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CLOSING ARGUMENTS — YES

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- Current smoking cessation aids have limited utility and do not deal with the "habit" component of why people smoke. Electronic cigarettes (e-cigarettes) fill this void, but should not be used for any other purpose.
- Smoking e-cigarettes is healthier than smoking regular cigarettes because e-cigarettes do not produce smoke or second-hand smoke, and do not contain toxic compounds at the same levels as traditional cigarettes.
- Legislation is needed to ensure e-cigarettes are used properly. They should not include flavouring or nicotine, and they should not be sold to minors.

The parties in these debates refute each other's arguments in rebuttals available at www.cfp.ca. Join the discussion by clicking on Rapid Responses at www.cfp.ca.

NO As physicians, we have an obligation to use evidence-based medicine when prescribing new therapies to our patients. The electronic cigarette (e-cigarette) must be considered a new therapy for smoking cessation; the difference in this instance is that the e-cigarette is not a medication. It has hit the market with a momentum unrelated to medical research, and we must be careful. I argue that e-cigarettes are not only useless in smoking cessation, but their introduction has been detrimental to all aspects of tobacco control.¹

What we know

What do we know about this new therapy? The e-cigarette is an electronic device that looks like a traditional cigarette. The user draws on a mouthpiece to activate a microelectrical circuit that vaporizes the e-cigarette liquid. The liquid is contained in a removable cartridge that consists of nicotine and flavouring agents dissolved in chemicals such as glycerin and propylene glycol.² Nicotine-containing e-cigarettes are not licensed in Canada, but are widely available and wholly unregulated.

The e-cigarette has 3 main components. It is powered by a small battery at the distal end that activates an indicator light that mimics the glow of a cigarette. There is a vaporizing chamber in the mid-part of the device that is triggered by inhalation and heats the liquid from a replaceable cartridge so that it vaporizes. The cartridge is inserted near the tip of the cigarette closest to the mouth of the user. It delivers an odourless, smokeless dose of nicotine to the user.

Safety and benefit

The use of e-cigarettes for smoking cessation is controversial. The principle is that the user can decrease his or her nicotine intake, along with the intake of other chemicals contained in cigarettes, while maintaining the habit of puffing on a cigarette. As nicotine levels fall, they are eventually able to break the habit. To date, there have only been a few randomized trials studying the new device.³⁻⁶ Moreover, there have been no trials that have run longer than 2 years and few with more than 50 participants. In addition, there are no follow-up data available to assess sustainment of smoking cessation. Most of these trials have been sponsored by big tobacco companies and were underpowered to show any sustained benefit.

To complicate matters, the safety of e-cigarettes is also controversial. A 2009 US Food and Drug Administration document found harmful components in the 2 brands studied.⁷ Trace levels of carcinogenic nitrosamines were found in more than half the samples. Other harmful chemicals were found, such as anabasine, which is found in tree tobacco and is used as an insecticide; myosmine, an alkaloid closely related to nicotine; and β -nicotyrine. A recent study done at the University of Montreal in Quebec had similar results.⁸ There are now hundreds of brands on the market, most of which have not been studied in any systematic way. In addition, there are no mandated quality control standards. Two e-cigarettes manufactured by the same company might contain different amounts of nicotine. Most e-cigarettes are manufactured in China. Some brands are now being produced in the United States, but quality control has not been standardized. The long-term safety has not been established.⁹⁻¹¹

Marketing

One of the most disturbing issues related to e-cigarettes

is that most brands are owned by big tobacco companies. In 2012, Lorillard bought blu eCigs. Altria (the parent company of Philip Morris), British American Tobacco, Imperial Tobacco, and Reynolds American all own and market e-cigarette brands. The companies use these brands to sponsor displays on race cars, in stores, at bus stops, and on cab tops, and even use them in television ads. Because the market is unregulated, these companies have been able to advertise on television and at sporting events, thereby undermining gains made in tobacco control.¹² To take things even further, the big tobacco companies are marketing directly to children and teens, especially with flavoured nicotine cartridges such as bubble gum and SweetARTS candy. Electronic cigarettes might be the new gateway to nicotine addiction for the upcoming generation. Celebrities have promoted their coolness factor, and social media such as Facebook, Twitter, and Snapchat have propelled sales and played a huge role in the success of e-cigarettes.

Psychological effects on smoking cessation


Marketing tactics aside, what about the psychological effects of the e-cigarette on smoking cessation? Many smoking cessation experts believe that the e-cigarette might delay breaking the habit of smoking.⁴ As e-cigarettes are more expensive than tobacco, people might return to smoking once the novelty has worn off. As well, people might use the e-cigarette longer because they believe it is safe. The e-cigarette might also lure young people into cigarette smoking owing to flavoured additives and easy availability (no age limit to purchase).

Conclusion

Government and health agencies are developing strategies to deal with this new phenomenon. Many institutions have decided to ban the use of e-cigarettes in places where cigarettes are prohibited. Restrictions on sales to minors have also been put in place in many regions. Further regulations regarding advertising and use are in development. Physicians play an essential role in explaining e-cigarettes to our patients and must be informed on all aspects.

The e-cigarette is a new, as-yet unstudied device. Most notably, it differs from other smoking cessation therapies, as it is not a medication and it is unregulated. There are hundreds of devices, mainly produced by big tobacco companies. The short- and long-term effects are not known. Further studies, including good randomized controlled trials, must be completed before we recommend this therapy to our patients.

The Food and Drug Administration recently released a study showing a sharp rise in e-cigarette use among American teenagers (up to 25% of high school students), with a corresponding modest decline in cigarette use (16% in 2011 to 9% in 2014).¹³

The e-cigarette has made it acceptable again to puff on a tobacco product. It remains to be seen if this will be a gateway into nicotine addiction. 

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Competing interests

None declared

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CLOSING ARGUMENTS — NO

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- There are hundreds of brands of electronic cigarettes (e-cigarettes) on the market, most of which have not been studied for safety in any systematic way. There are no mandated quality control standards.
- Trials to show that e-cigarettes can be used successfully in smoking cessation were underpowered to show any sustained benefit and were often sponsored by tobacco companies.
- Most e-cigarette brands are owned by big tobacco companies. Because the market is unregulated, these companies have been able to advertise on television and at sporting events, and market directly to children and teens.

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