

E-cigarettes: The case for caution

E-cigarettes are a form of battery powered electronic nicotine delivery system (ENDS). They combust fluid in cartridges optionally containing nicotine along with flavourings dissolved in a solvent such as propylene glycol, creating a vapour for inhalation. E-cigarettes are a controversial alternative to tobacco smoking.

THE FACTS:

Burgeoning demand amidst regulatory uncertainty

- Globally, e-cigarette use has grown rapidly, with analysts projecting US sales will outpace those of tobacco cigarettes within a decade.(1)
- In Australia, use is greatest amongst 18-24 year olds (2), with one-fifth of Australian smokers having tried e-cigarettes and 7% being current users.(3)
- The legal status of ENDS varies by state or territory, but in general e-cigarettes containing nicotine may not be sold without authorisation because nicotine is a prescription-only medicine.(4) Some states also restrict sales of non-nicotine ENDS that resemble traditional tobacco products (Queensland, Western Australia, New South Wales, South Australia).
- The commonwealth *Therapeutic Goods Act* prohibits therapeutic claims being made in the promotion of e-cigarettes, since none have been approved for registration as medical devices.
- In the ACT, e-cigarette sales are effectively unregulated as long as the product is not targeted to children and carries no therapeutic claims.(4) However, the ACT Government is currently finalising recommendations on regulatory changes regarding ENDS.

No clear evidence of long-term safety or improved quit rates

- A recent Cochrane review concluded e-cigarettes containing nicotine are more effective than placebo at helping tobacco smokers quit over a six month period.(5) Yet, the authors rate their confidence in that conclusion as low and there was insufficient evidence that e-cigarettes were more effective than existing regulated nicotine replacement therapies.
- There is no evidence to suggest that the common practice of dual use (using ENDS alongside conventional cigarettes) helps people to quit. In fact, it is possible that dual use reduces likelihood of quitting.(6)
- Studies have found lower levels of toxicants and carcinogens in e-cigarette vapour (cf. tobacco cigarettes) and the urine of e-cigarette smokers (cf. tobacco smokers).(7, 8) However, since a high proportion of smokers are likely to be dual users (6), the level of harm reduction associated with e-cigarette use is unclear.
- The long-term health effects of e-cigarette use are unknown and it is possible that toxicants produced by the heating of devices (9) or the combustion of solvents (6) and flavourings (10) will have significant negative impacts.

Substantial potential for re-normalisation of smoking

- Health advocates are concerned Australia's hard-won declines in smoking prevalence will be eroded by tobacco companies' use of e-cigarette advertising to skirt restrictions on tobacco marketing. Since ENDS replicate the tobacco smoking experience, they may form a gateway into nicotine addiction and conventional cigarette use.
- Tobacco companies own prominent ENDS brands, most promotion of ENDS occurs online, and youth are likely to be drawn to e-cigarette flavours like coffee, bubble gum, pina-colada, and tobacco. Already, youth ENDS smoking prevalence in the US has eclipsed that of conventional cigarettes.(11)
- A US study of middle and high school children also found e-cigarette users were twice as likely as non-users to state they intended smoking conventional cigarettes.(12)

THE OPINIONS

Given the uncertainties and risks outlined above, the position on e-cigarettes of key health organisations is understandably one of caution. Specifically:

National Health and Medical Research Council (NH&MRC)

- The *NH&MRC* states "there is currently insufficient evidence to conclude whether e-cigarettes can benefit smokers" and recommends that "health authorities act to minimise harm until evidence of safety, quality and efficacy can be produced." (13)

Australian Medical Association (AMA)

- The *AMA* has issued a nine point statement on e-cigarettes, the first point being "The advice from the medical profession on e-cigarettes is: don't start." (14)

Cancer Council Australia (CCA) and Heart Foundation of Australia (HFoA)

- In a joint statement, *CCA* and *HFoA* recommend: "Banning the retail sale of non-nicotine electronic cigarettes, ensuring smoke-free laws in each state and territory cover electronic cigarette use, and prohibiting advertising and promotion of electronic cigarettes".(15)

HOW YOU CAN MAKE A DIFFERENCE

Counsel based on current cessation evidence. This includes reinforcing the patient's quit decision, forming a quit plan, noting the alternative evidence-supported cessation tools, and outlining the risks of e-cigarettes. A recent article by the *Australian Association of Smoking Cessation Professionals* presents suggested e-cigarette advice for patients.(16)

Keep up to date with the evolving science: The *AMA* has an e-cigarette working group that regularly publishes viewpoints and updates in *Australian Medicine*. *Tobacco Control* and *Nicotine & Tobacco Research* are two key scientific journals to watch for results and reviews of ENDS-related studies.

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