Juul Labs

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

Juul Labs response to the Department of Health and Social Care Call for Evidence on youth vaping

Building regulatory compliance

What evidence is there about how and where children are accessing vapes?

The latest evidence shows that the majority of adolescents who purchase vapes themselves do so from physical shops - principally newsagents and corner shops, with smaller but still notable minorities using specialist vape stores, supermarkets and petrol stations. Preventing underage sales at physical retail stores is a key area for policymakers looking to reduce youth access to vapes. While relatively few adolescents purchase vapes online, this is also an area for improvement in age verification.

- **Most adolescents who buy e-cigarettes do so in shops.** The 2023 Action on Smoking and Health (ASH) survey on the use of vapes among young people in Great Britain found that 48% of young people (ages 11-17) who currently used e-cigarettes bought them from physical shops (e.g., newsagents, corner shops and off licences) [1]. The NHS 2021 Smoking, Drinking and Drug Use among Young People in England report found that 57% of 11-15-year olds who regularly used e-cigarettes purchased their vapes from shops, with newsagents the most common type of shop (41%), followed by specialist e-cigarette shops (27%), and supermarkets (13%) [2].

- **Retailers need more support to prevent underage sales.** In August 2022, data from local Trading Standards teams identified a 1,958% increase in the reporting of underage vape sales between 2021 and 2022 and a 1,367% increase in complaints reported to local Trading Standards services via Citizens Advice [3]. Compliance testing carried out by the Society of Chief Officers of Trading Standards in Scotland found that disposable vapes were being sold to under 18s [4]. These investigations are supported by a focus group study which found that Scottish 11–16-year-olds could easily access vapes from corner shops [5].

- **Online retailers provide a small, but still notable proportion of youth sales.** ASH's 2023 survey found that only 7.6% of young people who currently used e-cigarettes said they purchase vapes online [1], compared to 36% of adults who currently used e-cigarettes [6]. But a focus group study found that adolescents easily access websites that do not ask for age verification [5]. Any policy measures to prevent in-person sales must be combined with measures to prevent online sales to ensure a reduction in physical sales does not simply push young people to online retailers.

The ease with which young people can obtain e-cigarettes risks undermining the significant harm reduction potential in encouraging adults who smoke to switch. More needs to be done to enforce compliance with the law on the age of sale and to create safer retail environments. The Government's recent announcement that it will increase funding for Trading Standards to tackle underage sales and illicit vapes is a step in the right direction. Its activity should be focused on the sources of greatest access demonstrated by the data - prioritising mystery shopper checks on newsagents and corner shops is a good place to start. However, Trading Standards activity alone is unlikely to go far enough to address the issue and must be supplemented by other measures.

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

What evidence is there of the type of products children are accessing?

The Call for Evidence notes that the recent increase in youth vaping rates has coincided with a sharp rise in the sale of disposable vapes - those that are specifically designed to be thrown away after a single use. Many of these products - often with irresponsible packaging, names and flavours designed deliberately to appeal to young people - are now the strongly preferred choice for those underage using e-cigarettes. **ASH's 2023 survey found that 69% of young people who currently used e-cigarettes most frequently used disposable vapes - a dramatic increase from 7.7% in 2021 [1].** This sharp increase has happened concurrently with higher levels of youth use; in 2023 ASH found that 7.6% of 11-17-year-olds currently used e-cigarettes, compared to 3.2% in 2021. The same trends can be seen in the US. According to the US Food and Drug Administration and the Centre for Disease Control, in 2022, 57.2% of US high school students who used e-cigarettes used disposable products [7].

Concerningly, recent investigations suggest that many of these disposable products are not compliant with UK regulations. MHRA and Trading Standards investigations have found widespread non-compliance amongst some of the most popular disposable products, including breached limits on tank capacity, e-liquid volume, nicotine concentrations, and incorrect labelling of ingredients. MHRA has been actively investigating reports of non-compliance by the brand Elf Bar, including allegations that several of its products sold across the UK exceeded the legal nicotine limit for e-liquids by over 50% [8]. This is likely to have had a material impact on young people - ASH's 2023 survey found that Elf Bar is "by far the most popular" disposable brand on the market, with half of young people who used e-cigarettes citing this as a brand they have used [1].

More recent media investigations reported that many vapes used by schoolchildren have been found to contain harmful and illegal levels of metals including lead (2.4 times the stipulated safe exposure level), chromium (6.6 times the safe level) and nickel (9.6 times the safe level), as well as significant quantities of other harmful chemicals [9]. Most of the vapes tested by the Inter Scientific laboratory during the investigation had not undergone any form of testing or notification to MHRA to ensure they met UK regulatory requirements and should not be on the market.

Meanwhile, research conducted by the Chartered Trading Standards Institute (CTSI) has shown that Trading Standards professionals are more concerned about illicit vapes than any other product on the UK's high streets [10]. Trading Standards teams in the North East of England seized more than 1.4 tonnes of illegal disposable vapes in the last six months of 2022 [11], while an operation by the City of London Corporation's Trading Standards team seized £40,000 worth of illegal disposable vapes from a single retailer in February 2023 [12]. In a statement issued in March 2023, the CTSI said it is "overwhelmed" by the volume of non-compliant vapes being sold by retailers [13].

What evidence is there of effective measures to limit children's access to vapes?

The Government is right to consider measures to prevent those underage from accessing vapes. The recently announced 'illicit vapes enforcement squad' is a welcome development. The promised £3 million in new funding should be brought forward as soon as possible to provide Trading Standards with the additional resources it needs to tackle underage sales and the trade in illicit goods. The Government should also ensure this is a permanent increase to Trading Standards' central budget, ring-fenced specifically for e-cigarette enforcement activity, rather than a one-off uplift. This is vital for ensuring Trading Standards has the ongoing capacity to address the new and growing challenge

of illicit and underage vape sales. Recent media reports of young people using illegal vapes containing harmful metals and chemicals underline the importance of acting now to protect young people [9].

The Government has also committed to providing guidance to help build regulatory compliance. In doing so, it could look to guidance published in Northern Ireland to prevent underage sales [14]. This includes guidance on where in a shop to responsibly place vape products to minimise underage appeal (such as on top shelves and not near sweets) and advice on proportionate limits on sales volumes to help reduce the risk of social sourcing. More should also be done to communicate existing laws and standards.

However, these measures alone will not significantly reduce underage sales, and must be supplemented by other measures, many of which have been successfully deployed in other jurisdictions and for other age-restricted products:

- **Challenge 25:** The government should consider mandating a 'Challenge 25' policy for physical retailers to request proof of age of people who look under 25 and are attempting to buy vapes. Retailers in England have adopted this voluntarily for alcohol sales, where data from 2021 indicates 8% of young people (age 11-15) who drink alcohol purchase alcohol from shops - significantly lower than the 57% who purchase their vapes from shops [15]. Data from the Retail of Alcohol Standards Group evaluating the success of Challenge 25 (and its predecessor Challenge 21) showed that consumption of alcohol by 16-24-year-olds dropped by 24% between 2005 (when it was introduced) and 2014 [16]. Challenge 25 is already mandatory for retailers selling vapes, alcohol and tobacco in Scotland and this should be rolled out in the rest of the UK.

- **Mandatory age verification online:** Challenge 25 should be complemented by mandatory age verification processes for any online retailer, including a requirement for upfront age and identity verification before a sale is made online, for example requiring a photo ID to be scanned as well as a 'selfie' photograph to confirm identity which is validated by a third party.

- **Technological solutions:** Technological solutions such as automatic electronic ID scanning to verify the purchaser's age and ID validity and limit the number of products that can be purchased by a single individual to reduce the potential for social sourcing. There is evidence that such technological solutions can reduce transactions of e-cigarettes [17].

- **Mandatory retailer registration:** The Government should also consider introducing a mandatory system of registration for vaping retailers (as currently exists in Scotland [18]). The resulting database would support the provision of information on the law and guidance on best practice to all retailers. The registry would also be useful as a vehicle for regular awareness raising of compliance, allowing authorities to encourage behaviour change by reminding retailers of their obligations and the consequences of non-compliance. Nudges such as a warning that *'Trading Standards are operating in your local area'* could be a low-cost way of driving compliance.

- **Tougher penalties.** We welcome the Government's recent announcement that it will review the rules on issuing fines to shops selling vapes to those under 18 illegally. Trading Standards should be empowered to undertake more robust and immediate enforcement of legal requirements and impose harsher penalties for non-compliance, both at the store and consumer levels. To empower retailers to adopt Challenge 25

consistently, we would like to see tougher penalties for members of the public who abuse staff when asked for ID. To tackle proxy purchasing, which is illegal, adults should be fined for buying, or attempting to buy, tobacco products or nicotine-inhaling products on behalf of a person under the age of 18. This is currently in place in Northern Ireland where such a person can be issued a fixed penalty notice of £250, or a maximum fine of £5,000 if prosecuted and convicted by a court.

Are there any potential unintended consequences to the measures you have suggested?

The UK has a world-leading approach to tobacco harm reduction. Successive governments have rightly acknowledged the role that e-cigarettes can play in helping achieve the Smokefree 2030 ambition and the growing evidence that nicotine-containing e-cigarettes are effective at switching adult smokers away from cigarettes to a potentially less harmful alternative. In its 2021 vaping evidence update, Public Health England (now Office for Health Improvement and Disparities (OHID)) stated that nicotine vaping products "could play a crucial role in reducing the enormous health burden caused by cigarette smoking" [19]. The Department for Health and Social Care itself has said that "Some of the highest success rates of those trying to quit smoking are among people using an e-cigarette… alongside local Stop Smoking services, with up to 68% successfully quitting in 2020-21" [20].

It is therefore important that measures to limit underage individuals' access to vapes do not limit adults who smoke from accessing potentially less harmful products that can help move them away from cigarettes or hinder achieving the Smokefree 2030 ambition. We believe the measures proposed above are proportionate and, if implemented thoughtfully, will not restrict access for adults who smoke. Nevertheless, as the Government develops its plans more fully, it should take great care to ensure they are fully aligned with its Smokefree 2030 ambition.

Is there any other evidence on building regulatory compliance that the government should be aware of?

We welcome the Government's desire to work closely with the MHRA to remove non-compliant products from the UK market. In parallel, we believe that it should consider the effectiveness of existing product notification requirements set out in the *Tobacco and Related Products Regulations 2016*. We provide key evidence and suggested measures to address this in section 8.

Juul Labs

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

The appeal of vape products

What evidence is there about the appeal of vapes to children?

The evidence suggests that the growth in popularity of vapes - particularly disposables - amongst young people has in part been fueled by irresponsible branding practices, particularly flavour naming and packaging that are designed in a way that has obvious appeal to adolescents. The existence of colourful and cheap disposable vapes, named after well-known sweet brands such as Skittles and Chupa Chups and often sold in shops alongside similar-looking sweets [21 & 22], is highly irresponsible.

A study [5] of Scottish youths found that "disposable e-cigarettes were designed in a way to target youths and the brightly coloured devices and range of flavourings encouraged youths to want to try the products, particularly sweet flavourings." The young people surveyed described disposable e-cigarettes as "cool", "fashionable" and "enticing", and viewed them as a modern lifestyle "accessory". Re-usable tank models were perceived as being used by older adults. The CTSI has echoed these concerns, suggesting in a 2023 policy statement that there are "growing concerns from the public about the appeal of vapes as a lifestyle accessory for young people rather than what they were originally developed for, which was as a highly effective aid to support smokers to quit" [13].

This position has been echoed by England's Chief Medical Officer, Chris Whitty, who told the Health and Social Care Committee that young people are being targeted with "appalling" and "utterly unacceptable" marketing of vapes [23]. The Prime Minister himself told Sky News that marketing of vapes is often clearly "designed to appeal" to young people and that it is "not right" that colourful packaging and characters are used to sell them [24]. These practices undermine the opportunity to focus e-cigarettes on an audience of adult smokers, and in doing so reduce the potential for harm reduction for adult smokers as well as driving youth use.

What evidence is there about the appeal of vape flavours to children?

Sweet flavour variations have regularly been cited as a potential cause for the increased prevalence of vaping among young people. Some data suggest that the variety of sweet-tasting flavours, often named to appeal directly to young people, such as 'cotton candy', 'bubblegum' and 'lemon tart', may encourage young people to experiment with vaping:

- A BMJ study [5] suggested that "the variety of available flavours is one of the top reasons for experimentation with e-cigarettes among youths." It added that participants "discussed flavours predominately in relation to disposable e-cigarettes, often associating the colour of the product with its flavour."
- A review [25] of data from surveys and focus groups with adolescents (12–18 years old) suggested that flavoured e-cigarettes appeal partly due to their pleasant taste.

Importantly, any analysis of the appeal of flavours must also weigh the strong evidence that flavours can play an important role in helping adult smokers transition away from combustible cigarettes, and therefore the role they can play in helping reach the Government's Smokefree 2030 ambition:

- US research [26] has found that flavours play an important role in helping adults who smoke transition away from combustible cigarettes by helping to encourage people who smoke to try vaping products.
- Evidence also shows that adults who consume flavoured vaping products are more likely to subsequently fully transition off cigarettes and are less likely to relapse to smoking [27].
- Similarly, a study found that the use of fruit and other sweet-flavoured e-liquids was positively related to transitioning away from cigarettes among adults who smoked [28].
- A study found that 83% of adults who currently smoked said flavours were the main reason for trying vaping. The same study concluded that flavours play "a major role" in vaping initiation for adults who smoke and urged proportionate regulation that allows some flavour diversity [29].
- A study found that a ban on flavoured e-cigarettes would likely lead to an increase in the use of combustible cigarettes [30].

What evidence is there of effective measures to limit the appeal of vapes to children?

As a relatively recent phenomenon, the evidence of measures to restrict the appeal of vapes to young people is limited. That said, it is self-evident that branding with obvious appeal to young people serves no legitimate purpose for an age-restricted product.

The Government should explore measures to ban flavour-naming and packaging design elements that appeal to those who are underage, in line with recommendations made by Javed Khan's independent review into Smokefree 2030 policies [31]. This should include, but not be limited to, restrictions on cartoon, fantasy and fictional characters; sports references; colourful exaggerated graphics; confectionery, alcoholic drinks, energy drinks, and soft drinks; and imitating other brands or using other designs that may reasonably be considered to appeal to young people. This is an opportunity for the UK to diverge from EU-derived legislation (the *Tobacco and Related Products Regulations 2016*) to maintain its position as a world-leading regulatory system for e-cigarettes that champions tobacco harm reduction.

There is some precedent, including from other age-restricted and/or unhealthy products, for similar measures. With regards to gambling, the UK's Advertising Standards Authority (ASA) has explicitly designated adverts that include adolescent-oriented cartoon content or animated styles and characters similar to video games as "high-risk types of content" that should be avoided [32]. Gambling marketers in the UK must also be able to provide a detailed assessment of why they considered their advert would not appeal strongly to under-18s if the ASA asks for it, and the ASA provides extensive guidance on meeting regulatory requirements [33]. In New Zealand, the Advertising Standards Authority has ordered alcohol companies to change the packaging to remove resemblances to adolescent's cartoons [34]. And there are also several bans across Latin America on placing adolescent's cartoons on sugary breakfast cereal packaging [35].

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

The UK should learn from these as it considers introducing regulations on responsible vape product branding, including flavour naming. These new packaging and naming requirements should be included within the standard product notification process and enforced by a combination of the MHRA and Trading Standards.

Are there any potential unintended consequences to the measures you have suggested?

Importantly, any potential measures to address the appeal of vapes to young people must be proportionate to protect access for adult smokers who deserve an opportunity to switch to potentially less harmful alternatives. Harm reduction relies on alternatives to cigarettes being sufficiently appealing to adults who smoke.

We believe the measures set out above - to restrict naming and packaging design elements targeted at young people - will likely be effective in reducing youth appeal and underage use. However, we would caution against any measures to unduly restrict flavours themselves. As cited above, evidence shows that adult consumers of flavoured vaping products are more likely to subsequently fully transition off cigarettes, and are less likely to relapse to smoking, than those consuming non-flavoured vaping products. There is also evidence that banning flavours in vaping products can lead to increases in smoking combustible cigarettes [30]. Such an approach would be disproportionate and could inadvertently hinder the Government's Smokefree 2030 ambition.

Similarly, moving beyond our proposed packaging design restrictions to a form of plain packaging requirement is likely to be disproportionate, given the risk that limiting the visual differential between vaping products and cigarette packs reduces the likelihood of adults who smoke combustible cigarettes purchasing less harmful alternatives. ASH's headline data of adult e-cigarette use in 2023 states that "perceptions [around the relative harm of tobacco and e-cigarettes] are more inaccurate than at any point in the history of the surveys" [6]. Any measures that appear to equalise the harm of tobacco and e-cigarettes risk further increasing misperceptions and making achieving Smokefree 2030 more challenging.

Is there any other evidence on the appeal of vapes to children that the government should be aware of?

There are several other factors that have an impact on the appeal of vapes to young people, including social media and pricing. We provide evidence on these points in sections 3, 4 and 7. You can find full references to all the evidence presented in the attachment at the end of this section.

Juul Labs

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

Marketing and promotion of vape products

What evidence is there that vapes are being targeted specifically at children?

There is growing evidence that vapes are being marketed specifically at young people. Despite their age-restricted status, irresponsible players are sponsoring activities that appeal to young people, advertising in areas likely to be frequented by young people, or circumventing the existing ban on advertising in print, broadcast, online and other electronic media - including through the use of online influencers to promote vapes.

These types of activities have contributed to a growing awareness of vape advertising by young people. The 2023 ASH data found that there has been a significant growth in awareness of e-cigarette promotion between 2022 and 2023, with 53% of children aware of promotion in shops and 32% of promotions online in 2023 compared with 37% and 24% in 2022 respectively. It also found that only 20% of young people surveyed said they "don't see vapes being advertised", a substantial worsening from 31% of young people in 2022 [1]. Marketing is also proving effective; a 2021 research review by Cancer Research UK [36] found that:

- More than a third of young people (ages 16-19) believe that e-cigarette marketing made vaping seem either appealing or very appealing.
- Young people generally notice e-cigarette marketing more than adults across almost all advertising channels (including billboards and posters on public transport).
- Young people who have never smoked or vaped report noticing e-cigarette marketing more than adults who smoke across almost all channels.
- Around a third of young people believe vape marketing targets people who do not smoke.

This is concerning: while posing a small fraction of the risks of smoking, e-cigarettes are not risk-free and present specific health risks. It is vital that the irresponsible marketing and promotion of vapes do not undermine the significant harm reduction potential in encouraging adults who smoke to switch.

Juul Labs has an extensive set of company policies to ensure its brand and marketing activities are intended to appeal to adults who smoke, and limit appeal to those underage, as well as being fully compliant with regulation. This includes limiting the ways and channels in which products are advertised to ensure they appeal to adults who smoke only. But it is clear that there is not a consistent industry-wide approach.

What evidence is there of effective measures to limit the marketing and or promotion of vapes to children?

Juul Labs is supportive of measures that prevent those who are underage from being exposed to irresponsible messages whilst enabling targeted messages at adults who smoke. We fully support the existing ban on most types of advertising, and welcome steps to close loopholes currently being exploited by some irresponsible brands, particularly on social media (see Section 4). We welcome the Government's recent announcement that it will close

the regulatory loophole that allows the free distribution of vapes to under-18s. This is long overdue and will help to limit children's access to vapes - although it is important that in closing this loophole the Government ensures that adult smokers are still able to access free samples that can help them transition from combustible cigarettes to a potentially less harmful product.

Beyond this, there are a number of steps the Government could take to promote responsible marketing:

- **Ban on brand-sharing.** The Government could follow the example of tobacco and make brand-sharing between vaping products and other marketed commercial goods an offence: prohibit vaping products from either carrying another product's brand on a device or packaging or having the branding of a vaping product on any other products.
- **Clarify that paid online influencer marketing of vaping is banned under the *Tobacco and Related Products Regulations 2016's* restriction on advertising in online media**. ASA guidance indicates that paid social media placements fall under the TRPR restriction on advertising in online media [37]. The ASA has already enforced this standard on some paid promotions by influencers online [38], but the Government should put beyond all reasonable doubt that paid social media placements by influencers are banned; and that this covers both financial and material value payments, such as free vapes or other goods.
- **Restrict sponsorships.** Finally, the Government could do more to review and better enforce existing regulations on sponsorship of activities, events or individuals, for example by restricting the sponsorship of sports teams that can directly reach young people. This would have the dual benefit of helping limit the appeal of e-cigarettes to non-smokers as well as young people.

Are there any potential unintended consequences to the measures you have suggested?

Any measures to restrict vaping advertising must be proportionate and ensure they do not unduly restrict adults who smoke from accessing factual information about alternative products. We believe the measures suggested above are proportionate in preventing the marketing of vapes to young people, but they might also have some negative impact on appealing to adults who smoke.

To counter this, the Government should consider complementary measures to allow greater targeting specifically of adults who smoke. The Government's proposed Swap to Stop scheme is a laudable attempt to provide smokers with help to quit, and we support it. But action must also be taken to reverse the recent growth in inaccurate perceptions of the relative harm of vaping amongst adults who smoke. ASH's 2023 smokefree adult and youth survey results [1] found that 39% of adults who smoke believe vaping is as or equally harmful compared to smoking (a substantial increase from 33% in 2022, and just 15% in 2015 [39] and only around a third believe that vaping is less or a lot less harmful than smoking.

In particular, the Government should consider amending the current regulations so vapes can be promoted as less harmful products. Javed Khan's independent review of Smokefree 2030 policies recommended that "[adults who smoke] need to see more messages that switching to vapes is hugely beneficial to their health" [31]. We agree

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

and think this would be a useful step to counter increasing trends towards misunderstanding the relative risks of vaping among adults who smoke.

We also believe the Government should specifically allow direct information and promotions to age-verified adult smokers through digital channels (such as email and SMS). Another measure that could be considered is allowing physical and online retailers to provide switching messaging at the point of sale of cigarettes, directly targeting adults who smoke and minimising the risk of appealing to underage users.

There is also a strong case for the Government to fund a new nationwide, targeted media campaign aimed at adults who smoke. This approach is already broadly applicable in New Zealand and is supported by a range of organisations, including Cancer Research UK [36] and the Royal College of Physicians [40].

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

The role of social media

What evidence is there that social media influences children's behaviour relating to vapes?

Recent years have seen a number of worrying trends in children's exposure to online vaping content, particularly user-generated and influencer content on social media. Most social media platforms either have a blanket ban on content that promotes vaping products or restrict vaping-related content to under-18s. Nevertheless, vaping-related content that is not explicitly advertisement is prevalent and easy to access and includes content that glamorises the consumption of e-cigarettes, as well as content depicting use by celebrities and other influencers.

Non-age-restricted vape user-generated content with billions of views is prevalent on TikTok. Most of these videos portray vaping positively - a study showed that two-thirds of videos related to e-cigarettes on TikTok depicted vaping use positively, and the sample of 808 videos analysed had been viewed 1.5 billion times on the platform [41]. Although TikTok's guidelines explicitly prohibit users from "showing or promoting recreational drug use, or the trade of alcohol, tobacco products, and drugs", vaping is not specified and there are more than 16 billion views of videos with the hashtag "vape". Accounts with names such as "vaping_piotre", "master_vape" and "the_vaping_trucker" have more than 100k followers combined. Instagram explicitly bans the advertising of e-cigarettes but has no rules on showing vaping content.

There is also an issue with the effectiveness of age controls and assurance, even though most social media platforms have age restrictions. For example, Snapchat, TikTok and Instagram all require users to be at least 13 years old to create an account. However, according to Ofcom, 79% of 8 to 12-year-olds reported having their own profile on Snapchat and 60% reported having their own profile on TikTok, Instagram or Twitter. In addition, Ofcom also found that 32% of children aged 8 to 17 have a user age of 18+ [42]. This means very young children as well as teenagers could be exposed to vaping content intended for an adult audience.

As a result:

- The 2023 ASH survey found that around a third of young people reported being exposed to vaping content online. Of those who saw content online, the most common channels were social media platforms like TikTok (49%), YouTube (29%) and Instagram (28%) [1].
- A study concluded that over 600 e-cigarette brands collaborated with 55 of the most engaging influencers worldwide. According to this study, 75% of the influencers analysed did not use age-restriction notifications to prevent underage users from accessing vape-related content [43].

A growing body of evidence suggests a correlation between exposure to this content, the positive perception young people have of these products, and ultimately their decisions to consume the products. A study conducted on adolescents in the US found that greater exposure to vape social media content was associated with greater intentions to use vapes as well as more positive attitudes towards vaping products [44].

Juul Labs®

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

What evidence is there of effective measures to ensure vapes are not targeted to children through social media platforms?

As a relatively recent phenomenon, the evidence of effective measures to ensure vapes are not targeted at young people through social media platforms is limited. However, it is clear that online platforms have been ineffective in protecting young people from exposure to age-inappropriate content in significant numbers.

We believe social media companies should do far more to tackle content created by users who portray vaping as appealing to young people or promote other irresponsible behaviour. Social media platforms should explicitly ban content depicting those who are or appear to be underage using e-cigarettes or content made by adults that glamourise e-cigarettes. They should also clarify and reinforce that e-cigarettes are age-restricted products. To enforce this, social media platforms should take down depictions of underage use of e-cigarettes, content that glamourises vaping, e-cigarette content that appeals to those who are underage, as well as generally restricting access to content about e-cigarettes to those underage.

In doing so, social media platforms could learn from a scheme in the gambling industry that addresses age assurance concerns by committing that all social media adverts must be targeted at consumers aged 25 and over unless the website in question proves they can be precisely targeted at over-18s [45]. Platforms could take a similar approach by ensuring no one under the age of 25 - rather than just 18 - is exposed to vaping content, for example by restricting access to content with hashtags such as “vape” and “vaping”.

More fundamentally, the Online Safety Bill offers a near-term opportunity to ensure social media companies get this right. We believe the Government should include content related to e-cigarettes (or indeed all age-restricted products), as a category of Priority content that is harmful to young people – or failing that for Ofcom to include such material as non-designated harmful content in its Codes of Practice. We have engaged with the Government, Parliament and Ofcom on these issues, including submitting evidence to Ofcom on online safety regulation and the Public Bill Committee on the Online Safety Bill.

We also think there needs to be a particular focus on influencers who use vapes in their content unpaid, and therefore are not caught by rules banning paid-for e-cigarette advertising online (see Section 3). Ofcom should highlight the importance of tackling vaping content created by influencers or other individuals who have large social media followings that could make vaping appealing to those underage. Influencers should never be allowed to promote e-cigarettes to young people online.

In addition, the Government and regulators must reinforce existing rules. The Office for Health Improvement & Disparities (OHID) has said the UK needs to “substantially strengthen” the enforcement or regulations to prevent the promotion of e-cigarettes in social media [46]. OHID cited a University of Stirling report reviewing vaping product marketing, which pointed out that young people’s awareness of e-cigarette content on social media and online websites remained high (above 40%) between 2017 and 2019, despite this being a prohibited channel for advertising [47].

To do this, the ASA should clarify and enforce that manufacturers' and retailers' owned social media profiles are the only online channels that can be used, and that this must be limited to factual information.

The impact of vapes on the environment

What evidence is there of the impact of disposable vapes on the natural environment when they are discarded?

There has been a dramatic growth in the use of disposable products in the last two years. At the end of 2022, disposable vapes were estimated to have expanded their value share of the e-cigarette market to 60% [48]. This share is likely to grow in the future.

Their growth in market share over reusable alternatives is creating significant environmental concerns, with growing evidence of their adverse impact on the natural environment. The evidence shows that disposable vapes are creating a problem with plastic, electronic and hazardous chemical waste at scale.

- A 2022 investigation by Material Focus and the Bureau of Investigative Journalism identified that 1.3 million disposable vapes were being thrown away every week in the UK. It suggested that this has led to over 155,000 tonnes of electrical waste being thrown away every year and 527 million electrical items being hoarded in UK homes [49]. These figures are likely to have increased substantially since this investigation, in line with the growth in market share of disposable products.
- A 2022 study found that the incorrect disposal of disposable vapes could release plastic, electronic and hazardous chemical waste into the environment, calling it "highly concerning on an ecological level." It also made a comparison between disposable vapes and coffee capsules, saying both are "intentionally designed to be convenient and single-use, and both are (largely) non-biodegradable and poorly recyclable" [50].
- The Institute of Environmental Management and Assessment has suggested that discarding disposable vapes in normal bins "presents a multitude of risks to workers who come into contact with [them] through the waste and recycling stream. The biggest risk is arguably from the lithium battery in the vape." It added that nicotine is classified as a biocide which means it can be harmful to living organisms [51].
- The NGO Keep Scotland Beautiful has said disposable vapes "put a real strain on the environment, adding to plastic pollution, risks to wildlife, and contamination as the contents are a mixture of hazardous vaping liquid and a lithium battery. When littered these can often end up near watercourses, down drains, or be smashed open by traffic" [52].
- The NGO Wildlife and Countryside Link has said disposable vapes are increasingly being found littered in the streets and in the natural environment, with negative impacts on communities, pets and wildlife. It added that they are "fundamentally flawed in their design and are inherently unsustainable products" [53].

There is also evidence that some vape manufacturers - including but not exclusively disposables - are not compliant with basic regulations.

- In July 2022, Sky News reported that two popular disposable vape brands were not registered with the mandatory Waste Electrical and Electronic Equipment (WEEE) regulations and were therefore not meeting the minimum producer requirements such as providing clear information on reuse and recycling [54].

- An investigation by Material Focus and the Financial Times, the results of which were published in March 2023, found that more than 90% of "the most significant vape and vape juice producers in the UK" had failed to register with the WEEE regulations - again, despite being obligated to [55].

The Government has accepted that the WEEE regulations are not currently well-equipped to address vaping products, noting that they "were developed at a time when the vaping industry was in its infancy" [56].

If any impact has been identified how does that compare with the impacts of reusable vaping products?

Disposable (i.e., non-rechargeable) vapes contribute to the increasing amount of electrical and battery waste in the UK. This is predictable; not only do disposable vapes make up a large segment of the market, but they are also specifically designed to be thrown away after a single use - which can range from a few days to two weeks depending on the frequency of use. A rechargeable device usually lasts at least one year with proper charging and care. The JUUL device, for example, comes standard with a two-year warranty.

Keep Scotland Beautiful has said that the best option to limit the environmental impact of vapes would be "for vapers to use reusable devices which can be recharged and refilled" [52]. This stands to reason, and the Government should consider how best to ensure the environmental impact of disposables is understood by consumers.

What evidence is there of effective measures to reduce the environmental impact of disposable vapes?

The rapid growth of the disposables segment of the market globally has meant that there are limited real-world examples of effective measures to prevent the adverse environmental impact of vapes. However, it is clear the category needs to do more.

The industry is already acting. Juul Labs has created a take-back programme for our products at the end of their usable life. Totally Wicked has installed vape disposal bins in 150 of its stores across the UK where consumers can dispose of the vapes regardless of the brand [57]. But this alone is not enough given the presence of irresponsible actors in the industry, and policymakers need to consider taking action.

There are a range of potential tools available to policymakers. Firstly, the Government must enforce existing regulations, including the WEEE scheme, and crack down on non-compliance. It should also expedite the publication of the results of the reviews into the WEEE scheme and batteries regulations and consult on new measures as soon as possible. This could include clarifying whether current UK battery regulations, which mandate that supermarkets offer free collection ('take-back') of waste or used batteries if they sell or supply 32 kilograms or more of portable

batteries per year, apply to batteries contained in e-cigarettes (which we believe they should) [58]. We also urge the UK Government to look carefully at the results of the ongoing review of the environmental impact of disposable vapes by the Scottish Government to help inform any potential policy measures [59].

Lessons can also be learned from successful approaches in other FMCG product categories. This could include regulatory interventions in product standards and information, for example mandating that packaging includes information about recycling, or promotion of take-back schemes, such as those seen in the cosmetics industry [60].

In addition, we have seen from other sectors that levies or consumer charges can effectively change consumer behaviour. For example, the Government introduced a plastic carrier bag charge in supermarkets in 2015. Data published in 2022 showed that the measure had led to a 97% reduction in the use of plastic carrier bags [61].

Are there any potential unintended consequences to the measures you have suggested?

Measures should focus on tackling irresponsible manufacturers and raising standards across the board to ensure adult smokers can access a wide range of potentially less harmful alternatives.

Is there any other evidence on the impact of the environmental harm caused by disposable or other vaping related products that the government should be aware of?

Lithium is a key component of rechargeable batteries - manufacturing of which is ramping up in order to meet the increasing demand for electric vehicles. Throwing away vapes, which contain lithium-ion batteries, wastes valuable resources. Measures such as addressing regulatory non-compliance and encouraging users to choose rechargeable devices could help address this issue.

Juul Labs

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

Understanding the vape market

What evidence is there on whether price makes vapes appealing to children?

The low price point of certain vapes - particularly disposables - helps to aid their accessibility to young people. These products generally range from £2.99 to £6 per item, and it is notable that prices at the cheapest end of the market have decreased substantially at the same time as youth use rates of disposables have increased dramatically [62].

What evidence is there of the impact on demand for vapes from children and adults if the price changes?

There is some evidence to indicate that children are sensitive to e-cigarette price changes and that increases in price could potentially slow down youth use:

- A review of e-cigarette econometrics literature identified a number of studies that reported that increased e-cigarette price is associated with decreased e-cigarette purchases, use prevalence, and use frequency amongst adolescents [63].
- A 2023 study found that e-cigarette price increases were associated with a significant reduction in the number of young people using e-cigarettes in the last 30 days, as well as the intensity of use. A $1 price increase was found to lower past 30-day use rates by 12.2% [64].
- A 2018 study found that a 10% increase in e-cigarette disposable prices was associated with a reduction in the number of days vaping among 11-18-year-olds who use e-cigarettes by approximately 9.7% [65].

This evidence suggests that the recommendation made in Javed Khan's independent review of Smokefree 2030 policies to reduce VAT on vaping devices [31] does not seem appropriate in the current context of rising use prevalence among young people. These studies also indicate that policies increasing e-cigarette prices could reduce young people's use of e-cigarettes.

However, studies have also found that increasing e-cigarette prices across the category can create significant unintended consequences for smokefree ambitions by disincentivising adult smokers from switching. This evidence has shown that blanket price increases for the vaping category as a whole, and subsequent decreases in vape purchases, are associated with an increase in sales and purchases of combustible cigarettes:

- A review of e-cigarette econometrics literature found that a 10% increase in e-cigarette price is associated with an 11.5% *decrease* in e-cigarette sales/purchases and a 1.1% *increase* in cigarette sales/purchases, as well as decreased e-cigarette use prevalence, and increased smoking prevalence, propensity, and number of cigarettes smoked [63].
- Analysis of data from six EU markets in 2016 found that in static models every 10% increase in e-cigarette prices was associated with a decrease in sales of approximately 8.2%, and that price elasticity for e-cigarette demand is higher than for combustible cigarettes. It concluded that taxation is a measure that could be used

'to deter e-cigarette initiation [among adults who have never used e-cigarettes] while concomitant greater tax increases on regular cigarettes could incentivise switching' by adults who smoke [66].

- A study found that a national e-cigarette tax in the US of $1.65 per millilitre of vaping liquid would raise the proportion of adults who smoke cigarettes daily by approximately one percentage point, translating to 2.5 million extra adults who smoke daily [67].

The evidence demonstrates that **interventions to increase e-cigarette prices across all device types are blunt instruments, such that using price increases as a lever to address youth use could have the unintended consequence of damaging harm reduction objectives**. If it is considering potential interventions on price to address underage use of e-cigarettes, the Government should take great care to target any interventions as much as possible to avoid unintended consequences. Potential mechanisms for tightening interventions on price could include:

- **Placing a levy on devices**. This would disproportionately increase the cost of disposable products that are overwhelmingly used by children, young people and people who do not smoke while having a more limited impact on the price differential between cigarettes and refillable and pod-based e-cigarettes favoured by adult smokers. This measure would have the added benefits of combating environmental concerns around the disposal of batteries in devices, aiding enforcement efforts, and providing funding for increased regulatory oversight of the category.

- **'Zero-rating' medicinal vapes from VAT and/or any future potential levy** as the medicinal pathway becomes more developed. This would make them as affordable and differentiated from cigarettes as possible for those who could benefit most from switching.

These measures could be supported by:

- **Simultaneous tax increases on combustibles** to maintain (or even increase) the price differential between cigarettes and vapes. We welcomed the Government's Spring Budget announcement of additional duties on cigarettes but we believe there is room to go further to ensure interventions on the price of vapes do not disincentivise adult smokers from switching.

- **Creating better public messaging about the potential financial savings from switching** from cigarettes to vapes. A focus on financial savings could feature in promotional material for the 'Swap to Stop' initiative as well as other public health messaging related to smoking.

Interventions on price are not straightforward. Any measures under consideration in this area will have clear trade-offs, including potentially incorrectly signalling to adult smokers that vaping products are as harmful to users as combustible cigarettes. Any potential policy interventions must be assessed carefully - including through detailed consultation - to ascertain whether they can be appropriately targeted and to minimise the risk of harm to the Smokefree 2030 ambition.

What evidence is there on the price range of vape products and the price differential between different product types? For example conventional, disposable, flavoured varieties, and non-nicotine products.

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

Disposable products generally range from £2.99 to £6 per item [62]. Prices of disposables are significantly lower than other types of vaping devices: tank-based refillable vaping devices range from £20 and upwards for a starter kit, while pod-based refillable vaping devices cost from £7 to £10 upfront with additional pods costing around £5.

The Government should also note the implications of the significant compliance issues uncovered by recent MHRA and Trading Standards investigations. These found that a number of products on the market, including a large proportion of Elf Bar products, substantially breached the legal limit of 2 millilitres of vape liquid per vape. Some were found to contain as much as 3 millilitres of vape liquid, a 50% increase on the legal limit [68]. To put this into perspective, a consumer purchasing an illegal £3 vape with 3 millilitres of vape liquid effectively pays a rate of £2 for an equivalent legal vape, providing users with a large discount on top of already low prices.

Illegal nicotine concentrations, another issue uncovered by recent regulatory investigations into a number of popular disposable products, create related concerns by giving users a greater 'hit per puff'. We firmly believe that the Government should take action to ensure product compliance is addressed before looking at any other pricing interventions. We have made recommendations to this effect in Section 8.

What evidence is there on the average amount of liquid in disposable products and does this differ for flavoured, non-flavoured or non-nicotine types?

As highlighted above, recent MHRA and Trading Standards investigations have found that a number of disposable products on the market substantially breach the legal limit of 2 millilitres of vape liquid per vape set out in the *Tobacco and Related Products Regulations 2016* [67]. A recent investigation by LBC also found products advertised as containing 3500 puffs - highly likely to contain significantly more than 2 millilitres of vape liquid - on sale on Amazon to UK consumers. The products were falsely advertised as being nicotine-free, but lab tests confirmed the vapes in question contained nicotine [69].

What evidence is there on the average nicotine content or strength of disposables and does this differ for flavoured and non-flavoured types?

The Chartered Trading Standards Institute has reported that local Trading Standards teams routinely seize illegal vaping devices that exceed the regulations on nicotine strength set out in the *Tobacco and Related Products Regulations 2016* [12]. While there is a growing body of evidence to show that e-cigarettes are less harmful than combustible cigarettes, they are not risk-free, and the Government should take action to ensure young people and non-smokers are not exposed to illegal nicotine strength levels.

What evidence is there on the market share of different types of vaping products?

The most up-to-date 2023 data from ASH shows that 69% of all young people (age 11-17) who use e-cigarettes most frequently use a disposable device, up from 52% last year, and just 7.7% in 2021 [1].

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

ASH is yet to publish corresponding 2023 data for adults, but 2022 data from the Smoking Toolkit Study found that from January 2021 to April 2022, there was an 18-fold increase in the percentage of vapers aged 18 or over who used disposables, rising from 1.2 to 22.2%. It also showed that as of April 2022 over 50% of 18-year-olds and over 30% of 25-year-olds who use e-cigarettes used disposables [70]. Given trends seen elsewhere, these rates are highly likely to have increased over the last year. Indeed, at the end of 2022, disposable vapes were estimated to have a 60% value share of the e-cigarette market, with closed-system products falling below 20% [48].

What evidence is there of methods that estimate the cigarette stick equivalent to vape quantities? This could include methods based on the number of puffs, the average amount consumed per day, the nicotine content, or other possible methods.

Although methods to estimate cigarette stick equivalents or puffs per device are notoriously difficult - not least given the significant variations in how users consume vaping products - it is important to note the significant disparities in puff claims made by products already on the market. Disposable vapes that claim up to 3500 puffs per product create significant concerns around product standards and compliance with the regulations.

Additional policy issues

Improving product standards

The important role that e-cigarettes can play in advancing tobacco harm reduction and helping the UK reach its Smokefree 2030 ambition is threatened by the presence of low-quality products that do not reflect best practice, and illegal products that do not comply with existing product regulations. This has been highlighted by recent MHRA and Trading Standards investigations and media reports which have found widespread non-compliance with regulations on nicotine limits, tank sizes and ingredients [68 & 10]. It is vital that more is done to prevent non-compliant products from being on the UK market to better protect young people from the unknown risks that these products pose. We welcome the Government's efforts to get non-compliant products removed from the market but we believe more needs to be done.

The Government should consider working with the MHRA to strengthen the product notification process to ensure higher product standards. Consumers must be able to trust that the products they buy are compliant with requirements set by the Government and that the contents of the product reflect the labelling. At Juul Labs, the quality of our products is a key priority. Juul Labs maintains a quality system that is compliant with ISO 13485 for Medical Devices. We conduct extensive testing on our products - the e-liquid and vapour contents and the hardware and battery components - and maintain closely monitored quality controls and standards. This helps us ensure we meet all regulatory requirements. We are also currently sponsoring and developing a publicly available specification (PAS 8855) with the British Standards Institute (BSI) and industry experts. PAS 8855 will provide manufacturers with best practice to supply quality vaping products.

However, it is clear from recent MHRA and Trading Standards investigations that not all manufacturers meet these same high standards. We believe that greater scrutiny is required to ensure confidence in e-cigarettes sold in the UK, and ultimately the safety of UK consumers - in other words a shift from a purely notification regime, towards one with a stronger review of products before they enter the market. To achieve this, we believe the MHRA should:

- **Be given the power to develop enhanced guidance to clearly set out what information manufacturers should submit with notifications**, including specific directions on what constitutes sufficient chemical and toxicological testing of emissions.
- **Be equipped to undertake greater scrutiny of data submitted in notifications,** including through:
    - Full scientific assessments of the material and data provided to ensure that products conform with legal requirements.
    - Audits on product samples of a significant proportion of product notifications, to check the MHRA's scientific testing data aligns with the data included in the notification and conforms to regulatory requirements.
- **Include a specific examination of the proposed packaging and naming of submitted products to prevent underage appeal** (*aligning with policy recommendations made in Section 2, where we recommended exploring measures to ban flavour-naming and packaging design elements that appeal to those who are*

underage)**.** This would align the pre-market review process with the Government's key objective of reducing youth vaping rates.

- **More closely scrutinise updates to existing notifications** to ensure that substantial modifications are properly recorded as such and are not submitted as minor modifications or clerical corrections.

These new powers will require changes to the *Tobacco and Related Products Regulations 2016*. In addition, the MHRA will require additional funding to ensure it has the capacity to enforce a more robust notification process. **We believe the product notification fee should increase substantially to allow appropriate resources to be deployed by MHRA and in recognition of its expanded mandate**. This could be delivered by a more substantial upfront fee for each initial product notification, an annual 'maintenance' fee per published product to cover the costs of enhanced scrutiny and penalties for non-compliance.

In support of these measures, the Government **could consider revising the MHRA's priorities**. Effective regulation of the e-cigarette market should be added to MHRA's organisational objectives, and it should be required to submit **a yearly report on the market to DHSC** to help the Secretary of State meet existing regulatory monitoring requirements. In addition, **the National Audit Office should undertake a review of the MHRA's progress** after 24 months.

This focus on regulatory levers could be supplemented by considering additional measures for raising product standards. The Government could, for example, consider setting specific conditions for manufacturers looking to participate in the Government's new 'Swap to Stop' initiative, potentially set in conjunction with the MHRA. It could also work with the industry to push for higher technical standards, potentially with the input of standards-setting bodies, to influence product standards development.

Juul Labs

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

Juul Labs UK submission to the Call for Evidence on youth vaping - references

1. **Action on Smoking and Health.** (2023) *Use of e-cigarettes (vapes) among young people in Great Britain.* https://ash.org.uk/uploads/Use-of-vapes-among-young-people-GB-2023.pdf?v=1686042690

2. **NHS Digital.** (2022) *Smoking, Drinking and Drug Use among Young People in England, 2021. Part 4: Electronic cigarette use (vaping)* https://digital.nhs.uk/data-and-information/publications/statistical/smoking-drinking-and-drug-use-among-young-people-in-england/2021/part-4-electronic-cigarette-use-vaping

3. **Chartered Trading Standards Institute.** (2022) *CTSI voices concerns around possible links between underage vaping and risks of Child Sexual Exploitation.* https://www.tradingstandards.uk/news-policy/news-room/2022/ctsi-voices-concerns-around-possible-links-between-underage-vaping-and-risks-of-child-sexual-exploitation/

4. **Chartered Trading Standards Institute.** (2022) *Trading Standards highlight risks from disposable vaping products in Scotland.* https://www.tradingstandards.uk/news-policy/news-room/2022/ctsi-voices-concerns-around-possible-links-between-underage-vaping-and-risks-of-child-sexual-exploitation/

5. **Smith MJ**, MacKintosh AM, Ford A, et al. (2023) *Youth's engagement and perceptions of disposable e-cigarettes: a UK focus group study. British Medical Journal Open*. 13: e068466. doi: http://dx.doi.org/10.1136/bmjopen-2022-068466

6. **Action on Smoking and Health.** (2023) *Headline results ASH Smokefree GB adults and youth survey results 2023.* https://ash.org.uk/uploads/Headline-results-ASH-Smokefree-GB-adults-and-youth-survey-results-2023.pdf?v=1684400380

7. **Cooper M**, Park-Lee E, Ren C, Cornelius M, Jamal A, Cullen KA. (2022) Notes from the Field: E-cigarette Use Among Middle and High School Students — United States. *Morbidity Mortality Weekly Report.* 71, 1283–1285. DOI: http://dx.doi.org/10.15585/mmwr.mm7140a3

8. **O'Connor M.** (6 February 2023) Teenagers are being sold banned vaping devices containing up to 3,500 puffs, investigation shows. *The Daily Mail.* https://www.dailymail.co.uk/news/article-11716721/Teenagers-sold-banned-vaping-devices-containing-3-500-puffs-investigation-shows.html

9. **Pym H**, Watkinson L. (23 May 2023) Vaping: High lead and nickel found in illegal vapes. *BBC News.* https://www.bbc.co.uk/news/health-65614078

10. **Chartered Trading Standards Institute.** (2023) *Illicit vapes top list of high street threats, say Trading Standards experts.* https://www.tradingstandards.uk/news-policy/news-room/2023/illicit-vapes-top-list-of-high-street-threats-say-trading-standards-experts/

11. **Chartered Trading Standards Institute.** (2022) *1.4 tonnes of illegal vapes seized by North East Trading Standards teams.* https://www.tradingstandards.uk/news-policy/news-room/2022/14-tonnes-of-illegal-vapes-seized-by-north-east-trading-standards-teams/

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB

12. **Chartered Trading Standards Institute.** (2023) *£40,000 worth of illegal vapes taken off City streets set to be destroyed.* https://www.tradingstandards.uk/news-policy/news-room/2023/40-000-worth-of-illegal-vapes-taken-off-city-streets-set-to-be-destroyed/

13. **Chartered Trading Standards Institute.** (2023) *CTSI statement on current issues relating to the sale of vapes in the UK.* https://www.tradingstandards.uk/media/3178633/ctsi-statement-on-vapes-march-2023.pdf

14. **NI Business Info.** (n.d.) *Age-restricted sales: Selling tobacco and nicotine inhaling products.* https://www.nibusinessinfo.co.uk/content/selling-tobacco-and-nicotine-inhaling-products

15. **NHS Digital.** (2022) *Smoking, Drinking and Drug Use among Young People in England, 2021. Part 6: Young people who drink alcohol.* https://digital.nhs.uk/data-and-information/publications/statistical/smoking-drinking-and-drug-use-among-young-people-in-england/2021/part-6-young-people-who-drink-alcohol#where-pupils-get-alcohol

16. **Retail of Alcohol Standards Group.** (2015), *Rising to the challenge: A report into the application and impact of Challenge 25.* https://wsta.co.uk/wp-content/uploads/2019/11/Challenge25Report2014.pdf

17. **Chen T,** Prakash S, Zion A, Joselow J, Shiffman S, Kasmer P. (2021) Improving Retailer Compliance for Tobacco Purchases: Pilot Study Findings. *American Journal of Health Behavior*. 45 (3), 576-587. doi: https://doi.org/10.5993/AJHB.45.3.11

18. **Tobacco Register Scotland.** (n.d.) *Register of Tobacco and Nicotine Vapour Product Retailers.* https://www.tobaccoregisterscotland.org/

19. **Public Health England.** (2021) *Vaping in England: 2021 evidence update summary.* https://www.gov.uk/government/publications/vaping-in-england-evidence-update-february-2021/vaping-in-england-2021-evidence-update-summary

20. **Department of Health and Social Care.** (2021) *E-cigarettes could be prescribed on the NHS in world first.* https://www.gov.uk/government/news/e-cigarettes-could-be-prescribed-on-the-nhs-in-world-first

21. **Matthews S.** (2023) Rishi Sunak admits he's scared his daughters, 12 and 10, will get hooked on vapes because of the 'ridiculous' marketing tactics used to lure kids in. *Daily Mail.* https://www.dailymail.co.uk/health/article-12123779/Sunak-voices-concerns-vape-advertising-targeted-kids.html

22. **Glancy J.** (2023) Generation Vape: how children got hooked on e-cigarettes. *The Times*. https://www.thetimes.co.uk/article/generation-vape-how-schoolchildren-got-hooked-on-e-cigarettes-98fdskqdd

23. **UK Parliament - House of Commons**. (2023) Health and Social Care Committee: Oral evidence: Prevention in health and social care, HC 965. https://committees.parliament.uk/oralevidence/12702/pdf/

24. **Culbertson A.** (2023) Sunak hits out at vape companies for appealing to children - and reveals he is looking forward to Katy Perry performing at King's coronation. *Sky News.* https://news.sky.com/story/sunak-hits-out-at-vape-companies-for-appealing-to-children-and-reveals-he-is-looking-forward-to-katy-perry-performing-at-kings-coronation-12859747

25. **Goldenson NI**, Leventhal AM, Simpson KA, Barrington-Trimis JL. (2019) A Review of the Use and Appeal of Flavored Electronic Cigarettes. *Current Addiction Report.* 6(2): 98-113. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6709993/

26. **Russell C**, McKeganey N, Dickson T, Nides M. (2018) Changing patterns of first e-cigarette flavor used and current flavors used by 20,836 adult frequent e-cigarette users in the USA. *Harm Reduction Journal.* 15(33). https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-018-0238-6#citeas

27. **Friedman S**, Xu S. (2020) Associations of Flavored e-Cigarette Uptake With Subsequent Smoking Initiation and Cessation. *JAMA Network Open*. 3 (6): e203826. doi: https://10.1001/jamanetworkopen.2020.3826

28. **Li L**, Borland R, Cummings K, Fong, G, Gravely S, Smith D, Goniewicz, M, O'Connor R, Thompson M, McNeill A. (2021) How Does the Use of Flavored Nicotine Vaping Products Relate to Progression Toward Quitting Smoking? Findings From the 2016 and 2018 ITC 4CV Surveys. *Nicotine & Tobacco Research*. 23 (9). 1490–1497. doi: https://doi.org/10.1093/ntr/ntab033

29. **Gendall P**, Hoek J. (2021) Role of flavours in vaping uptake and cessation among New Zealand smokers and non-smokers: a cross-sectional study. *BMJ Tobacco Control.* 30. 108-110. https://tobaccocontrol.bmj.com/content/30/1/108

30. **Buckell J**, Marti J, Sindelar JL. (2019) Should flavours be banned in cigarettes and e-cigarettes? Evidence on adult smokers and recent quitters from a discrete choice experiment. *BMJ Tobacco Control*. 28. 168-175. https://tobaccocontrol.bmj.com/content/28/2/168

31. **Khan J.** (2022) The Khan review: Making smoking obsolete: Independent review into smokefree 2030 policies. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1081366/khan-review-making-smoking-obsolete.pdf

32. **Advertising Standards Authority.** (n.d.) *Gambling and lotteries advertising: protecting under-18s. Advertising Guidance (non-broadcast and broadcast).* https://www.asa.org.uk/static/d9dd9d06-00e7-4630-81d460b598c7d976/Protecting-children-and-young-people-gambling-guidance-2022.pdf

33. **Advertising Standards Authority.** (2023) *Gambling, betting and gaming: Appeal to children.* https://www.asa.org.uk/advice-online/betting-and-gaming-appeal-to-children.html#:~:text=Ads%20should%20not%20appeal%20strongly%20to%20under%2D18s,-One%20way%20in&text=From%201%20October%202022%2C%20CAP,stricter%20than%20the%20previous%20rule

34. **New Zealand Advertising Standards Authority.** (2022) *Complaint 22/097 Greenhill Beverages, Greenhill Seltzers, Packaging.* https://cdn.asa.co.nz/backend/documents/2022/06/01/22097.pdf

35. **Pagán A.** (2022) Why cartoon cereal mascots are banned in Latin America. *The Takeout.* https://thetakeout.com/cereal-box-cartoon-mascots-banned-in-chile-mexico-1848421193

36. **Cancer Research UK.** (2021) *E-cigarette marketing in the UK. Evidence from adult and youth studies and policy compliance studies.* https://www.cancerresearchuk.org/sites/default/files/e-cigarette_marketing_in_the_uk_fullreport_march_2021.pdf

37. **Advertising Standards Authority.** (2018) *Electronic cigarettes: Media prohibitions.* https://www.asa.org.uk/advice-online/electronic-cigarettes-media-prohibitions.html

38. **Advertising Standards Authority.** (2023) *ASA Ruling on HQD Tech UK.* https://www.asa.org.uk/rulings/hqd-tech-uk-a22-1163022-hqd-tech-uk.html

39. **Action on Smoking and Health.** (2022) *Use of e-cigarettes (vapes) among adults in Great Britain.* https://ash.org.uk/uploads/Use-of-e-cigarettes-vapes-among-adults-in-Great-Britain-2022.pdf?v=1661865959

40. **Royal College of Physicians.** (2021) *Smoking and health 2021: A coming of age for tobacco control?* https://www.rcplondon.ac.uk/projects/outputs/smoking-and-health-2021-coming-age-tobacco-control

41. **Sun T,** Lim CC, Chung J, Cheng B, Davidson L, Tisdale C, Leung J, Gartner CE, Connor J, Hall WD, Chan G. (2023) Vaping on TikTok: a systematic thematic analysis. *BMJ Tobacco Control.* 32:251-254. https://tobaccocontrol.bmj.com/content/32/2/251

42. **Ofcom.** (2022) *A third of children have false social media age of 18+.* https://www.ofcom.org.uk/news-centre/2022/a-third-of-children-have-false-social-media-age-of-18

43. **Vassey J**, Valente T, Barker J, Stanton C, Laestadius L, Boley Cruz T, Unger JB. (2022) E-cigarette brands and social media influencers on Instagram: a social network analysis. BMJ Tobacco Control. https://tobaccocontrol.bmj.com/content/early/2022/02/06/tobaccocontrol-2021-057053

44. **Vogel E,** Ramo D, Rubinstein M, Delucchi K, Darrow S, Costello C, Prochaska J. (2021) Effects of Social Media on Adolescents' Willingness and Intention to Use E-Cigarettes: An Experimental Investigation, *Nicotine & Tobacco Research.* 23(4): 694–701. https://academic.oup.com/ntr/article-abstract/23/4/694/5698118?redirectedFrom=fulltext

45. **Betting and Gaming Council.** (n.d.) Safer gambling initiatives - advertising and marketing. https://bettingandgamingcouncil.com/safer-gambling-initiatives/advertising-marketing

46. **Office for Health Improvement and Disparities.** (2022) *Nicotine vaping in England: 2022 evidence update summary.* https://www.gov.uk/government/publications/nicotine-vaping-in-england-2022-evidence-update/nicotine-vaping-in-england-2022-evidence-update-summary

47. **Stead M**, Hitchman SC, Angus K, Aleyan S, Ford A, MacKintosh AM, Purves R, Mitchell D, Hammond D, Fong GT, Driezen P, Reid J, Craig L, Chung-Hall J & Cummings KM. (2021) E-cigarette marketing in the UK: evidence from adult and youth surveys and policy compliance studies. *Cancer Research UK.* https://www.cancerresearchuk.org/sites/default/files/e-cigarette_marketing_in_the_uk_fullreport_march_2021.pdf

48. **Nott G.** (2022) Tobacco & vaping 2022: Disposable vapes drive stunning growth. *The Grocer.* https://www.thegrocer.co.uk/top-products/tobacco-and-vaping-2022-disposable-vapes-drive-stunning-growth/674498.article

49. **Material Focus**, Bureau of Investigative Journalism. (2022) *One million single use vapes thrown away every week contributing to the growing e-waste challenge in the UK.* https://www.materialfocus.org.uk/press-releases/one-million-single-use-vapes-thrown-away-every-week-contributing-to-the-growing-e-waste-challenge-in-the-uk/

50. **Pourchez J**, Mercier C, Forest V. (2022) From smoking to vaping: a new environmental threat? *The Lancet Respiratory Medicine.* 10: 7, E63-E64, DOI: https://doi.org/10.1016/S2213-2600(22)00187-4

51. **Institute of Environmental Management and Assessment.** (2022) *Disposable vapes – a challenge to the recycling sector.* https://www.iema.net/articles/disposable-vapes-a-challenge-to-the-recycling-sector

52. **Young L.** (2022) 'Disposable' vapes and the damage they cause. *Keep Scotland Beautiful.* https://www.keepscotlandbeautiful.org/blogs/disposable-vapes-and-the-damage-they-cause/

53. **Wildlife and Countryside Link.** (2023) *The Environmental case for Banning Disposable Vapes.* https://www.wcl.org.uk/docs/assets/uploads/WCL_Disposable_Vapes_Briefing.Mar23.pdf

54. **Clarke T,** Chapman M. (2022) Millions of disposable vapes containing valuable metal ending up in landfill. *Sky News.* https://news.sky.com/story/millions-of-disposable-vapes-containing-valuable-metal-ending-up-in-landfill-12652211

55. **Williams C.** (2023) Vape firms failing to comply with WEEE regulations. *Material Recycling World.* https://www.mrw.co.uk/news/vape-firms-failing-to-comply-with-weee-regulations-07-03-2023/

56. **Department for Environment, Food and Rural Affairs.** (2023) *Consultation outcome: Commonly littered single-use plastic items: call for evidence.* https://www.gov.uk/government/consultations/commonly-littered-single-use-plastic-items-call-for-evidence/outcome/summary-of-responses-and-government-response

57. **Totally Wicked.** (2023) *Totally Wicked Launch Nationwide Vape Recycling Programme*. https://www.totallywicked-eliquid.co.uk/vaped/totally-wicked-launch-vape-recycling-pogramme/

58. **Department for Environment, Food and Rural Affairs.** (n.d) *Battery waste: retailer and distributor responsibilities.* https://www.gov.uk/battery-waste-supplier-reponsibilities#:~:text=You%20must%20offer%20free%20collection,from%20where%20you%20supply%20batteries.

59. **Scotland Energy and Climate Change Directorate.** (2023) *Environmental impact of single-use vapes.* https://www.gov.scot/news/environmental-impact-of-single-use-vapes/

60. **The Cosmetic, Toiletry and Perfumery Association.** (2023) *CTPA Position Paper on Take-back Schemes for Small Cosmetic Product Packaging.* https://www.ctpa.org.uk/news/ctpa-position-paper-on-take-back-schemes-for-small-cosmetic-product-packaging-6732

61. **Department for Environment, Food and Rural Affairs.** (2022) *10p bag charge turns the tide on plastic waste.* https://www.gov.uk/government/news/10p-bag-charge-turns-the-tide-on-plastic-waste

62. **Action on Smoking and Health.** (2023) ASH response to vaping consultation calls on government to urgently implement four high impact interventions. https://ash.org.uk/media-centre/news/press-releases/ash-response-to-vaping-consultation-calls-on-government-to-urgently-implement-four-high-impact-interventions

63. **Selya A,** Foxon F, Chandra S and Nealer E. (2023) Meta-analysis of e-cigarette price elasticity [version 1; peer review: awaiting peer review]. *F1000Research*. 12(121) https://doi.org/10.12688/f1000research.129233.1

64. **Diaz M**, Kierstead E, Khatib B, Schillo B, Tauras J. (2023) Investigating the Impact of E-Cigarette Price and Tax on E-Cigarette Use Behavior. *American Journal of Preventive Medicine.* 64(6): 797-804. ISSN: 0749-3797. https://doi.org/10.1016/j.amepre.2023.01.015

65. **Pesko MF**, Huang J, Johnston L, Chaloupka F. (2018) E-cigarette Price Sensitivity Among Middle and High School Students: Evidence from Monitoring the Future. *Addiction.* 113(5): 896–906. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5895490/

66. **Stoklosa M**, Drope J, Chaloupka FJ. (2016) Prices and E-Cigarette Demand: Evidence From the European Union. *Nicotine & Tobacco Research.* 18(10): 1973-1980. https://pubmed.ncbi.nlm.nih.gov/27085083/

67. **Pesko MF**, Courtemanche CJ, Catherine Maclean J. (2020) The effects of traditional cigarette and e-cigarette tax rates on adult tobacco product use. *Journal of Risk and Uncertainty.* 60(3): 229-258. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7880200/

68. **Kelly T**, Marsden R, Duffin C, O'Connor M. (2023) UK's top-selling vape is stripped from shelves over illegal level of nicotine: Company admits 'inadvertently' breaking the law after it emerges products exceed limit. *The Daily Mail.* https://www.dailymail.co.uk/news/article-11716505/Company-admits-inadvertently-breaking-law-emerges-vapes-exceed-limit.html

69. **Knight F.** (2023) Vapes falsely advertised as nicotine-free sold online without age checks, LBC investigation finds. *LBC.* https://www.lbc.co.uk/news/vapes-falesly-advertised-nicotine-free-sold-online/

70. **Tattan-Birch H**, Jackson SE, Kock L, Dockrell M, Brown J. (2022) Rapid growth in disposable e-cigarette vaping among young adults in Great Britain from 2021 to 2022: a repeat cross-sectional survey. *Addiction.* 118(2): 382– 386. https://doi.org/10.1111/add.16044

Juul Labs®

JUUL Labs UK Ltd.
7th Floor, 50 Broadway
London, UK SW1H 0DB