

Royal Society for Public Health (RSPH) submission to the Science and Technology Committee inquiry into electronic cigarettes

The Royal Society for Public Health (RSPH) is an independent, multidisciplinary charity dedicated to the improvement of the public's health and wellbeing. We have a membership of over 6000 members working in public health.

Our vision is that everyone has the opportunity to optimise their health and wellbeing, and we seek to achieve this through our qualifications, conference and training programmes and policy and campaign work.

We are pleased to provide written evidence to the Science and Technology Committee, given our work in 2017 looking at the role of e-cigarettes in the UK, and the potential health benefits to smokers.

Key Points

- Based on the evidence to date, electronic cigarettes are substantially less harmful than smoked tobacco.
- The balance of evidence to date suggests that e-cigarettes can be an effective smoking cessation aid, but there is a need for more high quality research in this area.
- RSPH supports the use of e-cigarettes for smokers who are struggling to quit, which is likely to be most effective when combined with behavioural support from cessation services.
- E-cigarette use remains rare among young people in the UK, and is mostly confined to those who smoke or have smoked before. However, there is increasing awareness and experimentation with e-cigarettes among young people, so use in this population should continue to be monitored, with regulations in this area under continual review.
- A “gateway effect”, whereby e-cigarette use causes higher rates of smoking uptake among young people, has not been observed in the UK; however, the possibility cannot be ruled out.
- There is a worrying and growing misconception among smokers that e-cigarettes are at least as harmful as smoking.
- There is a lack of independent, high quality research into the harm profile of heated tobacco products. As an evidence base emerges, the regulatory model around heated tobacco products should be structured in line with their relative risk.
- The areas in most need of further research are:
 - The long term health impact of the range of different flavouring components.
 - The extent to which e-cigarettes are effective cessation aids.
 - The harm profile of heated tobacco products.

Health impact of e-cigarette use

Electronic cigarettes have been available for a relatively short amount of time, and as such there is no clear answer to what the long-term health effects of their use will be. However, though the absolute risk of e-cigarette use remains unknown, it is possible to say with confidence that it is substantially less harmful than smoking tobacco. Anyone who switches from using smoked tobacco to e-cigarettes will substantially improve their health.

There is now growing consensus in the UK public health community about the relative safety of e-cigarettes, the most widely cited estimate coming from Public Health England's (PHE) 2015 evidence review which concluded that e-cigarette use is likely to be around 95% safer than smoking.¹ This figure was subsequently endorsed by the Royal College of Physicians in their 2016 report, *Nicotine without Smoke*.² Most recently, the British Medical Association (BMA) report, *E-cigarettes: Balancing risks and opportunities*,³ emphasised the much lower risk of using e-cigarettes as compared to smoking tobacco.

Nevertheless, it is vital that we continue to monitor the potential long term health effects of e-cigarette use, which as of now remain unknown. In particular, it is important that a research focus remains on the presence of and variation in flavourings found in e-liquids. Though there is currently no clear evidence that current e-liquid flavourings acutely harm humans, it is vital that this aspect continues to be monitored closely.

Health impact on bystanders

According to the current research base, there is no evidence that vapour exhaled by e-cigarette users is likely to cause significant harm to others through subsequent "passive inhalation".⁴ It is very likely that, due to the far lower concentration of toxic substances in e-cigarettes, second-hand vapour is substantially less harmful to bystanders than second-hand smoke. As for nicotine (a component of many e-liquids), a PHE review of the evidence concluded that vaping releases only negligible levels into the ambient air, with "no identified health risks to bystanders."⁵

E-cigarettes as smoking cessation aids

E-cigarettes are the most popular device used to aid quit attempts,⁶ and though the research base in this area is limited, most evidence to date suggests that they can be effective cessation aids – particularly when combined with behavioural support.

The most recent support for the efficacy of e-cigarettes as cessation aids comes from a Cochrane review, published in late 2016, which concluded there is a positive relationship between e-cigarette use and smoking cessation, while noting that this area would benefit greatly from further trials.⁷ These findings are further bolstered by research published in the BMJ at the same time, based on data from the nationwide Smoking Toolkit Study (STS) data, which estimated that e-cigarette use leads to an additional 16,000-22,000 people quitting smoking each year who would not otherwise have done so.⁸

The nationwide STS data⁹ indicates that the 4-week quit rate for attempts with e-cigarettes is at least as high as that of attempts using other medication. Among all smokers using Stop Smoking Services, the average quit rate is 51%, whereas among the service users who were also e-cigarette users, the quit rate was 66%.¹⁰ Though not unequivocal, this result is consistent with, and suggestive of, the effectiveness of e-cigarettes as cessation aids. This

proposition is also consistent with the steady increase in recent years of the proportion of vapers who are ex-smokers – from 1 in 3 in 2014 to approximately 1 in 2 in 2017.¹¹

Overall, though the balance of evidence to date suggests that e-cigarettes can be effective for smoking cessation, this rests on a somewhat limited evidence base, and there is no consensus on the evaluation of just how effective they might be. E-cigarettes have the potential to be a widespread and low cost tool for reducing smoking rates, and therefore it is crucial that high quality research into their effectiveness as cessation aids is pursued. The situation will likely improve over the coming years, as studies currently in the field reach completion.

RSPH supports the view that anyone who is struggling to quit smoking should consider using e-cigarettes as a means to help them quit. Licensed stop-smoking medications lead to much higher long term successful quit rates when their use is combined with behavioural support, and similarly, it is likely that e-cigarette use will be more effective when combined with cessation services.

Dual use of e-cigarettes and tobacco

It is not uncommon for smokers who begin using e-cigarettes to continue smoking tobacco at the same time. Some have raised concerns that such “dual users” may be sustaining their tobacco intake at a significant level and for a long time, leading people to question whether they are reducing their harm exposure after all. The current proportion of e-cigarette users who dual use – understood as those who regularly vape but also smoke – is 45%.¹² The 2017 figures indicate this is the first time there are more ex-smokers (1.5 million) who use e-cigarettes than current smokers (1.3 million) in the UK.

While there is no evidence that dual use increases a smoker’s tobacco consumption, it should be stressed that there is no safe level of smoking. In particular, it should be emphasised that the relationship between cigarette consumption and cardiovascular damage is not linear, and even substantially lower smoking levels can still do a large amount of damage.¹³ More needs to be done to encourage e-cigarette users who continue to smoke to make the leap, and “switch and break” the smoking habit.

In theory, if smokers get some nicotine from an alternative (and less harmful) source, the nicotine they need from cigarettes should decrease, leading to fewer cigarettes being smoked. However, in the case of continuing smoking while using nicotine replacement therapy (NRT) products, a 2013 systematic review found that dual use was associated with little to no reduction in cigarette consumption.¹⁴ Most recently, a 2017 study found that dual use of NRTs or e-cigarettes with cigarettes was not associated with any substantially reduced levels of carcinogens and toxins, relative to smoking only cigarettes.¹⁵ Therefore, while there is a need for more research in this area, the current evidence base indicates that dual use of tobacco and e-cigarettes does not effectively reduce harm exposure. RSPH does not regard dual use as a viable harm reduction behaviour, and it is vital to encourage as many dual users as possible to give up completely.

It has also been claimed by some that prolonged dual use can hamper a directed quit attempt, sustaining the harm exposure to someone who otherwise might have quit smoking entirely at an earlier time. Research is still needed to determine whether this is the case for e-cigarettes; however, a systematic review found that in the case of using NRT for smoking reduction, there is a positive association with both attempts to quit smoking and with successful smoking cessation.¹⁶ In fact, current licensed NRT products are approved for cutting down on smoking through dual use, and they are recommended on the basis that

dual use is likely to increase quit attempts.¹⁷ If e-cigarettes function in a similar manner to other alternative nicotine products, dual use involving e-cigarettes should also be regarded as a viable pathway to quitting – not as an obstacle. There is therefore a clear need for more research into this question.

Young people and e-cigarettes

A recurring contention around e-cigarettes is that their use by non-smokers could potentially act as a gateway behaviour towards smoking. This is of particular concern in the context of increasing awareness of and experimentation with e-cigarettes among young people.¹⁸ While it is important to remain vigilant to these possibilities, this should be tempered by the fact that in Britain, regular e-cigarette use among young people and adults is almost entirely confined to those who currently smoke or have smoked in the past.

There have been a number of studies, primarily in the USA,¹⁹ which have purported to demonstrate a causal link between e-cigarette use and increased likelihood of smoking – a so-called “gateway effect”. There has also been some relevant research in the UK, for example a recent study involving a 12-month survey of teenagers, which indicated e-cigarette users are more likely to also start smoking cigarettes.²⁰ These studies do not permit the conclusion that e-cigarette use causes smoking uptake. Indeed, it is important to note that in recent years – a period in which e-cigarette availability and experimentation has increased among young people – youth smoking rates have declined. Nevertheless, the possibility of a gateway progression to smoking cannot be dismissed, and it is important that e-cigarettes are targeted exclusively at smokers.

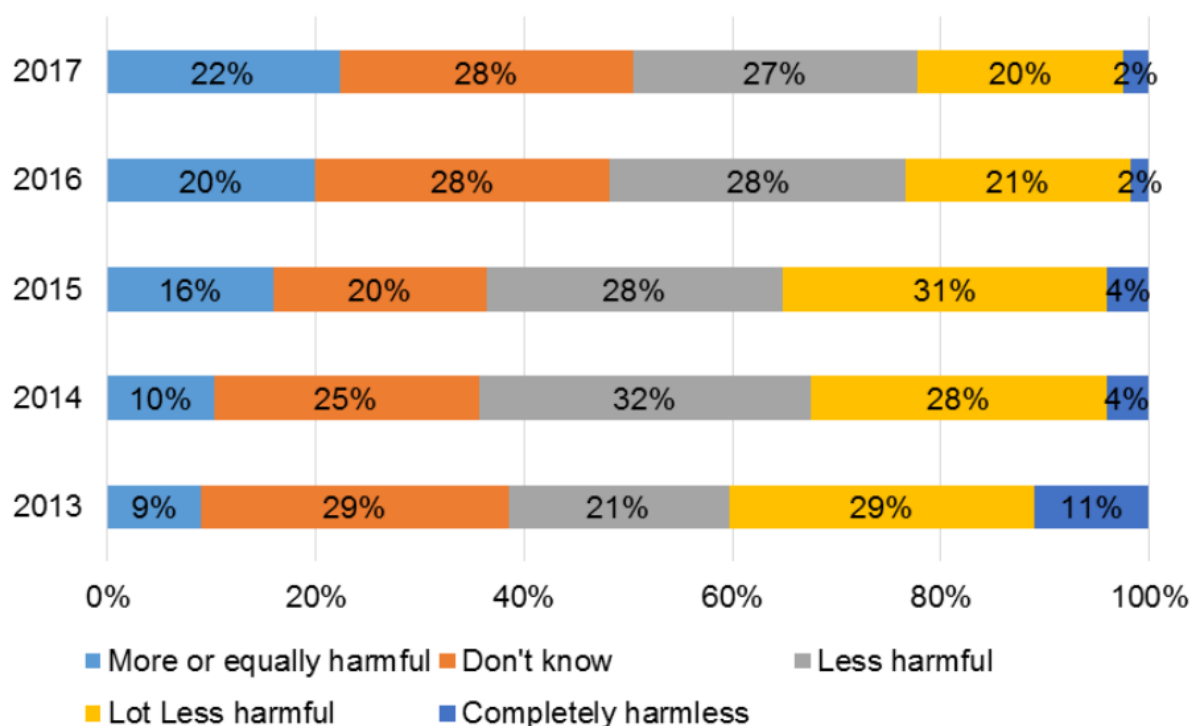
There is some evidence to suggest e-cigarette use among adolescent non-smokers is increasing in some countries, for example in the USA²¹. For this reason, we must remain vigilant to the possibility of any similar developments in the UK, and continue to monitor young people’s behaviour in this regard. However, current regular e-cigarette use among young people (11-18 y/o) is rare, and does not appear to be following any sort of upward trend²². It is also largely confined to those who currently or have previously smoked. As such, current regulations regarding promotion of e-cigarettes and their restricted sale to under-18s have so far been adequate in respect to addressing concerns around e-cigarette use among young people.

Popular perception of e-cigarettes

There is a lack of understanding among the public about vaping, which may be acting as a significant barrier to their usage. Worryingly, among smokers who have never used e-cigarettes, 1 in 3 (30%) believe e-cigarettes are more or equally harmful as smoking. This is a figure which has grown from 25% in 2016.²³

Figure 1 shows the progression of the smoking public’s perception of harm from e-cigarettes over the past 5 years. This is a concerning trend, because if smokers have an inaccurate perception of the relative harmfulness of vaping may, it is likely to dissuade them from potentially making the switch and improving their health.

Figure 1: Smokers perception of harm from e-cigarettes



Source: Use of e-cigarettes (vapourisers) among adults in Great Britain, ASH, May 2017. Unweighted base: GB adult smokers (2013, n=1720; 2014, n=1705; 2015 n=1945; 2016 n=1639 2017 n=1569)

Research has shown that perceptions of harm can indeed inhibit the use of e-cigarettes among smokers,²⁴ and this barrier will only be exacerbated if the concerns of the public go unaddressed. Responsible messaging could help to counteract this threat, for example highlighting that smoking cessation services are advised to support smokers who choose to quit using e-cigarettes.

Heated tobacco products

Heated tobacco products, or “heat-not-burn” products, are a relatively new tobacco product on the market, with notable examples including Philip Morris International’s iQOS. Since they are tobacco products, it is crucial that they are treated as entirely distinct from e-cigarettes, which do not contain tobacco. They should therefore not be regulated under the same framework as e-cigarettes.

There is very little research published so far into the health effects of heat-not-burn products. What research has been done indicates that they are probably less harmful than conventional smoked tobacco and significantly more harmful than e-cigarettes; however, almost all research to date has been tobacco industry funded, and is yet to be fully replicated through independent studies. It is possible that such products will, in time, be demonstrated to be significantly less harmful than smoked tobacco, but RSPH does not consider what has been published by the tobacco industry to date as grounds for conclusion on this point.

The regulatory regime for heated tobacco products should be set up so that, as and when a better established research base emerges, they can be regulated in line with their harm profile. It is therefore paramount that reliable independent research is undertaken, so that a robust evidence base can develop. Moreover, since the market could potentially develop in

different directions in the coming years, there may emerge a range of substantially differing heat-not-burn devices, with accordingly differing harm profiles. The regulatory framework for heated tobacco products should therefore be flexible enough to deal with diverse products.

Tobacco companies and e-cigarettes

Though the market for e-cigarettes was led by small companies, major tobacco companies such as British American Tobacco (BAT) and Philip Morris International (PMI) have become increasingly involved in the past five years.²⁵ Given the tobacco industry's ongoing involvement in and efforts to expand the smoked tobacco markets worldwide, it is important to ensure this increasing presence in the e-cigarette market does not lead to a situation where tobacco companies are treated as stakeholders on a public health issue.

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