

Use of e-cigarettes (vapourisers) among adults in Great Britain

Summary of findings

Level of use (page 3)

- An estimated 2.9 million adults in Great Britain currently use e-cigarettes (vape) up from 700,000 in 2012, the first year ASH collected figures (see table 1 below).¹
- For the first time there are more ex-smokers (1.5 million) who use e-cigarettes than current smokers (1.3 million). Over half (52%) of e-cigarette users are now ex-smokers and 45% are smokers.
- The main reason given by ex-smokers who are currently vaping is to help them stop smoking while for current smokers the main reason is to reduce the amount they smoke.

Perceptions of harm (page 8)

- Public perceptions of harm from e-cigarettes remain inaccurate with only 13% accurately understanding in 2017 that e-cigarettes are a lot less harmful than smoking.
- Among smokers perceptions are also getting worse with only 20% accurately believing in 2017 that e-cigarettes are a lot less harmful than smoking compared with 31% in 2015.
- Between 2016 and 2017 fewer smokers also understand that NRT is much safer than smoking. In 2017 just under a third of smokers understood that NRT was much less harmful than smoking.

Products (page 10)

- Only 6% of current vapers report using an e-liquid containing over 20 mg/ml (the limit in the Tobacco Products Directive)
- Among daily vapers only 1% report using more than 10ml of e-liquid a day, and only 20% report using more than 4ml a day. Under the Tobacco Products Directive the new limit for tank sizes is 2ml while the size limit for bottles is 10ml.
- Tobacco is no longer the most commonly used flavour by e-cigarette users, fruit flavours are.

Daily vaping (page 12)

- People who vape every day compared to those who vape less frequently are more likely to be ex-smokers. If they smoke daily vapers are more likely to consume fewer cigarettes and to have a stronger motivation to quit than smokers who vape less frequently than every day.

Background

This fact sheet reports the results of the ASH Smokefree GB surveys on the use of e-cigarettes among adults in Great Britain. ASH included questions on e-cigarette use in this annual survey starting in 2010 with questions addressed only to smokers². Questions about e-cigarettes were extended to include all adults in surveys conducted from 2012 onwards^{3 4 5 6 7 8}. These surveys have all been carried out by YouGov. Using the findings of the surveys and applying these to the most recent population data available in each year ASH, working with King's College London, has estimated the prevalence of e-cigarette usage in Great Britain.

In March 2013⁹ an additional survey of children aged 11 to 18 was conducted, the ASH Smokefree Youth survey. This has been repeated annually since then. ¹⁰ For use among children [please see the ASH factsheet](#). In summary the ASH Smokefree Youth Survey shows that regular use of e-cigarettes amongst children and young people is rare and is confined almost entirely to those who currently or have previously smoked.

Since the Smokefree GB survey first commenced a number of other surveys have also been gathering data on e-cigarette use.¹¹ The Smoking Toolkit Study¹² is probably the most extensive of these and tracks smoking and e-cigarette use throughout the year in England. The findings from the Smokefree GB survey and the Smoking Toolkit Study are broadly consistent although differences in the populations covered, definitions of smoking status and how the surveys are conducted lead to small differences. Throughout this factsheet we refer to the findings of the Smoking Toolkit Study as further illustration of the patterns of e-cigarette use. For the full findings from the Smoking Toolkit Study visit: www.smokinginengland.info

E-cigarette awareness and use

Awareness of e-cigarettes is widespread among adults. The 2017 survey found that 95% of smokers and 94% of the general population had heard of e-cigarettes.

ASH estimates that there are currently 2.9 million adults in Great Britain using e-cigarettes (6% of the adult population). Of these, approximately 1.5 million (52%) are ex-smokers while 1.3 million (45%) continue to use tobacco alongside their e-cigarette use (figure 1).

Table 1

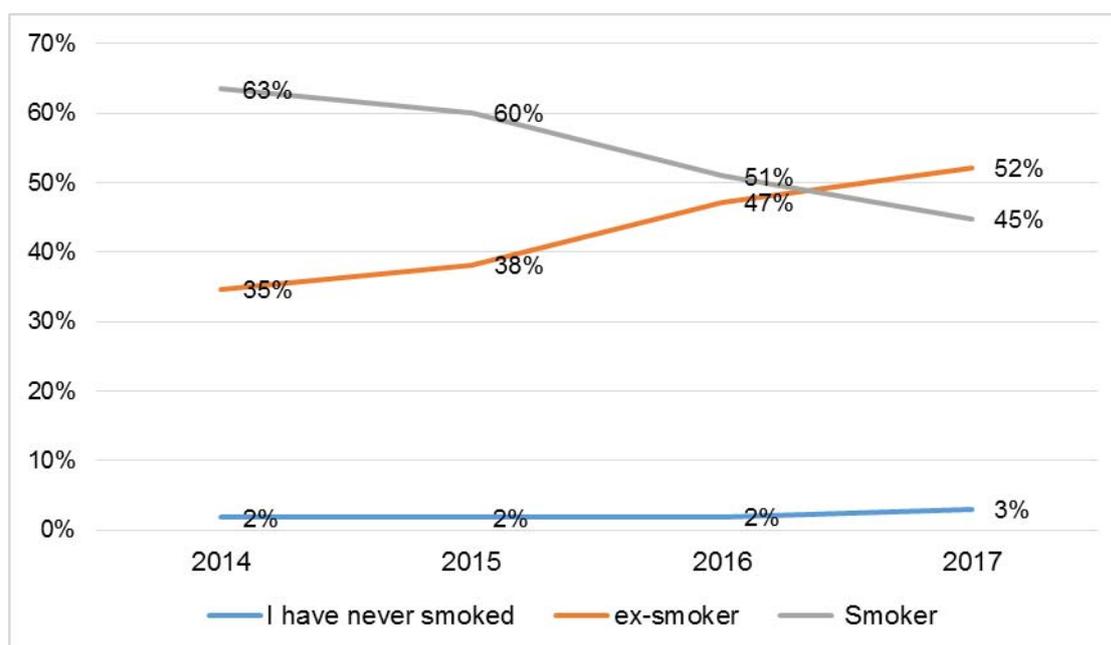
	2012	2013	2014	2015	2016	2017
Number of e-cigarette users (vapers) in Great Britain	700,000	1.3 million	2.1 million	2.6 million	2.8 million	2.9 million
Prevalence	1.7%	2.7%	4.2%	5.4%	5.7%	5.8%
Year on year rate of change ¹³		+86%	+62%	+24%	+8%	+4%

The Smoking Toolkit Study run by University College London, produces a similar estimate with 5.5% of the English population currently using e-cigarettes.

Use of the devices is confined to current and ex-smokers and use amongst never smokers remains very low. Over time the proportion of current e-cigarette users who smoke tobacco has fallen and the proportion who are ex-smokers has risen (figure 1). The trends are similar in the Smoking Toolkit Study.

However, due to differences in the surveys, it consistently estimates a slightly higher figure for the proportion of e-cigarette users who are current smokers.¹⁴

Figure 1: Current e-cigarette users by smoking status

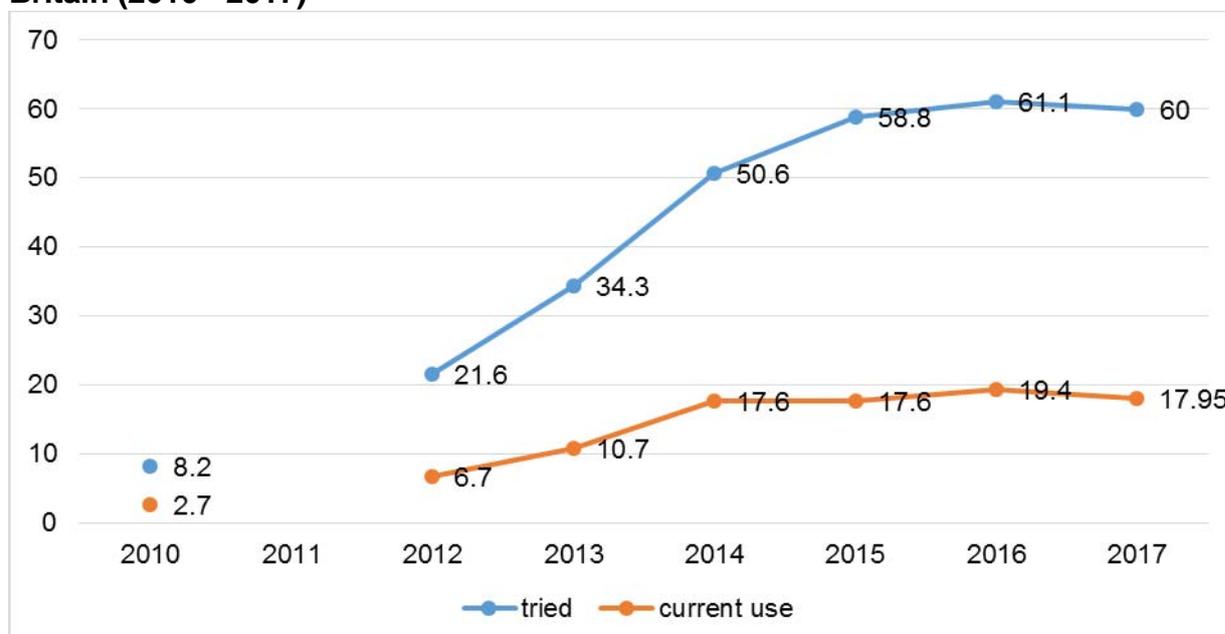


Unweighted base: (2014 never smokers n=6081 ex-smoker n=4478 smoker n=1710) (2015 never smokers n=6129 ex-smoker n= 3889 smoker n= 2037) (2016 never smokers n= 6099 ex-smoker n= 4354 smoker n= 1704) (2017 never

smokers n=6626 ex-smoker n=4438 smoker n=1632)

Between 2010 and 2014 there was a rise in the number of current cigarette smokers who also use e-cigarettes, from 2.7% in 2010 to 17.6% in 2014. However, since 2014, this increase has slowed and seems to have plateaued (figure 2). The proportion of ex-smokers using e-cigarettes continues to rise from 4.5% in 2014 to 9.5% in 2017 (figure 3).

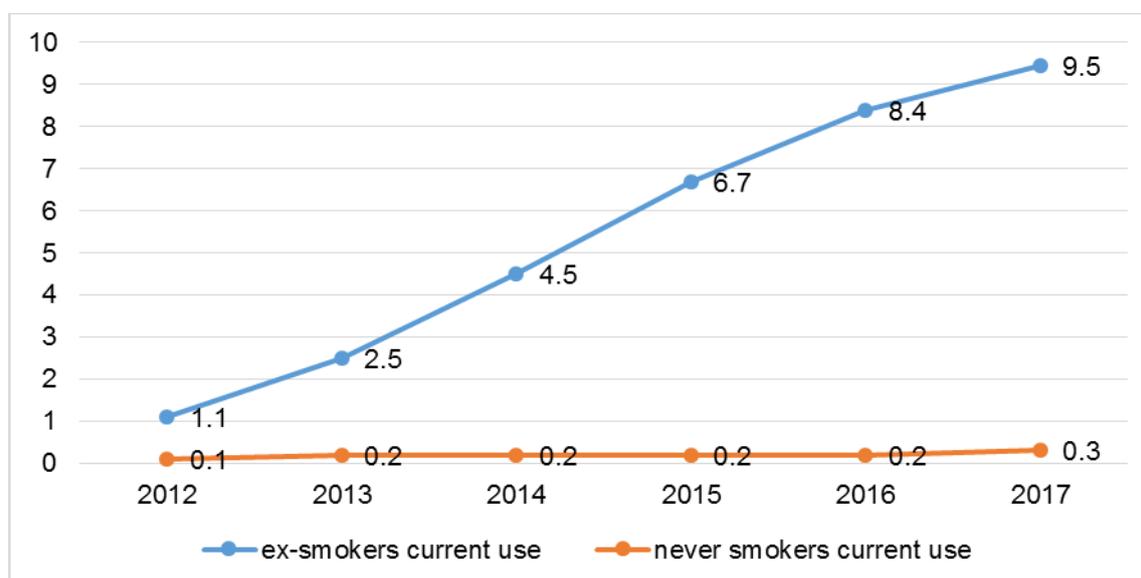
Figure 2: Electronic cigarette use among current adult cigarette smokers in Great Britain (2010 - 2017)



Unweighted base: GB adult smokers (2010, n=2297; 2012, n=2093; 2013, n=1895; 2014, n=1776; 2015 n=2037; 2016 n=1704 2017 n=1840)

The trend in the Smoking Toolkit Study is similar, which reports stability in the use of e-cigarettes among current smokers but a continuing upward trend among ex-smokers, particularly in those who reported using e-cigarettes as part of a quit attempt.

Figure 3: E-cigarette use among adult ex-smokers and never smokers in Great Britain (2012 - 2017)



Unweighted base: GB adult ex-smokers (2012, n=4473; 2013, n=4303; 2014, n=4498, 2015 n=3889; 2016 n=4354 2017 n=4438), GB adult never smokers (2012, n=5886; 2013, n=5972; 2014, n=5995 2015, n=6129 2016, n=6420 2017, n=6626)

Overall 65% of those who have ever tried e-cigarettes are no longer using them.

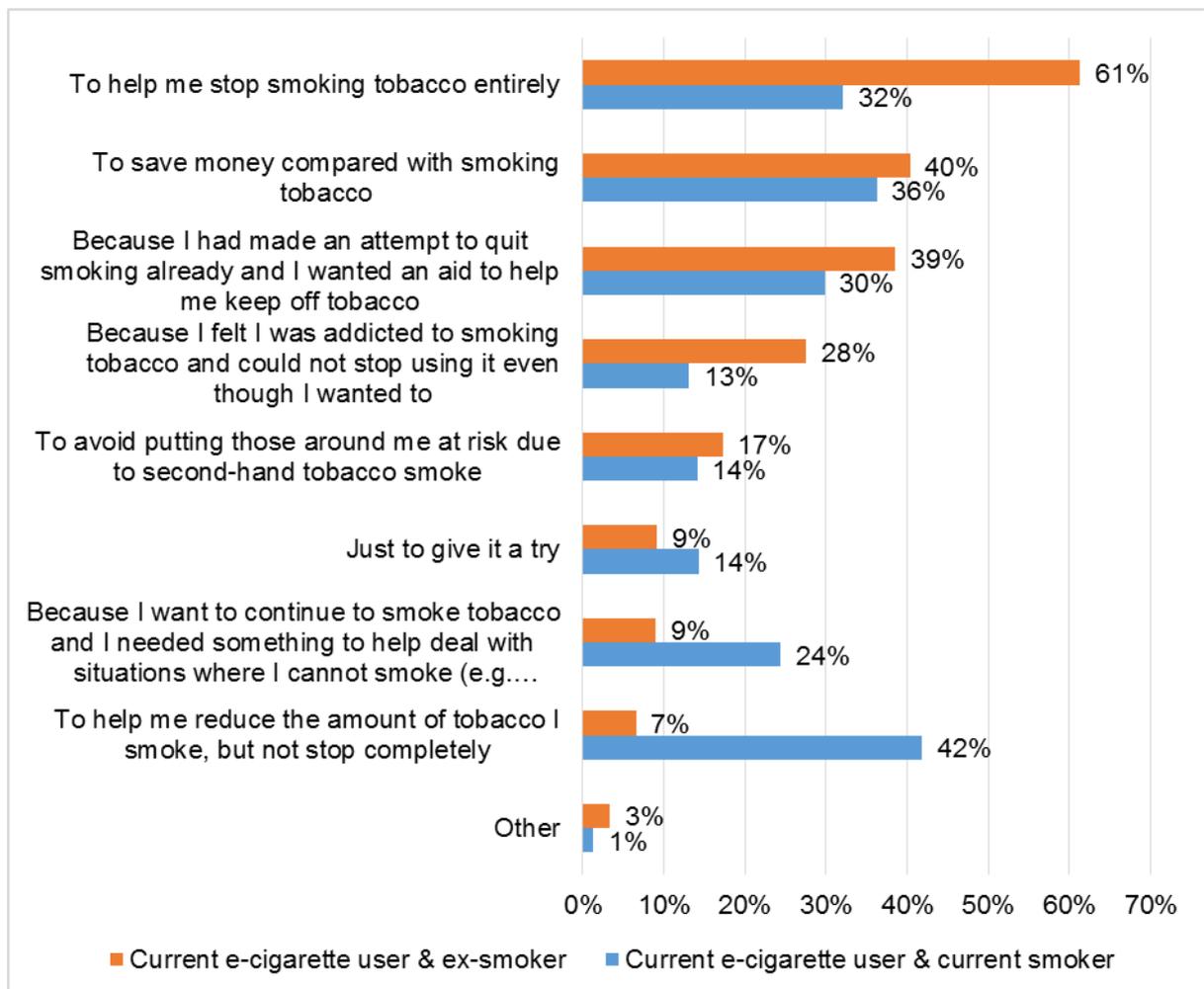
The top three reasons ex-smokers give for currently using e-cigarettes are:

- “to help me stop smoking entirely” (61%);
- “to save money compared with smoking” (40%), and;
- “to help keep me off tobacco” (39%).

The top three reasons smokers give for currently using e-cigarettes are:

- “to help me reduce the amount of tobacco I smoke, but not stop completely” (42%);
- “to save money compared with smoking” (36%), and;
- “to help me stop smoking entirely” (32%).

Figure 4: Reasons for using e-cigarettes (2017)

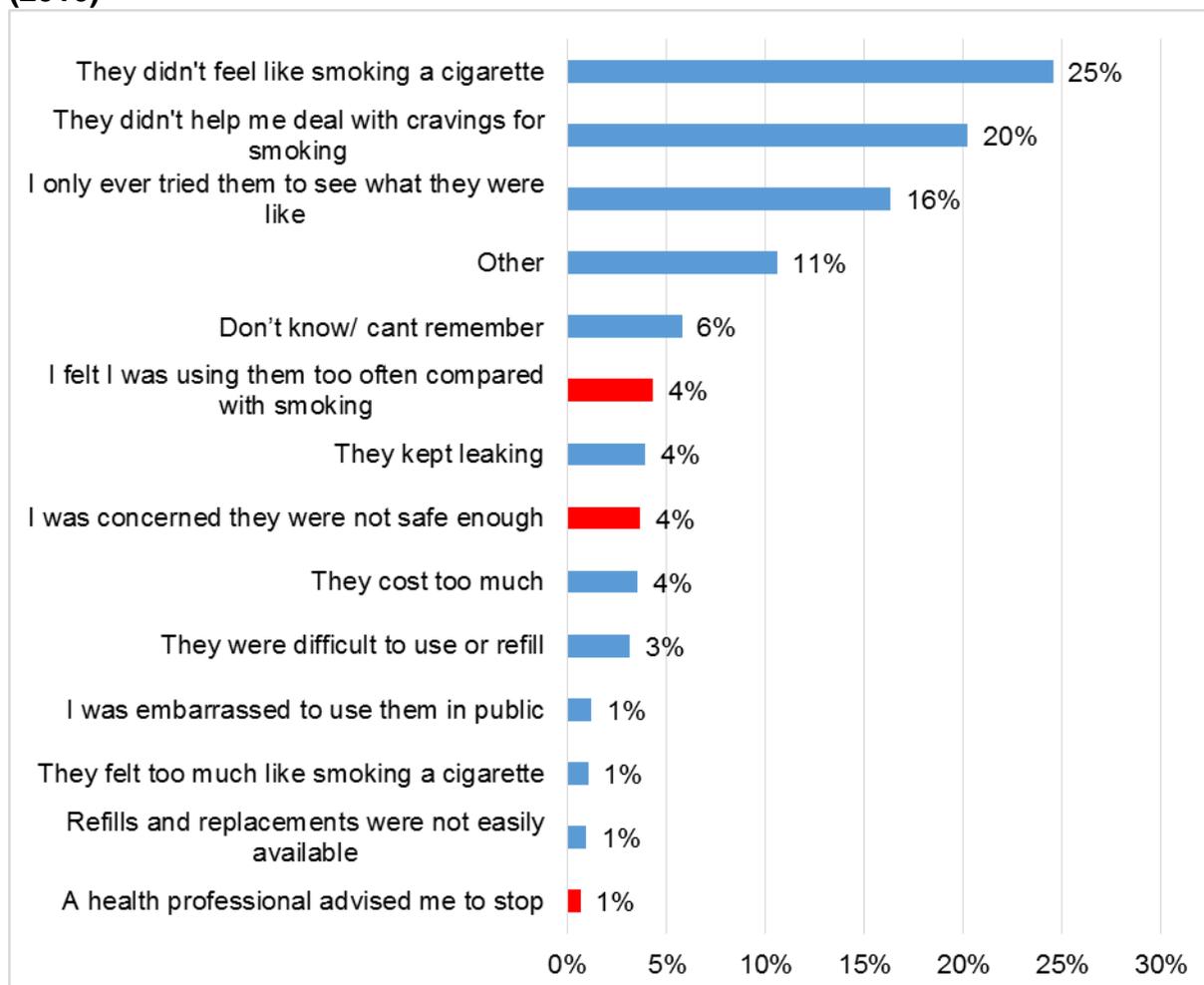


Unweighted base: GB adult current e-cigarette user and current smoker (n=293), GB adult current e-cigarette user and ex-smoker (n=361)

Over a third (36%) of ex-smokers who have tried e-cigarettes but no longer use them said they had used them as part of a quit attempt.

In 2016 we asked smokers who have tried but are no longer using e-cigarettes what their main reason was for stopping. The most common reasons related to whether products were a sufficient substitute for smoking. However, 4% said their main reason for stopping was concerns that e-cigarettes were not safe enough, another 4% said they were concerned they were using them too often compared with smoking and a further 1% said they had been advised to stop by a health professional (figure 5). Research has shown that perceptions of harm may be inhibiting some smoker’s use of e-cigarettes¹⁵.

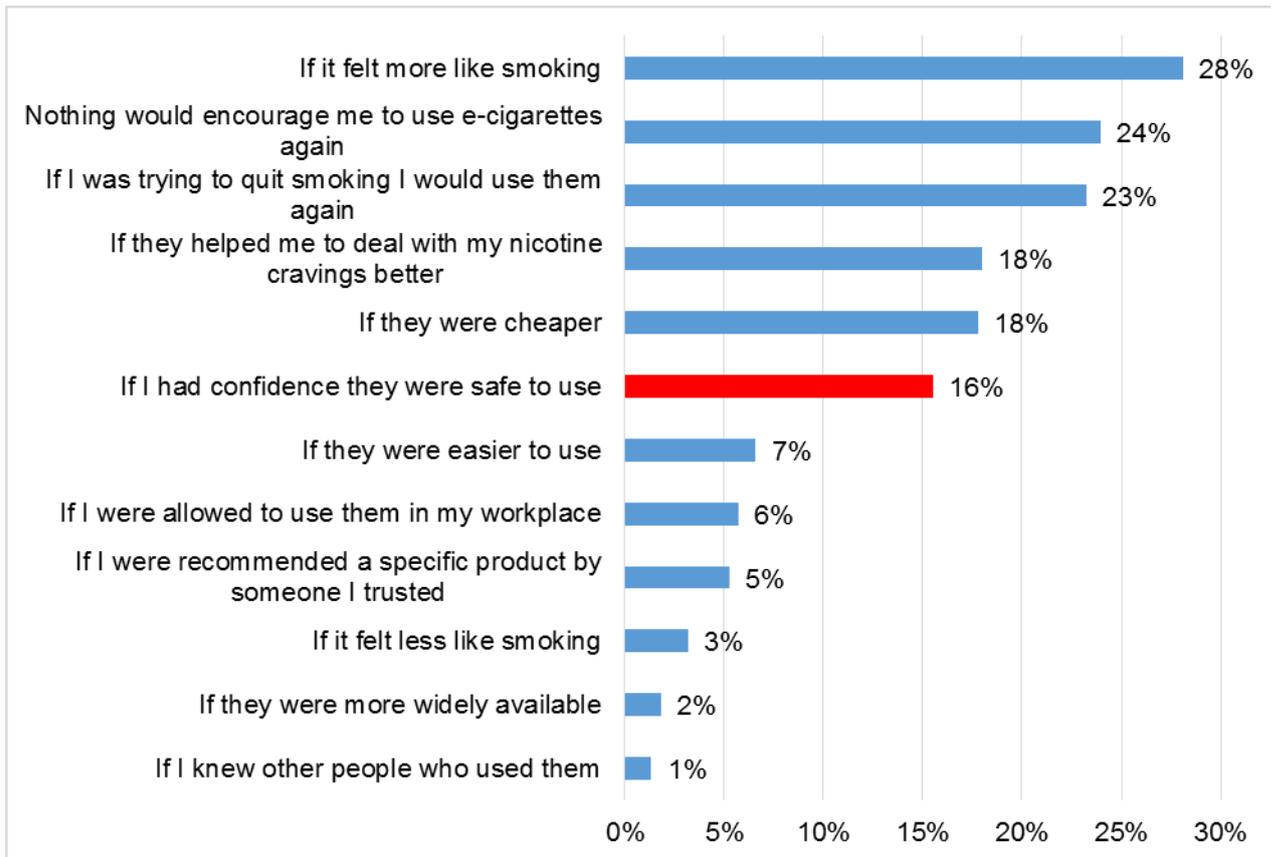
Figure 5: Main reason for stopping using an e-cigarette among current smokers (2016)



Unweighted base: GB adult current smokers who have tried but no longer use e-cigarettes n=703

In 2016 we also asked what would encourage smokers to try an e-cigarette again (respondents could choose multiple options). While many said they would try them again if they were quitting, if products were more like smoking or if they helped them deal with cravings better, 16% said confidence that products were safe would encourage them to try again (figure 6).

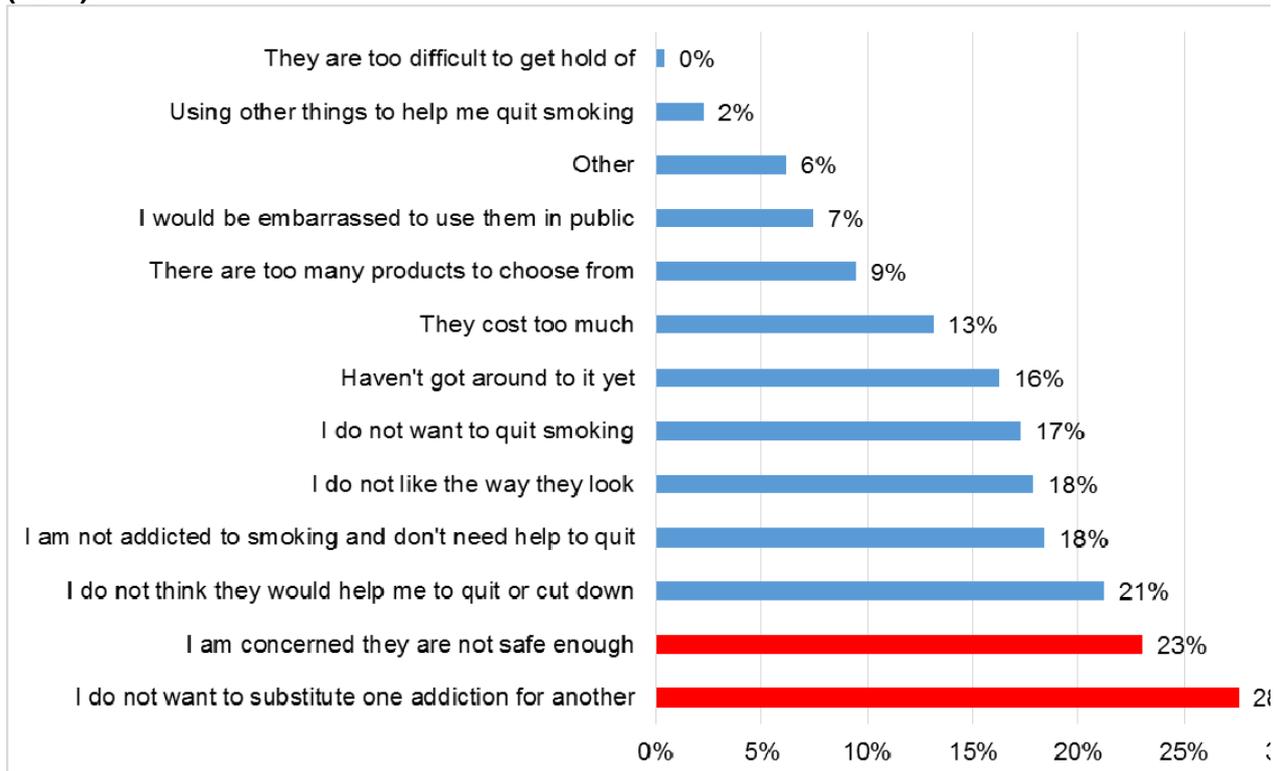
Figure 6: What would prompt smokers to try e-cigarettes again



Unweighted base: GB adult current smokers who have tried but no longer use e-cigarettes n=703

In 2017 we asked smokers who've never tried an e-cigarette why they hadn't (respondents could choose multiple options). Concerns about replacing one addiction with another and potential harms were the most commonly cited reasons (figure 7).

Figure 7: Reasons for not trying an e-cigarette among smokers who never have (2017)

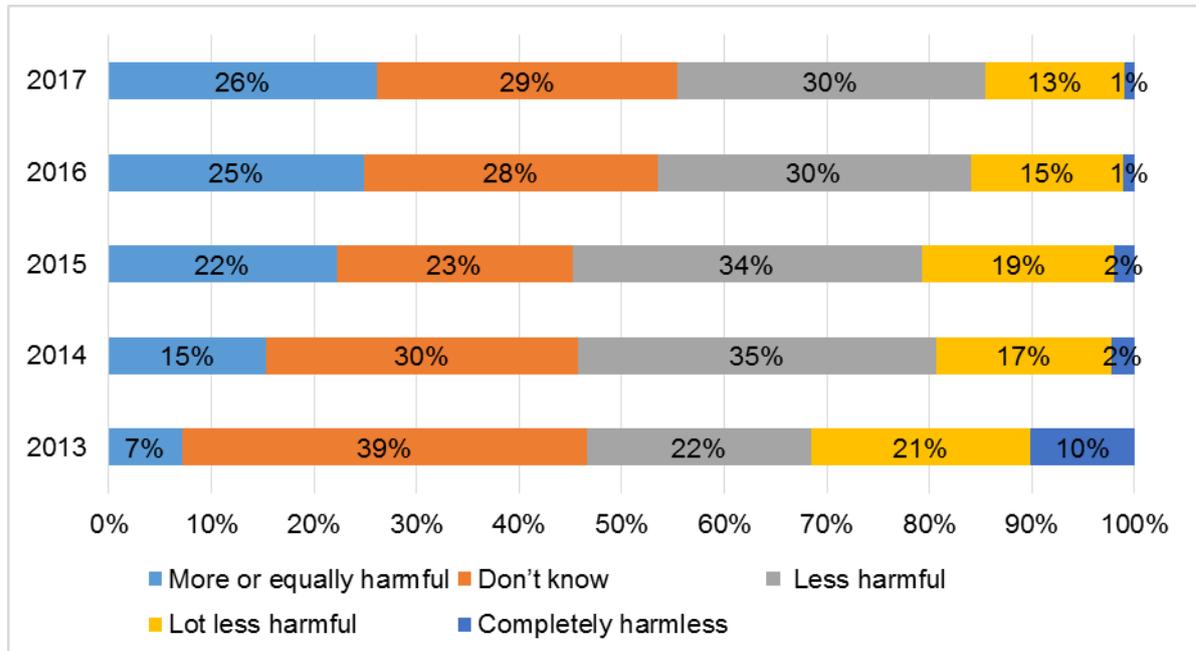


Unweighted base: All GB smokers who have never tried an e-cigarette n=600

Perceptions of harm

Between 2013 and 2017 the perception of harm from e-cigarettes has changed. A growing proportion of the public and smokers fail to recognise that e-cigarettes are less harmful than smoking. In 2017 only 13% of adults correctly identified that e-cigarettes are a lot less harmful than smoking compared to 21% in 2013. In addition, the proportion of the adult population thinking that e-cigs are as harmful, or more harmful, than smoking nearly quadrupled from 2013 to 2017 from 7% to 26% (figure 8).

Figure 8: Adult population perception of harm from e-cigarettes relative to smoking (2013-2017)



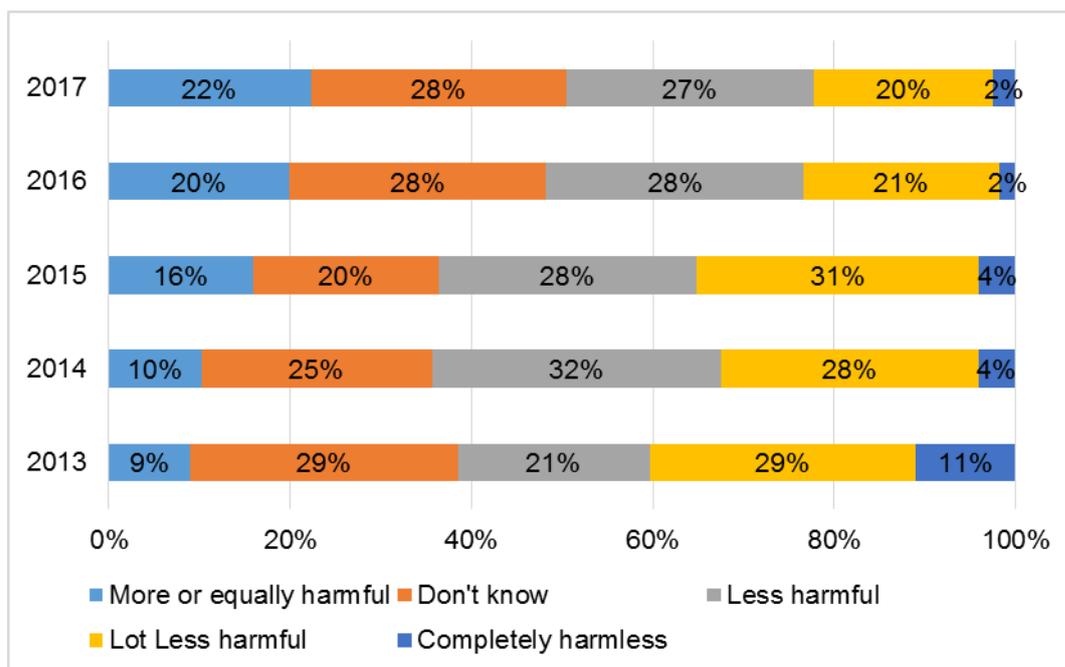
Unweighted base: All GB adults who have heard of e-cigarettes - 2013, n=8936; 2014, n=11,307; 2015 n=11,340; 2016 n=11,489; 2017 n=12,101

People who are currently using e-cigarettes are more likely to have accurate perceptions of harm. Among all those who are currently vaping (smokers and ex-smokers) 49% accurately identify that e-cigarettes are a lot less harmful than smoking.

However, the poor understanding among smokers in general about the relative harms of e-cigarettes compared to smoking is of concern. In 2017 the proportion of smokers who said they did not know whether e-cigarettes were harmful relative to smoking was almost at the same rate as it was in 2013 (29% in 2013 and 28% in 2017). In addition, the proportion of smokers who think e-cigarettes are just as, or more, harmful than smoking has increased significantly from 9% in 2013 to 22% in 2017 (figure 9). Over this period evidence has grown about the relative safety of e-cigarettes when compared to combustible tobacco.

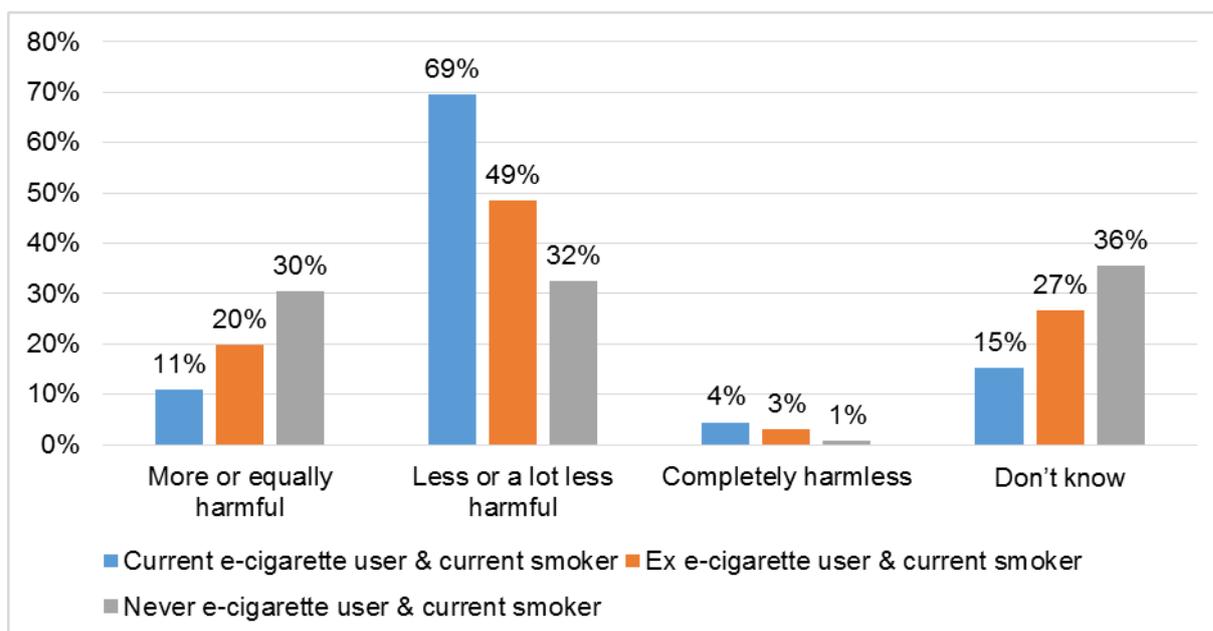
Smokers who have never tried e-cigarettes are less likely to accurately believe they are a lot less harmful than tobacco smoking than smokers who are currently using e-cigarettes. Among smokers who have never tried an e-cigarette 1 in 3 (30%) believe e-cigarettes are more or equally harmful as smoking (figure 10). This is a view that has grown over time among smokers who have not tried an e-cigarette with 25% holding this opinion in 2016.

Figure 9: Smokers perception of harm from e-cigarettes



Unweighted base: GB adult smokers (2013, n=1720; 2014, n=1705; 2015 n=1945; 2016 n=1639 2017 n=1569)

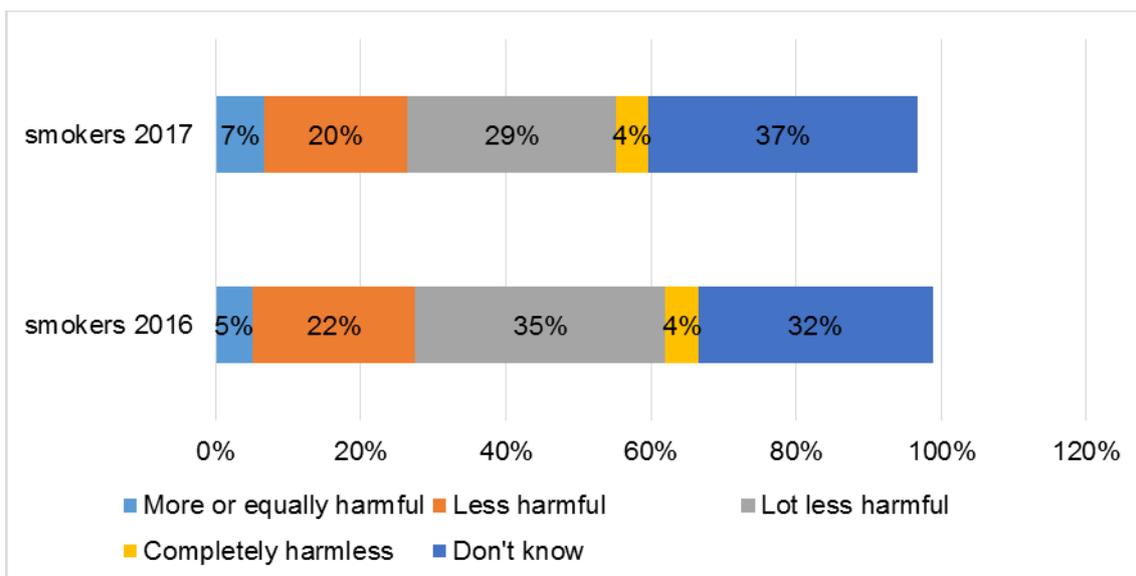
Figure 10: Perception of harms from electronic cigarettes relative to smoking among current smokers (2017)



Unweighted base: GB adult current e-cigarette user and current smoker (n=293), GB adult ex e-cigarette user & current smoker (n=676), GB adult never e-cigarette user and current smoker (n=600)

In 2016 and 2017 we also asked people for their views of the relative harms of nicotine replacement therapy products compared with tobacco smoking. Worryingly, understanding and, in particular, smokers' understanding of the relative harms from Nicotine Replacement Therapy (NRT) have become more inaccurate between 2016 and 2017 (figure 11). NRT is a licenced medication and there are very few risks from consumption.

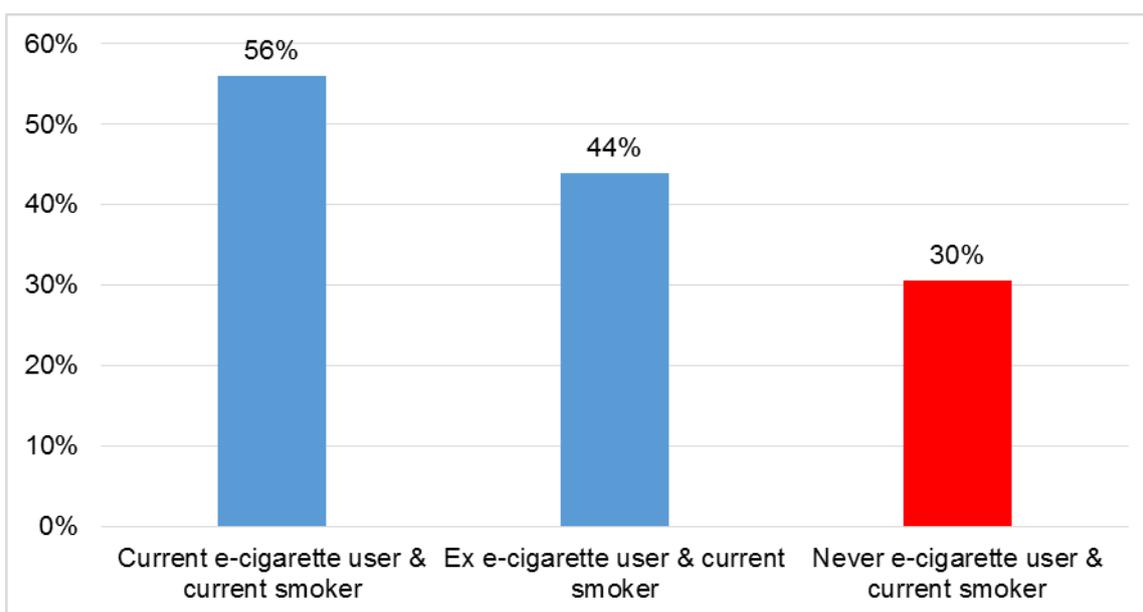
Figure 11: Is NRT more or less harmful than regular cigarettes? (Smokers 2016-17)



Unweighted base: GB adult smokers: 2016 n=1477 ; 2017 n=1632

From our 2016 survey smokers who have not tried e-cigarettes are also least likely of current smokers to have tried NRT (figure 12).

Figure 12: % of smokers who have tried NRT (2016)

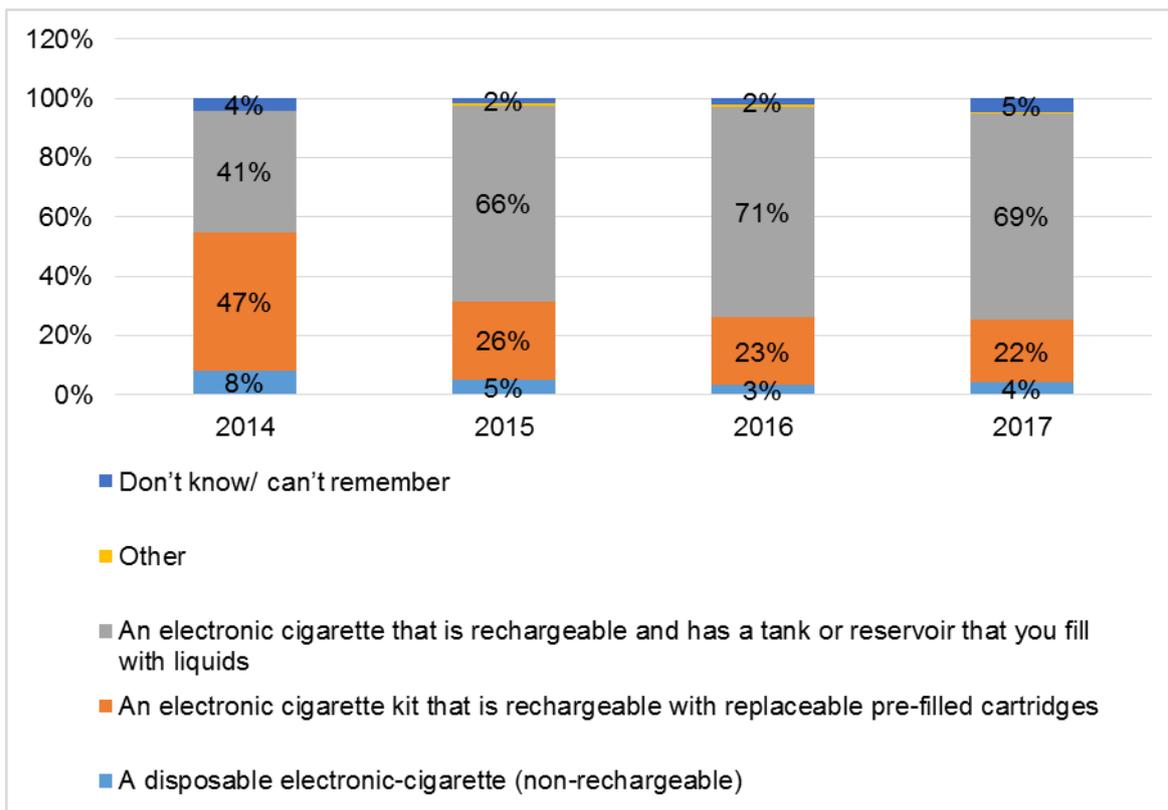


Unweighted base: All GB adult current smokers who have tried NRT - current e-cigarette user and current smoker (n=330), GB adult ex e-cigarette user & current smoker (n=703), GB adult never e-cigarette user and current smoker (n=645)

Products

Most e-cigarette users /vapers are now using a rechargeable product with a reservoir/tank and this proportion has grown since 2014 but has remained fairly consistent between 2016 and 2017. The use of disposable e-cigarettes is very low among current users and has fallen since 2014 (figure 13).

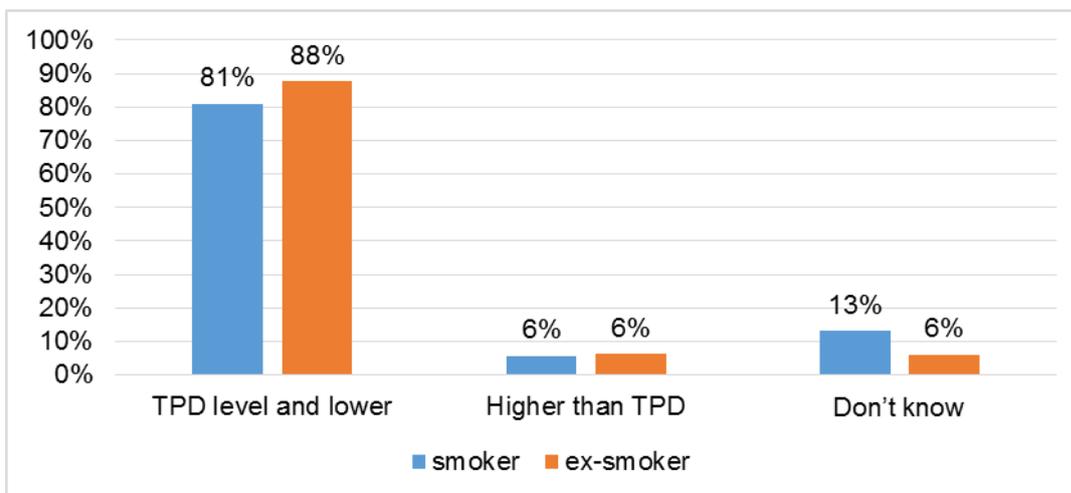
Figure 13: Type of electronic cigarette used by current e-cigarette users



Unweighted base: All GB adults who currently use e-cigarettes: 2014 (n=498) ; 2015 (n= 614), 2016 (n=667); 2017 (n=669)

There are many different e-liquids on the market in a range of flavours and nicotine strengths. A large majority (88%) of current e-cigarette users sometimes or always use products that contain nicotine. Most use liquids below the upper limit of nicotine concentration set by new EU regulations of 20mg/ml. Only 6% of current users report using liquids with a higher concentration of nicotine (figure 14).

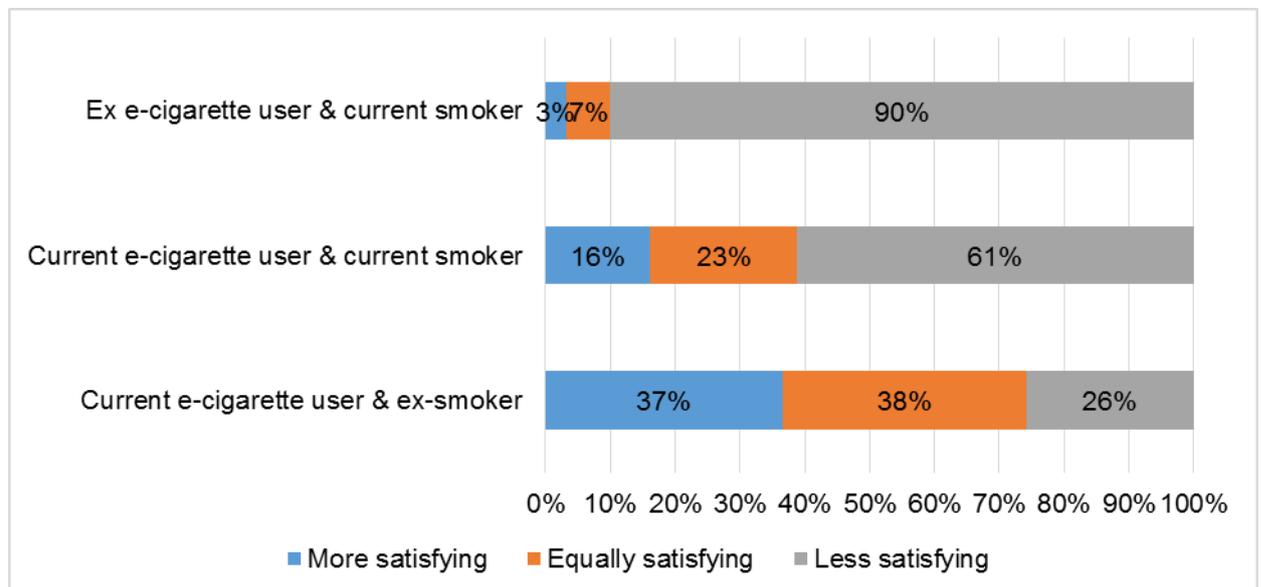
Figure 14: Strength of nicotine in e-liquid used by current vapers (2017)



Unweighted base: Current e-cigarette user and smoker n=261, Current e-cigarette user and ex-smoker n=328

Levels of satisfaction with e-cigarettes compared to smoking are low among people who continue to smoke with only 10% of smokers who no longer use e-cigarettes reporting that they are more or equally satisfying compared to smoking. While current vapers who no longer smoke are more likely to report they are equally or more satisfying than smoking 26% still find them less satisfying than smoking. (figure 15)

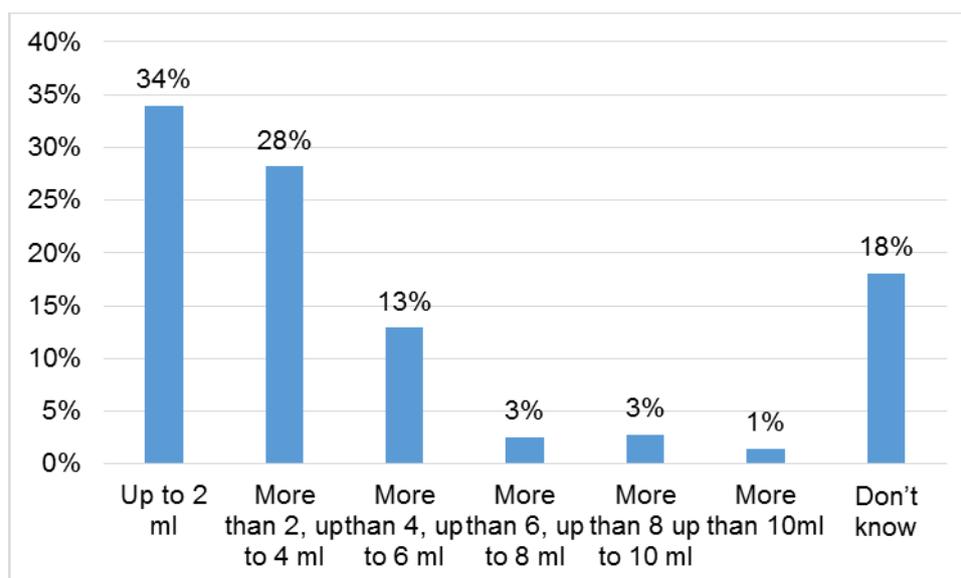
Figure 15: Current vapers satisfaction levels from e-cigarettes compared with smoking



Unweighted base: (Ex e-cigarette user and current smoker n=611) (Current e-cigarette user and ex-smoker n=352) (Current e-cigarette user and current smoker n=286)

Most daily vapers (62%) are using 4ml or less of e-liquid a day with 20% using more than 4ml a day. Only 1% of users reported using more than 10ml a day. However, 18% of vapers do not know how much liquid they use in a day (figure 16).

Figure 16: Volume of e-liquid used by daily vapers

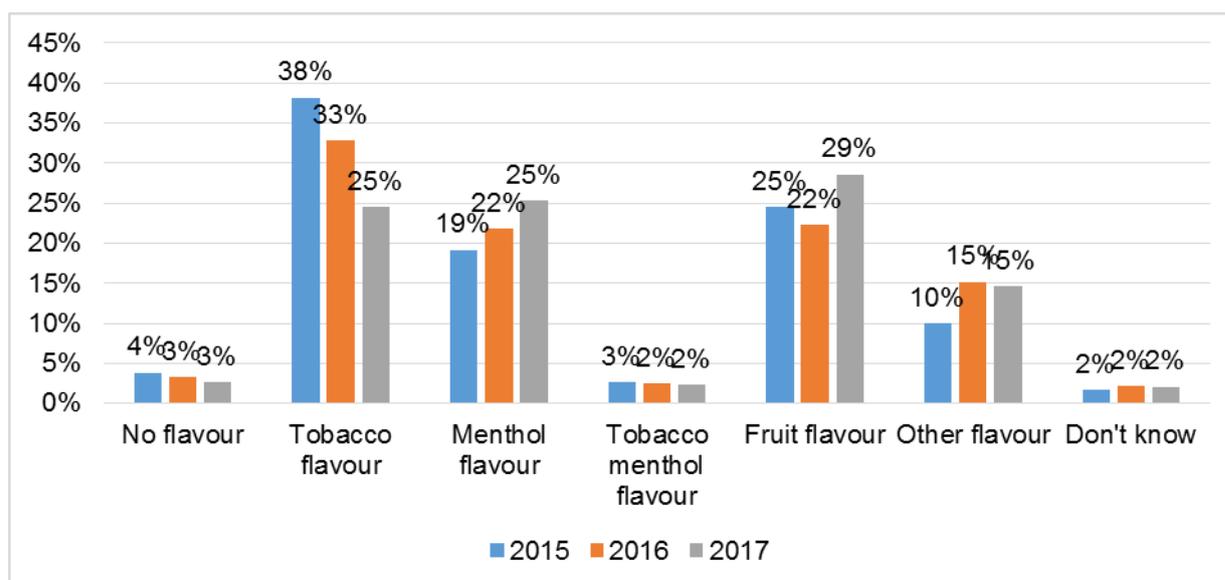


Unweighted base: All GB adults who use tanks and vape daily 2017 (n=366)

Tobacco is no longer the most popular individual flavour with only a quarter of vapers reporting

using it. Fruit flavours have become the most popular in 2017 with 29% of vapers reporting using them. Very few are using products with no flavours (figure 17).

Figure 17: Flavours used by current vapers

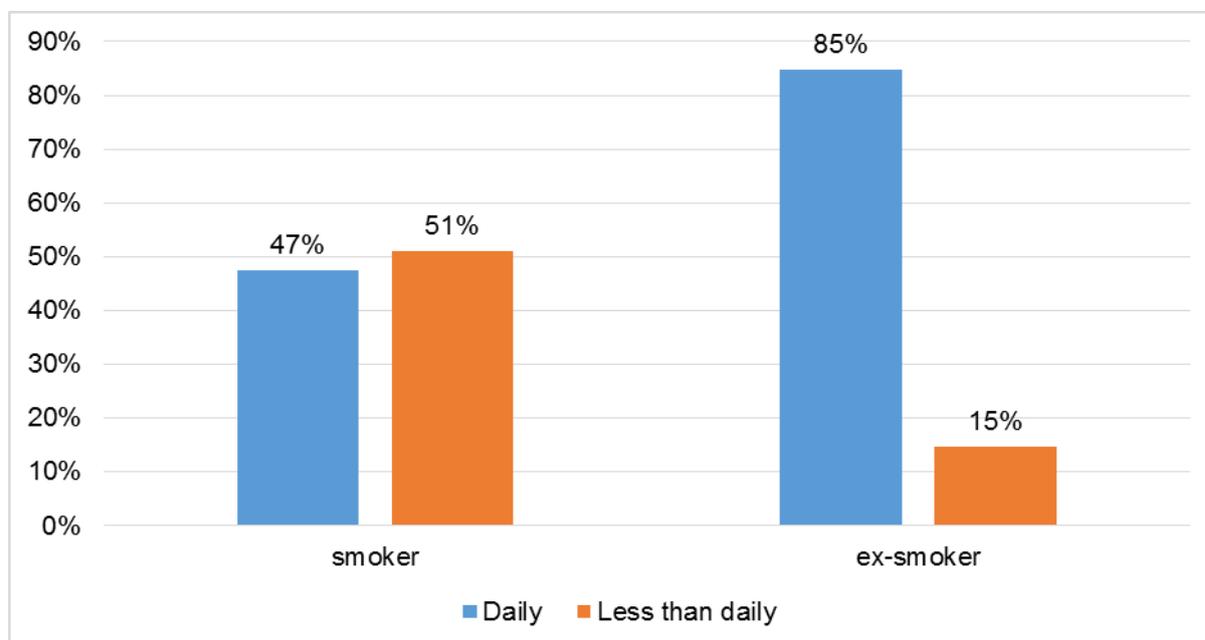


Unweighted base: All GB adults who have tried and still use e-cigarettes 2017 (n=669)

Daily vaping

Ex-smokers who vape are more likely to do so daily, compared to smokers who vape. Among current vapers just under half (47%) of those who also smoke are vaping daily, while 85% of ex-smokers who currently vape do so daily (figure 18).

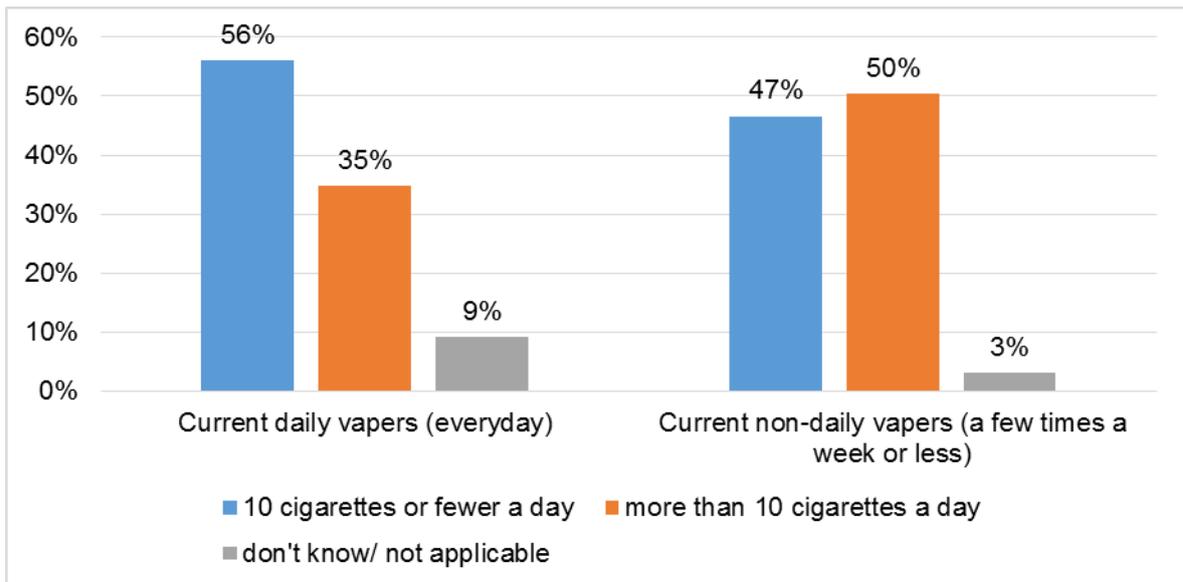
Figure 18: Frequency of use of e-cigarettes by smoking status



Unweighted base: Current e-cigarette users and smoke n=293, Current e-cigarette users and ex-smokers n=361

Among vapers who also smoke, those who vape every day are more likely than those who vape less frequently to be smoking fewer cigarettes (figure 19)

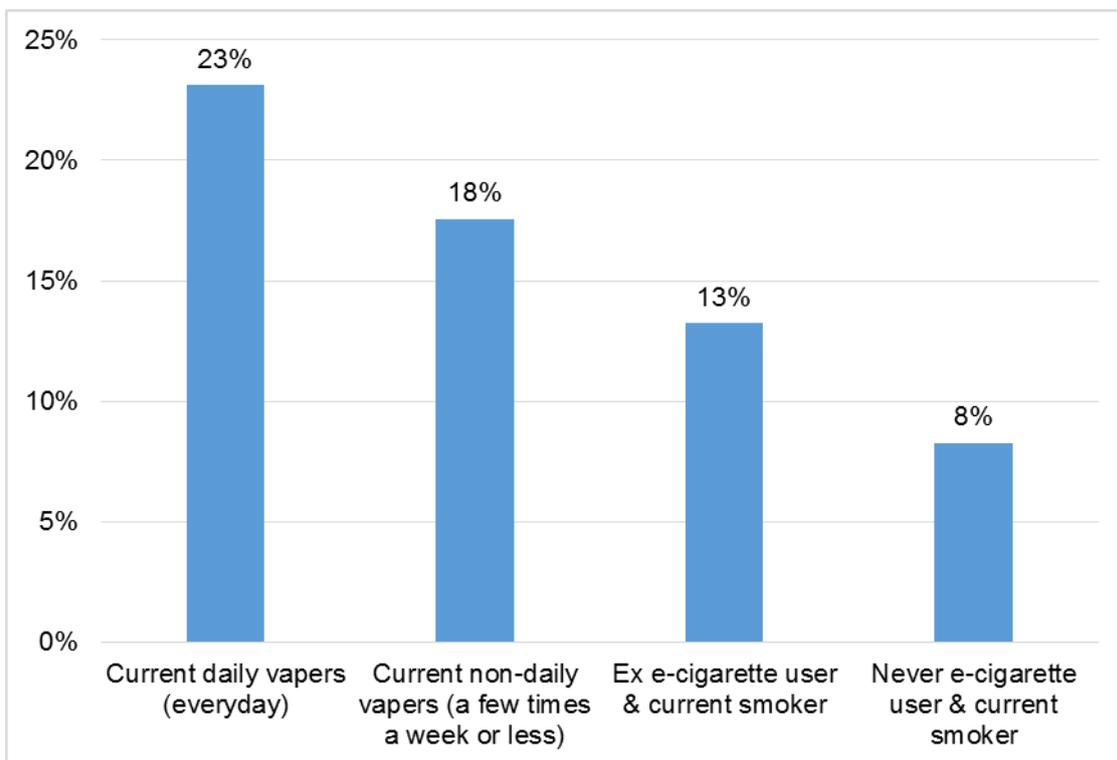
Figure 19: Number of cigarettes smoked by daily and non-daily vapers who also smoke



Unweighted base: Current daily vapers n=138, Current non-daily vapers n=150

Daily vapers who also smoke are also more likely than other smokers to report they plan to quit smoking in the next three months (figure 20).

Figure 20: Want to stop smoking and plan to in the next three months



Unweighted base: Current daily vapers n=138, Current non-daily vapers n=150, ex e-cigarette user and current smoker n=676, never e-cigarette user and current smoker n=630

References

¹ Methodology: Calculations are by ASH and King's College London. In each of the years we applied the proportions of e-cigarette use by smoking status in the YouGov survey to the most recent available ONS mid-year GB population estimates at the time the YouGov data was gathered. In 2017 ONS mid-year GB population estimates for 2015 have been used:

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/2015-06-25>

²Total sample size was 12,597 adults. Fieldwork was undertaken between 17th and 22nd March 2010. All surveys were carried out online. All figures have been weighted and are representative of GB adults (aged 18+) or children (11 to 18) as appropriate.

³ Total sample size was 12,436 adults. Fieldwork was undertaken between 27th February and 16th March 2012.

⁴ Total sample size was 12,171 GB adults. Fieldwork was undertaken between 1st and 19th February 2013. All surveys were carried out online. The figures have been weighted and are representative of all GB Adults (aged 18+)

⁵ Total sample size was 12,269. Fieldwork was undertaken between 5th and 14th March 2014. All surveys were carried out online. The figures have been weighted and are representative of all GB Adults (aged 18+).

⁶ Total sample size was 12,055. Fieldwork was undertaken between 26th February and 12th March 2015. All surveys were carried out online. The figures have been weighted and are representative of all GB Adults (aged 18+).

⁷ Total sample size was 12,157. Fieldwork was undertaken between 2nd March and 23rd March 2016. All surveys were carried out online. The figures have been weighted and are representative of all GB Adults (aged 18+).

⁸ Total sample size was 12,696. Fieldwork was undertaken between 16th February and 19th March 2017. All surveys were carried out online. The figures have been weighted and are representative of all GB Adults (aged 18+).

⁹ Total sample size was 2,178 children aged 11 to 18. Fieldwork was undertaken 21st - 28th March 2013.

¹⁰ Total sample size was 2,068 children aged 11 to 18. Fieldwork was undertaken 21st March – 1st April 2014.

¹¹ ONS, E-cigarette use in Great Britain, 2015. 2017

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/drugusealcoholandsmoking/datasets/ecigaretteuseingreatbritain>

¹² Beard E, West R, Michie S, Brown J. Association between e-cigarette use and changes in quit attempts, success of quit attempts, use of smoking cessation pharmacotherapy, and use of stop smoking services in England: time series analysis of population trends. *BMJ* 2016 ;354:i4645
<http://www.bmj.com/content/354/bmj.i4645>

¹³ Year on year figures created by ASH during data analysis.

¹⁴ The difference results from the assessment of smoking status: there are fewer ex-smokers and more current smokers in the Smoking Toolkit Study. There may be a number of reasons for this difference including how the surveys are conducted and different definitions of smoking and ex-smoking. For example in the Smoking Toolkit Study people are only considered to be ex-smokers if they smoked for over a year while this criteria is not applied to ex-smokers in the Smokefree GB survey. However, within the different categories of smoking status, the prevalence of e-cigarette use is similar between the two surveys

¹⁵ Brose LS, Brown J, Hitchman SC, McNeill A. Perceived relative harm of e-cigarettes over time and impact on subsequent use. A survey with 1-year and 2-year follow-ups. *Drug and Alcohol Dependence* 2015;157:106-11
doi: 10.1016/j.drugalcdep.2015.10.014

