

**NJ Health**  
New Jersey Department of Health



**Tobacco-Free**  
FOR A HEALTHY NEW JERSEY

# DON'T GET VAPED IN

**The Next Generation of Tobacco Addiction**





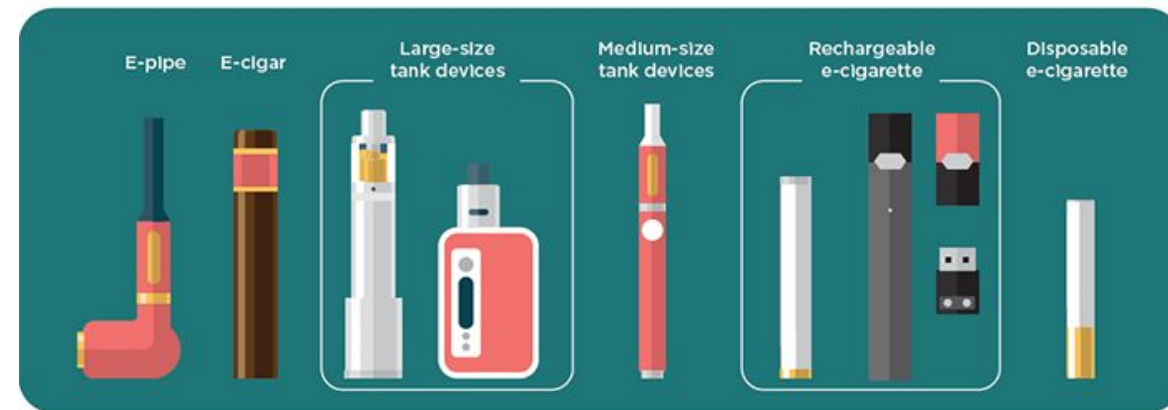
# Objectives

- Define the risks of electronic nicotine delivery systems
- Discuss the relationship between vaping and adverse outcomes of COVID – 19
- Identify resources for intervention services available to the public for tobacco cessation



# Electronic Nicotine Delivery System (ENDS)

- AKA: e-cigarettes, vape pens, hookah pens, tanks, mods, JUUL etc.
- Battery-powered heating devices
- Originally designed to deliver liquid nicotine to users in the form of a “aerosol” (instead of smoke)
- The “aerosol” comes from heating liquid nicotine and flavoring.





# E-cigarette Generations



## Cig-a-Like

E-cigarettes came onto the market around 2007. Most delivered nicotine and were disposable.



## Variations

Variations on the first e-cigarettes included products like e-hookah & rechargeable versions.



## Vape Pens

These have batteries that can reach higher temperatures, have refillable e-liquid cartridges, & allow users to regulate the frequency of inhalations.



## Mods

Large size, modifiable e-cigarettes allow for more aerosol, nicotine, & other chemicals to be inhaled into the lungs, at a faster rate.



## Pod-Based

The e-cigarettes are shaped like USBs and contain pods with higher amounts of nicotine than previous generations.

## Fourth Generation



# Pod Based Systems

- Pod Mod is an e-cigarette, or vaping product with a prefilled or refillable “pod” or pod cartridge with a modifiable (mod) system (“Pod-Mods”)
- These are other examples of fourth generation devices. Pod Mods come in many shapes, sizes, and colors.
- Common Pod Mod brands include JUUL<sup>®</sup> and Suorin<sup>®</sup>
- There are compatible prefilled pod cartridges that contain nicotine, THC, or CBD with or without flavoring.

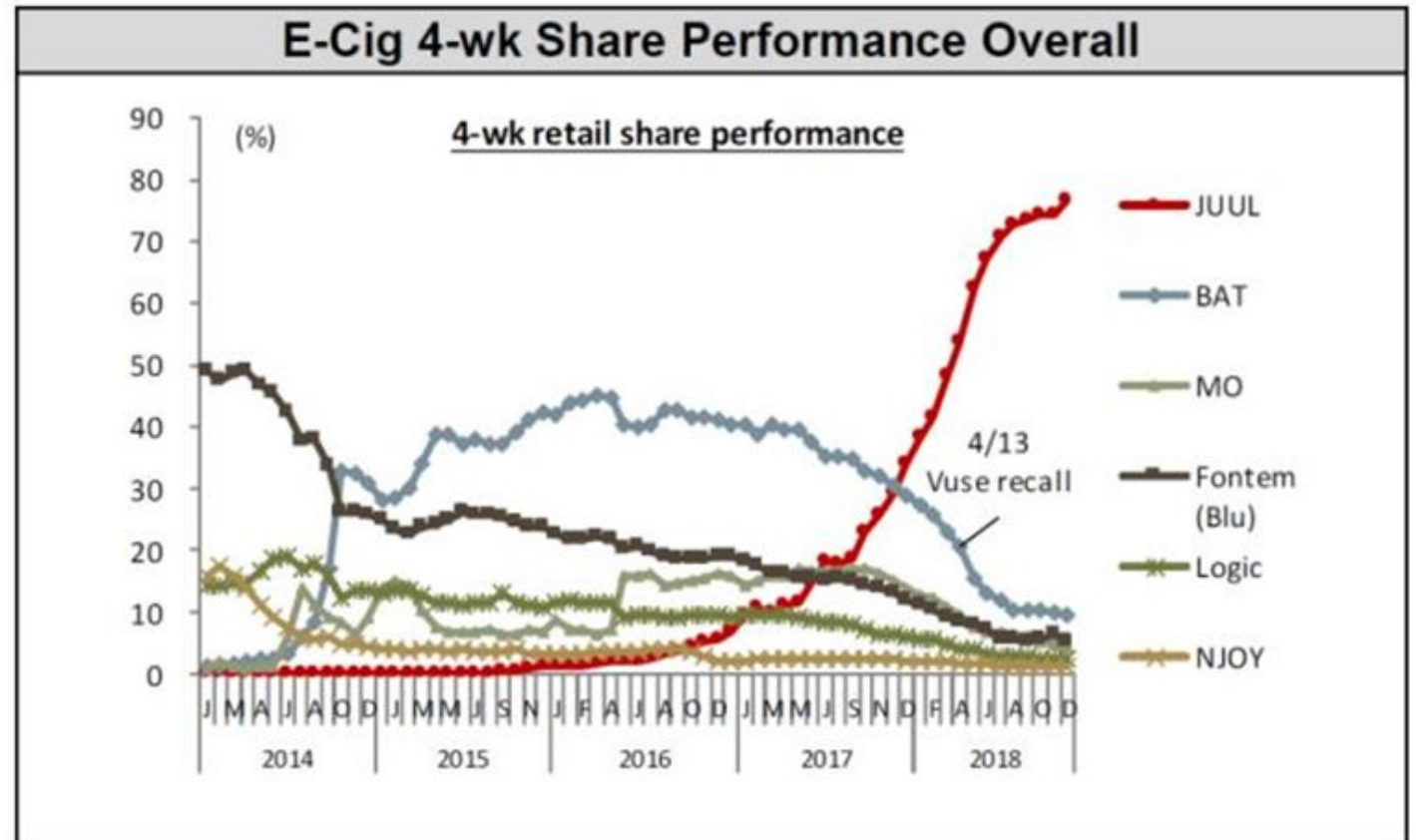
E-CIGARETTE, OR VAPING, PRODUCTS VISUAL DICTIONARY  
CDC.gov





# Extraordinary Growth

- From 2016 to 2017, JUUL's sales spiked by 641% to 16.2 million e-cigarettes in 2017.
- As of December 2018, JUUL controls about 80% of the market





# E-Cigarettes & Vape Pens Components



## Battery

The battery is the energy source of the device and powers the atomizer

## Atomizer

The atomizer is the heating element that heats the e-liquid and is often coil shaped

## E-Liquid

Sometimes called e-juice, this is put into the device and often contains flavors and nicotine

## Cartridge

The cartridge (tank) holds the e-liquid and may also hold the atomizer

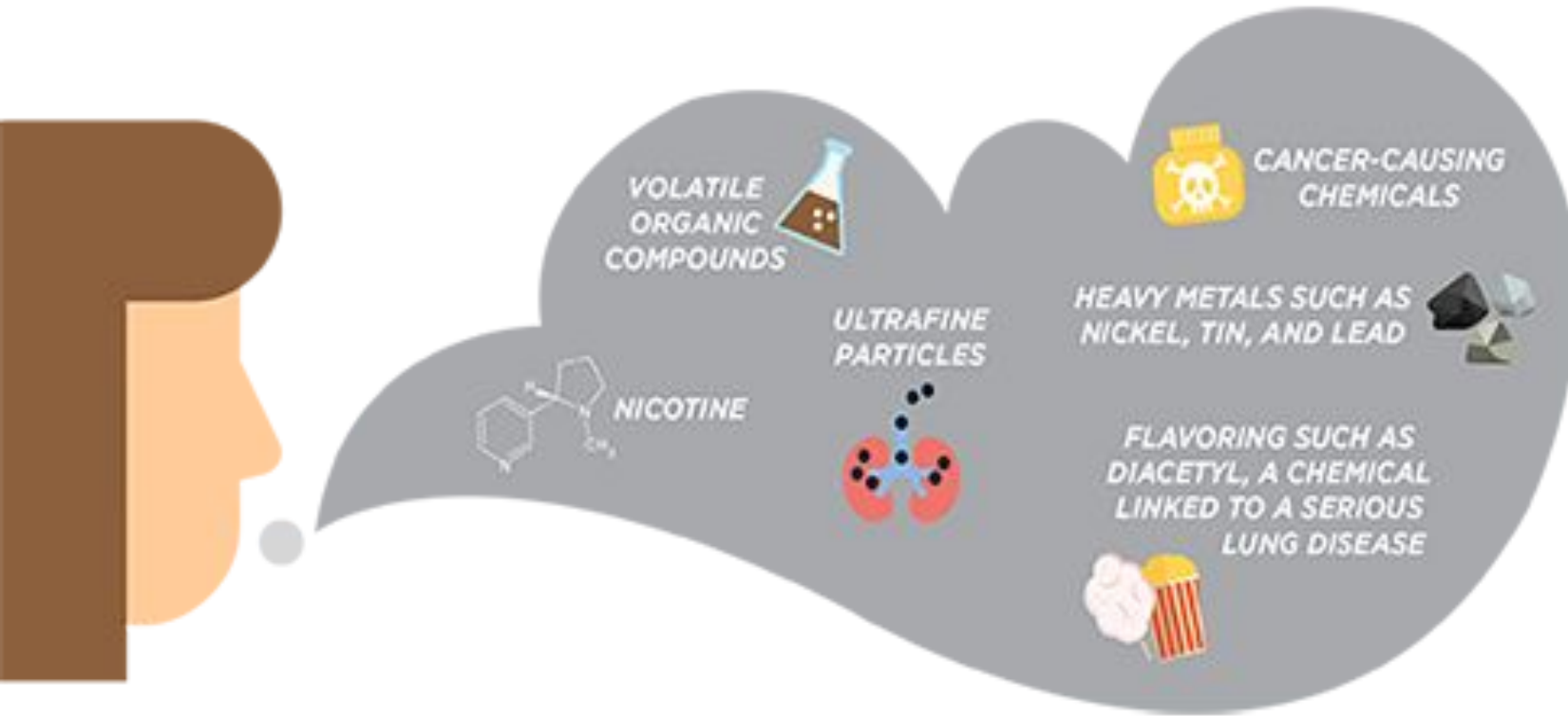
## Aerosol

Heating e-liquid inside the device creates an aerosol that is inhaled into the body and out into the air





# ENDS Aerosol is NOT Harmless "Water Vapor"



- Labeling is NOT always a reliable indicator of nicotine content
- About **99%** of ALL e-cigs sold at convenience stores, supermarkets and similar outlets contain nicotine.





# Nicotine Addiction & Youth

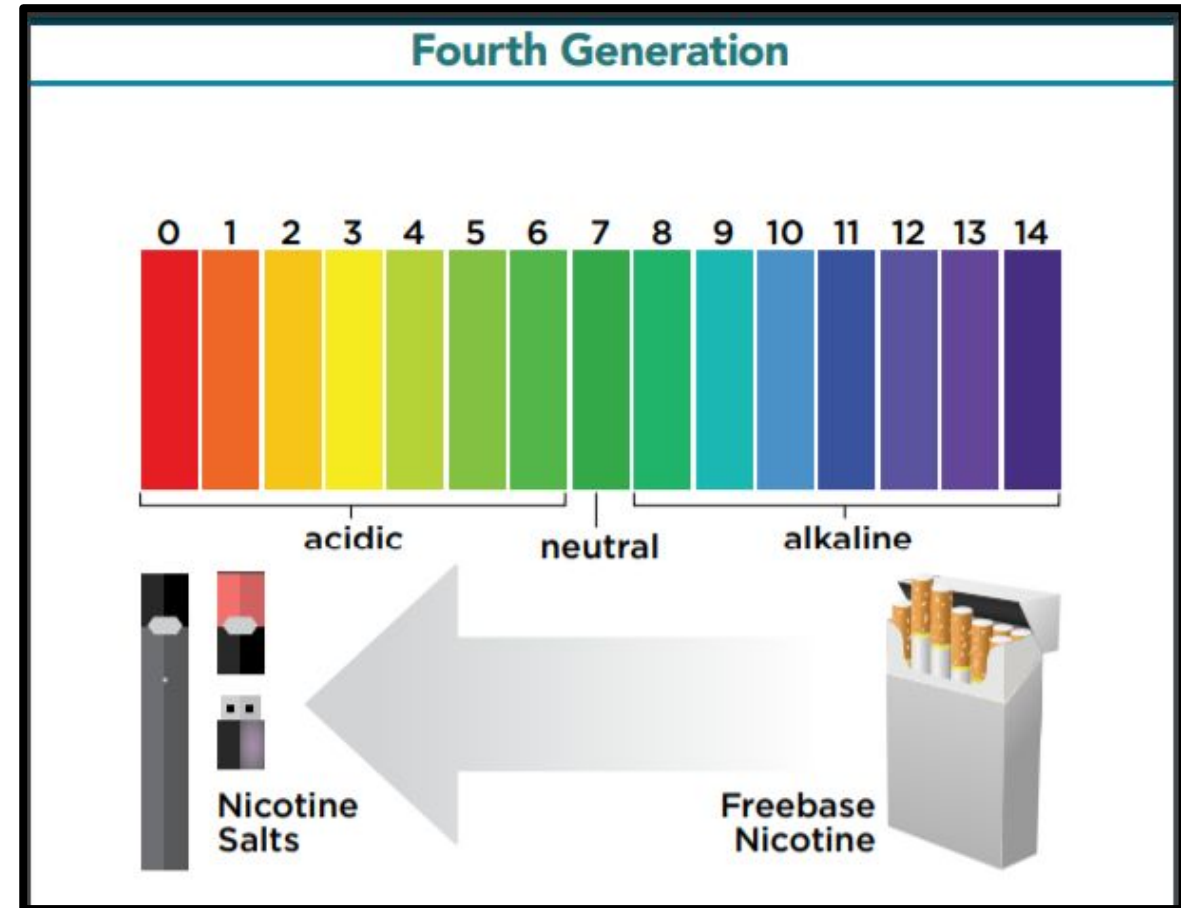
- Nicotine is dangerous and highly addictive for youth at any age because the brain is still developing.
- Nicotine effects brain circuits that control attention, learning, mood, impulse control, and increase susceptibility to addiction and other drugs use
- In addition to nicotine exposure, e-cig use can be harmful due to the other **chemicals/substances** present in e-cig devices.
  - Nearly 1 in 11 middle and high school vaped cannabis in the US
  - Marijuana use was **3.5X** higher in people who vaped to those who didn't





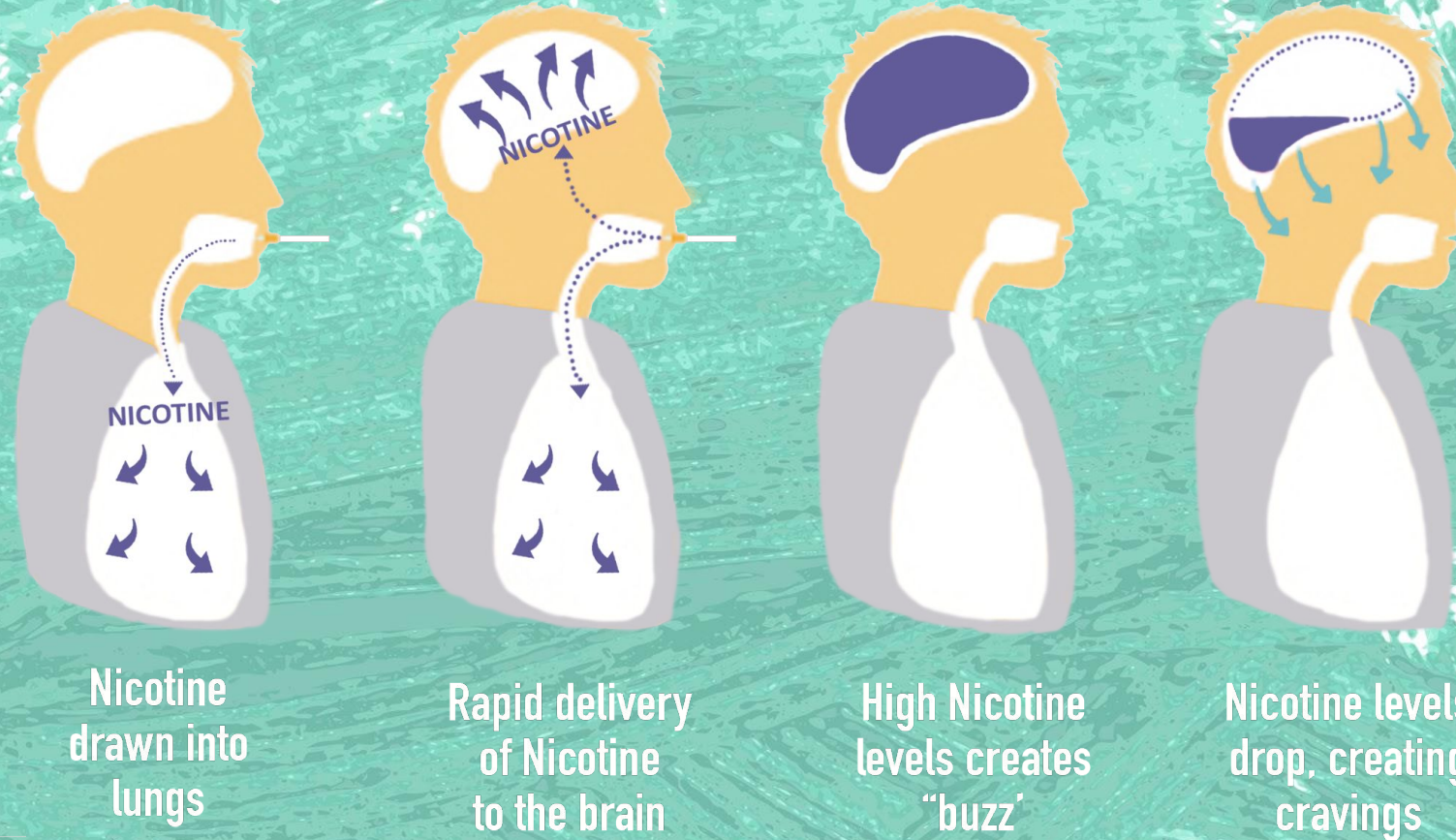
# Nicotine Salts

- Nicotine for e-liquid begins as free base nicotine.
- To change to a nicotine salt, an e-liquid maker adds an acid to lower the pH – usually benzoic acid
- Initial patent for JUUL nicotine salt technology obtained in 2015
- JUUL claims that their nicotine salt formulation increases the rate and amount of nicotine delivered into the blood, compared with other formulations.
  - Delivery **2.7 times faster** than other e-cigs





# The Cycle of Nicotine Addiction



**NICOTINE** is highly addictive, by activating areas of the brain involving feelings of pleasure (dopamine).



# Nicotine Comparison: Cigarettes in a Pod

1 pack of cigarettes =  
40 mg of nicotine



20  
cigarettes

1 JUUL Pod =  
41.3 mg of nicotine



20.65  
cigarettes

PHIX Pod =  
75 mg of nicotine



37.5  
cigarettes

SUORIN Pod =  
90 mg of nicotine



45  
cigarettes





# E-liquid Ingredients

- ENDS also contain propylene glycol or glycerin and flavorings.
  - Some ENDS manufacturers claim these ingredients are safe because they meet the FDA definition of “Generally Recognized as Safe” (GRAS) for foods additives NOT inhalation
    - effects of many of these inhaled ingredients are largely unknown
    - lung inflammation and disease (i.e.: popcorn lung)
      - **75%** of e-cigarette flavors tested contained diacetyl





# E-cigarette, or vaping, product use associated lung injury (EVALI)

- EVALI
  - 2,290 cases
  - 49 states, 1 territory (NJ: 46 confirmed; 44 probable; 14 investigations)
  - 47 confirmed deaths in 25 states
- Symptoms
  - cough, shortness of breath, chest pain
  - Nausea, vomiting, or diarrhea
  - Fatigue, fever, or weight loss
- Theory for Cause
  - In all cases, some kind of vape product was being used
  - Vitamin E acetate
    - Vitamin E acetate is used as an additive because it resembles THC oil and thickens ingredients
- Other concerns
  - Linked to seizures, cardiovascular disease, and depression





# Unintended Injuries/Death

- Defective e-cig batteries have caused fires, explosions, and life threatening injuries.
  - 2 confirmed deaths
- Exposure to liquid nicotine can be toxic. Children and adults have been poisoned by swallowing, or absorbing e-liquid.

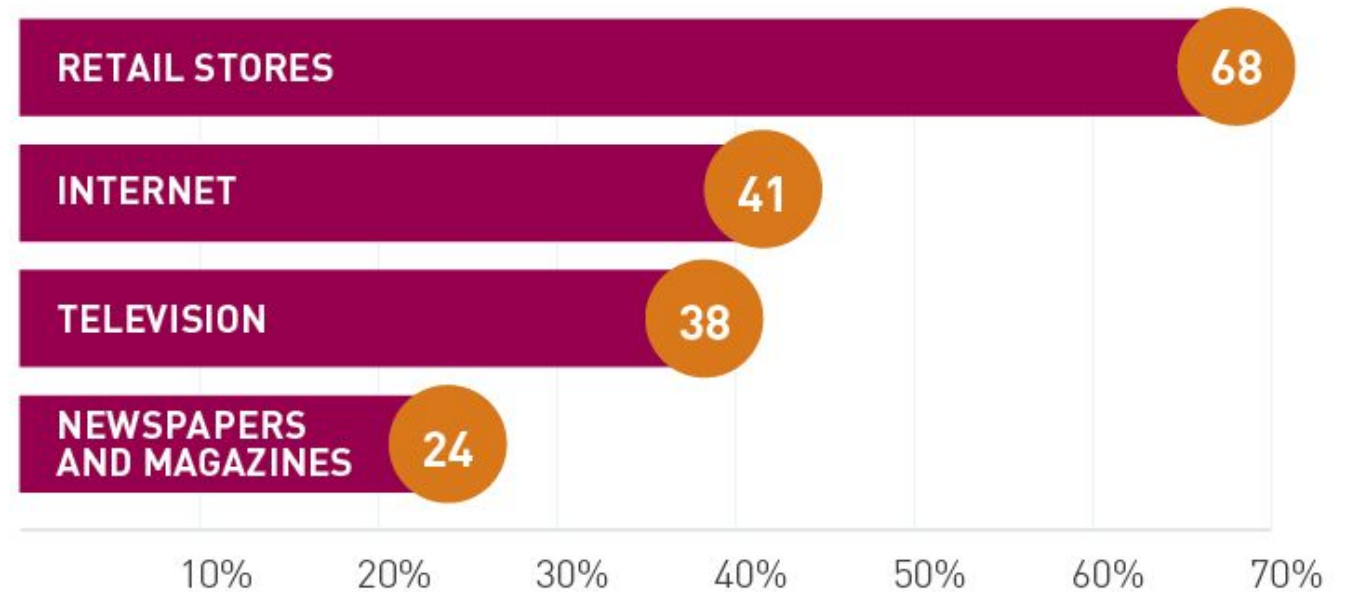




# Advertising

- By 2016, nearly **4 in 5** middle and high school students saw a e-cig ads.
  - More than **20 million** youth exposed to ads
- Between 2014 and 2016, exposure to retail e-cig advertising among youth increased to nearly **20%**.
  - \$115 million on e-cig ads in 2014.

## Where young people are most likely to see e-cigarette ads





# New Toys...Old Tactics

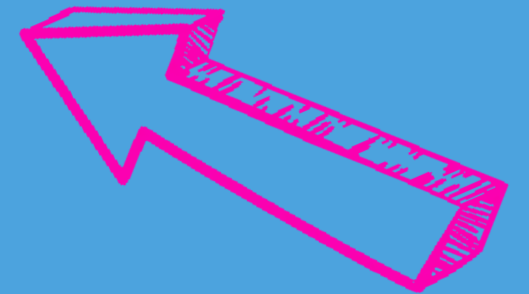
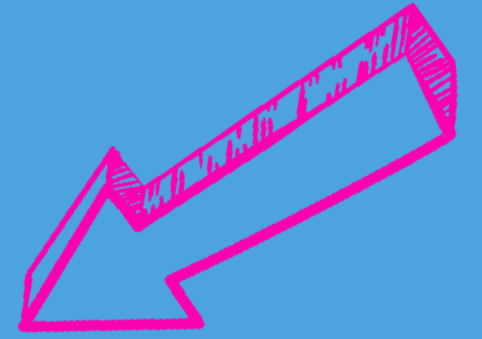
- E-cigs traditionally have been an unregulated industry
  - Nicotine concentration, other contents
  - Online sale to minors
  - Products made overseas
  - Advertising
- E-cig marketing tactics similar to tobacco
  - Misleading claims of being healthy & safe
  - Cessation device
  - Promote that e-cigarette can be used anywhere (indoors)
  - Proven to have increased use by youth
    - ✓ candy flavored products
    - ✓ themes of rebellion, glamour
    - ✓ sexy celebrity endorsements
    - ✓ sports and music sponsorships
    - ✓ discounts





# Tobacco Marketing

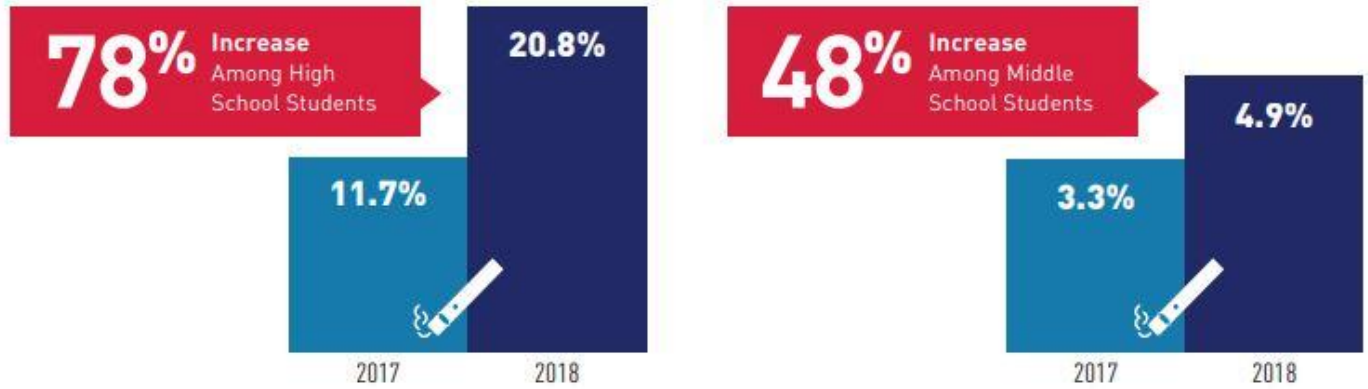
*What group of people are being targeted?*





# Epidemic Levels and Trends

## SURGE IN YOUTH CURRENT E-CIGARETTE USE — 1.5 Million More Students Used E-Cigarettes in 2018 vs 2017



### AMONG HIGH SCHOOL CURRENT E-CIGARETTE USERS — Rise in Frequency and Use of Flavors

Metric	2018	2017
More Used E-Cigarettes on 20 or More Days	28%	20%
More Used Flavored E-Cigarettes	68%	61%

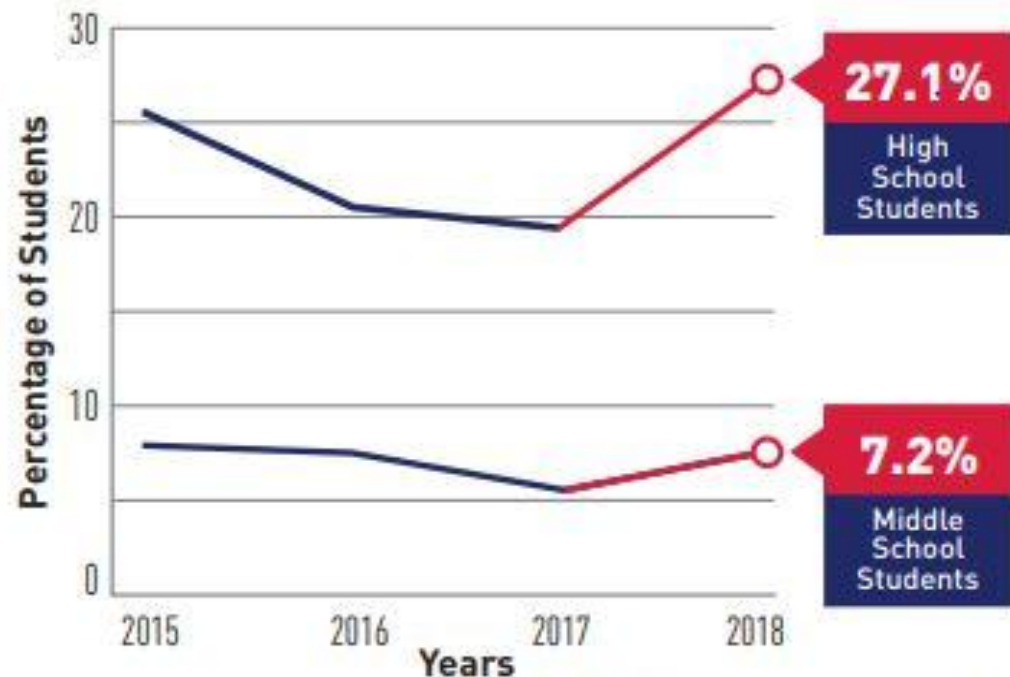
SOURCE: FDA, National Youth Tobacco Survey, 2017-2018.



# E-cigarettes: Reversing Previous Declines

E-CIGARETTE USE SURGE LED TO UPTICK IN  
OVERALL TOBACCO USE — Reversing Previous Declines

Current Use of Any Tobacco Product



Note: All numbers in this document are estimates.

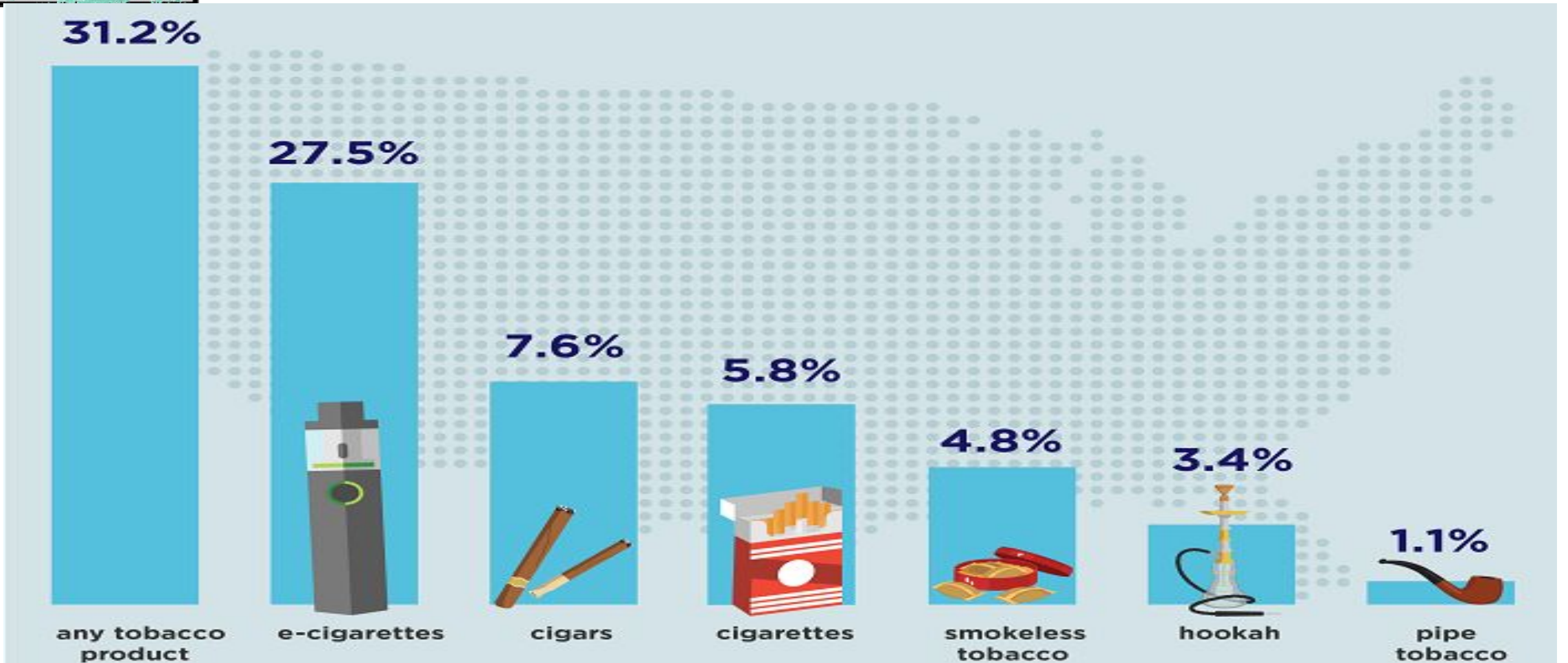




# Youth & ENDS

- Over **3.6 million** youth are current e-cig users.
  - 1 in 5 US High School Students
  - 1 in 20 Middle School Students
- E-cigarettes have been the most commonly tobacco product used among youth since 2014
- In 2020, **38.9% of HS students and 20% of MS students** reported using E-Cigs on 20 or more days
- Among all E-Cig users, **82.9% used Flavors**

# Tobacco product use US high school students—2019



Source: CDC. National Youth Tobacco Survey, 2019.



# National Youth Tobacco Survey 2020

**2020** National Youth Tobacco Survey

**In 2020, about 1.8 million fewer U.S. youth are current e-cigarette users compared to 2019.**

However

**3.6M**

U.S. youth still currently use e-cigs

There is a notable uptick in use of

**DISPOSABLE**

e-cigs by youth

More than

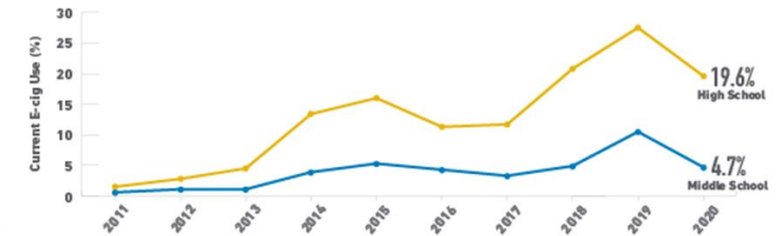
**8 out of 10**

current youth e-cig users use flavored e-cigs

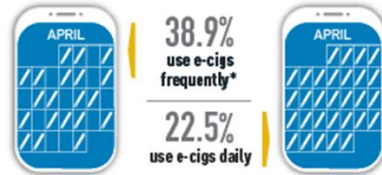
**2020**  
National Youth Tobacco Survey

Findings show a sharp decline in youth e-cigarette use with **1.8 Million** fewer users since last year

However, due to **alarming increases** since 2011, the number of current youth e-cig users remains **concerningly high: 3.6 Million**



Among high school current e-cig users:

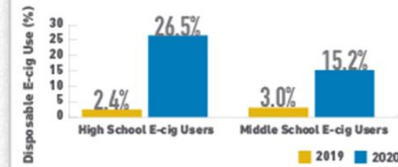


Disturbingly high rates of frequent and daily e-cig use suggest

**STRONG DEPENDENCE ON NICOTINE**

\*20 or more days in past 30 days

Disposable e-cig use **SURGED**



More than **8 out of 10** current youth e-cig users use flavored e-cigs



Despite the positive change from last year, youth use of e-cigarettes remains a **PUBLIC HEALTH CRISIS** affecting children, families, schools and communities. FDA will continue to address this crisis by:

- ✓ Enforcing minimum age of 21 to purchase tobacco products
- ✓ Educating the public
- ✓ Prioritizing enforcement against youth-appealing products
- ✓ Conducting thorough product reviews

CENTER FOR TOBACCO PRODUCTS

Source: Wang TW, Hoff LJ, Park-Lee E, et al. Cullen KA, King BA. E-cigarette Use Among Middle and High School Students — United States, 2018. MMWR Morb Mortal Wkly Rep 2020;69:1310–1312

Note: All numbers presented here are estimates.

CTP-165

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

@FDATobacco

facebook.com/fda







# Accidentally Addicted

**63%**

**OF JUUL USERS  
DON'T KNOW THAT  
THE PRODUCT  
ALWAYS CONTAINS  
NICOTINE.**



 **truth initiative**  
INSPIRING TOBACCO-FREE LIVES

[truthinitiative.org](http://truthinitiative.org)



NEARLY

**1 in 5**



**STUDENTS BETWEEN  
12 AND 17 YEARS OLD  
HAVE SEEN JUUL  
USED IN SCHOOL.**

 **truth initiative**  
INSPIRING TOBACCO-FREE LIVES

[truthinitiative.org](http://truthinitiative.org)



# Dual Use

- The vast majority of current e-cigarette users are also current smokers.
  - **65%** of youth who had used an e-cig in the last 30 days also reported using another tobacco product in the same time frame.
- This raises additional concerns beyond the potential health effects of e-cigarettes alone.
- Research suggests that using e-cigarettes may lead youth to start smoking traditional cigarettes.

SOURCE: Truth Initiative, 2018.

The National Academies of Sciences, Engineering, and Medicine, 2018.



# Young Adults & ENDS

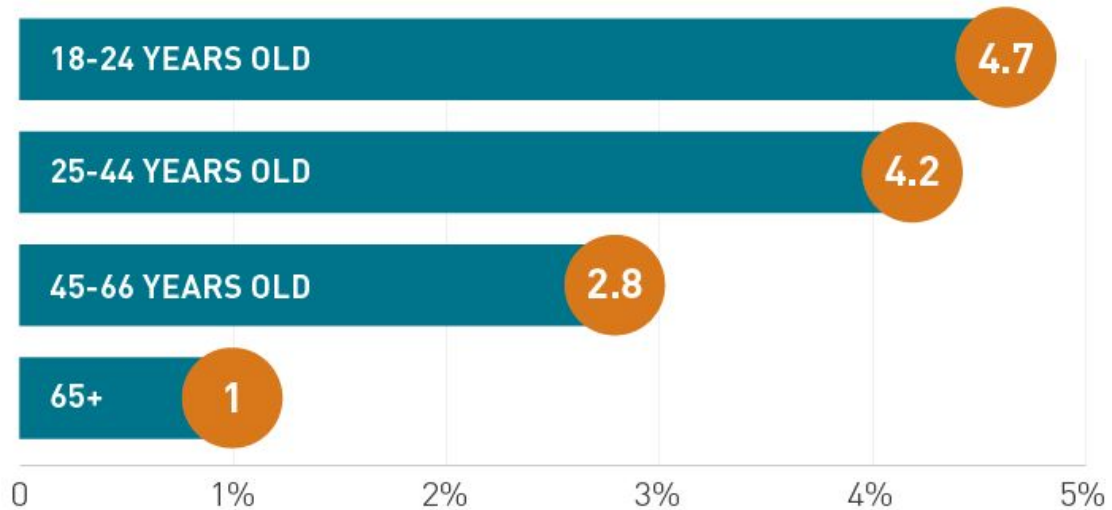
- Among current e-cig users aged 18-24:
  - 40% never smokers
  - 43% were current smokers
  - 17% were former smokers
- Highest age group of adult nonsmokers to use e-cigs
- Young adults who use e-cigs are more than **4X** as likely to begin smoking traditional cigarettes within *18 months* as their peers who do not vape.





# Adult Use

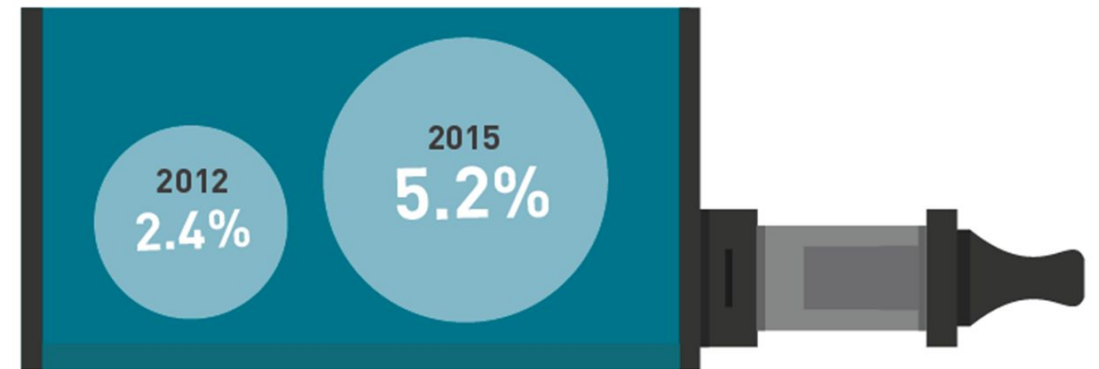
## Adults who currently use e-cigarettes



The data indicate that patterns of use are the opposite of what they should be. Rates are highest among younger age groups and decrease with age. The pattern should be just the opposite, with higher rates of adult use consistent with higher rates of smoking prevalence.

Source: 2016 National Health Interview Survey

## Young adults who use e-cigarettes every day or some days



- **7 million** adults use e-cigarettes
  - About **60%** of adult e-cigarette users also smoke cigarettes (dual use)

SOURCE: Truth Initiative, 2018.



# Images of Popular Products



SUORIN Drop



MOTI



Uwell Amulet 10W Vape  
Watch Pod System



NJOY Ace



# NEW Disposable USB Product

## PUFF BAR. AUTHENTIC FLAVOR. DIRECT TO YOU.

Made from medical-grade soaked cotton with 5% salt nicotine and flavoring, the Puff Bar heats liquid to produce vapor without burning carcinogens.

With over 20+ flavors to choose from, the Puff Bar disposable device is compact, light, and portable. They require no maintenance, charging, or refilling; once it has been used, just throw it away.







# FDA Action & Updates

- Dec. 2018 - Tobacco giant Altria has invested \$12.8 billion for a 35% stake in JUUL and valued the company at \$38 billion.
- Sept. 2019 - JUUL CEO resigns and replaced with a Tobacco Executive
  - Suspended all advertising
  - Stopped Lobbying
- Oct. 2019 – JUUL limits sales to Menthol and Tobacco “Flavored” products.
- BEWARE of completing products that resemble JUUL devices and pods that are on the rise. (Ex: Myle, KandyPens Rubi, etc.)



# **FDA Action against Puff Bar**

FDA NEWS RELEASE

## **FDA Notifies Companies, Including Puff Bar, to Remove Flavored Disposable E- Cigarettes and Youth-Appealing E-Liquids from Market for Not Having Required Authorization**

*Companies Cited for Marketing Unauthorized Tobacco Products Based on Continued  
Internet Surveillance During COVID-19 Pandemic*



# State & Local Action

- In 2010, **NJ's Smoke free Air Act** was revised to include a ban on electronic smoking devices in indoor public places and workplaces.
- Age of sale in NJ to purchase e-cigs increased from 19 to **21**
- 2019 NJ public beaches and parks ban smoking and vaping
- Many NJ municipalities have banned the use of e-cigs in city owned parks, playgrounds, and outdoor recreation areas.
- Sept 2019, NJ Governor created a task force to investigate ENDS
  - Michigan and New York bans flavored e-cigarettes
- April 2020, NJ Prohibits the sale of Flavored E-Cigs / Prohibits Coupons on any tobacco product





# Pop-culture Phenomenon



JUUL's original marketing campaign included billboards, YouTube videos, advertising in Vice Magazine, launch parties and a sampling tour.



Selena Gomez and other celebrities are "juuling" too!

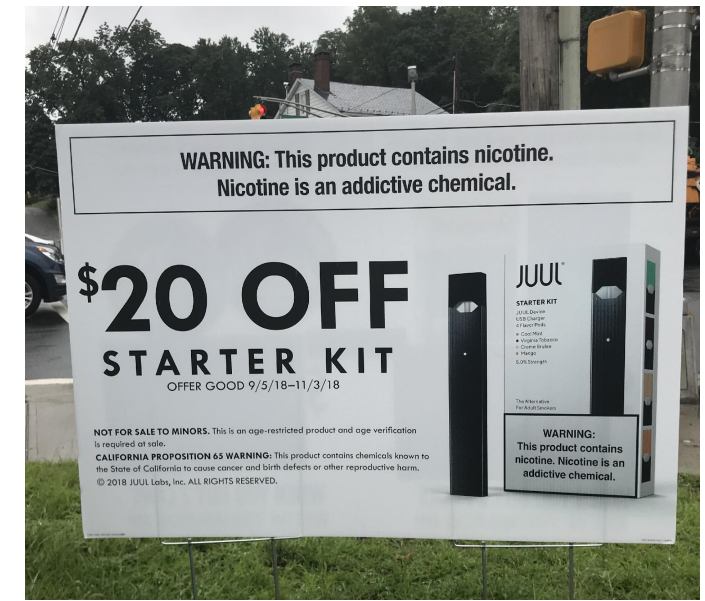




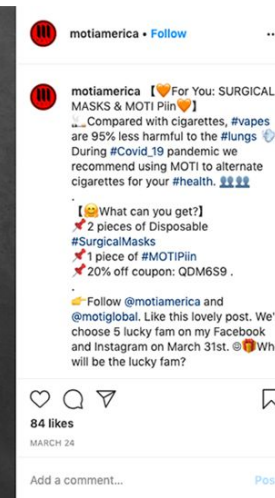
# Promotion Localized



One of the first major e-cig brands to rely heavily on social media to market and promote its products



Back to school promotional sale. Photo taken outside a North Jersey convenient store.





# Vape Tricks







# Where are they getting it?

- While Internet was not the most common, **89%** of youth who attempted to purchase online were successful

**YOUTH WHO USED JUUL FLAVOR PODS IN THE PAST 30 DAYS SAID THEY OBTAINED THE DEVICE IN THE FOLLOWING WAYS.**



\*youth could select multiple answers

[truthinitiative.org](http://truthinitiative.org)

 **truth initiative**  
INSPIRING TOBACCO-FREE LIVES

Source: Truth Initiative, 2018.



# COVID – 19 Smoking and Vaping

- Smokers are likely to be more vulnerable to COVID-19

**SAY NO TO TOBACCO  
IN THE TIME OF COVID-19...  
AND ALWAYS!**

Smoking makes you more vulnerable to COVID-19.



Increased risk of serious illness due to unhealthy lungs



Higher chance of transmission from hand to mouth

So, stop smoking and give your lungs a chance!

 World Health Organization  
Western Pacific Region

#COVID19  
March 2020



Based on what we know now, those at high-risk for severe illness from COVID-19 are:

- People aged 65 years and older
- People who live in a nursing home or long-term care facility

People of all ages with underlying medical conditions, particularly if not well controlled, including:

- People with chronic lung disease or moderate to severe asthma
- People who have serious heart conditions
- People who are immunocompromised
  - Many conditions can cause a person to be immunocompromised, including cancer treatment, smoking, bone marrow or organ transplantation, immune deficiencies, poorly controlled HIV or AIDS, and prolonged use of corticosteroids and other immune weakening medications.
- People with severe obesity (body mass index [BMI] of 40 or higher)
- People with diabetes
- People with chronic kidney disease undergoing dialysis
- People with liver disease



# Coronavirus and Lung Health

- “Based on what we know about smoking and vaping, it has a whole range of adverse effects on your respiratory system that increase the likelihood of you getting infected.” Dr. Stanton Glantz, Director of UCSF’s Center for Tobacco Control Research and Education.
- There is evidence that cigarettes weaken the immune system and limit lung function.
- According to a UCSF study - people who smoke e-cigarettes also face a significant risk of developing severe, chronic lung illnesses — such as asthma, bronchitis and emphysema.





# Stanford Study: Vaping & COVID-19

## Vaping linked to COVID-19 risk in teens and young adults

Data collected in May shows that teenagers and young adults who vape face a much higher risk of COVID-19 than their peers who do not vape, Stanford researchers found.

AUG 11  
2020

Vaping is linked to a substantially increased risk of COVID-19 among teenagers and young adults, according to a new study led by researchers at the [Stanford University School of Medicine](#).

The study, which was published online Aug. 11 in the *Journal of Adolescent Health*, is the first to examine connections between youth vaping and COVID-19 using U.S. population-based data collected during the pandemic.

Among young people who were tested for the virus that causes COVID-19, the research found that those who vaped were five to seven times more likely to be infected than those who did not use e-cigarettes.

“Teens and young adults need to know that if you use e-cigarettes, you are likely at immediate risk of COVID-19 because you are damaging your lungs,” said the study’s senior author, [Bonnie Halpern-Felsher](#), PhD, professor of pediatrics.



Teenagers and young adults who vape face a much higher risk of COVID-19 than their peers who do not vape, a new study has found.

*Nery Zarate/Unsplash*



# Signs Your Student(s) May Be Vaping

- Leaving class to use the bathroom at the same time everyday
  - Mood changes before and after leaving the room
- Texting or using social media
- Hanging out the in the bathroom stalls together
- Check pop-up ceiling (may find vaping devices)
- Returning to class smelling with a fruity sweet scents, especially male
- Putting thick markers or pens in their mouth
- Look for lanyards or hoodies that my hide vaping devices
- Devices can be concealed and may look like colorful USBs





# 5 Signs Your Child is Vaping

- The Scent
- Pens/UBS that are neither
- Increase Thirst
- Nosebleeds
- Passing on Caffeine







# Talk to Your Teens

As a parent or caregiver, you have an important role in protecting children from e-cigarettes.

- Talk to your child or teen about why e-cigarettes are harmful for them. It's never too late.
- Set a good example by being tobacco-free.
- Learn about the different shapes and types of e-cigarettes and the risks of e-cigarette use for young people at [www.CDC.gov/e-cigarettes](http://www.CDC.gov/e-cigarettes).



Fact Sheet for Parents

[Download the PDF](#)  [PDF 1 MB]

or [order a free hard copy](#).



# NJ Cessation Services

- NJ Quitline
  - Free telephone based counseling for NJ residents 18+
  - Call: 1-866-657-8677
  - Visit: [www.njquitline.org](http://www.njquitline.org)
- Mom's Quit Connection for Families/ Quit For Kids
  - Free individual telephone or face to face counseling to families with children under age 7 qualify
  - 1-888-545-5191
  - Quit for Kids texting support program
  - [www.quitforkids.com](http://www.quitforkids.com)
- NJ Quit Centers
  - Free individual and group counseling session across 12 counties
  - [www.tobaccofreenj.com/quit-smoking](http://www.tobaccofreenj.com/quit-smoking)



# Additional Cessation Programs

- National Quit Line

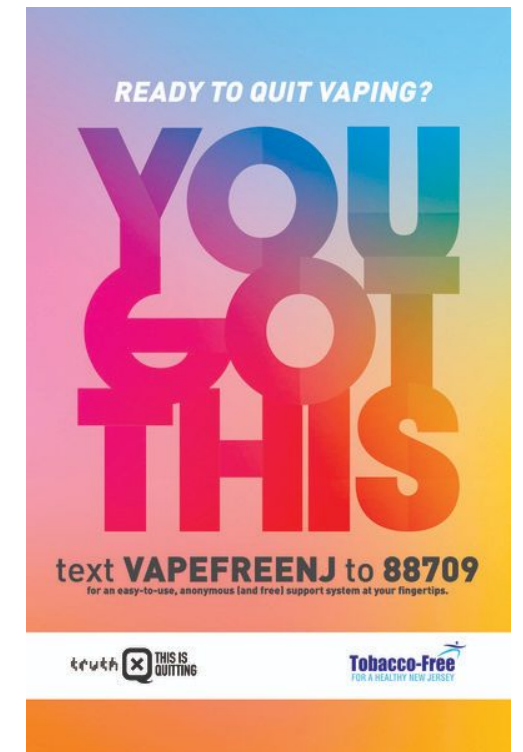
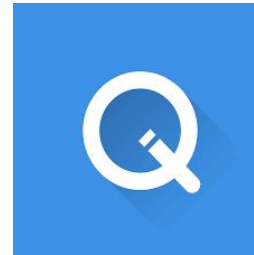
- 1-800-QUIT-NOW
- quitnowapp

- Free texting (Teens)

- Truth– Text "VAPEFREENJ" to 88709.
  - Specifically to quit vaping
  - Youth and Young Adults 13-24

- Free Online

- Become and Ex – [www.becomeanex.org](http://www.becomeanex.org)
  - Smoking and vaping







# This Is Quitting Slide

**READY TO QUIT VAPING?**

*You've got this,  
and we've got your back.*

text **VAPEFREENJ** to **88709**  
for an easy-to-use, anonymous (and free) support system at your fingertips.



READY TO QUIT VAPING?

**YOU ARE WORTH IT**

**TRY THIS IS QUITTING, A FREE, TEXT-TO-QUIT PROGRAM.**



READY TO QUIT VAPING?

**YOU GOT THIS**

text **VAPEFREENJ** to **88709**  
for an easy-to-use, anonymous (and free) support system at your fingertips.





# MORE RESOURCES

- [www.vapefactsnj.com](http://www.vapefactsnj.com)
- [www.tobaccofreenj.com](http://www.tobaccofreenj.com)
- [www.incorruptible.us](http://www.incorruptible.us)
- [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/index.htm](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm)
- <https://www.fda.gov/tobacco-products/products-ingredients-components/vaporizers-e-cigarettes-and-other-electronic-nicotine-delivery-systems-ends>
- <https://truthinitiative.org/research-resources/emerging-tobacco-products/e-cigarettes-facts-stats-and-regulations>
- <https://www.lung.org/quit-smoking/vape-talk>

# INCORRUPTIBLE.US

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Gloucester, Cumberland, Salem,  
Atlantic, Cape May

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Follow your county page!

**@incorruptible.county**

(i.e. @incorruptible.atlantic, @incorruptible.hudson)

Follow us now!





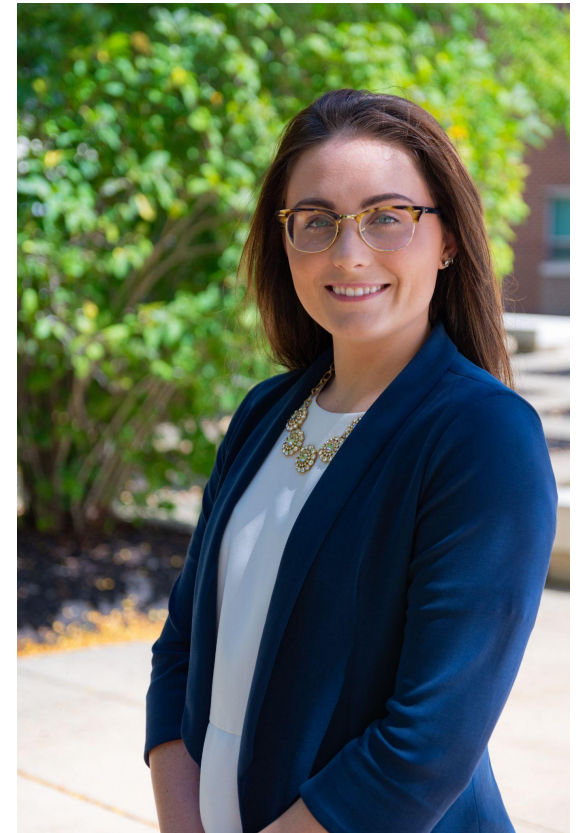
# Contact Information

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**QUESTIONS?**



# Created by:

Tobacco Team @ Tobacco Free For a Healthy NJ

Funded by the New Jersey Department of Health  
Office of Tobacco Control

