



## Tobacco Flavoring

### THE HISTORY AND WHERE WE ARE NOW

In 2009, the Family Smoking Prevention and Tobacco Control Act gave the U.S Food and Drug Administration the authority to regulate tobacco products, including cigarettes, cigarette tobacco, roll-your-own tobacco, and smokeless tobacco.<sup>1</sup> The bill also banned the sale of flavored cigarettes, except for menthol. In 2016, the FDA extended its regulatory authority to all “tobacco products” including electronic cigarettes and other electronic nicotine delivery systems (ENDS), cigars, hookah, pipe tobacco, nicotine gels, dissolvables not already subject to regulation, and other products that might meet the definition of “tobacco product” in the future.<sup>1</sup>

FDA has only just begun to take steps to regulate these newer products -- over 15,000 different e-cigarette flavors currently exist in the marketplace leading to an epidemic of youth use, and relatively few studies have been conducted to investigate the safety and inhalation toxicity for flavored products.<sup>2</sup> In January 2020, the FDA issued guidance that removed some flavored cartridge-based electronic nicotine delivery systems (ENDS) from the market. However, the policy failed to include menthol- or tobacco-flavored cartridge-based e-cigarettes, any flavored disposable e-cigarettes, and e-liquids used in refillable, open tank systems.

Menthol is one of the most common flavor additives used in cigarettes and other tobacco products, accounting for 36% of the cigarette market in the U.S in 2018 and an increase in sales from 10.7% to 61.% among prefilled e-cigarette cartridges in 2020.<sup>3,4</sup> A 2013 FDA analysis concluded that menthol cigarettes may increase youth initiation, and there has been great scientific debate on the role of menthol in nicotine dependence and cessation..<sup>5</sup> The use of menthol cigarettes is particularly prevalent among youth adults and African Americans. An estimated 85.8% of African American smokers and 46% Hispanic smokers smoke menthol cigarettes in comparison to 28.7% of White smokers.<sup>6</sup> African American and Hispanic communities are heavily targeted by tobacco companies, which may be a contributing factor to the high tobacco-related morbidity and mortality rates in these communities.<sup>7</sup>



Tobacco companies have focused heavily on flavorings because they know that’s what attracts a new generation of users. Research shows that flavoring, regardless of the tobacco product, increases the appeal to youth and adults. Many young adults perceive hookah as a safer alternative to cigarettes, offering a “smoother” experience due to the flavoring and the smoking techniques.<sup>8</sup> This newly growing market of flavored tobacco products has become a pressing public health crisis as epidemic-levels of youth tobacco users are set up for a lifetime addiction.

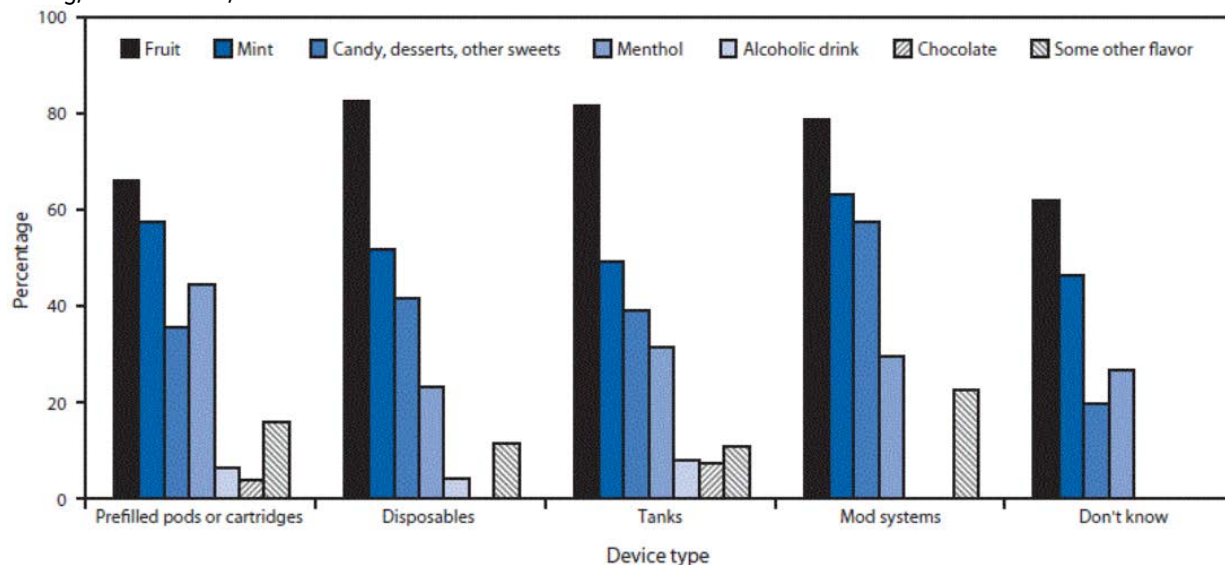
### OVERVIEW

Despite the success of tobacco prevention and cessation programs, tobacco use is still highly prevalent among youth and adult populations. A decrease in cigarette smoking among youth has coincided with an increase in the use of e-cigarettes and other flavored tobacco products.<sup>9</sup> The 2016 Surgeon General Report on e-cigarettes concluded that flavors are among the most commonly cited reasons for using e-cigarettes among youth and young adults.<sup>10</sup> One national study found that younger age was a significant predictor of flavored tobacco product use.<sup>11</sup> The increased appeal of e-cigarettes and other tobacco products has been popularized by the marketing and promotion of “fun, enticing” flavorings to youth and also to adults looking for nicotine alternatives to cigarettes.

- Results from the 2020 National Youth Tobacco Survey indicated that one in five high school students and one in 20 middle school students report current use of e-cigarettes.<sup>12</sup>
- Fruit (73.1%), mint (55.8%), menthol (37.0%), and candy/desserts (36.4%) are the most popular flavors reported among high school users of e-cigarettes.<sup>12</sup>

- Fruit (75.6%), candy/desserts (47.2%), mint (46.5%), and menthol (23.5%) are the most used flavors reported among middle school users of e-cigarettes.<sup>12</sup>
- Between 2019 to 2020, disposable e-cigarettes increased significantly among current e-cigarette high school users (2.4% to 36.5%) and current middle school e-cigarette users (3.0% to 15.2).<sup>12</sup>
- 81% of youth who had ever used a tobacco product started with a flavored product.<sup>13</sup>
- Among current tobacco youth product users, 64.1% report use of a flavored tobacco product in 2018.<sup>14</sup>

Percentage of flavor types by current e-cigarette users among middle and high school students by device type using the National Tobacco Survey, United States, 2020<sup>12</sup>



## ANTICIPATED HEALTH RISKS

As individuals become increasingly addicted to flavored tobacco products there have been significant reports of severe respiratory illnesses and hospitalizations among youth and adults with use of e-cigarette products.<sup>15</sup> Commonly added sugars to burley tobacco can lead to an increase in toxicants in tobacco smoke that are hazardous to the respiratory tract.<sup>16</sup> Emerging studies have found that short-term exposure to aerosolized flavorings in e-cigarettes can have damaging effects on the regulation of blood vessel function due to their effects on endothelial cells which is a risk factor for cardiovascular disease.<sup>2,17</sup>

Due to the widespread popularity of e-cigarettes and the use of menthol in all tobacco products, users are now inhaling large quantities of flavoring chemicals over extended periods of times. The use of flavored cigars, hookah, and flavored smokeless tobacco have all contributed to the increased use of tobacco and nicotine products. Little is known about the adverse health effects associated with flavored tobacco products; therefore it is important for adults to use extreme caution when using these tobacco products, and youth should not use them at all.

## THE ASSOCIATION ADVOCATES

The American Heart Association advocates for the elimination of all characterizing flavors other than tobacco from all tobacco products. The removal of all flavorings from tobacco products is necessary to reduce appeal to youth and adults. AHA is committed to ending tobacco and nicotine addiction in the U.S. Restricting flavors in all tobacco products should be a priority in achieving the tobacco endgame.

## KEY TIPS/MESSAGES

- People who never smoked traditional cigarettes cite flavors as a reason they began using e-cigarettes.
- The easy availability of menthol cigarettes, flavored cigars, flavored hookah and youth friendly e-cigarette flavors is causing an increase in youth use of epidemic proportion.
- The removal of all characterizing flavors from all tobacco products is essential for reducing their appeal to youth.

- Menthol cigarettes are heavily marketed to African American smokers, 85.8% of whom use menthol products. Menthol is also popular with Latinos, 46% of whom use menthol products.<sup>6</sup> Among youth who currently used any type of e-cigarettes, 37% of high school users and 23.5% of middle school users use menthol flavored e-cigarettes.<sup>12</sup> Removal of menthol from tobacco products is essential to reduce the use of tobacco among youth and communities historically targeted by the tobacco industry.

## References

1. U.S Department of Health and Human Services Food and Drug Administration. Regulation of Flavors in Tobacco Products. March 21, 2018. <https://www.federalregister.gov/documents/2018/03/21/2018-05655/regulation-of-flavors-in-tobacco-products> Accessed September 30, 2019.
2. Bhatnagar A, Whitsel LP, Blaha MJ, et al. "New and Emerging Tobacco Products and the Nicotine Endgame: The Role of Robust Regulation and Comprehensive Tobacco Control and Prevention: A Presidential Advisory From the American Heart Association." *Circulation*. 2019;139(19). doi:10.1161/cir.0000000000000669.
3. U.S. Federal Trade Commission (FTC), Cigarette Report for 2018 pdf icon [PDF–281 KB]external icon. Washington: Federal Trade Commission, 2019 [accessed 2020 Apr 17].
4. Ali FRM, Diaz MC, Vallone D, et al. E-cigarette Unit Sales, by Product and Flavor Type — United States, 2014–2020. *MMWR Morb Mortal Wkly Rep* 2020;69:1313–1318. DOI: <http://dx.doi.org/10.15585/mmwr.mm6937e2>
5. U.S. Food and Drug Administration . Preliminary Scientific Evaluation of the Possible Public Health Effects of Menthol versus Nonmenthol Cigarettes. Silver Spring, MD: Center for Tobacco Products, Food and Drug Administration; 2013
6. U.S Department of Health and Human Services Food and Drug Administration. Menthol and Other Flavors in Tobacco Products. July 20, 2018. <https://www.fda.gov/tobacco-products/products-ingredients-components/menthol-and-other-flavors-tobacco-products>. Accessed October 14, 2020
7. Sterling K, Fryer C, Pagano I, et al. Association between menthol-flavoured cigarette smoking and flavoured little cigar and cigarillo use among African-American, Hispanic, and white young and middle-aged adult smokers. *Tobacco Control* 2016;25:ii21-ii31.
8. Sterling KL, Fryer CS, Majeed B, Duong MM. Promotion of waterpipe tobacco use, its variants and accessories in young adult newspapers: a content analysis of message portrayal. *Health Educ Res*. 2015;30(1):152–161. doi:10.1093/her/cyu035
9. Tsai J, Walton K, Coleman BN, et al. Reasons for Electronic Cigarette Use Among Middle and High School Students — National Youth Tobacco Survey, United States, 2016. *MMWR Morb Mortal Wkly Rep* 2018;67:196–200. DOI: <http://dx.doi.org/10.15585/mmwr.mm6706a5external icon>
10. HHS, E-Cigarette Use Among Youth and Young Adults. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2016.
11. Villanti AC, Richardson A, Vallone DM, Rath JM. Flavored Tobacco Product Use Among U.S. Young Adults. *American Journal of Preventive Medicine*. 2013;44(4):388–391. doi:10.1016/j.amepre.2012.11.031.
12. Wang TW, Neff LJ, Park-Lee E, Ren C, Cullen KA, King BA. E-cigarette Use Among Middle and High School Students — United States, 2020. *MMWR Morb Mortal Wkly Rep*. ePub: 9 September 2020. DOI: <http://dx.doi.org/10.15585/mmwr.mm6937e1external icon>
13. Villanti AC, Johnson AL, Ambrose BK, Cummings KM, Stanton CA, Rose SW, Feirman SP, Twestre C, Glasser AM, Pearson JL, Cohn AM, Conway KP, Niaura RS, Bansal-Travers M and Hyland A. Flavored Tobacco Product Use in Youth and Adults: Findings From the First Wave of the PATH Study (2013–2014). *Am J Prev Med*. 2017;53:139–151.
14. Cullen KA, Liu ST, Bernat JK, et al. Flavored Tobacco Product Use Among Middle and High School Students — United States, 2014–2018. *MMWR Morb Mortal Wkly Rep* 2019;68:839–844. DOI: <http://dx.doi.org/10.15585/mmwr.mm6839a2>
15. Schier JG, Meiman JG, Layden J, et al. Severe Pulmonary Disease Associated with Electronic-Cigarette-Product Use — Interim Guidance. *MMWR Morb Mortal Wkly Rep*. ePub: 6 September 2019. DOI: <http://dx.doi.org/10.15585/mmwr.mm6836e2external icon>
16. Cheah, et al. Effect of Adding Sugar to Burley Tobacco on the Emission of Aldehydes in Mainstream Tobacco Smoke. *Tobacco Regulatory Science*. 2018; 4(2): 61–72.
17. Lee, W., Ong, S., Zhou, Y., Tian, L., Bae, H., Baker, N., et al. (2019). Modeling Cardiovascular Risks of E-Cigarettes With Human-Induced Pluripotent Stem Cell-Derived Endothelial Cells. *Journal of the American College of Cardiology*, 73(21), 2722–2737. <http://dx.doi.org/10.1016/j.jacc.2019.03.476> Retrieved from <https://escholarship.org/uc/item/0th760sk>