

Tobacco and vapes: evidence to support legislation

Yorkshire Cancer Research response, November 2025

Vape and nicotine flavours and ingredients

Flavours in vapes and nicotine products

Please provide evidence of any flavours, ingredients or substances within vapes or nicotine products that could pose health risks and that we should consider when developing regulations. For example, risks associated with regulators, binders and sweeteners.

There are currently a variety of vaping product flavours using different ingredients on the UK market. Current regulations prohibit substances which are known to be carcinogenic, toxic or mutagenic.¹ The addition of vitamins, caffeine and other stimulants is also banned.¹

Evidence shows that vaping is less harmful than smoking and switching completely can improve health substantially, when compared with continuing to smoke. The 2022 Office for Health Improvement and Disparities evidence review describes that levels of exposure to toxicants including tobacco specific nitrosamines and volatile organic compounds were significantly reduced in people who formerly smoked that had switched to vaping products with different flavours.²

The evidence review finds limited evidence that biomarkers of exposure to toxicants may differ slightly between different flavours. The review cites evidence from cell and animal studies, which suggests that buttery or creamy flavourings or flavourings such as cinnamaldehyde have the potential to alter cellular responses. However, the review finds that exposure to these flavourings in vaping products had less potential to alter cellular responses than tobacco smoke.² There are significant methodological differences between studies with variation in the method, dose and duration of exposure and e-liquid composition which may not reflect human vaping behaviour.² Further research to address current limitations in the existing evidence is therefore required.

When conclusive evidence shows that a specific flavour, ingredient or substance in a vaping product is unsafe, Government should be enabled to act quickly to prohibit it.

Government should also apply powers to regulate the promotion of vaping flavours to address cases where products are particularly appealing towards children and young people. This can be delivered in practice by granting the MHRA powers to remove products under a new registration scheme. The MHRA could then remove products which were not compliant with product requirements including packaging, features and content, including products which are deliberately targeted towards children.³ This approach balances public safety with targeted measures to reduce the appeal of specific flavours to children. It is also less likely than broader restrictions on vaping flavours to have unintended consequences on adult users who use vaping products as a stop smoking tool.

Please provide evidence of effective strategies and methods to limit the flavours in vapes and nicotine products.

Any proposed restriction on the flavours in vapes must not have a significant effect on their use and availability as a stop smoking tool for those who are using them to quit smoking. Limiting flavours may have a detrimental effect on people using them for smoking cessation. Other proposed regulations in the Tobacco and Vapes Bill, such as the powers to restrict the packaging and display of vaping products, may better target use in young people and people who do not smoke.

Research has started to evaluate the impact of restrictions to limit flavours in vaping products in other countries. In the United States, several individual states have restricted the sale of flavoured vaping products. Some US studies have found that flavour restrictions may be having a detrimental impact on smoking rates, particularly among young adults.

For example, a 2024 study used survey data from 376,963 individuals aged between 18 and 29 in the US to evaluate the impact of restrictions on sales of flavoured vaping products.⁴ This found that restrictions were associated with statistically significant reductions of daily vaping, and statistically significant increases in daily cigarette smoking, when compared with states which did not implement restrictions.⁴

A separate 2024 study matched flavour restrictions implemented in US states and localities with vaping product sales data in these areas.⁵ The study found that flavour restrictions reduced flavoured vaping product sales but also increased cigarette sales across age groups.⁵ The study finds that for every 1 less 0.7 ml pod sold due to flavour restrictions, there were an additional 12 cigarettes sold.⁵

Whilst further research is needed to fully determine the impact of flavour restrictions on vaping prevalence, the existing evidence does not clearly support limiting flavours of vaping products. Restrictions on vape flavours may increase smoking prevalence.

When conclusive evidence is identified on the harm of a specific flavour, ingredient or substance, Government must update existing regulations at pace. There must be sufficient capacity within the regulatory system to quickly and comprehensively evaluate the health risks of vaping product content. This can ensure that ingredients proven to be harmful are quickly banned in order to minimise potential harm.

Please provide evidence on the presence of heavy metals in vape liquids and nicotine products and any associated risks. (Optional, maximum 500 words)

The 2022 OHID review states that conclusions cannot be confidently made on the level of exposure to metals from vaping products.² The review identifies inconsistent results of studies which evaluate the level of metal exposure among vapers compared to people who smoke and do not vape or smoke. It also notes that having a history of smoking will greatly impact upon the levels of metals present among people who switched from smoking to vaping.

Nicotine

Please provide evidence on whether the limits on nicotine levels in nicotine vapes should be re-assessed, or if the current maximum limit of 20mg per ml is sufficient.

The current levels of nicotine permitted in UK vape liquids appear appropriate to ensure vaping products maintain their effectiveness as a smoking cessation tool, whilst limiting the appeal to young people.

The current levels of nicotine appear to be effective for smoking cessation given that vaping products are the most effective and popular smoking cessation method.⁶ Increasing the levels of nicotine could therefore risk unnecessarily increasing risks to children without being necessary to support people who smoke to quit. This is crucial given the use of nicotine during adolescence can disrupt the development of brain circuits that control attention, learning, and susceptibility to addiction.⁷

Tobacco flavours and accessories

Please provide evidence on the effectiveness of banning characterising flavours for cigarettes and hand-rolled tobacco on reducing tobacco consumption.

Characterising flavours (with the exception of menthol) in factory made (FM) and roll your own (RYO) cigarettes were banned in the EU and the UK in May 2017. The ban on menthol cigarettes came into force in May 2020.

Evidence from other countries suggests that banning characterising flavours can be effective. For example, in the Netherlands menthol cigarette smoking decreased significantly after the EU menthol ban in 2020, from 8% to 4% and quit attempts amongst those who previously smoked menthol were higher than non-menthol smokers (67% compared to 50%).⁸

There is also evidence that for some groups in the UK the ban has been effective, but that further regulation is required to increase the effectiveness of the ban. Despite the ban on menthol cigarettes in 2020, one million adults in Great Britain continued to smoke menthol cigarettes in 2023.⁹ Between 2020 and 2023 the prevalence of menthol cigarette smoking did decrease but only slightly and non-significantly, from 16% to 14%. This decrease was more pronounced amongst younger people, dropping from 26% to 19% in 18- to 24-year-olds in the same period. This can be considered a key success of the ban given that menthol is associated with establishing smoking among young people and reducing the likelihood of quitting.^{10, 11} Moreover, in the same period, the prevalence of menthol cigarette smoking declined significantly in Wales from 23% to 8%.⁹

Despite successes in some groups, there is a need for further action to tackle continued menthol smoking. Evidence indicates that continued use is not due to any rise in illicit purchases, but that people continue to access flavourings through licit routes such as flavoured accessories.⁹ Between 2020 and 2023, there was a substantial increase in RYO cigarette use amongst menthol-cigarette smokers.¹² In the same period, the proportion of RYO and FM use amongst non-menthol cigarette smokers remained constant. This is likely due to the ease of adding flavoured accessories to RYO cigarettes, through flavoured filters

or paper. This suggests that the continued availability of flavoured accessories has in part undermined the effectiveness of the ban on characteristic flavours in the UK in reducing tobacco consumption. The Wales example potentially illustrates further the need to curb the tobacco industry's ability to promote other flavoured products. Where they did not push these products as hard, the ban was able to have a greater impact.

Please provide evidence on the use of ingredients that give cigarettes or hand-rolled tobacco a particular flavour or sensation.

Three years after the ban on cigarettes with a characterising menthol flavour, a million adults continued to smoke menthol cigarettes.⁹ Evidence suggests that this is not due to illicit access but that people are continuing to access menthol cigarettes through legal routes.⁹ This is through flavoured accessories and the continued availability of cigarettes perceived as mentholated.

The tobacco industry has been able to sidestep characterising flavour bans through introducing innovative additives.¹³ For example, by creating products which are not officially mentholated but contain synthetic coolants which produce a cooling effect similar to that of menthol. In the UK, people report continued access to products which they perceive to be mentholated, despite not being labelled as such.

There is therefore justification for considering an extension of the ban on flavours from characterising flavours to all additives that have flavour properties and/or evoke sensory effects.

Please provide evidence on how the use of flavours for other tobacco products (such as heated tobacco, shisha or chewing tobacco) impacts tobacco consumption.

Despite common misconceptions and often false narratives from tobacco companies that other tobacco products such as shisha, heated tobacco, cigars, cigarillos, pipe tobacco and smokeless tobacco are less harmful than cigarettes, the evidence is clear that there is no safe way to consume tobacco.¹⁴⁻¹⁶ These other tobacco products are often just as harmful, if not more so, than cigarettes and are often linked to cancer.¹⁷⁻²⁴

It is widely understood that flavours play a key role in increasing the appeal of tobacco and this is not limited to cigarettes. The presence of flavours also increases and maintains appeal for other tobacco products such as cigarillos, shisha and smokeless tobacco.²⁵ This is especially true among younger age groups.

By promoting flavoured versions of other tobacco products, tobacco companies have essentially been able to bypass flavour bans, enabling companies to continue to push harmful tobacco consumption habits. This is of particular concern given the appeal of flavours amongst younger groups. Indeed, the prevalence of other tobacco products (this includes cigars, cigarillos, pipe tobacco and waterpipe tobacco) is rising amongst young people in the UK.²⁶

For example, tobacco companies have developed 'cigarillos' which are classed as cigars but are designed to strongly resemble cigarettes and are clearly aimed at cigarette smokers.²⁷

Due to the flavour ban not applying to tobacco products other than RYO and FM cigarettes, cigarillos can be sold with flavour capsules. This essentially maintains the availability of flavoured tobacco to people who smoke. There is evidence from the USA that the continued availability of flavoured options through cigarillos has a negative impact on tobacco cessation among young people.²⁸

Please provide evidence on how the use of flavoured tobacco accessories (for example crush balls and flavoured filters) impacts tobacco consumption.

Flavoured tobacco, by reducing the harsh taste tobacco, appeals to young people, makes it easier to start smoking and harder to quit.²⁹⁻³¹ In recognition of this, the UK has banned flavoured cigarettes. However, there is evidence that a large proportion of people who smoke continue to smoke flavoured cigarettes, through completely legal routes.⁹ It is therefore important that loopholes are closed to prevent access to flavoured cigarettes completely.

One such loophole which tobacco companies have exploited is the exemption of tobacco accessories such as filters and rolling papers from the flavour ban. The continued availability of flavoured accessories has undermined the UK ban on flavoured cigarettes. This position is supported by the rise in RYO cigarette use amongst menthol cigarette smokers.¹² This rise indicates that rather than quitting smoking, menthol cigarette smokers have been able to continue to smoke flavoured tobacco through adding flavoured accessories to RYO cigarettes.

Additionally, many flavour accessories are marketed towards young people.³² This is especially concerning given that flavours are a key motivator to smoke within this group.

Whilst tobacco accessories do not contain tobacco or nicotine directly, they can only be used in conjunction with tobacco products and thus their continued availability effectively maintains the availability of flavoured tobacco. The flavour ban should be therefore extended to cover tobacco accessories.

Vapes

Size and shape

If you have any evidence relating to the size and shape of vapes, please include it here.

Evidence shows that vaping products are far less harmful than smoking. Switching completely from smoking to vaping is likely to convey substantial health benefits over continued smoking.^{2, 33, 34} Vaping products are also the most popular and effective smoking cessation tool.⁶ Yorkshire Cancer Research estimates suggest that there are nearly over 4,650 additional quitters each year in Yorkshire because of vaping products.³⁵ However, vaping is not completely risk free and therefore should not be used by people who do not smoke and are not at risk of smoking. Therefore, it is important that measures balance maintaining the availability and acceptability of vaping products and reducing their appeal to young people.

It is important that the shape of vaping products is regulated to minimise appeal to children and young people. There are certain shaped vapes which are clearly designed to appeal to young people. For example, there are vaping products which are shaped as cartoon characters, toys, sweets and makeup. Any regulation of the shape of vaping products should consider which shapes are necessary to maintain effectiveness for smoking cessation as well as limiting appeal to children and young people. There is some evidence, for example, that vaping products which resemble cigarettes could aid a smoking cessation attempt for some smokers.³⁶

Digital screens

Please provide evidence on the role of digital screens on vapes. For example, whether there may be benefits or harms, and whether there is a need to place limits on the use of digital screens.

There is clear rationale for placing limits on the use of digital screens on vaping products.

There is no evidence to suggest that digital screens on vaping products increases the effectiveness of vaping products as a smoking cessation tool. Indeed, the fact that vaping products have been highly effective as a smoking cessation tool before the advent of digital screens on vaping products indicates that digital screens are not necessary for effective smoking cessation. Yet there is a strong possibility that digital screens could increase the appeal of vaping products to young people. For example, some digital screens on vaping products enable users to play games in a blatant attempt to make them more appealing to children.³⁷

Requirement to be child resistant

Please provide evidence on the effectiveness of child resistant measures on vapes.

Child-resistant and tamper-evidence containers have been required for electronic cigarettes (or vapes) under UK since 2016.³⁸ Child resistant measures are vital for reducing the risk of poisoning or harm exposure to e-liquid for very young children and babies. However, child or tamper resistant packaging is very unlikely to prevent older children from vaping. This group will be able to get past child resistant measures easily. Indeed, between 2014 and 2023, vaping prevalence between 11-15 years olds in England increased by 117%.³⁹

It is also important to recognise that making packaging too complicated could risk disadvantaging adult smokers with disabilities.

Heated tobacco devices

Size and shape

If you have any evidence relating to the size and shape of heated tobacco devices, please include it here.

There are certain shapes of vaping product which have become available on the market which are clearly designed to appeal to children and young people. Regulation must prevent designs of heated tobacco products that may appeal to a younger audience, by regulating the shape and size of heated tobacco products.

Digital screens

Please provide evidence on the role of digital screens on heated tobacco devices. For example, whether there may be benefits or harms, and whether there is a need to place limits on the use of digital screens.

In recent years, “smart vapes” featuring touch screens have emerged on the global vaping product market.³⁷ In October 2024, the US Food and Drug Administration (FDA) issued a warning to online retailers and a manufacturer for selling or distributing these products, with the FDA describing how these may target children and young people.⁴⁰

Digital elements of vaping products including touch screens, interactive displays and games have the potential to increase the appeal of vaping products to children, copying the design of smartphone and gaming devices. If heated tobacco devices were to adopt similar innovations, then this would risk creating a new route for youth engagement with tobacco products. In this context, it is important that a ban on digital screens is placed on heated tobacco devices before the tobacco industry can innovate new, digitally enabled products that copy the design of smart vapes.

Requirement to be child resistant

Please provide evidence on child resistant measures on heated tobacco devices and whether there would be a benefit to mandating specific child resistant measures.

Regulations to reduce accessibility to children should also be applied to all heated tobacco products. Since 2016, child-resistant and tamper-evidence containers have been required for vaping products, a clear recognition of the risks of accidental ingestion of nicotine.³⁸ However, child-resistant measures do not appear to be required for heated tobacco products under current regulations. This represents a significant gap in regulation. Heated tobacco sticks contain nicotine and processed tobacco, meaning that accidental ingestion exposes children to nicotine poisoning but also the harmful toxicants present in tobacco, including tobacco specific nitrosamines.

The powers granted by the Tobacco and Vapes Bill therefore provides an important opportunity to strengthen child safety standards for heated tobacco products.

Any other evidence

Please provide evidence on other elements of a heated tobacco device that the government should consider regulating and why.

Heated tobacco devices are a form of tobacco product and therefore should be subject to the same regulatory standards as these products.

Current regulations for heated tobacco devices require packaging to carry a health warning. However, packaging may include company branding, reflecting an inconsistency in existing regulations between different tobacco products. In May 2016, the Standardised Packaging of Tobacco Products Regulations was implemented. This applies to factory made cigarettes and hand rolling tobacco. Requirements include that there is no specific branding, that packaging must be in dark brown and must not contain any indication that the product is less harmful than other products.

This inconsistency enables heated tobacco products to maintain distinctive branding, potentially increasing their appeal as a harm reduction alternative to cigarettes for people who smoke. However, there is not enough independent, high quality evidence to demonstrate that heated tobacco devices are a viable harm reduction alternative, with a 2022 Cochrane Review highlighting that much of the existing research into heated tobacco products is funded by the tobacco industry.¹⁹

Vaping products are far less harmful than smoking and switching completely to vapes can improve health substantially when compared to continuing to smoke. Vaping products are also the most popular stop smoking tool in England. It has been estimated that there are up to 50,700 additional quitters a year in England and nearly over 4,650 a year in Yorkshire because of vaping products.⁴¹

Aligning standardised packaging regulations across all tobacco products including heated tobacco devices would ensure consistency and prevent promotional benefits which could enhance their appeal. This decision would reflect the fact that there is insufficient evidence to support heated tobacco devices as a harm reduction method and that vaping products are far less harmful than smoking and the most popular and effective smoking cessation tool.

Licensing

Licensing scheme objectives

Do you agree or disagree with the proposed licensing scheme objectives?

- **Agree**

Please explain your answer.

The proposed licensing scheme is an important method of ensuring that the sale of these products is confined to reputable retailers. It will align their sale with other products such as alcohol, for which retailers are already required to have a license.

Yorkshire Cancer Research supports the proposed licensing scheme objectives. The objective of protecting public health is critical to ensuring that the scheme drives reductions in smoking prevalence.

Evidence from other countries which have a public health objective as part of their tobacco licensing schemes supports the adoption of this principle domestically. Countries including Finland and Hungary have adopted licensing schemes for public health purposes.⁴² In Hungary, tobacco retail licensing was established in 2013 for the purpose of preventing

adolescent smoking.⁴² Survey data shows that since the policy's implementation, the prevalence of current cigarette smoking among respondents aged between 13 and 15 declined from 27.0% in 2012 to 12.0% in 2020.⁴³

The impact of alcohol licensing evidence is varied, with some studies reporting no consistent association between licensing decisions and health outcomes.⁴⁴ However, other studies make a different conclusion, with a 2016 study finding that there were stronger reductions in alcohol-related hospital admissions in English local authorities with more intensive alcohol licensing enforcement.⁴⁵

The impact of a public health objective for alcohol licensing in Scotland does provide evidence to support the establishment of this objective for the new retail licensing scheme. Under existing regulations in England and Wales, public health is not one of the four alcohol licensing objectives.⁴⁶ However, Scotland has an additional objective of "the protection and promotion of public health".⁴⁶ Research with public health teams in Scotland found that whilst there are challenges in the application of this objective, it has provided legal authority to support public health teams.⁴⁷ Applying a similar principle to retail licensing scheme outlined in the Tobacco and Vapes Bill could therefore strengthen the position of public health teams in the licensing process.

Impact of a licensing scheme

Please provide evidence of potential public health benefits as a result of implementing a licensing scheme. In your answer, you may want to consider any relevant evidence from the implementation of existing licensing schemes for other products and relevant international examples.

Evidence suggests that implementing a licencing scheme could benefit public health, especially if the licencing scheme includes a public health objective. For example, Hungary's licencing scheme which includes a strong public health objective reduced the number of retailers (by 85%) and rate of sales to underage smokers (by 27.6%).⁴⁸

Alcohol licensing evidence is mixed. Some studies report no clear link between licensing decisions and health outcomes, while others find that local licensing measures can improve public health, for instance, by reducing alcohol-related hospital admissions.^{44, 45}

Nevertheless, public health experts consistently suggest that including a public health objective in licensing frameworks would help advance local health goals.⁴⁷

Product registration

Please provide evidence on the effectiveness or ineffectiveness of the current notification system for nicotine vaping products.

The current notification scheme for vaping products is undertaken by the MHRA. Manufacturers must show that the product meets requirements including that the nicotine strength is no more than 20mg/ml, does not contain certain ingredients including caffeine and taurine and meets minimum labelling requirements. However, the scheme does not inspect or test the products themselves, nor does it evaluate their branding or design.

It would be useful if a mandatory and prominent statement could be included on all vaping products that undergo the MHRA notification process, indicating these products are intended as a stop smoking tool. This could support a change in public perception and understanding so vaping products are most commonly seen as a tool for stopping smoking, rather than a lifestyle device.

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