

E-cigarettes in Canada – A Joint Position Statement

The Canadian Lung Association and The Canadian Thoracic Society developed a joint statement calling for critical measures, by all levels of government, to effectively regulate vaping such that young people are protected, health effects are monitored, and research on potential for smoking cessation is enhanced.

Summary

The Canadian Lung Association and the Canadian Thoracic Society are concerned about the safety of electronic cigarettes and we believe that urgent measures are needed to 1) ensure that strong regulations and safety standards are in place; and 2) prevent the establishment of a new generation of tobacco and nicotine users. Most importantly, we want to ensure that we do not risk the current and future lung health and overall health of Canadians. To this end, we have developed joint evidence-based recommendations directed to all levels of government and to the Canadian public.

Overview

Electronic cigarettes (also known as vapes) are battery-operated devices that create a smoking-like experience. This is done through the heating of a liquid solution usually containing glycerol, propylene glycol, nicotine, and flavours.¹ Collectively, this is often referred to as e-juice. The heating of the liquid produces an aerosol that is inhaled into the lungs.¹ Newer devices may generate sufficient temperatures to also generate products of combustion.²

History of Vaping in Canada

Vaping devices entered the Canadian market in 2004 and in 2009 Health Canada issued an advisory against electronic cigarettes, as insufficient evidence was available to support the safety of the devices.³ However, at the time of this advisory, e-cigarettes containing nicotine were not legal in Canada. Enforcement of this ban did not occur and the promotion and sale of vaping products, both with and without nicotine, continued to rise across the country.

In May 2018, Bill S-5, introduced amendments to the Tobacco Act and the Non-Smokers Health Act, and created a new regulatory framework for vaping products in Canada.⁴ This included making it legal to have e-cigarettes with nicotine sold to Canadian adults. The regulations also included some marketing restrictions and safety standards.⁴ However, it is evident that the current Tobacco and Vaping Products Act (TVPA) didn't go far enough in preventing youth from using vaping products.⁵

In September 2019, Health Canada issued a new advisory to Canadians regarding the use of vaping products, responding to an outbreak of pulmonary disease and death associated with vaping in the US.^{1,6} In their advisory they recommended that if Canadians were concerned about any health effects associated with vaping, that they avoid vaping and monitor and report any potential symptoms.¹ Since that time, some cases have been reported in Canada and Health Canada has issued a new webpage to document confirmed and probable cases as they arise.⁷

Vaping: what we know today

Electronic cigarette use is growing in Canada, causing significant debate in the public health community. On one side, they are viewed as a harm reduction tool, and marketed aggressively as a safer alternative to smoking cigarettes. On the other side, the long-term safety of e-cigarettes is unclear and there is a growing level of data suggesting that exposure to e-cigarette

constituents such as glycerol, nicotine and certain flavors can result in lung damage.^{8,9} Combined with increased reports of nicotine poisonings among toddlers,¹⁰ device malfunctions resulting in explosions of vape devices¹¹ and the lack of standardization of products combined with easily modifiable devices at the hands of the consumer ultimately brings into question the claim that vaping is a 'safer alternative'.

With the outbreak of e-cigarette/vaping-associated lung injury, the immediate health effects of vaping have become apparent and are alarming. Vaping has caused irreversible lung damage and acute pulmonary lung disease, in some cases, has resulted in death.^{1,6,17,18}

Lastly, the rise in popularity among young Canadians is staggering. The most recent Canadian Student Tobacco, Alcohol and Drugs Survey from 2018-19 indicates that e-cigarette prevalence rates doubled among students since the last survey (2017-18) with 20%, or approximately 418,000 students, reporting e-cigarette use in the past 30 days.¹³ Equally concerning is that 42% of those who reported using e-cigarettes also identified that they had never smoked a cigarette before.¹³ Similarly, another study showed that amongst youth aged 16-19, there was a reported change of 74 per cent in the prevalence of vaping (from 8.4 to 14.6 per cent).¹⁴ With ongoing aggressive marketing and promotion of these products, there is concern that the numbers of youth vaping will continue to rise, particularly with the introduction of nicotine-based products. Vaping use among young people has also been linked to an increased likelihood of smoking traditional cigarettes.^{15,16}

Vaping and Cannabis

Recreational cannabis in Canada can be consumed in a variety of ways, including vaping. Further research is needed to best understand the long-term potential health impacts associated with vaping cannabis.¹⁹

A vast majority, but not all of the illnesses associated with the US outbreak have involved vaping tetrahydrocannabinol (THC), one of the compounds found in cannabis.^{6,18} Recent evidence suggests that various diluents (e.g., vitamin E acetate and medium-chain triglycerides) that are in THC-containing e-juice to enhance quality and appearance, are linked to the appeal of e-cigarette use. These additives may be causally involved with the development of pulmonary illness.^{20,21} As a result, the CDC in the US is recommending that individuals refrain from using e-cigarettes, particularly those containing THC.⁶ Likewise, Health Canada is advising Canadians that any vaping products purchased outside of the legal market may increase any potential risk.¹ However, individuals need to be aware that there is not enough information about the health effects of vaping legally purchased cannabis to determine whether it is safe, and some of the vaping-associated lung injury cases reported in the US likely involved legally purchased products. Given the current severity of illnesses experienced and the ongoing research needed to answer these questions, we do not recommend vaping cannabis under any circumstances.

Electronic Cigarettes and Smoking Cessation

Current research remains inconclusive as to the effectiveness of electronic cigarettes in helping people to quit smoking.^{6,15,16,18} The only randomized controlled study to date that showed improved smoking cessation outcomes at 12 months with e-cigarettes compared to NRT used a nicotine patch as a comparator.²² Important to note in this study is that individuals using electronic cigarettes to quit smoking continued to use them after cessation of tobacco whereas those who used NRT did not. There are no studies comparing e-cigarettes with more effective NRT approaches or with alternative agents such as varenicline.

Based on the available evidence to date, the best approach to quit smoking is through behavioural support and approved pharmacologic aids to increase the chances of sustained and complete abstinence.^{17,18}

Harm Reduction Concept

The benefit of increased usage of electronic cigarettes among smokers is based largely on the basis of a harm reduction approach. By definition, an ideal harm reduction strategy would prevent introduction of smoking among non-users, promote cessation among current users, and put an end to secondhand and third-hand exposure among non-smokers.²³ In addition, it is also recognized that harm reduction strategies can include reducing tobacco-related health risks while assuming continued use of tobacco or nicotine-containing products. This is the theoretical argument for the continued availability of electronic cigarettes among cigarette users.

Based on a synthesis of data reviewed and published by the National Academies of Science in 2018, studies evaluated found that aerosols emitted from e-cigarettes are substantially less complex than tobacco smoke and although toxic substances have been identified in electronic cigarettes, the amounts exposed to users under typical circumstances are less than those found with combustible tobacco smoke¹⁷. When considered in the context of a harm reduction strategy, switching to e-cigarettes in the short-term may be a less harmful alternative than continued smoking for an individual.¹⁵ However, this statement needs to be tempered by the fact that the harms (including but not limited to the effects of inhaled nicotine and/or flavors, potential device malfunctions, and outbreak of vaping associated lung illnesses) continue to evolve and have not been fully evaluated to date and therefore, at a societal level, the concept that e-cigarettes are safer than tobacco should be challenged.

What is the Canadian Lung Association and the Canadian Thoracic Society's position on e-cigarettes?

The Canadian Lung Association and the Canadian Thoracic Society are concerned about the safety of electronic cigarettes and we believe that urgent measures are needed to 1) ensure that strong regulations and safety standards are in place; and 2) prevent the establishment of a new generation of tobacco and nicotine users. Most importantly, we want to ensure that we do not risk the current and future lung health and overall health of Canadians. Additionally, we are concerned that e-cigarettes will re-normalize smoking behaviour and increase nicotine addiction among non-smokers in contrast to its original intent of encouraging complete cessation.

While we acknowledge that some individuals may view these products as a method to aid them in quitting smoking, they have not been approved by Health Canada for this purpose and to date there has not been sufficient evidence to support their use for this purpose. More research is required to understand whether these devices should be recommended for this use. We call for research that examines the effectiveness of e-cigarettes as a cessation tool, taking into consideration the overall balance of proven benefits and harms, including health implications of short and long-term e-cigarette use and best practices to support full cessation of inhaled nicotine containing products.

The Canadian Lung Association and Canadian Thoracic Society are making the following recommendations:

- The federal government should adopt policies to regulate vaping similar to regulations pertaining to tobacco products. Aligning vaping to tobacco products prevents and protects young people from starting, increases public awareness through warnings and reporting, and supports cessation efforts by reducing smoking triggers and controlling nicotine levels. This would include the following changes:
 - no advertising or promotion except as permitted for tobacco;
 - comprehensive ban on additives and/or flavours;
 - restrict sales of e-cigarettes to specialty vape shops and prohibit sales where minors are allowed;

- impose significant tax on the purchase of vape devices and products;
- plain and standardized packaging of vape delivery devices (e.g. product cannot be altered or manipulated, limits imposed on colour and design, etc.);
- large, rotating health warnings on packages;
- limit the maximum amount of nicotine allowed to a level of 20 mg/ml of nicotine (comparable to a standard cigarette).²⁴
- mandatory testing and reporting of ingredients included within vaping products;
- Provincial and municipal governments must be encouraged to adopt additional policies around vaping (nicotine and cannabis) products, which further protect residents, in addition to those proposed federally.
- Enhanced research is needed to:
 - accurately capture current health impacts associated with vaping of both nicotine and cannabis products through increased surveillance and reporting measures
 - understand the lung health risks of vaping (nicotine and/or cannabis) devices, including long-term effects
 - determine the potential effectiveness (both short and long term) of e-cigarettes as a cessation device
 - support Canadians to ultimately quit e-cigarettes
- That the issue of vaping both nicotine and cannabis products continues to be monitored. Additional legislative changes may be required as more evidence emerges.

Together, we also recommend the following for Canadians considering the use of vaping products:

- Learn the facts: Vaping has significant health risks and understanding the potential short and long-term health outcomes before vaping is recommended. There is accumulating evidence that e-cigarettes cause serious lung disease
- Non-smokers, pregnant women and people who have quit smoking should not vape.
- Younger people should be educated to understand their increased risk of nicotine addiction compared with the general population and should be strongly encouraged not to vape
- If you are vaping:
 - monitor for symptoms affecting your lung health and let your healthcare provider know you vape.
- If you smoke and are using vaping to quit, know that there is not significant evidence to suggest vaping as an effective cessation support. Our recommendation is:
 - do not vape
 - talk to a health professional about clinically proven options for quitting.

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Canadian Lung Association

The Canadian Lung Association is the leading organization in Canada helping Canadians breathe - working to save lives, prevent lung disease and improve lung health through research, advocacy, education and support. As a non-profit and volunteer-based health charity, we depend on donations from the public to support our mission to lead nationwide and international lung health initiatives, prevent lung disease, help people manage lung disease and promote lung health.

Canadian Thoracic Society

The CTS is Canada's national specialty society for respirology, recognized by the Royal College of Physicians and Surgeons of Canada, representing an inter-disciplinary membership of physicians, healthcare professionals and research scientists in respiratory health. The CTS is advancing knowledge and improving patient outcomes through leadership, collaboration, research, education and advocacy, and promoting the best respiratory care practices in Canada. For more information visit cts-sct.ca

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