

EVALUATING FLAVORED TOBACCO SALES RESTRICTIONS

A Literature Review



As states and localities consider policies to reduce the use of commercial tobacco* products – particularly by youth – and to limit the disparate health impact of tobacco use on priority populations, interest in evidence-based studies on the effectiveness of sales restrictions has grown.

Following is a select compilation of recent studies as of 2022 on the impact of policies that restrict or prohibit the sales of flavored tobacco products in U.S. communities and other countries. The entries also include brief summaries of study findings and occasional recommendations.



* The Public Health Law Center recognizes that traditional and commercial tobacco are different in the ways they are planted, grown, harvested, and used. Traditional tobacco is and has been used in sacred ways by Indigenous communities and tribes for centuries. In comparison, commercial tobacco is manufactured with chemical additives for recreational use and profit, resulting in disease and death. For more information, visit <http://keepitsacred.itcmi.org>. When the word “tobacco” is used throughout this document, a commercial context is implied and intended.

- **Abigail S. Friedman**, *A Difference-in-Differences Analysis of Youth Smoking and a Ban on Sales of Flavored Tobacco Products in San Francisco, California*, 175 JAMA PEDIATRICS 863 (2021), <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2780248>. This study analyzed youth smoking rates after the flavored tobacco ban took effect in San Francisco. Data revealed that self-reported smoking rates among high school students actually increased.
 - **But see: Stanton Glantz**, *Study Claiming SF Flavor Ban Increased Youth Smoking Dissolves; It is Not Based on any Data Collected After Enforcing the Ban* (2022), <https://profglantz.com/2022/03/21/study-claiming-sf-flavor-ban-increased-youth-smoking-dissolves-it-is-not-based-on-any-data-collected-after-enforcing-the-ban>. This article rebuts the findings in the *JAMA Pediatrics* paper, claiming the data in the study cannot be used to assess the impact of enforcing a ban on the sale of flavored tobacco products because none of the data were collected from youth while a flavor ban was actually being enforced.
- **Alex C. Liber et al.**, *A Bite-Style Model to Evaluate Poland's Menthol Cigarette Ban* (Working Paper), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3946277. This study evaluated the impact of the menthol ban in Poland. Researchers found only a small reduction in overall tobacco consumption and an increase in non-menthol cigarette sales. However, total cigarette sales did decrease in areas with higher menthol usage rates pre-ban.
- **Anne-Line Brink et al.**, *Tobacco Companies' Exploitation of Loopholes in the EU Ban on Menthol Cigarettes: A Case Study from Denmark*, TOBACCO CONTROL (2022), <https://tobaccocontrol.bmj.com/content/tobaccocontrol/early/2022/03/20/tobaccocontrol-2021-057213.full.pdf>. In attempting to explain why the menthol ban in Denmark was less successful than expected, this study explored the various ways that tobacco companies exploited loopholes in the ban. The researchers recommend that menthol bans should cover menthol and similar flavors in all amounts and cover all tobacco products to be most effective.
- **Christine Kyriakos et al.**, *Impact of the European Union's menthol cigarette ban on smoking cessation outcomes: Longitudinal findings from the 2020-2021 ITC Netherlands Surveys*, *Tobacco Control*, TOBACCO CONTROL Published Online (Sept. 2022). doi: [10.1136/tc-2022-057428](https://doi.org/10.1136/tc-2022-057428). The European Union (EU) banned menthol as a characterizing flavor in cigarettes in May 2020. This pre/post-study evaluated the impact of the menthol ban on smoking cessation outcomes among a representative cohort of Dutch smokers. The EU menthol ban was effective in reducing menthol use and in increasing quit attempts and quitting among pre-ban menthol smokers. Higher levels of post-ban quitting were also observed; however, when accounting for other factors, this was only significant among women and those with moderate income. Impact could be maximized by closing gaps that allow post-ban menthol cigarette use.

- **Christopher J. Cadham et al.**, *The Actual and Anticipated Effects of a Menthol Cigarette Ban: A Scoping Review*, 20 BMC PUB. HEALTH 1055 (2020), <https://bmcpublikealth.biomedcentral.com/articles/10.1186/s12889-020-09055-z>. This study applied the results of an international literature review of the impact of menthol bans to estimate the impact of a menthol ban in the United States. Under a ban, the study projects between 25 and 64 percent of U.S. smokers would attempt to quit and initiation would be reduced by 6 percent.
- **Christopher Carpenter & Hai V. Nguyen**, *Intended and Unintended Effects of Banning Menthol Cigarettes* (Nat'l Bureau Econ. Rsch., Working Paper, Paper No. 26811), <http://www.nber.org/papers/w26811>. This working paper uses provincial sales data to analyze the impact of Canada's menthol ban, finding that the ban significantly reduced cigarette smoking among adults and youth. The paper also discusses issues that may make a menthol ban less effective, including substitution of products and travel to jurisdictions without sales restrictions.
- **David T. Levy et al.**, *An Expert Elicitation on the Effects of a Ban on Menthol Cigarettes and Cigars in the United States*, 23 NICOTINE & TOBACCO RSCH. 1911 (2021), <https://academic.oup.com/ntr/article-abstract/23/11/1911/6294188>. The authors elicited information from eleven tobacco experts to gauge the impact of a menthol cigarette and cigar ban in the United States. They estimate that a ban would substantially reduce smoking initiation and tobacco product use among menthol smokers.
- **David T. Levy et al.**, *Public Health Impact of a US Ban on Menthol in Cigarettes and Cigars: A Simulation Study*, TOBACCO CONTROL (2021), <https://tobaccocontrol.bmj.com/content/early/2022/04/13/tobaccocontrol-2021-056604>. Simulating the effects of a national menthol ban, this study found that overall smoking would decline by 15 percent in as little as five years, resulting in 650,000 lives saved by 2060.
- **Doris G. Gammon et al.**, *Implementation of a Comprehensive Flavoured Tobacco Product Sales Restriction and Retail Tobacco Sales*, TOBACCO CONTROL (2021), <https://tobaccocontrol.bmj.com/content/early/2021/06/03/tobaccocontrol-2021-056494>. This study compared flavored tobacco sales in San Francisco post-ban to two California cities without flavor bans. Average weekly flavored tobacco sales decreased by 96 percent in San Francisco, while the rate did not change in San Jose and fell by only 10 percent in San Diego.
- **Elizabeth M. Brown et al.**, *Changes in Retail Sales of Tobacco Products in Ontario After a Menthol Sales Restriction*, TOBACCO CONTROL (2021), <https://tobaccocontrol.bmj.com/content/early/2021/07/12/tobaccocontrol-2021-056489>. This study measured retail sales data of menthol cigarettes and potential substitutes before and after the menthol ban in Ontario, finding a decrease of 93 percent in sales of menthol products.

- **Eric K. Soule et al.**, *Smoking Cessation Strategies Used by Former Menthol Cigarette Smokers After a Menthol Ban*, 123 ADDICTIVE BEHAVS. 107046 (2021), https://www.sciencedirect.com/science/article/abs/pii/S0306460321002318?casa_token=8ucXmMAvkGwAAAAA:qC1Bj8MdWDJjcHyoNtnab2a7XKBL7D8LngqrkRxUTZWF_ztP7tAhMNN5FfTHWDoTNLXO07r9pQ. This study analyzed how menthol smokers in Ontario, Canada responded to the menthol ban. The study found that the ban did help menthol smokers quit; specifically, 30.7 percent of pre-ban menthol smokers reported that the ban helped with cessation.
- **Geoffrey T. Fong et al.**, *Impact of Canada's Menthol Cigarette Ban on Quitting Among Menthol Smokers: Pooled Analysis of Pre-Post Evaluation from the ITC Project and the Ontario Menthol Ban Study and Projections of Impact in the USA*, TOBACCO CONTROL (2022), <https://tobaccocontrol.bmj.com/content/early/2022/04/27/tobaccocontrol-2021-057227>. This study used data on quitting after the Canadian menthol ban to estimate the impact in the United States. An estimated 789,724 daily smokers are projected to quit if the United States banned menthol nationally.
- **Geoffrey T. Fong et al.**, *The Impact of Canada's Menthol Cigarette Ban on Quitting Among Menthol Smokers and Projections of Impact in the European Union: Findings from the ITC Project*, 7 TOBACCO PREVENTION & CESSATION 44 (2021), <http://www.tobaccopreventioncessation.com/The-Impact-of-Canada-s-Menthol-Cigarette-Ban-on-Quitting-Among-Menthol-Smokers-and,143653,0,2.html>. This study used data on quitting and quit attempts after the Canadian menthol ban to predict the impact of a menthol ban in the EU. In Canada, quit attempts increased by 9.7 percent and quitting by 7.5 percent post-ban. If the impact in the EU were equal to the impact in Canada, the researchers predicted an additional 627,661 quitters in the EU with a menthol ban.
- **Janet Chung-Hall et al.**, *Evaluating the Impact of Menthol Cigarette Bans on Cessation and Smoking Behaviours in Canada: Longitudinal Findings from the Canadian Arm of the 2016-2018 ITC Four Country Smoking and Vaping Surveys*, 31 TOBACCO CONTROL 556 (2022), <https://tobaccocontrol.bmj.com/content/tobaccocontrol/31/4/556.full.pdf>. This study surveyed smokers in seven Canadian provinces prior to and after menthol cigarette bans. A menthol ban was associated with higher rates of quit attempts and quit success among menthol smokers.
- **Jessica Liu et al.**, *Youth Tobacco Use Before and After Flavoured Tobacco Sales Restrictions in Oakland, California and San Francisco, California*, TOBACCO CONTROL (2022), <https://tobaccocontrol.bmj.com/content/early/2022/08/24/tobaccocontrol-2021-057135corr1>. This study analyzed the impact of Oakland and San Francisco's respective flavored tobacco bans on youth tobacco use. The study found that youth smoking and vaping declined in Oakland and flavored tobacco sales decreased in San Francisco.

- **Joseph R. Gudyish et al.**, *Menthol Cigarette Use in Substance Use Disorder Treatment Before and After Implementation of a County-Wide Flavoured Tobacco Ban*, 30 TOBACCO CONTROL 616 (2021), <https://tobaccocontrol.bmj.com/content/30/6/616>. This study looked specifically at the impact of San Francisco's menthol ban on menthol use among people with substance use disorders. While the ban did not impact the number of cigarettes smoked per day or the readiness to quit, the rates of menthol usage in this population did decrease.
- **Katherine A. East et al.**, *Evaluating the Outcomes of the Menthol Cigarette Ban in England by Comparing Menthol Cigarette Smoking Among Youth in England, Canada, and the US, 2018–2020*, 5 JAMA NETWORK OPEN e2210029 (2022), <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791805>. This study compared menthol smoking rates in Canada (in which a menthol ban had already been implemented), England (in which a menthol ban was implemented during the study), and the United States (in which there is no ban) to analyze the impacts of menthol bans. The study found that smoking rates decrease significantly when a ban is implemented and continue to decrease over time.
- **Krzysztof Przewoźniak et al.**, *Effects of and Challenges to Bans on Menthol and Other Flavors in Tobacco Products*, 7 TOBACCO PREVENTION & CESSATION 68 (2021), <http://www.tobaccopreventioncessation.com/pdf-143072-69745?filename=Effects%20of%20and%20challenges.pdf>. This paper makes recommendations for future menthol bans based on the success of other bans. These recommendations are to: include all tobacco products and accessories in the bans, accelerate implementation, and provide smoking cessation programs and campaigns.
- **Lauren Czaplicki et al.**, *Compliance with the City of Chicago's Partial Ban on Menthol Cigarette Sales*, 28 TOBACCO CONTROL 161 (2018), <https://tobaccocontrol.bmj.com/content/28/2/161>. This study analyzed compliance with the City of Chicago's ban on menthol cigarette sales within 500 feet of a school. Overall compliance was 57 percent and gas stations were most likely to continue selling menthol.
- **Linda M. Bosma et al.**, *Restricting Sales of Menthol Tobacco Products: Lessons Learned from Policy Passage and Implementation in Minneapolis, St. Paul, and Duluth, Minnesota*, 5 HEALTH EQUITY 439 (2021), <https://www.liebertpub.com/doi/epdf/10.1089/heq.2020.0137>. This study examined menthol bans in Minnesota localities to determine best practices for future bans. The authors found that policies were stronger when they had support from politicians, involved leadership from the community, incorporated community awareness-building campaigns, and were tailored to preempt tobacco industry tactics.
- **Melody Kingsley et al.**, *Impact of Massachusetts' Statewide Sales Restriction on Flavored and Menthol Tobacco Products on Tobacco Sales in Massachusetts and Surrounding States, June 2020*, 112 AM. J. PUB. HEALTH 1147 (2022), <https://ajph-aphapublications-org.ezp3.lib.umn>.

[edu/doi/full/10.2105/AJPH.2022.306879](https://doi/full/10.2105/AJPH.2022.306879). Using tobacco sales data from Massachusetts and surrounding states, this study analyzed the impact of Massachusetts comprehensive flavored tobacco ban. Sales in Massachusetts drastically decreased, with no notable increases in sales of any surrounding state.

- **Michael Chaiton et al.**, *Analysis of Wholesale Cigarette Sales in Canada After Menthol Cigarette Bans*, 4 JAMA NETWORK OPEN e2133673 (2021), <https://jamanetwork.com/journals/jamanetworkopen/article-abstract/2785881>. This study evaluated the change in cigarette sales data across all Canadian provinces after the implementation of menthol cigarette bans. The bans were associated with significant reductions in menthol cigarette sales and total cigarette sales.
- **Michael Chaiton et al.**, *Evaluating a Real World Ban on Menthol Cigarettes: An Interrupted Time-Series Analysis of Sales*, 22 NICOTINE & TOBACCO RSCH. 576 (2019), <https://academic.oup.com/ntr/article/22/4/576/5385586>. Using wholesale data from tobacco manufacturers reported to Health Canada, as required by Canadian law, this study analyzed the impact of the menthol ban on tobacco sales. Post-ban sales dropped by 55 million menthol cigarettes and 128 million total cigarettes in Ontario alone.
- **Michael Chaiton et al.**, *Prior Daily Menthol Smokers More Likely to Quit 2 Years After a Menthol Ban Than Non-Menthol Smokers: A Population Cohort Study*, 23 NICOTINE & TOBACCO RSCH. 1584 (2021), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8500186>. This study examined quitting behavior among smokers two years after the Ontario menthol ban. The data show that pre-ban menthol smokers were more likely to quit than pre-ban non-menthol smokers.
- **Michael O. Chaiton et al.**, *Taking Global Leadership in Banning Menthol and Other Flavours in Tobacco: Canada's Experience*, 31 TOBACCO CONTROL 202 (2022), <https://tobaccocontrol.bmj.com/content/31/2/202>. This paper analyzes the Canadian menthol ban implementation and impact to suggest ways to improve bans in other jurisdictions.
- **Mona Issabakhsh et al.**, *The Public Health Impact of a US Menthol Cigarette Ban on the Non-Hispanic Black Population: A Simulation Study*, TOBACCO CONTROL (2022), <https://tobaccocontrol.bmj.com/content/early/2022/06/12/tobaccocontrol-2022-057298>. Using simulation data, this study projected that a national menthol ban would save 255,000 lives and 3.9 million life-years for non-Hispanic Black people over 40 years.
- **Priyanka Vyas et al.**, *Compliance with San Francisco's Flavoured Tobacco Sales Prohibition*, 30 TOBACCO CONTROL 227 (2021), <https://tobaccocontrol.bmj.com/content/30/2/227>. This study analyzed compliance data collected by the San Francisco Department of Public Health. Initial compliance with the flavor ban was low, but increased to 80 percent after inspections.

- **Samuel Asare et al.**, *Association of Cigarette Sales with Comprehensive Menthol Flavor Ban in Massachusetts*, 182 JAMA INTERNAL MED. 231 (2022), https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2787781?casa_token=y4YIW3rn6QQAAAAA:hPvOtEpcGy8EeNQMHsaqzApd05Oh5KvpMfUDUeJIED2AickrpB5bGX49NE_NAunYgLsjKOtZSA. This study compared cigarette sales data in Massachusetts after the state implemented a comprehensive flavor ban with sales data in other states. The study found that the ban was associated with a statistically significant decrease in menthol cigarette and total cigarette sales.
- **Todd Rogers et al.**, *A Comprehensive Qualitative Review of Studies Evaluating the Impact of Local US Laws Restricting the Sale of Flavored and Menthol Tobacco Products*, 24 NICOTINE & TOBACCO RSCH. 433 (2021), <https://academic.oup.com/ntr/article/24/4/433/6370828>. This is a literature review of the impact of flavored tobacco sales restrictions in jurisdictions throughout the United States. Flavor bans are associated with reduced availability, marketing, and sales of restricted products. However, policies are less effective if a ban has exemptions, implementation challenges, tobacco industry push-back, and cross-border purchasing.
- **Yan Li et al.**, *Assessing the Health and Economic Impact of a Potential Menthol Cigarette Ban in New York City: A Modeling Study*, 98 J. URB. HEALTH 742 (2021), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8688642>. This study simulated the impact of a menthol ban in New York City on cardiovascular disease. Over a twenty-year period, a ban would result in a 5 percent reduction in heart attacks, a 3.8 percent reduction in strokes, and over \$1.6 billion in cost savings. Most of these gains would be among women, particularly Black women.
- **Yong Yang et al.**, *The Impact of a Comprehensive Tobacco Product Flavor Ban in San Francisco Among Young Adults*, 11 ADDICTIVE BEHAV. REPS. 1 (2020), <https://www.sciencedirect.com/science/article/pii/S2352853220300134?via%3Dihub>. This study surveyed San Francisco residents to determine the impact of the city's flavored tobacco ban, finding that overall use of flavored tobacco products decreased.

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