

## Electronic Cigarettes - policy position paper

Tobacco smoking is a considerable lifestyle risk factor for stroke. The Stroke Foundation does not support smoking in any shape or form. There is currently insufficient evidence of the effective use e-cigarettes as a quitting aid.<sup>1</sup> There is growing evidence of e-cigarette use as a precursor to smoking in young people.<sup>2</sup> From a health impact perspective, evidence suggests that e-cigarettes may expose users to fewer toxic chemicals than conventional tobacco cigarettes; however the extent to which this reduces harm to the user has not been determined.<sup>3</sup> The Stroke Foundation does not currently support the use of e-cigarettes, nor does it condone their use in public spaces.

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### Background to e-cigarettes

Electronic cigarettes (also known as e-cigarettes, Electronic Nicotine Delivery Systems (ENDS) and personal vaporizers) are battery powered vaporizers that provide a mist rather than cigarette smoke. A heating element vaporizes a liquid solution containing a mixture of propylene glycol, glycerine and other flavourings.

Because of the possible relationship to tobacco laws and medical drug policies, e-cigarette legislation has been debated in many countries outside Australia. The European Parliament and United States Food and Drug Administration have both proposed regulations requiring standardisation of liquids and personal vaporizers, listing of ingredients and child proofing of liquid containers. The regulation of e-cigarettes in Australia is complex. Some states and territories have introduced laws specifically addressing e-cigarettes, in other jurisdictions e-cigarettes are regulated by a number of more general laws relating to poisons, therapeutic goods and tobacco control.<sup>4</sup>

The Federal Parliament's Standing Committee on Health, Aged Care and Sport is currently conducting an Inquiry into the Use and Marketing of e-cigarettes and Personal Vaporisers.

On 3 April 2017, the CEO of the National Health and Medical Research Council (NHMRC) issued an updated statement on e-cigarettes, to assist consumers and policy-makers in understanding the current evidence about the safety and efficacy of electronic cigarettes.<sup>5</sup> The NHMRC found there was "currently insufficient evidence to support claims that e-cigarettes are safe and further research is needed to enable the long-term safety, quality and efficacy of e-cigarettes to be assessed." In recognition of the need for high-quality research in this area, the NHMRC is currently funding a number of studies investigating the effects of e-cigarettes.

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1 [https://www.nhmrc.gov.au/\\_files\\_nhmrc/file/publications/17072\\_nhmrc\\_-\\_electronic\\_cigarettes-web\\_final.pdf](https://www.nhmrc.gov.au/_files_nhmrc/file/publications/17072_nhmrc_-_electronic_cigarettes-web_final.pdf)

2 Soneji S, Barrington-Trimis JL, Wills TA, Leventhal AM, Unger JB, Gibson LA, Yang J, Primack BA, Andrews JA, Miech RA, Spindle TR, Dick DM, Eissenberg T, Hornik RC, Dang R, Sargent JD.

Association between Initial Use of e-Cigarettes and Subsequent Cigarette Smoking among Adolescents and Young Adults: A Systematic Review and Meta-analysis (2017)

3 [https://www.nhmrc.gov.au/\\_files\\_nhmrc/file/publications/17072\\_nhmrc\\_-\\_electronic\\_cigarettes-web\\_final.pdf](https://www.nhmrc.gov.au/_files_nhmrc/file/publications/17072_nhmrc_-_electronic_cigarettes-web_final.pdf)

4 <http://www.quit.org.au/downloads/resource/policy-advocacy/policy/legal-status-electronic-cigarettes-australia.pdf>

5 [https://www.nhmrc.gov.au/\\_files\\_nhmrc/file/publications/17072\\_nhmrc\\_-\\_electronic\\_cigarettes-web\\_final.pdf](https://www.nhmrc.gov.au/_files_nhmrc/file/publications/17072_nhmrc_-_electronic_cigarettes-web_final.pdf)

In June 2017 the Journal of the American Medical Association (Paediatrics) conducted a systematic review of longitudinal studies that assessed initial use of e-cigarettes and subsequent cigarette smoking and found that e-cigarette use was associated with greater risk for subsequent initiation of cigarette smoking.<sup>6</sup>

### **The law surrounding e-cigarettes**

Under federal law, nicotine is listed in Schedule 7 of the Standard for the Uniform Scheduling of Medicines and Poisons. This means nicotine products cannot be sold unless they are approved for therapeutic use or are a device similar to traditional cigarettes. The Australian Therapeutic Goods Administration recently upheld an interim decision to reject an application to exempt nicotine from Schedule 7 at concentrations of 3.6 per cent or less of nicotine for self-administration with an electronic nicotine delivery system ('personal vaporiser' or 'electronic cigarette') for the purpose of tobacco harm reduction.<sup>7</sup>

### **Health effects of e-cigarettes**

E-cigarettes may expose users to chemicals and toxins such as formaldehyde, heavy metals, particulate matter and flavouring chemicals, at levels that have the potential to cause adverse health effects. These include solvents such as propylene glycol, glycerol or ethylene glycol, which may form toxic or cancer-causing compounds when vaporised.<sup>8</sup>

The NHMRC has suggested that e-cigarettes may expose users to fewer toxic chemicals than conventional tobacco cigarettes; however the extent to which this reduces harm to the user has not been determined.

The World Health Organisation (WHO) says that "no specific figure about how much 'safer' the use of these products is compared to smoking can be given any scientific credibility at this time."<sup>9</sup> The WHO also points to growing evidence indicating that long-term inhalation of flavourings used in most e-liquids is likely to pose a risk to health.

Studies have shown that e-cigarettes expose both users and bystanders to very small particles that may worsen existing illnesses or increase the risk of developing diseases such as cardiovascular or respiratory disease.<sup>10</sup> A 2016 systematic review of health risks from passive exposure to electronic cigarettes found the vapour has the potential to pose a health risk to bystanders, although the risk is likely to be lower than that posed by conventional cigarette smoke.<sup>11</sup>

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6 Soneji S, Barrington-Trimis JL, Wills TA, Leventhal AM, Unger JB, Gibson LA, Yang J, Primack BA, Andrews JA, Miech RA, Spindle TR, Dick DM, Eissenberg T, Hornik RC, Dang R, Sargent JD.

Association between Initial Use of e-Cigarettes and Subsequent Cigarette Smoking among Adolescents and Young Adults: A Systematic Review and Meta-analysis (2017)

7 <https://www.tga.gov.au/book-page/21-nicotine-0>

8 T. Cheng, "Chemical Evaluation of Electronic Cigarettes" Tobacco Control, vol. 23, no. Suppl 2, pp. ii11-7, 2014.

9 World Health Organisation, "Electronic Nicotine Delivery Systems and Electronic Non-Nicotine Delivery Systems (ENDS/ENNDS)" WHO Framework Convention on Tobacco Control, Geneva, 2016

10 Environmental Protection Agency, "Integrated Science Assessment for Particulate Matter (Final Report)" U.S. Environmental Protection Agency, Washington DC, 2009.

11 I. M. R. Hess, K. Lachireddy and A. Capon, "A Systematic Review of the Health Risks from Passive Exposure to Electronic Cigarette Vapour" Public Health Research and Practice, vol. 26, no. 2, 2016.

Findings by the World Health Organisation (WHO) show that there is enough evidence to warn against the use of e-cigarettes by children and pregnant women.<sup>12</sup> The WHO draws on the findings of the US Surgeon General's extensive report into the Health Consequences of smoking. The report summarises by saying:

"Nicotine activates multiple biological pathways that are relevant to foetal growth and development, immune function, the cardiovascular system, the CNS, and carcinogenesis. Experimental research documents that nicotine plays a key role in several adverse consequences of maternal smoking for the foetus, including altered lung development, and has effects on the developing brain."<sup>13</sup>

### **Marketing of e-cigarettes**

The Stroke Foundation supports moves to prevent young people and non-smokers from being exposed to the promotion of e-cigarettes until such time that health authorities declare them safe. The WHO estimates that since 2005, the e-cigarette industry has grown from one manufacturer in China to an estimated US\$3 billion global business with 466 brands. The tobacco industry is now well entrenched in this market and making many unsubstantiated health claims about e-cigarettes.

Australian websites selling non-nicotine e-cigarettes advertise a variety of 'flavours', with one website selling 55 different flavours. Fruit flavours in particular, such as strawberry or watermelon, pose a risk familiarising and conditioning children and young adults to smoking-like activities.

Cigarette smoking is a considerable lifestyle risk factor for stroke. The Stroke Foundation does not support cigarette smoking in any shape or form, or any alternative that may increase the subsequent uptake of cigarette smoking. The Stroke Foundation endorses the position of the NHMRC; namely, that other methods of smoking cessation have better evidence of efficacy and safety than e-cigarettes, and that health authorities and policy-makers should regulate e-cigarettes in such a way that potential harm to users and bystanders is minimised, and vulnerable groups (in particular young non-smokers) are protected.

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12 Electronic nicotine delivery systems – Report by WHO. [http://apps.who.int/ib/ctc/PDF/cop6/FCTC\\_COP6\\_10Rev1-en.pdf](http://apps.who.int/ib/ctc/PDF/cop6/FCTC_COP6_10Rev1-en.pdf)

13 The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General, 2014. <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/>