



This information sheet provides information on the safety and use of electronic cigarettes (e-cigarettes).

Key messages

- Currently, there is limited evidence of the safety of e-cigarettes or their suitability as a smoking cessation aid.
- There are concerns about the attractiveness of e-cigarettes to young people, and subsequent tobacco smoking and nicotine addiction.
- The use of e-cigarettes in smokefree areas might weaken smokefree legislation, and the progress made in making our society see smoking as an unusual habit rather than normal thing to do.
- E-cigarettes are not manufactured to the same careful standards as pharmaceutical products, and research has found a number of quality control concerns.
- There are concerns about the regulation of e-cigarettes, and which legislation is most appropriate for this product.
- Before they are widely promoted, evidence is needed to ensure that e-cigarettes:
 - are a safe, harm reduction alternative to tobacco smoking
 - that they are a safe and effective cessation aid
 - that they don't undermine motivation to quit
 - that they don't act as a gateway to nicotine addiction for young people.

What is an e-cigarette and how does it work?

E-cigarettes are a form of Electronic Nicotine Delivery Device (ENDD). They are promoted as an alternative to tobacco products. People use them by inhaling doses of nicotine (or non-nicotine) into their lungs from a vaporized solution. Most e-cigarettes are designed to look like tobacco cigarettes or other tobacco smoking products, and can give a physical sensation similar to that of inhaled tobacco smoke.

E-cigarettes as a smoking cessation tool

It has been suggested that e-cigarettes:

- are much safer than the alternative of smoking tobacco
- that they may help people quit smoking
- reduce disease and the death linked with tobacco smoking.

Some research suggests that e-cigarettes may help smokers quit or reduce their smoking, and improve their health. However, research has also shown that nicotine absorption using e-cigarettes is not the same as absorption from tobacco cigarettes. There is also a lack of data on whether e-cigarettes relieve the desire to smoke and control other nicotine withdrawal symptoms.

There is a lack of proof of how well e-cigarettes work as a quit smoking tool. As such, the World Health Organization and the Ministry of Health, along with others do not consider that, currently, there is enough evidence that e-cigarettes are suitable tool to help smokers quit.

How safe are e-cigarettes?

Toxins and carcinogens

Since e-cigarettes do not burn tobacco, people are not exposed to the harmful toxins and chemicals. However, the health effects of using e-cigarettes are currently unknown as only a handful of studies have looked at the contents of the cartridges or vapour produced by e-cigarettes. The US Food and Drug Administration (FDA) checked the contents of two brands of e-cigarettes and have found that they contain carcinogens and toxic chemicals, although at lower levels than tobacco cigarettes. New Zealand research funded by the manufacturer, looked at the safety of one brand of e-cigarettes, and found that they are safer than tobacco cigarettes and safe when used in the way they were tested. Current research suggests that there are few risks to people using e-cigarette. However, the Ministry of Health suggest that this should be confirmed with information from long-term outcome studies that look at e-cigarette users' future health.

Young people

There is a concern that e-cigarettes could promote smoking among young people. E-cigarettes are a novelty product, which look like cigarettes. They are marketed in a similar way, and come in candy-like flavours, such as chocolate and fruit. These may appeal to and encourage young people to try these products. They are sold without any legal age restrictions. This may lead young people to try other tobacco products, and become addicted to them. There are also child safety issues in terms of children opening and swallowing the contents of nicotine cartridges. Cartridges are not generally sold in child-safe containers that could prevent the possible risk of choking or nicotine poisoning.

Quality control

Currently, e-cigarettes are not manufactured to the same strict standards as pharmaceutical products. Research has found a number of quality control concerns and health issues. The FDA found that there were different amounts of nicotine in or produced from e-cigarettes than were stated on the labels. Some e-cigarettes were marketed as containing no nicotine,

when they did, in fact, contain nicotine. Because e-cigarettes are not regulated (do not come under any laws), each brand and batches within a brand may vary. This could affect how well they work and the research into their safety.

Making tobacco use look normal, undermining attempts to quit smoking and maintaining nicotine addiction

The main reasons people use e-cigarettes are:

- to help them quit smoking or break their nicotine addiction
- to reduce the amount of tobacco they smoke
- to use them in smokefree places so they don't annoy others with their tobacco smoke
- to save money
- to replace cigarette smoking.

Depending on the country they are being marketed in, these claims are either stated or suggested. A possible unwanted outcome of e-cigarettes is that smokers will use them in non-smoking places, such as indoor areas. This will allow people who have quit tobacco smoking to carry on using a nicotine product in smokefree areas. This weakens tobacco control laws. It also continues to make smoking look like normal behaviour.

Are they legally available?

There have been many discussions and legal cases on how e-cigarettes should be sold or marketed to consumers by regulatory bodies around the world. Much of this depends on how the manufacturer markets the product and the claims they make about their product. In New Zealand, nicotine cartridges for e-cigarettes contain a medicine, which must be licensed under the Medicines Act before they can legally be sold. E-cigarettes are classified as medicines if sold with a nicotine cartridge, or as a medical device if sold as a quit smoking aid. However, it has been argued that they should qualify as tobacco products under the Smoke-free Environments Act.

Recommendations

E-cigarettes are an alternative to tobacco smoking, which may be an acceptable way of reducing the harm of smoking. However, currently, there is not much evidence on the safety of e-cigarettes, or whether these products are suitable as a quit smoking aid.

The researchers agree that more study is needed on:

1. the long-term health effects of using e-cigarettes
2. the value of e-cigarettes as a quit smoking tool
3. youth trying these products and then, possibly, becoming addicted to nicotine and tobacco use
4. issues around quality control and manufacturing of these products.

Until this research has been done it is not be known what effect e-cigarettes will have on the lives of those who use them.

The Cancer Society does not support making e-cigarettes widely available or allowing their marketing until the research evidence is available to decide their place as a safe and effective component of tobacco control at the individual and population levels.