



SCHOOL-BASED
HEALTH ALLIANCE
Redefining Health for Kids and Teens

Vaping and Adolescents The New Public Health Crisis

Allison Kilcoyne MS RN FNP-BC

Director of School Based Health

North Shore Community Health

President, Massachusetts SBHA



Help Us Count!

Are you joining as a group?

If you are viewing as a group, go to the “Chat” icon and type in the name of the person registered and the total number of additional people in the room.

e.g., Tammy Jones +3



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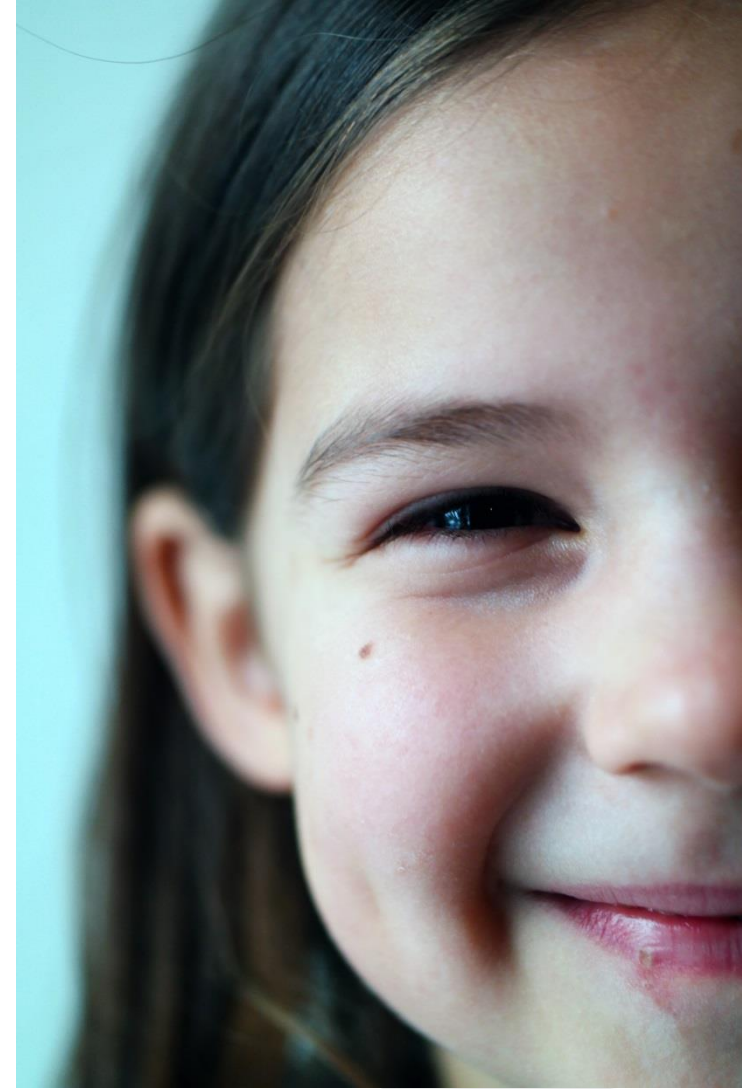




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Redefining Health for Kids and Teens




We Believe...

In the transformational
power of the health and
education intersection



HEALTHY STUDENTS
make better learners

REMINDERS

-  All attendees are in listen-only mode.
-  We want to hear your questions! To ask a question during the session, use the “Chat” icon that appears on the bottom your Zoom control panel.
-  Please complete evaluation poll questions at the end of the presentation.

WEBINAR ARCHIVE

- The State of the Science: Teen Brain Development and the Impact of Marijuana
- Hallways to Health 4-Part Webinar Series
- Youth-Led 2-Part Webinar Series
- Quality Counts: How to Download and Use Your 2016-17 NQI Reports and Prepare for 2017-18 Reporting

<http://www.sbh4all.org/webinars>



TODAY'S PRESENTER



Allison Kilcoyne, MS RN FNP-BC

**Director of School-Based Health at North Shore Community Health and
President of Massachusetts School-Based Health Alliance**



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Redefining Health for Kids and Teens

Nothing to Disclose



e-cigs, vape pens, e-hookahs, e-pipes, tanks, mods, vapes, electronic nicotine delivery systems, or ENDS, JUUL (Juuling), BO, Blue,



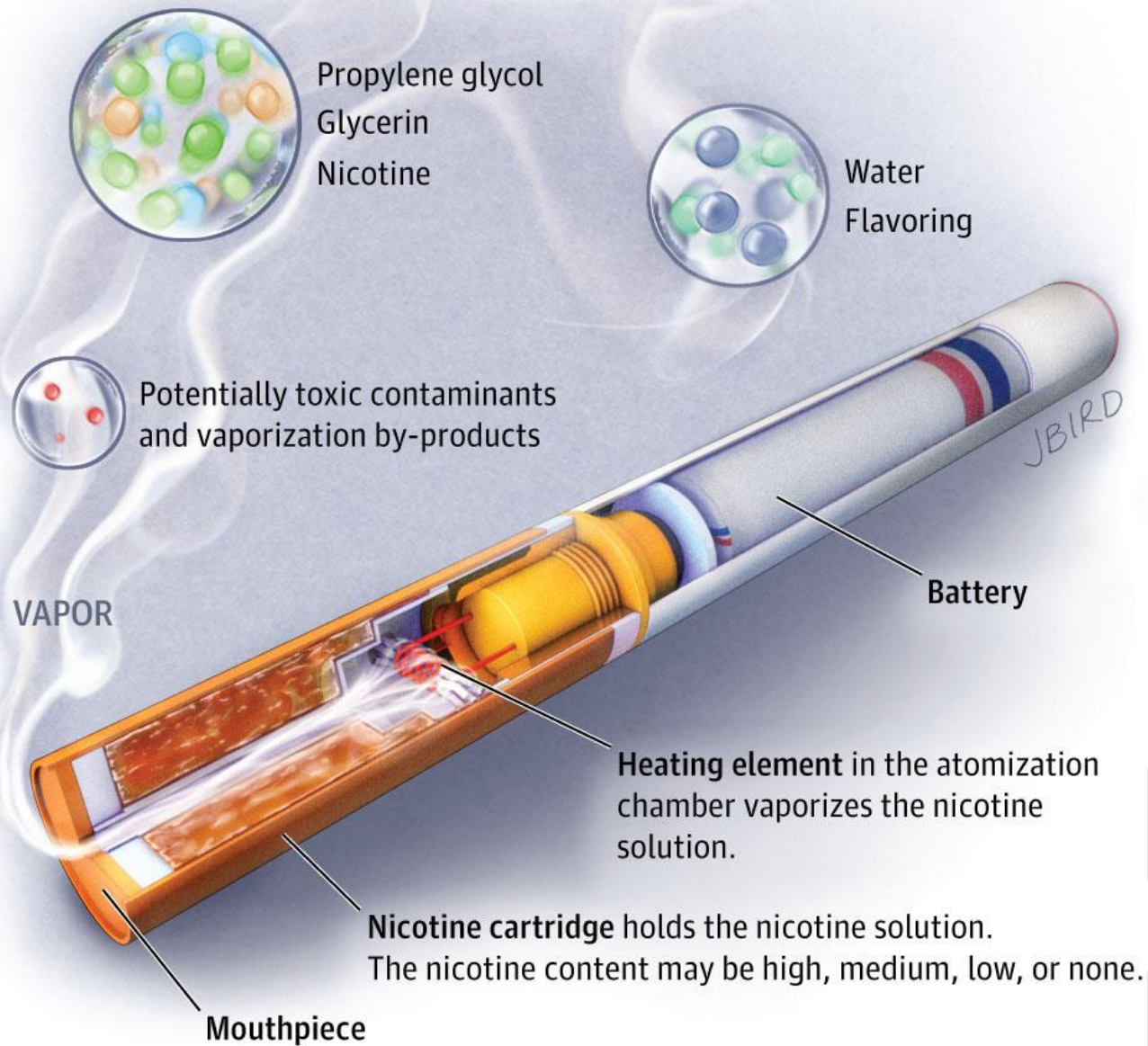
Dan Kitwood/Getty image capture: www.thedailybeast.com/vaping-killed-vapers-dont-care

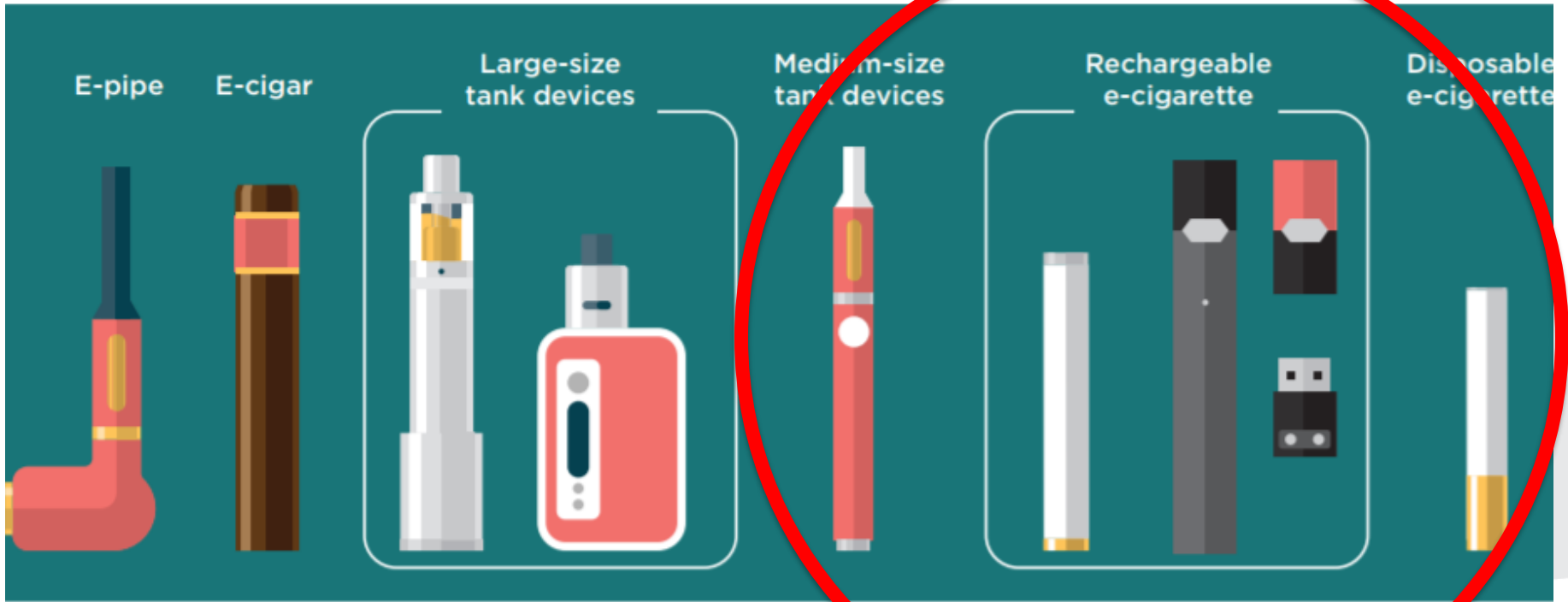
Rip, hit



Vaping: what is it

- Developed in 2003 by Chinese pharmacologist to aide father dying of lung cancer to quit smoking
- Inhaling and exhaling the aerosol (often called vapor) produced by an e-cigarette or similar
- battery-powered device
- Delivers nicotine, THC, and more
- Research on tobacco use is helpful





U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

JUUL

- Pods contain e-liquid with highly absorbable nicotine salts

 - Heated into vapor and inhaled

- 1 JUUL pod = 0.7mL of nicotine (5% concentration)

 - Nicotine equivalent of **1 pack of cigarettes** (≈200 puffs)



JUULpods

\$15.99

Each pack contains 4 pods





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10% off 4 or more

BLU

Disposable E-Cigarette -
Tobacco Flavor

\$8.99

MSRP \$9.99 | SAVE: \$1.00



10% off 4 or more

BLU

Disposable E-Cigarette -
Magnificent Menthol

\$8.99

MSRP \$9.99 | SAVE: \$1.00



About 400 puffs each disposable = 2 packs cigarettes
One disposable every 4 days = ½ pack cigarettes per day

Vape pens and cartridges



Use of e cigarette:

- Produces an aerosol that contains:
 - Nicotine
 - Ultrafine particles that can be inhaled deep into the lungs
 - Volatile organic compounds
 - Cancer-causing chemicals
 - Flavoring such as diacetyl, a chemical linked to a serious lung disease
 - Heavy metals such as nickel, tin, and lead

Poll: Why do adolescents vape?

Use by a friend or family member

Taste, flavors

Belief low risk, less harm

Curiosity

All of the above

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

Poll question discussion

One in ten youth perceived intermittent cigarette smoking as causing “little” or “no” harm; this perception was higher among current users. Efforts to educate youth about the risks of even intermittent tobacco product use could reduce misperceptions of harm.

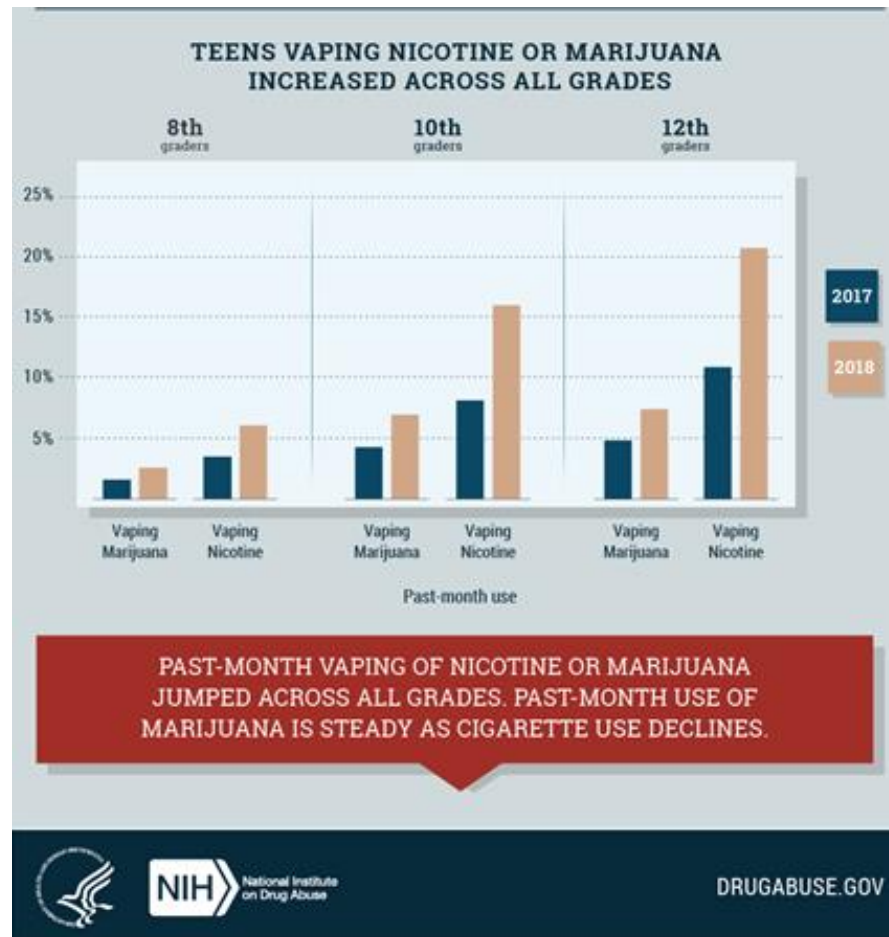
“I started at a party, then I bought my own, then I started using it every day. That is all within a month.”*

“My boyfriend gave me one for Christmas.”*

“It smelled good (cotton candy) so I tried and liked it.”*

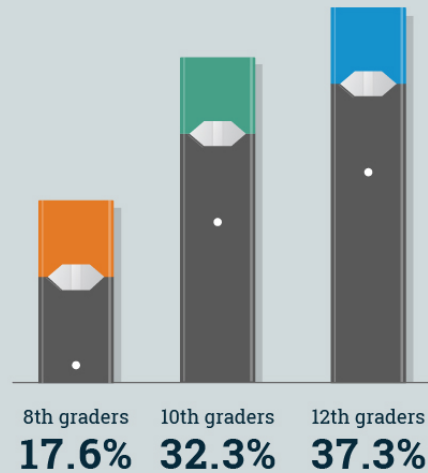
“My grandfather had one and I tried it, then I got one, then I used it all the time.”*

How big is the problem of vaping in teens?

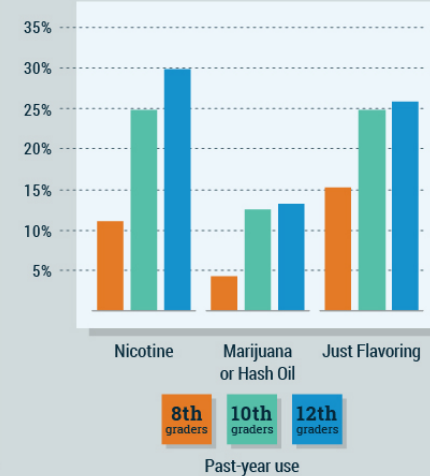


TEENS USING VAPING DEVICES IN RECORD NUMBERS

PAST-YEAR VAPING



WHAT DO TEENS SAY THEY ARE VAPING?



NEARLY 2 IN 5 STUDENTS IN 12TH GRADE REPORT PAST-YEAR VAPING, RAISING CONCERNS ABOUT THE IMPACT ON BRAIN HEALTH AND POTENTIAL FOR ADDICTION.

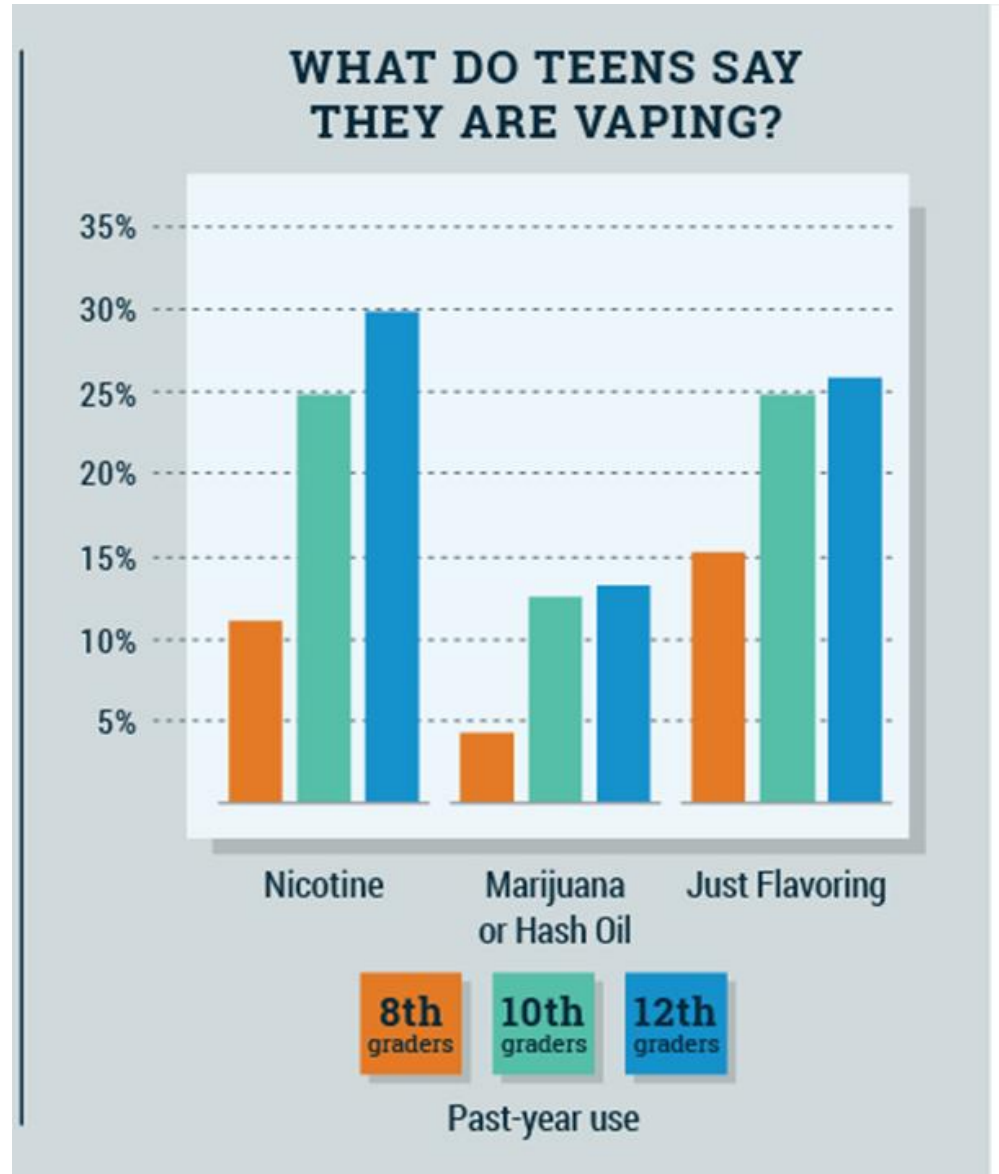


National Institute
on Drug Abuse

DRUGABUSE.GOV

99% of e-cigarette liquids sold in the US contain nicotine

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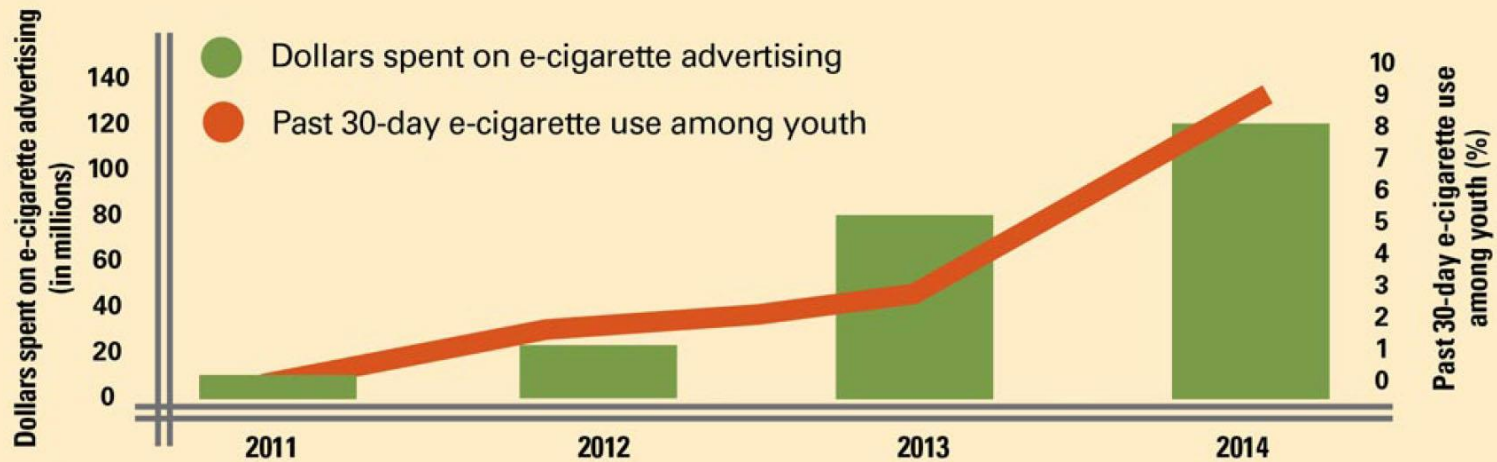


Poll : Why the increase in vaping in youth?

1. Peer pressure
2. Increased Access
3. Increased Advertising
4. Addictive properties

Why the increase in use?

E-cigarette use among youth is rising as e-cigarette advertising grows



SOURCE: National Youth Tobacco Survey, 2011-2014; Kim et al (2014), Truth Initiative (2015).



What's old is new again





What's old is new again

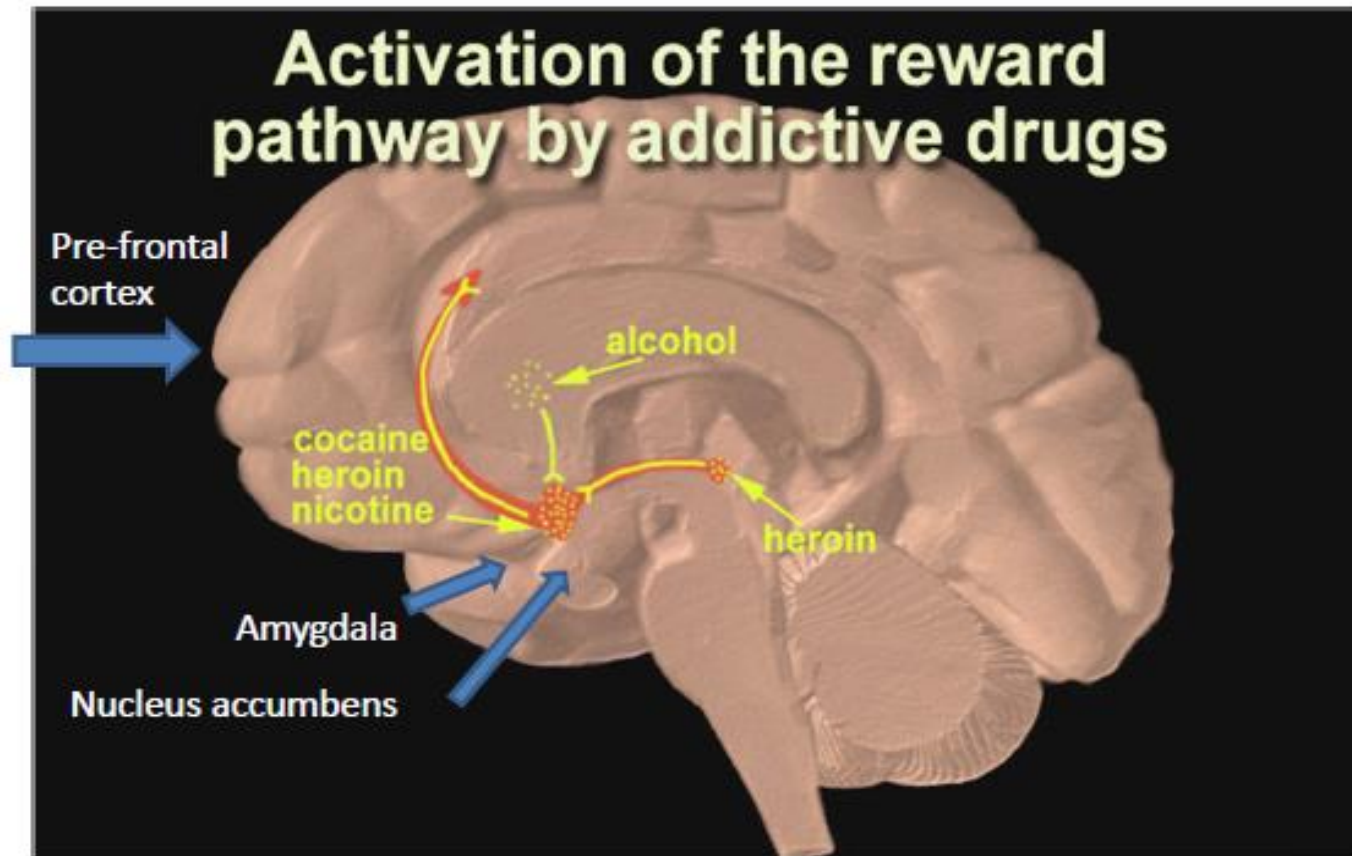


Nicotine

- Nicotine takes 10-15 seconds to reach the brain
 - Effects last approximately 30 minutes
- Short-term stimulant properties
- Acts on Ach receptors
 - produce dopamine, serotonin and glutamate
- Pleasure center activation
- Highly addictive
 - more than alcohol and cannabis; similar to cocaine



Substance use and the teen brain



Nicotine

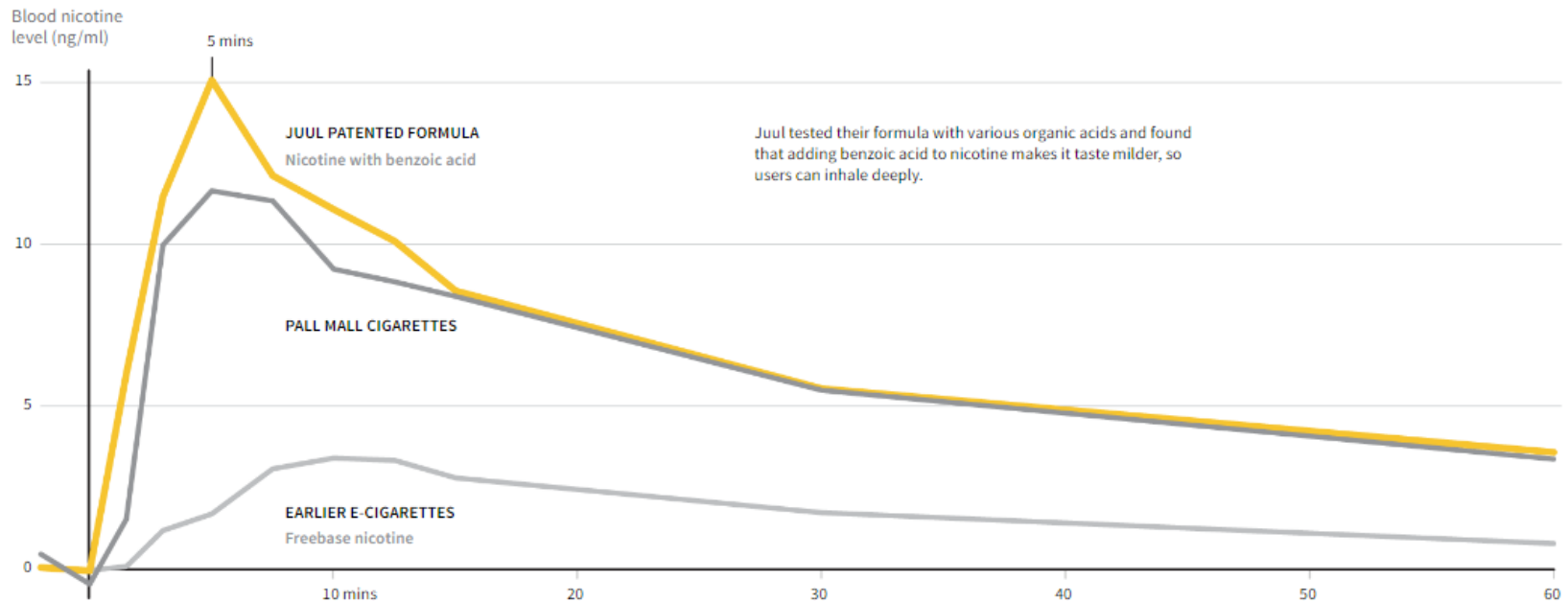
The onset of action of nicotine is 7-10 seconds. Elimination half-life of nicotine is 2 to 3 hours, meaning that the level of nicotine in the blood decreases by one half after a smoker stops smoking for that length of time

“Nicotine is a powerful drug that meets all established criteria for a drug that produces addiction—specifically, dependence and withdrawal. Nicotine is as addictive as heroin and cocaine, and it has the paradoxical effects of being a stimulant and a depressant. No other drug doses at such a high frequency: a pack-a-day smoker who smokes for 14 years will have more than 1 million dosing opportunities.” –
World Health Organization

https://www.who.int/tobacco/publications/gender/en_tfi_gender_women_addiction_nicotine.pdf

The Thing about JUUL

HOW QUICKLY DIFFERENT FORMS OF NICOTINE ENTER THE BLOODSTREAM



ook.com/sharer/sharer.php?u=https%3A//www...

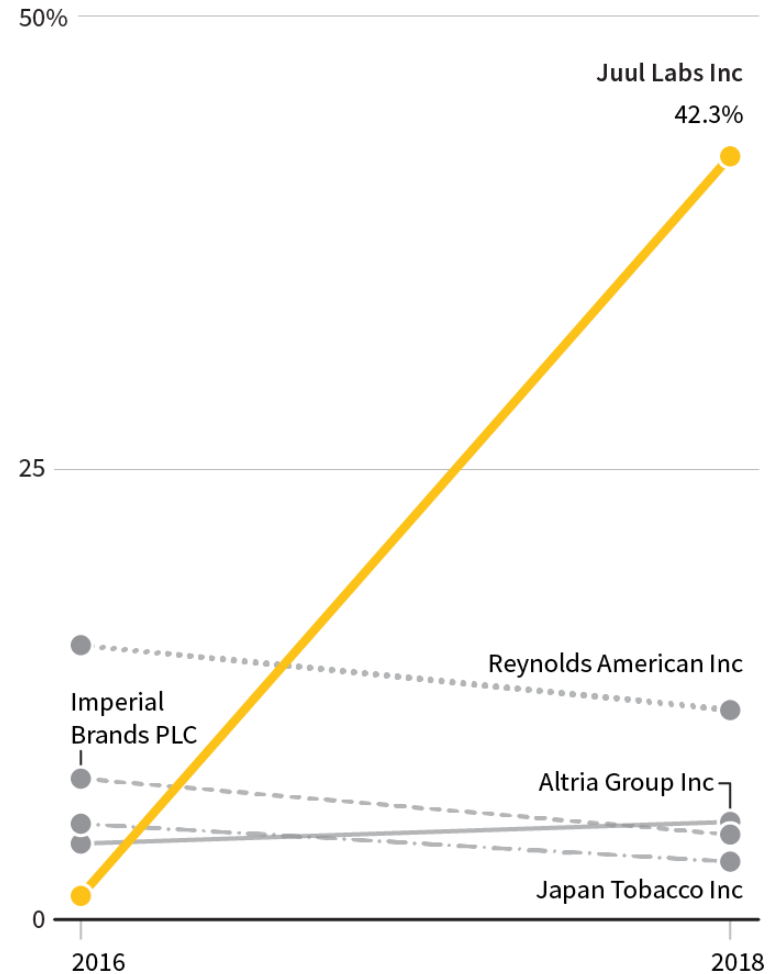
<https://www.reuters.com/investigates/special-report/juul-ecigarette/>

- Developers researched tobacco company settlement
- Focused on first puff
- Stanford tech developers
- Marketing to youth

Juul's explosive growth

In just two years, Juul captured 40% of the U.S. e-cigarette market.

MARKET SHARE



Source: Euromonitor International



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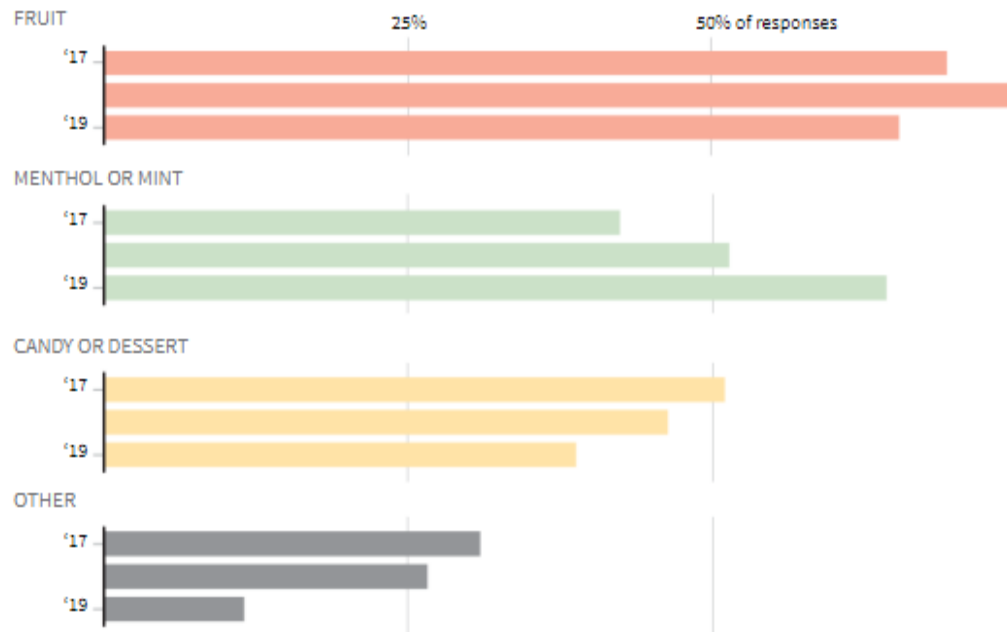
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Flavors drive e-cigarette use among high schoolers

High school students like fruit, mint and candy flavors of e-cigarette nicotine liquids far more than tobacco flavors, survey data shows. Regulators have pressured Juul and other vaping device makers to stop offering flavors that appeal to children.

MOST POPULAR E-CIGARETTE FLAVORS, 2017-19

Flavors used by high school students in the previous 30 days.



Note: In each year's survey, alcohol, chocolate or clove or spice flavors got less than 10% of responses each.

Sources: National Youth Tobacco Survey, U.S. Food and Drug Administration; Juul

JUUL POD FLAVORS

Juul stopped selling mango, fruit, cucumber and creme pods in the United States on Oct. 17.



Fruit



Mango



Menthol



Cucumber



Mint



Creme



Classic
Tobacco



Virginia
Tobacco

Vaping THC

Vaping marijuana?



“Premium wax vaporizer”



“Liquid shatter” pen



The New York Times
**Vaping Sicknesses Rising: 153
Cases Reported in 16 States**



Richard Vogel/Associated Press

By Sheila Kaplan
Aug. 21, 2019

WASHINGTON — Sixteen states have now reports serious, vaping-related respiratory illnesses in the months, and many of the patients are teenagers or young adults. In a statement on Wednesday, the Centers for Disease Control and Prevention said that all of the cases occurred in people who acknowledged vaping either nicotine or tetrahydrocannabinol, known as THC, the high-inducing chemical in marijuana.

**First Death in a Spate of
Vaping Sicknesses Reported
by Health Officials**



Since June, 193 people in 22 states have reported vaping-related injuries, the C.D.C. said. Jason Henry for The New York Times

By Matt Richtel and Sheila Kaplan

Aug. 23, 2019



The New York Times
**Dozens of Young People
Hospitalized for Breathing and
Lung Problems After Vaping**



Dozens of young people have been hospitalized around the country in recent weeks for severe respiratory problems after vaping either nicotine or marijuana, stumping doctors treating them. The Illinois, Minnesota and Wisconsin public health departments are investigating these cases and at least 20 additional emergency admissions that doctors suspect are related to vaping some substance, possibly even illegal street drugs or adulterated liquids laced with THC, the ingredient that provides marijuana's high

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VAPING

Not just counterfeit: Legal THC vaping products linked to lung illnesses

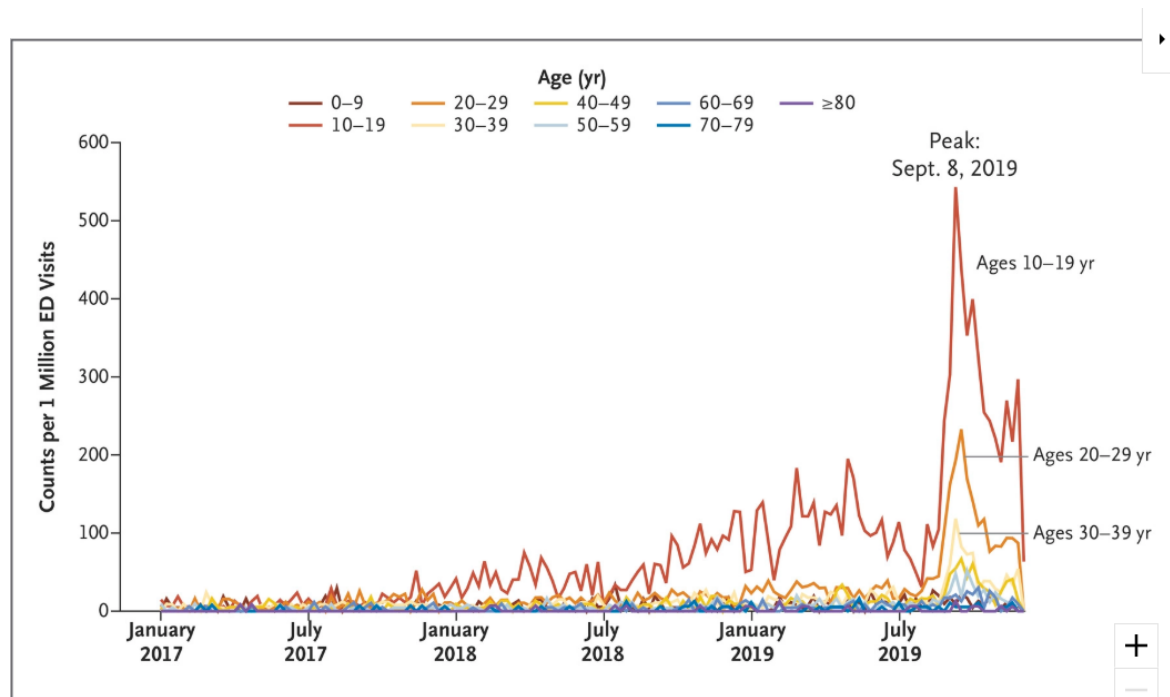
Six patients in Massachusetts reported purchasing THC products from licensed dispensaries.

E-cigarette Vaping Associated Lung Illness (EVALI)

- Most patients with EVALI have been men and adolescent boys (67%), have been younger than 35 years of age (78%), and have reported using e-cigarette products containing tetrahydrocannabinol (THC) (80%)
- ED visits spiked in June 2019, peaked September 2019, lower incidence as of November 2019
- Vitamin E oil and other substances used to create appearance of higher THC concentration

https://www.nejm.org/doi/full/10.1056/NEJMSr1915313#article_supplementary_material

Emergency Department (ED) Visits with Electronic Cigarette (E-Cigarette) Product Use as the Reason for the Visit, According to Age Group.



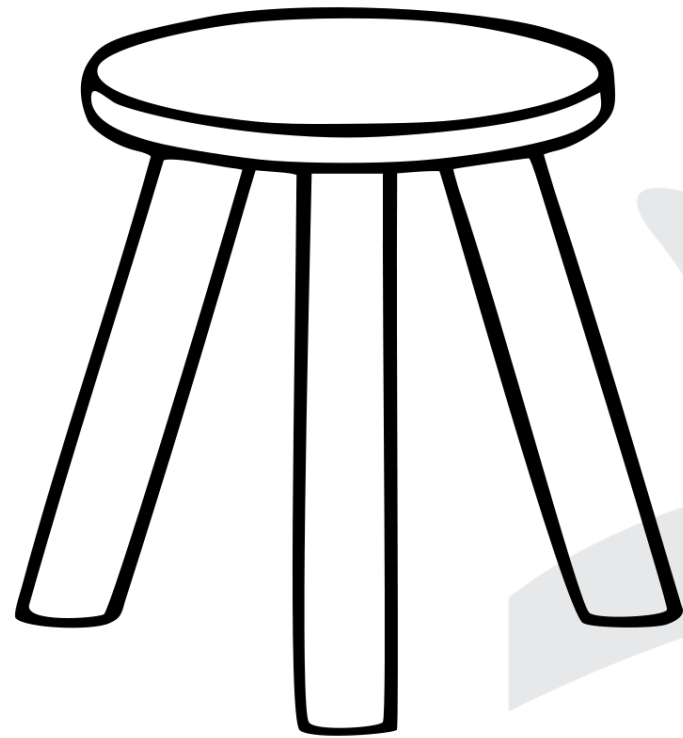
Other Health Implications?

- harm to brain development – impairments in attention and working memory
- association with mood disorders and poor impulse control
- increase the risk of young people smoking cigarettes and change brain chemistry in ways that make adolescent brains more susceptible to other addictive drugs
- Possible seizures

<https://www.fda.gov/news-events/fda-brief/fda-brief-fda-encourages-continued-submission-reports-related-seizures-following-e-cigarette-use>

Vaping is BAD - So what do we do?

- Prevention strategies
 - Delay use!
- Treatment strategies
 - Behavioral and pharmacologic
- Restorative Justice Strategies for Schools
 - Consequence vs. Opportunity



Fourth leg – ADVOCACY!

Prevention Campaigns

#ditchJUUL

<https://www.thetruth.com/take-action/ditchjuul>

The Real Cost Campaign

<https://therealcost.betobaccofree.hhs.gov/?g=t>

Make Smoking History

<http://makesmokinghistory.org/dangers-of-vaping/schools/>

Stanford Prevention Toolkit

<https://med.stanford.edu/tobaccopreventiontoolkit/E-Cigs.html>





E-Cigarettes and Vape Pens

→ [Unit 1 - Where did E-Cigarettes and Vape Pens Come From?](#)

Table of Contents

Unit 1 "Where Do E-Cigarettes & Vape Pens Come From?" 

Unit 2 "So, What's Really in these E-Cigarettes & Vape Pens?" 

Unit 3 "What's So Bad About E-Cigarettes & Vape Pens?" 

Overview

This module provides an understanding of the inner workings of e-cigarettes, the content of the aerosols they produce, and thirdhand smoke. It's broken down into 5 units, each of which explore e-cigarettes in-depth.

Please note: e-cigarettes, vape pens, etc. may be abbreviated as e-cigs or vapes, and refer to any device similar to an e-cigarette.

Goals

Increase knowledge about basic facts of e-cigarettes and the harm they cause.

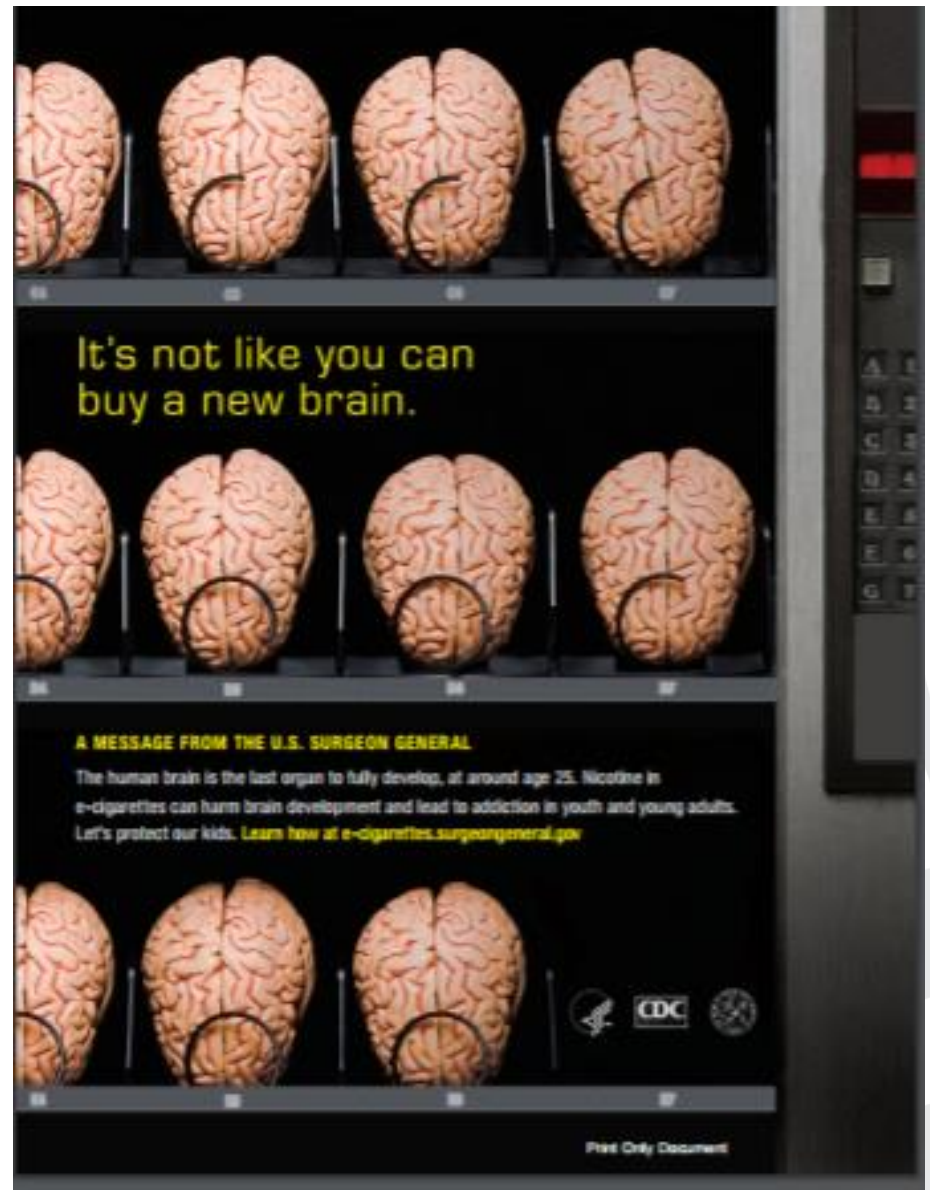


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A MESSAGE FROM THE U.S. SURGEON GENERAL

The human brain is the last organ to fully develop, at around age 25. Nicotine in e-cigarettes can harm brain development and lead to addiction in youth and young adults.

Let's protect our kids. Learn how at e-cigarettes.surgeongeneral.gov





Technology and anti-vaping campaigns

- Adolescent Counseling and Technology (ACT) for nicotine and tobacco <http://www.possibilitiesforchange.com/>
- Web based video game intervention for young adolescents: <https://www.smokescreengame.org/>

What do we see in youth that have been vaping?

- Increased use – sometimes all day long use
- Taking risks to get access to vapes
- Hiding from friends and family
- Vaping alone
- Getting in trouble at school

Nicotine Dependence Diagnosis

Tolerance

Withdrawal

Craving

Taking in larger amounts or longer than expected

Unsuccessful attempts to cut down

Giving up social, recreational or occupational activities

Great deal of time trying to obtain nicotine

Use despite knowledge of health or social risks

F17.29-, Nicotine dependence, other tobacco products. Electronic nicotine delivery systems (ENDS) are non-combustible tobacco products

Treatment of Nicotine Dependence

Behavioral

Education

Groups

Peer Support

Provider Support

Pharmacologic

Nicotine Replacement
Therapy

Under 18 years requires
prescription

Some health plans do not pay
for products

Considered off label
prescribing

Opportunities for Restorative Justice Programs



How have schools responded?



- Searching all students
- Taking doors off stalls in bathrooms
- Locking bathrooms
- No after school activities
- Vaping detectors
- Out of school suspension

Restorative Justice Approach

Repairing the harm caused by the behavior

Change to mindset – an opportunity to intervene for the health of the youth

Alternative to suspension programs could....

- Identify key people in the school students have to meet with : school nurse, resource officer, health teacher
- Have students investigate health effects of vaping and create a project – video, poster, etc.
- Go to their health center or PCP for an educational appointment
- Attend a multi-session educational group



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PEABODY VETERANS MEMORIAL HIGH SCHOOL
"Home of the Tanners"



Ms. Cara Murtagh
Superintendent of Schools
Dr. Chris Lord
Assistant Superintendent of Schools
Mrs. Judith Manlatis
Assistant Principal

485 LOWELL STREET
PEABODY, MASSACHUSETTS 01960
Telephone ~ 978-536-4500
Facsimile ~ 978-536-4565
<http://www.peabody.k12.ma.us>

Dean of Students
A House ~ Mr. William Krol
B House ~ Mr. Edmund Tarallo
C House ~ Ms. Ashlen Fidalgo

Vaping Alternative Program: Sign-Off

Initial Referral Date: _____

Referring Dean of Students: Mr. Krol - A House
Mr. Tarallo - B House
Mrs. Fidalgo - C House
Mr. Carty - Community High School

I, _____ (name), have agreed to enroll in the Vaping Alternative Program offered by Peabody Veterans Memorial High School in partnership with the Health Center in lieu of suspension/as part of a reduced consequence (circle one) for my recent suspendable behavior related to vaping.

As part of the vaping diversion program, I understand that I must complete all of the following sessions as part of the #DitchJUUL Program offered by the Health Center at PVMHS:

Activity	Date Completed	Facilitator Signature
1. Initial intake meeting with the Health Center.		
2. Session 1: Dispelling the Health Myths of Vaping.		
3. Session 2: What are My Choices?		
4. Session 3: Quitting and Craving.		
5. Session 4: Maybe I Need More Help.		

Please return the completed form to your Dean by _____ (date, 25 School Days from Initial Referral Date). Failure to complete all sessions within the allotted time may result in suspension.

- Sessions led by SBHC NPs
- Individual or Groups
- All offered follow up NP visits, NRT and/ or referral to Behavioral Health

Things to remember:

- Vaping is very common in adolescents and has been increasing dramatically the past 2 years
- Nicotine is a highly addictive chemical that effects the adolescent brain immediately
- There continue to be unknown health consequences of vaping
- It is very difficult to “just stop” vaping, many youth need both behavioral and pharmacologic support



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Questions?





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BECOME A MEMBER!



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SAVE THE DATE!



PRESENTED BY



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COLORADO ASSOCIATION FOR
SCHOOL-BASED HEALTH CARE

Thank You!

Allison Kilcoyne MS RN FNP-BC
allison.kilcoyne@nschi.org

