

Are electronic cigarettes a gateway to adolescent smoking?



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*A closer look at the evidence suggests vaping might be diverting adolescents away from tobacco, writes **Dr Colin Mendelsohn**.*

A COMMONLY raised concern about electronic cigarettes (e-cigarettes) is that they may be a gateway to smoking for adolescents - that they may encourage nicotine addiction and progression to tobacco smoking in young people who would not otherwise have smoked.

This argument is embedded in the [policies of the AMA \(https://ama.com.au/position-statement/tobacco-smoking-and-e-cigarettes-2015\)](https://ama.com.au/position-statement/tobacco-smoking-and-e-cigarettes-2015), the Heart Foundation and [Cancer Council Australia \(http://wiki.cancer.org.au/policy/Position_statement_-_Electronic_cigarettes\)](http://wiki.cancer.org.au/policy/Position_statement_-_Electronic_cigarettes) and is used to argue for strict regulation.

However, the available evidence does not support this concern. In fact, the opposite may be true; e-cigarettes may actually be diverting adolescents away from smoking.

Misty business

An e-cigarette is a battery-operated device which heats a liquid solution into a mist or aerosol that the user inhales, simulating a smoking experience.

The mist usually, but not always, contains nicotine. E-cigarette use is known as 'vaping' and users are 'vapers'. E-cigarettes have now been available in many countries since 2006. Their experience can provide valuable insights and can help guide rational policy in Australia.

One argument proposed for the gateway theory is based on misinterpretation of survey results. Many studies have found that young people who use e-cigarettes are also more likely to smoke.^{1, 2} This association has been incorrectly interpreted as causal by some, when it actually tells us nothing about whether the vaping caused the smoking. A more likely explanation is that young people who are more attracted to experimentation are more likely to try both products.

Population evidence also supports the lack of a gateway. As e-cigarette use by adolescents is rising, adolescent smoking rates are falling and are now at record lows in many countries. For example, in the US, from 2011 to 2014, adolescent e-cigarette use rose from 1.5% to 13.4%.³ However, adolescent smoking rates fell from 15.8% to an all-time low of 9.2%.³ If a gateway mechanism is operating, an increase in smoking rates would be expected.

One possible explanation for this reduction in smoking prevalence is that e-cigarettes are preventing smoking uptake. Young people who experiment with e-cigarettes may otherwise have smoked in the absence of e-cigarettes. Using an e-cigarette which may be more enjoyable and socially acceptable may prevent adoption of the more harmful behaviour. It is obviously better for young people not to use e-cigarettes, but vaping is preferable to smoking and is at least 95% safer.⁴

Further evidence to support this substitution hypothesis has emerged in the United States, where some states have banned the sale of e-cigarettes to minors. Two large studies have found that the introduction of bans was associated with a significant increase in adolescent smoking rates compared to states without bans.^{5,6} Banning e-cigarette sales to adolescents may be having the perverse consequence of eliminating a much less harmful substitute behaviour which is diverting users from smoking tobacco.

Furthermore, like adult smokers, some young people are using e-cigarettes to help them quit smoking.⁷ E-cigarette bans remove this treatment option.

Closing the gateway

Importantly, it is rare for non-smoking youth to become regular e-cigarette users. In the UK, less than 0.2% of never-smoking youth vape regularly and there is no evidence of progression to smoking.⁸ Regular e-cigarette use is almost exclusively confined to young people who already smoke.^{8,9}

Another argument claimed to support the gateway theory is that adolescents will become addicted to nicotine from e-cigarettes and then progress to a more potent nicotine delivery device, such as cigarettes. However, the great majority of adolescent e-cigarette users do not use nicotine. Only [20% report using nicotine in the US](http://(https://www.drugabuse.gov/related-topics/trends-statistics/monitoring-future/overview-findings-2015/monitoring-future-figures-2015)) ([http://\(https://www.drugabuse.gov/related-topics/trends-statistics/monitoring-future/overview-findings-2015/monitoring-future-figures-2015\)](http://(https://www.drugabuse.gov/related-topics/trends-statistics/monitoring-future/overview-findings-2015/monitoring-future-figures-2015))) and 28% in Canada.¹⁰

After 10 years of real-world experience overseas there is no convincing evidence to support the notion that adolescent vaping leads to smoking. In fact, e-cigarettes may be a gateway out of smoking and may be reducing adolescent smoking rates. Policy decisions need to be based on the growing evidence base and not on speculation, ideological beliefs and old fashioned views.

References

1. Primack BA, Soneji S, Stoolmiller M, Fine MJ, Sargent JD. Progression to Traditional Cigarette Smoking After Electronic Cigarette Use Among US Adolescents and Young Adults. *JAMA Pediatr.* 2015;169(11):1018-23

2. Leventhal AM, Strong DR, Kirkpatrick MG et al. Association of Electronic Cigarette Use With Initiation of Combustible Tobacco Product Smoking in Early Adolescence. *Jama*. 2015;314(7):700-7
3. Corey CG, Wang B, Johnson SE. Notes from the field: electronic cigarette use among middle and high school students – United States, 2011–2012. *MMWR Morb Mortal Wkly Rep*. 2013;62(35):729-30
4. McNeill A, Brose LS, Calder R, Hitchman SC, Hajek P, McRobbie H. E-cigarettes: an evidence update. A report commissioned by Public Health England. PHE publications gateway number: 2015260 2015. Available at <https://www.gov.uk/government/publications/e-cigarettes-an-evidence-update> (<https://www.gov.uk/government/publications/e-cigarettes-an-evidence-update>) (accessed February 2016)
5. Friedman AS. How does electronic cigarette access affect adolescent smoking? *J Health Econ*. 2015;44:300-8
6. Pesko MF, Hughes JM, Faisal FS. The influence of electronic cigarette age purchasing restrictions on adolescent tobacco and marijuana use. *Prev Med*. 2016
7. Kong G, Morean ME, Cavallo DA, Camenga DR, Krishnan-Sarin S. Reasons for Electronic Cigarette Experimentation and Discontinuation Among Adolescents and Young Adults. *Nicotine Tob Res*. 2015;17(7):847-54
8. 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(1):102-3
9. Use of electronic cigarettes among children in Great Britain. Action on Smoking and Health, UK, 2015 Contract No.: Fact sheet 34. Available at <http://www.ash.org.uk/information/facts-and-stats/fact-sheets> (<http://www.ash.org.uk/information/facts-and-stats/fact-sheets>) (accessed June 2015)
10. Hamilton HA, Ferrence R, Boak A et al. Ever Use of Nicotine and Nonnicotine Electronic Cigarettes Among High School Students in Ontario, Canada. *Nicotine Tob Res*. 2015;17(10):1212-8

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