

Debate: should the use of e-cigarettes be encouraged among smokers?

Introduction

The use of electronic cigarettes (ECs) has rapidly increased over recent years since they were invented in China in 2003. Although initially designed to provide inhaled doses of nicotine as an alternative to smoking cigarettes, now nicotine-free products are also available. They have rapidly evolved with a wide range of devices available to meet consumer demand.

In essence, the main features are the device and the fluid (e-liquid) used that facilitates the vape. First-generation devices looked very much like a cigarette but, compared with smoking tobacco, were not very efficient at delivering nicotine. Later generations looked more like pens and, more recently, pod systems were introduced as a simpler option. Many frequent vapers have moved onto the more-advanced, modified devices – ‘mods’ – to achieve a more-tailored experience.

E-liquid contains two or three main elements:

- A base – usually propylene glycol or vegetable glycerine;
- Flavours;
- Nicotine at a range of concentrations (if required).

Research is evolving and often conflicting in approach and results. Researchers have been battling to keep up with the developing technology and have to consider a range of variables – this is one reason why there are mixed responses to ECs. There is a debate about whether they are a useful tool in the battle against tobacco addiction or another risk to public health that health professionals need to consider.

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- The views expressed in this article are those of the individual, not the organisation they represent

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It seems counterintuitive that a new technology that promised to see the end of smoking in our lifetime is still having to fight its corner, but that is what has happened with e-cigarettes (ECs). I use the term EC to cover all vaping devices, including those that look like cigarettes, pens, the pod systems and the bigger modifiable devices; the more sophisticated they are, the better they work for the user, but they all deliver an aerosol that generally contains nicotine.

People smoke for the nicotine – which is a stimulant – but die from the tar and the carbon monoxide. ECs have had a considerable impact on smokers since around 2014, enabling those who are literally sick of smoking and want to avoid cancer, heart disease and respiratory illnesses to switch to a safer product.

Leicester Stop Smoking Service was the first to offer ECs and many more have followed its lead. Thousands of smokers – particularly those who had given up giving up – have become ex-smokers with the help of an EC. These service users, who had often tried all the other alternatives, described ECs as a revelation. Success rates for vapers trying to stop smoking are around 10-20% higher than those using other methods, and there is growing evidence that vaping prevents relapse back to smoking; it has become the most popular and the most effective stop-smoking aid (Dockrell, 2018).

So why has vaping suffered such a bad press? Why aren't health professionals doing everything possible to encourage uptake among their patients? There is considerable misunderstanding about ECs in both professional and lay circles: there are fears that using ECs will encourage people to recommence smoking or entice young people to start. This has been surveyed extensively by Action on Smoking and Health (ASH); not only is there is no evidence that this is happening but smoking rates are falling faster than ever before in the UK (ASH, 2018).

If people continue to use nicotine recreationally, this should not overly concern us. On its own, when not inhaled with lit tobacco, it is a mild stimulant and does not cause cancer. It is not even particularly addictive when not smoked – few people get addicted to nicotine replacement therapy. The National Institute for Health and Care Excellence (2018; 2013) recommends the long-term use of clean forms of nicotine to prevent people smoking again. We should help people stop smoking, not stop them using nicotine.

Few adverse events relating to ECs have been reported and tracked by the Medicines and Healthcare products Regulatory Agency and, those that have, are mostly mild transitory symptoms such as dry throat; tobacco, however, when smoked, kills half of its users. Those who switch from tobacco to ECs want to save their lives and should be given all the encouragement possible. A hostile media environment delights in scare stories; for instance, it was reported that ECs cause popcorn lung – an industrial disease that affects workers in the popcorn industry – but it has never been observed among smokers or vapers (Cancer Research UK, 2018). Stories such as these only scare people from trying a harm-reduction alternative to smoking.

We can see from the evidence that many smokers stop when they try a good-quality EC. If all health professionals got on board with this message, we would see an even more dramatic fall in smoking rates – and there would likely be no, or little, expense borne by the NHS as most people are willing to buy these devices themselves.

All smokers should be encouraged to vape and all vapers should be encouraged to stop using tobacco cigarettes entirely.

“People continuing to use nicotine recreationally should not overly concern us”

AGAINST

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Smoking ECs is marketed in England as being at least 95% safer than smoking tobacco and of negligible risk to passive smokers – yet this is a unique position and not one that is held worldwide. Global organisations, including the European Respiratory Society and the World Health Organization, do not currently endorse EC use and question safety claims, based on the limited high-quality research studies available. Epidemiological studies have shown long-term cause-and-effect associations – a good example is Doll and Hill’s 1954 tobacco smoking (cause) and death (effect) study – yet they are lengthy, which is a key issue for those seeking evidence about vaping.

It is frequently reported that ECs contain far fewer harmful substances than tobacco-based cigarettes, but this does not mean they are harm free. Available with and without nicotine, ECs often contain propylene glycol, a known irritant when inhaled, as well as the carcinogenic agents acetaldehyde and formaldehyde (National Academies of Sciences, Engineering, and Medicine, 2018).

“Global organisations do not currently endorse electronic cigarette use”

In 2017, cigarette smoking prevalence in those aged ≥18 years in the UK was 15.1%, down from 15.8% in 2016 (Office for National Statistics, 2018). However, EC firms have spent vast sums promoting their products and, in 2014, 3.7% of the population aged ≥16 years in Great Britain used ECs; by 2017 this had increased to 5.5% – around 2.8 million people (ONS, 2018). This highlights two areas of concern: a large proportion of the EC market has been bought by multinational tobacco companies, which raises fears about tobacco companies’ hidden agendas; and the uptake of vaping among young people may re-normalise smoking. While there is little evidence in the UK that this is the case, data from the US has shown vaping among adolescents is increasing, associated with a decrease in cigarette smoking. At face value this appears positive, but there is also evidence that young vapers are highly likely to progress to become established smokers, particularly given the highly addictive nature of nicotine (Levy et al, 2018).

While some emerging evidence shows EC may be an effective aid to smoking cessation, the number of successful quitters is very small. In 2018, in England, 62.2% of e-cigarette users were reported to be dual users, smoking tobacco and vaping concurrently (West et al, 2019). These figures demonstrate that vaping appears to be most commonly used by individuals in the long term rather than the short term. Yet, vaping alongside concurrent tobacco smoking raises significant concerns as the interaction of both inhaled substances and their impacts upon short- and long-term health is not yet known.

Evidence-based recommended smoking-cessation approaches are licensed pharmacological products including nicotine replacement therapy, varenicline or bupropion with behavioural support. Smokers are significantly more likely to quit and stay quit using these approaches. Alarming, however, the prescribing of these licensed treatments has decreased by up to 75% in England (British Lung Foundation, 2018). This has occurred at a time when rates of EC use have risen.

Smoking is the leading cause of preventable death in the UK and we must support smokers to quit at every opportunity. Our responsibility is to ensure we advocate smoking abstinence using the best-available evidence. There is insufficient evidence to conclude that vaping is harm free in the long term, or more effective than existing licensed pharmacological treatments; we must communicate this to our patients, while supporting and acknowledging the challenges smokers face in their efforts to quit.

References

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