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Dear Sir or Madame;

The Middlesex-London Health Unit welcomes the opportunity to provide comments on Health Canada's proposed vaping products flavour regulations and order and shares Health Canada's concerns about the widespread use of vaping among Canadian youth. High vaping rates in Canada are putting young people at risk of nicotine addiction and the harms associated with vaping.

The Middlesex-London Health Unit applauds Health Canada for its diligence in regulating vaping product promotion, packaging and labelling, and most recently for placing a maximum nicotine concentration of 20 mg/ml for any vaping product marketed in Canada.

We agree with Health Canada's proposal to further restrict vaping product flavours. With a few modifications, we support Health Canada moving forward with Option 5, a three-pronged approach that would restrict flavoured vaping products to tobacco and mint/menthol only by:

- Prohibiting most flavouring ingredients, and all sugars and sweeteners in vaping products;
- Further restricting the promotion of flavours; and
- Prescribing sensory attributes standards.

However, in order to stem the epidemic of youth vaping in our nation and protect those most likely to uptake the use of vapour products, regulations need to be strengthened. The Middlesex London Health Unit recommends Health Canada take the following actions as outlined below:

**Recommendation:** Health Canada should further strengthen Option 5 by amending Schedule 2 in order to restrict flavouring ingredients that impart mint, menthol, or mint/menthol flavours, banning their promotion, and prohibiting products that confer sensory attributes typical of mint/menthol.

**Recommendation:** Health Canada should continuously monitor emerging evidence on the harms of flavouring agents, regularly update the list of prohibited ingredients, and commit to the frequent sampling and testing of vaping products for the presence of prohibited ingredients.

**Recommendation:** Health Canada should extend the outlined restrictions that would prevent the attractive promotion of flavoured vaping products to the promotion of mint/menthol.

**Recommendation:** Given the popularity of mint/menthol and non-tobacco flavours among young people, Health Canada should prescribe standards to ensure that all vaping products only bring to the user the smell, taste and chem-esthetic sensations typical of tobacco. Health Canada should continuously assess products against the sensory attribute standards prescribed using a trained sensory panel to ensure that products sold in the market limit users' perceptual experience to one typical of tobacco only.

**Recommendation:** Health Canada should take a strong stance on implementing compliance measures through active monitoring across the supply chain, testing of products for prohibited ingredients, and establishing a trained sensory panel. Health Canada should also remain vigilant and monitor the threat of cross-jurisdictional purchasing of flavoured vaping products through online retailers and manufacturers.

The proposed regulations along with the recommended improvements we have suggested will help to prevent youth, young adults and non-smokers from initiating vapour product use. The Middlesex-London Health Unit looks forward to continuing to work in partnership with our federal public health partners to address this emerging public health issue of significant concern. For more information or to discuss further, please do not hesitate to contact me or Donna Kosmack, Program Manager for Chronic Disease Prevention and Tobacco Control at (519) 663-5317 ext. 2302.

Sincerely,



Christopher Mackie, MD, MHSc, CCFP, FRCPC  
Medical Officer of Health

*Attachment*

## Comments on the Proposed Vaping Products' Flavour Regulations

### Importance of flavours in driving vaping behaviour in youth

- The nation-wide prevalence of vaping among students (grade 7-12) has doubled, rising from 10% in 2016-2017 to 20.2% in 2018-2019.<sup>1,2</sup>
- Youth are also vaping more frequently and one in every three students has tried an e-cigarette.<sup>1,2</sup>
- Vaping products are cheap, widely accessible, and attractive – young people are being enticed with over 7,700 flavours.<sup>3</sup>
- Flavours are consistently cited as a primary reason young people begin vaping and continue to vape.<sup>4-6</sup>
- A Heart & Stroke funded study, the *2020-2021 Youth and Young Adult Vaping Project (YYAV)*, found that 92% of young people used a flavoured vaping product at initiation, and 90% continued to vape flavoured products.<sup>7</sup>
- Among young people, mint/menthol was the second most popular flavour reported while tobacco was least popular – only 1% of those surveyed used a tobacco flavoured e-liquid at initiation and presently.<sup>7</sup>
- In contrast, adults (especially smokers) had a greater preference for tobacco flavoured vaping products.<sup>6</sup>
- Data from the 2019 Canadian Tobacco and Nicotine Survey (CTNS) found that 22% of adults 25 years or older used tobacco flavoured vaping products most often.<sup>8</sup>
- This increased to 41% for adults 45 years or older.<sup>8</sup>
- Exposure to nicotine through vaping devices can damage young brains, affecting mood, memory and concentration.<sup>9-12</sup>
- Vaping in young people is also associated with an increased odds of subsequent tobacco smoking,<sup>13,14</sup> emphasizing the need for a comprehensive approach to address youth vaping.
- Globally, several jurisdictions have taken action to restrict the availability of flavoured vaping products to dissuade youth use, including Netherlands, Finland, and the U.S. states of California, New York, New Jersey, Massachusetts, and Rhode Island. In Canada, Nova Scotia, Prince Edward Island, and Nunavut have complete flavours restrictions, excluding tobacco flavours.

### Popularity of mint/menthol among youth and young adults

- Flavours are a top reported positive aspect of vaping among young vapers,<sup>7</sup> and nearly half (44%) of Canadian youth surveyed in the 2020-2021 YYAV study said they would quit vaping if they could not purchase flavoured vaping products.<sup>7</sup>
- A systematic review by Zare et al. (2018) found that adolescents consider the flavour of vaping products to be the most important factor when trying e-cigarettes and that vaping initiation is more likely to occur with fruit, sweet, menthol and cherry flavoured products.<sup>6</sup>

- In one study of nearly 3,400 students, the use of non-traditional flavoured vaping products (versus tobacco only, or mint and menthol) among adolescents was associated with continued use and greater puffing frequency.<sup>15</sup>
- This was also observed in a second study of 1,800 high school students in Philadelphia, where initial use of flavoured vaping products (except tobacco or unflavoured products) was associated with a progression to current vaping after 18 months.<sup>16</sup>
- When non-traditional flavours are restricted, but mint and menthol remain on the market, young people shift their purchasing and consumption preferences toward mint and menthol flavoured vaping products.<sup>17,18</sup>
- In Canada, 90,000 youth vapers prefer mint/menthol flavours and would continue to be influenced to vape if mint/menthol is not included in the flavour restrictions.<sup>1,7</sup>
- Canadian data also indicated that youth and young adult women have a higher preference for mint/menthol as their present flavour,<sup>7</sup> and exempting mint/menthol flavours from the proposed restrictions may disproportionately impact young women.<sup>7</sup>

### Flavouring ingredients and their associated health risks

- Heating e-liquids to high temperatures can produce toxic aerosols that may damage cells of the mouth, nose, lungs, and blood vessels in the human body.<sup>20-25</sup>
- In one study, the addition of sucralose, a sweetener, enhanced the formation of toxic compounds known as aldehydes, in e-cigarette vapour.<sup>26</sup> When the chemical composition of flavoured versus unflavoured aerosols was compared, more aldehydes were formed in the aerosols of flavoured e-liquids.<sup>20</sup>
- An Ontario study tested 166 different e-liquids and found that sweet e-liquids had a greater number of flavouring chemicals compared to tobacco and menthol flavoured e-liquids.<sup>27</sup> Benzyl alcohol, benzaldehyde, and vanillin were among the chemicals identified in the samples tested that posed a risk of inhalation toxicity.<sup>27</sup>
- The long-term consequences of inhalation or exposure to these compounds are currently unknown.

### Restricting the promotion of flavours

- Despite industry claims that flavoured vaping products are not being advertised in a youth-appealing way, evidence suggests the opposite. In one study, 255 Californian youth were presented with eight random advertisements for fruit-, dessert-, alcohol- and coffee-flavoured vaping products. A majority of those surveyed felt the sweet flavours were targeted to a younger audience, this was especially true for the “Cupcake man” flavour.<sup>28</sup>
- The Ontario Tobacco Research Unit (OTRU) collected samples of flavoured vaping products from online Canadian vape stores in 2019 and found several examples of flavoured vaping products with attractive packaging, design elements, names and descriptors with youth-appeal.<sup>29</sup>

## Prescribing sensory attribute standards

- The proposed regulations would mandate that a flavoured vaping product or its emissions forgo sensory attributes that result in a sensory perception (smell or taste) that is not typical of tobacco or mint/menthol. This is an innovative way to regulate the availability of flavoured vaping products and restrict manufacturers' ability to make products with a highly pleasant smell or taste.
- Youth have a strong innate preference for sweetness that tapers off with age.<sup>30-32</sup> This is concerning because fruit and confectionary flavours contain sugars and sweeteners and are very popular among youth.
- Sugars and sweeteners can increase the appeal of vaping products by enhancing perceived sweetness and smoothness.<sup>33</sup>
- Sensory attributes like sweetness, smoothness, and even familiarity are linked to higher liking and appeal ratings, especially among young people.<sup>33,34</sup> Furthermore, flavouring ingredients and additives are extremely effective at masking the bitterness and harshness of nicotine.<sup>33,34</sup>
- Attenuated bitterness and harshness makes high nicotine vaping significantly more tolerable in youth and is also associated with higher liking and appeal ratings.<sup>33</sup>
- Mint and menthol remain popular among young people and possess their own sensory-enhancing effects. Mint is familiar to youth and menthol can attenuate the bitterness and harshness of nicotine, enhancing the appeal and tolerability of high nicotine vaping as well.<sup>33,35</sup>
- Recent evidence among young ice-flavour (menthol-fruit) users indicated that menthol contributed a "cooling" sensory attribute that could additively increase the appeal of high-nicotine vaping, the risk for frequent vaping, nicotine dependence, and poly-tobacco product use.<sup>35</sup>
- Ice-flavour users were more likely to report using combustible cigarettes in the past 30 days, report vaping dependence and initiation at an earlier age, and engage in more vaping episodes per day compared to users of fruit or confectionary flavours.<sup>35</sup>

## Flavours and smoking cessation

- Although it is argued that a comprehensive flavour ban could reduce the appeal of e-cigarettes among some adult smokers,<sup>36</sup> the evidence is inconclusive on whether having a large variety of flavours contributes to smoking cessation.<sup>37-39</sup>
- Data from the U.S. Population Assessment of Tobacco and Health (PATH) Study indicated that adults who used sweet or mint/menthol flavours (vs tobacco flavours) were less likely to abstain from smoking and/or vaping.<sup>40</sup> The two-year follow-up found that 44% of exclusive e-cigarette users continued vaping while 60% of dual users returned to exclusive cigarette smoking, 26% continued dual use, and only 5% transitioned to exclusive e-cigarette use.<sup>40</sup>
- E-cigarettes are not medically approved cessation devices and while some clinical studies show they may be effective cessation aids when paired with counselling in controlled environments, most larger populations studies find e-cigarettes to be ineffective.<sup>41</sup>

- Factors other than flavours, such as the motivation or intention to quit smoking, are important for cessation and can also influence consumer behaviour. A California study of adult vapers revealed that when presented with a hypothetical flavour ban (excluding tobacco), adults who were motivated to quit smoking using e-cigarettes were significantly more likely to continue purchasing and using available vaping products compared to users who vaped for other reasons.<sup>42</sup>
- An interview of U.S. adults who successfully quit smoking and vaping found they recommended smokers to use tobacco flavours to transition away from cigarettes and suggested that having fewer flavours in the market could make it less overwhelming for smokers turning to e-cigarettes for cessation.<sup>43,44</sup>
- A comprehensive flavour ban that includes mint/menthol would still give adult smokers access to a range of tobacco flavours, ensuring that e-cigarettes maintain their potential for smoking cessation.
- Youth and young adults primarily use vaping products for reasons other than cessation<sup>8,45-50</sup> and flavours are a top reported positive aspect of vaping among youth.<sup>7</sup>
- The fact that most youth who vape are never-smokers is concerning. In 2019, 74% of youth aged 15-19 who reported vaping in the past 30 days were never-smokers compared to 41% of young adults aged 20-24 and 14% of adults 25 and older.<sup>8</sup>
- Flavours entice youth to start vaping<sup>7</sup>, exposing them to the harms of nicotine addiction. The earlier in childhood an individual uses nicotine, the stronger the addiction and the harder it is to quit.<sup>51,52</sup>
- Vaping is a gateway to nicotine addiction and may increase the risk of subsequent cigarette initiation.<sup>30</sup>
- Regular e-cigarette users may be five-times more likely than non-e-cigarette users to become regular smokers in the absence of any tobacco use history.<sup>7,53</sup>

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