

UK GOVERNMENT



BAN ALL E-CIGARETTE FLAVORS

BAN DISPOSABLE E-CIGARETTE IMPORTS

BAN E-CIGS AS CONSUMER PRODUCTS

ENFORCE MEDICAL THERAPEUTIC TESTING OF ALL DEVICES
BEFORE IMPORT IS ALLOWED

REVEAL TRUE E-CIG USE STATISTICS AND RELAPSE RATES

OHID 'QUIT' DEFINITION '4 WEEKS WITHOUT A CIGARETTE' IS
DECEPTIVE – RELAPSE RATE OVER 75% @ 6 MONTHS LATER

ADMIT E-CIGS LEAD TO DUAL OR POLY USE

ADMIT E-CIGS ARE TARGETTED AT KIDS AND YOUTH ADDICTION

How much nicotine is in a cigarette compared to a vape?

Sarah Marsh :: 24/6/2023



📷 E-cigarettes differ in levels of nicotine depending on the brand. Photograph: AleksandrYu/Getty Images/iStockphoto

Many people are still unsure how e-cigarettes compare with smoking in terms of nicotine – we break it down

The emergence of e-cigarettes in the UK has caused no small amount of controversy. While it has been hailed as an effective tool for quitting by smokers, there have been repeated warnings over a swathe of young people taking up vaping.

But how vapes compare to smoking in terms of nicotine is still a mystery to some.

Generally, a smoker absorbs between 1 milligram and 2mg of nicotine from a single cigarette. Although there is between 8mg and 20mg of nicotine, only a fraction is actually inhaled – generally thought to be about a 10th. Various factors alter this – the strength of the filter, each individual person and how much is lost in the smoke – but this amount is a general rule of thumb.

An e-cigarette, much like the regular variety, has differing levels of nicotine depending on the brand.

The Tobacco Products Directive, which came into force in the UK in May 2017, restricts vapes to 2 millilitres of e-liquid with a strength of 20mg per millilitre or under in any single product.



Disposable vapes cause fires and cost taxpayer, English and Welsh councils say

Some of the most popular vapes on the market are advertised as coming in nicotine strengths of 0mg, 10mg and 20mg/ml, so a 2ml vape typically contains 0, 20mg or 40mg of nicotine, and allows for between 600 and 800 puffs.

A 20mg/ml vape, with 40mg of nicotine, is therefore the equivalent of smoking one or two packs of 20 cigarettes.

But when a vape is illegal, it may contain a lot more e-liquid, and the strength per millilitre could be far higher than allowed. This means it offers thousands of puffs and is the equivalent of hundreds of cigarettes.

It's generally recommended that someone who smokes Marlboro Red or other regular straight cigarettes, which give 1.2mg of nicotine or 24mg per 20 pack, would select a vape that offers 20mg of nicotine.

Ultra-light cigarettes such as Silk Cut contain approximately 0.4mg of nicotine in each cigarette, or 8mg of nicotine per pack, a quarter of that of a vape.

Millions of illegal vapes seized in UK in three years, data shows

Sarah Marsh :: 24/6/2023



📷 Illicit vapes have been found to contain high levels of lead, nickel and chromium, as well as nicotine in excess of UK regulations. Photograph: Yui Mok/PA

Experts warn of 'tsunami' of illicit e-cigarettes which could contain harmful ingredients

Millions of illegal and potentially harmful vapes have been seized by trading standards in the last three years, data shows, with experts warning this is the "tip of the iceberg" and a "tsunami" of products is flooding into the UK.

Freedom of information requests to 125 local authorities revealed that more than two and a half million illicit e-cigarettes were collected since the beginning of 2020.

Figures show that 1,352,063 were seized by trading standards at Hillingdon borough council in west London alone. The council area includes Heathrow airport, where thousands of unlawful vapes are arriving.

The e-cigarettes are not-compliant with UK legal regulations and could have higher nicotine concentration levels, contain banned ingredients or have oversized tanks for nicotine liquid. Previous analysis found illicit vapes to contain high levels of lead, nickel and chromium.

Kate Pike, the lead officer at the Chartered Trading Standards Institute, warned that the figures are likely to be the “tip of the iceberg” in terms of how many non-compliant vapes are being sold in UK shops.

She said: “I get calls from colleagues at the port almost every day – it feels like there is a tsunami. They are mainly coming from China.”

Doctors have called for an outright ban on disposable vapes – which come in bright colours and a variety of flavours – to reduce their popularity among young people as the long-term impact remains unknown.

There is rising concern over youth vaping in Britain, with the latest survey by Action on [Smoking](#) and Health (Ash) showing a rise in recent years. In 2022, 7% of 11- to 17-year-olds surveyed said they used vapes, compared with 3.3% in 2021.

Pike said non-compliant vapes were particularly popular with underage consumers – because they were cheap and could be bought in places that were less likely to check ID – and that research showed a third of products sold in UK shops were likely to be illegal.

“We don’t need sniffer dogs to find these products as they are all on shelves in high-street shops, in full view of the public,” Pike said. “There is a significant number of illegal products on the market, which does not help when we are trying to support the public health response, which is to ensure the products are much safer than tobacco for smokers looking to quit.

“The main concern is that young people are getting their hands on these products ... We do not want children or adults getting addicted to something at all like this,” she said.

Pike said that illegal vapes often did not have the right warnings or information on their packaging. “We know that legal compliant vapes pose a fraction of the risk of smoking but we do not know what the risk is from illegal vapes,” she said.

The vaping industry is also calling for stronger enforcement of regulations and for illegal vaping products to be treated as seriously as counterfeit cigarettes.

Dan Marchant, the director of the retailer Vape Club, said illicit vape products “have the potential to be dangerous”. He said they could be spotted by how many puffs they advertise, as anything offering more than 500-700 has usually “not been through the appropriate testing and safety measures”.

Phil Jenkins, a senior London Trading Standards officer who oversaw the seizure of 1m illegal vapes at Heathrow last year, said they came in on commercial flights as standard cargo.

“They are declared as atomisers on the paperwork but when they come through we can see in the packaging they will have a battery warning and say they are vapes.”

Jenkins said businesses were factoring in that some vapes would be intercepted, so would over-order. He said officials had confiscated about 6 tonnes of illegal vapes this week, and so the FoI figures for Hillingdon were already out of date.

“They are not hidden or smuggled in but brought in openly, and people pay import duties. There is nothing illegal about transporting goods across borders, but they are illegal to sell,” said Jenkins.

Kent county council seized 329,276 illicit vapes in 2022 and has seized 49,528 in 2023 so far. Oliver Jewell, the council's principal trading standards officer, said e-cigarette devices "play a legitimate part in the efforts to reduce smoking prevalence figures".

He added: "Disposable e-cigarettes grew rapidly in popularity throughout 2022 and can be a highly profitable commodity for retailers, which in turn leads to some seeking a competitive edge by stocking illegal products."

In Kent, trading standards officers are tackling the problem by visiting retailers to "provide advice and remove illegal products from the market while also ensuring those retailers have measures in place to prevent sales to young people".

Data shows that 28 councils spent £9,000 testing vape products over the last three years. Earlier in the year, the government announced an "illicit vapes enforcement squad", led by trading standards. Ministers said it would be backed by £3m in funding and would conduct test purchases and remove banned products from shops and at borders.

The government has also launched a call for evidence to "identify opportunities to reduce the number of children accessing and using vapes".

A Department of Health and Social Care spokesperson said: "It is illegal to sell nicotine vapes to children and we are concerned about the recent rises in youth vaping, particularly because of the unknown long-term harms.

"We are taking bold action to end this practice through the £3m illicit vapes enforcement squad, which will tackle products imported and traded illicitly, remove illegal products from the market that don't comply with our regulations, and tackle underage sales to children.

"We have also launched a call for evidence to identify opportunities to reduce the number of children accessing and using vape products and explore where the government can go further. The call for evidence has now closed, and the government will be considering a range of options based on the evidence provided."

Disposable vapes should be banned to protect children, UK paediatricians say

Rachel Hall :: 6/6/2023



📷 The number of young people vaping reached one in five 15-year-olds in 2021, according to NHS Digital data, and is expected to be significantly higher this year. Photograph: Tolga Akmen/EPA

Single-use e-cigarettes growing in popularity among young people despite unknown health effects and environmental impact

Children's doctors are calling for an outright ban on disposable vapes to reduce their popularity among young people as the long-term impact on lungs, hearts and brains remains unknown.

The government should ban single-use disposable vapes, which can be bought for just £1.99 and are most popular with young people, the Royal College of Paediatrics and Child [Health](#) has said.

This would reduce their environmental impact and discourage children who have never smoked from taking up vaping and risking long-term addiction and lung damage.

Dr Mike McKean, the RCPH vice-president and a paediatric respiratory consultant, said the college had made a "very carefully considered call", reflecting concerns from its members about the "epidemic" of child vaping, the limited research into the longer-term health impacts, and the small but growing numbers of children with respiratory problems.

“It took decades to understand relationship of cigarette smoking to cancer and respiratory illnesses – my worry is we could be sleepwalking into a similar situation here,” McKean said.

“If you know about lung development, you know that if you inhale potentially noxious, volatile substances there is a huge potential for an inflammatory reaction that could have a minor or a major effect. There is lots of evidence it causes significant coughing and breathlessness. We’re not seeing lots of highly damaged lungs yet, but there are cases reported where the inflammatory response is overwhelming and causes permanent scarring.”

He said that while he thought Australia’s approach, where vapes are only available on prescription, might overburden the NHS, England’s permissive approach was “out of step” with neighbouring countries, such as Scotland, France, Germany and Ireland. So far, England has banned free vape samples for under-18s and may prohibit colourful packaging and flavour names that target younger people.

Ministers had the power to “easily” ban disposable vapes, he said, and he hoped they would respond “as fast as possible” to submissions to the government’s call for evidence on youth vaping, which closes on 6 June, to avoid the problem getting kicked into the political long grass before the next general election. “If you’re 12 and starting to vape regularly we can’t wait for that 12-year-old to be 13 or 14, we need action now.”

He added he thought there was a “moral imperative” to prevent companies from profiting from long-term addictions by targeting children with colourful packaging and fruity flavours.

The ban would also reduce the environmental harm caused by e-cigarettes, which waste lithium needed for batteries to power electric cars and increase plastic waste, as 1.3 million vapes are thrown away every week in the UK.

The latest NHS Digital data shows that the number of young people vaping is rapidly growing to reach one in five 15-year-olds in 2021, and figures are expected to be significantly higher this year. Action on [Smoking](#) and Healthdata also shows that experimental use of e-cigarettes among 11-to-17-year-olds is up 50% on last year.

A Department of Health and Social Care spokesperson said: “It is illegal to sell nicotine vapes to children and we are concerned about the recent rises in youth vaping – particularly because of the unknown long-term harms.

“We are taking bold action to crack down on youth vaping through the £3m illicit vapes enforcement squad to tackle underage sales to children. We have also launched a call for evidence to identify opportunities to reduce the number of children accessing and using vape products and explore where the government can go further.”

Disposable vapes cause fires and cost taxpayer, English and Welsh councils say

Sarah Marsh :: 18/6/2023



📷 About 1.3m single-use vapes are thrown away each week in the UK, according to research. Photograph: Peter Dazeley/Alamy

Single-use E-cigarettes difficult to recycle and cause fires in bin lorries, Local Government Association says

Disposable vapes are increasingly causing fires in bin lorries and recycling issues at a “great cost” to the taxpayer, councils have said.

The Local Government Association, which represents councils in England and Wales, said single-use vapes such as Elf bars, Lost Mary and Juul were almost impossible to recycle. They are designed as one unit so batteries cannot be separated from the plastic.

The organisation said the lithium batteries inside the plastic can sharply increase in temperature if crushed and can become flammable. This costs taxpayers money through fire damage to equipment and the specialist treatment needed to deal with hazardous waste.

Last year, research by Material Focus – a non-profit organisation which runs the Recycle Your Electricals campaign – found that about 1.3m single-use vapes are thrown away each week in the UK – an extraordinary rise since the first was sold in 2019. Their work found that more than 700 fires in bin lorries and recycling centres were caused by batteries that had been dumped into general waste.

Last month, recycling firms said they were dealing with so many vapes that they were struggling to insure their facilities. Some are using artificial intelligence to detect vapes, as well as installing thermal imaging cameras and automatic foam jets.

The warning comes days after children's doctors called for an outright ban on disposable vapes to reduce their popularity among young people as the long-term impact remains unknown.

Dr Mike McKean, the RCPH vice-president and a paediatric respiratory consultant, said the college had made a "very carefully considered call", amid concern from its members about an "epidemic" of child vaping. It was noted that a small but growing number of children were experiencing respiratory problems.

The children's commissioner for England, Rachel de Souza, urged ministers to crack down on the "insidious" marketing of vapes to young people. She said the government would be "failing a generation" if these "highly addictive and sometimes dangerous products" were allowed to become mainstream.

While the LGA did not go as far as calling for a ban on disposable vapes, it said retailers and producers of these products should take responsibility for the litter they create.

Councillor Linda Taylor, the LGA's environment spokesperson, said: "Single-use vapes, just like any other item of hazardous waste, need to be properly classified and producers must take responsibility for the litter they create.

"The volume of these items that council waste teams are handling is increasing, and this is coming at a great cost to the council taxpayer.

"We need a crackdown on the producers and retailers of these products, and to get this litter under control."

Councils are calling for the Environment Agency to proactively enforce retailer duties on paying into a producer compliance scheme and reform of the producer responsibility scheme.

E-cigarettes are classified as "toys, leisure and sports equipment" that councils say does not reflect the harm of the material or cost of collection. The government should also look at ways to encourage take-back of vapes through a deposit return scheme funded by producers, the LGA has argued.

Vaping has risen rapidly over the past decade, with an estimated 4.3 million people now using these products, according to a report from Action on Smoking and Health (Ash). The data suggests 8.3% of adults in England, Wales and Scotland vape, up from 1.7% a decade ago, which equated to about 800,000 people.

A Defra spokesperson said: "All electrical waste should be properly disposed of and recycled to protect our environment – this includes disposable vape pens.

"Our environmental improvement plan sets out our plan to review rules for waste electricals this year. As part of this, we will consider what changes in legislation are needed to ensure the vaping sector foots the bill for the collection and treatment of their used products."

Are we creating a generation of vape addicts?, asks JONATHAN WALKER

Jonathan Walker - sunday express DEPUTY POLITICAL EDITOR :: 18/6/2023



UK to crackdown on vaping (Image: Getty)

As a child I always hated it when my father smoked. I was vaguely aware of the health risks. But it was also because tobacco is a pretty foul substance. It smells bad and if you are around the smoke for too long your clothes start to smell too.

I fear I may have felt differently, however, if my father had been a vaper. Because many vaping products look very much like they are designed to appeal to children.

Vaping involves a hand-held electronic device which heats up a liquid containing nicotine, and various other substances, to create a “mist” which can be inhaled. These “e-cigarettes” provide a nicotine hit without the need to smoke tobacco.

If you catch a whiff of someone else’s vape it can smell pretty good, because that’s how it’s designed. The liquid contains flavouring with options ranging from strawberry and blackberry to custard, bubblegum and sherbert.

Liquids are sold in brightly-coloured bottles with names such as Riot Squad and Nasty Juice. Alternatively, one can buy disposable devices, again brightly-coloured and designed to last a day or so before being thrown away.



Vaping product packaging appeals to children (Image: Getty)

The branding, and the taste, have more in common with children's sweets than a packet of Silk Cut. It's hard to avoid the suspicion that this is being done on purpose.

That's the view of Children's Commissioner Dame Rachel de Souza, a Government-appointed watchdog, who said on Friday: "It is insidious that these products are intentionally promoted to children, both online and offline. Many children addicted to vaping have never smoked tobacco. Vaping is acting as a gateway, rather than a quitting strategy."

According to Labour MP Ruth Jones, growing numbers of pupils are unable to sit a two-hour exam without a vaping break, because the products have got them hooked. The Government is under pressure to act.

But Ministers face a dilemma, because vaping is less unhealthy than smoking a traditional cigarette and there is a deliberate strategy of encouraging existing smokers to switch to e-cigs.

Health Secretary Steve Barclay last week admitted there is a "real concern ... that some children have been targeted with vapes". But he said: "One wants to ensure vaping is available to adults because obviously, in terms of smoking cessation, there are benefits there."

There are six million smokers in the UK and 3.2 million vapers. If more people make the switch then the nation will be healthier. But the elephant in the room must not be ignored. Many vaping products do not appear to be aimed at gnarled old smokers.

Health concerns as vaping turns into addiction (Image: Getty)

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How many adults are going to be tempted by products labelled “Watermelon Bubble Gum” or “Cotton Candy Ice”? And how many want to be seen puffing on a device in bright primary colours?

These products, widely available in high street shops and online, are the modern-day equivalent of alcopops, the sugary alcoholic drinks that sparked an outcry in the 1990s. The drinks industry was accused of designing products with flavours usually found in bottles of pop, to tempt young people.

It responded by withdrawing some products and changing the way others were marketed. There's little sign of the vaping industry taking similar measures.

So, at long last, the Government has decided to act. Ministers have announced plans for an enforcement squad, working with trading standards officials, to identify shops selling vapes to anyone under the legal age limit of 18.

More important, however, is a consultation into how vapes are marketed and sold.

This will look at the brand names, the packaging and the flavours, and consider whether much tougher rules are needed to ensure e-cigarettes and associated paraphernalia are aimed at adults.

Trending

The review will also look at what can be done to prevent disposable e-cigarettes littering the streets. These plastic tubes aren't just unsightly – they also contain damaging chemicals that can leak into the environment. It is about time.

But to be fair, ministers face a difficult balancing act.

They believe the vape industry can play a key role in helping to achieve the Government's ambition of creating a “smoke free England”, meaning fewer than one in 20 people smoke by 2030.

Surely, however, it must be possible to design a product which tastes pleasant enough but doesn't appear to be targeted squarely at adolescents.

If you're a smoker who can't quit then moving on to e-cigs might be the best thing you can do.

But we need to make sure vaping does not get a new generation hooked on nicotine.

Related articles

FDA Orders Stores to Stop Selling Elf Bar Disposable Vapes

Steven Reinberg :: 23/6/2023



FRIDAY, June 23, 2023 (HealthDay News) -- The U.S. Food and Drug Administration said Thursday it has sent warning letters to 189 retailers, telling them to stop selling unauthorized tobacco products such as Elf Bar and Esco Bars.

Both brands are disposable e-cigarettes sold in flavors known to appeal to kids, including bubblegum and cotton candy. A federal ban on flavored vapes that was issued in early 2020 does not cover disposable vapes.

"The FDA is prepared to use all of its authorities to ensure these, and other illegal and youth-appealing products, stay out of the hands of kids," FDA Commissioner [Dr. Robert Califf](#) said in an agency [news release](#). "We are committed to a multi-pronged approach using regulation, compliance and enforcement action and education to protect our nation's youth."

The warning letters were sent following a nationwide inspection blitz conducted over several weeks.

In addition, two studies published in [Morbidity & Mortality Weekly Report](#) highlight concerns over the risks of Elf Bar products among young people.

The [first study](#) found that Elf Bar was the most popular disposable e-cigarette sold in the United States in December 2022, and that it has fueled a significant rise in e-cigarette sales.

The [second study](#) showed thousands of e-cigarette poisoning cases reported to poison centers in the past year, mostly among kids ages 5 and under. Among the cases with brand information reported, Elf Bar was named more than all other brands combined, with nearly all Elf Bar cases occurring among children younger than 5.

"All players in the supply chain -- including retailers -- have a role in keeping illegal e-cigarettes off the shelves," [Brian King](#), director of FDA's Center for Tobacco Products, said in the agency news release. "This latest blitz should be a wake-up call for retailers of Elf Bar and Esco Bars products nationwide. If they're waiting for a personal invitation to comply with the law, they might just get it in the form of a warning letter or other action from the FDA."

To help prevent these products from illegally entering the marketplace the FDA issued import alerts for products under both the Elf Bar and Esco Bars brands. An import alert puts these products on the red list, which allows the FDA to detain a product without physically examining it at the time of entry. Last month, the FDA issued orders allowing customs officials to seize shipments of Elf Bar, Esco Bar and two other brands, the *Associated Press* reported.

In response to the latest action from the FDA, IMiracle Shenzhen Technology Co. Ltd., the maker of Elf Bar, said in a statement that, "In keeping with its previous actions on vaping, this latest move by the FDA willfully ignores the latest science on e-cigarette use and continues to prevent U.S. adults from accessing an entire category of nicotine products that the FDA knows are significantly safer than traditional cigarettes."

Still, the FDA stated that none of the products have received FDA marketing authorization and they come in flavors like cotton candy, which regulators say can appeal to teenagers.

"We're not going to stand by as bad actors are profiting off the sale of illegal products that are addicting our nation's youth," King told the *AP*. "Today's action is just part of our longstanding efforts to address those products, particularly flavored disposable products."

What This Means for You

The FDA said Thursday it has sent letters to 189 retailers ordering them to stop selling unauthorized flavored tobacco products like Elf Bar and Esco Bar.

More information

For more on the FDA and e-cigarettes, head to the [U.S. Food and Drug Administration](#).

SOURCES: U.S. Food and Drug Administration, news release, June 22, 2023; IMiracle Shenzhen Technology CO. Ltd., statement, June 23, 2023; *Associated Press*

E-cigarette Unit Sales by Product and Flavor Type, and Top-Selling Brands, United States, 2020–2022

Fatma Romeh M. Ali, PhD¹; Andrew B. Seidenberg, PhD²; Elisha Crane, MPH¹; Elizabeth Seaman, PhD¹; Michael A. Tynan, MPH³; Kristy Marynak, MPP³

E-cigarette products, related policies, and use patterns change rapidly. In the United States, the prevalence of e-cigarette use is markedly higher among youths and young adults than it is among adults overall. In 2021, 4.5% of all adults aged ≥ 18 years (an estimated 11.1 million) and 11.0% of young adults aged 18–24 years (an estimated 3.1 million) currently (≥ 1 day during the previous 30 days) used e-cigarettes; during 2022, 14.1% of high school students (an estimated 2.14 million) currently used e-cigarettes (1,2). E-cigarettes often contain high concentrations of nicotine. Nicotine is highly addictive and can harm the adolescent brain, which continues to develop through approximately age 25 years (3). Since 2020, the availability of e-cigarette products has changed in response to multiple factors, including local and state policies to address flavored e-cigarette sales, actions undertaken by the Food and Drug Administration (FDA), COVID-19–related closures, and global supply chain disruptions. To assess trends in unit sales of e-cigarettes in the United States, by product and flavor, and top-selling brands, the CDC Foundation, Truth Initiative,* and CDC analyzed retail scanner data during January 26, 2020–December 25, 2022, from Information Resources, Inc. (IRI), a U.S. data analytics and market research company. Overall, unit sales increased by 46.6% during the study period. The unit share of menthol-flavored product sales remained relatively stable during this period, whereas nonmenthol flavor unit shares changed. During January 26, 2020–December 25, 2022, unit shares of tobacco-flavored and mint-flavored products decreased (from 28.4% to 20.1% and from 10.1% to 5.9%, respectively), whereas shares of other flavor sales increased (from 29.2% to 41.3%). In addition, during January 2020–December 2022, unit shares of prefilled cartridges decreased from 75.2% to 48.0%, and disposable e-cigarette unit share

increased from 24.7% to 51.8% of total unit sales. The five top-selling e-cigarette brands for the 4-week period ending December 25, 2022, were Vuse, JUUL, Elf Bar, NJOY, and Breeze Smoke. Analysis of information on e-cigarette retail sales can guide strategies to prevent youth access to and use of e-cigarettes, including restrictions on flavored tobacco products (4).

U.S. e-cigarette sales data were licensed from IRI, which included Universal Product Code sales from brick-and-mortar

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* <https://truthinitiative.org/>



retailers only; sales from online retailers and tobacco specialty stores, including vape shops, were not available. For analyses other than top-selling brands, e-cigarette products were categorized as prefilled cartridges, disposable devices, or e-liquids[†] (5), and e-cigarette accessories and devices sold without e-liquids (accounting for 9.5% of sales) were excluded. Product flavor names were categorized as tobacco, menthol, mint, or all other flavors (e.g., fruit, clove or spice, candy, desserts, other sweets, chocolate, alcoholic and nonalcoholic drinks). Ambiguous or concept flavors (e.g., “fusion”), which constituted 5.6% of sales, were searched online and back-coded into one of the four flavor categories. E-cigarette unit sales were standardized and summed during 4-week periods during January 26, 2020–December 25, 2022[§]. Analyses were performed for total unit sales and the proportion of total unit sales (unit share) by flavor and product type using Stata (version 17; StataCorp). Trends during the analysis period were analyzed using Joinpoint regression (version 4.9.1.0; National Cancer Institute), which detects points in time when changes in trend (or slope changes) are statistically

significant. The average 4-week period percentage change (APPC) was calculated as the average of the slope coefficients of the Joinpoint regression line. P-values <0.05 were considered statistically significant. Total number of brands and a list of the top five brands with the highest unit sales, as provided in the IRI database without unit standardization or exclusions, were reported for the beginning and end of the study period. This study was reviewed by CDC and was conducted consistent with federal law and CDC policy.[¶]

During January 2020–December 2022, total U.S. e-cigarette unit sales increased by 46.6%, from 15.5 million to 22.7 million units per 4-week period (APPC = 1.1; $p < 0.05$); however, sales fluctuated during this period (Figure 1). Although sales increased during January 2020–May 2022, the percentage of increase in sales slowed from 36.5% (15.5 million to 21.2 million; APPC = 6.9) during January 2020–June 2020 to 16.8% (21.2 million to 24.7 million; APPC = 1.3) during June 2020–June 2021 to 4.9% (24.7 million to 25.9 million; APPC = 0.4) during June 2021–May 2022 ($p < 0.05$ for all APPCs). Overall, during January 2020–May 2022, total sales increased 67.2% (APPC = 1.8; $p < 0.05$), from 15.5 million to 25.9 million units per period. During May–December 2022, total sales decreased by 12.3% (APPC = –1.8; $p < 0.05$), to 22.7 million units per period.

Among total e-cigarette unit sales during January 2020–December 2022, the percentage of menthol flavor sales did

[†] Prefilled cartridges include tanks, cartridges, and pods used in rechargeable and reusable e-cigarette devices; the cartridges are not intended to be refilled after the liquid has been depleted. Disposable devices include nonrechargeable and nonreusable e-cigarette devices that are not intended to be refilled with e-liquid after being depleted; the device is disposed of once the e-liquid has been consumed. E-liquids are containers of the liquid used in e-cigarette devices, which typically contains a humectant (e.g., propylene glycol), nicotine, and flavoring.

[§] Consistent with previous studies, unit sales were standardized to reflect the most common package size for each product type. A standardized unit was equal to five prefilled cartridges, one disposable device, or one e-liquid bottle.

[¶] 45 C.F.R. part 46, 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

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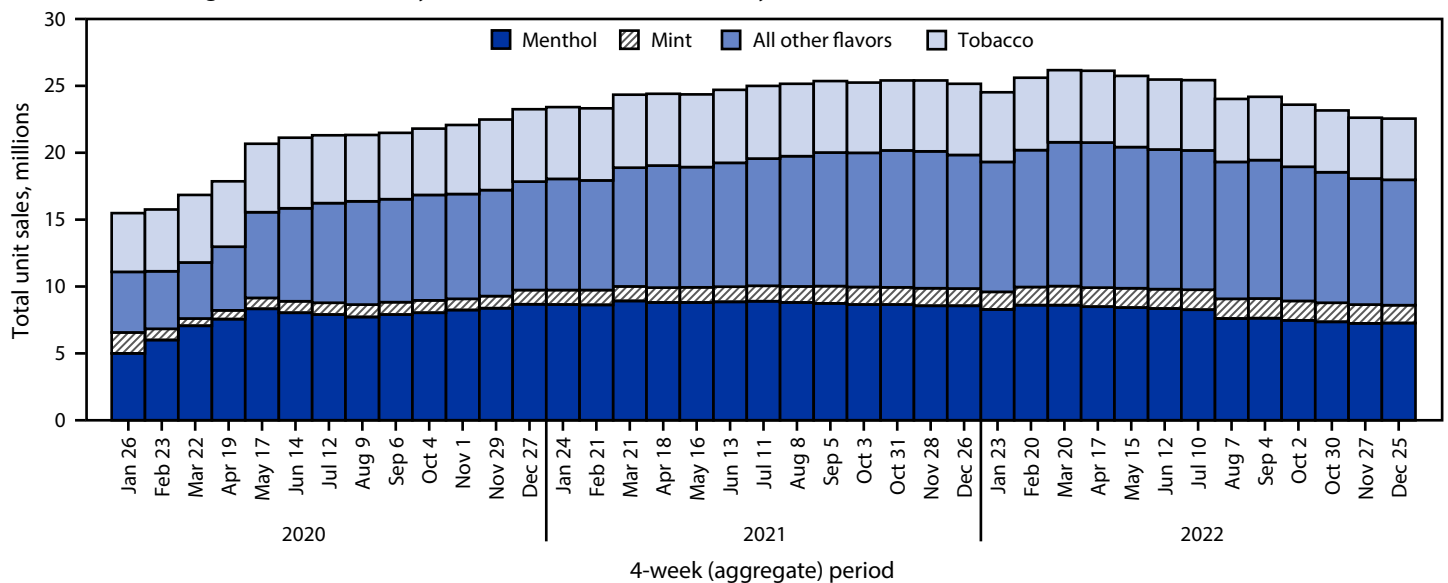
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FIGURE 1. Total e-cigarette unit sales,* by flavor† — United States, January 26, 2020–December 25, 2022

* Retail sales data obtained from Information Resources, Inc. for convenience stores, gas stations, grocery stores, drug stores or pharmacies, mass merchandiser outlets, club stores, dollar stores, and military sales; Internet and vape shop sales were not recorded.

† The "All other flavors" category includes fruit, clove or spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy, desserts, other sweets, or some other flavor. Unknown flavors were excluded from this figure (<0.1%).

not significantly change (<1%, from 32.3% in January 2020 to 31.9% in December 2022), whereas the percentages of tobacco, mint, and other flavor sales fluctuated. During the period of increasing total sales (January 2020–May 2022), decreases were observed in the percentages of sales of both tobacco flavor (from 28.4% to 20.5%; APPC = -1.1; $p < 0.05$) and mint flavor e-cigarettes (10.1% to 5.6%; APPC = -1.9; $p < 0.05$), while the percentage of other flavor sales increased from 29.2% to 40.8% (APPC = 1.1; $p < 0.05$). During the period of declining total sales (May–December 2022), the percentage of sales of tobacco-flavored e-cigarettes decreased slightly, from 20.5% to 20.1% (APPC = -0.6; $p < 0.05$), while slight increases in sales of mint-flavored (from 5.6% to 5.9%) and other-flavored e-cigarettes (40.8% to 41.3%) occurred (APPC = 1.3 and 0.4, respectively; $p < 0.05$).

Among total e-cigarette unit sales during January 2020–December 2022, the percentage of prefilled cartridge sales decreased from 75.2% to 48.0% (APPC = -1.1; $p < 0.05$). In contrast, the percentage of disposable e-cigarette sales more than doubled, from 24.7% in January 2020 to 51.8% in December 2022 (APPC = 1.9; $p < 0.05$). Among prefilled cartridge e-cigarettes sales in January 2020, tobacco, menthol, and mint flavors accounted for 34.2%, 40.0%, and 10.5% of sales, respectively, whereas e-cigarette sales of other flavors accounted for 15.3% (Figure 2). During December 2022, the prefilled cartridge market was composed of tobacco- (37.3%) and menthol- (62.2%) flavored sales almost exclusively. Among disposable e-cigarette sales during January 2020, tobacco,

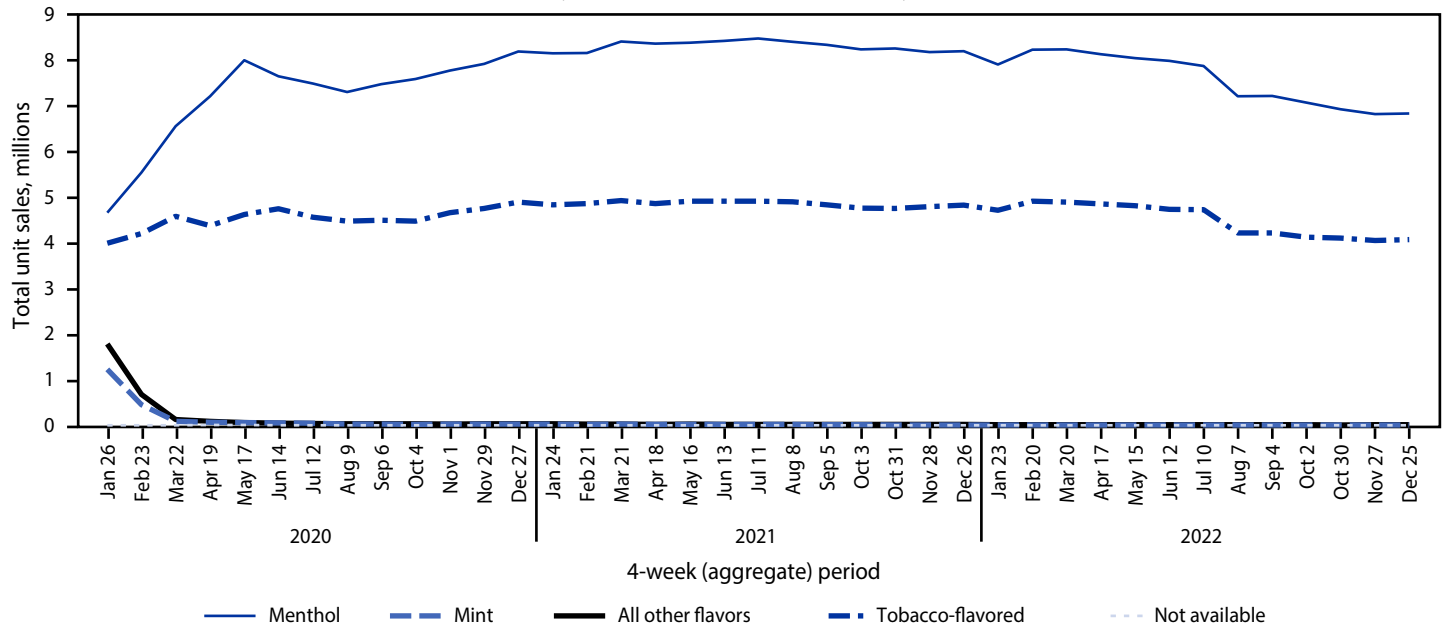
menthol, mint, and other flavors accounted for 10.5%, 9.0%, 8.9%, and 71.4%, respectively (Figure 3). By December 2022, the disposable e-cigarette market was led by mint (11.1%) and flavors other than tobacco, menthol, or mint (79.6%); tobacco- and menthol-flavored sales accounted for 4.3% and 3.6%, respectively.

During the 4-week period ending January 26, 2020, among 184 brands, the top five in descending order of sales were JUUL, Vuse, NJOY, My Blu, and Puff.** During the 4-week period ending December 25, 2022, the top five brands were Vuse, JUUL, Elf Bar, NJOY, and Breeze Smoke. The total number of e-cigarette brands increased 46.2% during the study period, from 184 to 269. Vuse, JUUL, NJOY, and My Blu are prefilled cartridge brands; Puff, Elf Bar, and Breeze Smoke are disposable.

Discussion

E-cigarette unit sales during December 2022 were 46.6% (7.2 million units) higher than sales during January 2020. Declines in total unit sales observed during May 2022–December 2022 likely reflect multiple factors, including local and state restrictions on flavored tobacco product sales, FDA regulatory actions, potential COVID-19–associated supply chain disruptions, inflation, and a recent proliferation of large

** Individual brands (reported by IRI as "brand franchises") might include multiple product lines (e.g., Vuse includes the product lines Vuse Alto and Vuse Solo, Elf Bar includes Elf Bar BC5000 and Elf Bar, and Puff includes Puff Bar).

FIGURE 2. Prefilled cartridge* e-cigarette unit sales,[†] by flavor[§] — United States, January 26, 2020–December 25, 2022

* Prefilled cartridges include tanks, cartridges, and pods used in rechargeable and reusable e-cigarette devices; the cartridges are not intended to be refilled after the liquid has been depleted. Unit sales were standardized to reflect the most common package size for each product type; a standardized unit was equal to five prefilled cartridges.

[†] Retail sales data obtained from Information Resources, Inc. for convenience stores, gas stations, grocery stores, drug stores or pharmacies, mass merchandiser outlets, club stores, dollar stores, and military sales; Internet and vape shop sales were not recorded.

[§] The "All other flavors" category includes fruit, clove or spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy, desserts, other sweets, or some other flavor.

format disposable e-cigarettes capable of delivering thousands of "puffs" that might permit higher nicotine consumption per unit. Increases in the number of available e-cigarette brands during the study period and changes observed in the top five brands during December 2022 reflect the dynamic nature of the e-cigarette market.

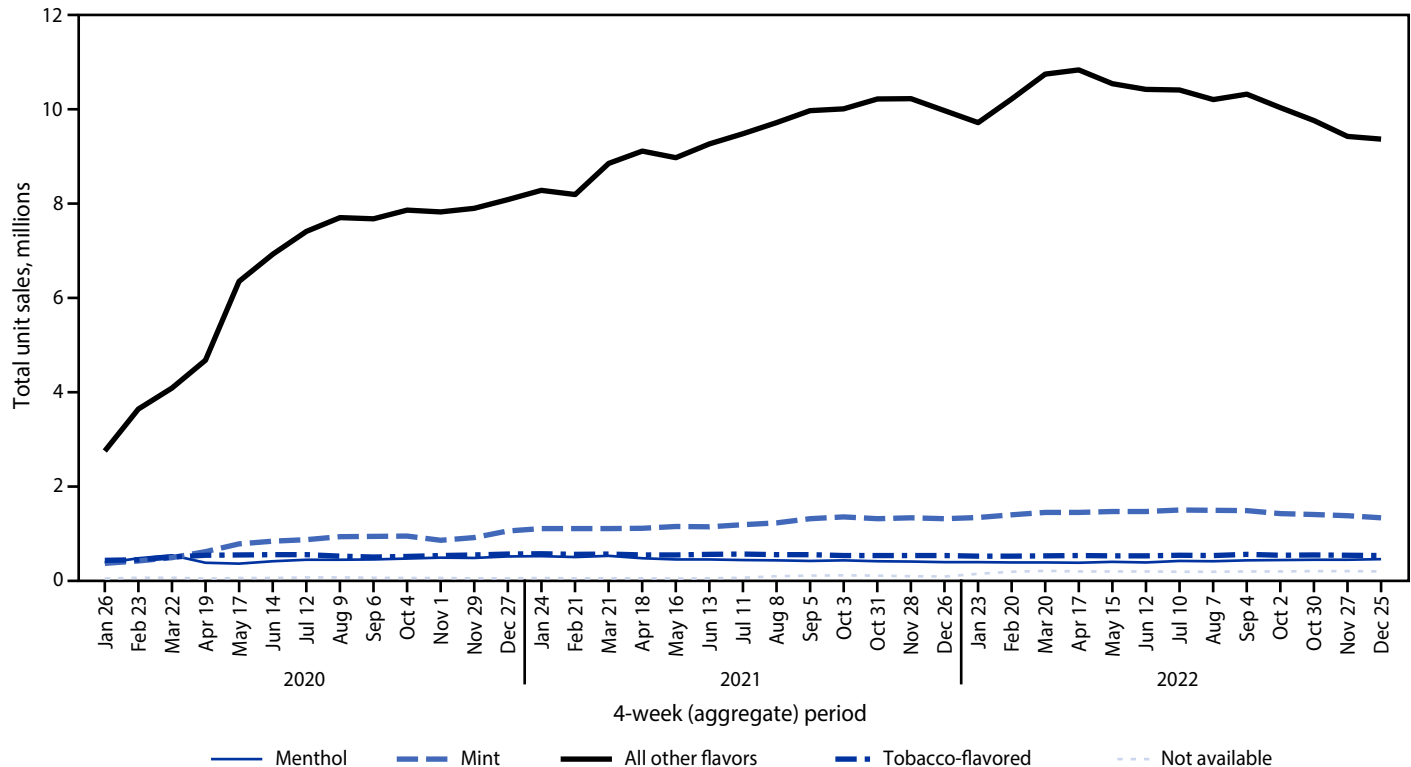
Citing the appeal of flavored e-cigarettes to children, FDA announced during January 2020 that it would prioritize enforcement against prefilled e-cigarettes in flavors other than tobacco and menthol based on the prevalence of use of these products among youth at the time.^{††} The present study's findings indicate that after this announcement, retail sales of mint- and other-flavored prefilled cartridges halted while notable increases in sales of fruit- and mint-flavored disposable products occurred. Although disposable e-cigarettes constituted approximately less than one quarter of total unit sales during January 2020, disposable sales surpassed refillable sales in March 2022. As of August 2022, Elf Bar, a disposable brand that has driven sharp increases in e-cigarette use among persons aged 16–19 years in England, is the top disposable brand reported among a sample of 4,142 persons aged 16–19 years in the United States (6) and was the top-selling disposable brand in December 2022.

^{††} <https://www.fda.gov/news-events/press-announcements/fda-finalizes-enforcement-policy-unauthorized-flavored-cartridge-based-e-cigarettes-appeal-children>

In addition, flavored disposable e-cigarettes have emerged as the most commonly used device type among U.S. middle and high school students who use e-cigarettes (7). These sales data, coupled with behavioral data, demonstrate that the e-cigarette landscape and use patterns rapidly shift in response to market changes, policy interventions, and other factors.

As of December 31, 2022, seven states (California, Maryland, Massachusetts, New Jersey, New York, Rhode Island, and Utah) and 378 jurisdictions, including counties, cities, towns, and villages, have some type of restriction on flavored e-cigarette sales in place. The comprehensiveness of local and state flavored tobacco product policies varies (7), with some policies exempting certain flavors (e.g., menthol) or products (e.g., cigars), which are disproportionately used by certain groups such as non-Hispanic Black or African American youths (7). States such as Massachusetts, which have well-enforced comprehensive flavor restrictions, have experienced large and sustained declines in total e-cigarette sales (8). Further, a review of nine studies found that after a flavored tobacco product sales restriction, use of tobacco products among young persons declined (9). The trends observed nationally in the relative proportions of disposable e-cigarette sales are observable within states lacking e-cigarette flavor restrictions.^{§§}

^{§§} <https://www.fda.gov/news-events/press-announcements/fda-denies-marketing-applications-about-55000-flavored-e-cigarette-products-failing-provide-evidence>

FIGURE 3. Disposable e-cigarette* unit sales,[†] by flavor[§] — United States, January 26, 2020–December 25, 2022

* Disposable devices include nonrechargeable and nonreusable e-cigarette devices that are not intended to be refilled with e-liquid after being depleted; the device is disposed of once the e-liquid has been consumed. Unit sales were standardized to reflect the most common package size for each product type; a standardized unit was equal to one disposable device.

[†] Retail sales data obtained from Information Resources, Inc. for convenience stores, gas stations, grocery stores, drug stores or pharmacies, mass merchandiser outlets, club stores, dollar stores, and military sales; Internet and vape shop sales not captured.

[§] The "All other flavors" category includes fruit, clove or spice, chocolate, alcoholic drink (such as wine, cognac, or other cocktails), candy, desserts, other sweets, or some other flavor.

Through the premarket tobacco application process established by the Tobacco Control Act, FDA can authorize or deny the marketing of tobacco products using the standard that allowing the product to be marketed is "appropriate for the protection of public health."^{¶¶} FDA issued its first marketing denial orders for approximately 55,000 flavored e-cigarette products on August 26, 2021, and its first marketing denial order for a menthol-flavored, cartridge-based e-cigarette on October 26, 2022^{***}; to date, only tobacco-flavored e-cigarette products have received marketing authorization on the basis of a scientific evaluation of their risks and benefits to the population as a whole.^{†††} FDA has taken action to address illegal flavored disposable e-cigarette products, including the issuance of warning letters to importers, distributors, and retailers for

the unauthorized sale of Puff Bar products, the most commonly used e-cigarette brand among U.S. middle and high school students in 2022 (10). Additional FDA enforcement efforts against manufacturers or retailers include no-tobacco-sale orders, permanent injunctions against noncompliant manufacturers in conjunction with the U.S. Department of Justice, and other actions.^{§§§}

The findings in this report are subject to at least three limitations. First, sales data from tobacco specialty stores, including vape shops and internet retailers, were not available. However, online sales are estimated to constitute only 20% of total e-cigarette sales (4). Second, these analyses did not account for variations in e-cigarette nicotine strength or unit size. Large-format disposable e-cigarettes, including (but not limited to) Elf Bar BC5000, have recently been introduced. Therefore, recent declines in unit sales might not signify declines in consumption. Finally, purchaser age is not available from IRI.

^{¶¶} <https://www.federalregister.gov/documents/2021/10/05/2021-21011/premarket-tobacco-product-applications-and-recordkeeping-requirements>

^{***} <https://www.cdcfoundation.org/State-E-CigaretteSales-DataBrief-2022-Oct30?inline>

^{†††} <https://www.fda.gov/tobacco-products/premarket-tobacco-product-applications/premarket-tobacco-product-marketing-granted-orders>

^{§§§} <https://www.fda.gov/tobacco-products/compliance-enforcement-training/ctp-compliance-enforcement>

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Summary

What is already known about this topic?

E-cigarette products, related policies, and use patterns change rapidly. Flavored e-cigarette products appeal to young users.

What is added by this report?

E-cigarette unit sales increased by 46.6% during January 2020–December 2022. After January 2020, sales of mint and other flavored prefilled cartridges ceased, and disposable e-cigarettes in fruit, sweet, and other flavors increased. Disposable e-cigarettes in youth-appealing flavors are now more commonly sold than prefilled units.

What are the implications for public health practice?

Monitoring e-cigarette sales can inform strategies to prevent youth tobacco use, including restrictions on flavored tobacco products.

Sales reflect purchases by adults and could also reflect direct or indirect purchases by youths.

Comprehensive restrictions on the sale of all flavored tobacco products that include e-cigarettes, menthol cigarettes, and flavored cigars are warranted in all jurisdictions. These strategies, when coupled with longstanding evidence-based strategies to prevent youth tobacco use such as price increases, comprehensive smokefree policies that include e-cigarettes, and counter-marketing campaigns, are expected to reduce youth initiation and use as well as reduce disparities in tobacco product use.

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Notes from the Field

E-Cigarette–Associated Cases Reported to Poison Centers — United States, April 1, 2022–March 31, 2023

Nicole A. Tashakkori, MPH¹; Brian L. Rostron, PhD¹;
Carol H. Christensen, PhD¹; Karen A. Cullen, PhD¹

E-cigarette–associated cases reported to U.S. poison centers have fluctuated during the past decade, increasing during 2010–2014, and then decreasing during 2015–2017 (1). During 2017–2018, the number of e-cigarette exposure cases increased by 25% (from 2,320 to 2,901), and in 2018 nearly two thirds (63.3%) of cases occurred among children aged <5 years (1). To understand the number and characteristics of e-cigarette exposure cases in the United States, the Food and Drug Administration (FDA) analyzed National Poison Data System (NPDS) data* from the most recently available 12-month period (April 1, 2022–March 31, 2023). NPDS is maintained by U.S. poison centers. FDA's analyses report a further increase in the number of e-cigarette exposure cases, particularly among children aged <5 years.

NPDS is a repository of cases reported to U.S. poison centers that are recorded by specially trained and certified health care professionals (2). Information on exposure cases (reports or reported incidents by persons who contact poison centers regarding an exposure to a substance) in NPDS is recorded based on generic codes (a required general identification code for a substance or group of products) and product codes (product-specific codes, often by brand; these are not required upon case intake). Cases involving e-cigarettes were identified using generic codes; brands were identified using product codes.[†] E-cigarette exposure cases were defined as an exposure to e-cigarettes or e-liquids and were examined by age group, exposure route, level of care provided, medical outcome, and product brand. This study was determined as exempt by the FDA Institutional Review Board for Human Subject Protection.[§]

During April 1, 2022–March 31, 2023, a total of 7,043 e-cigarette exposure cases were reported (Table), representing a 32% increase, from 476 in April 2022 to 630 in March 2023. Among all exposures, 6,074 (87.8%) occurred among children aged <5 years. Inhalation or nasal (4,298; 61.0%) and ingestion or oral (2,818; 40.0%) exposure routes were most common.

TABLE. Characteristics of poisoning exposures involving e-cigarettes (N = 7,043)* — United States, April 1, 2022–March 31, 2023

Characteristic	No. (%)
Age group, yrs[†]	
<5	6,074 (87.8)
5–11	206 (3.0)
12–17	153 (2.2)
18–24	198 (2.9)
≥25	288 (4.2)
Exposure route[§]	
Inhalation or nasal	4,298 (61.0)
Ingestion	2,818 (40.0)
Dermal	245 (3.5)
Ocular	67 (1.0)
Other [¶]	39 (0.6)
Level of care at health care facility	
Not referred	6,113 (86.8)
Refused referral or did not arrive	100 (1.4)
Lost to follow up or left against medical advice	205 (2.9)
Treated, evaluated, and released	582 (8.3)
Admitted to a hospital**	43 (0.6)
Medical outcome	
Not followed ^{††}	3,584 (50.9)
No effect	1,398 (19.8)
Minor effect	1,915 (27.2)
Moderate effect	133 (1.9)
Major effect	12 (0.2)
Death	1 (0.01)
Brand^{§§}	
No brand reported	6,701 (95.1)
Brand reported	342 (4.9)
Elf Bar	208 (60.8)
JUUL	55 (16.1)
Vuse	31 (9.1)
Pop Vape ^{¶¶}	20 (5.8)
Puff Bar	14 (4.1)
Other brand***	14 (4.1)

* Cases involving exposure to more than one substance were excluded.

[†] Missing or incomplete data are excluded in the percentage values for age. Data are considered missing or incomplete when no information is provided for the variable or when listed as unknown persons aged ≤19 years, or unknown persons aged 20–29 years. Two persons listed as being aged 30–39 or 50–59 years are categorized as aged ≥25 years. Data are missing or incomplete for 124 persons.

[§] More than one exposure route was possible for each case; thus, percentages might not sum to 100%.

[¶] Includes less commonly reported routes of exposure, such as aspiration (with ingestion), optic, parenteral, rectal, vaginal, and unknown.

** Patients are categorized as having been admitted to a hospital when coded as being admitted to a critical care unit, noncritical care unit, or psychiatric facility.

^{††} Data are considered not followed when coded as 1) not followed, judged as nontoxic exposure (clinical effects not expected); 2) not followed, minimal clinical effects possible (no more than minor effects possible); and 3) unable to follow, judged as a potentially toxic exposure.

^{§§} The percentages reported by brand represent exposures for each brand out of the total number of exposures where brand was reported.

^{¶¶} Data for Pop Vape were not available until April 30, 2022.

*** "Other brand" includes five cases reported for exposure to Myle Vapor, three for Bidi Stick, two for 7 Daze Pods, two for Aquabar, one for SMPO, and one for Suorin. No cases were reported during this period for Green Smoke, Bo Caps, Crossbar, or MarkTen.

* <https://poisoncenters.org/>

[†] Product codes are only available for 16 e-cigarette brands in NPDS.

[§] This study was determined as exempt by the FDA Institutional Review Board for Human Subject Protection because data were previously collected and did not contain personally identifiable information.

Overall, 43 (0.6%) e-cigarette exposure cases resulted in hospital admission, and 582 (8.3%) required treatment at a health care facility. A major effect[‡] was experienced in 12 (0.2%) exposure cases and a moderate effect in 133 (1.9%) cases. One reported case resulted in death (a suspected death by suicide of a person ≥ 18 years). Approximately one half of reported cases resulted in either a minor effect (27.2%) or no reported effect (19.8%); 50.9% of cases were not followed.^{**} Among 342 (4.9%) cases with brand information, the most commonly reported brand was Elf Bar (60.8%), a disposable e-cigarette available in a variety of flavors; monthly cases involving Elf Bar increased from two in April 2022 to 36 in March 2023. More than 90% of Elf Bar exposures were among children aged <5 years.

NPDS relies on voluntary reporting of poisoning exposure cases; thus, the number of cases is likely underreported (3). In addition, because product codes are not required, only a small proportion of e-cigarette exposure cases included information on the brand associated with the exposure.

The number of reported U.S. e-cigarette exposure cases during this 12-month period is approximately double the number reported in 2018 (1). Most of the cases were among children aged <5 years. Among the 5% of cases for which brand was available, Elf Bar, for which sales in the United States have recently increased (4), was reported more often than all the other reported brands combined, with nearly all Elf Bar cases occurring among children aged <5 years.

[‡] On the basis of definitions provided by NPDS, patients experiencing a minor effect exhibit some signs and symptoms from the exposure, which would usually resolve rapidly, such as mild, self-limited gastrointestinal symptoms, without dehydration or transient cough. Persons experiencing a moderate effect exhibit more pronounced and prolonged signs and symptoms for which some form of treatment would be indicated, such as a high fever, disorientation, or gastrointestinal symptoms causing dehydration. Major effects from exposure are life-threatening or might result in severe signs and symptoms (e.g., repeated seizures, cardiac arrest, or respiratory arrest), severe disability, or disfigurement.

^{**} Data are considered not followed when coded as 1) not followed, judged as nontoxic exposure (clinical effects not expected); 2) not followed, minimal clinical effects possible (no more than minor effects possible); and 3) unable to follow, judged as a potentially toxic exposure.

Continued surveillance is critical to guiding efforts to prevent poisoning exposure associated with e-cigarettes, particularly among young children. Health care providers; the public health community; e-cigarette manufacturers, distributors, sellers, and marketers; and the public should be aware that e-cigarettes have the potential to cause poisoning exposure and are a continuing public health concern (5). Adult e-cigarette users should store their e-cigarettes and e-liquids safely to prevent access by young children.

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