



Talking Ethics



Friend or Foe: The E-Cigarette Conundrum

by Paula Benbow, RDH, MPH • pbenbow@cdha.ca

As health care providers we have a duty to ensure that we are giving our clients the best possible advice based on the best possible evidence. Yet what is our role when an emerging trend gains rapid popularity in the absence of sufficient high-quality evidence of safety and long-term consequences?

The effects of long-term tobacco use are readily apparent on the teeth, gums, tongue, and cheeks as well as on the lips, face, and neck. Dental hygienists play a critical role in routinely screening for mucosal changes, and aid in the prevention and elimination of tobacco use. Dental hygienists are among the few health professionals who are uniquely positioned to deliver these health promotion and disease prevention strategies to individuals, communities, and populations.

But with 8.5% of Canadians (approximately 2.5 million people) reportedly trying e-cigarettes,¹ what approach should dental hygienists take?

Electronic cigarettes (e-cigarettes) are battery-powered devices that mimic the use of conventional cigarettes. E-cigarettes are usually comprised of a battery, a cartridge containing water, flavouring, and sometimes nicotine in a base of propylene glycol and glycerin, and an atomizer that heats this liquid to produce vapour.² Puffing on the device triggers the atomizer to heat the solution, producing vapour that is inhaled by the user, an action that is often referred to as “vaping.”¹ A key difference between e-cigarettes and tobacco cigarettes is that e-cigarettes do not contain tobacco and no combustion takes place.^{1,3} Although e-cigarettes are perceived to be less harmful than tobacco cigarettes and manufacturers of e-cigarettes claim that they may support tobacco harm reduction efforts,¹ there are growing concerns about their possible adverse health effects, their potential to renormalize tobacco use, the increased uptake among youth, and other unforeseen consequences of unregulated production, sale, and use of these diverse products.⁴

Nicotine is a highly addictive substance and, while nicotine-containing e-cigarettes have not been approved for sale in Canada, many users have reported vaping with e-cigarettes containing nicotine.¹ There are many ways to access nicotine, such as online and at retail outlets and “vape shops,”⁵ and the amount of nicotine content can vary considerable. Interestingly, approximately half of Canadian e-cigarette products labelled as nicotine-free actually contain nicotine.⁶ Other ingredients that have been found in e-cigarettes include formaldehyde, carcinogenic compounds such as nitrosamines, carbonyl compounds, volatile organic compounds (some levels similar to cigarettes), and vapour containing heavy metals.^{4,7-10} In addition to an increase in accidental poisonings, short-term eye and respiratory irritation related to e-cigarette use, there is limited evidence that e-cigarettes actually help people to quit tobacco.¹¹⁻¹² Moreover, the potential harm from second-hand e-cigarette vapour remains an unknown. Although the data are limited and the adverse chemicals appear to be substantially less harmful than combustible tobacco, it is clear that e-cigarettes are not harmless products.

What if your client is interested in using e-cigarettes or is attempting to quit tobacco?

The e-cigarette industry promotes the use of e-cigarettes as a harm-reduction strategy for tobacco users and a smoking cessation aid. However, these claims have not been supported by sufficient high-quality research.¹³⁻¹⁵ In addition, e-cigarettes have not been approved as a smoking cessation aid by Health Canada. Also of concern are the continuing evolution and diversity of e-cigarettes, which call into question the relevance and/or comparability of research conducted on older products. Furthermore, e-cigarettes may represent a “gateway” drug, particularly to youth, if they increase the likelihood that non-smokers or former smokers will try and/or continue to use tobacco products.¹⁶

Continued...

TD Insurance

Meloche Monnex



Get more out of your CDHA membership.

Get **preferred insurance rates** today!

On average, professionals who have home and auto insurance with us save \$400.*

Because you've earned it.

At TD Insurance we believe your efforts should be recognized. That's why, as a **Canadian Dental Hygienists Association** member, you have access to the TD Insurance Meloche Monnex program, which offers you preferred insurance rates and highly personalized service, along with additional discounts. **Request a quote and find out how much you could save!**

Our extended business hours make it easy.
Monday to Friday: 8 a.m. to 8 p.m.
Saturday: 9 a.m. to 4 p.m.

Home and auto insurance program recommended by



HOME | AUTO | TRAVEL

Ask for your quote today at 1-866-269-1371
or visit melochemonnex.com/cdha



The TD Insurance Meloche Monnex program is underwritten by SECURITY NATIONAL INSURANCE COMPANY. It is distributed by Meloche Monnex Insurance and Financial Services Inc. in Quebec, by Meloche Monnex Financial Services Inc. in Ontario, and by TD Insurance Direct Agency Inc. in the rest of Canada. Our address: 50 Place Crémazie, Montreal (Quebec) H2P 1B6.

Due to provincial legislation, our auto and recreational vehicle insurance program is not offered in British Columbia, Manitoba or Saskatchewan.

*Average based on the home and auto premiums for active policies on July 31, 2014 of all of our clients who belong to a professional or alumni group that has an agreement with us when compared to the premiums they would have paid with the same insurer without the preferred insurance rate for groups and the multi-product discount. Savings are not guaranteed and may vary based on the client's profile.

© The TD logo and other TD trade-marks are the property of The Toronto-Dominion Bank.

The complexity of this ethical problem may leave dental hygienists pondering multiple courses of actions. Fortunately, CDHA's Code of Ethics¹⁷ can offer some assistance when dealing with this ethical challenge.

PRINCIPLE 1: BENEFICENCE

Beneficence involves caring about and acting to promote the good of another. Dental hygienists use their knowledge and skills to **assist clients to achieve and maintain optimal oral health and overall well-being.**

PRINCIPLE 2: AUTONOMY

Autonomy pertains to the right to make one's own choices. Dental hygienists are responsible for actively involving clients in their oral health care, and **promote informed choice by communicating relevant information openly, truthfully, and sensitively in recognition of their needs, values, and capacity to understand.**

Ultimately, in the absence of sufficient high-quality evidence demonstrating the safety of e-cigarettes and their role in reducing dependence on tobacco, and given emerging concerns about health risks, the role of the dental hygienist is to assist clients in making an informed choice. Since e-cigarettes are not approved as a smoking cessation aid in Canada, dental hygienists should assist individuals interested in quitting tobacco by providing cessation counselling, making appropriate referrals, and directing clients to cessation aids approved by Health Canada, as required. It is imperative for dental hygienists to stay current on the research and advocate for appropriate regulation of and high-quality research on e-cigarettes, with a particular emphasis on safety, youth uptake, their potential as a smoking cessation device, and their long-term health and societal effects.

References

1. Czoli CD, Reid JL, Rynard VL, Hammond D. *E-cigarettes in Canada – Tobacco use in Canada: Patterns and trends. Special Supplement. Waterloo, ON: Propel Centre for Population Health Impact, University of Waterloo; 2015.*
2. *Non-Smokers' Rights Association/Smoking and Health Action Foundation. Position statement on electronic cigarettes. Revised October 2014. Available from: <https://www.nusra-adnf.ca/cms/file/files/NSRA%20ecig%20position%20statement%20revised%20Oct14%202014.pdf>*
3. Benowitz NL, Goniewicz ML. *The regulatory challenge of electronic cigarettes. JAMA. 2013;310(7):685-86.*
4. *WHO FRAMEWORK Convention on Tobacco Control. Electric nicotine delivery systems. Conference of the Parties to the WHO Framework Convention on Tobacco Control, Moscow, 13-18 October 2014.*
5. *Hammond D, White C, Czoli C, Martin C, Magennis P, Shiplo S. Promotional activities for electronic cigarettes in Canada: A review and preliminary environmental scan. Prepared for Health Canada, December 2014.*
6. *Geller H (Assistant Deputy Minister, Healthy Environment and Consumer Safety Branch, Department of Health). Testimony to the House of Commons Standing Committee on Health. 21 Oct 2015. Ottawa: Canada, House of Commons. 1105.*
7. *Pellegrino RM, Tinghino B, Mangiaracina G, Marani A, Vitali M, Protano C, Osborn JF, Cattaruzza MS: Electronic cigarettes: An evaluation of exposure to chemicals and fine particulate matter (PM). Ann Ig. 2012;24:279-88.*
8. *Grana R, Benowitz N, Glantz ST. E-cigarettes: a scientific review. Circulation. 2014;129:1972-86.*
9. *Kosmider L, Sobczak A, Fik M, Knysak J, Zaciera M, Kurek J, Goniewicz ML. Carbonyl compounds in electronic cigarette vapors: Effects of nicotine solvent and battery output voltage. Nicotine Tob Res. 2014 Oct;16(10):1319-26.*
10. *Goniewicz ML, Knysak J, Gawron M, Kosmider L, Sobczak A, Kurek J, Prokopowicz A, Jablonska-Czapla M, Rosik-Dulewska C, Havel C, Jacob P, Benowitz N. Levels of selected carcinogens and toxicants in vapour from electronic cigarettes. Tob Control. 2014 Mar;23(2):133-39.*
11. *Flouris AD, Chorti MS, Poulianiti KP, Jamurtas AZ, Kostikas K, Tzatzarakis MN, Wallace Hayes A, Tsatsakis AM, Koutedakis Y. Acute impact of active and passive electronic cigarette smoking on serum cotinine and lung function. Inhal Toxicol. 2013 Feb;25(2):91-101.*
12. *Chatham-Stephens K, Law R, Taylor E, Melstrom P, Bunnell R, Wang B, Apelberg B, Schier JG. Notes from the field: Calls to poison centers for exposures to electronic cigarettes – United States, September 2010–February 2014. MMWR. 2014; 63(13):292-93.*
13. *McRobbie H, Bullen C, Hartmann-Boyce J, Hajek P. Electronic cigarettes for smoking cessation and reduction (review). Cochrane Database of Systematic Reviews 2014, Issue 12. Art. No.: CD010216. DOI: 10.1002/14651858.CD010216.pub2*
14. *Khan M, Stanbrook MB, Allehebi RO. Efficacy and safety of electronic cigarettes for smoking cessation: A systematic review. Am J Respir Crit Care Med. 191(2015): A3715.*
15. *Rahman MA, Hann N, Wilson A, Mnatzaganian G, Worrall-Carter L. E-cigarettes and smoking cessation: Evidence from a systematic review and meta-analysis. PloS One 2015;10(3): e0122544.*
16. *Brandon TH, Goniewicz ML, Hanna NH, Hatsukami DK, Herbst RS, Hobin JA, Ostroff JS, Shields PG, Toll BA, Tyne CA, Viswanath K, Warren GW. Electronic nicotine delivery systems: A policy statement from the American Association for Cancer Research and the American Society of Clinical Oncology. J Clin Oncol. 2015 Mar 10;33(8):952-63.*
17. *Canadian Dental Hygienists Association. Dental hygienists' code of ethics. Ottawa: Author; 2012.*