

The sinister truth about vaping - and why habit loved by teens isn't as safe as you may think: Interactive graphic reveals how e-cigarettes affect your body over time after shock study sparked cancer fears

- Devices now popular with millions have been linked to a plethora of health issues
- [READ MORE: Shock study reveals e-cigs damage people's DNA just like smoking](#)

By [JOHN ELY SENIOR HEALTH REPORTER FOR MAILONLINE](#)
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Vaping is widely considered a safer alternative to smoking, allowing people to get a nicotine hit without suffering the harms of traditional cigarettes.

But safer doesn't necessarily mean safe.

Evidence is now piling up to show the gadgets pose their own dangers, with multiple studies raising the alarm about vaping's potential risks.

Experts are especially concerned about the meteoric rise of the habit among teens - and even younger children - who have never smoked before.

Fresh e-cigarette health fears were sparked today after an alarming study suggested [vaping triggers cell changes which may go on to cause cancer](#) — just like traditional tobacco smoking.

Scientists who examined mouth swabs from smokers and e-cigarette users found similar DNA changes in the cell samples taken from both groups.

It indicated vaping is 'not as harmless as originally thought', said researchers from University College [London](#) and the University of Innsbruck, Austria.
Experts claimed it added to a growing body of evidence that long-term use of the devices may cause significant damage to health.

Cancer Research UK says there is no good evidence that vaping causes cancer.

Previous studies have also found vapers experienced a similar pattern of changes within their genes as smokers, although the changes are more extensive in people who smoke.

Other studies have highlighted the risk posed by the chemical reactions that occur in the vaping process.

Metal components of the devices which heat the liquid containing the nicotine and flavourings — creating the vapour — can also release of a plume of toxic metals.

[READ MORE: Fears vaping could cause CANCER: Shock study reveals e-cigs damage DNA just like smoking as top experts warn £5 gadgets loved by teens are 'not as harmless as originally thought'](#)



Vaping can trigger cell changes which may go onto cause cancer, a study by British and Austrian experts suggests

These include arsenic, chromium, nickel and lead, known carcinogens.

Studies have suggested exposure to these metals could also contribute to dreaded 'popcorn lung' — dangerous inflammation of the respiratory organs which leads to wheezing, coughing and shortness of breath.

Popcorn lung is caused by a build-up of scar tissue in the lungs, which blocks the flow of air.

Although Cancer Research UK denies this and states an additive in e-cig liquids that was linked to the condition was banned in 2016.

In extreme cases, vaping-induced inflammation has even been linked to [holes forming in the lung itself](#).
Inflammation from vaping usually takes a month to form as nanoparticles from the vapour progressively become embedded in lung tissue.

This inflammation also increases the risk of a person suffering respiratory infections, including Covid, experts say.

Some specific chemicals like cinnamaldehyde, diacetyl and acetylpropionyl added to certain vapes and vape liquid flavours provoke stronger responses.

One study found people who vaped for at least six months had high levels of inflammation, mouth wounds and up to a 100-fold increase in oral fungi.

A paper published in the American Journal of Preventive Medicine, which tracked vapers for three years, also found they had a 1.3-times higher risk of developing respiratory disease than people who did not use any tobacco product.

Chemicals contained in vapes can also cause oxidative stress, a type of damage to cells.

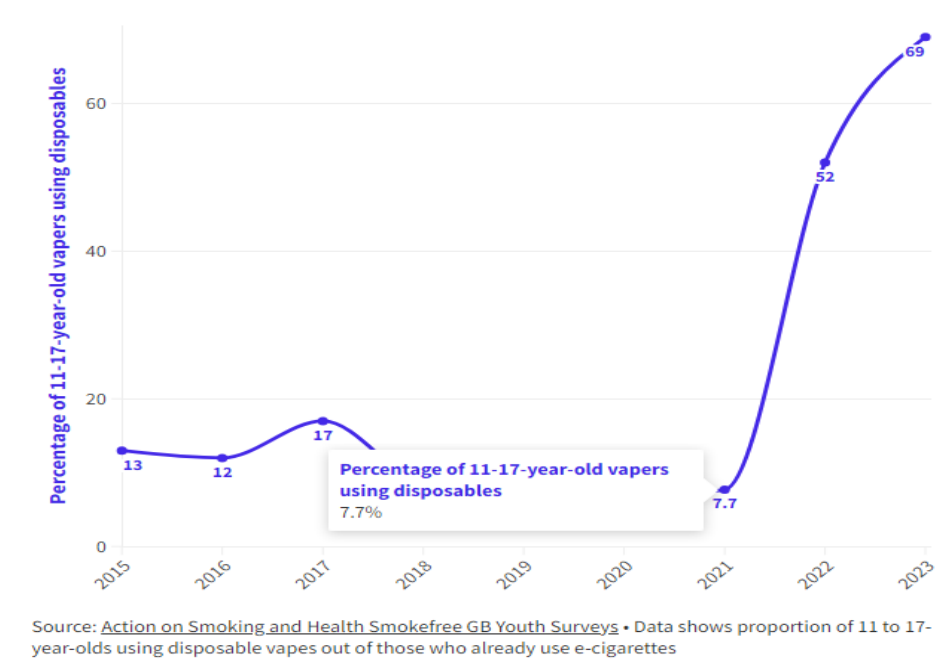
In a study, researchers from the University of [California, Los Angeles](#), compared oxidative stress in the lungs of routine cigarette smokers, vapers and people with no history of long term use of tobacco or nicotine devices. Vaping for only 30 minutes caused oxidative stress levels two to four times higher than baseline levels in those with no history of smoking, they found.

Another danger of vapes, which is exactly the same for cigarettes, is their addictive nature, courtesy of their nicotine content.



One in 10 Estonian's now vape regularly each month, cementing its position as the e-cigarette capital of the world. Published by the Organisation for Economic Co-operation and Development (OECD) – a forum of 37 countries with market-based economies founded in 1961 – it also found just four countries rank higher than the UK

How disposable vape use has soared nine-fold in two years



Nicotine is an addictive substance that, upon entering the body, binds to proteins in the brain in just 11 seconds.

While there ,it triggers the release of hormones dopamine and serotonin — providing a sense of euphoria and calmness.

The body goes on the become accustomed to and to crave this high, leading to a powerful impulse to have another hit either from a vape or cigarettes.

Once this dependency is formed, withholding nicotine can lead to irritation, anger, or sadness, as well as restlessness and trouble concentrating.

Nicotine also raises blood pressure and causes the heart to beat faster.

This process takes a few minutes as the arteries that supply the heart narrow significantly, which can lead to higher blood pressure.

However, studies suggest the effect last for days when it comes to vaping.

A recent study found that vaping for just an hour leads to blood vessels taking three days to return to normal function.

Over the long term, experts say this could lead to hardening of the blood vessels, a risk factor for cardiovascular disease like heart attacks.

Last year the American Heart Association said that long term vaping resulted in ‘cardiac remodelling’ which could, in turn, lead to heart failure and heart rhythm problems.

From a toxicology standpoint, nicotine itself is considered relatively harmless.

Instead, its danger lies in driving people to use vapes and cigarettes frequently.

In addition to the health risks this can pose, it can also lead to unexpected financial losses as users seek to fund their habit

While a cigarette typically contains anywhere between 8 to 20mg of nicotine only a fraction is actually absorbed, estimated to be 1 and 2mg.

Vape strength, much like cigarettes, varies but some of the strongest contain 20mg of nicotine per ml.

So a 2ml vape, the maximum legal capacity in the UK, will contain 40mg of nicotine.

MailOnline reporter reveals her firsthand experience of predatory sweet shops selling vapes

Inside the eerily quiet shops themselves, employees are ready to pounce on potential customers.

After kindly telling shop workers I didn't need help, they hovered over my shoulder, intensely watching me browse the hundreds of products on offer.

In an exchange that seemed innocent to begin with, I was asked my age.

A usual question for purchasing a vape - which is supposedly illegal for kids to buy, I thought.

However his predatory intentions soon became obvious.

'Beautiful young girls have to pay £5 just for looking in the shop,' he said.

'So do other people not have to pay?' I quipped back. 'Or is it just what you call beautiful young women?'

He replied: 'Let me guess your age. You look young but I think you are older. Do you prefer to be called a beautiful girl or a lady? How old do you think I am?'

This was, quite clearly, not about whether I was old enough to purchase a vape.

This means a single strong vape can contain the equivalent level of nicotine as smoking two packs of 20 cigarettes.

Originally touted as a new way to help smokers quit the habit, vapes and e-cigarettes have become a vice all their own.

The industry, now estimated to be worth over £1.3billion in the UK, has spawned a plethora of dedicated vape shops with plumes of flavoured vapour wafting across the streets as cheap disposable vape pods litter green spaces and drains.

Almost all experts agree that current evidence suggests vapes are far safer than the traditional cigarettes they were originally meant to be substitutes for.

The device allows people to inhale nicotine in a vapour — produced by heating a liquid, which typically contains propylene glycol, glycerine, flavourings, and other chemicals.

Unlike traditional cigarettes, they don't contain tobacco, nor do they produce tar or carbon — two of the most dangerous elements.





POLL

Do YOU think vaping should be banned?

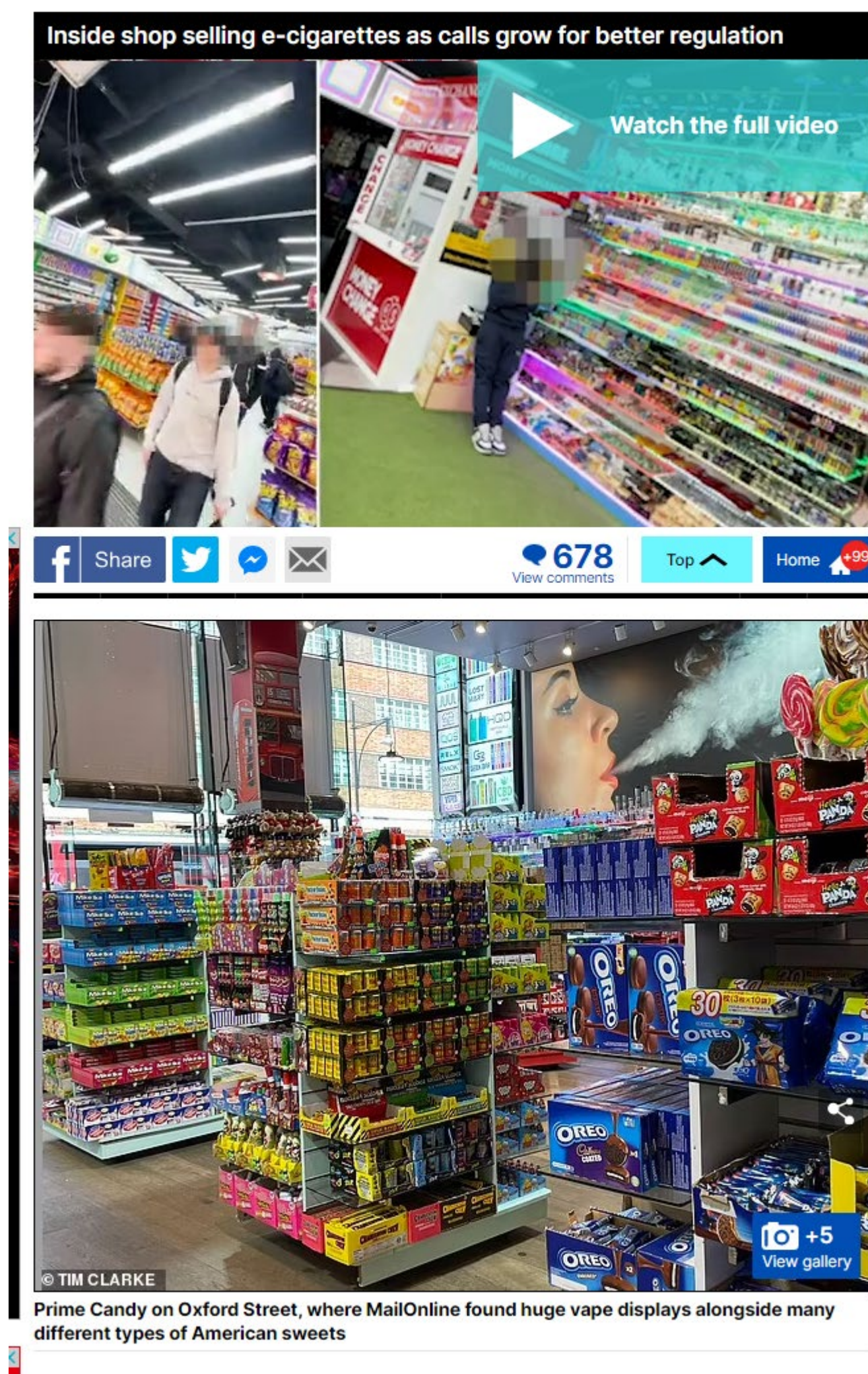
☒ Yes

☒ No

While a 2015 report by the now defunct Public Health England stated that vaping is 95 per cent less harmful than smoking, that remaining 5 per cent could still be doing damage.

Further adding to the confusion is that this, now often quoted, figure was from a study that itself noted their estimates were based on evidence of potential vaping harms being at a very early stage.

Short term health effects of vaping, like teenagers collapsing after using the devices, frequently make the headlines but it's the mystery surrounding the long-term impacts that are worrying some experts.



As vapes have only been around for the blink of an eye in health monitoring terms, the consequences of using the devices, especially among people picking up the habit in their youth, for decades are unknown. The data simply doesn't yet exist.

Doctors have expressed fears there could be a wave of lung disease, dental issues and even [cancer](#) in the coming decades in people who took up the habit at a young age.

[READ MORE: The truth about vaping and your health: We are finally getting answers - and this is why leading experts are getting increasingly worried...](#)

Last year leading paediatricians also warned children were being hospitalised with vaping-induced breathing difficulties amid a 'disturbing' youth vaping epidemic.

[NHS](#) figures show a rise in the number of children admitted to hospital due to vaping.

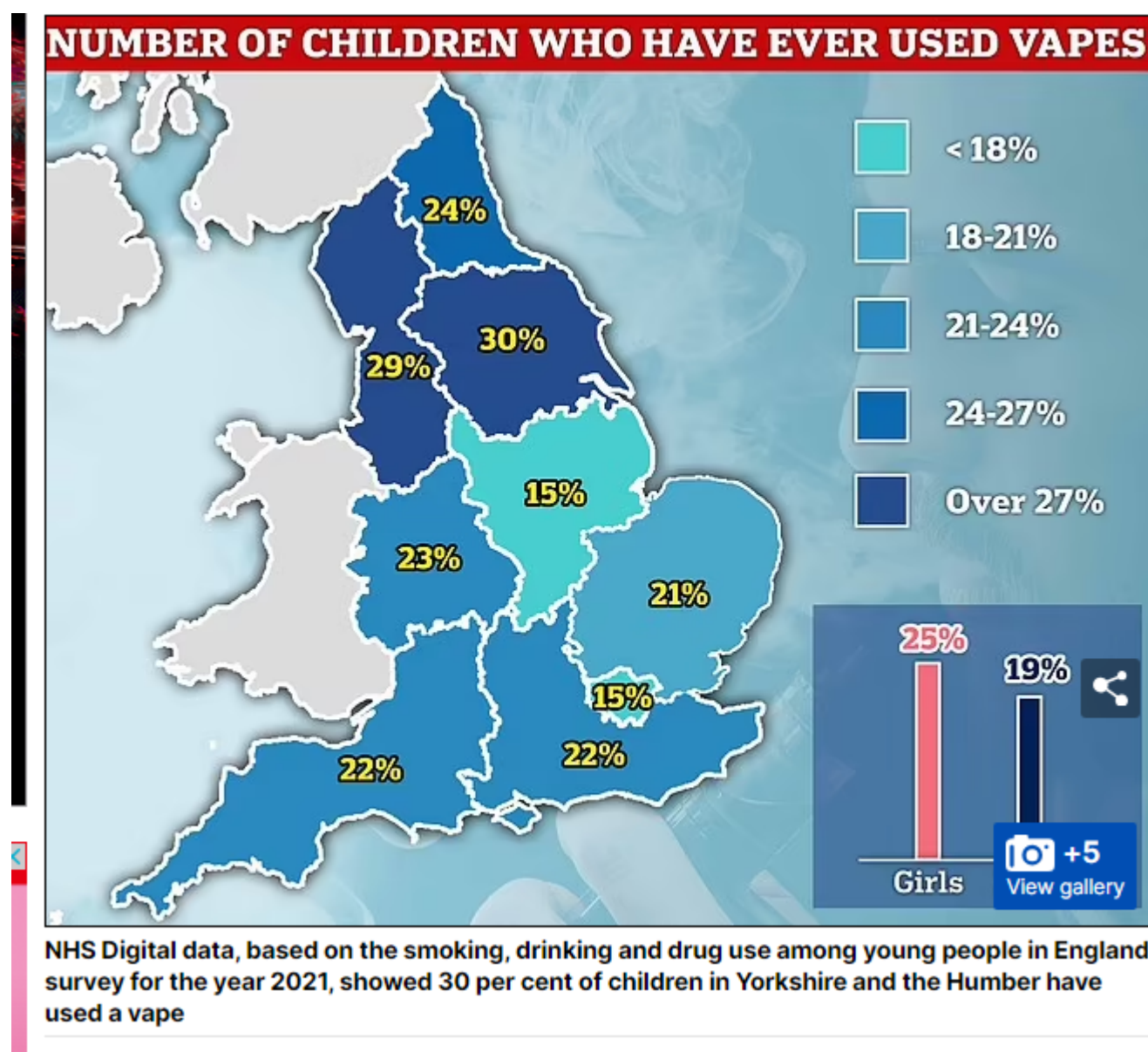
Forty children and young people were admitted to hospital in England last year due to 'vaping-related disorders', which could include lung damage or worsening asthma symptoms, up from 11 two years earlier, the NHS said.

Concerns over vaping in children have led ministers to announce a series of measures designed to curtail their availability in Britain.

A new Bill aims to introduce new powers to restrict vape flavours and packaging intentionally marketed at children.

This could change how vapes, which contain nicotine, are displayed in shops, moving them out of sight of children and away from other products such as sweets.

Figures show that one in five children has tried vaping despite it being illegal for under-18s, while the number of children using vapes has tripled in the past three years.



Other powers in the Bill mean enforcement officers will be able to give £100 on-the-spot fines to clamp down on underage sales of tobacco and vaping products.

This is in addition to the maximum £2,500 fine that local authorities can already impose.

It will also be illegal for retailers to give free samples of vapes to under-18s.

Separately, the Government has committed to ban disposable vapes from April 2025 under environmental laws.

Health campaigners have repeatedly said that offering disposables for 'pocket money prices' encourages children to take up vaping.

Figures also show disposable vapes are the e-cigarette of choice among youngsters, with purchases mostly made from corner shops.

MailOnline has [previously exposed the predatory tactics of some sweet shops](#) selling capes, including products resembling popular sweet brands like Skittles and Jolly Ranchers.

Professor discusses the possible health impacts of vaping



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