



E-CIGARETTES

(ELECTRONIC NICOTINE DELIVERY SYSTEMS (ENDS))

Public Health Wales is committed, in the longer term, to a smoke free and nicotine free Wales.

ENDS present both potential benefits and potential harms, so a balance of approaches is needed to help minimise the risks to children and young people and non-smokers in the general population and to maximise the potential benefits to committed smokers who are unwilling or unable to quit as well as those who wish to quit smoking.

For children and young people:

The use of nicotine by children and young people is unsafe, it can cause addiction and can harm the developing adolescent brain - there are no benefits to children and young people in using ENDS. There is concern that ENDS are seen as 'safe' but this is not the case, while the health risks of ENDS are significantly lower than cigarettes they are not without risk.

- ENDS should feature alongside other health-harming substances e.g. tobacco and alcohol, in all health education for children and young people, and be presented as harmful to health.
- A systematic enforcement programme should be developed to minimise the sales of ENDS to those less than 18 years of age, including development of a register of retailers and systematic test-purchasing, prosecution and media activity.
- 'Confectionary-like' flavours of e-liquid should not be permitted, in order to reduce the appeal of ENDS to children and young people.
- There should be restrictions on the use of ENDS in settings predominantly used by children e.g. in schools and school grounds and around the entrances to schools.
- There should be restrictions on the advertising of ENDS in all media that would be regularly viewed by children and young people.

For the non-smoking general population:

There is some evidence of the potential for ENDS use to have a negative impact on indoor air quality and therefore represent a risk to health. Currently, the available evidence is inconclusive on the level of potential harm and more work is

required. Voluntary restrictions on the use of ENDS in many public spaces are already in place.

- Until a more definitive risk assessment can be completed, voluntary restrictions on the use of ENDS in enclosed public spaces should continue.

For smokers who want to quit:

NHS stop smoking services which provide behavioural support and access to licensed pharmacotherapy currently offer the greatest likelihood of stopping smoking. However, the majority of smokers who make a quit attempt do so without specialist support. For these smokers, ENDS may prove helpful in achieving a successful quit from tobacco although they are not currently licensed as a medicine for this purpose.

- If you smoke and would like to stop there are a range of medicines and other help available from NHS Wales. Research shows that if you get help to quit you are four times more likely to stop. If you prefer to go it alone then e-cigarettes may be helpful in your quit attempt. Independent and unbiased advice on different aids to quitting smoking is available from Stop Smoking Wales.
- Public Health Wales will include information on ENDS alongside other aids to stopping smoking in all information materials and in Stop Smoking Wales support services. Information on all products will be presented to support smokers in making an informed choice about the best way to quit for them.
- The use of ENDS by pregnant women is not recommended.
- Health and care professionals giving smoking cessation advice should be able to describe the relative quit rates of, and likelihood of success from, using different smoking cessation methods, including ENDS; to help smokers make an informed choice about the best route to quitting smoking for them.

For committed smokers who are unwilling or unable to quit:

For committed smokers who are unwilling or unable to quit there is a high degree of consensus that the benefits of using ENDS significantly outweigh the harms. The harms associated with the alternative, of continuing to use tobacco, are significant and well established. The exception to this advice would be for pregnant women, as the potential risks to the unborn child are unknown.

- If you are a smoker who is unwilling or unable to stop smoking now, switching completely from smoking tobacco to using e-cigarettes will significantly reduce the risks to your health. This advice does not apply to pregnant women who should consider using licensed nicotine replacement products.
- Health care workers working with those smokers who are unwilling or unable to quit now should advocate a complete switch to using e-cigarettes, as this will significantly reduce the risks to their patients' health. This advice does not apply to pregnant women who should be encouraged to switch to licensed nicotine replacement products.

BACKGROUND

Electronic cigarettes, or e-cigarettes, including e-pens, e-pipes, e-hookah, and e-cigars are known collectively as ENDS – electronic nicotine delivery systems. ENDS deliver nicotine within an inhalable aerosol by heating a solution that typically contains nicotine, propylene glycol and/or glycerol, plus flavours. This aerosol is commonly referred to as vapour and so the use of an ENDS is described as vaping.

Unlike cigarettes, there is no direct combustion involved in ENDS so there is no smoke and no other harmful products of tobacco combustion, such as tar and carbon monoxide.

While addiction to nicotine is not desirable, nicotine is not responsible for the vast majority of harm from smoking cigarettes and other tobacco products. Nicotine is an addictive substance and can be toxic when ingested in large doses. It may also contribute to cardiovascular disease, and have long-term consequences for foetal and adolescent brain development.

The Welsh Health Survey 2015 noted 6% of adult respondents reported currently using ENDS and 15% having ever-tried them. This compares to 19% reporting they smoke, in the same national survey (Welsh Government, 2015).

Public Health Wales and a range of other bodies, has previously identified a number of potential risks and benefits to population health from the rise in use of ENDS. These include:

- The potential role of widespread use of ENDS in re-normalising smoking, and there remains a gap in the current evidence base in this area and further research is needed.
- Use of e-cigs may reduce the likelihood of smokers quitting by displacing scientifically proven methods to help people quit.
- The use of ENDS will act as a gateway to tobacco use. The absence of longitudinal studies in this area means that it is very difficult to answer this question definitively, but evidence suggests that ENDS use is associated with tobacco use, with the relationship being poorly understood.
- ENDS, while presenting a lower health risk for existing smokers than tobacco use, are not safe. There is an international consensus that for non-smokers use of e-cigarettes represents a potential risk to health.

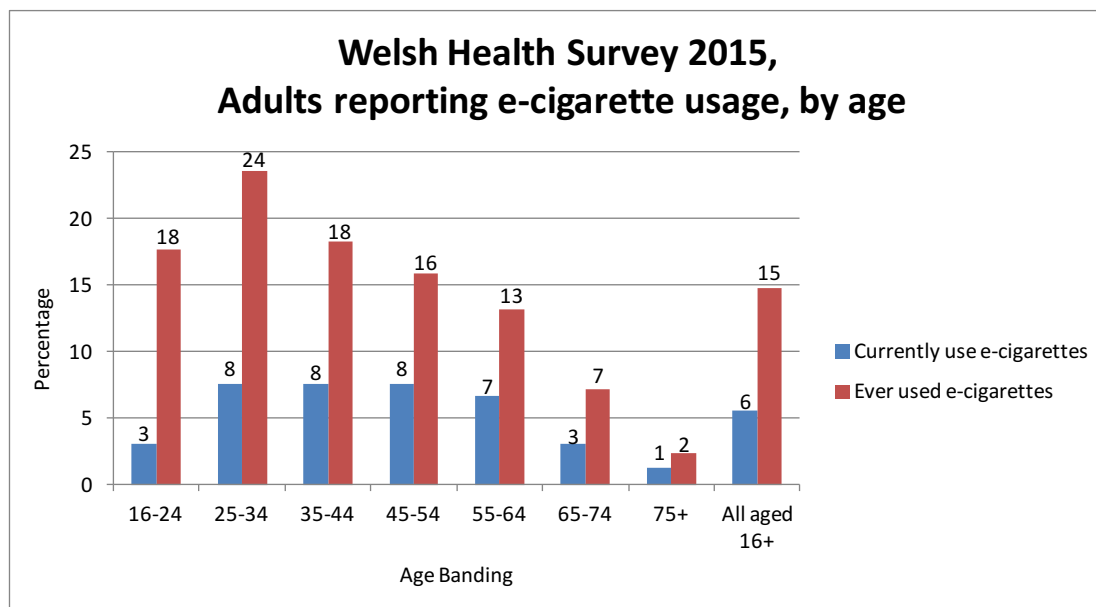


Figure 1 – Adults reporting e-cigarette use, by age, WHS 2015

The best available current international evidence has been utilised in developing this position statement. The supporting technical background paper provides more information on the evidence considered.

EVIDENCE

- ENDS aerosol contains nicotine, the addictive component of tobacco products. In addition to dependence, nicotine can have adverse effects on the development of the foetus during pregnancy and may contribute to cardiovascular disease. [...] Foetal and adolescent nicotine exposure may have long-term consequences for brain development, potentially leading to learning and anxiety disorders. The evidence is sufficient to warn children and adolescents, pregnant women, and women of reproductive age against ENDS use and nicotine. (WHO, 2016)
- The World Health Organisation have also identified fruit and confectionary flavours as appealing to children, younger never-smokers and young ENDS beginners and 'may therefore play a role in motivating experimentation among them'. (WHO, 2016)
- Recent research has indicated the potential risk to non-smokers of passive exposure to second hand aerosols (SHA) from vaping (WHO, 2016). There is relatively little conclusive evidence on the risks relative to second hand smoke or ambient air, but some studies indicate levels of nickel and chromium higher in SHA from ENDS than in second hand smoke and background air. The magnitude of the associated risks to health remain unknown.
- A Cochrane systematic review published in September 2016 found evidence from two trials that ENDS were more likely to help smokers to quit in the long term, than placebo ENDS. However, the small number of trials, low event rates and wide confidence intervals around the estimates mean that confidence in the results is rated 'low'. (Hartmann-Boyce et al, 2016)

- ENDS are capable of providing of the nicotine that smokers are addicted to without the harmful components of tobacco smoke, and so can prevent most of the harm from smoking (RCP, 2016).
- The number and level of toxicants generated by using ENDS is on average 'lower or much lower than in cigarette smoke', and 'ENDS are less toxic than cigarette smoke'. However, levels of toxicants can vary across brands and 'sometimes reach higher levels than in tobacco smoke'. (WHO, 2016)
- The 'evidence suggests that the health risks posed by e-cigarettes are relatively small by comparison [to tobacco]' but the long-term effects should be continued to be studied. (McNeill, 2015).

EUROPEAN AND UK LEGISLATIVE CONTEXT

Tobacco and Related Products Regulations 2016 will require that from 20 May 2017:

- All e-cigarette products to be child and tamper proof
- The contents of e-cigarette substances are declared on the label and are submitted to regulators prior to sale of the product.
- Health warnings about the 'addictiveness of nicotine' must appear on e-cigarette packaging
- E-cigarette advertising on television, radio, and in newspapers and magazines is restricted.
- The strength of nicotine in e-liquid and the size of e-liquid containers are limited.
- Additional ingredients such as vitamins, minerals, caffeine and taurine are banned.

INTERNATIONAL POLICY CONTEXT

A number of national and international bodies have produced statements or reports on ENDS, this includes the World Health Organisation; the US Food and Drug Administration and US Surgeon General; Public Health England and the Royal College of Physicians. While there is some consistency between the views of these organisations there are also substantial differences and it is increasingly clear that the public is confused about the status of ENDS and their relative benefits and safety. In drafting this position statement Public Health Wales has sought to navigate a path through this controversy that recognises that there are both potential benefits and harms from the use of ENDS. The recent output from the US Food and Drug Administration below summarises the position well:

"The Food and Drug Administration believes that this new technology [ENDS] has both potential benefits and risks. If [...] e-cigarettes, have reduced toxicity compared to conventional cigarettes; encourage current smokers to switch completely; and/or are not widely used by youth, they may have the potential to reduce disease and death. But if [they] prompt young people to become addicted to nicotine, reduce a person's interest in quitting cigarettes, and/or lead to long-term usage with other tobacco products, the public health impact could be negative." (US Federal Drug Administration, 2016)

The commercial interests of tobacco transnational companies (TTC) should not be under-estimated in relation to ENDS, and their increasing share of the market is noted by many as a major threat to tobacco control. The TTCs are making efforts to promote ENDS as a complement (not an alternative) to tobacco; promote smoking through ENDS advertising/promotion; and assert ENDS benefits to engage and influence policy and undermine tobacco control efforts.

For more information, please contact: publichealth.policy@wales.nhs.uk

REFERENCES

1. (FDA) U.S Food and Drug Administration, 2016 *The Facts on the FDA's New Tobacco Rule* Accessed at: <http://www.fda.gov/downloads/ForConsumers/ConsumerUpdates/UCM507132.pdf> Last accessed: 25/08/16
2. Hartmann-Boyce, J., et al, 2016. *Electronic cigarettes for smoking cessation*, Cochrane Database of Systematic Reviews. Accessed at: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD010216.pub3/full> Last accessed: 14/10/16
3. McNeill A, Brose LS, Calder R, et al, 2015. *E-cigarettes: an evidence update - A report commissioned by Public Health England*. UK Centre for Tobacco & Alcohol Studies Accessed at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/457102/Ecigarettes_an_evidence_update_A_report_commissioned_by_Public_Health_England_FINAL.pdf Last accessed: 28/07/16
4. (RCP) Royal College of Physicians, 2016. *Nicotine without smoke: Tobacco harm reduction*. London, UK: Royal College of Physicians. Accessed at: <https://www.rcplondon.ac.uk/projects/outputs/nicotine-without-smoke-tobacco-harm-reduction-0> Last Accessed: 02/11/16
5. Welsh Government, 2015. *Welsh Health Survey 2015 – Current Release* Accessed at: <http://gov.wales/statistics-and-research/welsh-health-survey/?lang=en> Last Accessed: 02/11/16
6. World Health Organisation, 2016. *Electronic nicotine delivery systems and Electronic Non-Nicotine Delivery Systems (ENDS/ENNDS)* Accessed at: http://www.who.int/fctc/cop/cop7/FCTC_COP_7_11_EN.pdf?ua=1 Last accessed: 6/10/16