







Figure 1. The evolution of vaping devices.

avoid vaping around vulnerable people, such as children, pregnant women or people with cardiovascular disease.

### 6. Don't most people who vape also continue smoking?

Although some smokers quit very soon after their first experience with a vaporiser, many go through a transition stage of both smoking and vaping (dual use) before finally quitting smoking permanently. This pattern of dual use is just as common as when smokers use nicotine replacement therapy to quit.<sup>5</sup>

Most studies have found that dual users maintain their nicotine level but significantly reduce the number of cigarettes they smoke each day, thereby lowering their exposure to toxins.<sup>31</sup> However, quitting tobacco altogether is always the preferred goal.

### 7. Is vaping a gateway to smoking for young people?

Overseas experience suggests that vaping is replacing, rather than encouraging, smoking of tobacco cigarettes among young people (under 18 years of age).<sup>13</sup> Smoking rates in youth are continuing to fall where vaping is readily available.<sup>32</sup>

Vaping in young people is associated with trying tobacco cigarettes later in life.<sup>33</sup> However, there is no evidence that vaping causes young people who would not have otherwise smoked to take up smoking. A more likely explanation is 'common liability' – that is, that young people who are more attracted to experimentation are predisposed to trying both products.<sup>34</sup>

Most vaping by young people is experimental, infrequent and short-lived. Regular vaping by nonsmoking adolescents is rare.<sup>35</sup> Furthermore, most young people who experiment with vaping use flavoured e-liquids without nicotine.<sup>32</sup>

### 8. Won't vaping just 're-normalise' smoking'?

There is no evidence that the increased visibility of vaping is causing smoking to become socially acceptable again.<sup>13,14</sup> Most vaporisers now look very different to tobacco cigarettes and do not smell of smoke. Research suggests that they are unlikely to entice nonsmokers to take up smoking.<sup>36</sup>

There is also no evidence that they are undermining the decline in cigarette smoking rates among adults and youth. On the contrary, the evidence suggests they have contributed to an accelerating rate of decline in smoking since 2010 in countries where vaping is readily available and widely used, such as in the US.<sup>37</sup>

### 9. Is vaping legal in Australia?

Nicotine e-liquid can be used legally to quit or reduce smoking if the user has a nicotine prescription from a registered medical practitioner.<sup>38</sup> GPs may be asked to write such a prescription. Otherwise, nicotine for vaping is classified as a schedule 7 dangerous poison in the national Poisons Standard. It is an offence to possess or use it in all states and territories without an authority.<sup>38</sup>

It is legal to possess electronic cigarette devices and to vape with nicotine-free e-liquids, although there are restrictions imposed by some states on where vaping is permitted.

Vaping is not currently endorsed by the NHMRC or TGA. Whether electronic cigarettes are clinical interventions requiring strict regulatory approval or consumer devices is being debated.

### 10. Where can I get more information?

The Australian Tobacco Harm Reduction Association (ATHRA) is a not-for-profit

health promotion charity established to improve public health by raising awareness of reduced-risk alternatives to smoking and educating the public and health professionals. The ATHRA website ([www.athra.org.au](http://www.athra.org.au)) has detailed information for smokers on how to switch to vaping and a section for health professionals, including how to write a nicotine prescription.

The ATHRA board of directors comprises four independent medical practitioners with an interest in public health and one consumer representative. None of the directors has any financial or commercial relationship with any electronic cigarette or tobacco company.

### Conclusion

Smokers who are unable or unwilling to quit with conventional cessation aids may benefit from trialling an electronic cigarette as a substitute for smoking or as a quitting aid. There is mounting evidence that vaping is less harmful than smoking, although the long-term risks are not yet fully established. GPs asked by patients about these products should discuss the pros and cons with them. If patients wish to go ahead and try them, GPs can provide behavioural support and a prescription to enable legal use of nicotine e-liquid. **RMT**

### Further reading

- McEwen A, McRobbie H. Electronic cigarettes. Dorchester, UK: National Centre for Smoking Cessation and Training; 2016. Available online at: [http://www.ncsct.co.uk/shopdisp\\_electronic\\_cigarette\\_briefing.php](http://www.ncsct.co.uk/shopdisp_electronic_cigarette_briefing.php) (accessed May 2018).
- Mendelsohn CP. Electronic cigarettes. A guide for discussions with patients. *Resp Med Today* 2016; 1: 40-44.
- Mendelsohn C, Gartner C. Electronic cigarettes. What should you tell your patients? *Med Today* 2015; 16: 26-32.

### References

A list of references is included in the website version of this article ([www.respiratorymedicinetoday.com.au](http://www.respiratorymedicinetoday.com.au)).

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# Vaping

## 10 frequently asked questions

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### References

1. Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics Series No. 31. Cat. no. PHE 214. Canberra: AIHW, 2017. Available online at: [www.aihw.gov.au/getmedia/15db8c15-7062-4cde-bfa4-3c2079f30af3/21028.pdf.aspx?inline=true](http://www.aihw.gov.au/getmedia/15db8c15-7062-4cde-bfa4-3c2079f30af3/21028.pdf.aspx?inline=true) (accessed May 2018).
2. Hajek P. Electronic cigarettes have a potential for huge public health benefit. *BMC Medicine* 2014; 12: 225.
3. Chapman S. Should electronic cigarettes be as freely available as tobacco cigarettes? *No. BMJ* 2013; 346: f3840.
4. Yong HH, Borland R, Balmford J, et al. Prevalence and correlates of the belief that electronic cigarettes are a lot less harmful than conventional cigarettes under the different regulatory environments of Australia and the United Kingdom. *Nicotine Tob Res* 2017; 19: 258-263.
5. West R, Brown J. Smoking Toolkit Study. Smoking in England. Available online at: [www.smokinginengland.info/latest-statistics/](http://www.smokinginengland.info/latest-statistics/) (accessed May 2018).
6. Caraballo RS, Shafer PR, Patel D, Davis KC, McAfee TA. Quit methods used by US adult cigarette smokers, 2014-2016. *Preventing Chronic Disease* 2017; 14: E32.
7. Berry KM, Reynolds LM, Collins JM, et al. E-cigarette initiation and associated changes in smoking cessation and reduction: the Population Assessment of Tobacco and Health Study, 2013-2015. *Tob Control* 2018; Mar 24. Epub ahead of print.
8. Beard E, West R, Michie S, Brown J. Association between electronic cigarette use and changes in quit attempts, success of quit attempts, use of smoking cessation pharmacotherapy, and use of stop smoking services in England: time series analysis of population trends. *BMJ* 2016; 354: i4645.
9. Farsalinos KE, Poulas K, Voudris V, Le Houezec J. Electronic cigarette use in the European Union: analysis of a representative sample of 27 460 Europeans from 28 countries. *Addiction* 2016; 111: 2032-2040.
10. Action on Smoking and Health UK. Use of electronic cigarettes (vapourisers) among adults in Great Britain. 2017. Available online at: <http://ash.org.uk/category/information-and-resources/fact-sheets> (accessed May 2018).
11. Hartmann-Boyce J, McRobbie H, Bullen C, Begh R, Stead LF, Hajek P. Electronic cigarettes for smoking cessation. *Cochrane Database Syst Rev* 2016; (9): CD010216.
12. Hitchman SC, Brose LS, Brown J, Robson D, McNeill A. Associations between e-cigarette type, frequency of use, and quitting smoking: findings from a longitudinal online panel survey in Great Britain. *Nicotine Tob Res* 2015; 17: 1187-1194.
13. Royal College of Physicians. Nicotine without smoke: tobacco harm reduction. London: RCP; 2016. Available online at: [www.rcplondon.ac.uk/projects/outputs/nicotine-without-smoke-tobacco-harm-reduction-0](http://www.rcplondon.ac.uk/projects/outputs/nicotine-without-smoke-tobacco-harm-reduction-0) (accessed May 2018).
14. McNeill A, Brose LS, Calder R, Bauld L, Robson D. Evidence review of e-cigarettes and heated tobacco products 2018. A report commissioned by Public Health England. London: Public Health England; 2018. Available online at: [www.gov.uk/governmentpublications/e-cigarettes-and-heated-tobacco-products-evidence-review](http://www.gov.uk/governmentpublications/e-cigarettes-and-heated-tobacco-products-evidence-review) (accessed May 2018).
15. Stephens WE. Comparing the cancer potencies of emissions from vapourised nicotine products including e-cigarettes with those of tobacco smoke. *Tob Control* 2017; Aug 4. Epub ahead of print.
16. Chun LF, Moazed F, Calfee CS, Matthay MA, Gotts JE. Pulmonary toxicity of e-cigarettes. *Am J Physiol Lung Cell Mol Physiol* 2017; 313: L193-L206.
17. Larcombe AN, Janka MA, Mullins BJ, Berry LJ, Bredin A, Franklin PJ. The effects of electronic cigarette aerosol exposure on inflammation and lung function in mice. *Am J Physiol Lung Cell Mol Physiol* 2017; 313: L67-L79.
18. Cibella F, Campagna D, Caponnetto P, et al. Lung function and respiratory symptoms in a randomized smoking cessation trial of electronic cigarettes. *Clin Sci (Lond)* 2016; 130: 1929-1937.
19. Polosa R, Morjaria J, Caponnetto P, Caruso M, Strano S, Battaglia E, et al. Effect of smoking abstinence and reduction in asthmatic smokers switching to electronic cigarettes: evidence for harm reversal. *Int J Environ Res Public Health* 2014; 11: 4965-4977.
20. Campagna D, Cibella F, Caponnetto P, et al. Changes in breathomics from a 1-year randomized smoking cessation trial of electronic cigarettes. *Eur J Clin Invest* 2016; 46: 698-706.
21. Polosa R, Morjaria JB, Caponnetto P, et al. Evidence for harm reduction in COPD smokers who switch to electronic cigarettes. *Respir Res* 2016; 17: 166.
22. Miler J, Mayer B, Hajek P. Changes in the frequency of airway infections in smokers who switched to vaping: results of an online survey. *J Addict Res Ther* 2016; 7(4).
23. Polosa R, Cibella F, Caponnetto P, et al. Health impact of e-cigarettes: a prospective 3.5-year study of regular daily users who have never smoked. *Sci Rep* 2017; 7: 13825.
24. Wang MP, Ho SY, Leung LT, Lam TH. Electronic cigarette use and respiratory symptoms in Chinese adolescents in Hong Kong. *JAMA Pediatr* 2016; 170(1): 89-91.
25. Cho JH, Paik SY. Association between electronic cigarette use and asthma among high school students in South Korea. *PLoS One* 2016; 11: e0151022.
26. Flouris AD, Chorti MS, Poulianiti KP, Jamurtas AZ, Kostikas K, Tzatzarakis MN, et al. Acute impact of active and passive electronic cigarette smoking on serum cotinine and lung function. *Inhal Toxicol* 2013; 25: 91-101.
27. Lappas AS, Tzortzi AS, Konstantinidi EM, et al. Short-term respiratory effects of e-cigarettes in healthy individuals and smokers with asthma. *Respirology* 2018; 23: 291-297.
28. McNeill A, Hajek P. Underpinning evidence for the estimate that e-cigarette use is around 95% safer than smoking: authors' note. PHE publications gateway: 2015260. 2015. Available online at [www.gov.uk/government/publications/e-cigarettes-an-evidence-update](http://www.gov.uk/government/publications/e-cigarettes-an-evidence-update) (accessed May 2018).
29. Shahab L, Goniewicz ML, Blount BC, et al. Nicotine, carcinogen, and toxin exposure in long-term e-cigarette and nicotine replacement therapy users: a cross-sectional study. *Ann Intern Med* 2017; Mar 21. Epub ahead of print.

30. Niaura R. Re-thinking nicotine and its effects. Schroeder Institute, Truth Initiative. 2016. Available online at: <http://truthinitiative.org/sites/default/files/ReThinking-Nicotine.pdf> (accessed May 2018).
31. McRobbie H, Phillips A, Goniewicz ML, et al. Effects of switching to electronic cigarettes with and without concurrent smoking on exposure to nicotine, carbon monoxide, and acrolein. *Cancer Prev Res* 2015; 8: 873-878.
32. National Institute on Drug Abuse. Monitoring the Future Survey. 2016. Available online at: [www.drugabuse.gov/related-topics/trends-statistics/monitoring-future](http://www.drugabuse.gov/related-topics/trends-statistics/monitoring-future) (accessed May 2018).
33. Soneji S, Barrington-Trimis JL, Wills TA, et al. Association between initial use of e-cigarettes and subsequent cigarette smoking among adolescents and young adults: a systematic review and meta-analysis. *JAMA Pediatrics* 2017; 171: 788-797.
34. Vanyukov MM, Tarter RE, Kirillova GP, et al. Common liability to addiction and "gateway hypothesis": theoretical, empirical and evolutionary perspective. *Drug Alcohol Depend* 2012; 123: S3-17.
35. Bauld L, MacKintosh AM, Ford A, McNeill A. E-cigarette uptake amongst UK youth: experimentation, but little or no regular use in nonsmokers. *Nicotine Tob Res* 2016; 18: 102-103.
36. McKeganey N, Barnard M, Russell C. Visible vaping: e-cigarettes and the further de-normalization of smoking. *Int Arch Addict Res Med* 2016; 2: 023.
37. National Center for Health Statistics. Early release of selected estimates based on data from the National Health Interview Survey, January–September 2017. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2018. Available online at: [www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease201803\\_08.pdf](http://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease201803_08.pdf) (accessed May 2018).
38. Douglas H, Hall W, Gartner C. E-cigarettes and the law in Australia. *Aust Fam Physician* 2015; 44: 415-418.