

Use of electronic cigarettes (vapourisers) among adults in Great Britain

Summary of findings

- An estimated 2.8 million adults in Great Britain currently use electronic cigarettes (vape) up from only 700,000 in 2012, the first year ASH collected figures (see table 1 below).¹
- Users are fairly evenly divided between smokers (1.4 million) and ex-smokers (1.3 million). The proportion of ex-smokers has increased, in 2014 two thirds of current vapers were smokers and one third ex-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 from electronic cigarettes have grown with only 15% of the public accurately believing in 2016 that electronic cigarettes are a lot less harmful than smoking. The lowest level than at any time in the history of the Smokefree Britain survey.
- Only 9% of vapers are using an e-liquid containing over 19 mg/ml (the limit in the Tobacco Products Directive is 20mg/ml) while 77% of vapers report using e-liquids containing 18 mg/ml of nicotine or less.
- Among daily vapers only 11% report using more than 4ml of e-liquid a day. Under the Tobacco Products Directive the new limit for tank sizes is 2ml while the size limit for bottles is 10ml. The vast majority (72%) are using 4ml or less of e-liquid a day.

Background

This fact sheet reports the results of the ASH Smokefree GB surveys on the use of electronic cigarettes among adults and young people in Great Britain. ASH included questions on electronic cigarette use in this annual survey starting in 2010 with questions addressed only to smokers.² Questions about electronic cigarettes were extended to include all adults in surveys conducted from 2012 onwards.^{3,4,5,6,7} 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 electronic cigarette usage in Great Britain.

In March 2013⁸ an additional survey of children aged 11 to 18 was conducted, the ASH Smokefree Youth survey. This has been repeated annually since then.⁹ For use among children please see the [ASH factsheet](#). In summary the ASH Smokefree Youth Survey shows that regular use of electronic cigarettes amongst children and young people is rare and is confined almost entirely to those who currently or have previously smoked.

Electronic cigarette awareness and use

Awareness of electronic cigarettes is widespread among adults. The 2016 survey found that 96% of smokers and 93% of the general population had heard of electronic cigarettes.

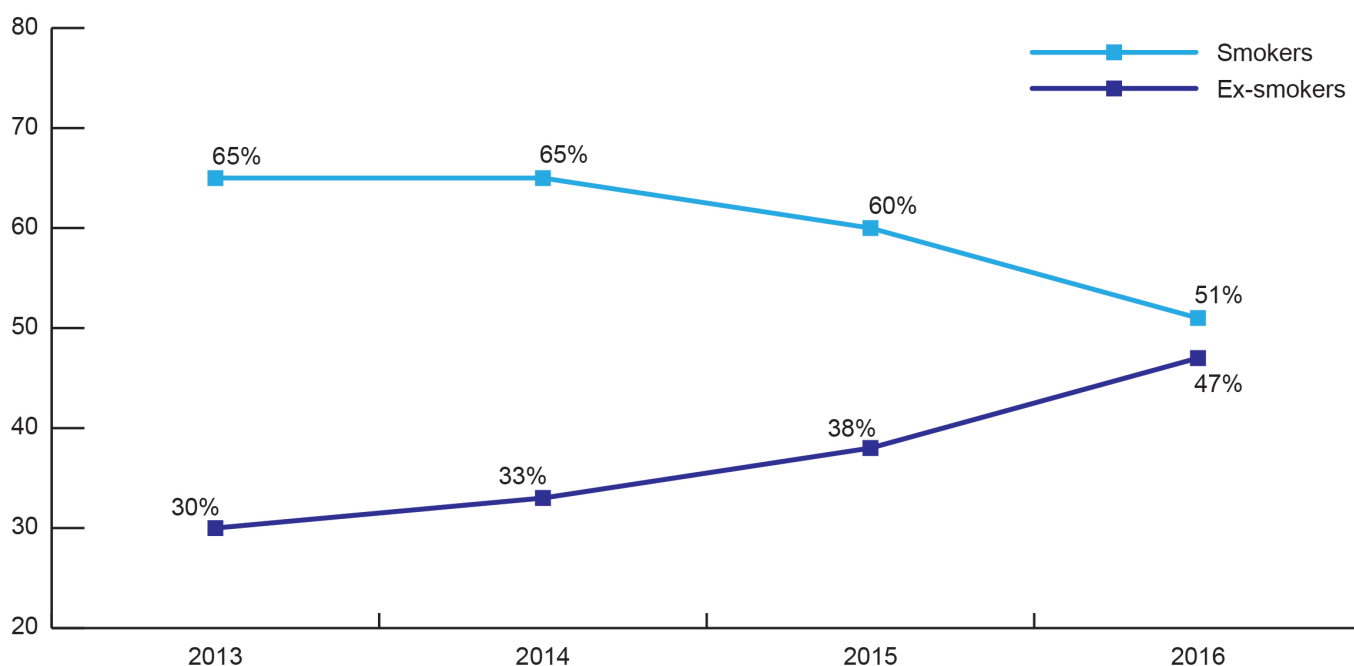
ASH estimates that there are currently 2.8 million adults in Great Britain using electronic cigarettes (6% of the adult population). Of these, approximately 1.3 million (47%) are ex-smokers while 1.4 million (51%) continue to use tobacco alongside their electronic cigarette use.¹

Table 1

	2012	2013	2014	2015	2016
Number of electronic cigarette users (vapers) in Great Britain	700,000	1.3 million	2.1 million	2.6 million	2.8 million

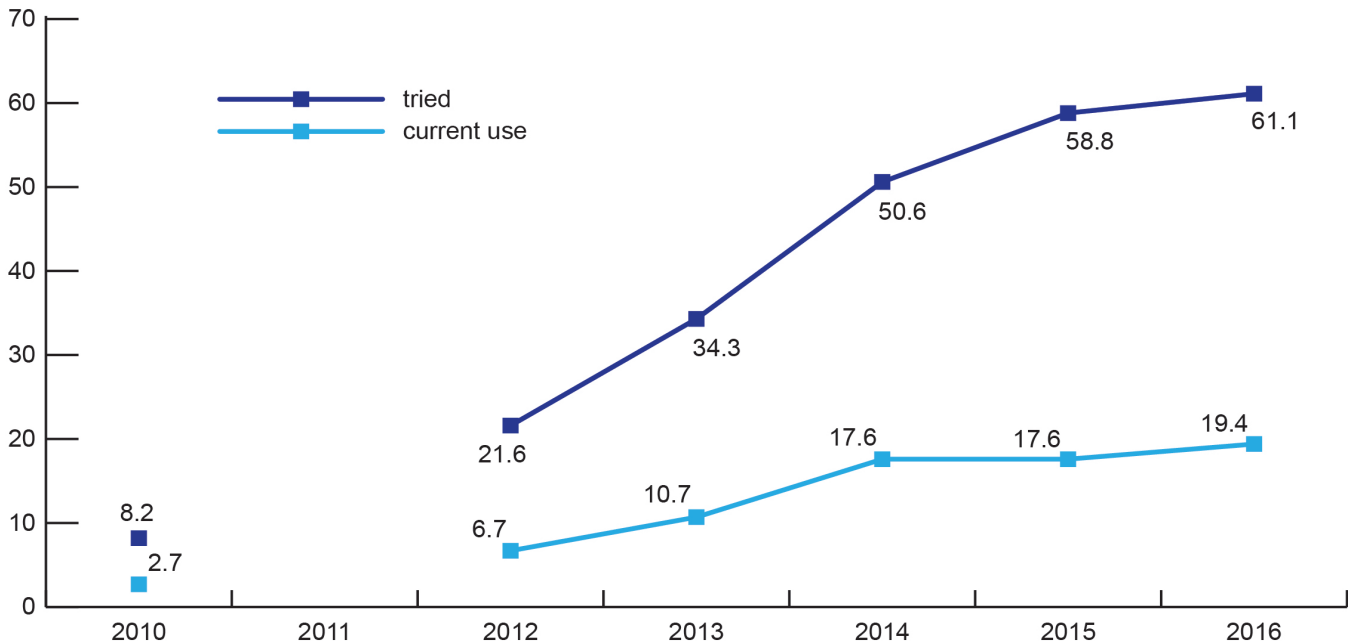
Use of the devices is confined to current and ex-smokers and use amongst never smokers remains negligible and has not changed since 2012. Over time the proportion of current electronic cigarette users who smoke tobacco has fallen and the proportion who are ex-smokers has risen (figure 1).

Figure 1: Proportion of users who are smokers or ex-smokers (2013 - 2016)



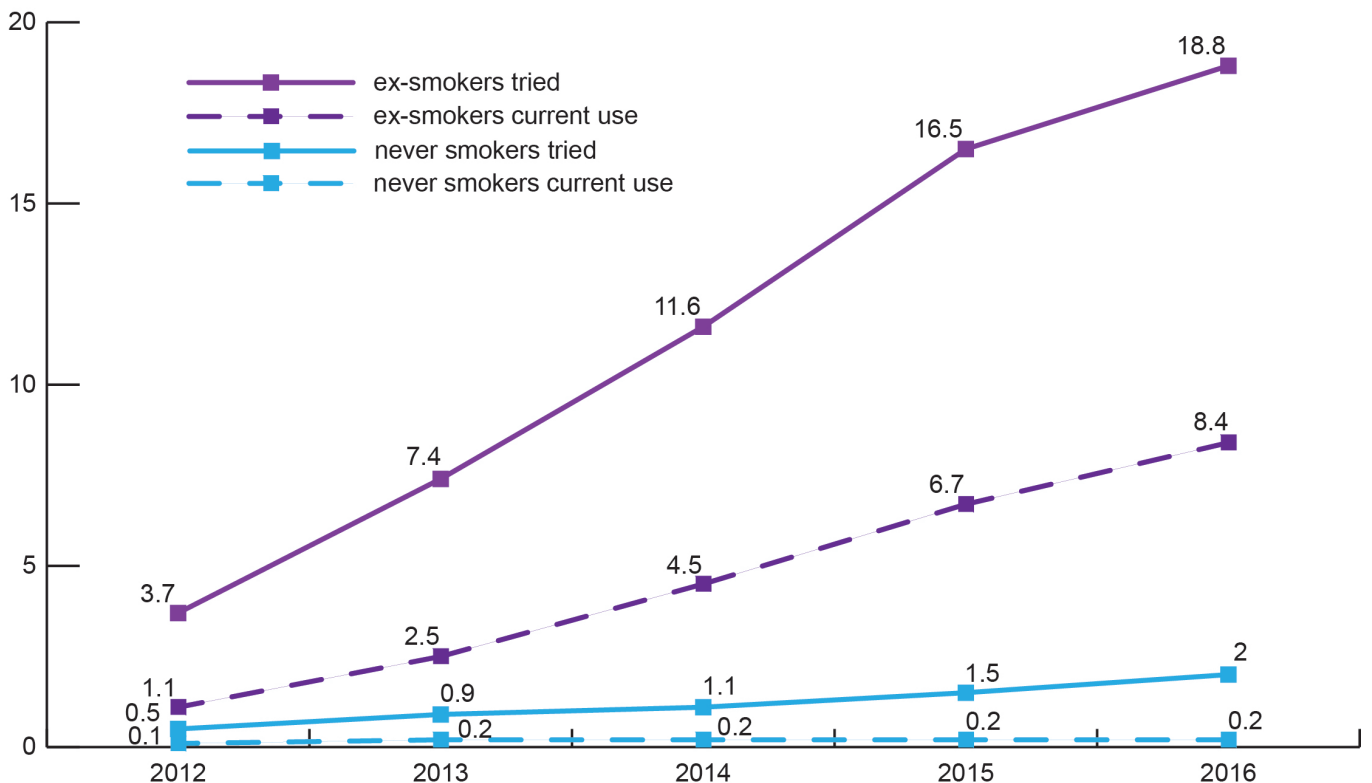
Between 2010 and 2014 there was a rise in the number of current cigarette smokers who also use electronic cigarettes, from 2.7% in 2010 to 17.6% in 2014. However, since 2014, this increase has slowed or even plateaued (figure 2). The proportion of ex-smokers using electronic cigarettes continues to rise from 4.5% in 2014 to 6.7% in 2015 to 8.4% in 2016 (figure 3).

Figure 2: Electronic cigarette use among current adult cigarette smokers in Great Britain (2010 - 2016)



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

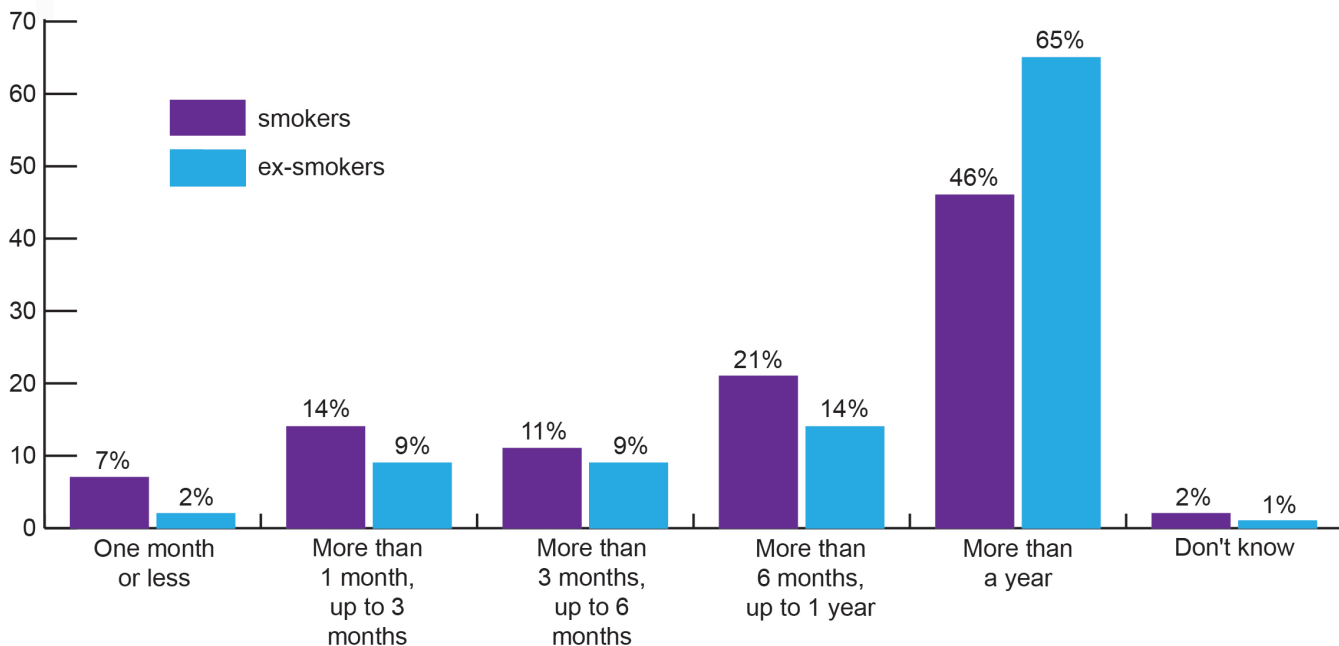
Figure 3: Electronic cigarette use among adult ex-smokers and never smokers in Great Britain (2010 - 2015)



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

Overall 65% of those who have ever tried electronic cigarettes are no longer using them. Around a third of these are also ex-smokers. However, longer term use of products is common among current vapers. Many have been using electronic cigarettes for over a year and this is more common among those who have also quit smoking (figure 4).

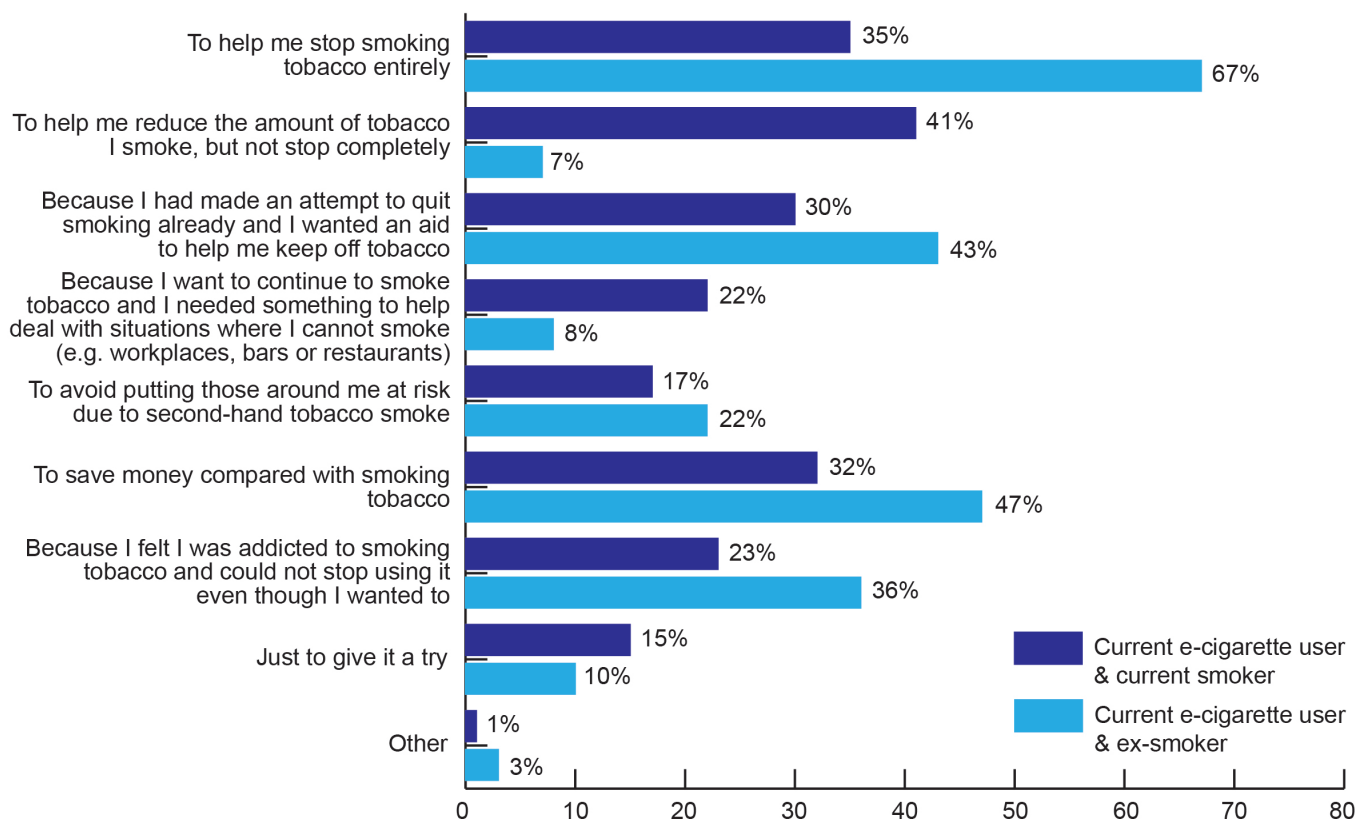
Figure 4: How long current users have been vaping (2016)



Unweighted base: GB adult cigarette smokers (n=330); GB adult cigarette ex-smokers (n=329)

Reasons for use

Figure 5: Reasons for using electronic cigarettes among current users



Unweighted base: GB adult current e-cigarette user and current smoker (n=330), GB adult current e-cigarette user and ex-smoker (n=329, 2016)

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

- “to help me stop smoking entirely” (67%);
- “to save money compared with smoking” (47%), and;
- “to help keep me off tobacco” (43%).

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

- “to help me reduce the amount of tobacco I smoke, but not stop completely” (41%);
- “to help me stop smoking entirely” (35%), and;
- “to save money compared with smoking” (32%).

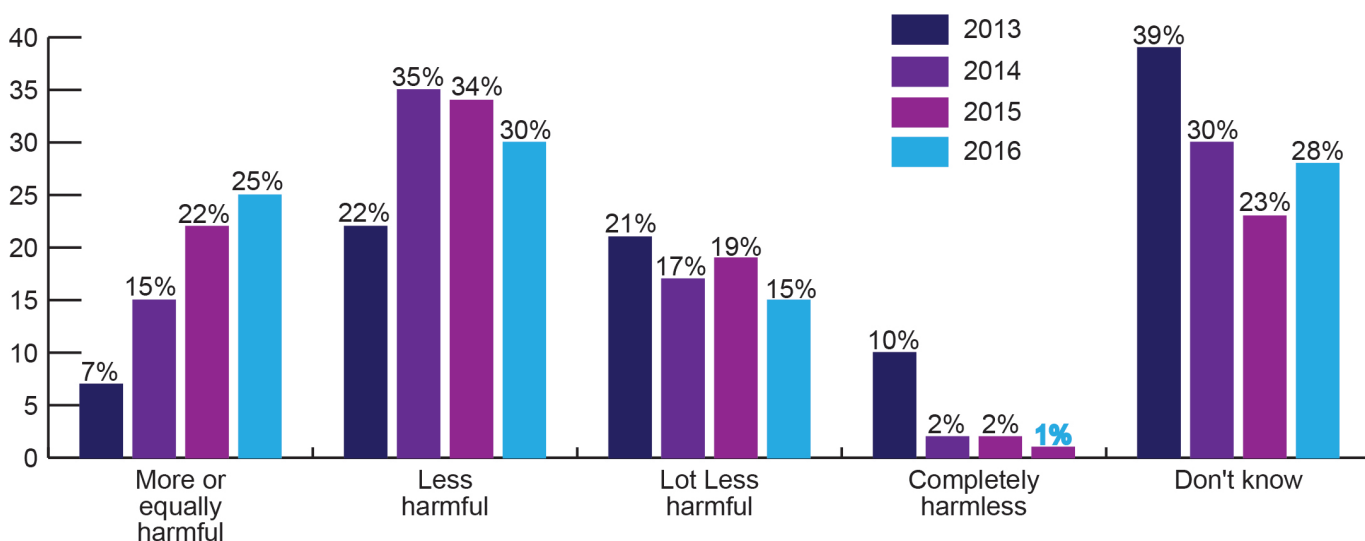
(figure 5)

Among those who no longer use electronic cigarettes nearly half (49%) say they used them ‘just to give it a try’. However, a third of ex-smokers who have tried e-cigarettes but no longer use them said they had used them as part of a quit attempt.

Perceptions of harm

Between 2013 and 2016 the perception of harm from electronic cigarettes has changed. The public and smokers are increasingly failing to recognise that electronic cigarettes are less harmful than smoking. In 2016 only 15% of adults correctly identified that electronic cigarettes are a lot less harmful than smoking whereas 21% correctly identified they were a lot less harmful than smoking in 2013. In addition, more than three times as many people in 2016 than in 2013 think they are as harmful or more harmful than smoking (figure 6).

Figure 6: Adult population perception of harm from e-cigarettes relative to smoking (2013-2016)



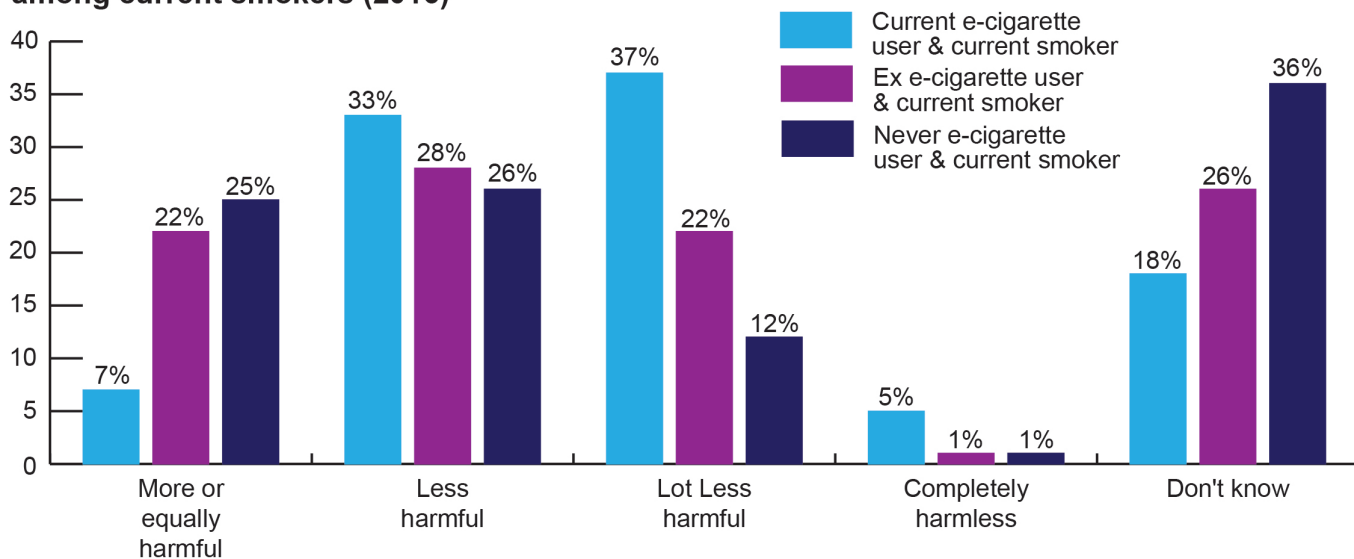
Unweighted base: All GB adults who have heard of e-cigarettes - 2013, n=8936; 2014, n=11,307; 2015 n=11,340; 2016 n=11,489

People who are currently using electronic cigarettes are more likely to have accurate perceptions of harm. Among all those who are currently vaping (smokers and ex-smokers) 47% accurately identify that electronic cigarettes are a lot less harmful than smoking.

Of particular concern is the worsening understanding among smokers. In 2016 the proportion of smokers who said they did not know whether electronic cigarettes were more or less harmful than smoking increased and is now nearly the same rate as it was in 2013 (29% in 2013 and 28% in 2016). When compared to three years ago, the proportion of smokers who believe e-cigarettes are more or as harmful as smoking has grown and the number who believed they were less harmful has fallen.

Smokers or who have never tried electronic cigarettes are less likely to accurately believe they are a lot less harmful than tobacco smoking than smokers who are currently using electronic cigarettes. Among smokers who have never tried an electronic cigarette 1 in 4 believe electronic cigarettes are more or equally harmful as smoking (figure 7).

Figure 7: Perception of harms from electronic cigarettes relative to smoking among current smokers (2016)

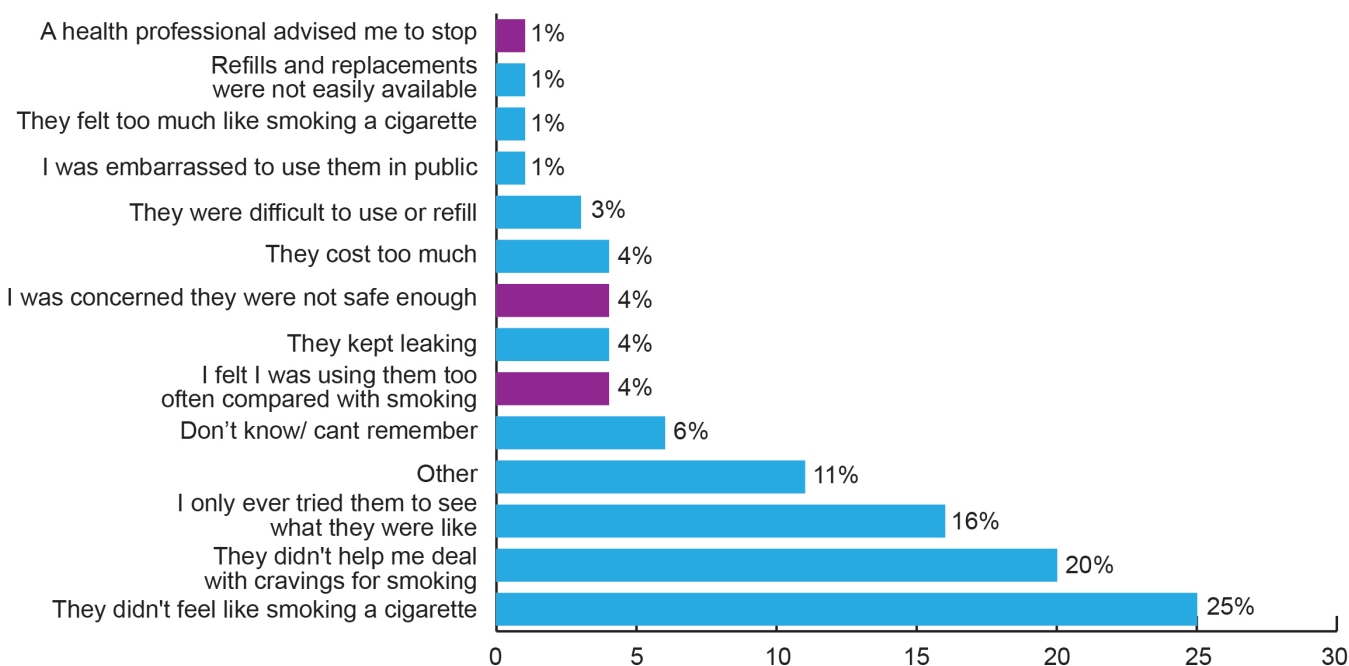


Unweighted base: GB adult current e-cigarette user and current smoker (n=330), GB adult ex e-cigarette user & current smoker (n=703), GB adult never e-cigarette user and current smoker (n=606)

Research has shown that perceptions of harm may be inhibiting some smoker's use of electronic cigarettes.¹⁰

We asked smokers who have tried but are no longer using electronic 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 electronic 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 8).

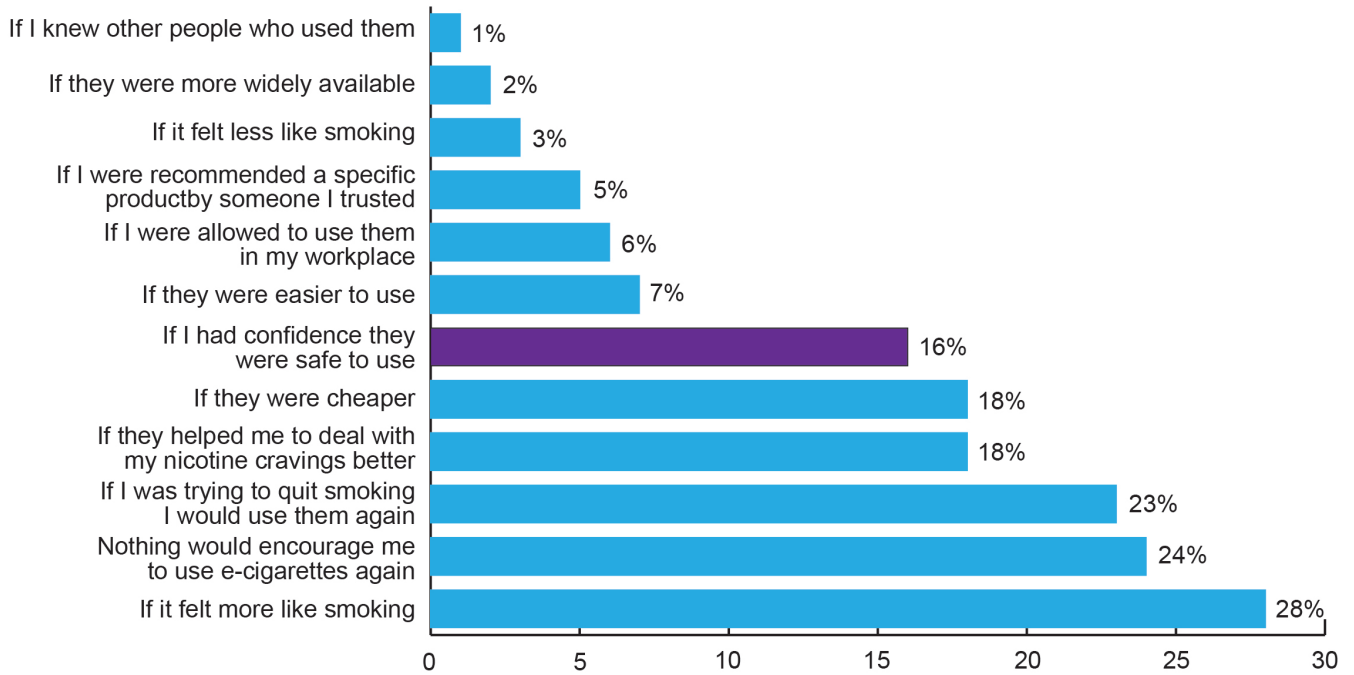
Figure 8: Main reason for stopping using an e-cigarette among current smokers (2016)



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

We also asked what would encourage smokers to try an electronic cigarette again (respondents could choose multiple options). While many said they would try them again if they were quitting or if products were more like smoking or helped them deal with cravings better, 16% said confidence that products were safe would encourage them to try again (figure 9).

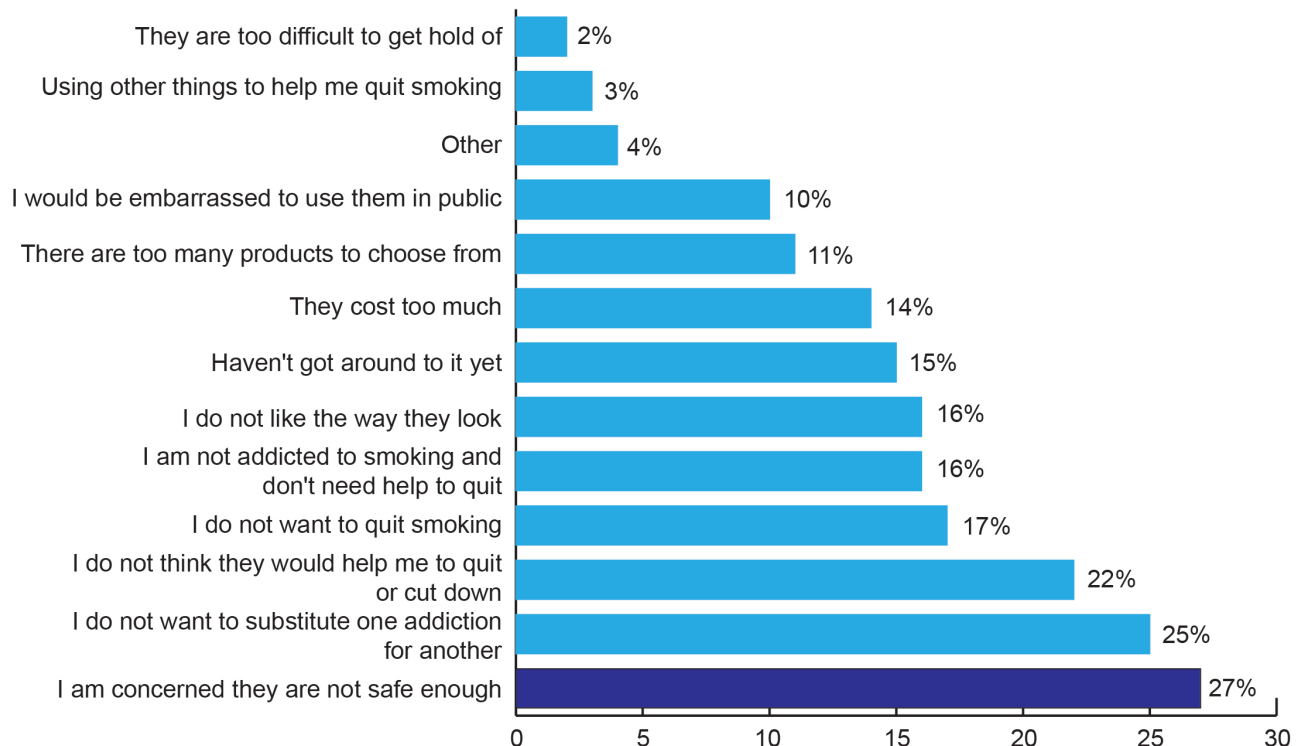
Figure 9: What would prompt smokers to try e-cigarettes again (2016)



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

We asked smokers who've never tried an e-cigarette why they hadn't (respondents could choose multiple options). Concerns about potential harms was the most commonly cited reason (figure 10).

Figure 10: Reasons for not trying an e-cigarette among smokers who never have (2016)

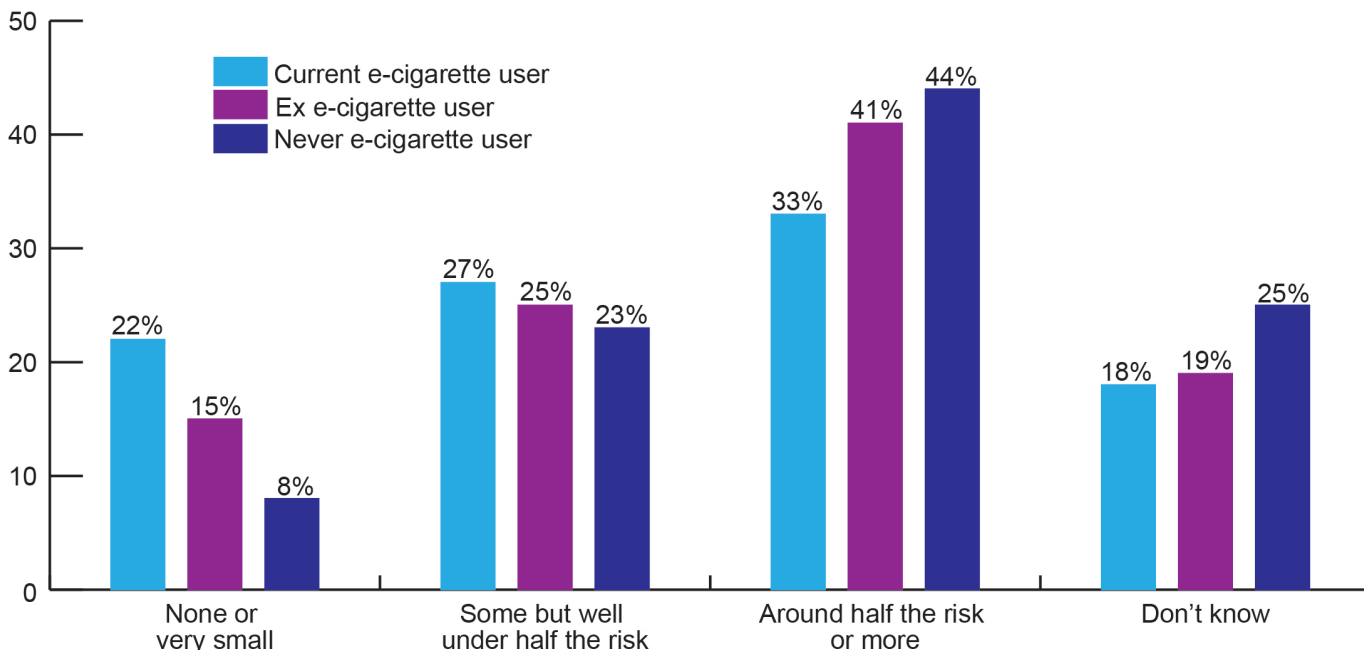


Unweighted base: All GB smokers who have never tried an e-cigarette n=606

It is notable that a quarter of respondents were also concerned about ‘substituting one addiction for another’ – this could indicate some misunderstanding about the relative harm from nicotine.

Those smokers who haven’t yet tried an electronic cigarette are also more likely to have poor understanding of the harms from nicotine than smokers who have tried electronic cigarettes. Only 8% of smokers who haven’t tried an electronic cigarette correctly state that nicotine’s contribution to the risk from smoking is none or very small, whereas 44% wrongly believe it is at least half the risk or more (figure 11).

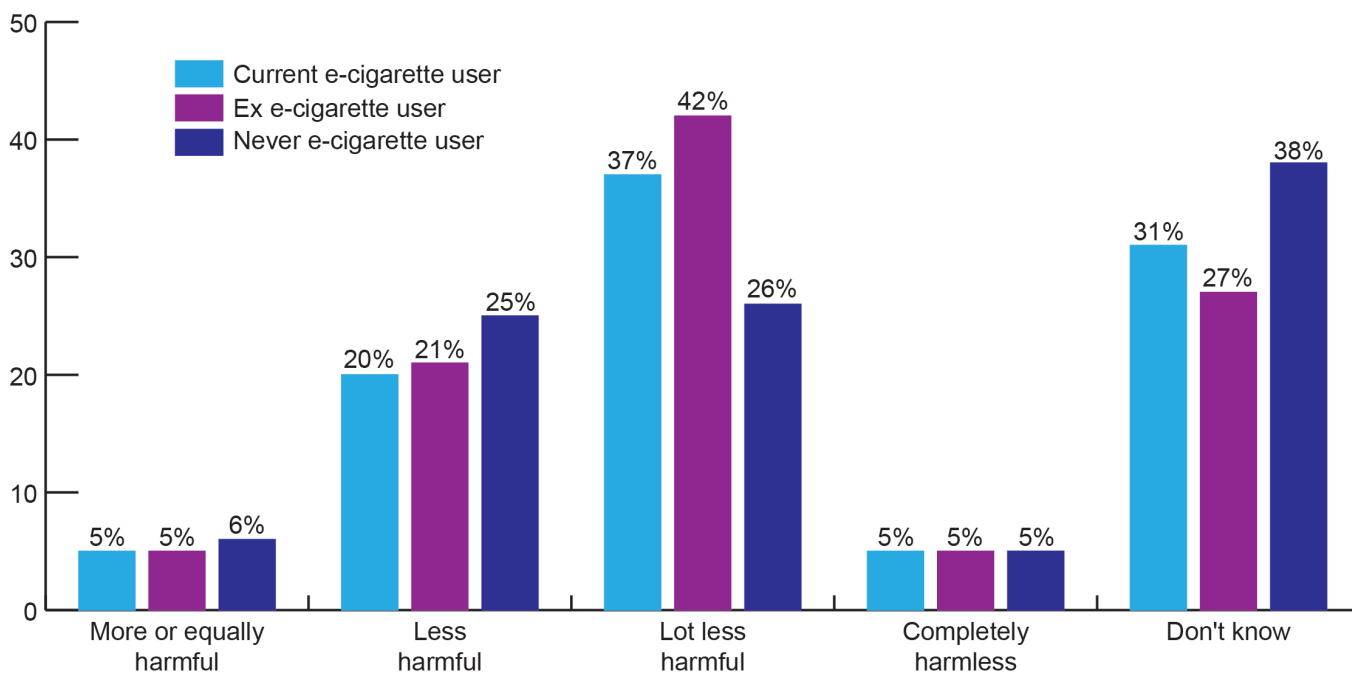
Figure 11: What portion of the risk from smoking comes from nicotine



Unweighted base: GB adult 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)

The same problem is seen in smokers understanding of nicotine replacement therapy (NRT). Smokers who haven’t tried electronic cigarettes are also less likely to correctly state that NRT is a lot less harmful than smoking than other smokers are (figure 12).

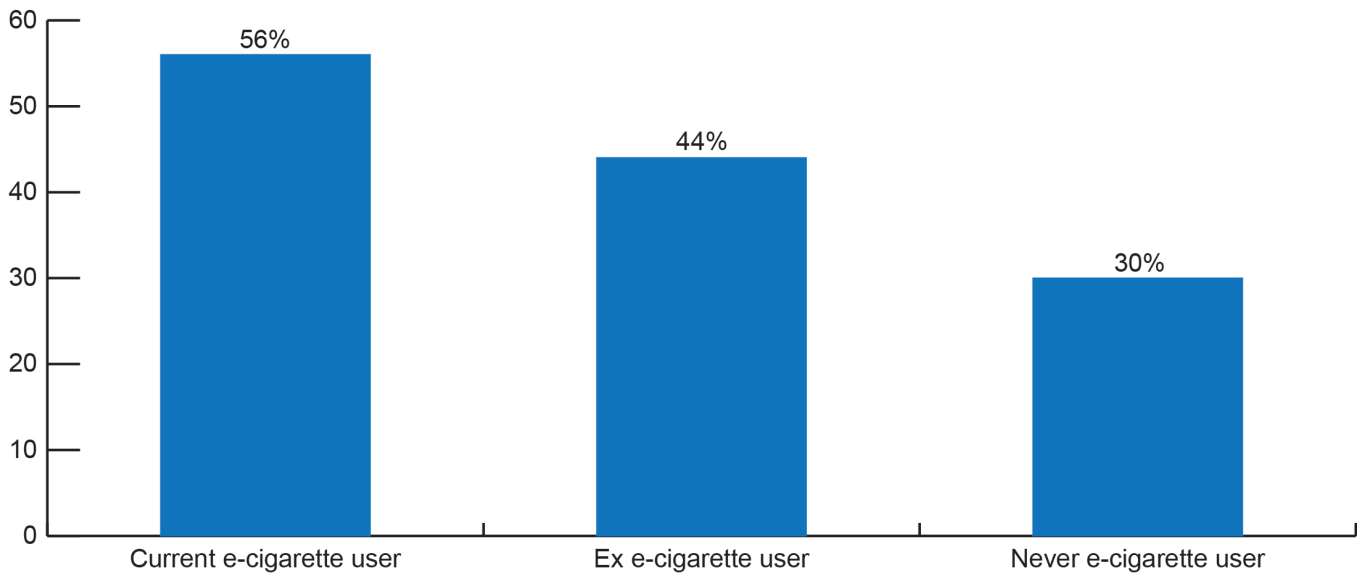
Figure 12: Smokers perception of the relative harm from NRT compared with smoking (2016)



Unweighted base: All GB adult current smokers who are aware of NRT: current e-cigarette user and current smoker (n=299), GB adult ex e-cigarette user & current smoker (n=612), GB adult never e-cigarette user and current smoker (n= 558)

Smokers who have not tried electronic cigarettes are also least likely of current smokers to have tried NRT (figure 13).

Figure 13: Percentage of smokers who have tried NRT (2016)

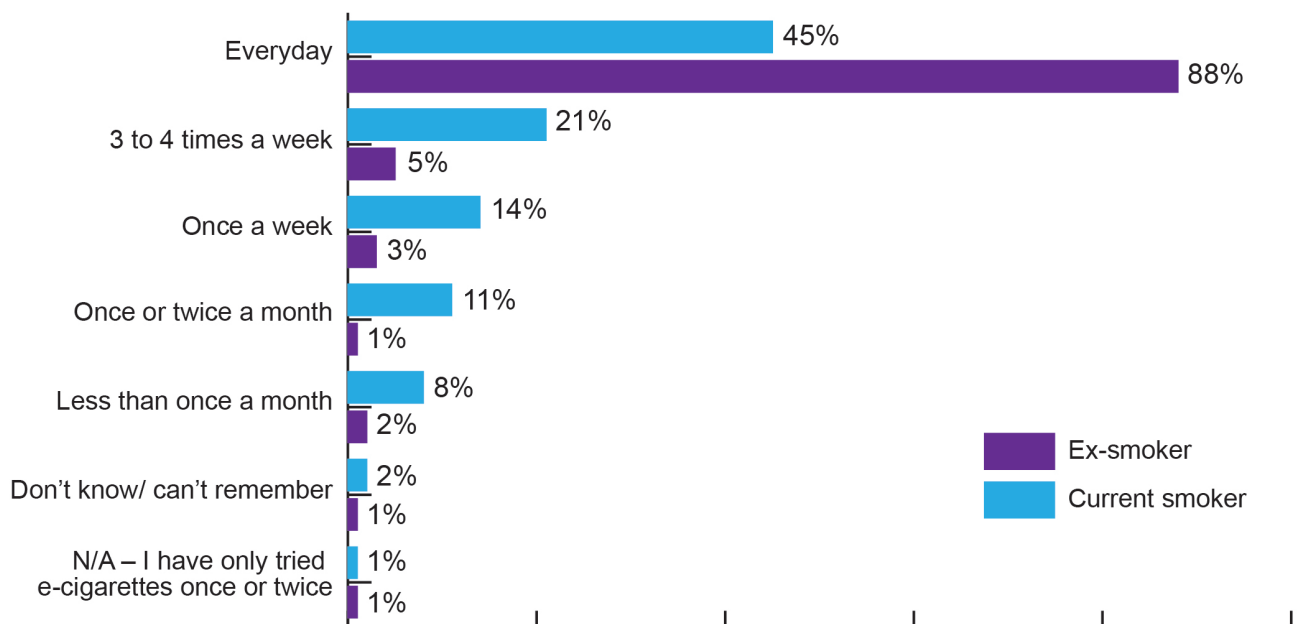


Unweighted base: All GB adult current smokers who have tried NRT - current e-cigarette user and current smoker (n= 330), GB adult ex e-cigarette user & current smoker (n=703), GB adult never e-cigarette user and current smoker (n=645)

Frequency of use

Not all vapers are using electronic cigarettes every day. Frequency of use varies between smokers and ex-smokers. Ex-smokers are almost twice as likely as smokers to be using electronic cigarettes daily (88% compared to 45%) (figure 14).

Figure 14: Frequency of use among current vapers (2016)

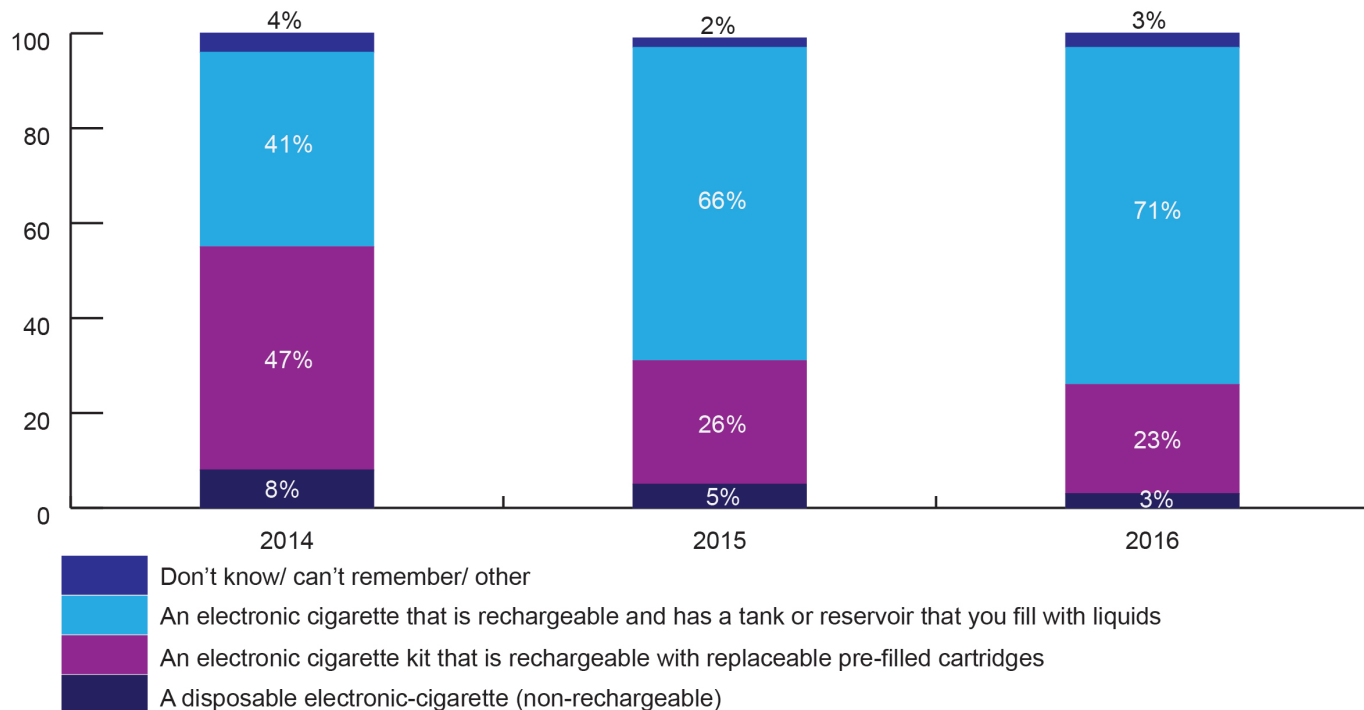


Unweighted base: GB adult current e-cig user and current smoker (n=330), GB adult current e-cigarette user and ex-smoker (n=329)

Types of products people are using

Most electronic cigarette users /vapers are now using a rechargeable product with a reservoir/ tank and this proportion has grown over the three years we have been asking these questions. The use of disposable electronic cigarettes is very low among current users and has fallen (figure 15).

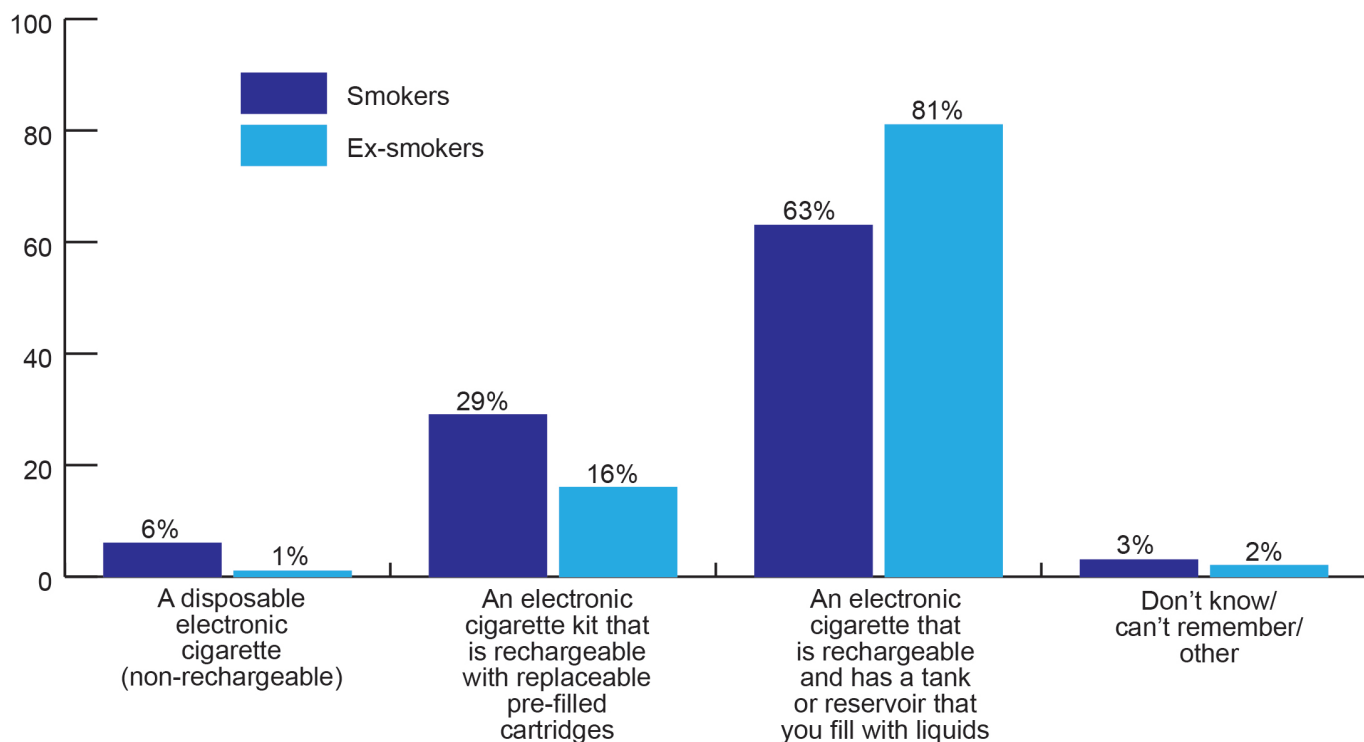
Figure 15: Type of electronic cigarette used most often nowadays



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

There are differences in the types of device used between smokers and ex-smokers with the vast majority of ex-smokers opting for a tank type device (81%) (figure 16).

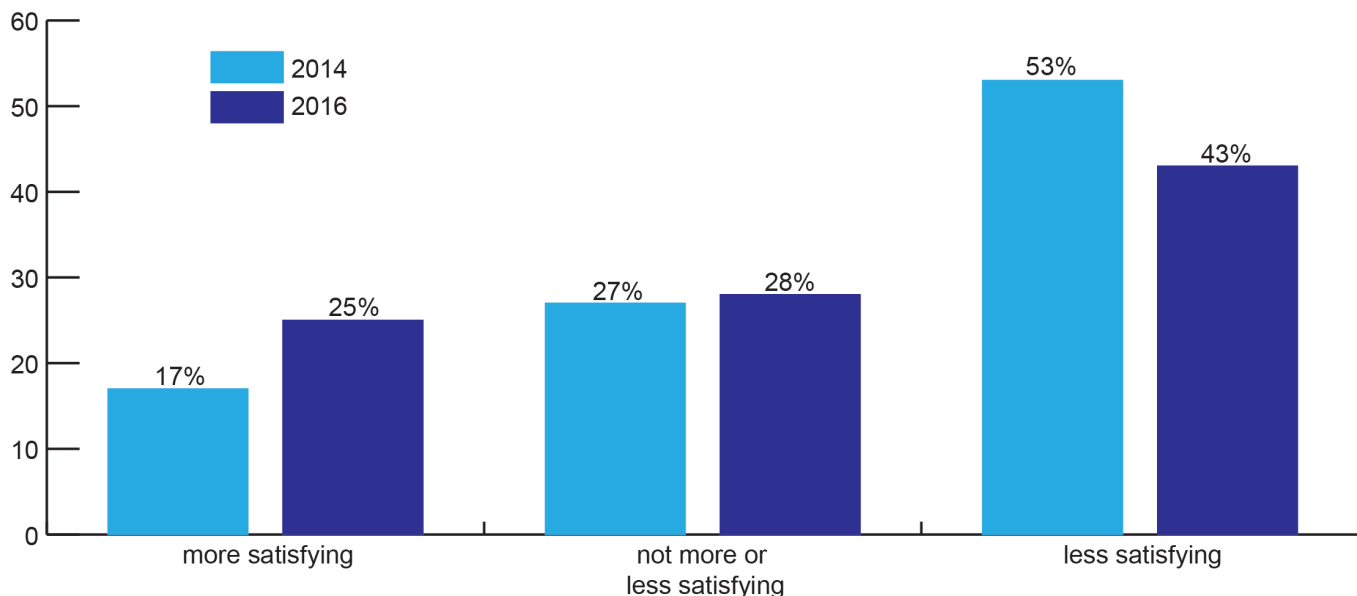
Figure 16: Type of device used by current vapers most often nowadays



Unweighted base: All GB adults who currently use e-cigarettes 2016 (smokers n=330, non-smokers n=329)

There has been a growth in the level of satisfaction that users report from electronic cigarettes. We asked vapers in 2014 and 2016 how using an electronic cigarette compared to smoking. In 2016 there was an increase in users reporting that vaping was at least as satisfying or more satisfying than smoking while fewer people reported their electronic cigarette was less satisfying (figure 17).

Figure 17: Current vapers satisfaction levels from e-cigarettes compared with smoking

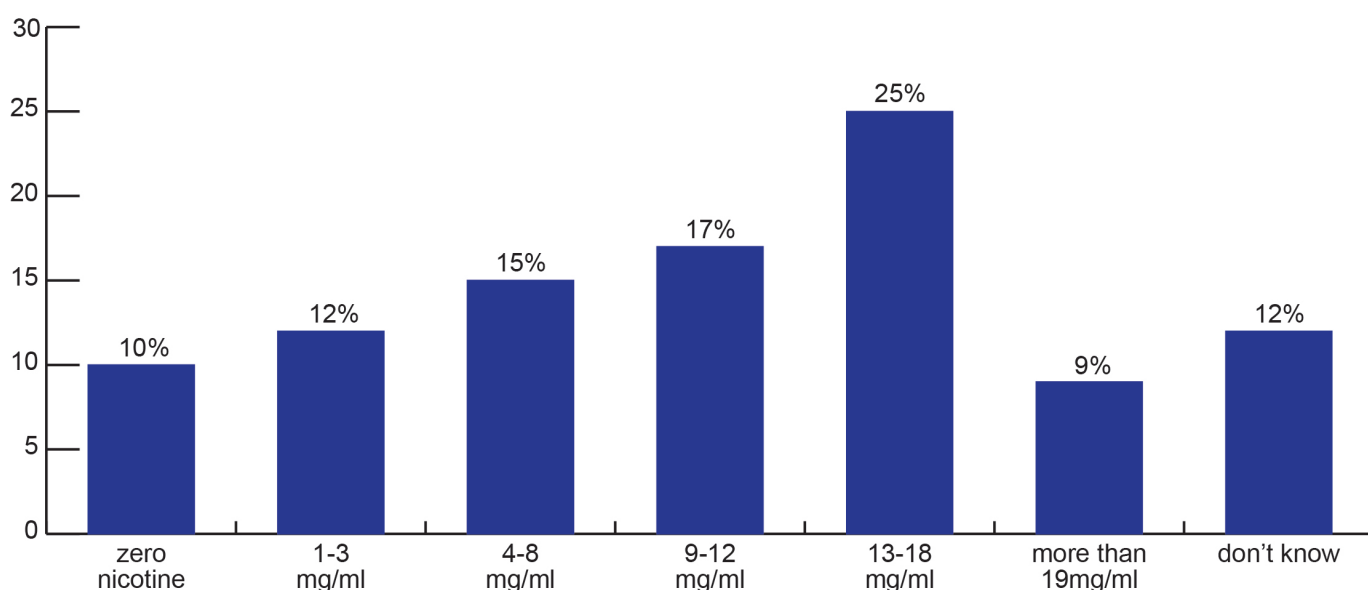


Unweighted base: Current e-cigarette users who have tried smoking 2014 (n=491); 2016 (n=659)

E-liquids

There are many different e-liquids on the market in a range of flavours and nicotine strengths. The vast majority of current electronic cigarette users say they use products that contain nicotine (87%). However, people are using a range of strengths. The chart below shows the nicotine strengths reported by the 95% of vapers who said they knew whether their e-cigarette included nicotine (figure 18).

Figure 18: Strength of nicotine in e-liquid used by current vapers (2016)

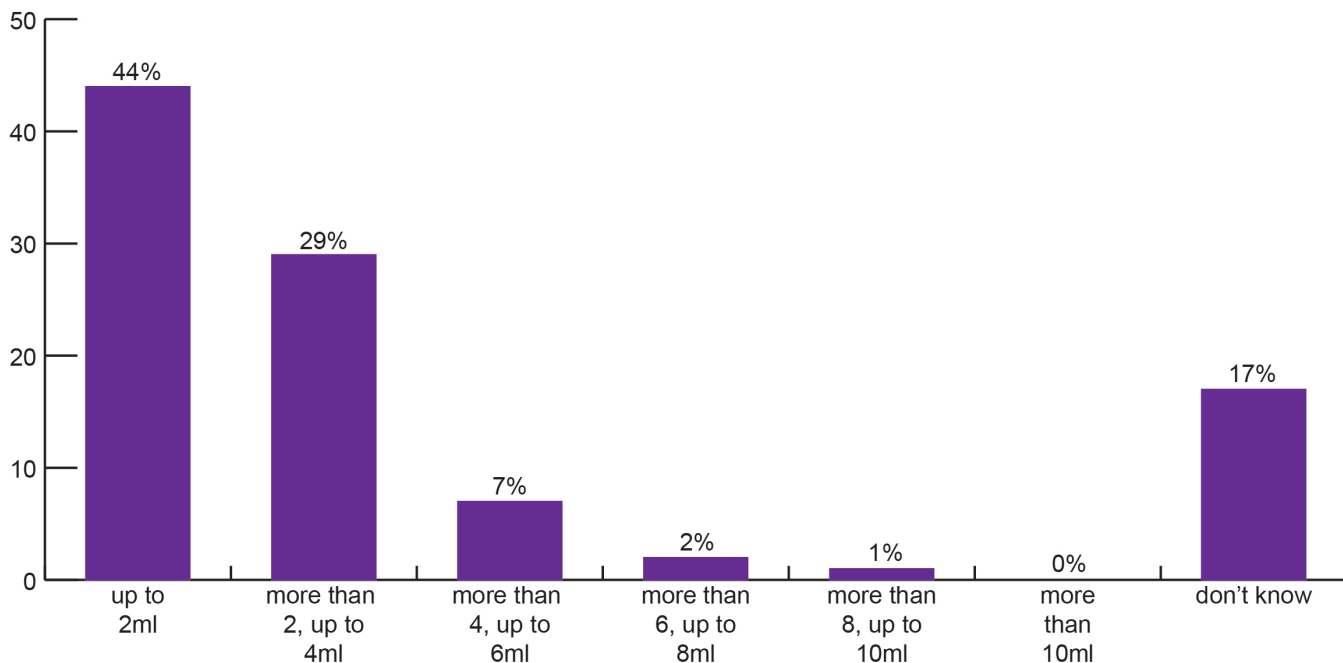


Unweighted base: All GB Adults who have tried and still use e-cigarettes and who reported knowing whether their e-cigarette contains nicotine or not 2016 (n=633).

The most popular strength of liquid is between 13 and 18 mg/ml. Only 9% of users are using over 19 mg/ml of nicotine and no respondents reported they were using a strength higher than 34 mg/ml. A larger number of smokers (22%) than ex-smokers (5%) were unable to report what level of nicotine they use in their e-liquid.

Most vapers (72%) are using less than 4ml of e-liquid a day with 11% using more than 4ml a day. There was little difference in amount of liquid used between smokers and ex-smokers. Only 0.2% of users reported using more than 10ml a day (figure 19).

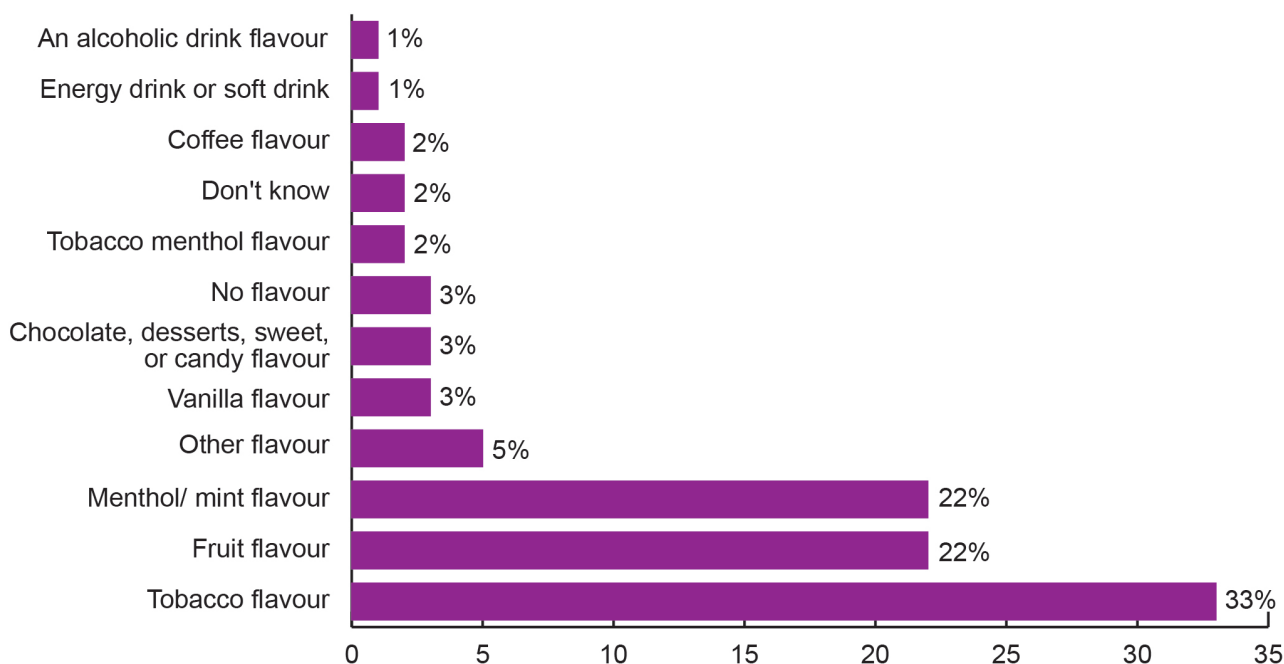
Figure 19: Current vapers daily use of e-liquid



Unweighted base: All GB adults who use tanks and vape daily 2016 (n=370)

While tobacco is still the most popular individual flavour vapers are using a wide range of other flavours. Very few are using products with no flavours (figure 20).

Figure 20: Most often flavours used by current vapers (2016)



Unweighted base: All GB adults who have tried and still use e-cigarettes 2016 (n=667)

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 2016 ONS mid-year GB population estimates for 2014 have been used: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/2015-06-25>
2. Total 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 2,178 children aged 11 to 18. Fieldwork was undertaken 21st - 28th March 2013.
9. Total sample size was 2,068 children aged 11 to 18. Fieldwork was undertaken 21st March – 1st April 2014.
10. Brose LS, Brown J, Hitchman SC, McNeill A. Perceived relative harm of electronic 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