

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

September 2019

## SUMMARY OF KEY FINDINGS

This fact sheet provides a detailed analysis of adult attitudes and behaviour with respect to e-cigarettes and how they have changed over time. The data are taken from an annual survey, Smokefree GB, carried out for ASH by YouGov. The survey first started asking about e-cigarette use in 2010 and this update includes the results of the 2019 survey carried out in Spring 2019.

Set out below is a summary of the key findings.

### USE AND AWARENESS OF E-CIGARETTES

- E-cigarette use continues to grow, and an estimated 7.1% of the adult population amounting to 3.6 million people in Great Britain currently use e-cigarettes (vape). (Table 1)<sup>1</sup>
- Over half (54.1%) of current vapers are ex-smokers, and the proportion has grown year on year, while the proportion of vapers who also smoke (known as dual users) has declined to 39.8% in 2019.<sup>2</sup> (Figure 1)
- The proportion of adult smokers who have never tried e-cigarettes declined rapidly from 2010 until 2014, and continued declining, but gradually, from 2015 onwards.<sup>3</sup> In 2019 it was 34.1%. (Figure 2)
- Only 0.8% of never smokers are current vapers (amounting to 6.1% of vapers).

### ATTITUDES TOWARDS E-CIGARETTES

- As in previous years the main reason given by ex-smokers for using e-cigarettes is primarily to help them quit (31%) and secondly to prevent relapse (20%).
- The main reason given by current smokers for using e-cigarettes is to cut down (21%) followed by to save money compared to smoking (16%). Significant proportions say the main reason is to help them stop smoking (14%) or to prevent relapse (12%). (Figure 3)
- The main reason given by never smokers for vaping is just to give it a try (73%).
- The proportion of smokers correctly believing vaping is less harmful than smoking has fallen from just over a half (54%) last year, to just under a half (48%) this year. This does not include the 1% of smokers who say they think vaping is harmless. (Figure 7)

### PRODUCTS USED

- The most popular products for all vapers are still tank systems, but there has been a decline since 2018 (83% to 77%) together with an increase in use of cartridge/pod systems (from 14% to 18%). (Figure 10)
- The majority of current vapers (73%) say they use only one device.
- When asked what brands they use, for those who have tried vaping and use cartridges, the most popular type of systems are Vype (18%), Blu (15%) and Logic (11%). Juul, which was new on the market in 2018,

is used by 6%.

- In 2019, 64% of current vapers using nicotine were using e-liquids of a strength of 1-12 mg/ml, and a further 24% were using 13-20 mg/ml (20mg/ml is the legal limit). Only 2% were using 21-34 mg/ml with none saying they used more than this, although 10% said they didn't know. (Table 4)
- Half of all vapers, 50%, say that they use the same strength e-liquid as when they first started vaping, while 39% have decreased the strength and only 9% have increased the strength over time. (Figure 11)

## USE AND AWARENESS OF E-CIGARETTES

In both 2019 and 2018, 94% of smokers and 93% of the general population had heard of e-cigarettes. This contrasts with 2012, when 49% of adults responding to the same question were aware of e-cigarettes.

Since measurement started in 2012 the number of e-cigarette users has grown from around 700,000 to 3.6 million in 2019. The rate of increase was highest in the early years, but e-cigarette use continues to grow, with the rate of growth increasing again from 2017 onwards (Table 1).

There are differences in vaping behaviour by social class, with 9.1% of those classified as C2DE being current vapers compared to only 5.5% of those classified as ABC1. This reflects the socio-economic distribution of smokers, however, the rate of growth since 2015 has been greater in C2DEs than ABC1s. In 2015, 4.6% ABC1s vaped & 6.3% C2DEs vaped. The change is 0.9 percentage points for ABC1 and 2.8 percentage points for C2DE.

The peak age range for current e-cigarette use in 2019 is 35-44 year olds (9.5%) followed by 45-54 year olds (9.3%), and then 25-34 year olds (7.8%). The lowest vaping rates by age are 4.3% for young adults aged 18-24, followed by those over 55 at 5.6%. There is little difference in e-cigarette use by gender, with 7.3% of those identifying as male and 6.9% of those identifying as female saying that they currently use e-cigarettes.

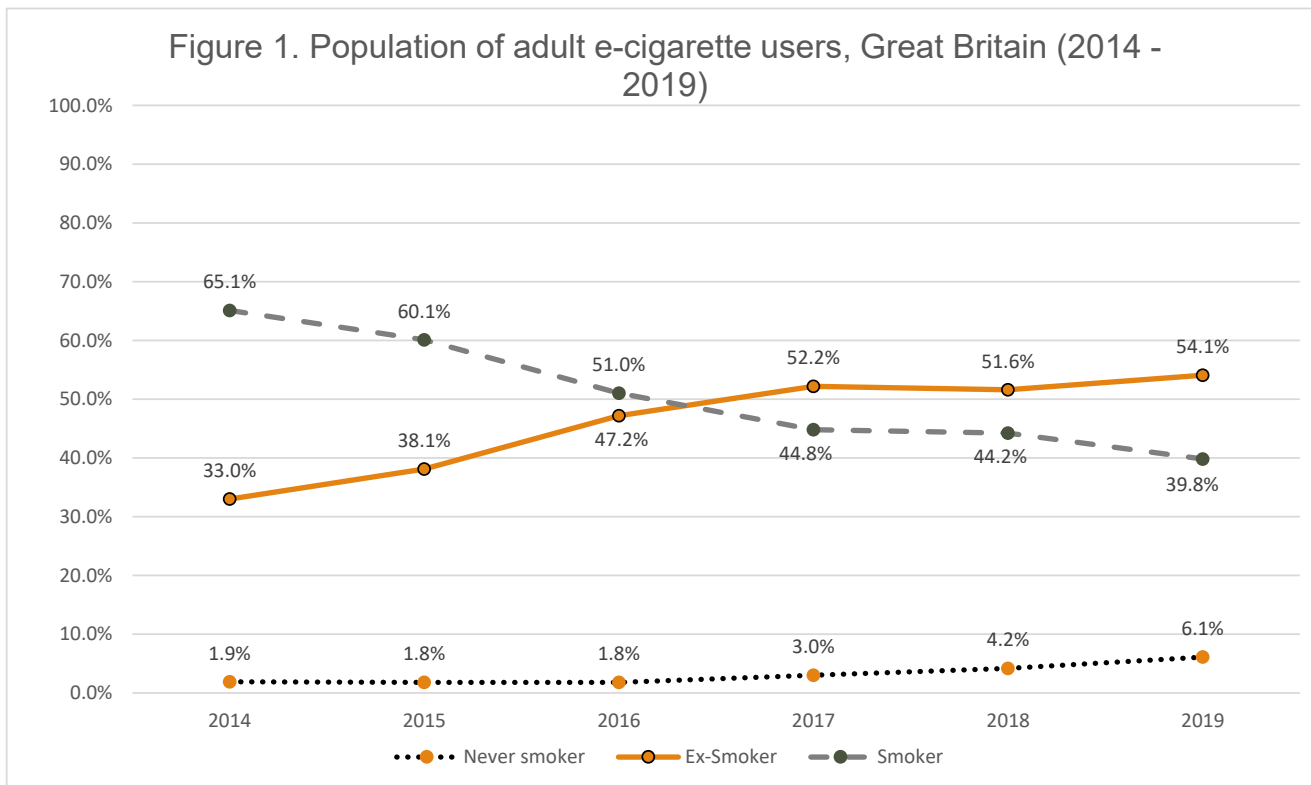
**Table 1: Number of e-cigarette users in Great Britain**

	2012	2013	2014	2015	2016	2017	2018	2019
% of population current users	1.7%	2.7%	4.2%	5.4%	5.7%	5.8%	6.2%	7.1%
Percentage point change (YoY)		1.0	1.5	1.2	0.3	0.1	0.4	0.9
Number of users (millions)	0.7	1.3	2.1	2.6	2.8	2.9	3.2	3.6
Rate of growth (YoY)		86%	62%	24%	8%	4%	10%	12.5%

## PROPORTION OF VAPERS BY SMOKING STATUS

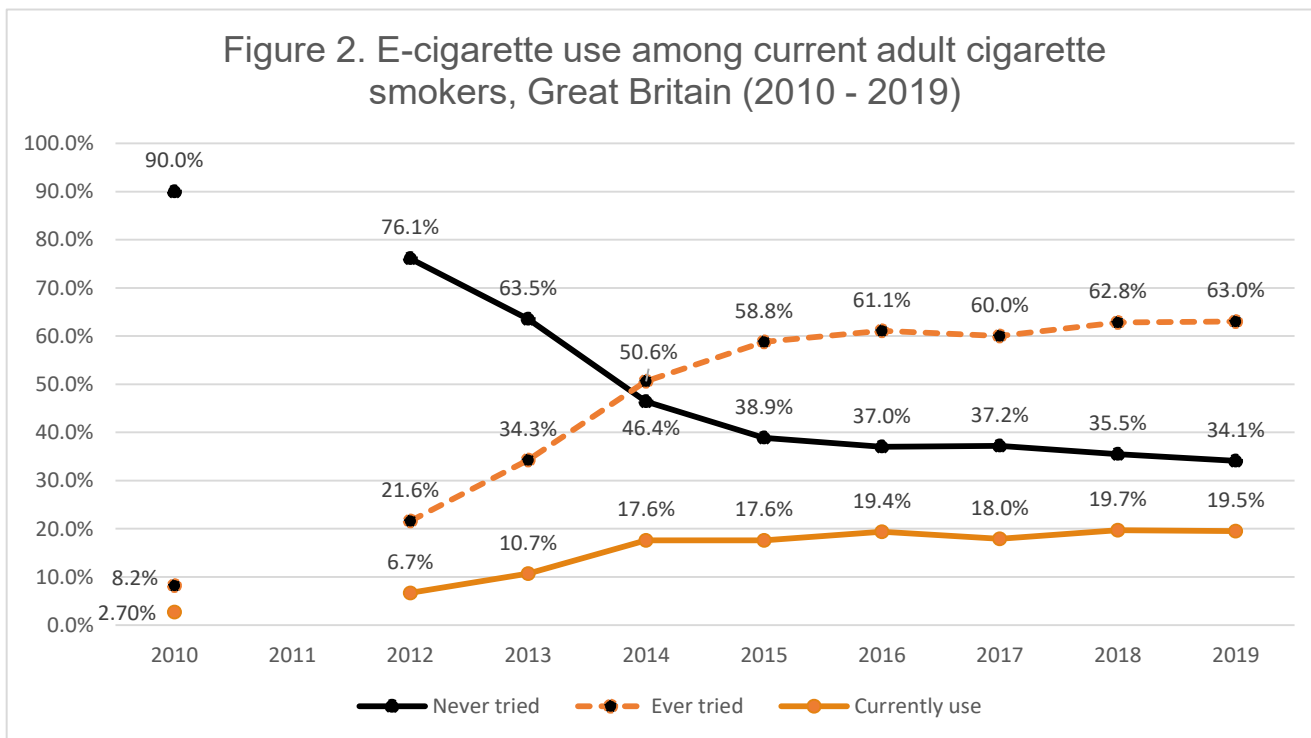
Use of e-cigarettes is largely confined to current and ex-smokers and use amongst never smokers remains low. Of the 3.6 million current vapers, just under 2 million are ex-smokers; 1.4 million are current smokers; and 200,000 are never smokers. Over time, the proportion of current electronic cigarette users who smoke tobacco has fallen, while the proportion who are ex-smokers has risen (Figure 1). In 2019, 54.1% of current vapers were ex-smokers while 39.8% also smoked (dual users).

This means that in every year since 2017 most e-cigarette users have been ex-smokers, rather than dual users or never smokers. However, there are more ex-smokers than current smokers in the population. As a result, only 12% of ex-smokers vape compared to 19.5% of current smokers.



Unweighted base: (2014: current e-cigarette users n=498, 2015: current e-cigarette users n=614, 2016: current e-cigarette users n=667, 2017: current e-cigarette users n=669, 2018: current e-cigarette users n=738, 2019: current e-cigarette users n= 854).

The proportion of adult smokers who have tried e-cigarettes increased rapidly from 2010 until 2014, but since 2016 it has reached a plateau. More than a third (34.1%) of current smokers had never tried vaping in 2019 (Figure 2).



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=1632; 2018, n=1633, 2019, n= 1777).

# VAPING BEHAVIOUR

## VAPING BEHAVIOUR IN EX-SMOKERS

13.3% of ex-smokers have tried vaping but no longer vape, compared to 11.7% of ex-smokers who currently vape. This means there are 2.2 million ex-smokers who have tried vaping but no longer vape, compared to just under 2 million ex-smokers (1.95 million) who are current vapers.

Over a quarter of ex-smokers who used to vape, vaped daily (26.4%). A total of just under four out of ten (38.7%) vaped more than once a month. Another 14.5% vaped less than once a month, while 42.9% only tried vaping once or twice and 3.9% couldn't remember or didn't know.

Nine out of ten ex-smokers who currently use e-cigarettes vape daily (88.5%), with 97.3% vaping more than once a month. Over three quarters of them have been vaping for over a year (78.4%):

- 21.6% have vaped for under 1 year
- 39.5% have vaped for 1-3 years
- 38.9% have vaped for >3 years

## ARE E-CIGARETTES CONTRIBUTING TO DECLINES IN SMOKING?

The Annual Population Survey found that smoking prevalence among adults aged 18 and over in England declined by 5.4 percentage points from 2011 to 2018. In 2011 19.8% of adults smoked, falling to 14.9% in 2017 and to 14.4% in 2018; equivalent to a drop from 7.7 million smokers in 2011 to 6.1 million in 2017 and 5.9 million in 2018.<sup>4</sup>

A comprehensive approach to tobacco control was implemented during this period of time, which has been associated with reductions in smoking prevalence.<sup>5 6 7</sup> This included a tobacco display ban, large graphic health warnings on the front of packs, plain packaging, increased tobacco taxes and minimum pack sizes; a number of factors are likely to have contributed to this decline in prevalence.

However, the Smoking Toolkit Study (an ongoing series of monthly surveys of the adult population of England) has shown a clear association between changes in population rates of quitting smoking and prevalence of e-cigarette use after adjusting statistically for a range of potential confounding factors. If the association is causal, e-cigarettes were responsible for an estimated 69,930 additional ex-smokers in England in 2017.<sup>9</sup> Furthermore, recent evidence from a randomised controlled trial showed that vaping was nearly twice as effective as NRT in helping smokers quit in a Stop Smoking Service setting in England.<sup>10</sup>

## VAPING BEHAVIOUR IN SMOKERS (DUAL USE)

The patterns of use among dual users do not follow a clear trend, with 45% of smokers currently vaping doing so daily, while 51% do so less than daily. Those who vape every day smoke on average much less than those who vape less frequently than daily. Table 2 gives a breakdown for the number of cigarettes smoked a day, by daily and non-daily vaping. Fewer than six cigarettes per day is considered low daily smoking, while 21 or more is considered heavy smoking. Half of all daily vapers can be defined as "light" smokers, smoking fewer than six a day compared to one in five non-daily vapers. More than three times the proportion of non-daily vapers are "heavy" smokers, smoking more than 21 cigarettes a day (13.9% compared to 4%) (Table 2).

**Table 2**

<b>Cigarettes smoked per day (ready-made or handrolled)</b>	<b>Daily vaper</b>	<b>Non-daily vaper</b>
6 or fewer a day	49.9%	20.8%
7-20 a day	40.6%	59.8%
More than 20 a day	4.0%	13.9%

### VAPING BEHAVIOUR IN NEVER SMOKERS

The proportion of current vapers who have never smoked is growing, from 1.8% in 2015 to 6.1% in 2019 (Figure 1). However, in the YouGov sample there are more never smokers (52.7%) than ex-smokers (32.8%) and current smokers (14.5%). Therefore, the proportion of never smokers who vape is 0.8%, compared to 11.7% of ex-smokers and 19.5% of current smokers. A further 13.3% of ex-smokers report having tried e-cigarettes but are no longer using them.

Never smokers who have tried or currently vape are different to smokers both in their vaping behaviour and in their attitudes to vaping. Only a quarter of never smokers who reported trying vaping are current users. Only 4% of never smokers who say they currently or used to use e-cigarettes say they vaped daily. Over a third (36%) of never smokers who have tried vaping report never using a nicotine containing e-cigarette. The main reasons never smokers give for vaping are just to give it a try (73%), and because they enjoy the experience (13%).

## ATTITUDES TO VAPING

### REASONS FOR E-CIGARETTE USE

Among all e-cigarette users the three main reasons for vaping remain as an aid to quitting (22%) followed by preventing relapse (16%) and to save money (14%). A quarter of users in socio-economic groups D (25%) and E (24%) cited saving money as a reason for vaping compared to 18% in group AB.

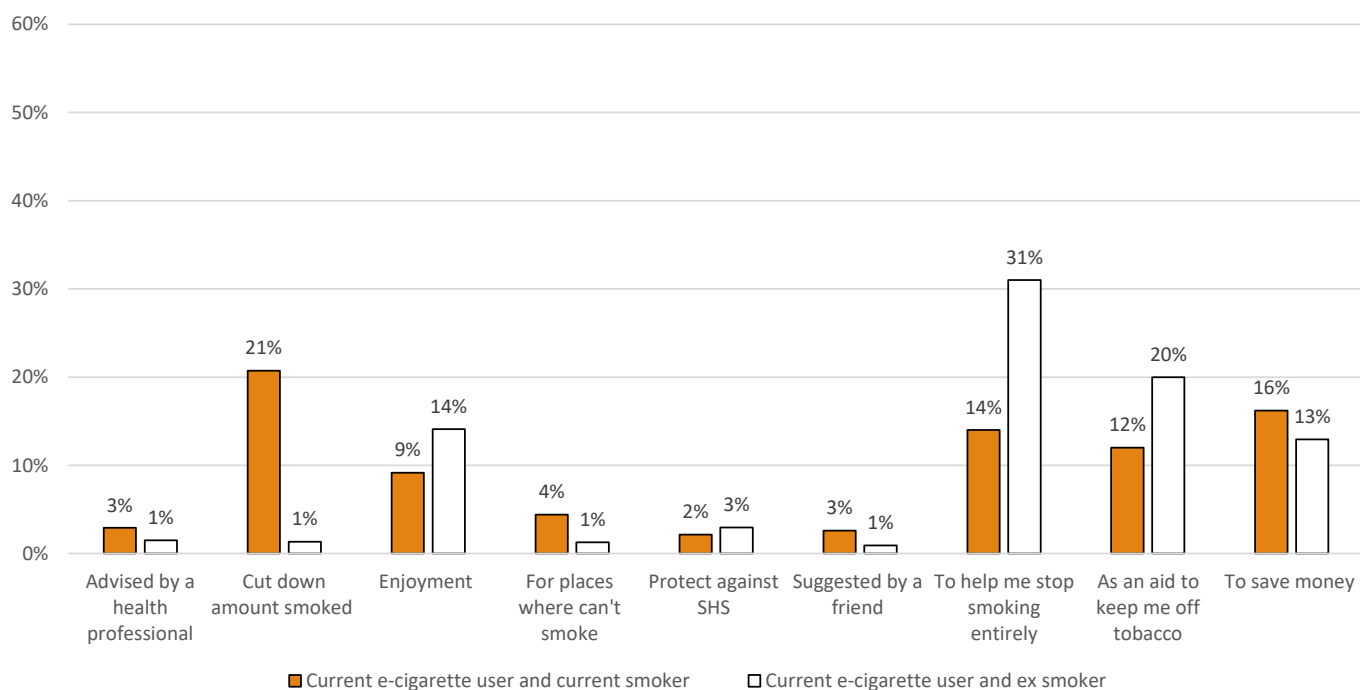
### REASONS FOR E-CIGARETTE USE BY SMOKING STATUS

Using e-cigarettes to quit, or as an aid to keep them off tobacco, was the reason most frequently given for vaping amongst ex-smokers who are also ex-vapers (38% and 20% respectively). Saving money was also cited as an important reason (13%).

When current e-cigarette users who are ex-smokers are asked for their main reason for vaping, the most frequently cited reasons are: to help them quit (31%) or as an aid to keep them off tobacco (20%), because they enjoy it (14%) and to save money (13%).

The main reasons current e-cigarette users who also smoke (dual users) give for using e-cigarettes are to help them to help cut down the amount smoked (21%) and to save money (16%). However, 14% say that they use them to try to help them quit, and 12% as an aid to keep them off tobacco.

Figure 3. Main reason current e-cigarette users are using an e-cigarette, Great Britain (2019)



To further investigate vapers' views about their e-cigarette use, current vapers were asked whether they agreed or disagreed with a series of statements.

For most e-cigarette users, improving their health is their number one reason for vaping. Among all users, 60% agree that "health is my number one reason for taking up e-cigarettes" (Table 3).

Table 3

How e-cigarette users view vaping	Agree	Neither agree nor disagree/don't know	Disagree
Health is my number one reason for taking up e-cigarettes	60%	26%	14%
I get a great deal of pleasure from vaping	51%	36%	12%
E-cigarettes have improved my quality of life	51%	37%	12%
Vaping is not a magic solution for stopping smoking	50%	24%	26%
Vaping is a medicine that I use in order to address my smoking addiction	50%	31%	20%
Lowering the levels of nicotine I consume through vaping is a priority for me	44%	34%	22%
I am worried that I'm getting more nicotine now that I use an e-cigarette	13%	26%	61%
I like to spend time discussing vaping online	8%	19%	73%

Unweighted base: GB users; 2019, n=854

## SATISFACTION

Those who tried vaping were also asked how satisfying they found it.

### Ex-smokers who currently vape

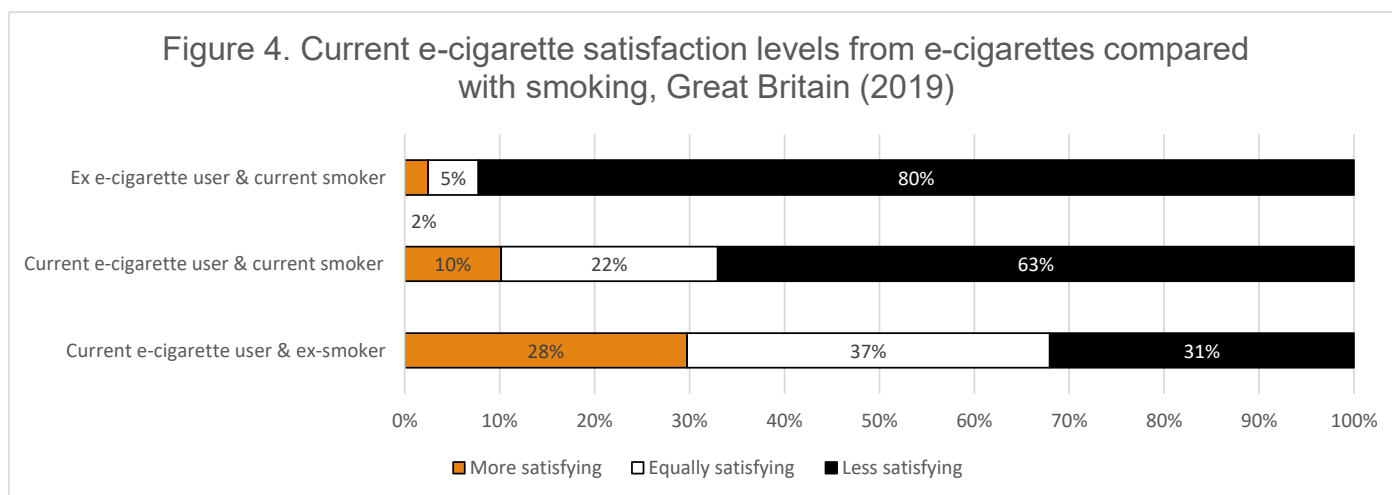
Nearly two thirds (65%) of e-cigarette users who no longer smoke find vaping more or equally satisfying than smoking, with under a third (31%) finding it less satisfying (Figure 4). However, although vaping may be less satisfying than smoking for some, and enjoyment of vaping is cited as the main motivation for use by only 12% of current e-cigarette users, when asked if they get “a great deal of pleasure from vaping” 51% of e-cigarette users agreed (Table 3).

### Smokers who currently vape

The figures are reversed for vapers who also smoke, with around a third (32%) finding it more than or equally as satisfying as smoking, and two thirds (63%) finding it less satisfying.

### Ex-smokers who are ex-vapers

However, satisfaction levels are lowest of all for smokers who no longer use e-cigarettes, 80% of whom say they found vaping less satisfying. Products have improved over the years, and it could be worth encouraging ex-vapers who smoke to try vaping again to prompt further quit attempts.



*\*This includes those that have tried e-cigarettes once or twice in addition to longer-term users  
Unweighted base: Current e-cigarette users & current smokers, excluding not applicable/ Don't know (2019, n=317); current e-cigarette user & ex-smoker, excluding not applicable (2019, n = 441); Ex e-cigarette users & current smokers, excluding not applicable (2019, n = 684)*

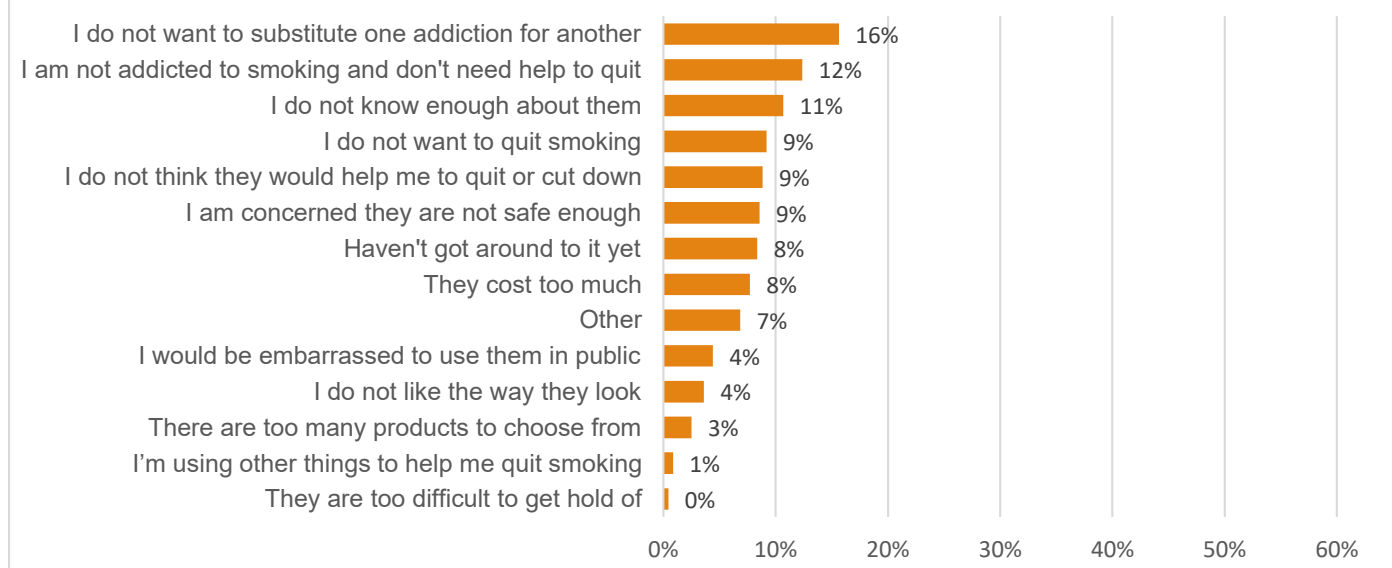
## REASONS WHY SMOKERS HAVEN'T TRIED OR HAVE STOPPED USING E-CIGARETTES

There are a wide range of reasons why smokers say they have not yet tried e-cigarettes. Smokers' views on addiction were cited most frequently, with 16% saying they don't want to substitute one addiction for another, while conversely 12% say that they aren't addicted to smoking and don't need help to quit.

Although only 9% of smokers cite concerns about safety as their main reason for not trying e-cigarettes, another 11% say they don't know enough about them, and 9% that that they don't believe that e-cigarettes could help them quit or cut down, showing a lack of confidence in these products (Figure 5).



Figure 5. Main reason for not trying an e-cigarette among smokers (2019)



Unweighted base: GB current smokers who have not tried e-cigarettes; 2019, n=614

The main reasons why 43% of smokers who had tried but no longer use e-cigarettes were:

- that vaping did not feel like smoking a cigarette (23%)
- that vaping did not help them deal with cravings (14%); and
- that they had only tried them to see what they were like (12%).

However, other surveys suggest that perceptions of harm may discourage some smokers either trying or sustaining use of e-cigarettes.<sup>11</sup> The ASH YouGov survey shows that 3% report stopping because of concerns about product safety (the same proportion as in 2018). Concerns about using the products too often (4%) may also be linked to misunderstandings about the harms from e-cigarettes. Last year 2% stopped because they had been advised to either by a health professional or friend/family member; this year the proportion was 1%.

### E-CIGARETTE USERS' OPINIONS ON WHAT THEY WOULD DO IF FLAVOURS WERE NO LONGER AVAILABLE

In March 2019, the US Food and Drug Administration announced a draft compliance policy proposing to prohibit the sale of e-liquid flavours other than tobacco menthol and mint, because of concern about youth uptake in the US.<sup>12</sup> In Great Britain, youth use of e-cigarettes is monitored regularly. Uptake is largely experimental with regular use confined largely to those who currently or previously smoked, with 0.8% of young people aged 11-18 who have never smoked using e-cigarettes more than once or twice.<sup>13</sup>

In 2019 for the first time we asked current e-cigarette users what they would do if flavours were no longer available. Around one in four said they would still try to get flavours and just under one in ten said they would make their own e-liquid. The most popular option after continuing to try to get flavours was using unflavoured e-liquids/cartridges. However, just under one in five said they would either smoke more or revert to smoking, and around the same proportion said they didn't know what they would do. Less than one in ten said they would stop vaping.

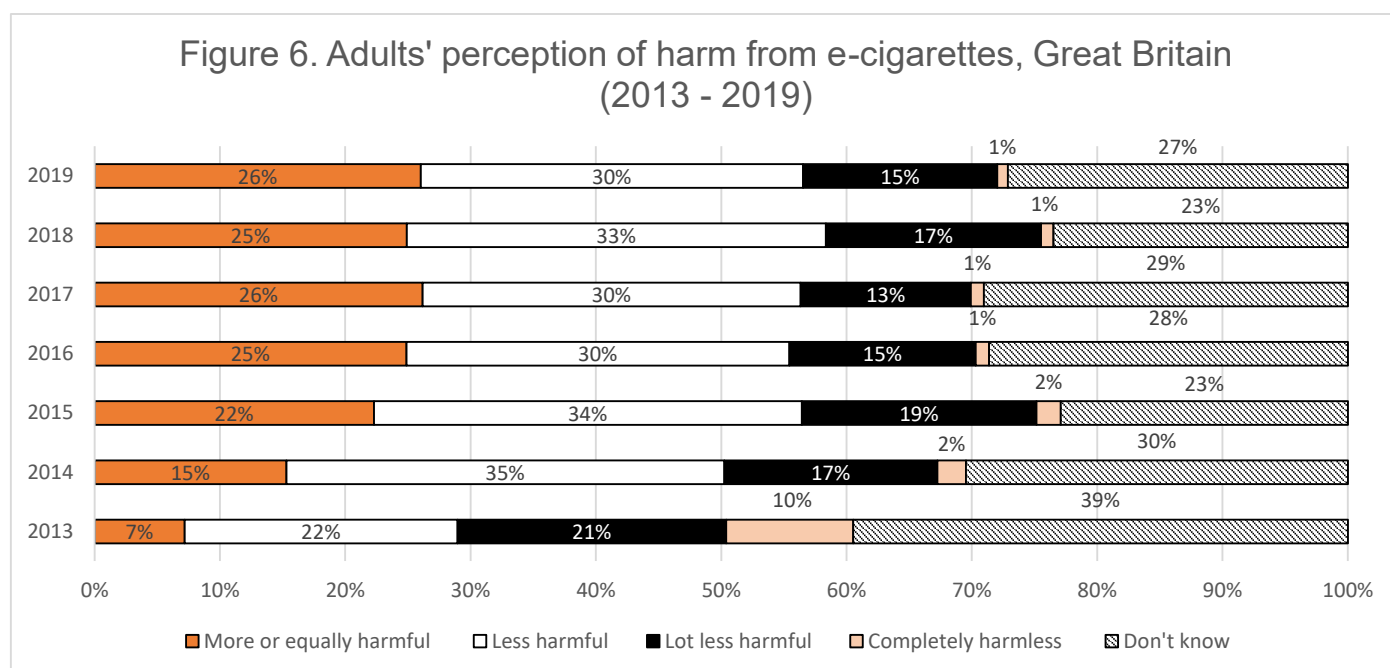


# PERCEPTIONS OF HARM

## ADULT POPULATION PERCEPTIONS OF HARM

Between 2013 and 2017 understanding among the adult population of harm caused by e-cigarettes compared to smoking deteriorated. Although the proportion saying they don't know how harmful e-cigarettes are compared to smoking declined from 39% to 29%, this was not because of a growth in accurate understanding of the relative risks. The proportion of the adult population thinking that e-cigarettes are more or equally harmful as smoking nearly quadrupled, increasing from 7% in 2013 to 25% in 2017.

In 2018, for the first time since 2015 at least half the population agreed that e-cigarettes were less or a lot less harmful than smoking (50% in 2018 compared to 43% in 2017). However, this improvement has not been sustained, and in 2019 only 45% agreed this was the case. The proportion of the adult population saying that they don't know how harmful e-cigarettes are compared to smoking remains high, at over a quarter of the population (27%) in 2019 (Figure 6).

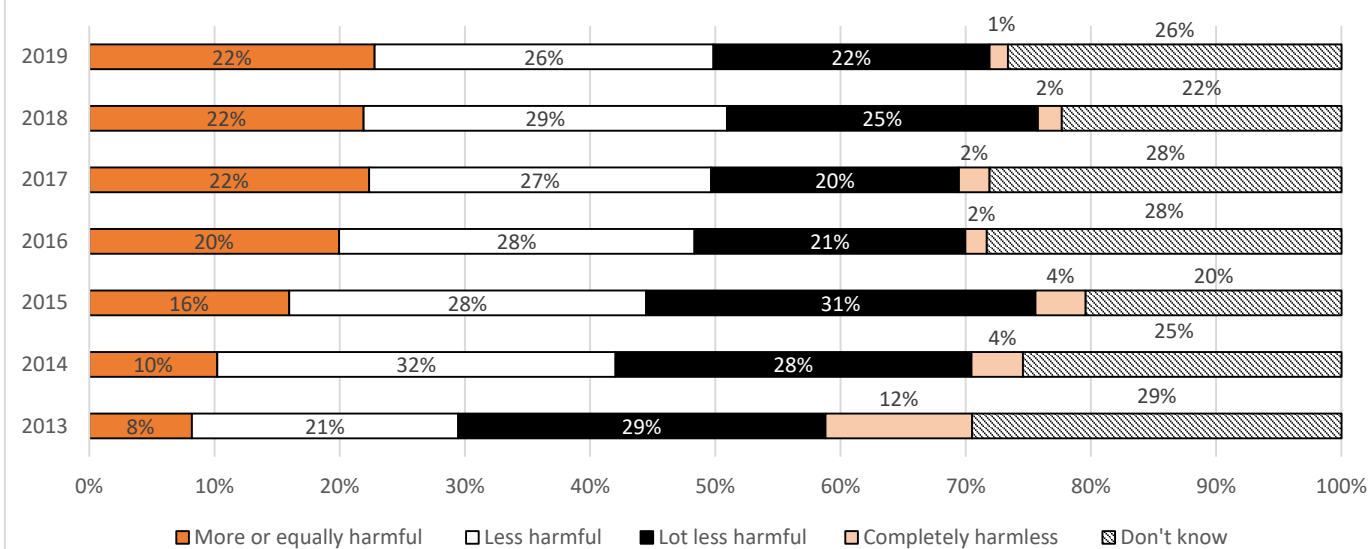


*Unweighted base: All GB adults who have heard of e-cigarettes: 2013, n=8936; 2014, n=11,307; 2015 n=11,340; 2016 n=11,489; 2017 n=12,101; 2018, n=12,070; 2019, n=11,634).*

## SMOKERS' PERCEPTIONS OF HARM

A similar pattern can be seen among smokers' perceptions of harm (Figure 7) with 48% reporting e-cigarettes were less or a lot less harmful, falling from 53% in 2018. The proportion thinking e-cigarettes are more or equally harmful has not changed much in recent years, and is slightly lower among smokers than among the adult population as a whole (22% compared to 26%). The proportion of smokers who don't know how harmful e-cigarettes are compared to smoking remains high and is very similar to that of all adults (26% compared to 27% for all adults).

Figure 7. Smokers' perception of harm from e-cigarettes, Great Britain (2013 - 2019)

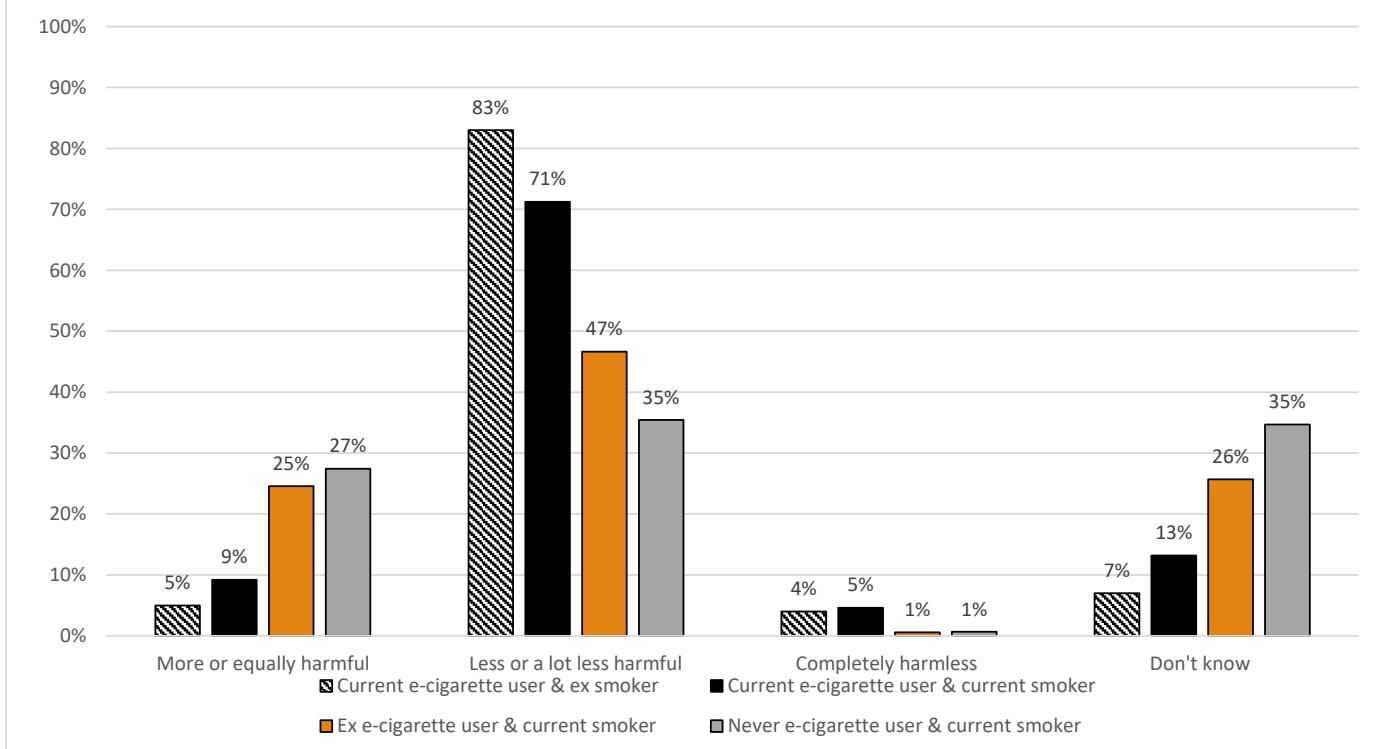


Unweighted base: GB adult smokers who have heard of e-cigarettes (2013, n=1720; 2014, n=1694; 2015, n=1945; 2016, n=1639; 2017, n=1569; 2018, n=1566; 2019, n = 1,679)

Smokers who currently use e-cigarettes have more accurate perceptions of their harm, with 71% thinking that are less or a lot less harmful and only 9% thinking they are more or equally harmful. (Figure 11) The proportion of current smokers who have never tried e-cigarettes saying that they don't know how harmful e-cigarettes are has increased by 8 percentage points since last year (35% in 2019 compared to 27% in 2018). This is matched by an equal decline in the proportion saying they are less or a lot less harmful (35% in 2019 compared to 43% in 2018). The proportion thinking they are more or equally harmful is little changed since last year (27% in 2019 compared to 28% in 2018).

However, the most accurate perceptions of harm are among ex-smokers who currently vape, with 83% thinking they are less or a lot less harmful than smoking (81% in 2018) and 5% that they are more or equally harmful (3% in 2018). (Figure 8)

Figure 8. Smokers' and ex-smokers' perceptions of harm from e-cigarettes in relation to e-cigarette use

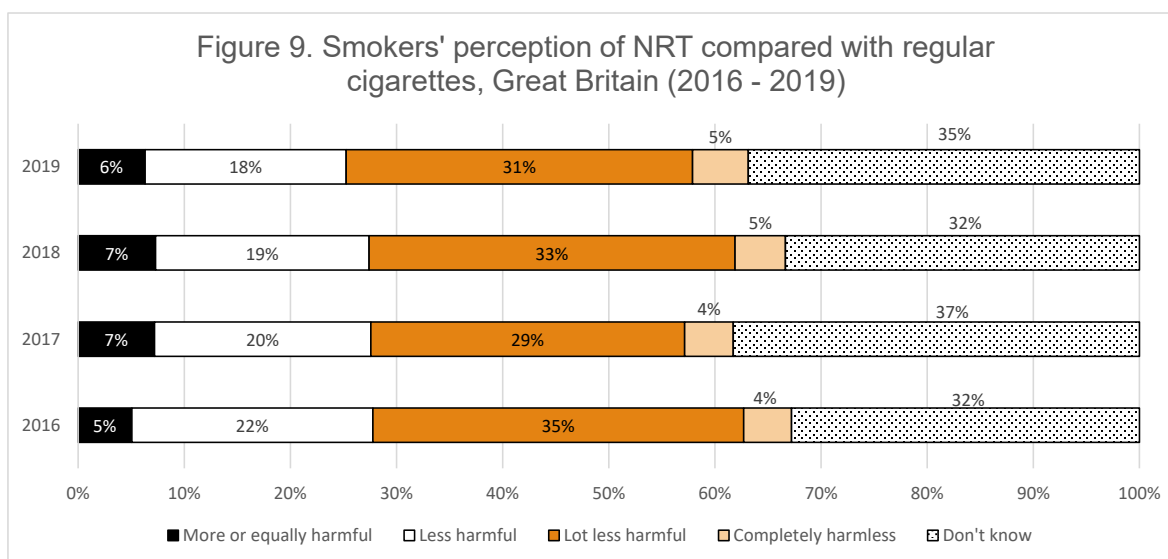


Unweighted base: GB current e-cigarette user & ex-smoker (2019, n=465); current e-cigarette user & current smoker (2019, n=335); GB ex e-cigarette user & current smoker (2019, n=781); never e-cigarette user & current smoker (2019, n=614).

### PERCEPTIONS OF HARM FROM NICOTINE REPLACEMENT THERAPIES (NRT)

Over the last four years we also asked people for their views of the relative harms of NRT compared with tobacco smoking. NRT is a licensed medication with minor side effects.

Understanding of the relative risk of NRT compared to smoking, particularly among smokers, is poor and getting worse. (Figure 9) More than a third (35%) of smokers said they did not know how harmful NRT is compared to smoking (compared to 32% in 2018) and only 31% correctly identified NRT as much less harmful than smoking (down from 33% in 2018).



Unweighted base: GB adult smokers: 2016, n=1477; 2017, n=1632; 2018, n=1633; 2019, n=1,777

# E-CIGARETTE REGULATIONS

In 2015 a minimum age of sale for e-cigarettes of 18 was introduced, making it illegal to sell e-cigarettes containing nicotine to under 18s or to purchase them on behalf of under 18s.<sup>14</sup> From 20 May 2016, a regulatory framework for e-cigarettes was introduced in the UK under the EU Tobacco Products Directive (TPD).<sup>15</sup> From that date, the advertising or promotion, directly or indirectly, of electronic cigarettes and re-fill containers on a number of media platforms, including on television, radio, newspapers and magazines, was prohibited. The only advertising still allowed is at point of sale and other local advertising such as billboards.

The new product rules under the TPD for electronic cigarettes introduced a notification process for manufacturers and importers in May 2016.<sup>16</sup> Non-compliant stock was allowed on sale for a further year until 20th May 2017.<sup>17</sup> See below for a summary of the key product standards:

## NICOTINE STRENGTH OF E-LIQUID

- Electronic cigarettes which contain up to 20 mg per ml of nicotine are regulated as consumer products.
- Products containing over 20mg per ml of nicotine cannot be sold unless they have a medicinal licence.<sup>18</sup>
- Zero nicotine products are not included in the TPD and do not require a medicinal licence.

## QUANTITY OF E-LIQUID

- Disposable electronic cigarettes, cartridges and tanks can contain a maximum of 2ml of e-liquid, while dedicated refill containers can contain up to 10ml.

## SAFETY

- Products must be child-resistant and tamper evident.

## HEALTH WARNINGS

- The pack must carry a health warning covering 30% of the surfaces of the unit packet and any outside packaging stating 'This product contains nicotine which is a highly addictive substance.'

The Medicines and Healthcare products Regulatory Agency (MHRA) is the competent authority for the notification scheme for e-cigarettes and refill containers in the UK.<sup>19</sup> Consumers and healthcare professionals can report side effects and safety concerns with e-cigarettes or refill containers to the MHRA through the Yellow Card reporting system.<sup>20</sup> They can also report products suspected to be defective or non-compliant to their [local Trading Standards team](#) or to [tpdsafety@mhra.gov.uk](mailto:tpdsafety@mhra.gov.uk).

Since the yellow card system was put in place on 20 May 2016, MHRA has received 62 Yellow Card adverse drug reactions (ADR) reports.<sup>21</sup> The reports generally include reactions which are either known side effects of nicotine replacement therapy or expected reactions taking into consideration the demographic of patients using e-cigarettes (current or former smokers).

No evidence of new risks has been identified as a result of the Yellow Card data collected so far. The MHRA assess all reports received in associated with nicotine-containing e-cigarettes and should any potential safety concerns be identified regulatory action would be taken and communicated as appropriate. The MHRA also receive reports of potential safety concerns and work with local Trading Standards teams to investigate as needed.

The regulations for e-cigarettes must be reviewed within five years of implementation. ASH has asked e-cigarette users questions about the type of product they use to inform our understanding of the impact of the current regulations and how the market for e-cigarettes is evolving.

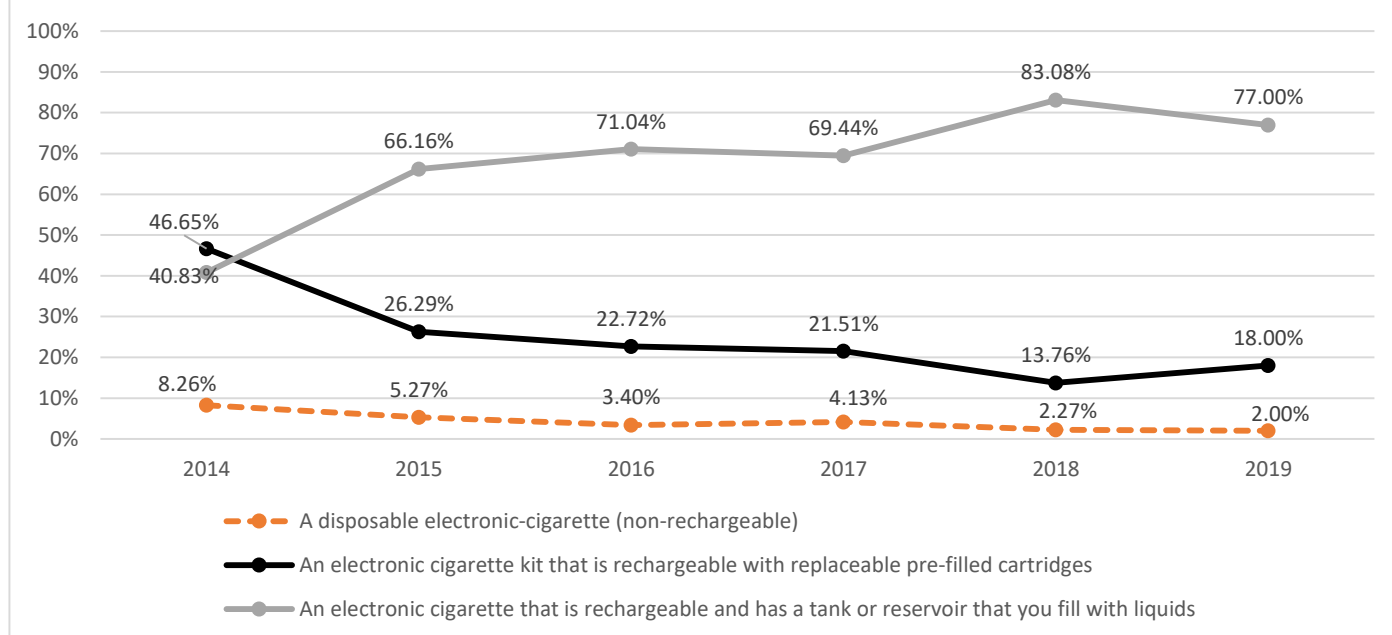
# TYPES OF DEVICE AND E-LIQUIDS IN USE

## E-CIGARETTE DEVICE USED

The proportion of e-cigarette users mainly using tank systems grew year-on-year until 2018, but fell back in 2019 from 83% to 77%. In contrast, for the first time this year, there has been an increase in those mainly using rechargeable e-cigarettes with replaceable pre-filled cartridges from 14% in 2018 to 18% in 2019 (Figure 10). The most popular types of rechargeable products with pre-filled cartridges are Vype (18%), Blu (15%) and Logic (11%), while 6% use Juul, the new product on the market in 2018.

The majority of e-cigarette users (73%) said they only used one device, and the most commonly used additional device was a tank system, particularly for current vapers who are ex-smokers (23% compared to only 16% for dual users).

Figure 10. Type of e-cigarette used by current e-cigarette users, Great Britain (2014 - 2019)



*Unweighted base: All GB adults who currently use e-cigarettes, excluding those who don't know frequency of use: 2014 (n=498); 2015 (n= 614); 2016 (n=667); 2017 (n=669); 2018 (n=715); 2019 (n=800)*

## NICOTINE CONSUMPTION

Some stakeholders have expressed concerns that the cap on nicotine levels imposed by the Tobacco Products Directive could be discouraging use among smokers with the highest levels of addiction.<sup>22</sup> For example in the US where there is no cap on nicotine levels the most popular product, Juul, sells in two strengths, 59 mg/ml and 35 mg/ml,<sup>23</sup> both much higher than the legal limit in the EU. In the UK only 20 mg/ml Juul products are available, the legal maximum.<sup>24</sup>

In 2016, before the legislation was introduced, more than three quarters of current e-cigarette users vaped liquids with concentrations of nicotine of 18 mg/ml or less (77%), with nearly half (49%) using e-liquid containing 12 mg/ml or less. One in ten (10%) used more than 18 mg/ml (20 mg/ml was only included as a specific break point from 2017 onwards). In 2017, at the time the sell through period was coming to an end, 6% of current vapers were using above the TPD limit, falling to 2% in 2018 and 2% in 2019 (Table 4).

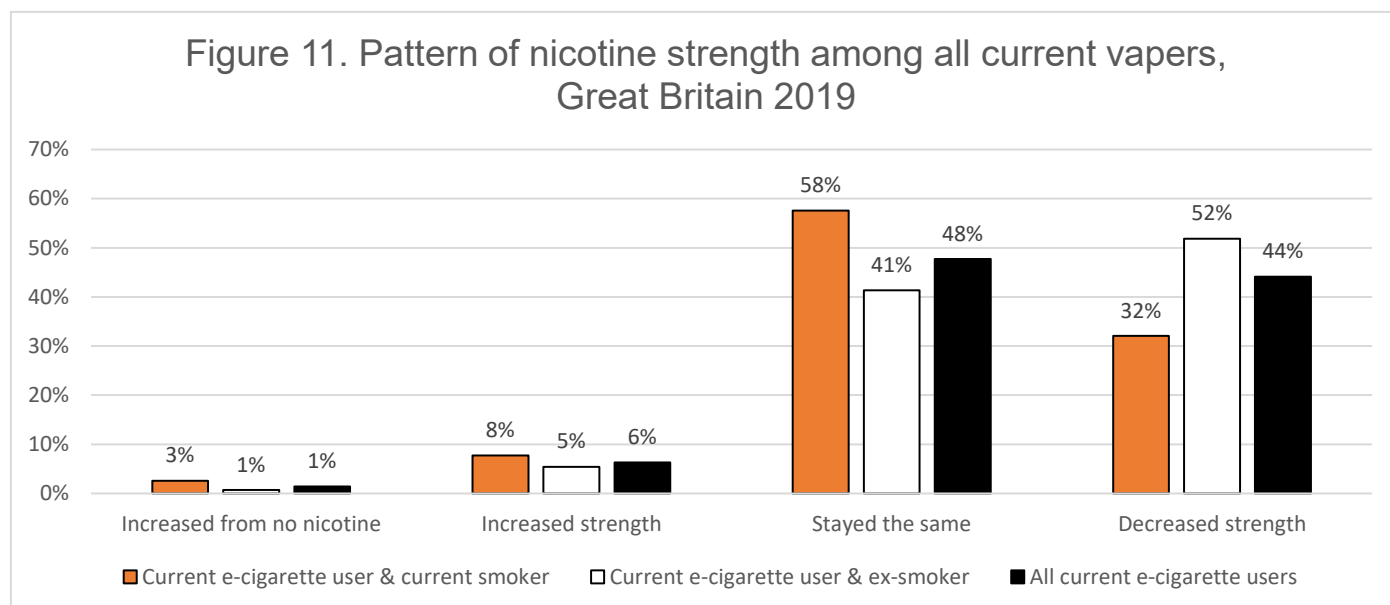
The ASH survey suggests that the current nicotine cap of 20 mg/ml is not a problem for the majority of current users who use e-liquid containing nicotine, as they are using strengths well under the legal limit. However, in 2019, 2% of e-cigarette users said they use nicotine strengths above the legal limit, and a further 2% used nicotine strengths just under or at the legal limit (10% didn't know what strength they used).

**Table 4**

Strength of nicotine used by current e-cigarette users				
Nicotine mg/ml	2016	2017	2018	2019
1-12	49%	61%	66%	64%
13-18	28%	20%	23%	21%
19-20	N/A	3%	2%	2%
19-34	10%	N/A	N/A	N/A
21-34	N/A	6%	2%	2%
34+	0%	0%	0%	0%
Don't know	13%	9%	8%	10%

*Unweighted base: Current GB e-cigarette user who uses nicotine, 2016 (n= 720); 2017 (n=597); 2018 (n=365); 2019 (n=720)*

In 2019, just under half of all current vapers (48%) say they use the same strength e-liquid as when they started, while 44% have decreased the strength and only 7% have increased the strength over time including 1% who previously did not use nicotine (Figure 11). Those who have quit smoking are more likely than dual users to report decreasing nicotine strength over time (Figure 14). However, compared to last year, a larger proportion of ex-smokers are choosing to remain on the same strength of nicotine (41% in 2019; 36% in 2018) and a smaller proportion to reduce nicotine strength (52% in 2019; 58% in 2018).



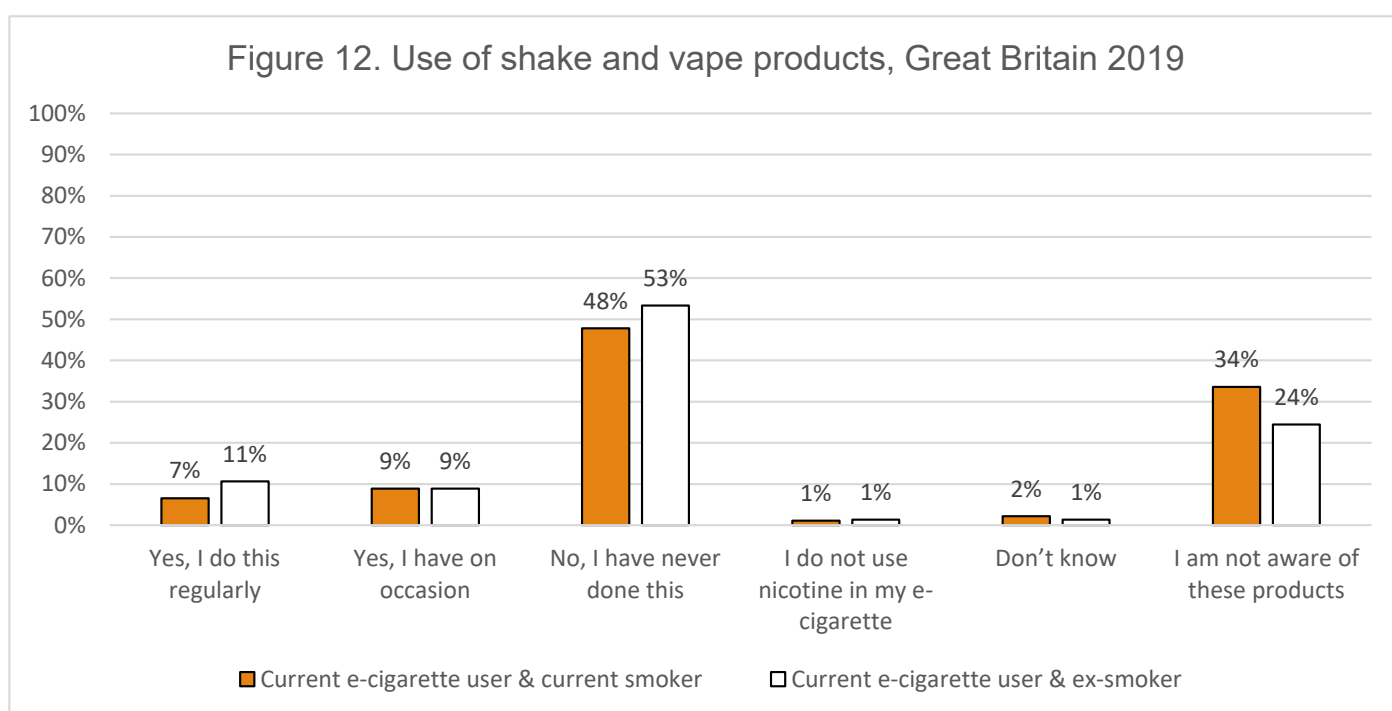
*(Change in nicotine strength from first use to current use, excludes don't know) Unweighted base: Current GB e-cigarette user and smoker who use or used to use e-cigs containing nicotine, 2019 (n=228); current GB e-cigarette user and ex-smoker who use or used to use e-cigs containing nicotine, 2019 (n=370).*

## VOLUME OF E-LIQUID USED IN E-CIGARETTES AND DEDICATED REFILL BOTTLES

Legislation limits the volume of e-liquid in an e-cigarette to less than 2ml and dedicated refill bottles to 10ml.

In 2016, prior to the legislation coming into force, 44% of those vaping daily reported using 2ml or less a day with none reporting using more than 10ml of liquid a day. In 2019, the proportions were 36% using 2ml or less a day and 2% more than 10 ml a day. We have not asked why vapers have increased the amount of liquid they use, but the most likely reasons are either the cap on nicotine strengths and/or changes in the types of product being used.

The limits on the size of refill bottles has prompted a change in sales practice, with larger bottles of zero-strength liquid for sale alongside smaller bottles with the highest legal limit nicotine strength liquid, sold to be mixed together. This is sometimes marketed as 'shake and vape'. The ASH YouGov survey finds that 19% of current vapers who use tank devices report using 'shake and vape' products, slightly up from 15% in 2018. The proportion not aware of these products had declined from 37% in 2018 to 28% in 2019. Use is most common among ex-smokers who vape, but still low, with only one in five reporting they use 'shake and vape' products regularly or occasionally (Figure 12).



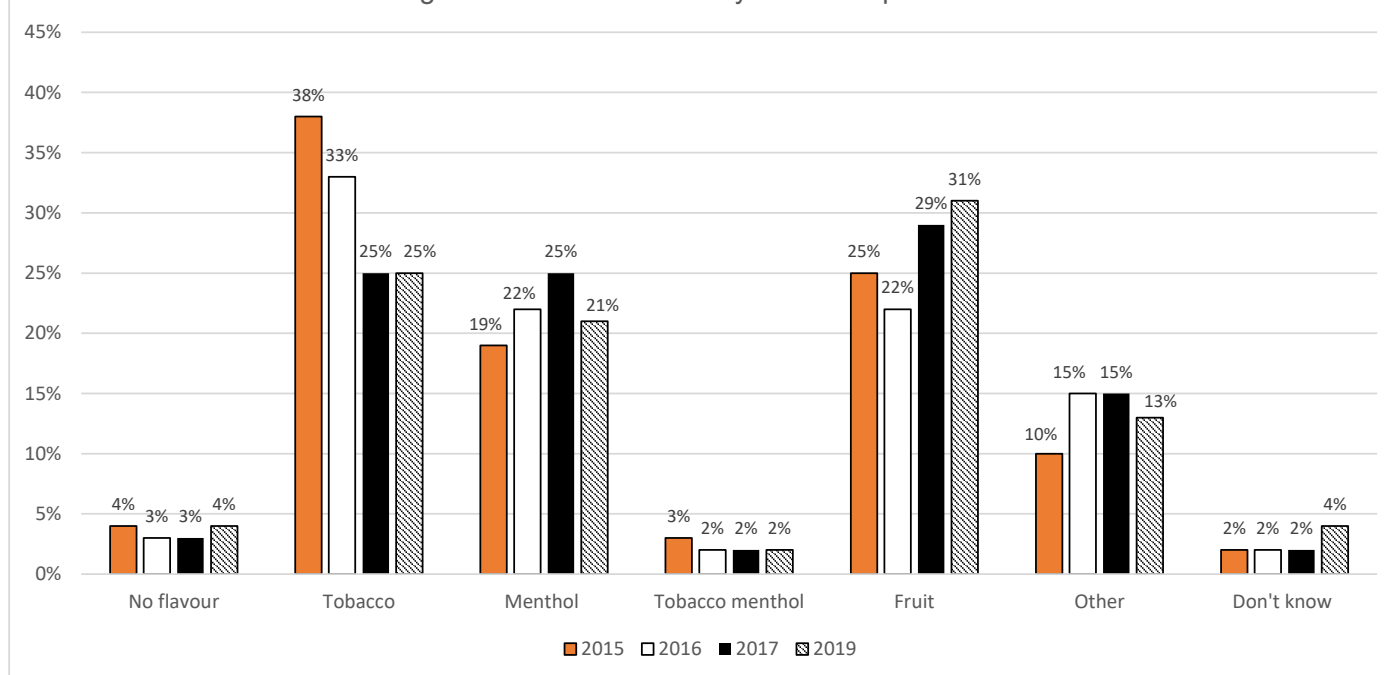
*Unweighted base: Current GB e-cigarette user (using tank as main device and using nicotine) 2019 (n=310); current GB e-cigarette user and ex-smoker, 2019 (n=451).*

## USE OF FLAVOURS

In 2015, we started asking e-cigarette users what flavour they used most often (Figure 13: the question was not asked in 2018). In 2015, tobacco was most popular at 38%, followed by fruit flavour at 25% and menthol at 19%. This has changed over time with fruit flavours now the most popular at 31%, followed by tobacco and menthol at 25% and 21%. Very few users are using products with no flavours. Dual users are most likely to use tobacco (31%) or fruit flavour (30%) followed by 18% who say that they are most likely to use menthol. Ex-smokers who currently vape are equally likely to favour tobacco or menthol after fruit (33% fruit, 24% tobacco, 24% menthol).



Figure 13. Flavours used by current vapers



Unweighted base: All GB adults who have tried and still use e-cigarettes 2019 (n=854) 2017 (n=669) 2016 (n=667) 2015 (n=614)

In 2018, we asked vapers to describe their use of flavours and a higher proportion of ex-smokers who currently vape (68%) said they stick to the same flavours compared to dual users (55%).

## ASH YOUNGOV SURVEYS IN CONTEXT

This briefing reports the results of the ASH Smokefree GB surveys on the use of e-cigarettes among adults in Great Britain. All figures, unless otherwise stated, are from YouGov Plc. ASH included questions on e-cigarette use in this annual survey starting in 2010 with questions addressed only to smokers.<sup>25</sup> ASH updated its annual survey with questions on e-cigarettes addressed to all respondents from 2012 onwards.<sup>26 27 28 29 30 31 32</sup> These surveys have all been carried out online by YouGov. All figures have been weighted and are representative of GB adults (aged 18+).

Using the prevalence figures provided by YouGov, ASH, working with Dr Leonie Brose at King's College London, creates an annual estimate of the number of e-cigarette users by smoking status in Great Britain. ASH has also carried out a survey of youth e-cigarette use (11-18 year olds) since 2013. Analysis of e-cigarette use among youth is published separately.<sup>33</sup>

Since the ASH-commissioned Smokefree GB survey first commenced, there have been a number of other surveys which have gathered data on e-cigarette use.<sup>34</sup> The Smoking Toolkit Study<sup>35</sup> is probably the most extensive of these and tracks both smoking and e-cigarette use throughout the year in England. The trends are similar to the Smoking Toolkit Study,<sup>36</sup> but the ASH Smokefree GB survey consistently estimates a slightly lower figure for the proportion of e-cigarette users who are current smokers. The difference results from the assessment of smoking status: there are fewer ex-smokers and more current smokers in the Smoking Toolkit Study than in the ASH Smokefree GB survey. Within the different categories of smoking status, the prevalence of e-cigarette use is similar between the surveys. For further information see the [Smoking Toolkit](#).

The Office for National Statistics (ONS) has been collecting data on e-cigarette use since 2014, and the most recent published data published for use are for 2018. Data on perceptions of harms is only available from 2014 to 2016 as the question is no longer asked.<sup>34</sup>

From 2017, after the launch of the Philip Morris International (PMI) product IQOS, the ASH Smokefree GB survey has asked about knowledge and use of heated tobacco products (also known as heat-not-burn). However, the population level of knowledge and use was low to start with and has not grown significantly, so no detailed analysis can be carried out to date. In 2019, 11% of the public had heard of heated tobacco products and 1% had ever tried them. This finding is consistent with both the Smoking Toolkit Study and the ONS, which also find very low levels of knowledge and use of these products.

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