

What are electronic cigarettes and how do they work?

Electronic cigarettes (or e-cigarettes) are battery-operated devices that work by heating a liquid to create a mist that is inhaled.

E-cigarettes are a type of alternative nicotine delivery system (ANDS), and are also known as personal vaporisers or electronic nicotine delivery systems (ENDS). The action of using an e-cigarette is commonly called 'vaping', and the mist created is called 'vapour'.¹

An e-cigarette is usually made up of the following parts:²

- **Mouthpiece** through which the vapour is inhaled.
- **Cartridge (or 'tank')** that contains the e-liquid or e-juice, and can be replaceable or refillable.
- Inside **the atomiser** a wick draws the e-liquid onto a heating element. When the person inhales on the e-cigarette, the heating element heats up and vapourises the e-liquid.
- **The battery** that powers the heating element in the atomiser is usually a rechargeable lithium-ion battery.

First-generation e-cigarettes have been purposefully made to look just like tobacco-containing cigarettes ('cigalikes'), and mostly use disposable cartridges. Second- and third-generation devices are larger and more powerful, have a refillable 'tank', and look nothing like tobacco-cigarettes (for example, some look like large ballpoint pens). Third-generation devices are also designed to be modifiable by the user.³

The main ingredients of e-liquids are the solutions propylene glycol and/or vegetable glycerine into which flavourings and/or nicotine may be dissolved. E-cigarettes do not contain tobacco. The vapour produced from e-cigarettes is visible and mimics cigarette smoke (although it does not contain the same chemicals).

Although the long-term health effects of e-cigarettes cannot yet be assessed, expert opinion is that e-cigarettes are likely to be much less harmful than smoking tobacco cigarettes (see Information Sheet #2). However, they are also not completely harmless, and there may be some short- and long-term health-related effects associated with using e-cigarettes. In particular, because e-cigarette manufacturing is not regulated, it is difficult to be certain of the quality of some e-cigarette devices and e-liquids.

E-cigarettes or e-liquids that can be legally purchased in the ACT **do not** contain nicotine. ACT residents can only purchase nicotine-containing e-cigarettes or e-liquids for personal therapeutic use with a medical prescription (see Information Sheet #4).

Do many people use e-cigarettes?

E-cigarette use in Australia is a relatively recent trend so there is not much national data available about their use. The National Drug Strategy Household Survey 2013 reported that 14.8% of smokers aged 14 or over had used e-cigarettes in the last 12 months⁴. A large Australia-wide survey in 2013 found that 9% of current cigarette smokers and 2% of recent quitters were using e-cigarettes at the time of the survey⁵. We do not know whether these people are using nicotine- or non-nicotine-containing e-cigarettes.

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Why do people use e-cigarettes?

In studies of smokers who have used e-cigarettes, four main reasons are given for their use:⁶

- To help them to quit smoking;
- To reduce the number of tobacco cigarettes smoked;
- To replace tobacco cigarettes in the long-term and stop them from taking up smoking tobacco again (relapsing); and
- To provide a temporary 'smoking' option when smoking tobacco cigarettes is not possible (e.g. in places where smoking is banned)

Although the Therapeutic Goods Administration (TGA) has not approved e-cigarettes as a smoking cessation device, some studies (especially of second- and third-generation devices) have found that they may be effective for some smokers in helping them to stop smoking tobacco-containing cigarettes (see Information Sheet #3).

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References

- 1 NSW Health. 'Electronic Cigarettes. What are electronic cigarettes?'. Accessed 23 June 2016. www.health.nsw.gov.au/tobacco/Pages/electronic-cigarettes.aspx
- 2 Australian Association of Smoking Cessation Professionals (AASCP). (2014). 'E-cigarettes: Safety Warning'. AASCP Newsletter, Issue #27, August 2014.
- 3 Royal College of Physicians. (2016). Nicotine without smoke: Tobacco harm reduction. London: RCP.

- 4 Australian Institute of Health and Welfare. (2014). National Drug Strategy Household Survey detailed report: 2013. Drug statistics series no.28. Cat.no.PHE 183. Canberra: AIHW.
- 5 Gravely S., Fong G.T., Cummings K.M., Yan M., Quah A.C.K., Borland R., Yong H.-H., Hitchman S.C., McNeill A., Hammond D., et al. (2014). Awareness, trial, and current use of electronic cigarettes in 10 countries: Findings from the ITC Project. Int. J. Environ. Res. Public Health.11:11691–11704.
- 6 Australian Association of Smoking Cessation Professionals (AASCP). (2014). E-cigarette Information Sheet. April 2014.



Cutting through the haze E-cigarette information sheet series

This information sheet is the first in a series that has been produced to provide information to workers at ACT health and community services and their clients to make informed decisions on the use (or not) of e-cigarettes. The information sheets in this series are:

- #1 What are electronic cigarettes and how do they work?
- #2 What do we know about the health effects of electronic cigarettes?
- #3 Can electronic cigarettes help people to quit smoking?
- #4 Are electronic cigarettes legal in the ACT?

There is debate about the health harms and effectiveness of e-cigarettes. These information sheets do not promote or discourage the use of e-cigarettes, but aim to provide information based on the best available evidence so that members of the ACT community can make their own informed decisions.

All information given is of a general nature. Individuals seeking to use e-cigarettes should obtain medical and/or legal advice for their own situation.

The research evidence surrounding electronic cigarettes is evolving rapidly. Every attempt has been made to ensure the accuracy and currency of this information at the time of writing. ATODA and ACT Health are planning a revision in 2018.