

# THE RISE OF E-CIGARETTES: WHAT YOU SHOULD KNOW ABOUT THE RISKS FOR YOUNG PEOPLE

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July 29, 2019



Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion



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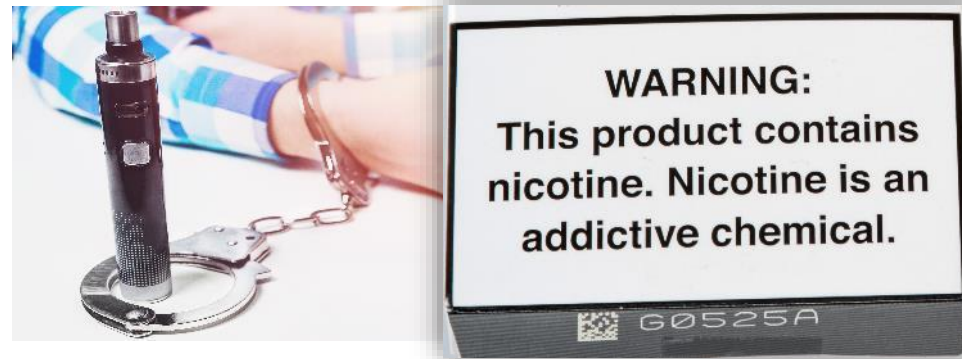
What's An E-cigarette?

2



Who's Using Them?

3



What Are The Health Effects?

4



What Can We Do About It?

1



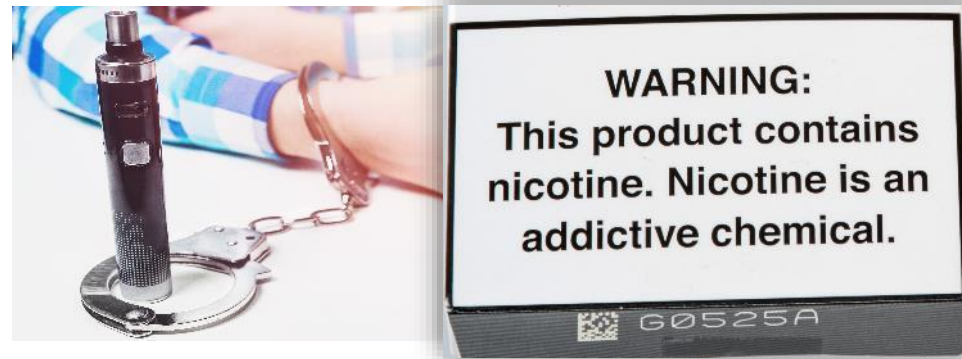
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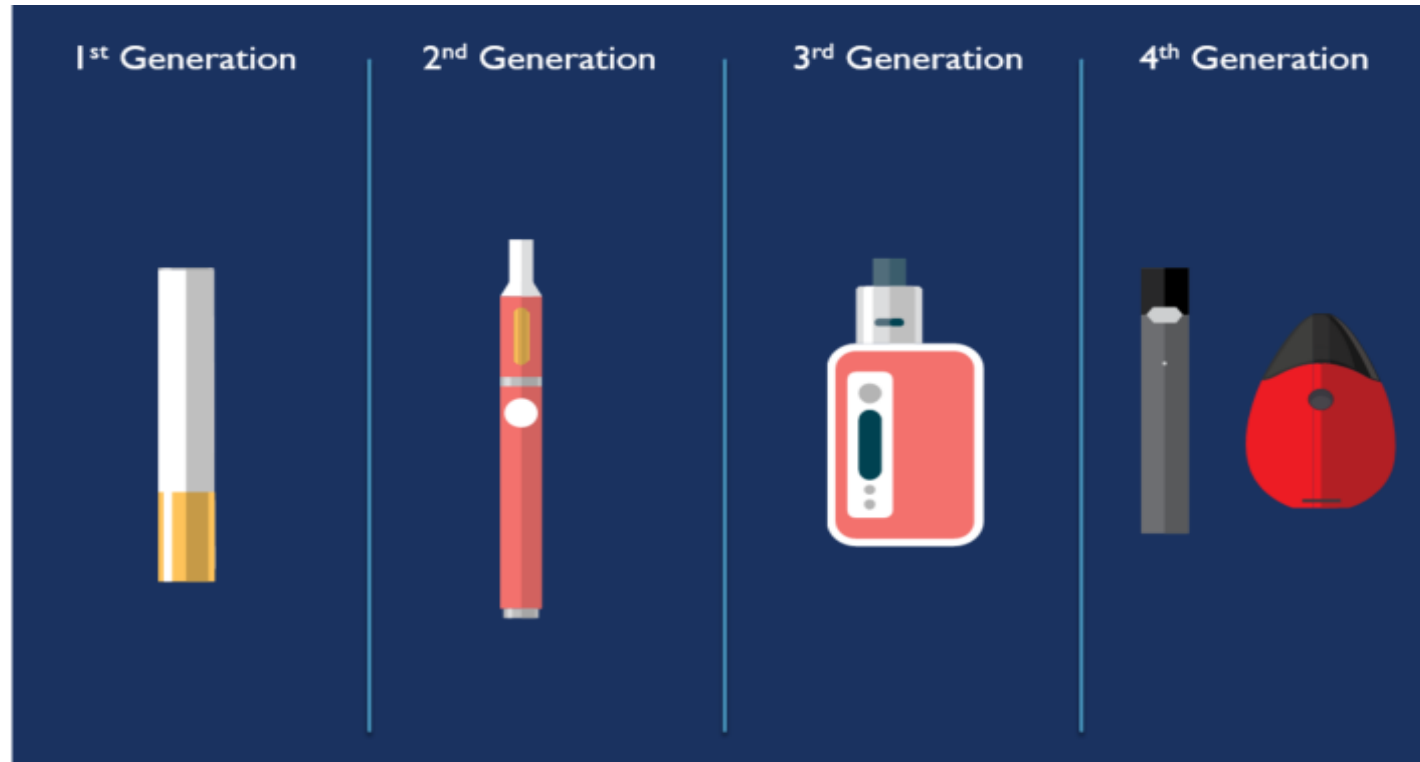
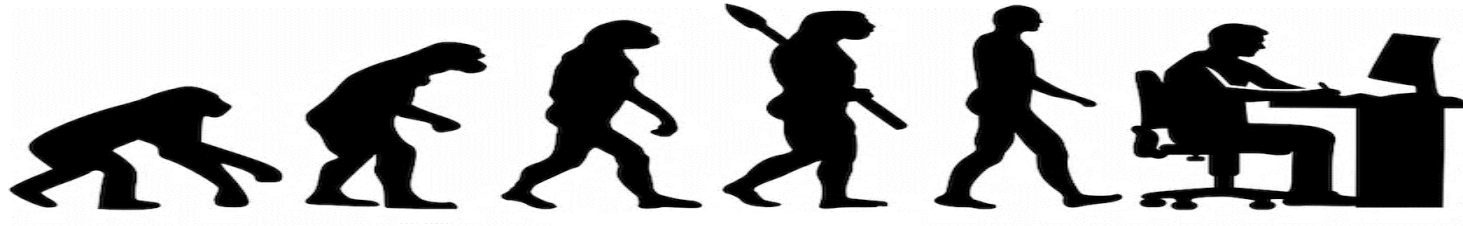


What Can We Do About It?





# THE EVOLUTION OF E-CIGARETTES



# THE “4<sup>th</sup> GENERATION” E-CIGARETTE HAS ARRIVED: THE “POD MOD”

**MarkTen Elite  
(Altria)**



**myBlu  
(Imperial Tobacco)**



**Vuse Alto  
(RJR)**



**Myle**



**Phix**



**Suorin Drop**



**Suorin Air**



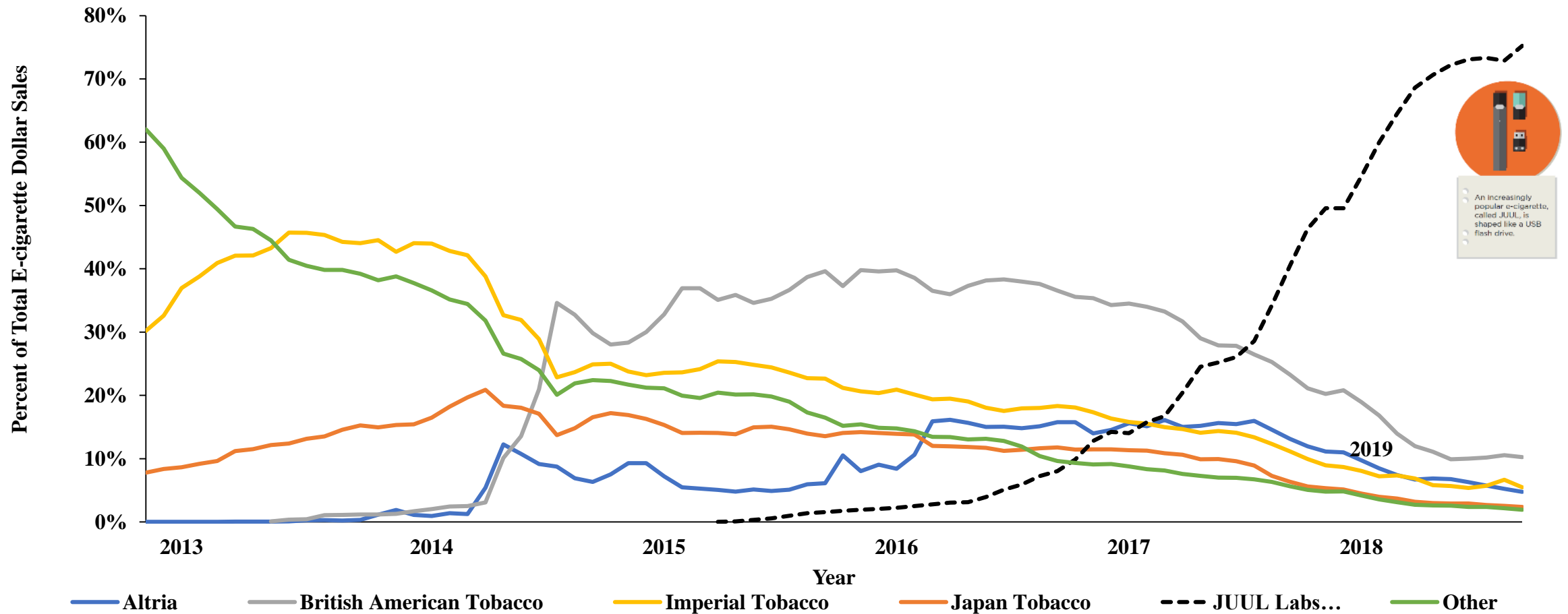
**KandyPens Feather**



**Daze MFG ZOOR**



# E-CIGARETTE MARKET SHARE, BY DOLLAR SALES, US, 2013 - 2018



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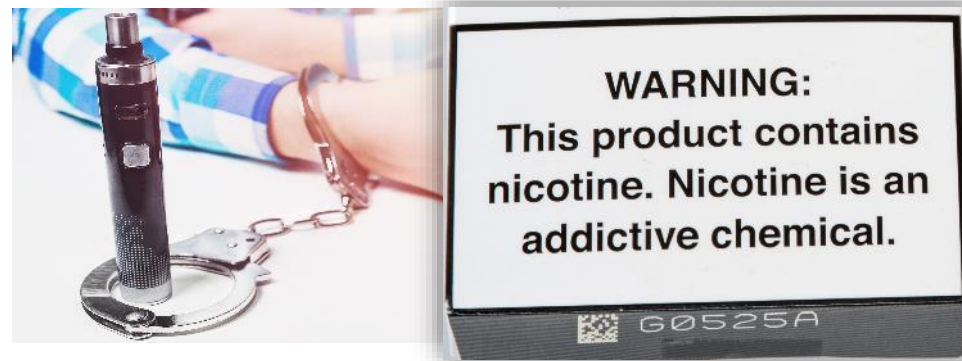
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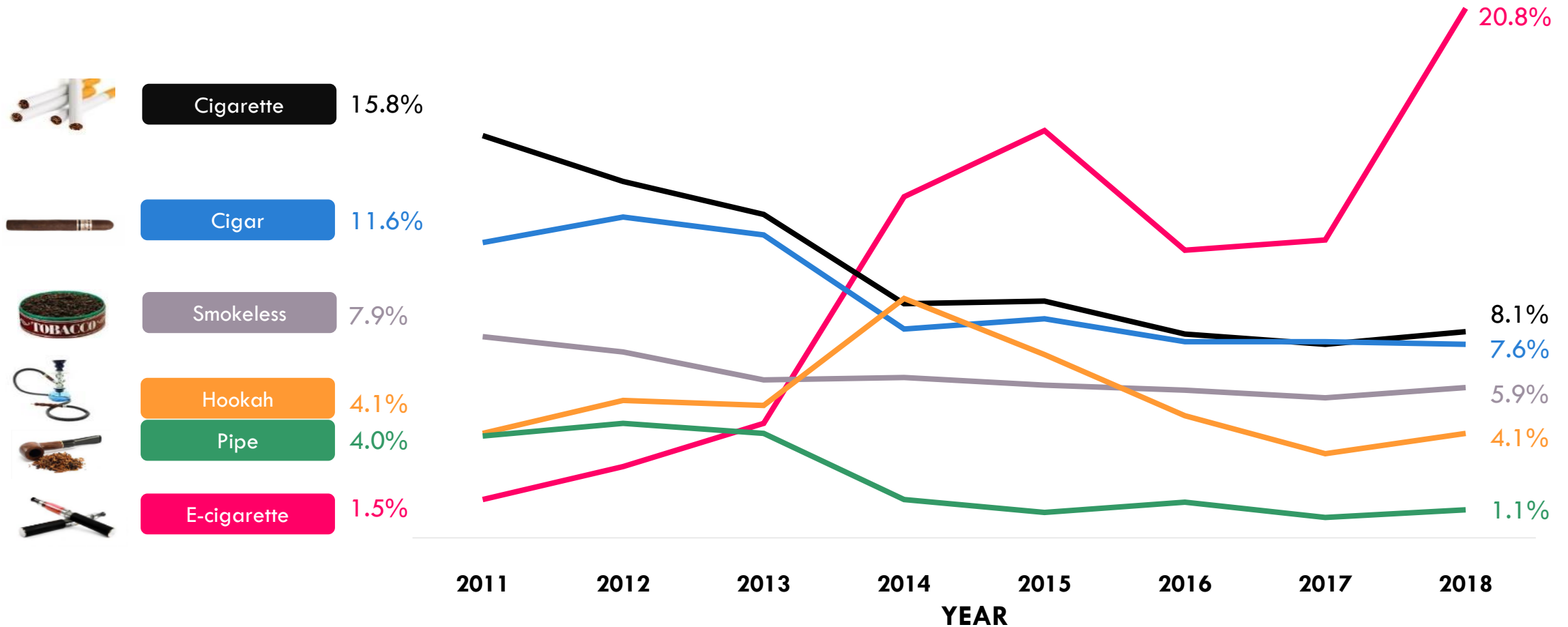
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# CURRENT TOBACCO PRODUCT USE AMONG U.S. HIGH SCHOOL STUDENTS – (2011–2018)





# WHAT CAUSES YOUTH E-CIGARETTE USE?



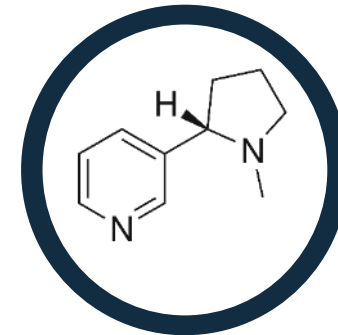
**Advertising**



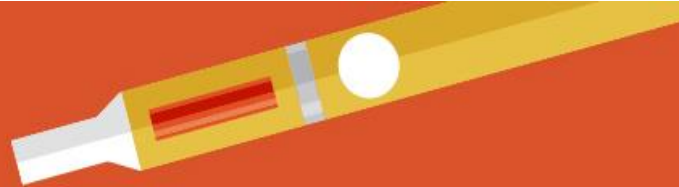
**Flavors**



**Nicotine**



# MOST YOUTH ARE EXPOSED TO E-CIGARETTE ADVERTISING



## E-CIGARETTE ADS

REACH NEARLY

**4 IN 5**

**U.S. MIDDLE AND  
HIGH SCHOOL STUDENTS**

More than 20 million youth saw e-cigarette ads in 2016.

### PERCENT OF STUDENTS EXPOSED TO E-CIGARETTE ADS



### YOUTH EXPOSURE TO E-CIGARETTE ADS, 2016

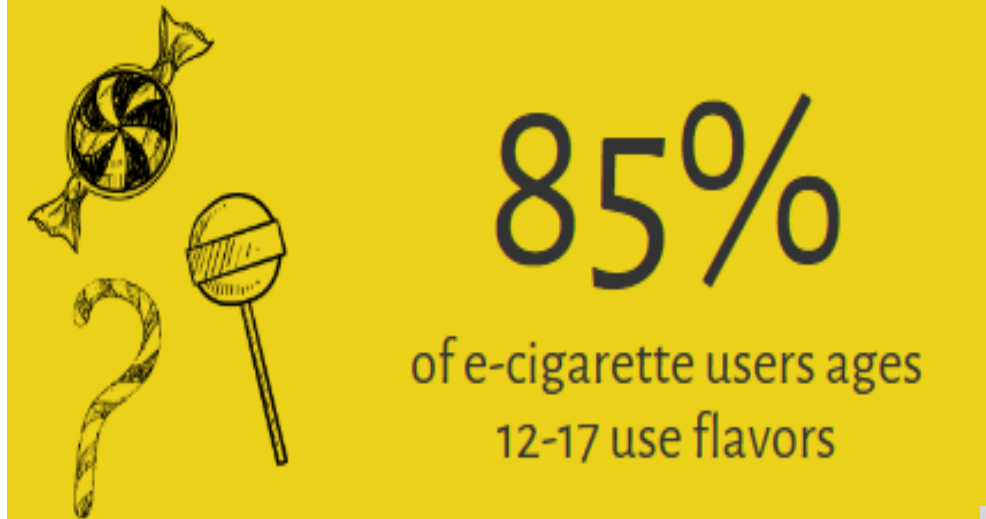


Efforts to reduce youth exposure to e-cigarette ads are important to prevent and reduce youth use of these products.

Source: National Youth Tobacco Survey



## USE OF FLAVORS IS PROMINENT AMONG YOUTH



menthol

fruit

alcohol

chocolate

candy

sweets





## JUUL CONTAINS A HIGH AMOUNT OF NICOTINE



All JUUL e-cigarettes have a high level of nicotine. According to the manufacturer, a single JUUL pod contains as much nicotine as a pack of 20 regular cigarettes.

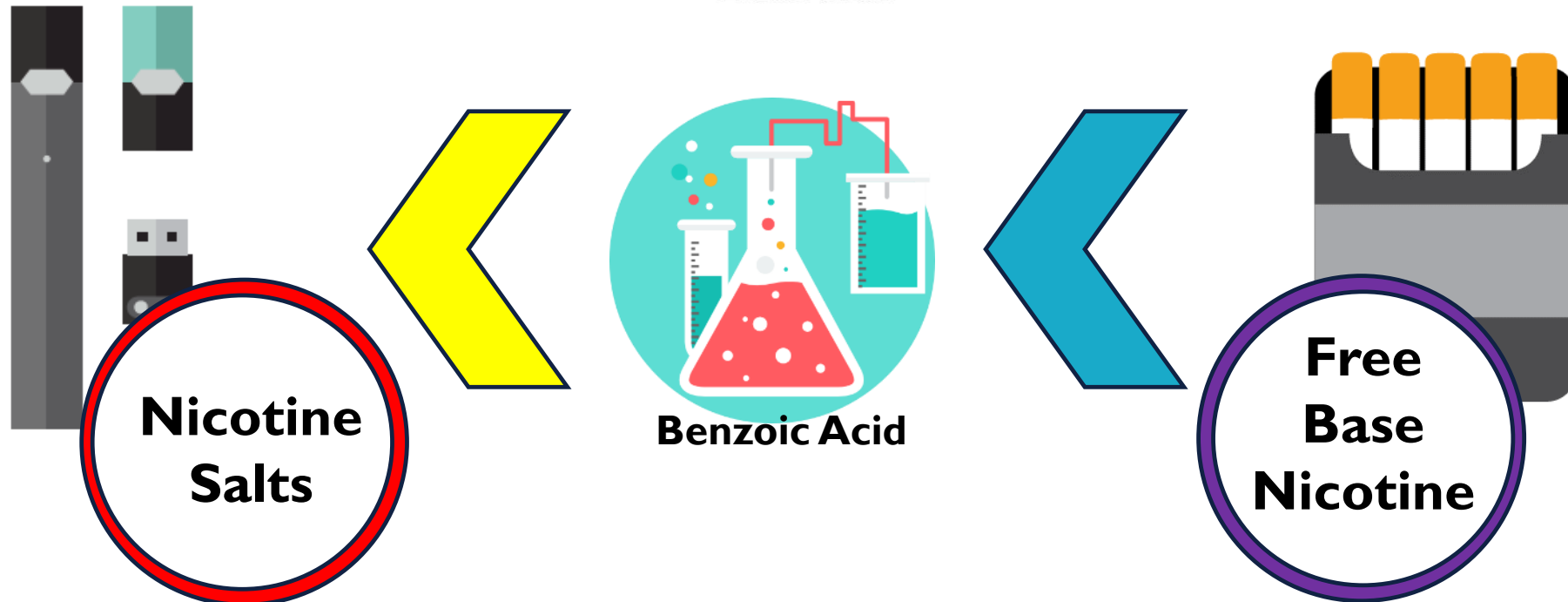
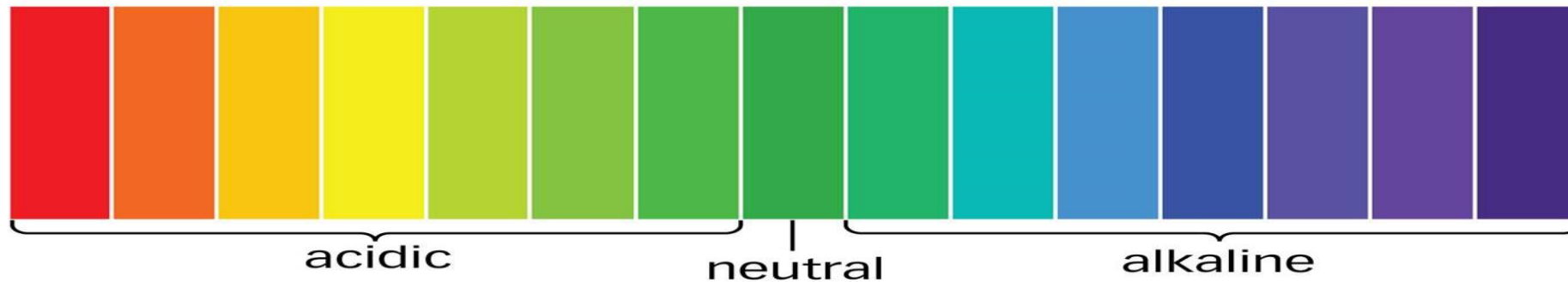
**WARNING:**  
**This product contains  
nicotine. Nicotine is an  
addictive chemical.**



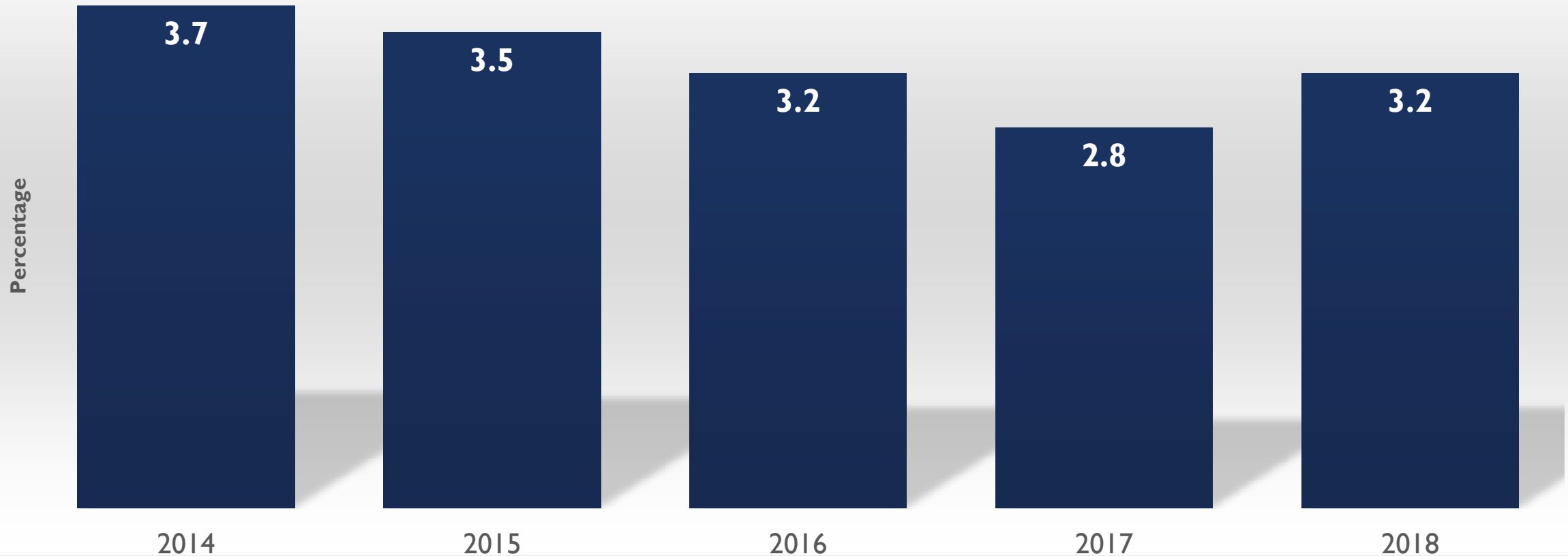
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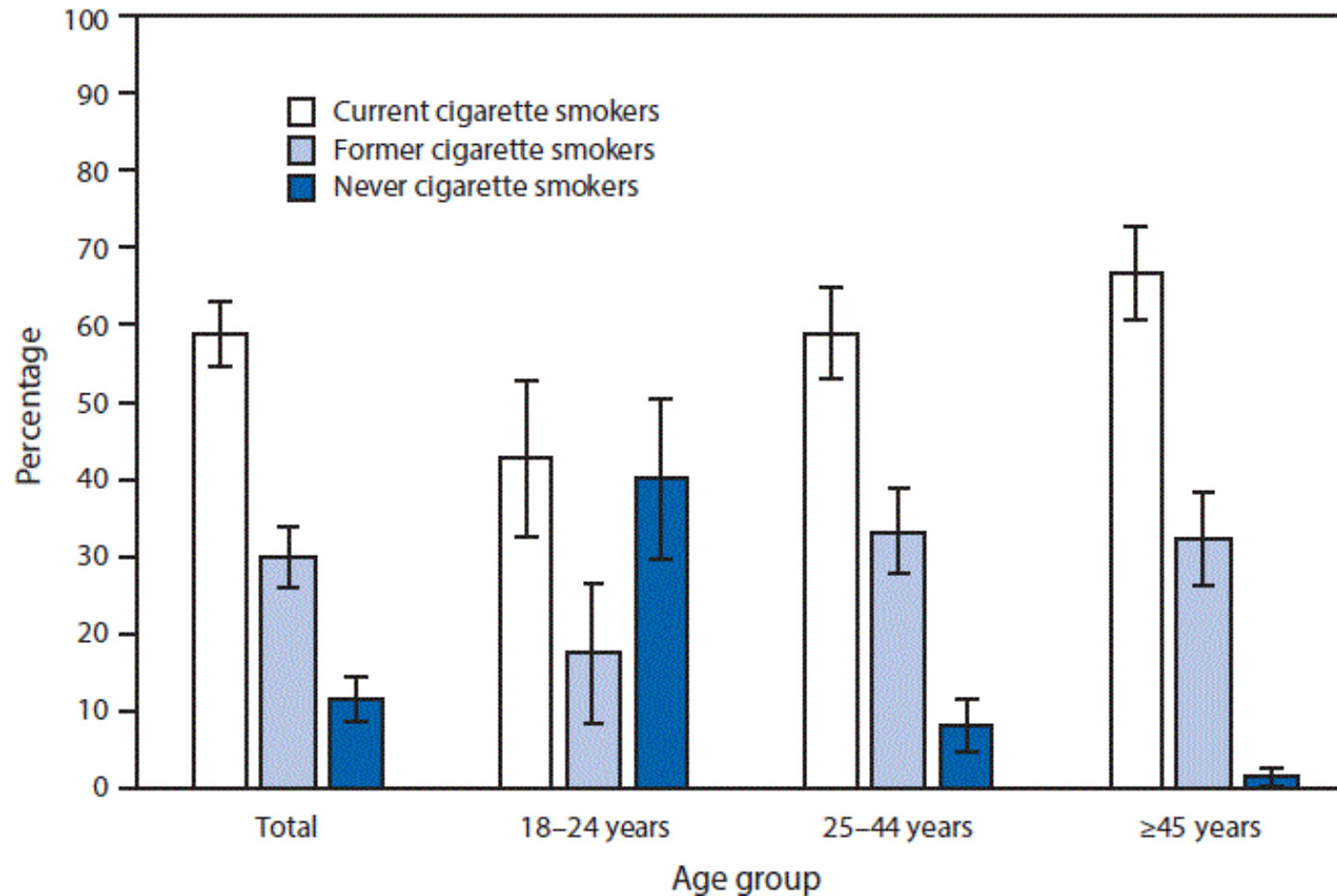
# NICOTINE SALTS ALLOW HIGH LEVELS OF NICOTINE TO BE INHALED MORE EASILY



## CURRENT E-CIGARETTE USE AMONG U.S. ADULTS, 2014-2018



# RELATIONSHIP BETWEEN CIGARETTE SMOKING AND E-CIGARETTE USE



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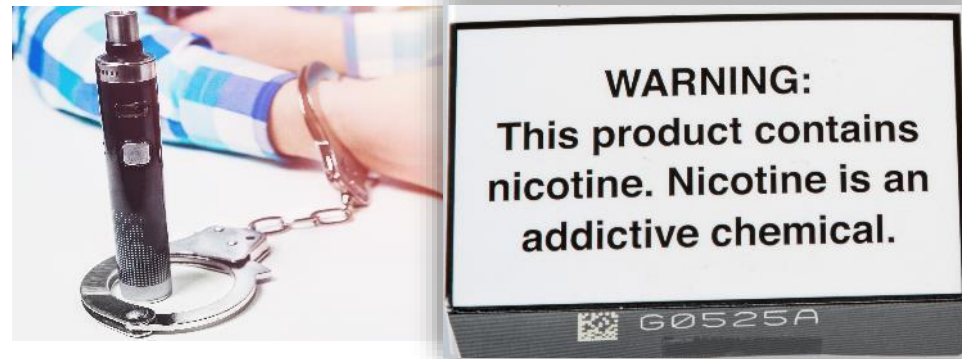
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# PUBLIC HEALTH HARM OR BENEFIT?



**Youth Initiation**

**Adult Cessation**

# E-CIGARETTE USE AS A SMOKING CESSATION TOOL AMONG ADULTS



**Cochrane** Trusted evidence. Informed decisions. Better health.

Our evidence About us Get involved News

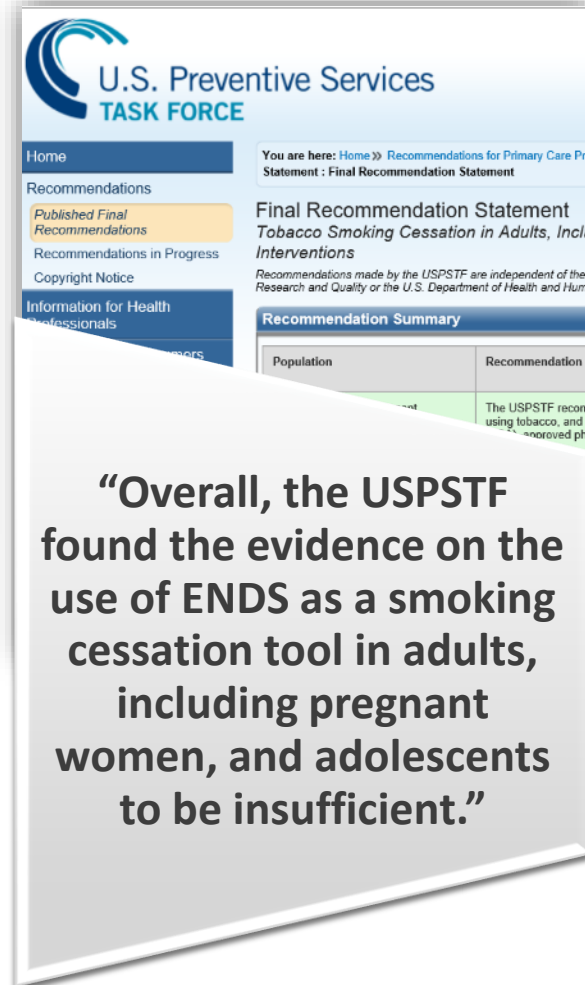
## Can electronic cigarettes help people stop smoking?

Published: 13 September 2016

**Background**

Electronic cigarettes (ECs) are electronic devices (commonly referred to as vapour) that the user inhales. They contain nicotine without most of the toxic chemicals found in tobacco. ECs are popular with smokers who want to quit smoking. However, it is unclear whether ECs are safe or effective for smoking cessation.

**“The long-term safety of e-cigarettes is unknown.”**



**U.S. Preventive Services TASK FORCE**

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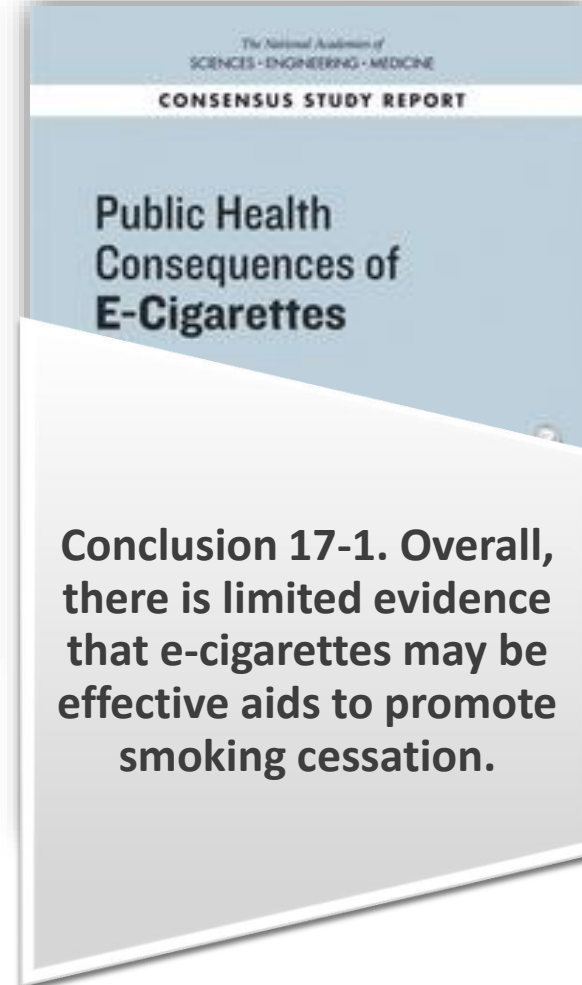
## Final Recommendation Statement Tobacco Smoking Cessation in Adults, Including Pregnant Women: Behavioral and Pharmacotherapy Interventions

Recommendations made by the USPSTF are independent of the U.S. Research and Quality or the U.S. Department of Health and Human Services.

### Recommendation Summary

Population	Recommendation
Adults who smoke and are not pregnant	The USPSTF recommends counseling about tobacco use, and providing pharmacotherapy as an adjunct to counseling, for adults who smoke and are not pregnant.

**“Overall, the USPSTF found the evidence on the use of ENDS as a smoking cessation tool in adults, including pregnant women, and adolescents to be insufficient.”**



The National Academies of SCIENCES • ENGINEERING • MEDICINE

## CONSENSUS STUDY REPORT

# Public Health Consequences of E-Cigarettes

**Conclusion 17-1. Overall, there is limited evidence that e-cigarettes may be effective aids to promote smoking cessation.**

# POTENTIAL HEALTH RISKS OF E-CIGARETTES



Leads to initiation of combustible tobacco use among non-smokers, particularly children



Leads to relapse among former smokers



Diminishes the chances that a smoker will quit



Discourages smokers from using proven quit methods



Exposes children, pregnant women, and non-users to secondhand aerosol



Glamorizes or renormalizes tobacco use

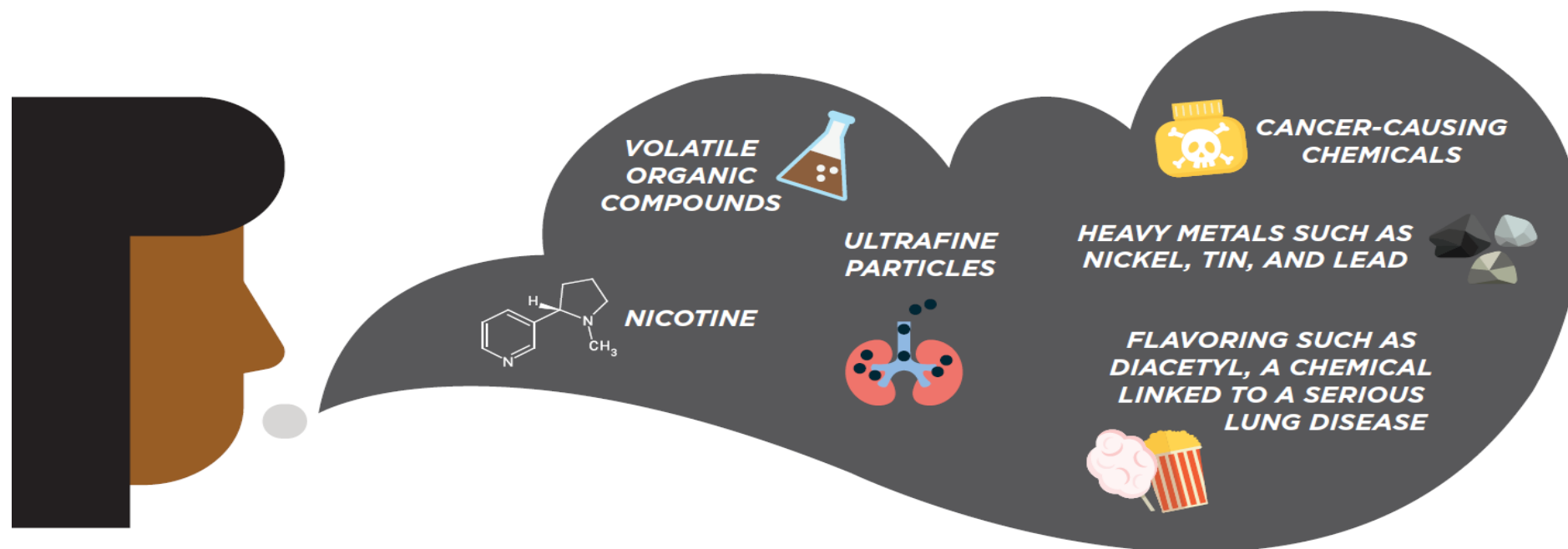


Results in poisonings among users or non-users



# E-CIGARETTES MAKE AEROSOL, NOT VAPOR

THE E-CIGARETTE AEROSOL THAT USERS BREATHE FROM THE DEVICE AND EXHALE CAN CONTAIN HARMFUL AND POTENTIALLY HARMFUL SUBSTANCES:





1



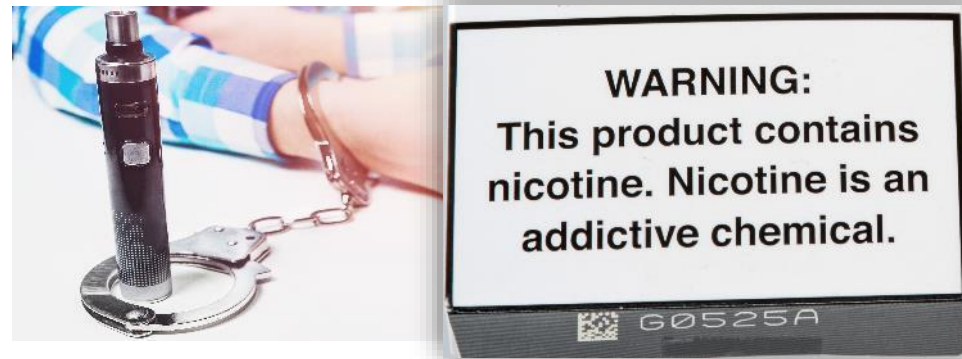
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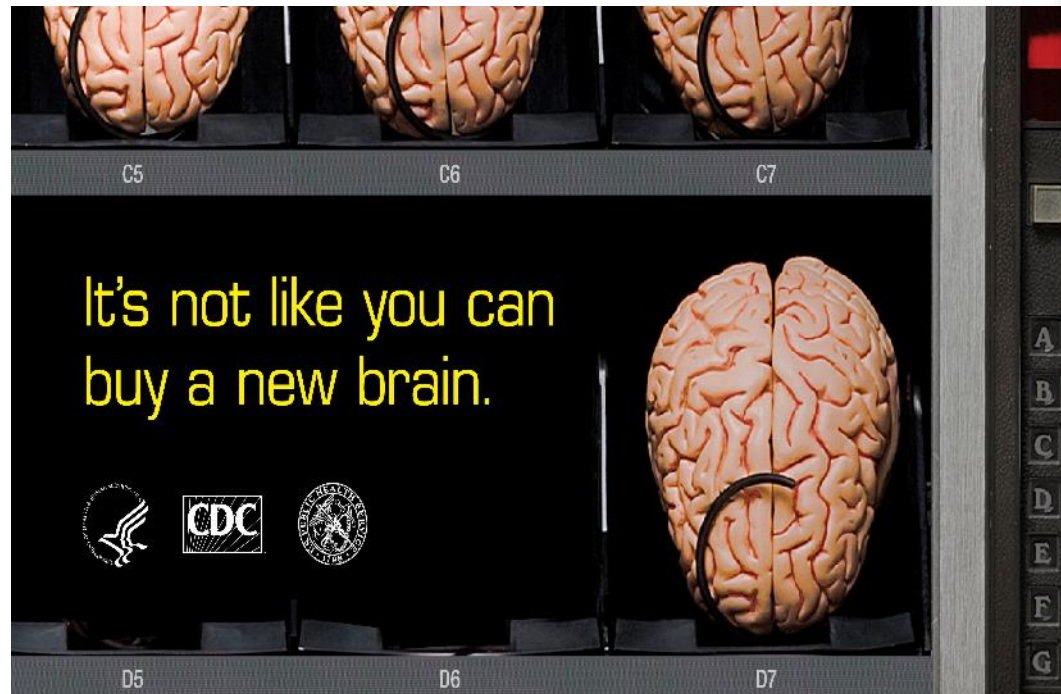
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# SURGEON GENERAL'S ADVISORY ON E-CIGARETTE USE AMONG YOUTH (2018)



<https://e-cigarettes.surgeongeneral.gov/>

## Surgeon General's Advisory on E-cigarettes and Youth

*I, Surgeon General of the United States Public Health Service, VADH, of protecting our children from a lifetime of nicotine addiction and the epidemic of youth e-cigarette use. The recent surge in e-cigarette use of types of e-cigarettes that have recently entered the market, is a cause to protect the health of our nation's young people.*

### KNOW THE RISKS

## The E-cigarette Epidemic Among Youth

Considerable progress has been made in reducing cigarette smoking. However, the tobacco product landscape continues to evolve to include a variety of smokeless, and electronic products, such as e-cigarettes.<sup>1</sup> E-cigarette flavors, and other additives to the user via an inhaled aerosol.<sup>2</sup>

E-cigarettes entered the U.S. marketplace around 2007, and since then, use of tobacco products among U.S. youth.<sup>3</sup> E-cigarette use among 900% during 2011-2015, before declining for the first time during 2016-2017. E-cigarette use among high school students during the past year, more than 3.6 million U.S. youth, including 1 in 5 high school students currently use e-cigarettes.<sup>4</sup>

E-cigarette aerosol is not harmless.<sup>5</sup> Most e-cigarettes contain nicotine, and other tobacco products.<sup>6</sup> Nicotine exposure during adolescence, which continues to develop until about age 25.<sup>7</sup> Nicotine exposure can also affect memory, and attention.<sup>8,9</sup> Using nicotine in adolescence can also affect the brain.<sup>10</sup> In addition to nicotine, the aerosol that users inhale and both themselves and bystanders to other harmful substances, including chemicals, and ultrafine particles that can be inhaled deeply into the lungs.

Many e-cigarettes also come in kid-friendly flavors. In addition to people,<sup>11</sup> some of the chemicals used to make certain flavors may be used to deliver other drugs, including marijuana.<sup>12</sup> In 2016, one-third of e-cigarette users had used marijuana in e-cigarettes.<sup>13</sup>

For adults, e-cigarettes may have the potential to reduce risk for cigarette use. However, a majority of adults who use e-cigarettes also use multiple tobacco products puts youth at even greater risk. Moreover, a 2018 National Academy of Sciences, Engineering, and Medicine report found moderate evidence that e-cigarette use increases the frequency of cigarette use. But any e-cigarette use among young people is unsafe, even if they do not use tobacco products.

## E-cigarettes Come in Many Shapes and Sizes

E-cigarettes are a rapidly changing product class, and are known as "hookahs," "mods," and "vape pens."<sup>14</sup> Recently, a new type of e-cigarette, the JUUL, has gained popularity among youth due to its minimal exhaled aerosol, reduced odor, and its design that looks like a USB flash drive, among other features.

USB flash drive shaped e-cigarettes is JUUL, which experienced a 600% surge in sales during 2016-2017, giving it the greatest market share of any e-cigarette in the U.S. by the end of 2017.<sup>15</sup> Other companies are now also starting to sell e-cigarettes that look like USB flash drives.

All JUUL e-cigarettes have a high level of nicotine. A typical JUUL cartridge, or "pod," contains about as much nicotine as a pack of 20 regular cigarettes.<sup>16</sup> These products also use nicotine salts, which allow particularly high levels of nicotine to be inhaled more easily and with less irritation than the free-base nicotine that has traditionally been used in tobacco products, including e-cigarettes. This is of particular concern for young people, because it could make it easier for them to initiate the use of nicotine through these products and also could make it easier to progress to regular e-cigarette use and nicotine dependence. However, despite these risks, approximately two-thirds of JUUL users aged 15-24 do not know that JUUL always contains nicotine.<sup>17</sup>

## You Can Take Action

We must take aggressive steps to protect our children from these highly potent products that risk exposing a new generation of young people to nicotine.<sup>18</sup> The bad news is that e-cigarette use has become an epidemic among our nation's young people. However, the good news is that we know what works to effectively protect our kids from all forms of tobacco product use, including e-cigarettes.<sup>19,20</sup> We must now apply these strategies to e-cigarettes, including USB flash drive shaped products such as JUUL. To achieve success, we must work together, aligning and coordinating efforts across both old and new partners at the national, state, and local levels. Everyone can play an important role in protecting our nation's young people from the risks of e-cigarettes.

## Information for Parents

- You have an important role to play in addressing this public health epidemic.
- Learn about the different shapes and types of e-cigarettes and the risks of all forms of e-cigarette use for young people at <https://e-cigarettes.surgeongeneral.gov/>.
- Set a good example by being tobacco-free. If you use tobacco products, it's never too late to quit. Talk to a healthcare professional about quitting all forms of tobacco product use. For free help, visit [smokefree.gov](https://smokefree.gov/) or call 1-800-QUIT-NOW.
- Adopt tobacco-free rules, including e-cigarettes, in your home and vehicle.
- Talk to your child or teen about why e-cigarettes are harmful for them. It's never too late.
- Get the Surgeon General's tip sheet for parents, [Talk With Your Teen About E-cigarettes](https://e-cigarettes.surgeongeneral.gov/), at <https://e-cigarettes.surgeongeneral.gov/>. Start the conversation early with children about why e-cigarettes, including JUUL, are harmful for them.
- Let your child know that you want them to stay away from all tobacco products, including e-cigarettes, because they are not safe for them. Seek help and get involved.
  - Set up an appointment with your child's health care provider so that they can hear from a medical professional about the health risks of tobacco products, including e-cigarettes.
  - Speak with your child's teacher and school administrator about enforcement of tobacco-free school policies and tobacco prevention curriculum.
  - Encourage your child to learn the facts and get tips for quitting tobacco products at [Teen.smokefree.gov](https://teen.smokefree.gov/).

## Information for Teachers

- You have an important role to play in addressing this public health epidemic.
- Learn about the different shapes and types of e-cigarettes and the risks of all forms of e-cigarette use, including JUUL, for young people at <https://e-cigarettes.surgeongeneral.gov/>.
- Develop, implement, and enforce tobacco-free school policies and prevention programs that are free from tobacco industry influence, and that address all types of tobacco products, including e-cigarettes.

# EVERYONE HAS A ROLE IN ADDRESSING YOUTH E-CIGARETTE USE

## Parents



## Teachers



## Health professionals



## States, communities, tribes, and territories



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- Set a good example by being tobacco-free. If you use tobacco products, it's never too late to quit. For free help, visit [smokefree.gov](https://smokefree.gov) or call 1-800-QUIT-NOW.
- Adopt tobacco-free rules, including e-cigarettes, in your home and vehicle.
- Get the Surgeon General's tip sheet for parents at <https://e-cigarettes.surgeongeneral.gov/>.
- Seek help and get involved.
  - Set up an appointment with your child's health care provider so they can hear about the risks of e-cigarettes.
  - Speak with your child's teacher and school administrator about tobacco-free school policies and curriculum.
  - Encourage your child to get tips for quitting at [Teen.smokefree.gov](https://teen.smokefree.gov) or Truth's App (text "DITCHJUUL" to 88709).



# 1



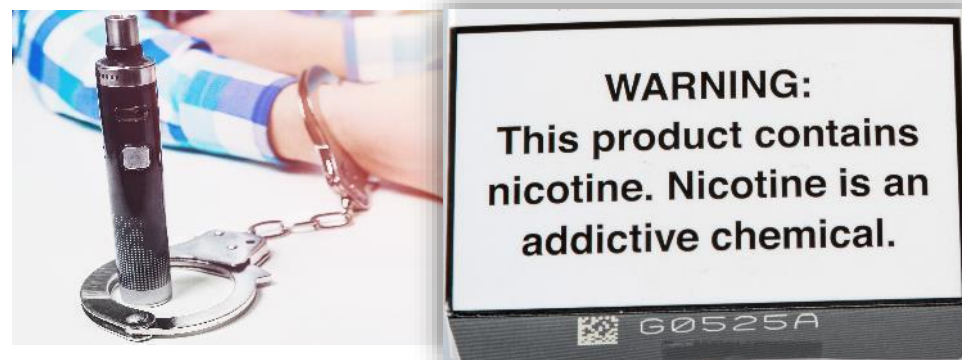
E-cigarettes are a tobacco product that produces an aerosol by heating a liquid that typically contains nicotine, flavorings, and other chemicals.

# 2



As of 2014, e-cigarettes were the most commonly used tobacco product among U.S. youth. Several factors have contributed to youth use, including advertising, flavors, and high nicotine content.

# 3



Youth use of any tobacco products, including e-cigarettes, is unsafe.

# 4



As the tobacco product landscape continues to diversify, it's important to modernize tobacco control strategies to adapt.



**Brian A. King, PhD, MPH**  
**Office on Smoking and Health**  
**baking@cdc.gov**



[www.cdc.gov/tobacco](http://www.cdc.gov/tobacco)

**E-CIGARETTES SHAPED LIKE USB FLASH DRIVES:**  
INFORMATION FOR PARENTS, EDUCATORS,  
AND HEALTH CARE PROVIDERS

Electronic cigarettes (e-cigarettes) are battery-powered devices that can deliver nicotine and flavorings to the user in the form of an aerosol. E-cigarettes come in many shapes and sizes.

**WHAT'S THE BOTTOM LINE?**

A new e-cigarette shaped like a **USB** flash drive is being used by students in schools.

Nicotine is highly addictive and can **harm brain development**, which continues until about age 25.

The use of any tobacco product—including e-cigarettes—is **unsafe** for young people.

**Parents, educators, & health care providers** can help prevent and reduce the use of all tobacco products, including e-cigarettes, by young people.

**>> Learn HOW** in this fact sheet.

CDC U.S. Department of Health and Human Services

**KNOW THE RISKS** Talk with Your Teen About E-cigarettes:  
A Tip Sheet for Parents

**BEFORE THE TALK**  
Know the facts:

- Get credible information about e-cigarettes and young people at [E-cigarettes.SurgeonGeneral.gov](http://E-cigarettes.SurgeonGeneral.gov)
- Avoid criticism and encourage an open dialogue.
- Remember, your goal is to have a conversation, not to deliver a lecture.
- It's OK for your conversation to take place over time, in bits and pieces.

Be patient and ready to listen.

Set a positive example by being tobacco-free.

- If you use tobacco, it's never too late to quit. For free help, visit [smokefree.gov](http://smokefree.gov) or call 1-800-QUIT-NOW.

CDC U.S. Department of Health and Human Services

**CDC Tobacco Free** 2 hrs · 4

Something in this locker contains nicotine, which is addictive and can harm brain development. What is it?

**Hiding in Lockers**

Protect kids from e-cigarettes

[https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/index.htm](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm)

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