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E-Cigarette Flavours: Theory, Evidence and Regulatory Policy

This Research News update provides an overview of recent work produced under a grant from Health Canada's Substance Use and Addictions Program (SUAP) on which OTRU is partnering with Physicians for Smoke Free Canada.

Executive Summary

This report focuses on options for e-cigarette flavour regulations. There are a range of regulatory policies regarding e-cigarette flavours that could curtail development of dependence and possible uptake of smoking by young non-smokers. In considering which regulatory policy options to pursue, it is important to consider their likely effects on both young non-smokers and adult smokers. This report outlines evidence, global practice and analysis of seven regulatory policy options regarding flavour restrictions.

Research Evidence Regarding the Effects of E-Cigarette Flavours

The 2018-19 Canadian Student Tobacco, Alcohol and Drugs Survey reported current e-cigarette use doubled (20%) among students in grade 7 to 12 since 2016-17, with prevalence highest among students in grade 10 to 12 (29%).¹ Forty percent of e-cigarette youth e-cigarette users reported daily use. E-cigarette dependence is of concern both as an endpoint and as a determinant of long-term, regular use and its associated potential harms.

The use of flavours in e-cigarettes has been associated with enticing youth users.² One study surveyed 13-17 year old youth and found that they were more likely to be interested in trying an e-cigarette from a friend if it were flavoured like menthol, candy, or fruit compared to tobacco, with users believing that e-cigarettes that were fruit-flavoured were less harmful than those with tobacco flavour.³ Further investigation has found that fruit, sweets, and beverage flavours



significantly increased the chances of 14-17 year old youth choosing e-cigarettes.⁴ Youth also tend to prefer sweet flavours compared to adults.⁵ A recent systematic review found that “adolescents could consider flavor the most important factor in their decision to try e-cigarettes and were more likely to initiate vaping through flavored e-cigarettes (especially fruit and sweet ones for non-smokers)”.⁶ Lastly, flavour used by Canadian youth in 2017 was fruit for 67.4%, candy for 16% and mint/menthol for 5%.⁷

Studies indicate that adult smokers increasingly prefer fruit, menthol/mint and sweet flavoured e-cigarettes over tobacco flavoured e-cigarettes.⁸

A systematic review did not find conclusive evidence of flavoured e-cigarettes contributing to smoking cessation.⁶

Jurisdictional Scan of E-Cigarette Flavour Regulations

Outlined in Table 1, flavour regulations can be separated into minor, major and comprehensive restrictions.

Table 1: Flavour Regulations

Level of Restriction	Jurisdiction
Minor restrictions	British Columbia, Canada North Dakota, US Northwest Territories, Canada Ontario, Canada Saskatchewan, Canada Yukon, Canada
Major restrictions	Michigan, US Montana, US New York, US Oregon, US Rhode Island, US Washington, US
Comprehensive restrictions	EU Member States Massachusetts, US New Jersey, US Nova Scotia, Canada



Canada

Federal legislation bans the promotion or labelling of confectionary, dessert, cannabis, soft drink and energy drink flavours, but not the actual flavours themselves. Under Canada's *Tobacco and Vaping Products Act* it is illegal to advertise vaping products' flavours that could appeal to youth. Health Canada, when announcing draft new e-cigarette promotion regulations, also stated in a Dec. 19, 2019 news release that "additional measures with respect to [...] additional flavour restrictions are being examined".⁹

Several provinces and territories have suggested or imposed stricter restrictions on flavoured e-cigarettes ([full report](#)).

The United States

In early 2020, the Food and Drug Administration released its [enforcement policy](#) aimed at unauthorized flavoured cartridge-based e-cigarettes that appeal to youth, including fruit and mint flavours.¹⁰ This enforcement policy, not an actual ban, aims at fruit, candy, mint and dessert flavors from small, cartridge-based e-cigarettes. It does not apply to menthol and tobacco-flavours and it does not apply to large, tank-based vaping devices. Nine US states regulate the flavours that can be used in e-cigarettes.¹¹

Other Jurisdictions

Some countries outside of the EU, US, and Canada have also taken steps to regulate flavoured e-cigarettes. For example, Moldova¹² and Bermuda¹³ ban flavours. States and territories in New Zealand ban fruit and confectionary flavoured e-cigarettes.¹³

Few studies have evaluated e-cigarette flavour restrictions. Assessment of their likely effects on decreasing e-cigarette use by young non-smokers and on decreasing e-cigarette use by smokers for cessation and for harm reduction must rely, for now, on extrapolating from restrictions on flavours in cigarettes and other tobacco products.

Little research has been published on the effectiveness of any of the direct dependence oriented regulatory policies.



Table 2 outlines seven policy options for regulating e-cigarette flavours. In deciding which e-cigarette flavour policy option to adopt, policymakers face a tension between wanting to prevent e-cigarette use by non-smoking youth and facilitating e-cigarette use for cessation and harm reduction by adults who smoke combustible cigarettes. A more comprehensive analysis, undertaken in the full report, assesses each policy option using four criteria: effect on nicotine use by youth and adults; technical feasibility, political viability; and alignment with international trade obligations.

Table 2: Regulatory Policy Options

	Effect on nicotine e-cigarette use by youth and adults	Technical Feasibility	Political Viability	Alignment with international trade obligations
Ban all flavours including menthol				
Ban flavours excluding menthol				
Ban flavours with additional exceptions (e.g. fruit + menthol)				
Ban flavours (as in a, b, c) in closed systems only				
Restrict flavours (as in a,b,c) to adult stores only				
Allow flavours only in medicinal products available to smokers				
Allow all flavours				

Ban All Flavours Including Menthol

There is research evidence, presented above, indicating that many smokers are attracted to e-cigarettes because of flavours. In addition, there is substantial evidence that flavours are highly important in youth initiation of e-cigarette use and there is evidence that restrictions on flavours in combustible cigarette products has led to decreased use. At the same time, it is not known definitively what proportion of smokers who would otherwise try, continue to use e-cigarettes or successfully quit smoking combustible cigarettes, would not do so in the absence of flavours. It is also not known definitively what proportion of them would not use e-cigarettes if flavours were not available. Notwithstanding the lack of conclusive evidence, what is known about the role of flavours in youth uptake of e-cigarettes, the rates of successful cessation of adult smokers who use e-cigarettes and lessons from tobacco flavour bans, there is a strong



likelihood that banning non-tobacco e-cigarette flavours would substantially reduce overall nicotine use.

Ban All Flavours Excluding Menthol and Ban Flavours with Additional Exceptions

The mid-range policy option of banning all but menthol/mint favours is being adopted or considered in some jurisdictions. This option may seem appealing in that it allows access for smokers to a flavour that may be appealing for them, while prohibiting all other flavours, like fruit and candy, that ostensibly are the ones that youth prefer; however, important for informing debate about this policy option is that several studies indicate that menthol/mint e-cigarettes are already quite popular with young people (Leventhal et al 2019). In addition, experience with tobacco flavour bans suggests that those who are looking for a flavoured product are likely to make do with menthol/mint if no other flavours are available. Excepting other flavours in addition to menthol, as done or is proposed in New Zealand and Ontario, would likely further decrease the possibility that youth would be less inclined to use e-cigarettes as evidence presented above indicates their preferences for flavours

Ban Flavours in Closed Systems Only

Cartridge-based e-cigarettes consist of, include, or involve a cartridge or pod that holds liquid that is to be aerosolized when the product is used. There is not a significant amount of data on bans on only cartridge ENDS. Notwithstanding, JUUL (a cartridge-only device) imposed restrictions on their products to only menthol and mint provide us with some detail.¹⁴ After a loss in sales following their decision to withdraw most flavored products from stores, JUUL sales recovered within weeks and surpassed their previous maximum in the same categories, as consumption simply switched to the menthol/mint and tobacco flavors that had not been banned. Additionally, many other companies took up the non-menthol flavoured market once JUUL abandoned it, signalling a need for more comprehensive, industry-wide regulation.

Restrict Flavours to Adult-Only Stores

Restricting the sale of whatever flavours are allowed (including menthol/mint only) to adult-only stores is a policy option being put forward in several jurisdictions. While this option holds some



promise, implementation challenges to date suggest that many adult-only vape shops are non-compliant in that they are selling to minors and experience from other substances suggests that youth will continue to access from social sources. A version of this policy goes into effect in Ontario on July 1, 2020, however, e-cigarettes with tobacco, mint and menthol flavours will still be sold in stores other than specialty vape stores.

Allow Flavours Only in Medicinal Products Available to Smokers

There is some precedent for this approach, as doctors currently prescribe cessation medications and recommend Nicotine Replacement Therapy (NRT), often in the form of patches, and in combination with nicotine gums. Flavoured vaporizers could be simply added to this group of therapies, particularly when combined with behavioural support. NRT is considered one of the most effective methods of quitting smoking and allows for significant oversight over the process. Yet there is little precedent for allowing flavours only in medicinal products, and there is thus little data available to evaluate.

Allow All Flavours

Providing no restrictions on flavours would likely mean little change to youth uptake of vaping. Given the correlates between flavour deregulation and youth vaping, this would likely lead to significant increases in underage vaping.

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Full publication available on request. Email publications@otru.org with the name of the publication you're requesting.

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