

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

October 2020

## Summary of key findings

This factsheet provides a detailed analysis of how attitudes and behaviour with respect to e-cigarettes among adults aged 18 and over 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 2020 survey carried out in February and March 2020.<sup>1</sup>

### USE AND AWARENESS OF E-CIGARETTES

- For the first time, current e-cigarette use has declined year-on-year, from 7.1% to 6.3% of the adult population in Great Britain, amounting to 3.2 million people. (Table 1)<sup>2</sup>
- Over half (58.9%) 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 fallen to 38.3% in 2020.<sup>1</sup> (Figure 1)
- The proportion of adult smokers who had never tried e-cigarettes fell rapidly from 2010 until 2014, and continued falling, but gradually, from 2015 onwards.<sup>3</sup> In 2020 it was 32.4%. (Figure 2)
- Only 0.3% of never-smokers are current vapers (amounting to 2.9% of vapers), down from 0.8% in 2019.

### ATTITUDES TOWARDS E-CIGARETTES

- As in previous years the main reason given by ex-smokers for vaping is to help them quit (41%) and prevent relapse (20%). (Figure 3)
- The main reason given by current smokers for vaping is to cut down (24%) followed by to help them quit (14%) and to prevent relapse (14%). (Figure 3)
- The proportion of smokers correctly believing vaping is less harmful than smoking has fallen from 48% last year, to 39% this year. This does not include the 1% of smokers who think vaping is harmless. (Figure 7)

### PRODUCTS USED

- The most popular products for all vapers are still tank systems, with 77% of vapers reporting using them. In 2020, 19% of vapers reported using cartridge/pod systems, similar to 2019 levels. (Figure 10)
- When asked what brands they use, for those who have tried vaping and use cartridges, the two most popular type of systems remain, Vype (20%) and Blu (17%), but Juul is now used by the same proportion of users as Logic (10%). Juul was new on the market in 2018.
- In 2020, 67% of current vapers using nicotine were using e-liquids of a strength between 1-12 mg/ml, and a further 24% using 13-20 mg/ml (20mg/ml is the legal limit). Only 2% were using more than 21mg/ml, although 7% said they didn't know. (Table 4)
- Excluding those who didn't know the strength of nicotine used, 44% of current vapers say that they use the same strength e-liquid as when they first started vaping, while 46% have decreased the strength and only 10% 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 grew from around 700,000 to 3.6 million in 2019. The rate of increase was highest in the first three years of e-cigarettes becoming widely available, with slower growth in recent years. However, by 2020 this changed, with the first decline in e-cigarette use recorded in this survey. (Table 1).

There are differences in vaping behaviour by social class, with 7.7% of those classified as C2DE being current vapers, compared to only 5.1% of those classified as ABC1. This reflects the socio-economic distribution of smokers (in this survey 17.1% of C2DE are smoking compared to 11.1% of ABC1), however, the rate of growth since 2015 has been greater in C2DEs than ABC1s. In 2015, 4.6% of ABC1s vaped and 6.3% of C2DEs vaped. The change is 0.5 percentage points for ABC1 and 3.1 percentage points for C2DE.

The peak ages for current e-cigarette use in 2019 are among 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**

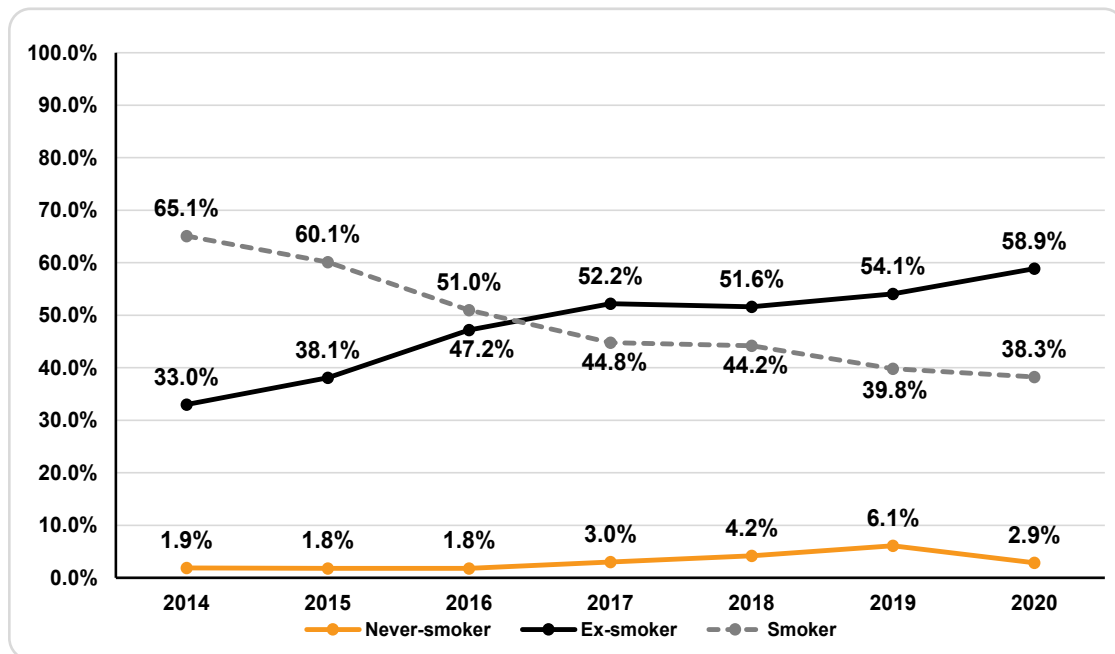
	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>% population current users</b>	1.7%	2.7%	4.2%	5.4%	5.7%	5.8%	6.2%	7.1%	6.3%
<b>Percentage point change (YoY)</b>	-	1.0	1.5	1.2	0.3	0.1	0.4	0.9	-0.8%
<b>Number of users (millions)</b>	0.7	1.3	2.1	2.6	2.8	2.9	3.2	3.6	3.2
<b>Rate of growth (YoY)</b>	-	86%	62%	24%	8%	4%	10%	13%	-12%

## 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 3.2 million current vapers, just under 2 million are ex-smokers; 1.2 million are current smokers; and 100,000 are never-smokers. Over time, the proportion of current e-cigarette users who smoke tobacco has fallen, while the proportion who are ex-smokers has risen. (Figure 1) In 2020, 61.7% of current vapers were ex-smokers, while 38.3% 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 11.3% of ex-smokers vape compared to 17.4% of current smokers. (Figure 1).

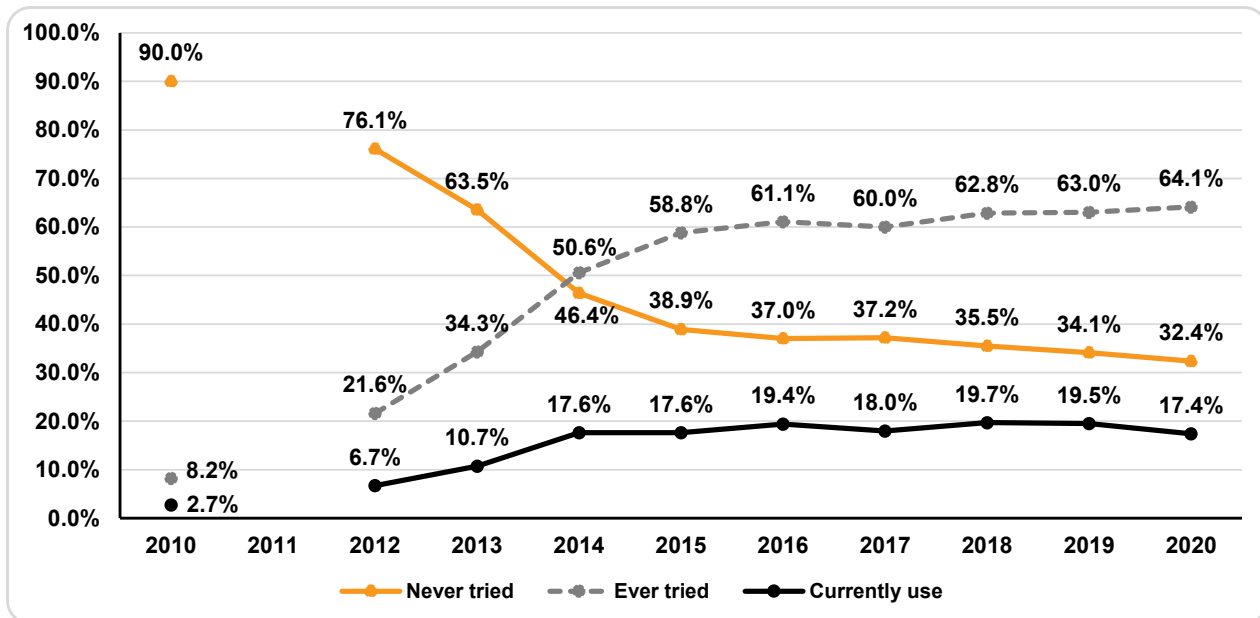
**Figure 1: Population of adult vapers (18+) in Great Britain, 2014 - 2020**



Unweighted base: GB adult vapers 2014, n=498; 2015, n=614; 2016, n=667; 2017, n=669; 2018, n=738; 2019, n= 854; 2020, n=787).

The proportion of adult smokers who have tried e-cigarettes increased rapidly from 2010 until 2014, but since 2016 it has reached a plateau. Around a third (32.4%) of current smokers had never tried vaping in 2020. (Figure 2)

**Figure 2: E-cigarette use among current adult cigarette smokers in Great Britain, 2010 - 2020**



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; 2020, n=1694).

# Vaping Behaviour

## VAPING BEHAVIOUR IN EX-SMOKERS

15.0% of ex-smokers have tried vaping but no longer vape, compared to 11.3% who currently vape. This means there are 2.5 million ex-smokers who have tried vaping but no longer vape, compared to just under 2 million ex-smokers (1.9 million) who are current vapers.

Over a quarter of ex-smokers who used to vape, vaped daily (29.4%) and 40.1% vaped at least weekly. The remainder reported vaping less frequently, with the largest group (40.4%) reporting they only tried vaping once or twice, while 5.4% could not remember or did not know.

Nine out of ten ex-smokers who currently use e-cigarettes vape daily (87.5%), with 96.8% vaping at least weekly. Over 80% of them have been vaping for over a year (82.5%):

- 17% have vaped for under 1 year
- 36.6% have vaped for 1-3 years
- 45.9% 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 5.9 percentage points from 2011 to 2019. In 2011, 19.8% of adults smoked, falling to 13.9% in 2019; equivalent to a drop from 7.7 million smokers in 2011 to 5.7 million in 2019.<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; so 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.<sup>8</sup> 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 49.8% of smokers currently vaping doing so daily, while 45.8% vape less than daily. Those who vape everyday smoke, on average, much less than those who vape less 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. Just under half of all daily vapers can be defined as “light” smokers, smoking fewer than six a day compared to one in four non-daily vapers. More than six times the proportion of non-daily vapers are “heavy” smokers, smoking more than 21 cigarettes a day (13% compared to 2%). (Table 2)

**Table 2: Cigarettes smoked per day by daily and non-daily vapers**

Cigarettes smoked per day (ready-made or handrolled)	Daily vaper	Non-daily vaper
6 or fewer a day	46%	27%
7-20 a day	46%	57%
More than 20 a day	2%	13%

## VAPING BEHAVIOUR IN NEVER-SMOKERS

The proportion of current vapers who report being never-smokers has fluctuated over the years of the survey but remains low at 2.9% of current e-cigarette users (see Figure 1). However, never-smokers are the majority of the population, so the proportion of never-smokers who are current e-cigarette users is only 0.3%, with 2.9% having ever tried vaping.

## Attitudes to vaping

### REASONS FOR E-CIGARETTE USE

Among all e-cigarette users the three main reasons for vaping are as an aid to quitting (30%) followed by preventing relapse (20%) and to cut down number of cigarettes smoked (11%).

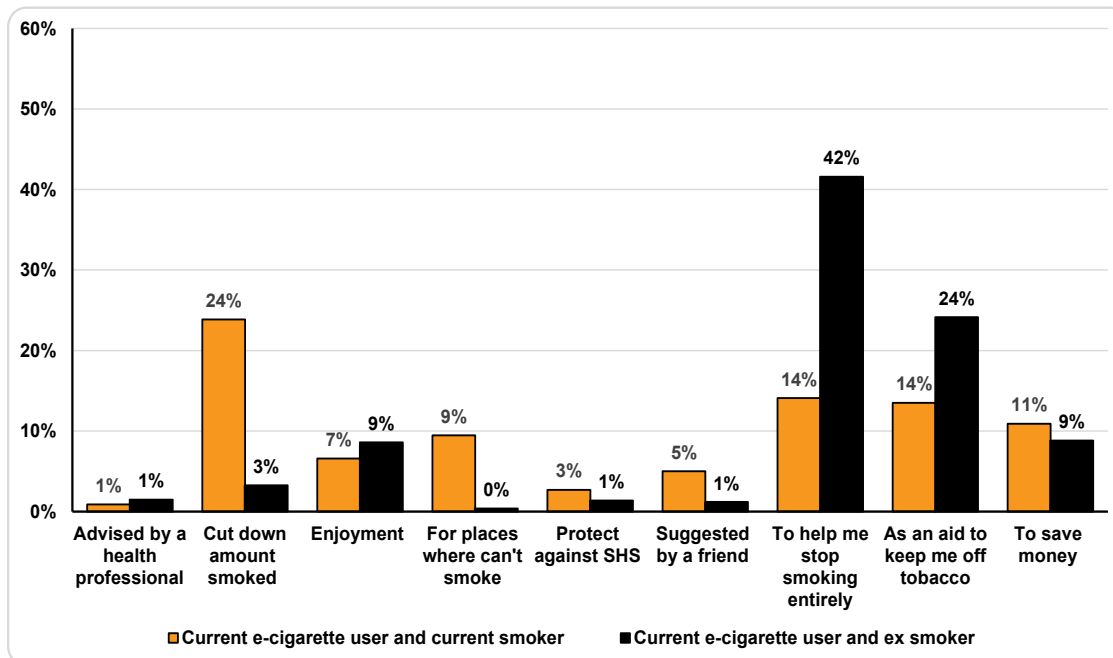
### REASONS FOR E-CIGARETTE USE BY SMOKING STATUS

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 (42%) or as an aid to keep them off tobacco (24%), because they enjoy it (9%) and to save money (9%).

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 (24%). However, 14% say that they use them to try to help them quit, and 14% as an aid to keep them off tobacco.

The sample size for never smokers who vape is too small for a detailed breakdown, but the majority say they just vaped 'to give it a try'.

**Figure 3: Main reason for vaping among smokers and ex-smokers who vape**



*Unweighted base: GB adult vapers 2020; current vaper and current smoker n = 292, current vaper and ex-smoker n = 475*

In 2019, to explore 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 vapers, 60% agree that "health is my number one reason for taking up e-cigarettes". (Table 3)

**Table 3: E-cigarette users' attitudes towards vaping**

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 out of 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 vapers; 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 as smoking, with just 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 9% of current e-cigarette users, our 2019 survey found that when asked if they get “a great deal of pleasure from vaping” 51% of e-cigarette users agreed (Table 3).

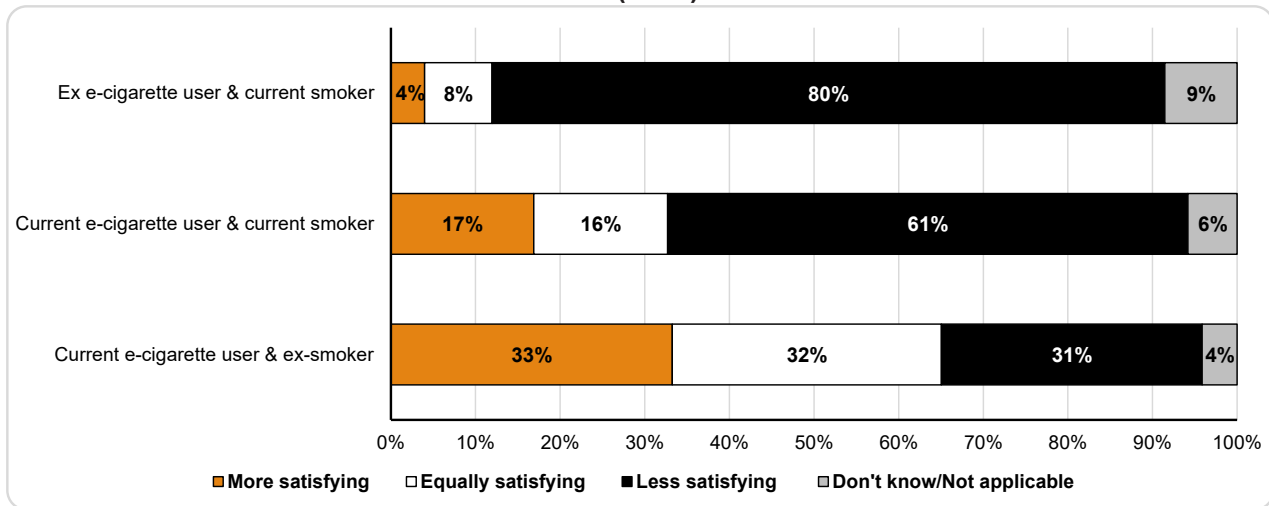
### ***Smokers who currently vape***

The figures are reversed for vapers who also smoke, with around a third (33%) finding it more than or equally as satisfying as smoking, and two thirds (61%) finding it less satisfying.

### ***Ex-smokers who are ex-vapers***

However, satisfaction levels are lowest of all for smokers who tried but 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.

**Figure 4: Current e-cigarette satisfaction levels from vaping compared to smoking, Great Britain (2020)**



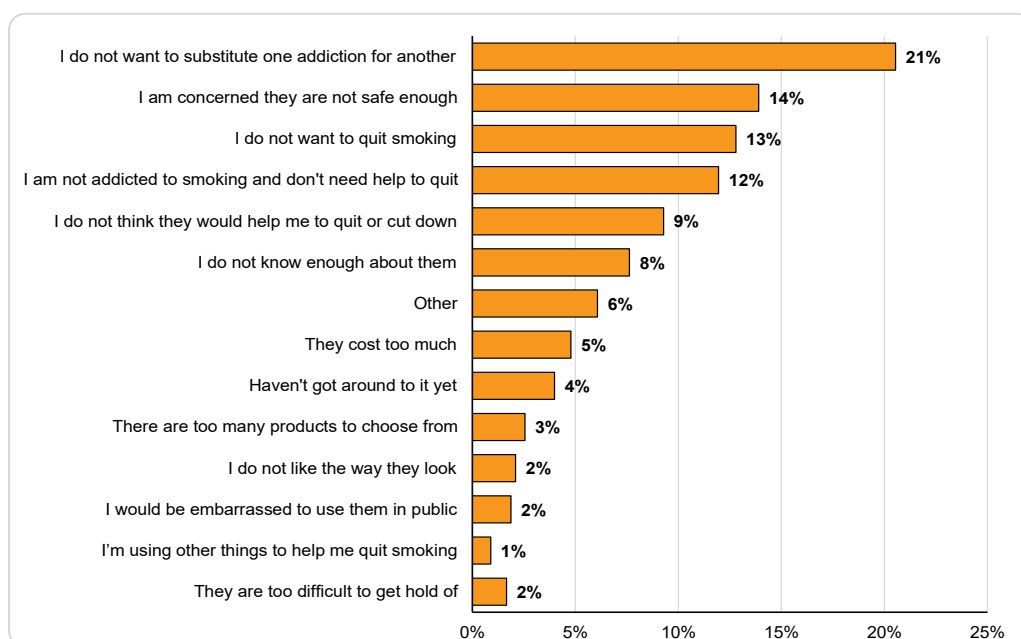
\*This includes those that have tried e-cigarettes once or twice in addition to longer-term users. Unweighted base: Current vapers & current smokers (2020, n=292); current e-cigarette user & ex-smoker (2020, n= 475); Ex e-cigarette users & current smokers, excluding not applicable (2020, n= 815)

## Reasons why smokers haven't tried or have stopped using e-cigarettes

Nearly a third, 32.4%, of smokers have not yet tried e-cigarettes. This is for a variety of reasons. Smokers' views on addiction were the most frequently cited main reason, with 21% saying they do not want to substitute one addiction for another (an increase from 16% last year), while conversely 12% say that they are not addicted to smoking and do not need help to quit.

There has been an increase in those citing safety concerns as their main reason for not trying e-cigarettes from 9% in 2019 to 14% in 2020. A further 8% say that they do not know enough about them, and 9% that they do not 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, 2020**



Unweighted base: GB current smokers who have not tried e-cigarettes; 2020, n=492

Nearly a half, 47%, of smokers have tried but no longer use e-cigarettes. The main reasons were

- that vaping did not feel like smoking a cigarette (22%)
- that vaping did not help them deal with cravings (16%)
- 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 6% report stopping because of concerns about product safety (double the proportion for 2018 and 2019) and a further 1% had stopped at the advice of a friend or health professional. Concerns about using the products too often (5%) may also be linked to misunderstandings about the harms from e-cigarettes.

Some people have problems with the products themselves with 6% saying they leaked and a further 4% saying they were too hard to refill. Around 10% of smokers report not liking products because they either made them feel unwell (5%) or didn't like the taste (5%).

## 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 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 that they would either smoke more or revert to smoking, and around the same proportion said that they did not know what they would do. Less than one in ten said that they would stop vaping.

## Perceptions of harm

### ADULT POPULATION PERCEPTIONS OF HARM

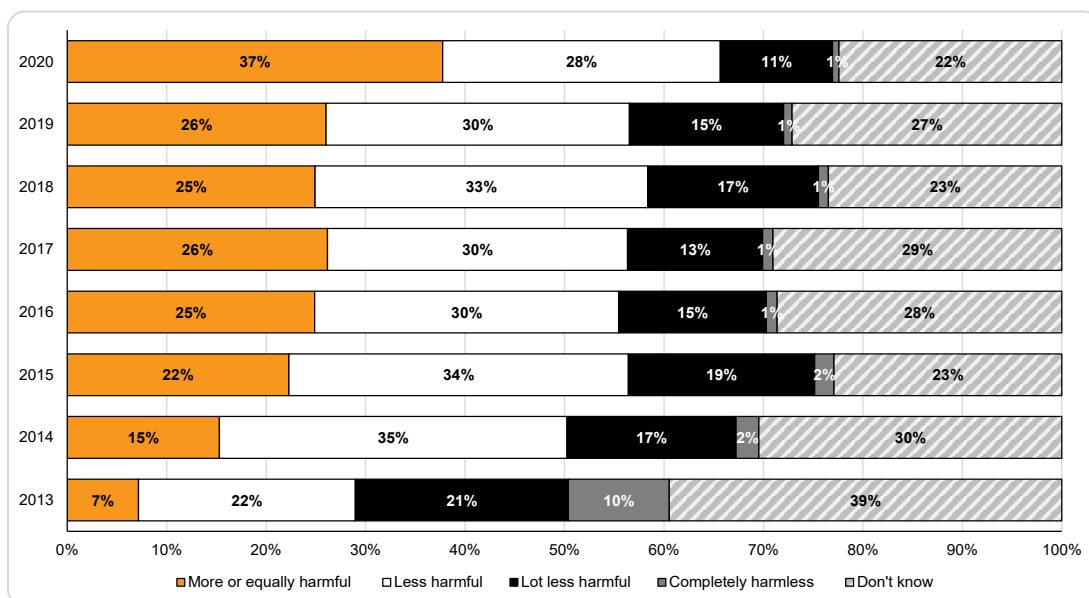
Since 2013 there has been a significant increase in misperception of the relative risks of vaping compared to smoking among the adult population. Although the proportion who say that they do not know how harmful e-cigarettes are compared to smoking declined from 39% to 22% from 2013 to 2020, this has not been 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 is five times higher than in 2013, increasing from 7% in 2013 to 37% in 2020.

Between 2016 and 2019 the views of the population appeared to stabilise somewhat with around a quarter of the population believing vaping was as or more harmful as smoking and around half believing that vaping is less or a lot less harmful than smoking. However, in 2020 perceptions have shifted markedly with the highest proportion of people reporting inaccurate misperceptions that e-cigarettes are more harmful than smoking (37%) and the lowest proportion reporting that e-cigarettes are less or a lot less harmful (39%). See Figure 6 on the next page.



The likely driver for this change in public perception is the impact of the media coverage of an outbreak of serious lung injury to vapers in the US, called EVALI. The number of hospital admissions from EVALI peaked in September 2019 and by February 2020 the US had reported 2,807 hospitalised cases and 68 deaths.<sup>14</sup> Only two cases of EVALI, both resulting in a fatal outcome, have been identified in the UK.<sup>15</sup> While the cause of this outbreak has since been identified as vitamin E acetate used to adulterate cannabis containing e-liquids the media coverage of the initial outbreak was far more prominent than the subsequent explanation or the fact that both vitamin E acetate and THC containing liquids are banned under UK rules.

**Figure 6: GB adults' perceptions of harm from e-cigarettes, 2013 - 2020**

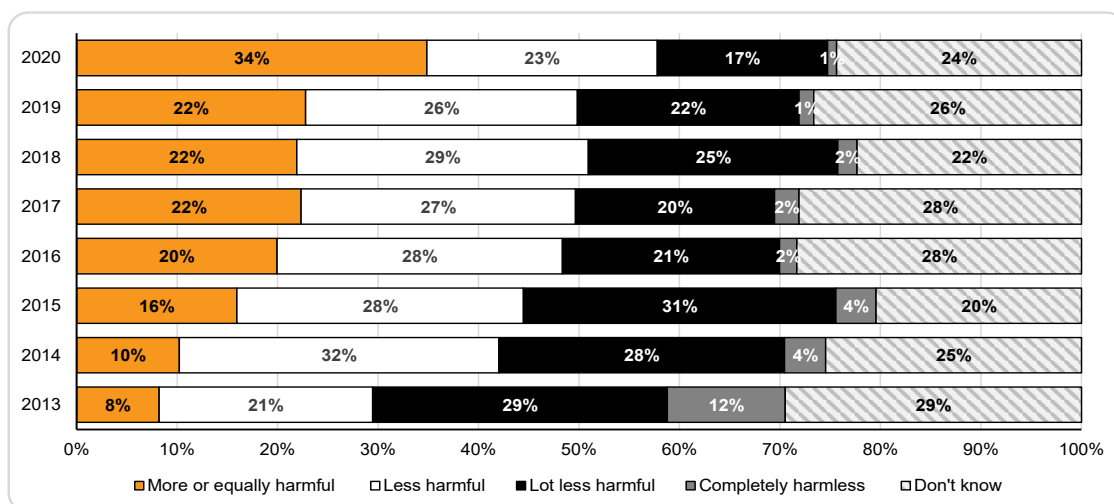


Unweighted base: All GB adults who have heard of e-cigarettes: 2013, n=8936; 2014, n=11,307; 2015, n=11,340; 2016, n=11,489; 2017, n=12,101; 2018, n=12,070; 2019, n=11,634; 2020, n=11,954).

### SMOKERS' PERCEPTIONS OF HARM

A similar pattern can be seen among smokers' perceptions of harm (Figure 7) with a drop of 9 percentage points between 2019 and 2020 in terms of whether smokers believe e-cigarettes to be less or a lot less harmful (48% in 2019 to 39% in 2020). This had already declined from 53% in 2018. The proportion thinking e-cigarettes are more or equally harmful had not changed for a number of years and in 2020 has increased to 34%. Nearly one in four smokers do not know how harmful e-cigarettes are compared to smoking, a similar proportion to that of all adults (24% compared to 22% for all adults).

**Figure 7: Smokers' perceptions of harm from e-cigarettes, Great Britain, 2013 - 2020**

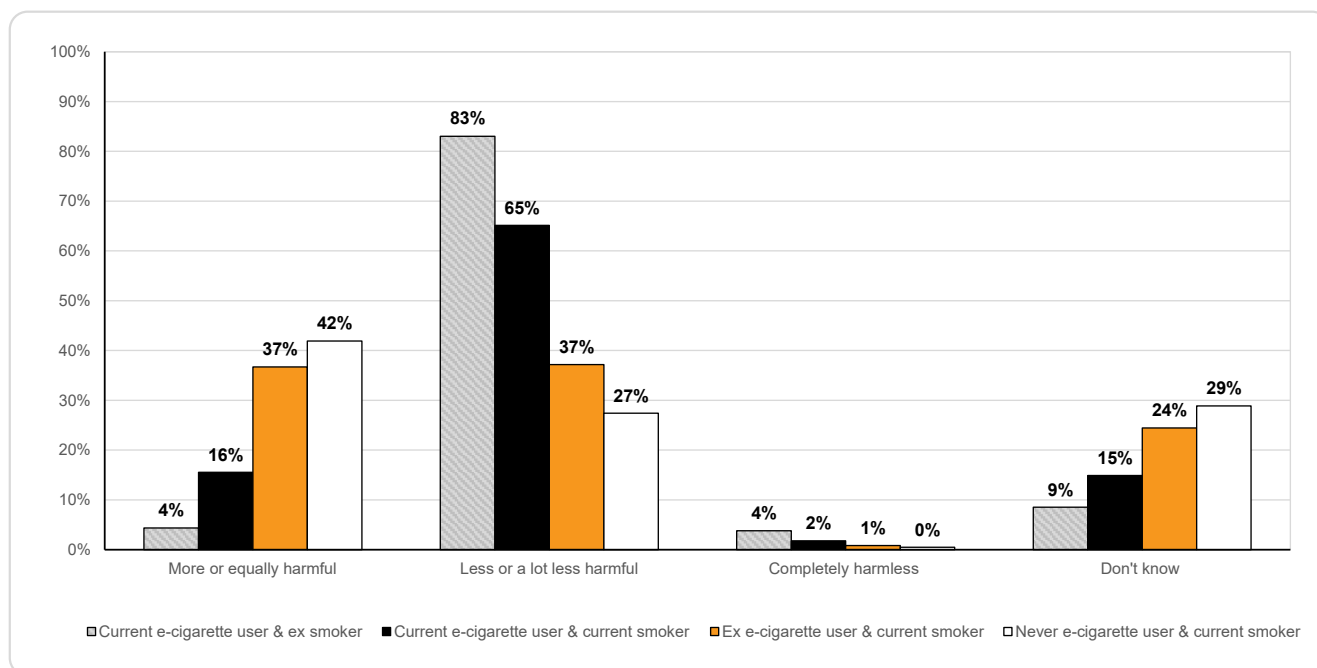


Unweighted base: GB adult smokers who have heard of e-cigarettes (2013, n=1720; 2014, n=1694; 2015, n=1945; 2016, n=1639; 2017, n=1569; 2018, n=1566; 2019, n = 1,679; 2020, n=1,599)

Smokers who currently use e-cigarettes have more accurate perceptions of their harm, with 65% thinking that are less or a lot less harmful (down from 71% in 2019) and 16% thinking that they are more or equally harmful (up from 16% in 2019). (Figure 8) The proportion of current smokers who have never tried e-cigarettes who believe they are more or equally harmful as cigarettes has increased by 15 percentage points between 2019 and 2020 from 27% in 2019 to 42% in 2020.

The only group where perceptions are unchanged since 2019 is among ex-smokers who currently vape. As in 2019 83% think they are less or a lot less harmful than smoking and 4% that they are more or equally harmful (5% in 2019). (Figure 8)

**Figure 8: Current smokers and ex-smokers perception of e-cigarette harm in relation to cigarette smoking**



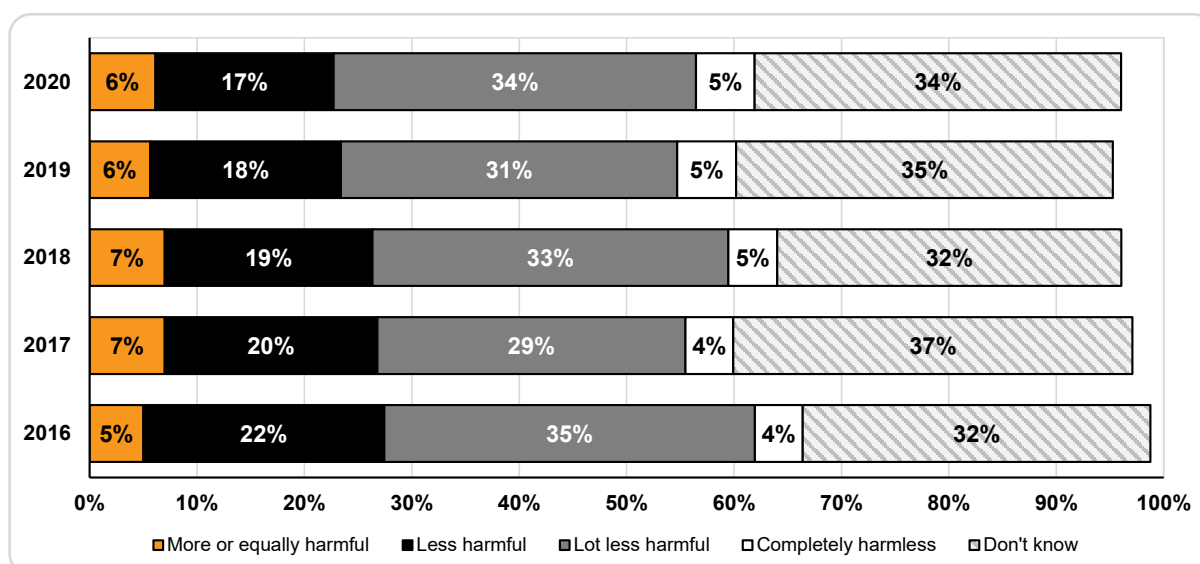
*Unweighted base: GB current e-cigarette user & ex-smoker (2020, n=475); current e-cigarette user & current smoker (2020, n=292); ex e-cigarette user & current smoker (2020, n=815); never e-cigarette user & current smoker (2020, n=492).*

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

Over the last five 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. (Figure 9) More than a third (34%) of smokers said that they did not know how harmful NRT is compared to smoking and only 34% correctly identified NRT as being much less harmful than smoking. These proportions have been similar over the last five years with no clear indication of improvement.

**Figure 9: Smokers' perceptions of NRT compared with regular cigarettes, Great Britain, 2016-2020**



Unweighted base: GB adult smokers: 2016, n=1477; 2017, n=1632; 2018, n=1633; 2019, n=1,777; 2020; 1,694

## 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>16</sup> From 20th May 2016, a regulatory framework for e-cigarettes was introduced in the UK under the EU Tobacco Products Directive (TPD).<sup>17</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>18</sup> Non-compliant stock was allowed on sale for a further year until 20th May 2017.<sup>19</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>20</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>18</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>21</sup> They can also report products suspected to be defective or non-compliant to their local Trading Standards service or to TPDsafety@mhra.gov.uk.

Since the Yellow Card Scheme was put in place for e-cigarettes on 20 May 2016, MHRA has received 176 Yellow Card adverse reaction reports.<sup>22</sup> 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 receives reports of potential safety concerns and works with local Trading Standards teams to investigate as needed.

There is a legal requirement to review the regulations within five years of implementation, which is May 2021. 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.

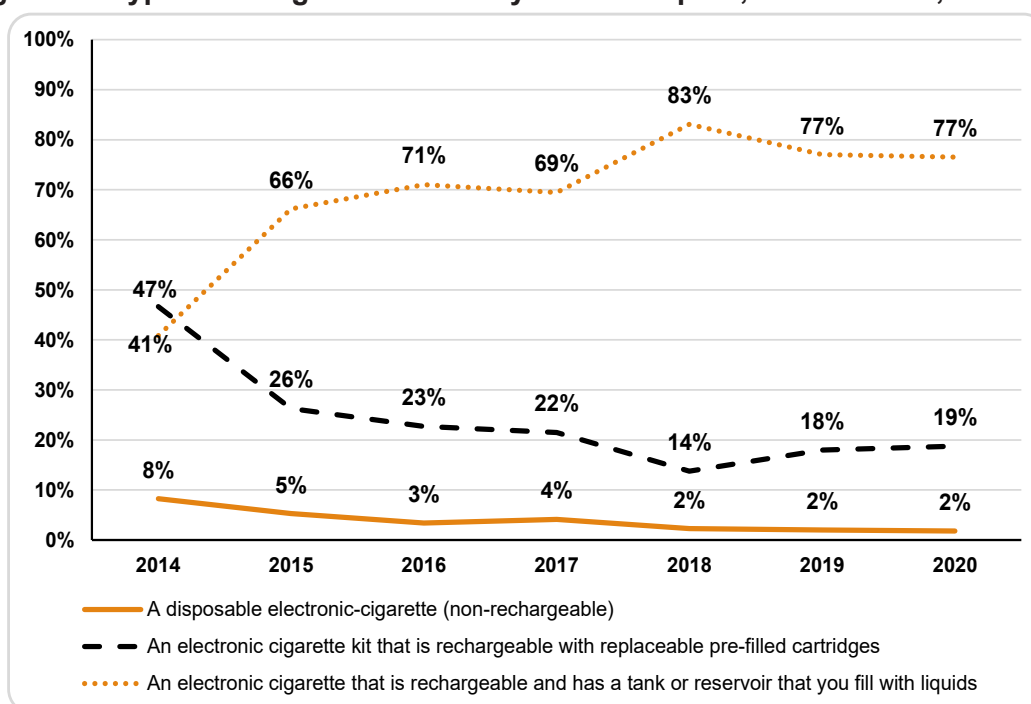
## Types of device and e-liquids in use

### E-CIGARETTE DEVICE USED

In 2020, as last year, just over three quarters of vapers reported mainly using tank systems, with nearly one in five using rechargeable e-cigarettes with replaceable pre-filled cartridge and only 2% using disposable e-cigarettes (Figure 10) The most popular types of rechargeable products with pre-filled cartridges are Vype (20%), Blu (17%), Logic (10%) and Juul (10%).

In 2019 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). This question was not asked in 2020.

**Figure 10: Types of e-cigarettes used by current vapers, Great Britain, 2014 - 2020**



*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) 2020 (n=767)*

In 2020 users were asked why they used the device they did. The most popular reasons for both tank and cartridge users was the hit of nicotine delivered (14% cartridge users 13% tank users) ease of use (11% for both) and price (10% cartridge users 12% tank users). However, there were also divergent reasons. For cartridge users easy access to product in local shops was more important (13% cartridge users, 5% tank users) while for tank users it was more important that the device was refillable (10% tank users, 1% cartridge users).

## 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>23</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>24</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>25</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 1% 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. In 2020, 2% of e-cigarette users said they use nicotine strengths above the legal limit, and a further 3% used nicotine strengths just under or at the legal limit (17% did not know what strength they used).

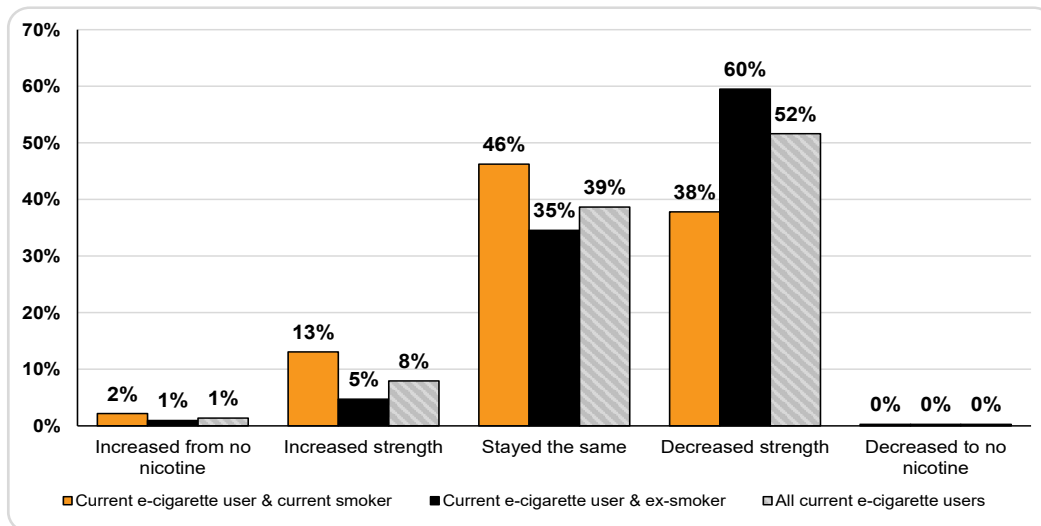
**Table 4: Strength of nicotine used by current e-cigarette users**

Strength	2017	2018	2019	2020
TPD level and lower	85%	90%	88%	91%
Higher than TPD	6%	2%	2%	2%
Don't know	9%	8%	10%	7%

*Unweighted base: Current GB e-cigarette user who uses nicotine, 2017 (n=597); 2018 (n=365); 2019 (n=720); 2020 (n=693)*

In 2020, just under half of all current vapers (39%) say they use the same strength e-liquid as when they started, while 52% have decreased the strength and only 9% 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 11: Pattern in nicotine strength among current vapers, 2020**



(Change in nicotine strength from first use to current use, excludes don't know) Unweighted base: Current GB e-cigarette user and smoker who have ever used nicotine containing e-cig, 2020 (n=205); current GB e-cigarette user and ex-smoker who have ever used nicotine containing e-cig, 2020 (n=389).

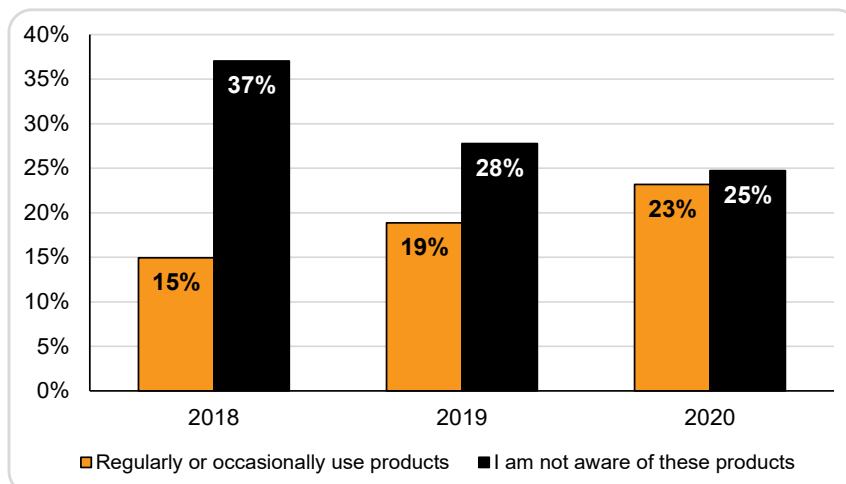
### AMOUNT OF E-LIQUID USED IN E-CIGARETTES AND DEDICATED REFILL BOTTLES

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 this legislation coming into force, 44% of those vaping daily and using a tank device reported using 2ml or less a day with none reporting using more than 10ml of liquid a day. In 2020, the proportions were 28% of all daily e-cig users using 2ml or less a day and 4% more than 10 ml a day. Looking just at those who use less than 10ml of liquid a day the estimated average daily liquid consumption has doubled between 2016 and 2020 from 1.9ml a day in 2016 to 4.1ml in 2020. 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.

To get round the limits larger bottles of zero-strength liquid are on 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 23% of current vapers who use tank devices or nicotine report using 'shake and vape' products, an increase on previous years. The proportion not aware of these products had declined from 37% in 2018 to 25% in 2020 (Figure 12). Use is most common among ex-smokers who vape with 25% reporting they use 'shake and vape' products regularly or occasionally.

**Figure 12: Awareness and use of 'shake-and-vape' products, 2018 - 2020**

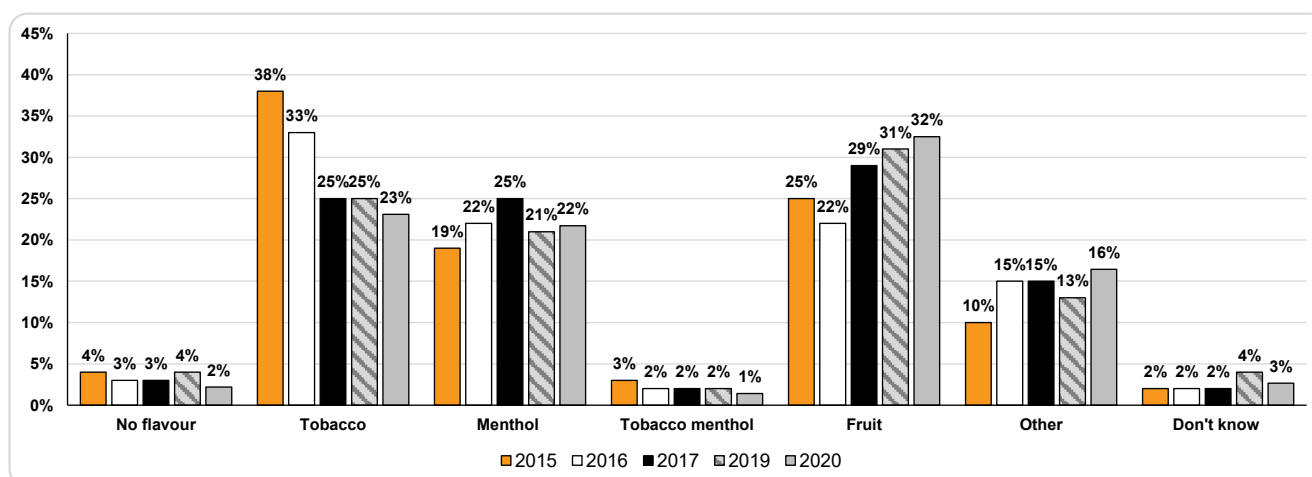


Unweighted base: Current GB e-cigarette user (using tank as main device and using nicotine) 2018 (n=696); 2019 (n=775); 2020 (n=744)

## USE OF FLAVOURS

In 2015, we started asking e-cigarette users what flavour they used most often. (Figure 16 below – the question wasn't asked in 2018). In 2015 tobacco was most popular at 38% followed by fruit flavour at 25% and menthol 19%. This has changed over time with fruit flavours now the most popular at 32%, followed by tobacco and menthol at 23% and 22%. Very few users are using products with no flavours. Dual users are most likely to use fruit flavours (32%) or tobacco (23%) followed by 17% who say they are most likely to use menthol. Ex-smokers who currently vape are equally likely to favour tobacco or menthol after fruit (34% fruit, 24% tobacco, 25% menthol).

Figure 13: Flavours used by current vapers (2015 - 2020)



Unweighted base: All GB adults who have tried and still use e-cigarettes 2015 (n=614); 2016 (n=667); 2017 (n=669); 2019 (n=854); 2020 (n=787)

In 2020, we asked vapers to describe their use of flavours and a higher proportion of ex-smokers who currently vape (74%) said they stick to the same flavours compared to dual users (61%).

## ASH YouGov 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>26</sup> ASH updated its annual survey with questions on e-cigarettes addressed to all respondents from 2012 onwards.<sup>27</sup> <sup>28</sup> <sup>29</sup> <sup>30</sup> <sup>31</sup> <sup>32</sup> <sup>33</sup> These surveys have all been carried out online by YouGov. All figures have been weighted and are representative of GB adults (aged 18+). 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>34</sup>

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.

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>35</sup> The Smoking Toolkit Study is probably the most extensive of these and tracks both smoking and e-cigarette use throughout the year in England.<sup>36</sup> The trends are similar in both surveys,<sup>37</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 2019. 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, 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 2020, 10% 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. In 2020 we also included questions about other novel nicotine products to assess public awareness. Voke, a medicinally licenced inhalator which resembles an e-cigarette was being used by less than 1% of the population with 8% aware of the product. Nicotine pouches (which includes brands such as Zin and Nordic Spirit) appear to have greater public awareness with 32% of people reporting they have heard of these products. However, use is still low at 1%.

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