E-cigarettes/electronic cigarettes

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Key points:

- ASH Scotland does not take a simplistic view "for" or "against" e-cigarettes, instead focusing on reducing the harm caused by tobacco
- e-cigarettes are battery-powered devices that heat a liquid, often containing nicotine and flavourings, into a vapour to be inhaled by the user
- e-cigarettes are safer than lit tobacco, although they are unlikely to be completely harmless
- around 5% of adults in Scotland currently use e-cigarettes, many of them concurrently with lit tobacco
- there is not yet evidence that young people are starting e-cigarette use and then progressing to lit tobacco use
- the emerging evidence is that using e-cigarettes to quit smoking can be effective, but more research is required to quantify and understand their effectiveness
- new regulations will come into force in 2016 covering the design of the devices, advertising restrictions and age limits for purchase and sale.

This briefing is intended for public health professionals, such as smoking cessation advisers. It is not intended to be a comprehensive review of evidence or a statement of ASH Scotland's position on e-cigarettes. For further information, please visit www.ashscotland.org.uk or contact our Information Service on enquiries@ashscotland.org.uk.

Introduction

ASH Scotland does not take a simplistic view either "for" or "against" electronic cigarettes. Our interest is in helping people improve their health by reducing the enormous harm caused by tobacco use. Our approach to electronic cigarettes will be guided by that principle.

In the debates over the relative risks associated with e-cigarettes, **we must not lose sight of the fact that tobacco is the key concern.** While the number of people who smoke has halved in the last 40 years, this still leaves just under 1 million people in Scotland[1] with greatly increased risk of cancer, heart disease, stroke, dementia, rheumatoid arthritis and diabetes. Half of long-term smokers will die of a cause associated with their tobacco use[2], often after many years of debilitating illness, and tobacco is far and away the largest preventable cause of death[3].

We believe that 'vaping' will prove to be much less harmful than smoking – but not harmless, as some have suggested. So for a smoker to switch from tobacco to electronic cigarettes will bring significant health benefits, and **we recommend any smoker to try the various options which might help them to quit tobacco, including e-cigarettes.**

We note that the best health outcomes will still come from being free of any addictive substance.

What are e-cigarettes?

E-cigarettes are battery-powered devices which heat a liquid, often containing flavourings and nicotine, to produce a vapour inhaled by the user. The liquid, usually composed primarily of propylene glycol or glycerine, is aerosolised and inhaled deep into the lungs in a manner similar to tobacco smoke (and unlike licenced nicotine replacement products such as inhalators). This is thought to produce an experience closer to smoking than other products, but which does not carry the harmful effects of tobacco smoke.

A wide range of terms are used to refer to electronic cigarettes, reflecting a range of device types which may not resemble lit tobacco cigarettes. Among the more common are vaporisers, vape pens, e-shisha, electronic nicotine delivery systems

(ENDS) and nicotine vapour products (NVPs, the term preferred by the Scottish Government).

There are a number of different types of device available. Devices known as 'cigalikes' or first-generation e-cigarettes resemble conventional cigarettes. They may be rechargeable and accept a refill of e-liquid in the form of a cartridge, or may be disposable. Second generation devices are larger, and are generally refillable and rechargeable. Third generation devices, sometimes known as "advanced personal vaporisers", often have unusual shapes and designs and can be customised extensively.

Are e-cigs safer to use than smoking tobacco?

Yes. The evidence that is available shows that e-cigarettes do not present comparable risks to lit tobacco products. A smoker completely replacing tobacco products with e-cigarettes should significantly reduce harm to their health.

While there is wide agreement that these products are safer than cigarettes, it is far too soon to say that they are completely harmless. Several studies have attempted to quantify the relative risk posed by e-cigarettes compared to tobacco. One study[4] determined that these products represent 5% of the risk of cigarettes, while a Monte Carlo analysis of various possible scenarios resulted of a figure between 1-50% of the risk[5]. These widely varying estimates demonstrate the difficulty of attributing a meaningful value to this risk without long-term studies of the health of e-cig users.

How many people in Scotland are using e-cigs?

Adult awareness and use of e-cigarettes has increased rapidly in Scotland, as it has in the rest of the UK. In 2010 only 3% of adult (age 18+) smokers in Scotland reported using an e-cigarette, while by early 2014 this had risen to 17%[6]. In total, 5% of the adult population of Scotland was thought to be using e-cigarettes in 2014[7].

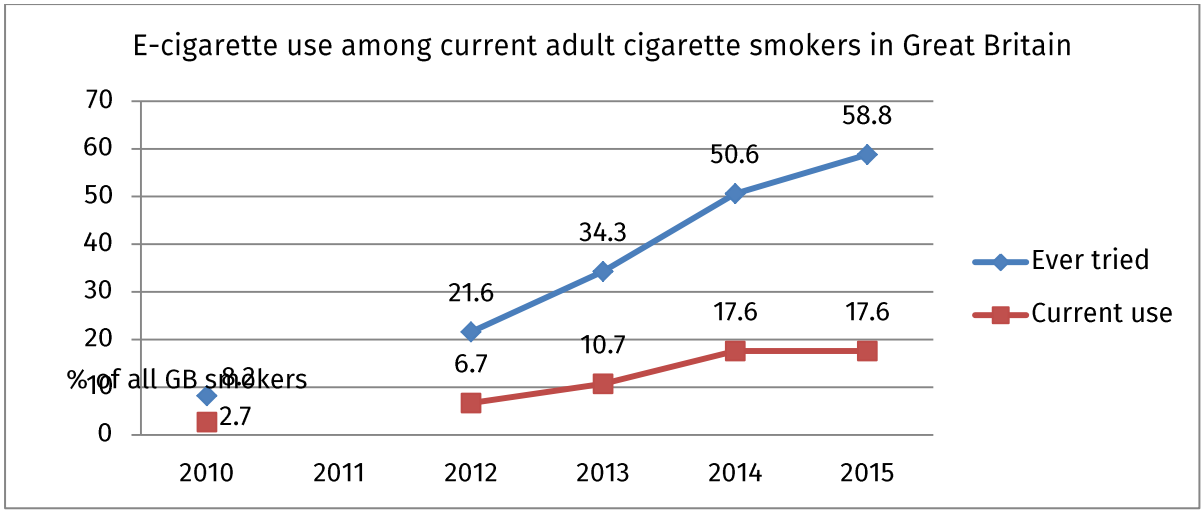

Figure 1 - E-cigarettes use among current adult cigarette smokers in Great Britain (2010 -2015). Surveys by ASH and YouGov. Unweighted base: GB adult smokers (2010, n=2297; 2012, n=2093; 2013, n=1895; 2014, n=1710; 2015, n=2037)

Use of e-cigarettes in Scotland is currently almost entirely confined to smokers or ex-smokers, with very few never smokers using the devices according to recent survey data[7].

Young people and e-cigs

Recent Scottish data has shown that relatively few young people use e-cigarettes on an ongoing basis, though a substantial number have tried them. According to 2013 SALSUS data, 17% of 15 year olds in 2013 had tried an e-cig, with 14% of them having tried one only once or a few times[8]. A 2015 survey of high school aged children showed that 12% of this population had tried an e-cig once or twice, with 1% having used them in the past, 1% using them less often than once a month, and 2% using them at least once a week[9].

There has been a great deal of concern about the prospect of young people being attracted to using e-cigarettes, and then moving on to use lit tobacco as part of a 'gateway effect'. A recent report of UK-based surveys of e-cigarette use suggested that, while experimentation is common, regular use is largely confined to young people who already smoke[10]. An analysis of the 2011 and 2012 US National Youth Tobacco Surveys indicated that e-cigarette use was associated with higher odds of starting smoking[11]. One longitudinal study in the United States found that use of e-cigarettes was associated with progression to using conventional cigarettes[12]. However, this study relied on a very small number of never-smoking e-cigarette

users (16, of whom 11 went on to use lit tobacco) and has been criticised for drawing overstated conclusions from this data[13].

Do e-cigs help people stop smoking?

Recent reviews of the evidence have suggested that e-cigarettes can have a positive role in smoking cessation. A study in England showed that smokers who used e-cigarettes when attempting to quit were around 50% more likely to succeed for at least several months compared to those who either quit unaided or used a licensed nicotine replacement therapy (NRT) product. However, they remained less successful than those attending specialist stop-smoking services[14]. Older studies have suggested that e-cigarettes are roughly as effective as NRT products[15,16]. Expert advice on stopping smoking, as available from the NHS, combined with appropriate medication remains the most effective known method of quitting[17].

There is concern over the proportion of e-cigarette users who are "dual-using" these products with lit tobacco, and therefore failing to realise significant health benefits. Some research has indicated that around 75% of e-cigarette users use lit tobacco and e-cigarettes concurrently[18,19]. It has been estimated that 2.1 million adults in Great Britain currently use e-cigarettes[20], with around two thirds of those current smokers[21]. It is not known whether dual use is correlated with future successful quit attempts.

More research is needed into the effectiveness of e-cigarettes for stopping smoking, with particular emphasis on population level effects and longer term cohort studies.

Some stop-smoking services in Scotland are now working with e-cigarette users, in line with harm reduction guidance published in 2014. This guidance encourages healthcare professionals to use clinical judgement when interacting with patients who use e-cigarettes, ensuring that users are still able to receive evidence-based smoking cessation support. While acknowledging that there are many unknowns about these devices, the guidance suggests that those who have quit using e-cigarettes should not be encouraged to stop using them, if there is likely to be a risk of relapse to smoking. Dual users should be encouraged where possible to quit lit, smoked tobacco.

E-cigarettes in public places

There is some evidence that e-cigarettes can produce a "second-hand vapour" effect, but the extent of any health effect of this is not yet clear. Particulate matter ($PM_{2.5}$) is produced by e-cigarette use. The levels reported are variable, with some studies reporting levels close to those produced by lit tobacco[22] while others report significantly lower levels[23]. One study reported that nonusers close to e-cigarette use may be exposed to nicotine from vapour, but not toxic tobacco combustion products similar to second-hand smoke[23]. Similarly, levels of volatile organic compounds have been reported to exist in e-cigarette vapour, though at lower concentrations than in tobacco smoke [24]. Overall, the levels of air pollution produced by e-cigarette vapour are reportedly much lower than those produced by tobacco smoke, and can be expected to have a similarly reduced health impact.

As e-cigarettes do not burn tobacco they do not come under Scotland's smoke-free public places legislation. Individual public and private sector bodies in Scotland are responsible for creating and implementing their own policies on e-cigarette use. It may be appropriate for some indoor areas to have bans on e-cigarette use, or (for clarity of enforcement of existing public places legislation) to ban "cigalikes" which clearly resemble lit tobacco. However, the evidence does not currently suggest that a total ban on indoor use would provide significant health benefits". E-cigarette use is less harmful than tobacco use, and users should be encouraged to view these devices as offering reduced risk. Banning e-cigarettes in all enclosed public places could risk conflating the two in the minds of smokers, potentially encouraging them to continue using tobacco rather than take up e-cigarettes.

What regulations cover e-cigs?

From May 2016 a range of new regulations on e-cigarettes will come into force under the revised European Union Tobacco Products Directive. European lawmakers agreed on a 'two-track' system whereby e-cigarettes that claim to help smokers quit will be subject to regulation as medicines. Other e-cigarettes may remain on the market provided they meet certain requirements, including:

- a maximum nicotine concentration of 20 mg/ml and maximum volume of 10 ml for refill containers, and 2 ml for e-cigarettes with requirements for child and tamper-proofing

- mandatory consumer warnings on e-cigarettes packaging with information on ingredients
- a requirement for manufacturers to notify countries before placing new products on the market, to provide details on the ingredients and emission of the products, and to provide data of sales volumes and profile of product consumers
- a ban on most forms of advertising that have a cross-border effect (including television and radio advertising).

E-cigarettes sold on the market at present must also comply with general products safety legislation. Trading Standards is responsible for ensuring compliance with existing regulations.

The Scottish Parliament is currently considering the Health (Tobacco, Nicotine etc., and Care) Bill. This Bill is expected to introduce a number of measures aimed at controlling e-cigarettes. This will include:

- an age limit of 18 on purchasing the devices
- a ban on 'proxy purchasing' by adults for under-18s
- prohibition on selling e-cigarettes from vending machines
- a registration system for e-cigarette vendors, similar to the tobacco retailer's register
- a "Challenge 25" age verification policy for e-cigarette purchase.
- taking powers to regulate domestic e-cigarette advertising (eg billboards, distributing samples and leaflets, point of sale)

Most e-cigarette advertising, like other commercial advertising in the UK, is governed by the Committee of Advertising Practice (CAP). They have produced a series of rules for e-cigarette advertisements designed to promote social responsibility. These include avoiding the promotion of e-cigarettes to non-smokers or young people, a ban on imagery associated with tobacco brand or which promotes the use of tobacco products, and restrictions on making medical claims, including the effectiveness of using e-cigarettes to stop smoking. The CAP has stated its intention to consult on a revised version of these rules in the near future. Regulations to govern domestic e-cigarette advertising in Scotland will be consulted on in the next session of Parliament, following the passage of the Health (Tobacco, Nicotine etc., and Care) Bill.

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