grams of tobacco, which can equate to a pack of cigarettes.
- **Little Cigars:** Very similar to cigarettes and sold in the same size (e.g., contain 1 gram of tobacco), shape and packaging (20 little cigars in a package).
- **Cigarillos:** Contain about 3 grams of tobacco, usually larger than little cigars and cigarettes.⁸

In 2014, about 13 billion cigars were sold in the United States, including 12.4 billion large cigars and cigarillos and 0.6 billion little cigars.⁹ While cigarette consumption has declined from 2000 to 2014, total consumption of cigars increased by 122% over this same period,¹⁰ with flavored cigars representing more than half of the U.S. cigar market.¹¹ Following the Family Smoking Prevention and Tobacco Control Act of 2009, research indicates that cigar manufacturers and the tobacco industry manipulated flavored cigarettes to become flavored cigars in order to circumvent the ban on flavored cigarettes.^{12,13} Cigars are also commonly sold as single products, making them an affordable alternative to cigarettes which are taxed at higher rates.¹⁴

Swisher International Inc.'s Swisher Sweets and Little products represent the most popular cigar brands on the market. They come in a variety of flavors, including chocolate, strawberry, ice cream, peach, and grape. Black & Mild brand cigars, owned by Altria (parent company of Philip Morris USA), also maintain a significant market share and sell flavors like apple, wine, and cream.¹⁶

Cigar Use by Certain Groups

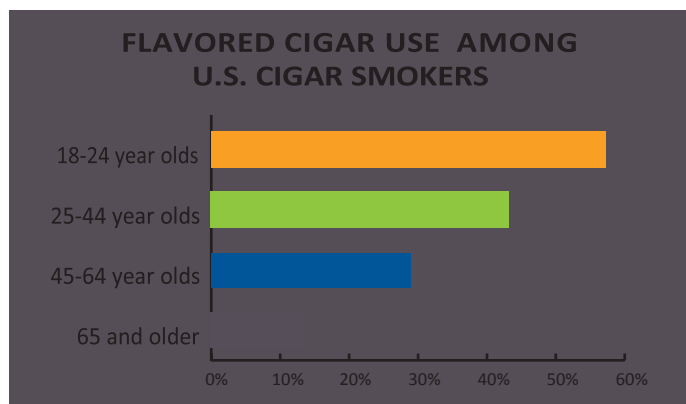
Cigars are the second most common form of tobacco used by high school students.¹⁷ That number increases among first-time tobacco users aged 12 and older, with nearly 2.7 million smoking cigars, in comparison to 2.3 million smoking cigarettes.¹⁸

A recent study found that more than 87% of adolescents who used cigarillos in the past 30 days used flavored cigarillos.¹⁹ When asked, 73.8% of current youth cigar smokers said they smoked cigars “because they come in flavors I like.”²⁰ More than two fifths of U.S. middle and high school smokers report using flavored little cigars or flavored cigarettes.²¹

In fact, a recent study found that flavored tobacco products, such as sweet-flavored cigars, are being engineered with the same flavor chemicals used in popular candy and drink products like LifeSavers and Jolly Ranchers, providing a “familiar, chemical-specific flavor cue” to the user.¹⁵

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Research indicates that use of flavored cigars decreases with age: an analysis of data from the National Adult Tobacco Survey show that flavored cigar use among cigar smokers was 57.1% for 18-24 year olds, 43.2% for 25-44 year olds, 28.9% for 45-64 year olds, and 13.4% for those 65 and older.²² In addition, youth, young adults, females, African-Americans, cigarette smokers, and daily cigar smokers are significantly more likely to report smoking a usual cigar brand that is flavored, with preference for a usual brand that produces flavored cigars decreasing significantly with age.²³



Source: Findings from the 2009–2010 National Adult Tobacco Survey. *Nicotine & Tobacco Research*. 2013;15:608–14.

Health Impacts of Cigar Use

Cigar smoke contains many of the same carcinogens as cigarette smoke, and may even be more toxic.²⁴ As a result of the curing and fermentation process involved in producing cigar tobacco, higher concentrations of cancer-causing nitrosamines are present and released upon combustion. Additionally, cigars have more tar for every gram of tobacco smoked in comparison to cigarettes, and higher concentrations of toxins due to less-porous cigar wrappers.²⁵

Cigars pose significant morbidity and mortality risks to users. While lung cancer risk is less strongly associated with cigar smoking than with cigarette smoking, the health risks from cigar smoking increase depending upon level of exposure as measured by cigars smoked per day, inhalation level, and past smoking history.^{26,27}

Cigar smokers have higher rates of lung cancer, heart disease, and lung disease as compared to nonsmokers.²⁸ Regular cigar smoking is associated with increased risk for lung, larynx, oral cavity, and esophageal cancer, and has been linked to gum disease and tooth loss.^{29,30} Cigar smokers have also tested for higher levels of toxic and carcinogenic substances like cotinine, 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL), which is a tobacco-specific nitrosamine (TSNA) that is a known lung carcinogen, and lead concentrations, as compared to nontobacco users.³¹

Daily cigar use and deep inhalation has also been linked to elevated risk of heart disease and chronic obstructive pulmonary disease.³² Cigar smokers also increase their mortality risk for an aortic aneurysm.³³ Regular cigar smoking was responsible for approximately 9,000 premature deaths and more than 140,000 years of potential life lost among U.S. adults aged 35 years or older in 2010.³⁴

There is a misperception that cigars are not harmful because cigar smoke is not inhaled, however, studies indicate that some cigar smokers do inhale, especially current and former cigarette smokers.³⁵ Inhalation of cigar smoke into the lungs and bloodstream causes smoke particles to deposit into the lungs, stomach, and digestive tract and increases the risk for cancer.³⁶⁻³⁸ Other research indicates that some youth and adult users of little cigars fully inhale the cigar smoke, similar to cigarettes, often indicating that inhaling was necessary to get a “buzz” from little cigars.^{39,40} Regardless of the level of inhalation, all cigar smokers expose their lips, tongue, and throat to smoke and cancer-causing chemicals.⁴¹

Smokeless Tobacco

- Smokeless tobacco is sold in various flavors and forms, with newer products that do not require spitting.
- Moist snuff is the most popular smokeless tobacco product and flavors account for the largest portion of moist snuff sales.
- Smokeless tobacco users tend to be younger and evidence shows the industry has manipulated the nicotine content to attract and retain users.
- Smokeless tobacco contains at least 28 cancer-causing chemicals.

Smokeless Tobacco Products and Market Share

Smokeless tobacco contains nicotine and is addictive.⁴² It is not burned, and it may be sucked, chewed, spit, or swallowed. It can come in a variety of flavors such as winter-green, citrus blend, cinnamon, berry, vanilla, and apple.^{43,44}

There are three main types of smokeless tobacco:

- **Chewing tobacco:** includes cured tobacco that comes in various forms such as loose leaf, plug, or twist tobacco, and is available in multiple flavors. Users place chewing tobacco between the cheek and gums.
- **Snuff:** Oral snuff is a finely cut, processed tobacco which the user places between the cheek and gums. Snuff may be moist, dry, or packaged in tea-like pouches or packets (i.e., snus). Dry snuff may be sniffed or inhaled into the nose, while snus is a newer form of snuff that does not require spitting.
- **Dissolvables:** Finely ground tobacco and flavorings, shaped into tablets, strips, or other forms, that the user ingests orally. These products do not require spitting.

In 2011, smokeless tobacco sales totaled approximately 124.6 million pounds in the U.S., increasing from the 122.6 million pounds sold in 2010. Moist snuff is the most popular smokeless tobacco product with over 80% of the market share, followed by loose leaf at over 17% of the market.⁴⁵ Three companies account for nearly 90% of U.S. sales of smokeless tobacco—U.S. Smokeless Tobacco Company (owned by Altria, popular premium brands like Skoal and Copenhagen), American Snuff, and Swedish Match.⁴⁶

Between 2005 and 2011, sales of flavored moist snuff across all companies increased by 72%; and in 2011, flavored products accounted for more than half (56.1%) of all moist

snuff sales.⁴⁷ Internal documents for the U.S. Smokeless Tobacco Company indicate that flavors were intentionally used to “graduate” new users from the “milder-tasting, more flavored” products to those with a “more full-bodied, less flavored ... more concentrated tobacco taste.”⁴⁸

Smokeless Tobacco Use by Certain Groups

The current demographics of smokeless tobacco users have changed as tobacco manufacturers introduce novel smokeless tobacco products with flavorings and new delivery methods appealing to a broader consumer base.⁴⁹ In 1970, men aged 65 and older were about six times more likely to use smokeless tobacco regularly as compared to men aged 18 to 24. By 1991, young men were 50% more likely than the oldest men to be regular users of smokeless tobacco.^{50,51}

In a 2013 survey of U.S. high school students, 14.7% of high-school boys and 8.8% of all high-school students reported current use of smokeless tobacco products.⁵² Furthermore, each year about 535,000 youth ages 12-17 report using smokeless tobacco for the first time.⁵³ More broadly, the number of persons aged 12 or older who used smokeless tobacco for the first time within the past year was 1.1 million in 2013.⁵⁴ Smokeless tobacco use among females has historically been low. Among males, smokeless use decreased between 1986 and 2000, but has been increasing since 2000.⁵⁵

There is evidence that users who begin with low-nicotine “starter” products are more likely to subsequently “graduate” to products with higher nicotine content,⁵⁶ and that use of starter products reinforces use of other tobacco products, including cigarettes.^{57,58} Industry marketing practices and introduction of novel products have encouraged cigarette smokers to use smokeless tobacco as an alternative in locations where smoking is not permitted.^{59,60} Cigarette smokers may also consider smokeless tobacco to be a cessation or harm reduction strategy to reduce use of combustible tobacco products.⁶¹ Studies have found that smokers who no longer use combustible tobacco may switch to smokeless tobacco as a substitute to smoking or may engage in dual use by using both products concurrently.⁶²⁻⁶⁴ Smokeless tobacco is not a safe alternative to combustible tobacco, and there is no conclusive evidence that shows that switching to smokeless tobacco is an effective long-term smoking cessation strategy.^{65,66}

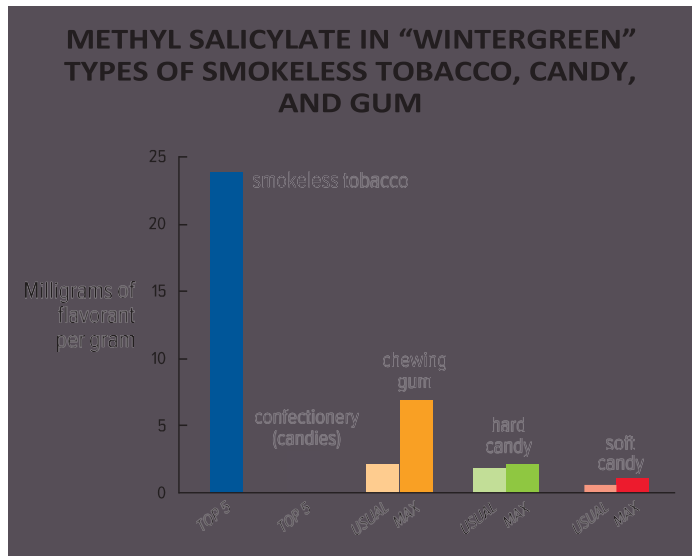
Health Impacts of Smokeless Tobacco Use

Smokeless tobacco contains at least 28 cancer-causing chemicals⁶⁷ and has been shown to cause gum disease, tooth decay and cancers of the oral cavity, esophagus and pancreas.⁶⁸⁻⁷⁰ The health risks associated with smokeless tobacco use can vary depending upon the product characteristics, manner and frequency of use, as well as interactions with dual use of other tobacco products.⁷¹

The use of flavorings in some oral smokeless tobacco products presents another level of exposure as the flavorings are ingested along with the tobacco.⁷² A measurement of the mint and wintergreen contents found in popular moist snuff products indicated that these products contain far more of these flavorings (i.e., methyl salicylate) than found in hard candies – a typical smokeless tobacco user could ingest up to 12 times the acceptable daily intake level of methyl salicylate as established by a scientific expert committee on food additives.⁷³ Smokeless tobacco products may also contain additives that have been prohibited for use in food; coumarin, for example, is an additive that has been banned in foods due to its liver toxicity, that is also found in Camel Mellow Orbs, a dissolvable tobacco product.⁷⁴

Smokeless tobacco products differ considerably in their concentrations of nicotine, volatile and nonvolatile nitrosamines including TSNAs, the most abundant strong carcinogens in smokeless tobacco products, as well as toxic metals and other compounds.⁷⁵⁻⁷⁷ All smokeless tobacco products contain nicotine and almost all contain TSNAs.⁷⁸ A comparison of studies found that biomarkers indicating exposure to carcinogens in the urine of users of moist snuff varied by brand used and, for some brands, were higher than levels seen in Marlboro cigarette smokers.⁷⁹

Smokeless tobacco use is strongly associated with the prevalence of oral lesions on the cheeks, gums, and/or tongue, such as leukoplakia.^{80,81} Lesions typically occur at the site in the mouth of smokeless tobacco application and indicate a high risk of cancers arising from leukoplakia and



Source: Chen C, et al. (2010)

oral submucous fibrosis.^{82,83} Research suggests that more than half of daily smokeless tobacco users had lesions or sores in the mouth,⁸⁴ and lesions are more severe in people who begin use at an earlier age, use for more hours per day, use greater dosages, or use on more days per month.⁸⁵ Other oral conditions associated with smokeless tobacco use include gingival recession, which can be observed within one year of smokeless tobacco use, dental decay, and caries.⁸⁶ A study found chewing tobacco users were four times more likely than non-users to have decayed dental root surfaces.⁸⁷

Other health impacts from smokeless tobacco use include an association with increased risk of fatal ischemic heart disease and stroke.⁸⁸⁻⁹⁰ Use during pregnancy heightens risk for early delivery and stillbirth, and can affect how a baby's brain develops before birth.^{91,92} Research shows that users who engage in dual use of smokeless tobacco and cigarettes may have greater levels of toxicants and may prolong the duration of smoking than those who use only one tobacco product, potentially posing greater health risks.^{93,94}

Hookah Tobacco

- Hookah has a wide range of flavors and flavor mixes available for purchase.
- Hookah smoking is a social activity and its popularity has increased among youth and college students.
- Flavored hookah tobacco is the preferred tobacco for use in water pipes.
- Hookah is not safer than cigarettes and has many of the same health risks as cigarette smoke.

Hookah Products and Market Share

Hookah—also called shisha, narghile, and goza—refers to water pipes that are used to smoke tobacco by indirectly heating it with burning embers or charcoal.⁹⁵ The tobacco comes in a range of flavors, such as apple, mint, cherry, chocolate, cardamom, watermelon, and cappuccino,⁹⁶ and some manufacturers even mix flavors to produce combinations such as strawberry-peach or raspberry-orange.⁹⁷ Several Middle Eastern companies manufacture and import the tobacco, including Al Fakher, Al Waha, Nakhla, Romman, and Fumari, and there are also U.S. companies that manufacture and distribute their own brands of tobacco for water pipe smoking.⁹⁸

Hookah Use by Certain Groups

Hookah smoking is often a social activity and two or more people may share the same waterpipe.⁹⁹ Hookah use began centuries ago in ancient Persia and India,¹⁰⁰ but hookah cafes have gained popularity nationwide in the U.S.¹⁰¹ and use by American youth^{102,103} and college students is increasing.¹⁰⁴⁻¹⁰⁸ One study found that hookah use in California was much higher among young adults (24.5% among men, 10% among women) than it was among all adults (11.2% among men, 2.8% among women) in the U.S.¹⁰⁹ A 2014 study found that teens that use hookah are two-to-three times more likely to start smoking cigarettes or to become current smokers than teens who have not tried hookah.¹¹⁰ In addition, an analysis of the 2012–2013 National Adult Tobacco Survey found that among young adults who had never established cigarette smoking, two of five hookah smokers reported being susceptible to smoking cigarettes.¹¹¹

The World Health Organization (WHO) found that the introduction of sweetened flavored water pipe tobacco, called *maassel*, is one of the contributing factors that has caused hookah's explosive growth.¹¹² Prior to the introduction of *maassel*, most water pipe smokers used some type of raw tobacco that produced a strong, harsh smoke, unlike the smoother, aromatic smoke produced from *maassel*.¹¹³ Research indicates that *maassel* is the preferred tobacco for use in water pipes, especially among young smokers.¹¹⁴ One study found that 88.7% of 12-17 year olds who had ever smoked hookah used flavored hookah the first time they tried the product, and 89% of current hookah smokers used a flavored product in the last month.¹¹⁵ Similarly, the 2014 National Youth Tobacco Survey found that 60.6% of middle and high school hookah smokers had used flavored hookah in the past month.¹¹⁶

Health Impacts of Hookah Use

Many young adults falsely believe that hookah smoking is safer than cigarette smoking;¹¹⁷ however, hookah poses many of the same health risks as cigarette smoking. One hookah session delivers approximately 125 times the smoke, 25 times the tar, 2.5 times the nicotine, and 10 times the carbon monoxide as a single cigarette.¹¹⁸ During an hour-long hookah smoking session the average user will take 200 puffs, while smoking an average cigarette involves only about 20 puffs.^{119,120} In fact, smoking hookah for 45 to 60 minutes can be equivalent to smoking 100 or more cigarettes.¹²¹

The charcoal that is used to heat the tobacco in a hookah can increase health risks for smokers, as the smoke contains toxicants emitted from both the charcoal and the tobacco product, including flavorings.¹²² Hookah smoke has high levels of carbon monoxide, metals, and cancer-causing chemicals.¹²³ As a result, hookah use can cause negative health effects on the respiratory system, cardiovascular system, oral cavity and teeth, and long-term use has been linked to high incidences of chronic obstructive pulmonary disease and periodontal disease.^{124,125} Hookah smokers may also be at risk for some of the same diseases as cigarette smokers, including oral cancer, lung cancer, stomach cancer, and esophageal cancer.^{126,127}

Liquid Nicotine Solution

- Liquid nicotine solution is a broad term that encompasses “e-juice” or “e-liquid” which is often used in electronic nicotine delivery devices, or electronic cigarettes.
- Liquid nicotine solution is available in a plethora of candy and fruit-flavors, many of which use popular brand names and logos that appeal to youth.
- Youth uptake of electronic cigarettes has vastly increased over the last several years.
- While there is insufficient research on the long-term health effects of liquid nicotine solution, evidence shows that toxic additives are often included in the aerosol spray.



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Liquid Nicotine Products and Market Share

Liquid nicotine solution, also called “e-juice” or “e-liquid,” is used in electronic smoking devices such as e-cigarettes and vaporizers. The term “electronic cigarette” or “e-cigarette” is a common term that can refer to a wide variety of products that use liquid nicotine solution, which is a derivative of tobacco. Unlike combustible tobacco products, e-cigarettes are battery-operated devices that heat liquid nicotine solution to form an inhalable aerosol.¹²⁸ Some e-cigarettes are reusable and users can replace or refill the liquid nicotine solution, while others are disposable and cannot be refilled.¹²⁹ Other more advanced devices, called modulators or “mods,” can be assembled with separate component parts and accessories, which permits greater variation in the battery power, style, and size.¹³⁰

Sales of electronic cigarettes and supplies have experienced triple-digit growth over the past five years, climbing to over \$3.5 billion with market analyses projecting use of e-cigarettes and vaporizers to overtake combustible cigarettes in ten years.¹³¹ Almost 50% of the

electronic cigarette market is owned by the largest tobacco companies, and that market share is expected to reach 80% in 2021.¹³² However, sales have decelerated over the past year due to customer dissatisfaction, safety concerns, and increased state regulation.¹³³

As a result of this growth, there are now over 460 brands of e-cigarettes and more than 7,700 unique e-cigarette flavors available for purchase online.¹³⁴ This includes a wide range of candy and fruit-flavors that are not permitted in cigarettes, many of which use well-known brand name candy and cereal products, such as Wrigley’s, Atomic Fireball, Tutti Frutti, and Cap N’ Crunch, which are considered to be appealing to children.¹³⁵

Liquid Nicotine Use by Certain Groups

Data trends depict increasing use of e-cigarettes by youth. From 2013 to 2014, a Centers for Disease Control and Prevention (CDC) survey found that youth use of e-cigarettes had tripled and now exceeds youth use of traditional cigarettes. Current e-cigarette use among high school students increased from 4.5% to 13.4%, amounting to 2 million high school students and 450,000 middle school students who currently use e-cigarettes.¹³⁶

A 2015 Monitoring the Future study found that 40% of youth who used e-cigarettes did so because “they tasted good” compared to only 10% who use them to quit smoking traditional cigarettes.¹³⁷

Other studies found similar increases in youth uptake of e-cigarettes,¹³⁸⁻¹⁴⁰ and preliminary California specific data indicates e-cigarette youth use to be at much higher rates than traditional cigarettes.¹⁴¹

A gateway effect has been observed for youth users: a recent longitudinal study of e-cigarette use found that adolescents who use e-cigarettes are more likely to start smoking cigarettes. Among nonsmoking students who used e-cigarettes, 20% indicated they had smoked their first cigarette a year later. Among nonsmokers who had not used e-cigarettes, only 6% had used cigarettes a year later.¹⁴² Similar findings were published in *The Journal of the American Medical Association (JAMA) Pediatrics* that indicates young people who smoke e-cigarettes are more likely to start smoking traditional cigarettes within a year

as compared to their peers who do not use e-cigarettes.¹⁴³ Using data from the 2012 National Youth Tobacco Survey, one study confirmed that e-cigarette users who had never smoked cigarettes and who had experimented with smoking had elevated intention to smoke cigarettes compared with their counterparts who had never used e-cigarettes.¹⁴⁴ Additionally, a new analysis of a nationally representative sample of adolescents supports these findings: use of electronic nicotine delivery systems (such as e-cigarettes) was associated with initiation of cigarette smoking in the last year.¹⁴⁵

Health Impacts of Liquid Nicotine Use

There is insufficient research regarding the long-term health effects of using e-cigarettes.¹⁴⁶ As e-cigarettes have largely been unregulated, they have been heavily marketed as a safer alternative to conventional cigarettes. However, the liquid nicotine solution used in e-cigarettes frequently contains nicotine, as well as propylene glycol, glycerin, flavorings, and other toxic additives.¹⁴⁷ Research has found chemicals and toxins contained in the aerosol; such as nicotine, formaldehyde, lead, nickel, and acetaldehyde, all of which are found on California's Proposition 65 list of chemicals known to cause cancer, birth defects, or other reproductive harm.¹⁴⁸ It is posited that nicotine exposure during periods of developmental vulnerability has multiple adverse health consequences, including impaired fetal brain and lung development, and altered development of cerebral cortex and hippocampus in adolescents.¹⁴⁹

Furthermore, certain chemicals used to flavor liquid nicotine, like diacetyl, 2,3-pentanedione, and acetoin, are present in many e-liquids at levels which are unsafe for inhalation.¹⁵⁰ While diacetyl has been approved for ingestion in human food, it has not been similarly evaluated and approved for use in tobacco products, which result in exposures other than ingestion (e.g., inhalation).¹⁵¹ A recent study found diacetyl in 75% of flavored e-cigarette liquids and refill liquids that were tested, and at least one of the three

flavoring chemicals (i.e., diacetyl, 2,3-pentanedione, or acetoin) was detected in 92% of the tested e-cigarettes and liquids.¹⁵² Diacetyl, when inhaled, is associated with the development of the severe lung condition called bronchiolitis obliterans, also known as "popcorn lung," which causes an irreversible loss of pulmonary function and damage to cell lining and airways.¹⁵³ Still another study has found that users of flavored e-cigarettes are likely inhaling a chemical called benzaldehyde, a widely used flavoring agent found in foods, as well as medicines like cough syrup, that when inhaled can irritate the airways.¹⁵⁴

In addition, the liquid nicotine solution contains varying concentrations of nicotine, ranging from no nicotine to 100 mg per milliliter (a milliliter is approximately a fifth of a teaspoon). The lethal dose of nicotine is estimated to be 30-60 mg in an adult and 10 mg in a child. The toxicity of a 60 mg dose of liquid nicotine is similar to or even higher than that of cyanide.¹⁵⁵ Accidental exposure to nicotine, particularly by children aged five and younger, has led to significant increases in calls to poison control centers in California and nationally.¹⁵⁶

Although there are claims that e-cigarettes are an effective smoking cessation tool, there is not enough evidence to indicate that e-cigarettes will help smokers quit or reduce the number of cigarettes smoked.^{157,158} The U.S. Preventive Services Task Force, which makes recommendations about the effectiveness of specific preventive care services after a thorough assessment of the science, recently concluded that "the current evidence is insufficient to recommend electronic nicotine delivery systems for tobacco cessation..."¹⁵⁹ In fact, recent evidence points to potential signs of dual use instead of cessation: instead of using e-cigarettes as a cessation tool, some users are using e-cigarettes in indoor environments where use of traditional cigarettes may be prohibited, but continuing to smoke traditional cigarettes outdoors.¹⁶⁰⁻¹⁶³

Menthol Cigarettes

- Menthol is an anesthetic additive used in cigarettes that imparts a cooling effect and minty taste, and reduces the harsh taste of cigarette smoke.
- Menthol cigarettes represent about one third of the U.S. cigarette market.
- Menthol users tend to be younger, female and members of ethnic minorities, and the FDA has concluded that menthol cigarettes are “starter” products.
- Menthol cigarettes lead to greater addiction and can inhibit cessation.

Menthol Cigarette Products and Market Share

Menthol is an anesthetic additive that can be natural or synthetically produced, and is commonly used as a minty flavoring in cigarettes. At low doses, menthol has a cooling, sensory effect that reduces the perceived harshness of tobacco and increases ease of smoking.¹⁶⁴ At high doses, menthol can cause irritation and pain via effects on certain receptors located in the nose, mouth and airways. Menthol is present in most cigarettes in the U.S., both as a characterizing flavor (higher levels) and for other taste reasons (lower levels).^{165,166} Menthol is also an active ingredient in many medicinal products, such as cough drops, and it is regulated as a drug by the FDA. The use of menthol in tobacco products is not regulated by the FDA, and it may be found in cigarettes, cigars, smokeless tobacco, and other tobacco products.¹⁶⁷

Menthol was first used as a cigarette additive in 1925, with sales totaling only 3% of the overall U.S. cigarette market prior to 1956.¹⁶⁸ Once the tobacco industry realized menthol made cigarettes more palatable upon initiation and could be used to retain smokers, marketing strategies were refined to target youth and certain groups (See Priority Populations Section).^{169,170}

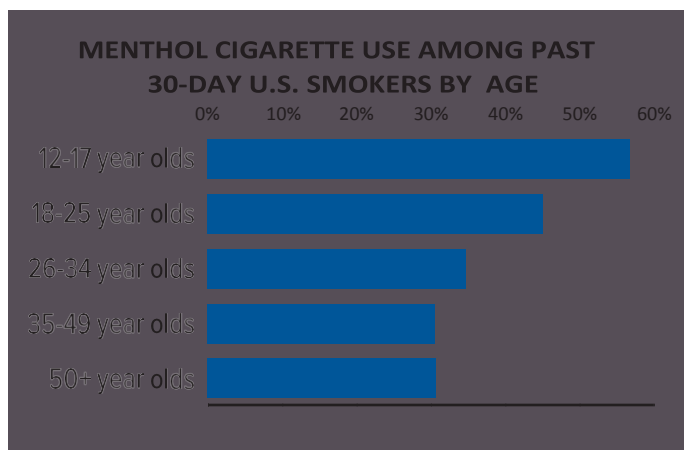
There are approximately 19 million Americans who smoke menthol cigarettes, including 1.1 million adolescents, and sales of these products comprise between 28% and 34% of the U.S. cigarette market.^{171,172} Common menthol cigarette brands include Kool, Newport, and Salem, although the cigarette market is highly consolidated among three companies: Altria (parent company of Phillip Morris, Marlboro products), Reynolds American and Lorillard.¹⁷³

Lorillard’s brand of mentholated cigarettes, Newport, has historically outpaced all other menthol brands and reflects its main product line. In 2014, Reynolds acquired Lorillard in a merger allegedly designed to give Reynolds access to the Newport product.¹⁷⁴

Menthol Cigarettes Use by Certain Groups

Analyses of internal tobacco industry documents reveal that the tobacco industry knowingly manipulated the menthol content in cigarettes to account for sensory preferences among younger and more experienced smokers,¹⁷⁵ understanding that the amount of menthol in a cigarette changes how the cigarette is smoked and how pleasurable it is to the smoker.¹⁷⁶ Menthol enhances the sensory experience or “throat grab” of the smoke, and through desensitization, reduces the irritating effect of nicotine, leading to a positive association by novice smokers.^{177,178}

Research indicates that menthol cigarettes are a “starter” product for youth and use of menthol is more likely among those who are recent initiates.¹⁷⁹⁻¹⁸³ Using data from the National Surveys on Drug Use and Health, one study found that menthol cigarette use is more common among 12–17 year olds (56.7%) and 18–25 year olds (45.0%) than among 26–34 year olds, 35–49 year olds, and 50+ year olds (range of 30.5% to 34.7%). The study also found that while adolescent and young adult use of non-menthol cigarettes has decreased from 2004–2010, menthol smoking rates have remained constant (adolescents) and increased (young adults) over this same period.¹⁸⁴



Source: Giovino GA, et al. (2015)

Menthol users are associated with being younger, female, and of non-Caucasian race/ethnicity, and use is especially high among minority youth. A review of three national data sets determined that more than 80% of adolescent African American smokers and more than half of adolescent Latino smokers use menthol cigarettes. Menthol cigarettes are also used by more than half of Asian American middle-school smokers.¹⁸⁵ In addition, an analysis on the 2008 and 2009 National Survey on Drug Use and Health found that an elevated prevalence of menthol use was found among persons with severe psychological distress,¹⁸⁶ while another study indicated that menthol is disproportionately used among young adult tobacco users with mental health problems.¹⁸⁷

Strong evidence also suggests that use of mentholated cigarettes during childhood and early adulthood increases nicotine addiction and dependence,¹⁸⁸⁻¹⁹⁰ with the FDA surmising that youth appeared to be particularly vulnerable to the effects of menthol cigarette smoking.¹⁹¹ Further, evidence indicates that menthol smokers in general, and African American smokers in particular, are less likely to quit successfully than non-menthol cigarette users.¹⁹²⁻¹⁹⁵

In 2011, after an extensive survey of the literature and research, the FDA released a report concluding that menthol cigarettes are “starter” products and increase smoking initiation among youth and young adults, lead to greater addiction, and can inhibit quitting smoking.¹⁹⁶ The FDA concluded that the removal of menthol cigarettes from the marketplace would greatly benefit public health.

Health Impacts of Menthol Cigarettes

Tobacco industry documents and empirical studies suggest that consumers, particularly younger users, tend to perceive menthol cigarettes as less hazardous than non-menthol cigarettes.¹⁹⁷ However, menthol cigarettes are not safer than non-menthol cigarettes and carry many of the same health risks: smokers are more likely than nonsmokers to develop heart disease, stroke, lung cancer and other respiratory diseases.¹⁹⁸

Due to the anesthetic effect of mentholated cigarettes, evidence suggests that they may facilitate deeper and more prolonged inhalation of toxic cigarette smoke.¹⁹⁹ Additionally, by reducing airway pain and irritation, continuous menthol smoking can mask the early warning symptoms of smoking-induced respiratory problems.²⁰⁰ Still other evidence has associated menthol with inhibiting the metabolism of nicotine in the body, and smokers of menthol cigarettes have been found with higher levels of cotinine and carbon monoxide in the bloodstream as compared to non-menthol smokers.^{201,202}

Menthol in high concentrations may also inhibit the detoxification of tobacco-specific carcinogens (NNAL), which could increase the risk of cancer,²⁰³ although the FDA in its 2013 report did not find enough evidence to support this claim. Lastly, a study of current smokers using data from the 2001-2008 U.S. National Health and Nutrition Examination Surveys found significantly increased odds of stroke for smokers of mentholated cigarettes compared with non-mentholated cigarette smokers.²⁰⁴

Priority Populations

Priority populations are groups that have higher rates of tobacco use than the general population, experience greater secondhand smoke exposure at work and at home, are disproportionately targeted by the tobacco industry, and have higher rates of tobacco-related disease compared to the general population.²⁰⁵ This section describes the evidence which indicates particular priority populations (i.e., youth, racial/ethnic minorities, and other targeted groups) are more likely to initiate and use flavored and mentholated tobacco products.

Adolescents (12-17) and Young Adults (18-26)

A multitude of research indicates that flavored products appeal to youth and young adults leading to increased use for this population. Despite prevalence rates for cigarette use trending downward for youth, research shows that more youth are using other flavored tobacco products. A national study found that 80.8% of 12-17 year olds who had ever used a tobacco product initiated tobacco use with a flavored product, and that 79.8% of current tobacco users had used a flavored tobacco product in the past month.²⁰⁶ Additionally, an examination of young adult tobacco users (18-34 year olds) found that 18.5% currently use a flavored tobacco product, with younger age being a predictor of flavored tobacco product use: young adults aged 18-24 year olds had an 89% increased odds of using a flavored tobacco product compared to those aged 25-34 year olds.²⁰⁷

Menthol cigarettes carry similar results. Among cigarette smokers, menthol cigarette use was more common among 12-17 year olds (56.7%) and 18-25 year olds (45%) than among 26-34 year olds, 35-49 year olds, and 50+ year olds (range of 30.5% - 34.7%).²⁰⁸ In fact, adolescents smoke menthol cigarettes at a higher rate than any other age group.²⁰⁹

Flavors Make Using Tobacco More Enticing and Harder to Quit

Flavorings and menthol additives mask the naturally harsh taste of tobacco, making it easier for youth to initiate and sustain tobacco use.^{210,211} A 2014 review of internal tobacco industry documents indicate that menthol and candy-like

flavors in little cigars and cigarillos were used to increase product appeal to beginning smokers by masking the heavy cigar taste, reducing throat irritation, and making the cigar smoke easier to inhale.²¹²

The majority of youth ever-users reported that the first product they had used was flavored, including 88.7% of ever hookah users, 81.0% of ever e-cigarette users, 65.4% of ever users of any cigar type, and 50.1% of ever cigarette smokers. Youth consistently reported product flavoring as a reason for use across all product types, including e-cigarettes (81.5%), hookahs (78.9%), cigars (73.8%), smokeless tobacco (69.3%), and snus pouches (67.2%).²¹³

Studies indicate that individuals who begin smoking at a younger age are more likely to develop a more severe addiction to nicotine than those who start later.²¹⁴ Further, both the FDA and the U.S. Surgeon General have warned that flavored tobacco products help new users establish habits that can lead to long-term addiction.^{215,216} A recent study of middle and high school students supports this: among cigar smokers, prevalence of no-intention-to-quit tobacco use was higher among flavored-little-cigar users (59.7%) than nonusers (49.3%).²¹⁷ Additionally, youth who initiate smoking with menthol cigarettes are more likely to become regular, addicted smokers and to show higher measures of dependence than youth who initiate with non-menthol cigarettes.²¹⁸ Furthermore, a nationally representative sample of U.S. youth tobacco users found that dual use (i.e., use of two tobacco product categories) was the most prevalent pattern (30.5%) detected among these users.²¹⁹

Flavored and Mentholated Tobacco Products are Heavily Marketed with Sweet Flavors, Colorful Packaging, and Brand Recognition

The U.S. Surgeon General concluded that, “... advertising and promotional activities by the tobacco companies cause the onset and continuation of smoking among adolescents and young adults.”²²⁰ Tobacco industry documents containing information about tobacco companies’ advertising, manufacturing, marketing, and research activities demonstrate a strategic focus on designing brand varieties with particular appeal to youth, such as mentholated, candy-flavored, and fruit-flavored brands.²²¹

For example, one internal industry memo described sweetened products as “... for younger people, beginner cigarette smokers, teenagers ... when you feel like a light smoke, want to be reminded of bubblegum.”²²²

Several flavored tobacco products share the same names, packaging and logos as popular candy brands like Jolly Rancher, Kool-Aid, and Life Savers.²²³ They are also engineered with the same flavoring agents as those used in popular kid-friendly candy and drink products such as Life Savers and Jolly Ranchers, providing a “familiar, chemical-specific flavor cue” to the user.²²⁴ Bright packaging and product placement at the register, near candy, and often at children’s eye-level, increases tobacco flavored products’ visibility to kids.²²⁵ As stated in an industry publication, “While different cigars target a variety of markets, all flavored tobacco products tend to appeal primarily to younger consumers.”²²⁶

The tobacco industry has aggressively used branding and advertising as a method to exploit particular youth populations and use of mentholated cigarettes. The vast majority of adolescents who smoke before the age of 18 use the three most heavily advertised brands. One of these heavily advertised brands, Newport, is the cigarette brand leader among African-American youth in the United States. Nearly eight out of every ten African American youth smokers smoke Newport cigarettes.²²⁷

Many Youth Believe Flavored or Mentholated Tobacco Products are Safer than Non-flavored Tobacco Products

Multiple studies of youth perception indicate that many younger users falsely believe that flavored or mentholated tobacco products are safer than non-flavored tobacco products. A recent study found that people younger than 25 years of age were more likely to say that hookahs and e-cigarettes were safer than cigarettes,²²⁸ and that mentholated cigarettes were less hazardous than

non-menthol cigarettes.²²⁹ This finding has been supported in other studies that show cigar smokers misperceive cigars as being less addictive, more “natural,” and less harmful than cigarettes.²³⁰

Recent research indicates that some teens may be more likely to use e-cigarettes prior to using combustible tobacco because of beliefs that e-cigarettes are not harmful or addictive, as a result of youth targeted marketing and availability of e-cigarettes in flavors that are attractive to youths.²³¹ A longitudinal study of e-cigarette use found that adolescents who use e-cigarettes are more likely to start smoking cigarettes, and that risk for use was greater for students who had the impression that e-cigarettes were less dangerous than regular cigarettes.²³²

Racial and Ethnic Minorities

Menthol Cigarette Use is Higher Among African Americans, Especially Minority Youth

Significant disparities exist in the use of menthol flavored tobacco products by certain racial and ethnic minority communities. African American smokers are far more likely to smoke menthol cigarettes than smokers of other racial and ethnic groups, and this trend is pervasive across all categories, regardless of stratification by income, age, gender, region, education, etc. African American youth are especially impacted: more than 80% of all African American adolescents who smoke use menthol cigarettes—the highest usage among all minority groups.²³³

Although African Americans usually smoke fewer cigarettes and start smoking cigarettes at an older age, their smoking-related morbidity and mortality is significantly higher than white smokers.^{234,235} This disparity in tobacco-related morbidity and mortality among African Americans may partly result from the greater use of menthol cigarettes among African American smokers.²³⁶ A smoking simulation model predicted that a 10% quit rate among menthol smokers



would save thousands of lives, preventing more than 4,000 smoking-attributable deaths in the first ten years, and over 300,000 lives over the next 40 years. Approximately 100,000 of those lives saved would be African Americans.²³⁷

In addition, menthol cigarettes are used disproportionately by other minority youth groups. Data from the National Survey on Drug Use and Health (NSDUH) shows that among adolescent smokers aged 12-17 years, 51.5% of Asians, 47.0% of Hispanics, and 41.4% of Native Hawaiians/Pacific Islanders reported smoking a menthol brand in the past 30 days.²³⁸ Further, other research shows that during the last year of high school, one third of Asian American youth are smokers. Of these youth, 60% report that their usual brand of cigarettes is a menthol brand.²³⁹

Lower Cessation Rates Common Among Minority Menthol Smokers

Research indicates that menthol smoking can lead to lower rates of cessation outcomes, especially for non-white smokers.²⁴⁰ Generally, quitting menthol cigarettes is particularly difficult because menthol smokers have to overcome the dependency on nicotine as well as positive associations with menthol itself.²⁴¹ In addition, one study found that among African Americans and Hispanic/Latino current smokers, those who smoked mentholated cigarettes were more likely to be seriously considering quitting smoking in the next six months and to think that they would quit smoking successfully in the next six months compared to non-menthol smokers. However, the evidence did not support this outcome: African Americans and Hispanics/

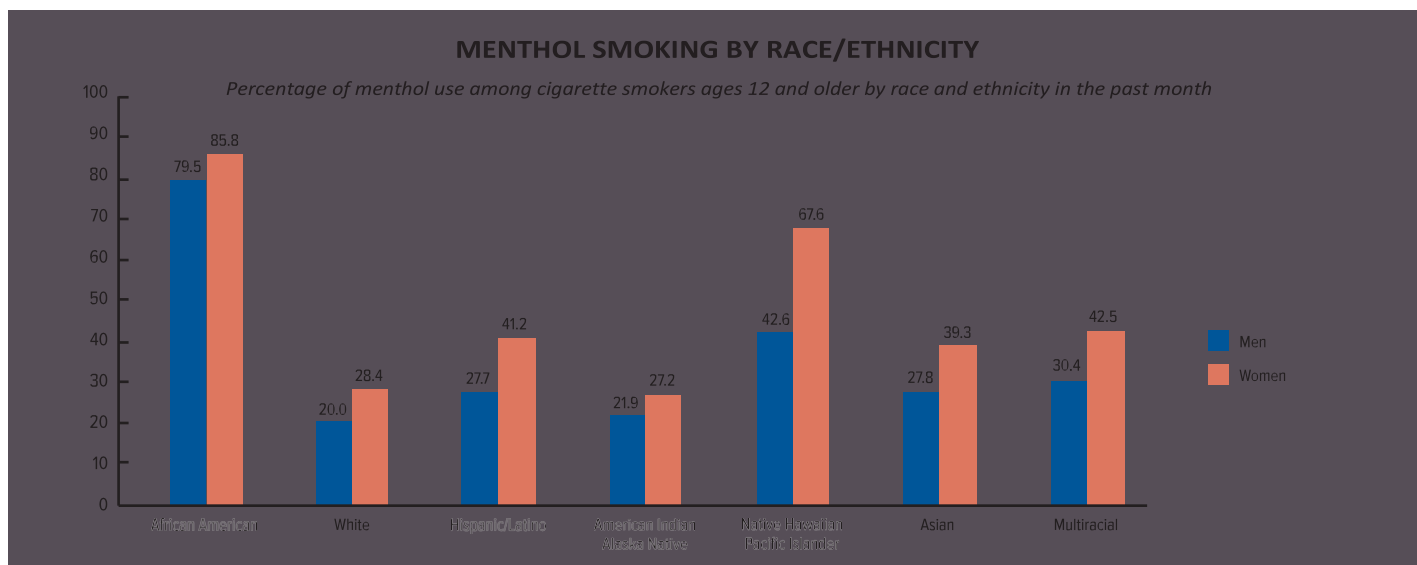
Latinos who smoked mentholated cigarettes were less likely to quit successfully for at least six months compared to those who smoked non-mentholated cigarettes.²⁴²

Another study found that despite smoking fewer cigarettes per day, African American and Hispanic/Latino menthol smokers were less likely to successfully quit as compared to non-menthol smokers within the same ethnic/racial group.²⁴³ This suggests that lower rates of cessation among these populations may be linked to higher rates of smoking mentholated cigarettes.

Tobacco Industry Has a Long History of Targeting Racial and Ethnic Minorities

Through strategic marketing and price discounting, the tobacco industry has targeted communities of color with mentholated tobacco products and flavored, cheap little cigars and cigarillos. Price discounting contributes to tobacco-related health disparities because vulnerable populations including youth, racial minorities, and persons with low incomes are more likely to purchase tobacco products through affordable discounts.^{244,245}

In particular, the tobacco industry has aggressively targeted African American populations through the use of multiple advertising mediums and branding to convey sociocultural messages around menthol products.²⁴⁶ Research indicates that African American neighborhoods have a disproportionate number of tobacco retailers,²⁴⁷ many which employ various point-of-sale strategies, such as price discounting, to encourage initiation and use in these communities.



Source: Substance Abuse and Mental Health Administration. The National Survey on Drug Use (NSDUH) and Health Report: Use of Menthol Cigarettes. November 2009.

One study found that a higher proportion of African American and young adult residents was associated with more exterior little cigar advertising and cheaper prices, with 95% of these stores selling little cigars in fruit, candy, and wine flavors.²⁴⁸

Other communities of color have similarly been targeted by industry. A review of tobacco industry documents suggests that RJ Reynolds, one of the leading cigarette manufacturers, developed a sophisticated surveillance system to track the market behavior of Hispanic/Latino smokers and understand their cultural values and attitudes. This information was translated into targeted marketing campaigns for the Winston and Camel brands, and in 2005, RJ Reynolds launched a music-themed marketing campaign to target African American and Hispanic/Latino youths.²⁴⁹ Empirical research examining menthol and non-menthol advertising also found a higher proportion of menthol advertisements out of all cigarette advertisements in Hispanic/Latino neighborhoods and magazines, than in non-Hispanic white neighborhoods and magazines.²⁵⁰

Since the mid-1980s, tobacco companies have targeted Asian Americans and Pacific Islanders in their marketing campaigns. The tobacco industry considered these groups to be a “potential gold mine” because of high rates of smoking in Asia and the Pacific, concentration in certain geographic regions, and the high proportion of Asian retailers.²⁵¹ A tobacco industry document review provided further evidence that Asian Americans and Hawaiian/Pacific Islanders were targeted in menthol marketing by cigarette companies.²⁵²

Lesbian, Gay, Bisexual, and Transgender (LGBT)

Similar to other priority populations, LGBT individuals have been aggressively targeted by tobacco industry through advertising and sponsorships on specific themes that resonate within the community: liberation, individualism, social success, and acceptance.²⁵³ For example, an ad for Camel Snus directed at LGBT audiences to “Take pride in your flavor,” and according to initial assessments of prevalence data, this industry messaging may be working.

Overall, LGBT individuals smoke cigarettes at a higher rate than the general population.^{254,255} In a national study conducted in 2009-2010, 71% of LGBT young adult smokers

(18-25) reported smoking menthol cigarettes.²⁵⁶ In addition, current menthol cigarette smoking was higher among LGBT adults (9.7%) than heterosexual/straight adults (4.2%), and LGBT women are more likely to smoke menthols cigarettes than straight women (42.9% vs.32.4%).²⁵⁷

LGBT individuals are also more likely to smoke flavored cigars (8.2%) than heterosexual/straight individuals (2.7%).²⁵⁸ Furthermore, 4.5% of LGBT adults use e-cigarettes, compared to 1.9% of heterosexuals.²⁵⁹ A Missouri study comparing heterosexual general population youth and LGBT youth found that these two groups differed significantly on many tobacco use related factors. General population youth initiated smoking at a younger age, and LGBT youth did not catch up in smoking initiation until age 15 or 16. However, LGBT youth (41.0%) soon surpassed heterosexual general population youth (11.2%) in initiation and proportion of current smokers and were more likely to use cigars/cigarillos and be poly-tobacco users.²⁶⁰ The latter finding is supported in a representative sample of U.S. high school youth that examined the concurrent use of multiple tobacco products: data indicated the prevalence of poly-tobacco use to be 21.7% among sexual minority youth compared with only 12.1% among heterosexual youth.²⁶¹

Women

Over 18 million adult women and 1.3 million girls in the U.S. currently smoke cigarettes.²⁶² Although men are more likely to smoke cigarettes than women, that is not the case with menthol cigarettes: women are 1.6 times more likely to smoke menthol cigarettes than men, and this pattern is seen across all racial/ethnic groups, except among American Indians/Alaskan Natives.²⁶³

Research suggests that among women smokers, menthol cigarette use is associated with higher tobacco dependence. More female menthol smokers, as compared to female non-menthol smokers, reported smoking their cigarette within five minutes of waking up in the morning and fewer quit attempts greater than 90 days.^{264,265}

A review of tobacco industry documents show extensive research was conducted on female smoking patterns, needs, and product preferences, including menthol brands. The tobacco industry has targeted some menthol brands to women, using women’s social and cosmetic concerns for cleanliness and freshness, and incorporated these themes in menthol cigarette product design and marketing.²⁶⁶

Conclusion

California and its tobacco control program have achieved great success in reducing the burden of tobacco use: over a 25 year period, cigarette consumption has decreased in California by 65%,²⁶⁷ with over 1 million lives saved²⁶⁸ and \$134 billion in averted health care costs.²⁶⁹ Despite this progress, tobacco use remains the chief risk factor for the leading causes of death in the state,²⁷⁰ and evidence shows that the tobacco industry continues to engage in efforts that entice a new generation of users. A foundation of this strategy is the use of candy and fruit flavors and cooling additives in tobacco products that are intended to attract and retain users by masking the naturally harsh taste of tobacco. More specifically, the combination of flavorings, the introduction of novel tobacco products, and deployment of predatory marketing has presented new public health threats in the form of increased initiation and sustained use of tobacco, particularly among certain vulnerable groups.

Contrary to popular beliefs, flavorings do not reduce the health impacts and risks associated with tobacco use, and are not safer than non-flavored tobacco products;²⁷¹ in fact, the literature suggests that flavored and mentholated tobacco products pose significant public health risks because they make these toxic tobacco substances more appealing and palatable upon use. There is also a

growing body of research which shows that these chemical flavorings and additives may present another level of exposure that has not been deemed safe for inhalation.

Furthermore, the literature shows that the tobacco industry has manipulated and marketed these flavor and menthol tobacco products to account for user preferences that skew younger, and reinforce sociocultural messages with priority populations. Research supports the finding that flavors and menthol tobacco products are “starter” products that establish daily habits and increase addiction to tobacco products, make it harder to quit, and increase use of multiple tobacco products concurrently.

Consumption of flavored tobacco products such as cigars, smokeless tobacco, hookah tobacco, and liquid nicotine solutions (used in electronic smoking devices) have increased in recent years, while menthol cigarettes continue to corner a large part of the U.S. cigarette market. Strong evidence supports the finding that youth, certain racial/ethnic groups, and other targeted priority populations (i.e., LGBT and women) are particularly vulnerable to sweet flavors and menthol, and are largely driving this increased uptake and sustained use of flavored tobacco products.

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