

22 January 2018

Fears about adolescent vaping overstated



Authored by Colin Mendelsohn

[Issue 2 / 22 January 2018](#)

NOTHING has inflamed the e-cigarette debate like fears that vaping will entice young people to take up smoking. This concern has led to [calls](#) for a very precautionary and restrictive approach to their use in Australia.

However, public policy on vaping should be based on a calm assessment of the best available evidence. It should also take into account the overall public health impact of any regulatory decisions and the ethical issues involved. This article reviews the latest evidence on some of the key issues in this debate.

How common is regular vaping by teenagers?

Contrary to alarming claims, regular vaping by young people is rare and is almost exclusively confined to current or past smokers.

[Most studies](#) have inflated the prevalence among youth by defining vaping as “past 30-day use” (even a single puff), thereby ignoring the frequency of use. This misrepresents the fact that most teen vaping is experimental and short-lived. Teenagers are curious, vaping is seen as a fun thing to do and some kids try it.

However, more frequent vaping is very uncommon among teenagers. In the largest [study](#) to date of over 60 000 teenagers in the UK, only 1–3% reported regular vaping (at least weekly). Regular use by teens who had never smoked was very rare, less than 0.5%, and there was little or no evidence of progression to smoking.

In the 2014 US [National Youth Tobacco Survey](#) , past 30-day vaping was reported by 9% of 15–18 years old, most of whom were current or past smokers. Less than 0.1% of non-smokers vaped regularly (10 days or more in the past month). The majority of youth who vaped did so on only 1–5 days in the past month.

Is vaping a “gateway” to smoking?

The scientific evidence does not support or rule out the “[gateway theory](#)”; that is, that young people who would never have smoked cigarettes try vaping, become addicted and then go on to regular smoking.

[Observational studies](#) have found that some teenagers who experiment with vaping go on to smoke when followed up later. However, as [experts](#) have pointed out, cause and effect cannot be established from studies of this kind. Many other unknown and unmeasured [confounders](#) could explain the association.

Moreover, many studies equate just one puff of a cigarette in the past 30 days with regular smoking at follow-up. This exaggerates the real uptake of smoking as only a [minority](#) of teenagers who try smoking will progress to daily smoking.

A plausible alternative explanation for the link between smoking and vaping is a “[common liability](#)” for substance use. Young people who are impulsive, rebellious and sensation-seeking are more likely to try both behaviours. Furthermore, the reverse pathway is much more common. Most teens who experiment with vaping are [already regular smokers](#).

The claim that adolescents will become addicted to nicotine from vaping and then progress to cigarettes for a bigger nicotine hit is overstated because the majority of adolescent vapers do not use nicotine. The US [Monitoring the Future](#) survey, in 2016, reported that only one in four 17–18-year-olds who vaped used nicotine. Similar low rates of nicotine use have been reported [in other countries](#).

Vaping may also be a “reverse gateway” out of smoking, as some teens use vaping to [quit smoking](#).

How is adolescent vaping affecting smoking rates?

The uptake of vaping in those countries that allow sales has coincided with significant falls in youth smoking rates. If vaping was attracting young people to smoke, an increase in youth smoking rates would be expected.

The [Monitoring the Future](#) survey shows that youth smoking in the US has declined faster over the past few years than at any time in the 40-year history of the survey. Youth smoking rates in [England](#) are also continuing to fall unabated.

A recent [Canadian review](#) concluded that it is likely that “vaping is replacing — rather than encouraging — the smoking of tobacco cigarettes”. It is possible that young people who experiment with vaping may otherwise have smoked if the low-risk alternative had not been available. Vaping may be more enjoyable and socially acceptable and may prevent the uptake of the more harmful behaviour. It is obviously better for young people not to use vaping devices, but vaping is preferable to smoking and is [at least 95% safer](#).

[Two large studies](#) in the US also support the theory that vaping is a substitute for smoking. Both found that the introduction of bans on the sales of vaporisers to minors in two states was associated with a significant increase in adolescent smoking compared with states without bans. However, [a third study](#) with different methodology found the opposite effect.

Is nicotine harmful to adolescent brains?

Concerns have been raised from animal studies that nicotine may harm the developing brain in adolescence. Although this is a potential risk, it is unclear how these findings translate to humans. However, there is [no evidence](#) of any significant health harm so far.

Importantly, the great majority of vaping occurs in young people who already smoke. Any additional risk from vaping is undesirable, but it is [minor in comparison to smoking](#).

What is the overall public health impact?

It is possible that some young people who would have never smoked will try vaping and become smokers. However, this small risk should be weighed against the much larger public health benefit of vaping as a tobacco harm reduction tool or cessation aid for adult smokers. Vaping is now the most popular quitting method in the [US](#) and [UK](#) and has been estimated to have helped [millions](#) of adult smokers to quit. [Modelling studies](#) have shown that, even when pessimistic assumptions are made about harm to youth, the overall impact of vaping on public health is likely to be large and positive.

The current crisis in tobacco control in Australia is the persistence of smoking in established adult smokers. Adult smoking rates [have not declined](#) since 2013 and [two out of three](#) continuing smokers will die prematurely of a smoking-related disease. It is cruel and arguably unethical to block adult smokers' access to an effective harm reduction treatment on the basis of exaggerated estimates of potential harms to young people.

Australia needs a balanced regulatory policy that restricts vaping by young people while supporting its use for adult smokers who are otherwise unable to quit smoking or nicotine. The current blanket ban is driven by exaggerated fears about potential harms to adolescents and completely ignores the interests of adult smokers who want to use these products to improve their health.

Colin Mendelsohn is an associate professor in the School of Public Health and Community Medicine at the University of New South Wales.

Poll

Vaping acts as a gateway to cigarette smoking for teenagers

- **Strongly disagree (75%, 27 Votes)**
- Disagree (17%, 6 Votes)
- The evidence is not yet clear (8%, 3 Votes)
- Strongly agree (0%, 0 Votes)
- Agree (0%, 0 Votes)

Total Voters: **36**