

# Tobacco Harm Reduction – E-Cigarettes

The AHS Tobacco Care Pathway provides an evidence informed 5-step process for addressing tobacco use in a healthcare setting. This pathway can be adapted to any healthcare setting. This document provides a guide for healthcare providers seeking to address the use of electronic smoking/vaping products (e-cigarettes) for harm reduction with adult patients/clients who are resistant to stopping smoking cigarettes or where repeated first-line therapy attempts have been unsuccessful. Healthcare providers using this document should be familiar with the recommendations in the Tobacco Cessation Toolkit – [AHS Pharmacotherapy Algorithm for Adult Inpatient](#).

## Why Harm Reduction?

Combustible commercial tobacco use causes a range of diseases and conditions including chronic obstructive pulmonary and cardiovascular disease. Most health problems are not caused by nicotine but by other components of tobacco smoke, such as tar and carbon monoxide. Smoking is highly addictive largely because it delivers nicotine very quickly to the brain and this makes stopping smoking difficult.<sup>1</sup> When a person stops smoking, and the level of nicotine in their blood drops, they experience discomfort from withdrawal symptoms.

While stopping tobacco use completely is the ideal, this is very challenging for many people. The use of licensed nicotine-containing products, such as nicotine replacement therapy (NRT), is a way of reducing harm for both the individual who smokes, and those around them who are exposed to second and third hand tobacco smoke. Electronic smoking/vaping devices that contain nicotine are now licensed in Canada for use by adults. Completely switching from smoking tobacco to using e-cigarettes can reduce exposure to toxic and cancer-causing chemicals, and e-cigarettes have been shown to help some people quit smoking. While not harm-free, across a range of studies and outcomes, e-cigarettes appear to cause less risk to an individual than combustible tobacco cigarettes.<sup>2</sup> E-cigarettes may be more attractive/popular than other harm reduction products (NRT) because they address the pharmacologic (ie. nicotine), social and behavioural aspects of smoking.<sup>3</sup>

## Applying the Tobacco Care Pathway for Harm Reduction

1. Patient and their visitors are informed of the AHS Tobacco and Smoke Free Environments policy. *'AHS provides a tobacco and smoke free environment so the use of tobacco and tobacco-like products is prohibited'*
2. Patient's commercial tobacco/tobacco-like product use status is identified. *'Have you used commercial tobacco or tobacco-like products in the past 30 days?'*
3. **Inpatient setting:** If current use, patient is asked if they would like withdrawal comfort. *'Would you be interested in nicotine replacement therapy or medication to keep you comfortable?'*
4. Patient is provided with a therapeutic intervention. The intervention can be brief (5A's model) or intensive. See box below.
5. Patient is provided with a referral for follow-up individual or group support (counsellor, AlbertaQuits online or HelpLine, QuitCore, primary care clinic, etc.) *'Would you be interested in a referral for follow-up or additional support?'*

During a therapeutic intervention, patients are:

- **Asked** about their commercial tobacco/tobacco-like product use (type, amount, years of use).
- **Advised** that stopping use remains the best thing they can do for their health and treatment outcomes.
- **Assessed** for interest in stopping or reducing commercial tobacco/tobacco-like product use and receiving support.
- **Assisted** to stop or reduce through pharmacotherapy and behavioural counselling.
- **Arrange** additional onsite support and/or more intensive intervention.

## Clinical Support Guidance

**Guidance for health professional discussion about e-cigarettes when Assisting a patient:**

### Overall Recommendations

- There continues to be a lack of evidence regarding the long-term safety and efficacy of e-cigarettes for harm reduction and smoking cessation. Health professionals should be prepared to discuss the evidence about risks and benefits with the patient.
- The United States is currently tracking cases of illnesses and deaths which they have labelled e-cigarette or vaping product use associated lung injury (EVALI). The majority of those sickened were vaping tetrahydrocannabinol (THC) and officials say vitamin E acetate, an additive, may be a potential cause.<sup>4</sup> Canada has also been tracking similar vaping-related illnesses.
- Use of e-cigarettes is not recommended for anyone not already smoking a commercial tobacco product.
- At this time, the combination of behavioural counselling and correct use of pharmacotherapy (NRT/cessation medication) shows the strongest evidence for safe and successful harm reduction and smoking cessation. This remains first-line treatment in Canada.
- Emphasize the importance of the goal of complete cessation of all combustible tobacco products. The risk of cardio vascular disease is non-linear, so even a single cigarette per day carries about half the risk of smoking 20 cigarettes per day.<sup>5</sup>
- Recommend the use of e-cigarettes regulated under the Canada Consumer Product Safety Act (CCPSA) and Tobacco and Vaping Products Act (TVPA). At this time the regulations are insufficient – Health Canada will be making efforts to improve standards and regulations over the next couple of years. To date, there are no vaping products approved as therapeutic devices under Health Canada’s Food and Drugs Act.
- There is insufficient evidence to advise on the most reliable or consistent e-cigarette to use and the optimal dose of nicotine.<sup>6</sup> In Canada, nicotine vaping regulations<sup>6</sup> fall under Consumer Chemicals and Container Regulations in which vaping liquids containing equal to or more than 66 mg/ml of nicotine are prohibited from manufacture, import or sale. Investigators have proposed that the concentration of nicotine in an e-cigarette cartridge needs to be at least 50 mg/ml to approach nicotine delivery

from a cigarette.<sup>7</sup> There is wide variability in the type of products available, and their levels of and delivery of nicotine.

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### Points to Cover in Discussions About E-Cigarettes

- E-cigarettes are devices that heat a nicotine containing liquid, producing an aerosol that differs from the smoke produced by burning tobacco.
  - E-cigarettes contain chemicals in addition to nicotine, including propylene glycol, glycerin and flavoring chemicals that may pose a risk.
  - Because they do not burn tobacco, e-cigarettes expose the user to fewer and lower levels of toxic chemicals than smoking a cigarette does.
  - If used as a complete substitute for smoking tobacco, e-cigarettes are expected to be less harmful than smoking commercial tobacco products in the short-term but their long-term safety is uncertain.
  - Because e-cigarettes are relatively new products, scientific information about health effects and effectiveness as smoking cessation devices is limited and rapidly evolving.
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### Points to Cover in Discussions About E-Cigarette Efficacy

- The potential efficacy of e-cigarettes for the treatment of tobacco dependence will predominantly depend on the route, speed and amount of nicotine delivery.<sup>3</sup>
  - There is moderate evidence that e-cigarettes with nicotine are more effective than e-cigarettes without nicotine for smoking cessation.<sup>2</sup> There is also moderate evidence that more frequent/regular and prolonged use of e-cigarettes is associated with increased likelihood of long-term cessation.<sup>2</sup>
  - Evidence suggests it is safe to use e-cigarettes along with Nicotine Replacement Therapy (NRT) products. It is important that individuals get enough nicotine to satisfy cravings, however the total nicotine content of both the NRT and e-cigarette needs to be considered in order to reduce the risk of experiencing symptoms of nicotine toxicity (nausea, lightheadedness).
  - It is important to use behavioural counselling in conjunction with e-cigarettes for smoking cessation and harm reduction. A recent randomized trial showed that e-cigarettes were more effective for smoking cessation than nicotine replacement therapy when both products were accompanied by behavioural support.<sup>8</sup>
  - Licensed nicotine containing e-cigarettes can be used for as long as needed to prevent relapse to commercial tobacco smoking. However, it is recommended that patients be advised to consider a quit date for e-cigarettes and not plan to use them indefinitely.<sup>9</sup>
  - There is a lack of evidence on the best methods for stopping e-cigarette use however tapering off similar to NRT products, by reducing the nicotine content in e-juice or using a reduce to quit approach may be suggested.
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### Points to Cover in Discussions About E-Cigarette Safety and Exposure

- Read and follow safety instructions provided with e-cigarettes and e-juice. Choose products with child-proof packaging and keep out of reach of children and pets to minimize the risk of nicotine poisoning.
  - Follow instructions for device maintenance, battery recharging and storage to minimize the risk of explosion.
  - Electronic cigarettes should not be used in public spaces or in homes/vehicles where children and pets can be exposed, due to the potential harms of second-hand exposure.
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Table adapted from The American College of Cardiology Foundation (2018)

[For additional information:](#)

Tobacco Information Series – Electronic Smoking Products  
E-Cigarettes Training: <https://tobaccocourse.otru.org/>

References:

- <sup>1</sup> National Institute for Health and Care Excellence (NICE). (2013, July). *Smoking: Harm Reduction*. Retrieved from <https://www.nice.org.uk/guidance/ph45>
- <sup>2</sup> National Academies of Sciences, Engineering and Medicine. (2018, January). *Public Health Consequences of E-Cigarettes*. Retrieved from <https://www.Nationalacademies.org/eCigHealthEffects>
- <sup>3</sup> Ebbert, J., Agunwamba, A., & Rutten, L., (2015). Counselling Patients on the Use of Electronic Cigarettes. *Mayo Clin Proc.* 90(1):128-134.
- <sup>4</sup> Centers for Disease Control and Prevention (2019). [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/severe-lung-disease.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html)
- <sup>5</sup> The American College of Cardiology Foundation. (2008). 2018 ACC Expert Consensus Decision Pathway on Tobacco Cessation Treatment (A Report of the American College of Cardiology Task Force on Clinical Expert Consensus Documents). *Journal of the American College of Cardiology*. <https://doi.org/10.1016/j.jacc.2018.10.027>
- <sup>6</sup> Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group (2017) Drug misuse and dependence: UK guidelines on clinical management. Retrieved from <https://www.gov.uk/government/publications/drug-misuse-and-dependence-uk-guidelines-on-clinical-management>
- <sup>7</sup> Farsalinos, K.E., Spyrou, A., Tsimopoulou, K., Stefopoulos, C., Romagna, G., & Voudris, V. (2017) Nicotine absorption from electronic cigarette use comparison between first and new-generation devices. *Scientific Rep.* 4;4133. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3935206/>
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- <sup>9</sup> Bhatnagar, A., Whitsel, L.P., Ribisl, K.M. Bullen, C., Chaloupka, F., Piano, M.R., Robertson, R.M., McAuley, T., Goff, D., Benowitz, N., American Heart Association Advocacy Coordinating Committee, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and Council on Quality of Care and Outcomes Research. (2014) Electronic cigarettes: a policy statement from the American Heart Association. *Circulation.* 130(16): 1418-1436.