

Should e-cigarettes be banned in Australia?

What they said...

'It's big tobacco which is arguing the case for these e-cigarettes and they're only doing it because it's in their interests. I have a very strong, clear, categorical view that this is not something that should occur in Australia'

Federal Health Minister, Greg Hunt

'I believe that e-cigarettes have huge potential to save lives by providing an alternative to smoking. Yet this can only be realised if we address negative harm perceptions and communicate honestly with the public'

Linda Bauld, Professor of Health Policy and CRUK/BUPA Chair in Behavioural Research for Cancer Prevention, University of Stirling

The issue at a glance

On October 6, 2017, the federal Health Minister, Greg Hunt, stated that he would never lift the ban on e-cigarettes in Australia, despite an ongoing Senate inquiry into their use.

<http://www.abc.net.au/triplej/programs/hack/health-minister-definitively-rules-out-legalising-e-cigarettes/9055736>

Five months before, on May 25, 2017, the Minister had announced that the Standing Committee on Health, Aged Care and Sport would inquire into and report on the use and marketing of e-cigarettes and personal vaporisers in Australia. Submissions to the inquiry closed on July 6, 2017.

https://www.aph.gov.au/Parliamentary_Business/Committees/House/Health_Aged_Care_and_Sport/ElectronicCigarettes

Explaining why he had made his decision in advance of the Senate Committee reporting its findings, the Health Minister stated, 'It's big tobacco which is arguing the case for these e-cigarettes and they're only doing it because it's in their interests. I have a very strong, clear, categorical view that this is not something that should occur in Australia.'

<http://www.abc.net.au/triplej/programs/hack/health-minister-definitively-rules-out-legalising-e-cigarettes/9055736>

The Minister's statement has met with support from the National Health and Medical Research Council and federal and state health departments. However, a range of health advocates from overseas and some authorities in Australia have defended the health benefits of e-cigarettes and condemned the Minister's statement as premature.

<http://www.theaustralian.com.au/national-affairs/health/health-trio-accused-of-presenting-factual-errors-to-ecig-inquiry/news-story/c360953ae14744b6beafc965eb1aa292>

Background

(The information below was derived primarily from the Wikipedia entry titled Electronic cigarette, accessed at https://en.wikipedia.org/wiki/Electronic_cigarette and the Wikipedia entry titled Regulation of electronic cigarettes accessed at

https://en.wikipedia.org/wiki/Regulation_of_electronic_cigarettes)

Physical description

Electronic cigarettes (or e-cigarettes) are battery powered devices which heat liquid (also called e-liquid) into an aerosol which is inhaled into a person's lungs. The aerosol is often

called 'vapour'. E-cigarettes are also called electronic nicotine delivery systems (ENDS), alternative nicotine delivery systems (ANDS), or e-cigs.

Using e-cigarettes is sometimes called vaping. The liquid in the e-cigarette is usually made of nicotine, propylene glycol, glycerine, and flavourings. Not all e-liquids contain nicotine.

The health risks of e-cigarettes are uncertain, but they are probably safer than tobacco cigarettes. Their long-term health effects are not known. They can help some smokers quit. When used by non-smokers, e-cigarettes can lead to nicotine addiction, and there is concern that children could start smoking after using e-cigarettes. So far, no serious adverse effects have been reported in trials. Less serious adverse effects include throat and mouth irritation, vomiting, nausea, and coughing.

The exact composition of the e-cigarette vapour varies. The majority of toxic chemicals found in tobacco smoke are absent in e-cigarette aerosol. Those present are mostly below 1% corresponding levels in tobacco smoke. Some contain diacetyl, a chemical linked to popcorn lung. The aerosol can contain toxicants and traces of heavy metals at levels permissible in inhalation medicines, and potentially harmful chemicals not found in tobacco smoke at concentrations permissible by workplace safety standards. However, chemical concentrations may exceed the stricter public safety limits.

History and increasing popularity

The modern e-cigarette was invented in 2003 by Chinese pharmacist Hon Lik, and as of 2015 most e-cigarettes are made in China. Since they were first sold in 2004 their global use has risen exponentially. In the United States and the United Kingdom their use is widespread.

Reasons for using e-cigarettes involve trying to quit smoking, reduce risk, or save money, though many use them recreationally. A majority of users still smoke tobacco, causing concerns that dual use may "delay or deter quitting". About 60% of UK users are smokers and roughly 40% are ex-smokers. In the UK use among never-smokers was negligible.

Because of overlap with tobacco laws and medical drug policies, e-cigarette legislation is debated in many countries. A European directive of 2016 set standards for liquids, vaporizers, ingredients and child-proof liquid containers. As of August 2016, the US FDA extended its regulatory power to include e-cigarettes.

Since their introduction to North America and Europe in 2007, the devices have become known by over 500 different brand names. Consumption among adults doubled by 2012, and by 2014, about 4% of US adults used e-cigarettes every day or some days. Global sales are in excess of US\$7 billion.

Regulation of e-cigarettes

Regulation of electronic cigarettes varies across countries and states, ranging from no regulation to banning them entirely. Others have introduced strict restrictions and some have licensed devices as medicines such as in the UK. As of 2015, around two thirds of major nations have regulated e-cigarettes in some way. Because of the potential relationship with tobacco laws and medical drug policies, e-cigarette legislation is being debated in many countries. The companies that make e-cigarettes have been pushing for laws that support their interests

Australia

Nicotine is classified as an S7 poison in Australia and in all Australian states and territories it is an offence to manufacture, sell or supply nicotine without a licence or specific authorisation.

This means e-cigarettes containing nicotine cannot be sold in any Australian state or territory. There are several reported instances where individuals have been charged with the illegal supply of liquid nicotine for use in e-cigarettes in Queensland.

A recent clarification from the Federal Department of Health stated that nicotine can be imported by an individual for use as an unapproved therapeutic good (e.g. a smoking cessation aid), but the importer must hold a prescription from an Australian registered medical practitioner and only import 3 months' supply at any one time.

United States

2014 figures indicate more than 9 million consumers in the United States regularly use e-cigarettes. Vaping is not consistently regulated across the United States. Some state and regional governments have extended their indoor smoking bans to include e-cigarettes. A review of regulations in 40 states found some state definitions allow e-cigarettes to avoid smoke-free laws, taxation, and restrictions on sales and marketing. The tobacco industry heavily lobbies states to make it harder to regulate and tax e-cigarettes.

The Federal Drug Administration (FDA) regulates all tobacco products, including e-cigarettes, hookah tobacco, and cigars. E-cigarettes were brought under FDA regulation in August 2016.

Under the 2016 ruling, the FDA will evaluate certain issues, including ingredients, product features and health risks, as well their appeal to minors and non-users. The FDA rule also bans access to minors. A photo ID is required to buy e-cigarettes, and their sale in all-ages vending machines is not permitted. The FDA in September 2016 has sent warning letters for unlawful underage sales to online retailers and retailers of e-cigarettes.

United Kingdom

In the United Kingdom, the use, sale and advertising of e-cigarettes are legal and e-cigarettes are not covered by laws restricting smoking in public places. However, businesses may choose to ban e-cigarettes as well. A notable example is Transport for London, banning smoking and vaping as their Conditions of Carriage. Effective 1 October 2015, it is illegal to sell e-cigarettes or e-liquids to minors. In 2014 the government announced legislation would be brought forward to outlaw the purchase of e-cigarettes by people under the age of 18. In October 2014 the United Kingdom's Advertising Standards Authority changed the regulations on e-cigarette advertising, allowing the devices to appear in TV ads from 10 November.

In June 2015 the Welsh Government announced that under legislation it planned to pass, in Wales e-cigarettes would be included in existing bans on smoking in workplaces and other public spaces.

Internet information

On November 24, 2017, The Australian published a report titled 'Health trio accused of presenting "factual errors" to e-cig inquiry'. The report presents accusations of supplying false information made by British Health authorities against Australian health authorities in relation to e-cigarettes. The Australian response is also supplied.

The full text can be accessed at <http://www.theaustralian.com.au/national-affairs/health/health-trio-accused-of-presenting-factual-errors-to-ecig-inquiry/news-story/c360953ae14744b6beafc965eb1aa292>

On November 14, 2017, the ABC published a report titled 'E-cigarettes: Is Australia out of step with other countries?'

This is a detailed treatment of the arguments for and against making e-cigarettes more readily available in Australia.

The full text can be accessed at <http://www.abc.net.au/news/health/2017-11-14/e-cigarettes-is-australia-out-of-step-with-other-countries/9138430>

On October 3, 2017, Live Science published a report titled 'Should People Who Can't Quit Smoking Switch to E-Cigarettes?' which advocates that those who cannot give up tobacco smoking would benefit from swapping their habit for vaping.

The full text can be accessed at <https://www.livescience.com/60590-should-you-switch-cigarettes-to-ecigarettes.html>

On September 21, 2017, BBC News published a news report titled 'NHS Health Scotland: E-cigs 'definitely' less harmful than smoking'

The news report detailed a consensus statement, published by Scotland's national health education and promotion agency, asserting the relative health benefits of e-cigarettes in comparison to tobacco smoking.

The full text can be accessed at <http://www.bbc.com/news/uk-scotland-41333537>

On August 29, 2017, Tobacco Treatment Specialist, Dr Colin Mendelsohn, published on his Internet site a comment titled 'No evidence that e-cigarettes are leading teens to smoke'

The piece argues that there is no significant evidence to suggest that young people shift from e-cigarettes to tobacco.

The full text can be accessed at <http://colinmendelsohn.com.au/posts/no-evidence-e-cigarettes-are-leading-teens-smoke/>

On August 28, 2017, The Guardian published an analysis titled 'Smoke and mirrors? Experts divide over Australia's e-cigarettes ban'

The article presents the arguments for and against Australia's current ban on e-cigarettes.

The full text can be accessed at <https://www.theguardian.com/society/2017/aug/28/smoke-and-mirrors-experts-divide-over-australias-e-cigarettes-ban>

Before July 6, 2017, a joint submission from the Thoracic Society of Australia and New Zealand and Lung Foundation Australia was made to the Inquiry into the Use of Electronic Cigarettes and Personal Vaporisers in Australia conducted by a Senate Health Committee.

The submission details the harm to human lungs attributable to e-cigarettes.

The full text can be accessed at <https://www.thoracic.org.au/documents/item/1051>

On February 27, 2017, The Huffington Post published a report titled 'Tobacco Companies Taking Over the E-Cigarette Industry'

The report details the extent to which Big Tobacco is taking control of the production and marketing of e-cigarettes.

The full text can be accessed at https://www.huffingtonpost.com/entry/tobacco-companies-taking-over-the-e-cigarette-industry_us_58b48e02e4b0658fc20f98d0

On February 13, 2017, The Conversation published a comment by Tobacco Treatment Specialist, Dr Colin Mendelsohn, titled 'Australia's looming e-cigarette ban robs smokers of a chance to quit'

Dr Mendelsohn warns that Australia is passing up a public health opportunity in banning e-cigarettes.

The full text can be accessed at <https://theconversation.com/australias-looming-e-cigarette-ban-robs-smokers-of-a-chance-to-quit-72566>

On February 6, 2017, CBS News published a news report titled 'Are e-cigarettes safer than tobacco? New study fires up debate'

The report details the results of a study which indicates that those who change from tobacco cigarettes to e-cigarettes reduce their exposure to harmful substances by between 56 and 97 percent.

The full text of this report can be accessed at <https://www.cbsnews.com/news/are-e-cigarettes-safer-than-tobacco-new-study-fuels-debate/>

On January 2, 2017, The Guardian published a comment by Linda Bauld, Professor of Health Policy and CRUK/BUPA Chair in Behavioural Research for Cancer Prevention, University of Stirling. The comment is titled 'I'll say it again: E-cigarettes are still far safer than smoking'. Bauld argues for the benefits of making e-cigarettes more readily available. The full text can be accessed at <https://www.theguardian.com/science/sifting-the-evidence/2017/jan/02/ill-say-it-again-e-cigarettes-are-still-far-safer-than-smoking>

In December, 2016, the United States Center on Addiction published an article titled 'What Parents Should Know About E-Cigarettes' which details the harm e-cigarettes can do to adolescent smokers.

The full text can be accessed at <https://www.centeronaddiction.org/e-cigarettes/about-e-cigarettes/what-parents-should-know-about-e-cigarettes>

On December 9, 2016, NBC News published a report titled 'E-Cigarettes Are Dangerous to Children, Surgeon General Says'

The news report details a United States Surgeon's General report detailing the harm done to children and adolescents through the use of e-cigarettes.

The full text can be accessed at <https://www.nbcnews.com/health/health-news/e-cigarettes-aren-t-safe-remain-dangerous-children-surgeon-general-n693576>

On July 25, 2016, Harvard Health Publishing published a report titled 'E-cigarettes: Good news, bad news'. Among the benefits the report indicates can be attributed to e-cigarettes are the far fewer toxins and carcinogens they contain compared to tobacco cigarettes.

<https://www.health.harvard.edu/blog/electronic-cigarettes-good-news-bad-news-2016072510010>

On June 20, 2016, ABC News published a report titled, 'Vaping tests reveal cancer-causing ingredients in e-cigarettes, ACCC alleges'

The report details claims regarding the harmful ingredients within e-cigarettes. The full text can be accessed at <http://www.abc.net.au/news/2016-06-20/tests-allege-e-cigarettes-have-cancer-causing-ingredients/7526364>

On August 25, 2015, Futurity published an article titled 'Does vaping prep teens for lifelong addiction?' which detailed the nature of nicotine addiction and its impact on young smokers.

The full text can be accessed at <http://www.futurity.org/teens-e-cigarettes-vaping-988602-2/>

On August 19, 2015, The Conversation published a comment by Linda Bauld, Professor of Health Policy and CRUK/BUPA Chair in Behavioural Research for Cancer Prevention, University of Stirling. The comment is titled 'Young people and e-cigarettes: what we know

so far'. Bauld argues that current data suggests that children and adolescents are not taking up e-cigarettes in significant numbers.

The full text can be accessed at <https://theconversation.com/young-people-and-e-cigarettes-what-we-know-so-far-46243>

On April 21, 2015, The Conversation published a comment by Simon Chapman, Professor of Public Health, University of Sydney. The comment is titled 'Want to quit smoking? Switching to e-cigarettes no advantage'.

Professor Chapman examines the findings of a recent study which indicate that using e-cigarettes to not supply an advantage to those seeking to give up smoking tobacco cigarettes. The full text can be accessed at <https://theconversation.com/want-to-quit-smoking-switching-to-e-cigarettes-no-advantage-40499>

On July 31, 2014, Time published a report titled 'E-Cig Benefits Outweigh Their Harms, New Research Says'

The Time's article reported on the findings of an overview of over 80 studies on e-cigarettes' safety and their effects, concluding that e-cigs are much less harmful to smokers and bystanders compared to conventional cigarettes

The full text can be accessed at <http://time.com/3060370/e-cig-benefits-are-greater-than-their-harms-new-research-says/>

Arguments for allowing the sale of e-cigarettes

1. E-cigarettes are preferable to tobacco cigarettes as they are less harmful

Supporters of e-cigarettes argue they are preferable to tobacco smoking as they have a less damaging effect on the health of smokers and passive smokers. Without tobacco, tar, ash, or carbon monoxide, e-cigarettes are marketed as 'healthier' alternatives to cigarettes. In July, 2016, Harvard Health Publishing published an overview of the advantages and disadvantages of e-cigarettes written by contributing editor, John Ross. Ross stated, 'A burning cigarette gives off noxious gases, such as carbon monoxide and hydrogen cyanide. Cigarette smoke also contains an ultrafine suspension of gummy residue, known as tar. Most of the carcinogens in cigarette smoke are found in the tar. The major benefit of e-cigarettes, compared to regular cigarettes, is that they do not produce the tar or the toxic gases found in cigarette smoke.' <https://www.health.harvard.edu/blog/electronic-cigarettes-good-news-bad-news-2016072510010>

In July, 2014, a report surveying the findings of over 80 studies on e-cigarettes' safety and their effects on users found that based on the evidence, e-cigarettes are much less harmful to smokers and bystanders than conventional cigarettes. The researchers found that based on the evidence, e-cigs are much less harmful to smokers and bystanders than conventional cigarettes. <http://time.com/3060370/e-cig-benefits-are-greater-than-their-harms-new-research-says/>

In February, 2017, a study funded by Cancer Research UK stated, 'Our study shows that bodily level exposure to established and important smoking-related carcinogens and toxicants is reduced by between 56 percent to 97 percent in long-term e-cigarette users who have stopped smoking completely, compared with tobacco cigarette smokers.'

<https://www.cbsnews.com/news/are-e-cigarettes-safer-than-tobacco-new-study-fuels-debate/>

In September, 2017, NHS Health Scotland, Scotland's national health education and promotion agency, issued a consensus statement claiming that e-cigarettes are 'definitely' less harmful than smoking tobacco. The statement was endorsed by more than 20 other organisations including health boards, academia and charities such as the British Lung Foundation and Cancer Research UK. Other research from Public Health England concluded

that e-cigarettes were 95% less harmful than normal cigarettes. <http://www.bbc.com/news/uk-scotland-41333537>

In January, 2017, Linda Bauld, Professor of Health Policy and CRUK/BUPA Chair in Behavioural Research for Cancer Prevention, University of Stirling, stated, 'I believe that e-cigarettes have huge potential to save lives by providing an alternative to smoking. Yet this can only be realised if we address negative harm perceptions and communicate honestly with the public. Ongoing research can help with this, and 2016 has seen the start of important studies, many commissioned by Cancer Research UK, which will tell us more in the future.' <https://www.theguardian.com/science/sifting-the-evidence/2017/jan/02/ill-say-it-again-e-cigarettes-are-still-far-safer-than-smoking>

2. E-cigarettes can help smokers quit tobacco-based cigarettes

Some studies have suggested e-cigarettes can be effective in helping tobacco smokers give up the habit.

Multiple studies and surveys have indicated that e-cigarettes have the potential to help tobacco smokers reduce their consumption or quit altogether. One New Zealand study showed e-cigarettes to be as effective as nicotine patches. An August 2014 study that surveyed over 20,000 Americans showed that among adults who used a product to help them quit smoking, 57% chose e-cigarettes. That was compared to the 39% who used prescription drugs like Chantix and the 39% who used other over-the-counter methods like patches or nicotine gum. <http://time.com/3678402/electronic-cigarettes-ecigs-health-science-research/> Research findings published in the British Medical Journal in September, 2016, concluded that 'the increase in e-cigarette use has been associated with an increase in success of quit attempts.' <http://www.bmj.com/content/354/bmj.i4645> The report suggested that in 2015 these devices helped at least 18,000 smokers to stop who would not otherwise have done so. <https://www.theguardian.com/science/sifting-the-evidence/2017/jan/02/ill-say-it-again-e-cigarettes-are-still-far-safer-than-smoking>

On April 4, 2016, The Australian Medical Association's journal, Australian Medicine, published an opinion piece by Dr Colin Mendelsohn, an Australian tobacco treatment specialist, opposing the AMA's position statement against e-cigarettes. Dr Mendelsohn stated, 'Three meta-analyses and a systematic review suggest that e-cigarettes are effective for smoking cessation and reduction. The evidence indicates that using an e-cigarette in a quit attempt increases the probability of success on average by approximately 50% compared with using no aid or nicotine replacement therapy (NRT) purchased over-the-counter.' <https://ama.com.au/ausmed/e-cigs-help-or-harm>

The vaping promotion site, Vaporfi, outlines numerous reasons why vaping can be successfully substituted for conventional cigarette smoking. The site notes that a number of attendant satisfactions that smoking gives the smoker are replicated by vaping. Included among these are supporting 'muscle memory'. The site claims, 'Unlike [other] methods..., vaping helps simulate the psychological attachment you've developed to the act of smoking a cigarette. The act of smoking and the rituals that make it up, are a big part of what the smoker is actually addicted to. When you're vaping, you go through those familiar motions attached to smoking. In doing so, you maintain that muscle memory you've created from smoking over the years, but at the same time you eliminate actually taking in tobacco smoke.' Vaporfi also refers to the 'throat hit', the apparently pleasurable sensation smokers experience at the back of their throats when smoking. The site claims, 'The universal sentiment seems to be that vaping is the one and only non-smoking alternative that allows you to experience this sensation and yet still eliminate the intake of smoke.' <https://www.vaporfi.com/blog/6-reasons-why-use-vapor-to-quit-smoking/>

Thus there are numerous justifications offered as to why e-cigarettes might make it easier for those smoking conventional cigarettes to give up the habit. (It should be noted that Vaporfi does not appear to envisage the new e-cigarette smokers giving up this habit.)

3. Vaping may be a valuable option for hard-core smokers who cannot give up

It has been suggested that rather than seeing e-cigarettes as a product to be taken up by novice smokers, they should be seen as a less harmful alternative for those already addicted to conventional cigarettes and unable to quit.

Researchers from the Queen Mary University of London, in a study published in the journal *Addiction*, have stated, 'Health professionals may consider advising smokers unable or unwilling to quit through other routes to switch to [e-cigarettes] as a safer alternative to smoking and a possible pathway to complete cessation of nicotine use.'

<http://time.com/3060370/e-cig-benefits-are-greater-than-their-harms-new-research-says/>

A study published in the *British Medical Journal's Tobacco Control Journal* on October 2, 2017, found that 'a strategy of replacing cigarette smoking with vaping would yield substantial life year gains, even under pessimistic assumptions regarding cessation, initiation and relative harm'. <http://tobaccocontrol.bmj.com/content/27/1/18> In other words, switching from cigarettes to e-cigarettes could extend the lives of smokers, compared with if they were to continue smoking traditional tobacco cigarettes. The report concluded, 'Even the gloomiest analysis [the pessimistic model] shows a significant gain in years of life if nicotine is obtained from vaping instead of much more deadly amounts of toxicants inhaled with cigarette smoke.' <https://www.livescience.com/60590-should-you-switch-cigarettes-to-e-cigarettes.html>

In addition to living longer, the study also concluded that incorrigible smokers who switched to vaping might see other health benefits, 'including reduced disease disability to smokers, [and] reduced pain and suffering...' <https://www.livescience.com/60590-should-you-switch-cigarettes-to-e-cigarettes.html>

4. E-cigarettes are not encouraging young people to take up smoking

It has been claimed that recent studies suggest that e-cigarettes are not encouraging young people to smoke.

In a comment published on his Internet site on August 29, 2017, Dr Colin Mendelsohn, an Australian tobacco treatment specialist, noted that a recent analysis of five studies in the United Kingdom strongly suggested that e-cigarettes are not leading young people to smoke. The study analysed five separate surveys in the United Kingdom between 2015-2017 of 60,000 young people aged 11-16 years. <http://colinmendelsohn.com.au/posts/no-evidence-e-cigarettes-are-leading-teens-smoke/>

The study published in the *International Journal of Environmental Research and Public Health*, found that although young people are experimenting with e-cigarettes, regular use (weekly or more) is rare. A tenth to a fifth of 11-16 year olds had tried e-cigarettes, but only 3% or less used them regularly and most of those were already tobacco smokers.

<http://colinmendelsohn.com.au/posts/no-evidence-e-cigarettes-are-leading-teens-smoke/>

In the United Kingdom, e-cigarettes are available to adult smokers to help them quit; however, they cannot be sold or promoted to young people. Sale to under 18 year olds is prohibited and there are restrictions on marketing which may appeal to children or youth. Dr Mendelsohn claims, 'The UK has showed that it is possible to get this balance right and that the net benefits of e-cigarettes are strongly positive for public health.' <http://colinmendelsohn.com.au/posts/no-evidence-e-cigarettes-are-leading-teens-smoke/>

This observation regarding the low incidence of e-cigarette use among British children and teenagers and their failure to act as a gateway habit, encouraging addiction to other forms of smoking, has been endorsed by a number of British researchers. Linda Bauld, Professor of Health Policy and CRUK/BUPA Chair in Behavioural Research for Cancer Prevention, University of Stirling, has stated, 'While young people are experimenting with e-cigarettes and the proportion who say they've tried them is rising, only very small numbers of young non-smokers are attracted to these products on any regular basis.

This, it's worth remembering, is during a period when smoking rates among young people are continuing to fall, suggesting that – in the UK at least – there is no evidence yet that more young people are starting to smoke because of e-cigarettes.'

<https://theconversation.com/young-people-and-e-cigarettes-what-we-know-so-far-46243>

5. Other nations have allowed e-cigarettes

Supporters of e-cigarettes have criticised the Australian government for its virtual prohibition of e-cigarettes. Those who hold this view note the more liberal approach adopted in a number of comparable nations.

In the United Kingdom, the use, sale and advertising of e-cigarettes are legal and e-cigarettes are not covered by laws restricting smoking in public places. However, businesses may choose to ban e-cigarettes as well. A notable example is Transport for London, banning smoking and vaping as their Conditions of Carriage. Effective 1 October 2015, it is illegal to sell e-cigarettes or e-liquids to minors. In 2014 the government announced legislation would be brought forward to outlaw the purchase of e-cigarettes by people under the age of 18.

In the United Kingdom, the Royal College of Physicians publicly endorses e-cigarettes for their public health benefits. It has stated, '[R]egulation should not be allowed significantly to inhibit the development and use of harm-reduction products by smokers. ... in the interests of public health it is important to promote the use of e-cigarettes, NRT (nicotine replacement therapy) and other non-tobacco nicotine products as widely as possible as a substitute for smoking. <https://www.rcplondon.ac.uk/projects/outputs/nicotine-without-smoke-tobacco-harm-reduction-0>

Similarly, in the United States, the sale of e-cigarettes is also legal, though there is variation between states as to whether e-cigarettes can be smoked in certain public places. As in the United Kingdom, the sale of e-cigarettes to minors is prohibited.

In Canada, though e-cigarettes were until recently technically illegal to sell, as no nicotine-containing e-fluid is approved by Health Canada, this is generally unenforced and they are commonly available for sale throughout the country.

In November 2016, the Canadian government amended the existing Tobacco Act and renamed it the Tobacco and Vaping Products Act, in order to regulate the manufacturing, sale, labelling and promotion of the devices.

In an opinion piece published in The Conversation of February 13, 2017, Dr Colin Mendelsohn, conjoint Associate Professor in the School of Public Health and Community Medicine at the University of New South Wales, stated that if the Australian government did not lift its ban on e-cigarettes 'Australian smokers will be denied access to life-saving technology estimated to have helped millions of smokers to quit overseas.'

<https://theconversation.com/australias-looming-e-cigarette-ban-robs-smokers-of-a-chance-to-quit-72566>

Arguments for banning the sale e-cigarettes

1. The safety of e-cigarettes has not been established

Critics of e-cigarettes in all their forms, but especially those that contain nicotine, note that the products have been in use only since 2003 and that insufficient time has elapsed and insufficient research has been conducted to establish their safety.

This point has been made by Dr Miranda Ween, a biologist and researcher with the University of Adelaide. Dr Ween has stated, 'The biggest issue is that we have no idea of what damage long-term use could do. It took decades to realise cigarettes caused cancer, and longer still to get that message to those using them. We don't want to repeat the same mistakes again. We need more research, and no one should be declaring them "harmless".'

<https://www.theguardian.com/society/2017/aug/28/smoke-and-mirrors-experts-divide-over-australias-e-cigarettes-ban>

The same point has been made by Becky Freeman, a tobacco control expert at the University of Sydney. Freeman has claimed that in the absence of evidence of their safety, it is irresponsible to allow e-cigarettes to be sold in Australia. Freeman has stated, 'We shouldn't treat smokers as guinea pigs.'

<https://www.theguardian.com/society/2017/aug/28/smoke-and-mirrors-experts-divide-over-australias-e-cigarettes-ban>

It has further been noted that the products contain components that have not been taken into the human body in this manner before. Dr Ween has observed in relation to this point, 'Our work, and that of others around the globe, is starting to show that the flavours in e-cigarettes can be harmful as well as the nicotine. The flavours used are food-safe, but have not been tested once superheated and vaporised and inhaled into the lungs.'

<https://www.theguardian.com/society/2017/aug/28/smoke-and-mirrors-experts-divide-over-australias-e-cigarettes-ban>

In June 2016, Australian Competition and Consumer Commission (ACCC) lodged a case in the Federal Court against Queensland-based companies Social-Lites and Elusion New Zealand, which each produce e-cigarettes. The ACCC maintains that claims the companies make about the safety of their products are inaccurate.

The ACCC said its testing showed formaldehyde and acetaldehyde were present in both brands of e-cigarettes, among other toxins. Formaldehyde is classified by the World Health Organisation International Agency for Cancer Research as a Group 1A carcinogen, meaning there is sufficient evidence to show it is carcinogenic to humans. Acetaldehyde is classified as a Group 2B carcinogen by the IARC, which is classified as being possibly carcinogenic to humans. <http://www.abc.net.au/news/2016-06-20/tests-allege-e-cigarettes-have-cancer-causing-ingredients/7526364>

A laboratory study of 30 healthy individuals...who used an e-cigarette for just five minutes showed worsening in measures of airway and respiratory resistance, impedance, and exhaled nitric oxide. This response was deemed to be similar to that observed following tobacco cigarette exposure. <https://www.thoracic.org.au/documents/item/1051>

Professor Matthew Peters, Head of Respiratory Medicine at Concord Hospital in Sydney, has stated, 'We just can't have a product available to the public on a hunch that it might be safer than smoking over the long run. Because it's no more than a hunch.'

<http://www.abc.net.au/news/health/2017-11-14/e-cigarettes-is-australia-out-of-step-with-other-countries/9138430>

2. E-cigarettes do not always encourage tobacco-smokers to relinquish their habit

The effectiveness of e-cigarettes as a means of helping tobacco-smokers quit their habit has been questioned.

A joint submission from the Thoracic Society of Australia and New Zealand and Lung Foundation Australia to the federal government's Inquiry into the Use of Electronic Cigarettes and Personal Vaporisers in Australia observed that there are many means of using nicotine to help smokers quit and that e-cigarettes have not been shown to be a better

alternative. The submission stated, 'There are many nicotine delivery systems already available for those who wish to quit smoking and there is a lack of evidence that e-cigarettes are superior to current best practice. The evidence of the efficacy of these devices in smoking cessation is weak. Furthermore, a Cochrane Collaboration review found there was no evidence that e-cigarettes were superior to nicotine replacement therapy.'

<https://www.thoracic.org.au/documents/item/1051>

A study published on April 21, 2015, in the leading journal *Addiction* concluded 'Daily use of e-cigarettes while smoking appears to be associated with subsequent increases in rates of attempting to stop smoking and reducing smoking, but not with smoking cessation. Non-daily use of e-cigarettes while smoking does not appear to be associated with cessation attempts, cessation or reduced smoking.' <http://onlinelibrary.wiley.com/doi/10.1111/add.12917/abstract>

The study of 1,473 English smokers found those who did not use e-cigarettes were more likely to stop smoking after 12 months: 13.9% of non-vapers successfully quit, compared with 9.5% of occasional vapers and 8.1% of daily e-cigarette users.

<https://theconversation.com/want-to-quit-smoking-switching-to-e-cigarettes-no-advantage-40499>

These findings have been replicated elsewhere. As of April, 2015, eleven published studies had investigated how people who vape compare with smokers who do not when trying to quit tobacco smoking. Stanton Glantz from the University of California has meta-analysed these studies and found that smokers who vape are 30% less likely to quit smoking than smokers who do not. <https://theconversation.com/want-to-quit-smoking-switching-to-e-cigarettes-no-advantage-40499>

3. E-cigarettes are addictive

Many of those opposed to e-cigarettes are concerned at the impact of an addictive, harmful substance on vapers (those who smoke e-cigarettes), especially those who begin using the product while young.

It has been found that nicotine is highly addictive in whatever form it is consumed and it may lead to changes in the brain that increase the risk of addiction to other drugs, especially in young people. Nicotine may also impair prefrontal brain development in adolescents, leading to attention deficit disorder and poor impulse control.

<https://www.health.harvard.edu/blog/electronic-cigarettes-good-news-bad-news-2016072510010>

Further, adolescents have been found to be more vulnerable to addiction than adults because their still-developing brains. <https://www.centeronaddiction.org/e-cigarettes/about-e-cigarettes/what-parents-should-know-about-e-cigarettes>

The effect of the different delivery modes on the nature of nicotine addiction has not been conclusively determined; however, even the evidence cited by manufacturers of e-cigarettes indicates there is addictive behaviour in response to e-cigarettes. An article published in *White Cloud* on October 1, 2015, intending to demonstrate that e-cigarettes are less addictive than tobacco cigarettes, made the following observations, 'A 2014 study conducted by the Penn State College of Medicine and published in the peer-reviewed *Nicotine & Tobacco Research* journal assessed the addictive nature of e-cigs using online surveys of ex-smokers who are current vapers. Survey respondents reported formerly smoking an average of 24 cigarettes every day and currently having about 24 vape sessions a day.'

The article concluded that these former tobacco smokers claimed to feel less dependent on their new habit; however, its author acknowledges that the incidence of product use was the same in each case, stating, 'On the surface, it appears that their addiction is the same...'

<https://www.whitecloudelectroniccigarettes.com/blog/quitting-tobacco-a-vapers-journey-to-e-cigs/>

K. Vendrell Rankin, director of Texas A&M University Baylor College of Dentistry's Tobacco Treatment Services, has explained the addiction mechanism, stating, 'Everybody has a certain amount of nicotine receptors in the brain. When you start smoking, vaping or supplying nicotine to them, they multiply. If you stop smoking or vaping, the receptors don't go away... Nicotine in any form triggers the release of neurotransmitters such as adrenaline and dopamine, which dramatically impacts a number of body systems. Dopamine floods the brain, and nicotine cravings increase.' <http://www.futurity.org/teens-e-cigarettes-vaping-988602-2/>

4. E-cigarettes might undermine the success of Australia's anti-smoking programs, especially among the young

Opponents of e-cigarettes claim that they may actually undermine the success of Australia's public health campaign to halt smoking in this country. Critics of the product claim that rather than help people quit smoking tobacco-based cigarettes, the products actually initiate smokers, either becoming a source of addiction themselves or acting as a gateway drug leading people to take up tobacco smoking. It is claimed that these risks are particularly great for young people who are attracted by the supposed safety of e-cigarettes and the range of fruit and candy flavours in which they are available.

Becky Freeman, a tobacco control expert at the University of Sydney, has described how one online Australian retailer, Vapeking, 'uses juvenile cartoon imagery on its website to promote flavours such as sunrise and wicked watermelon'. Another flavour is promoted by encouraging customers to 'wake up to the taste of sweetened condensed milk, dried red berries and a healthy serving of sweet honey coated cereal'.

<https://www.theguardian.com/society/2017/aug/28/smoke-and-mirrors-experts-divide-over-australias-e-cigarettes-ban>

Electronic cigarettes, or e-cigarettes, are now the most popular form of nicotine use among American middle and high school students, with an estimated 3 million students using them. There has been a 10-fold increase in the use of e-cigarettes among United States high school students between 2011 and 2015 – from 1.5 percent to 16 percent, with more teens using these products today than smoke cigarettes. <https://www.centeronaddiction.org/e-cigarettes/about-e-cigarettes/what-parents-should-know-about-e-cigarettes>

Cancer Council Australia has warned of e-cigarettes capacity to encourage their users to transition to tobacco smoking. The Council cites evidence from a meta-analysis of nine studies tracking 17,389 people aged 14 to 30, published in the Journal of the American Medical Association's Paediatrics. The study found initial e-cigarette users are more than three times more likely than non-e-cigarette users to subsequently become tobacco smokers.

<https://www.theguardian.com/society/2017/aug/28/smoke-and-mirrors-experts-divide-over-australias-e-cigarettes-ban>

Dr. Benard Dreyer, president of the American Academy of Paediatrics, has stated, 'Nicotine ... is highly addictive and has clear neurotoxic effects. E-cigarettes have the potential to addict the next generation and it's a major public health concern to us.'

<https://www.nbcnews.com/health/health-news/e-cigarettes-aren-t-safe-remain-dangerous-children-surgeon-general-n693576>

The worry that smoking e-cigarettes could lead to smoking tobacco cigarettes is of particular concern when children are involved. Simon Chapman, Emeritus Professor in the School Public Health at the University of Sydney, has stated, 'There's not much of a step between inhaling nicotine through e-cigarettes and children thinking "maybe I'll give smoking a try as well".' <http://www.abc.net.au/news/health/2017-11-14/e-cigarettes-is-australia-out-of-step-with-other-countries/9138430>

5. E-cigarettes are being used by the tobacco industry to compensate for the dwindling traditional cigarette market

Opponents of e-cigarettes do not see them as primarily a product designed to reduce reliance on traditional cigarettes. Rather, they claim, the tobacco industry is attempting to diversify what it manufactures as its traditional product loses popularity and market share. For opponents of e-cigarettes, the product is essentially smoking via a different delivery system and the health impacts are questionable.

Cathy Callaway, associate director of state and local campaigns for the American Cancer Society Cancer Action Network has stated, 'If the [tobacco] industry can keep people addicted to tobacco products, they'll be more likely to continue to purchase products, and the industry makes money.' <https://www.vox.com/2014/7/30/5948665/vaping-companies-are-quietly-winning-the-war-on-state-regulation>

As of February 2017, global e-cigarette sales were approximately \$5 billion a year; however, the e-cigarette industry is expected to grow 24 percent through 2018.

https://www.huffingtonpost.com/entry/tobacco-companies-taking-over-the-e-cigarette-industry_us_58b48e02e4b0658fc20f98d0

Though e-cigarettes were not initially developed by the traditional tobacco industry, big tobacco companies have rapidly developed their own e-cigarettes and bought out independent e-cigarette companies. <https://www.statnews.com/2017/05/08/ecigarettes-harm-reduction-big-tobacco/>

In June 2014, Philip Morris International (PMI) acquired the Nicocig brand, which has more than one-quarter of the market share in the United Kingdom. PMI has made heavy investments in heat-not-burn technology. In August 2013, Imperial Tobacco acquired Dragonite (previously Ruyan), a Chinese company, for \$75 million. In February 2014, Imperial made a deal with Boots Pharmacy chain in the United Kingdom to sell a new e-cigarette brand called Puritane. https://www.cdc.gov/tobacco/data_statistics/sgre-cigarettes/pdfs/2016_SGR_App_4-1_508.pdf

The popular American e-cigarette brand VUSE, is owned by R.J. Reynolds Vapor Company, a subsidiary of the tobacco giant Reynolds America, while British American Tobacco (BAT), the largest tobacco company in Europe, launched Vype, a now-popular brand of e-cigarette, around four years ago. https://www.huffingtonpost.com/entry/tobacco-companies-taking-over-the-e-cigarette-industry_us_58b48e02e4b0658fc20f98d0

There are many who object to the tobacco industry developing a market for a new addictive product. In an opinion piece published in STAT on May 8, 2017, Amy Fairchild and Ronald Bayer stated, 'E-cigarettes don't just represent a promising means to help people stop smoking, but also a way to market the recreational use of nicotine. That means an industry in the business of addiction will profit from tobacco harm reduction.'

<https://www.statnews.com/2017/05/08/ecigarettes-harm-reduction-big-tobacco/>

Further implications

The most influential of Australia's public health authorities are generally opposed to the use of e-cigarettes, being unconvinced of its supposed benefits as part of a treatment regime to help tobacco smokers give up smoking and wary of the health risks that e-cigarettes pose in their own right. Of particular concern is the risk e-cigarettes can pose to young users.

When the Standing Committee on Health, Aged Care and Sport releases its report on the use and marketing of e-cigarettes in Australia some time in 2018, it seems unlikely that the present limitations will be lifted. Currently, e-cigarettes can only be imported into Australia for personal use, in limited quantity, with a medical prescription, as part of treatment to help a patient give up smoking. Nicotine is designated a poison in Australia and its importation, production or sale is prohibited.

All that seems likely to occur is that regulations may be tightened regarding the strength of the nicotine concentrates that can be imported. It is also possible that there will be formal regulation of e-cigarettes that do not contain nicotine in response to suggestions that they also contain substances that can be harmful.

Australia has been highly successful in reducing the number of tobacco smokers. Daily smokers as a share of the Australian population aged over 14 has fallen from 25 per cent in the early 1990s — when federal and state government launched a series of National Tobacco Campaigns to discourage smoking — to 12.2 per cent in 2016, while the share of casual smokers has halved to 5.2 per cent. <http://www.theaustralian.com.au/news/nation/more-smokers-lighting-up-despite-everincreasing-taxes/news-story/190014e7306548c49fc372dabb5a0555>

However, an immediate rejection of e-cigarettes in Australia is unlikely to mark the end of the argument. Findings released in August, 2017, indicate that for the first time since anti-smoking campaigns ramped up a generation ago, the number of smokers in Australia has increased. The Australian Institute of Health and Welfare, found the number of smokers fell by 317,000 between 2010 and 2013 but rose 21,100 in the three years to 2016. An unexpected standstill in the national smoking rate since 2013, combined with rapid population growth, has pushed up the number of regular smokers by more than 21,000 to 2.4 million. Also of concern is that the smoking rate among Australia's youth does not seem to be maintaining its decline. The latest smoking rates for over-18s in the United States and Britain, 15.1- and 15.8 per cent respectively - are similar to or lower than in Australia, which has historically had significantly lower smoking rates.

<http://www.theaustralian.com.au/news/nation/more-smokers-lighting-up-despite-everincreasing-taxes/news-story/190014e7306548c49fc372dabb5a0555>

In this context, the debate surrounding e-cigarettes in Australia is only likely to become more heated over time. For supporters of e-cigarettes, the product is likely to be seen as a measure that could arrest the current stall in Australia's previously declining consumption of tobacco cigarettes. For their opponents, liberalising access to e-cigarettes is likely to be seen as a measure which may only make things worse - bringing health risks of its own, while possibly leading to increased tobacco smoking among the young.