

# TOBACCO FLAVOR BANS ARE CRITICAL FOR TOBACCO CONTROL

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## 1. FLAVORED TOBACCO PRODUCTS CONTRIBUTE TO HEALTH DISPARITIES AMONG YOUTH AND MINORITY GROUPS.

- i. The use of flavored tobacco products, including e-cigarettes, in youth is associated with later cigarette smoking<sup>1,2</sup>
- ii. Menthol flavors have historically been marketed to Black communities,<sup>3</sup> and it is the only cigarette flavor not previously banned by the FDA.<sup>4</sup> This contributes to tobacco-related health disparities in communities of color.<sup>5</sup>

## 2. TOBACCO FLAVOR BANS, LIKE THE ONE IMPLEMENTED IN SAN FRANCISCO IN 2019, CAN PROTECT YOUTH AND OTHER AT-RISK COMMUNITIES THAT ARE TARGETED BY MARKETING FOR FLAVORED TOBACCO PRODUCTS.

- i. Early concerns that flavor bans would increase conventional cigarette use<sup>6</sup> have been shown to be unfounded.<sup>7</sup>
- ii. An analysis of the Youth Risk Behavior Surveillance System (YRBSS) shows that cigarette use did not significantly increase in the period prior to the ban.
- iii. Those at greatest risk of cigarette were those who were using e-cigarettes. Youth using e-cigarettes were almost 12 times as likely to also smoke cigarettes compared to youth who did not use e-cigarettes.

## 3. MEASURES OF TOBACCO RETAIL SALES AFTER THE SAN FRANCISCO FLAVOR BAN SHOWED THAT BOTH FLAVORED TOBACCO PRODUCTS AND CONVENTIONAL CIGARETTE PURCHASES DECREASED<sup>8</sup>

- i. This indicates that those who used flavored tobacco did NOT switch to conventional cigarettes after the ban.

## 4. SURVEY DATA ALSO SHOWS THERE WAS NO SIGNIFICANT INCREASE IN CONVENTIONAL CIGARETTE USE AFTER THE IMPLEMENTATION OF FLAVOR BANS.

- i. After a partial flavor ban in Oakland in 2018, rates of both e-cigarettes and conventional cigarette use decreased among youth.<sup>7</sup>
- ii. A smaller survey of young adults in San Francisco showed that there was no significant change in cigarette smoking rates after the 2019 ban.<sup>9</sup>



**5. THE PROPOSED FDA BAN ON FLAVORED TOBACCO PRODUCTS IS AN IMPORTANT STEP FORWARD IN TOBACCO CONTROL, HOWEVER, THE BAN DOES NOT ADDRESS E-LIQUIDS FOR E-CIGARETTES.<sup>10</sup> A COMPREHENSIVE BAN LIKE THAT IN SAN FRANCISCO COULD BETTER PROTECT AT-RISK GROUPS.**

- i. The proposed FDA flavor ban will restrict the sale of menthol cigarettes and flavored cigars, which closes a gap in a prior flavor ban that excluded menthol cigarettes. This may reduce tobacco-related health disparities in communities where these products are marketed, specifically Black communities.<sup>3</sup> However, youth drawn to flavored e-cigarette products are still at risk.

### OVERVIEW

Tobacco flavor restrictions have been pursued at the local government,<sup>11</sup> state,<sup>12</sup> and now national level.<sup>10</sup> Tobacco control advocates have pursued these bans with the intention of 1) preventing the initiation of youth smokers and 2) addressing racial disparities in smoking related disease.<sup>5</sup>

The use of flavored tobacco products in youth is associated with later tobacco smoking,<sup>1,2</sup> raising concerns that flavors provide an attractive entry point to nicotine addiction. Additionally, flavored cigarettes have been restricted since 2009,<sup>4</sup> with the notable exception of menthol flavors. Menthol flavors have been historically marketed to Black communities and contribute to tobacco-related health disparities.<sup>3</sup> A ban on tobacco flavors may mitigate these issues, however, the few policies that have been adopted are relatively new, and so longitudinal follow-up is limited.

### FLAVOR BAN POLICY AND CONTROVERSY IN SAN FRANCISCO

In 2019, San Francisco implemented a comprehensive tobacco flavor ban that applied to all flavored tobacco products.<sup>13</sup> This ban was not the first,<sup>7</sup> nor the last,<sup>14</sup> that had been passed, but is of unique interest to the research community because of its scale and its scope. Some flavor ban policies allow for exceptions for menthol products or e-liquids, but San Francisco's ban is all encompassing. While some tobacco control advocates celebrated the ban as a win for public health,<sup>11</sup> others expressed some concern that the ban may increase the use of cigarettes once flavored nicotine products were no longer available.<sup>15</sup> An early analysis of data from San Francisco seemed to substantiate this latter concern, and provided the foundations for arguments against flavor bans in ongoing policy debates.<sup>16,17</sup> However, methodological errors in that study render the findings moot, and further analysis indicates that flavor bans reduce, not increase, smoking.

Using the Youth Risk Behavior Surveillance System (YRBSS),<sup>18</sup> a nationally representative youth dataset, researchers conducted a difference-in-difference analysis to compare smoking rates of high school age students in San Francisco in the 2019 dataset to same age students in a handful of other school districts. In 2019, youth in San Francisco had over double the odds of cigarette use relative to comparable school districts in other parts of the country.<sup>6</sup> While rates of cigarette use in San Francisco were greater among youth in the 2019 YRBSS dataset relative to the other county school districts in the analyses, there are several reasons to doubt that the flavor ban was the cause of this difference.<sup>19-21</sup> The primary concerns about these findings are two-fold: 1) the author argues that teens turn to cigarettes after access to flavored e-cigarettes is restricted, and yet data on e-cigarettes was not included in the analyses; and 2) the 2019 YRBSS youth data in San Francisco was collected in the fall of 2018, prior to the flavor ban.<sup>7</sup> This essential detail was not apparent in the dataset documentation, and was only confirmed via direct follow-up with the CDC.<sup>7</sup> This error is not the fault of the author, but should temper any conclusions that can be drawn from these analyses.



Despite the fact that the data collection for the YRBSS dataset occurred prior to the San Francisco flavor ban, the YRBSS data can help us examine two questions not addressed in the original study: 1) When accounting for e-cigarette use, are cigarette rates significantly greater in San Francisco in 2019 compared to previous years, relative to the other counties in the sample and 2) When accounting for e-cigarette use, are cigarette use rates significantly greater in San Francisco in 2019 compared to previous years in San Francisco alone?

To answer these questions, we replicated the methodology of the original study exactly, only adding the e-cigarette use variables that were originally excluded. Because e-cigarette use data was only collected starting in 2015, our useable data was more limited than the original study, who analyzed cigarette use trends starting in 2011.<sup>6</sup> However, we were still able to conduct comparable difference-in-difference analyses with the same reference counties (Los Angeles, California; San Diego, California; Broward County, Florida; Orange County, Florida; Palm Beach County, Florida; New York City, New York; and Philadelphia, Pennsylvania) to analyze trends in cigarettes use.

Smoking rates were greater in San Francisco relative to other counties in 2019, however, smoking rates prior to 2019 were greater as well (See Table 1). When looking at San Francisco alone, we see that there was no significant difference in smoking rates among non-e-cigarette users between 2019 and the previous years (See Table 2). In both sets of analyses, e-cigarette use was associated with significantly greater odds in cigarette smoking. These findings show that not only is e-cigarette use highly associated with cigarette use, but also shows that the impending ban did not increase cigarette use rates in San Francisco.

**Table 1.** Past 30-Day Cigarette use In San Francisco Relative to Other Counties

Variable	Odds Ratio	Standard Error	95% Confidence Interval	P
Prior to 2019				
San Francisco	1.59	0.22	1.21 - 2.08	0.0001
Other Counties	ref.	ref.	ref.	ref.
2019				
San Francisco	1.53	0.25	1.11 - 2.11	0.010
Other Counties	0.55	0.05	0.46 - 0.67	< 0.001
Covariates				
Prior E-cigarette Use	11.95	1.77	8.93 - 16.00	< 0.001
Age	1.20	0.06	1.08 - 1.32	0.001
Race / Ethnicity				
White	ref.	ref.	ref.	ref.
Black or African American	0.21	0.04	0.15 - 0.31	< 0.001
Hispanic / Latino	0.49	0.06	0.39 - 0.62	< 0.001
All Other Races	0.62	0.08	0.48 - 0.80	< 0.001

**Table 2.** Past 30-Day Cigarette use In San Francisco Alone

Variable	Odds Ratio	Standard Error	95% Confidence Interval	P
Prior to 2019				
No Prior E-Cig Use	ref.	ref.	ref.	ref.
Prior E-Cig Use	10.29	2.40	6.50 - 16.29	< 0.001
2019				
No Prior E-Cig Use	1.32	0.42	0.71 - 2.46	0.379
Prior E-Cig Use	9.03	2.47	5.27 - 15.49	< 0.001
Covariates				
Age	1.13	1.14	0.88 - 1.45	0.331
Race / Ethnicity				
White	ref.	ref.	ref.	ref.
Black or African American	0.32	0.14	0.13 - 0.77	0.006
Hispanic / Latino	0.49	0.13	0.30 - 0.81	0.006
All Other Races	0.62	0.08	0.48 - 0.80	< 0.001

### FLAVOR BANS REDUCE TOBACCO PURCHASING

Outside the YRBSS dataset, there is emerging evidence supporting flavor bans that comes directly from the retail sector. The retail marketplace in San Francisco was almost immediately and thoroughly compliant with the flavor ban in 2019.<sup>23</sup> After this ban, flavored tobacco sales decreased by 96% and all tobacco sales decreased by 25%.<sup>8</sup> This does not support the narrative that cigarette use increased in response to flavor restrictions.

The reduction in flavored tobacco use is also supported by findings in nearby Oakland. Prior to 2019, Oakland enacted a partial flavor ban that restricted the sale of menthol cigarettes outside of dedicated tobacco shops. Researchers found that after the ban, menthol packaging and related trash were centered around these exempt retailers, but were less prevalent the further away from these exempt areas.<sup>24</sup> One interpretation of this finding is that the restrictions on menthol sales reduced its availability and use. However, these findings are also cautionary. The exempt tobacco shops were largely in Black communities where menthol is already prevalent, and so menthol-related refuse was centered in these communities of color.<sup>24</sup> If we hope to reduce tobacco use in at-risk communities, comprehensive bans like those in San Francisco may be more effective.

### FLAVOR BANS DO NOT INCREASE YOUTH SMOKING

It is largely accepted that flavored tobacco products are attractive to youth, and that these products may lead to later cigarette use.<sup>1,2</sup> Preventing e-cigarette initiation is one primary goal of flavor bans, but it is not the only goal. E-cigarette use is high among youth, and we do not want to push youth to switch to cigarettes by taking away flavored tobacco products.



However, this concern is not supported by the available evidence. Because Oakland's partial flavor ban started prior to San Francisco, one researcher looked at the YRBSS dataset for Oakland to determine if youth rates of cigarette use changed after the policy initiated. The data showed that both e-cigarette and cigarette use decreased among the youth population.<sup>7</sup> A limited survey of young adults in San Francisco after the ban did not show a decrease in cigarette use, but also did not show a significant increase in cigarette use.<sup>9</sup> There is simply no evidence to support that flavor bans increase cigarette use, instead the evidence suggests that the bans are working to improve public health.

### CONCLUSION

Despite early evidence cautioning against flavor bans, emerging evidence shows that flavor bans do not increase conventional cigarette use. A reduction in tobacco use may help reduce health disparities among populations who have been targeted with flavored tobacco products, such as Black Americans and youths. The upcoming FDA federal ban on menthol cigarettes and flavored cigars<sup>10</sup> is an important step forward to reducing tobacco use, but the above evidence shows that we may need to go further. Gaps in Oakland's partial flavor ban left Black communities at risk,<sup>24</sup> and gaps in federal policy that do not restrict the sale of flavored e-liquids could leave our youth vulnerable. The evidence does not support the fear that bans could increase conventional cigarette use, and instead shows that comprehensive flavor bans have the potential to improve public health by reducing tobacco use.



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