



INSTITUTE FOR
HEALTH & RECOVERY

June 3, 2019

Understanding E-Cigarettes, JUULs and Vaping: *What's New? What's True?*

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About the Institute for Health & Recovery

The Institute for Health & Recovery (IHR) is a non-profit organization with offices and services throughout the state of Massachusetts. IHR provides counseling to individuals, youth and families struggling with addiction and mental health issues, many of whom have experienced violence.

IHR also provides training, consultation and technical assistance to state, local and national organizations to improve the integration of best practices and policies into prevention and treatment programs for families, taking what we learn from our direct service programs and using it to enhance programming.

IHR provides trauma-informed:

- Outpatient behavioral health treatment in home and community settings for those affected by substance use and mental health disorders
- Education and care coordination for youth & young adults
- Access to residential substance use treatment for families
- Prevention & Early Intervention services



About the Tobacco, Addictions, Policy & Education (TAPE) Project

SINCE 1994, the **Tobacco, Addictions, Policy and Education (TAPE) Project** has been a leader in helping substance use and mental health treatment programs in Massachusetts, the United States and Canada to address tobacco dependence with clients and staff through consultation, technical assistance and training.

In Massachusetts, the TAPE Project is available to work with all treatment programs in the statewide Department of Public Health, Bureau of Substance Addiction Services (BSAS) system and offers the following services free of cost to BSAS-funded programs:

- On-site staff training
- Program consultation and technical assistance
- Resources and referrals

**IHR's TAPE Project has been funded by MA DPH,
Bureau of Substance Addiction Services since 1994**



Welcome...

Nicotine's Impact on the Brain and Body

nicotine

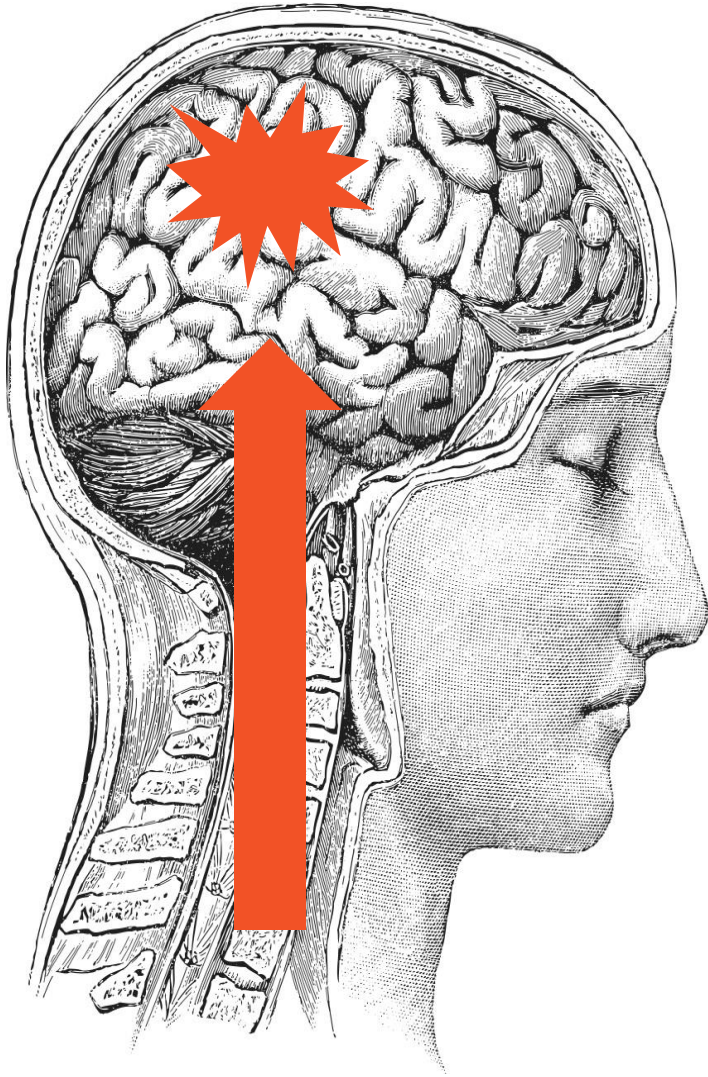
noun

nic·o·tine | \ 'ni-kə-, tēn \

Definition of *nicotine*

: a poisonous alkaloid $C_{10}H_{14}N_2$ that is the chief active principle of tobacco and is used as an insecticide

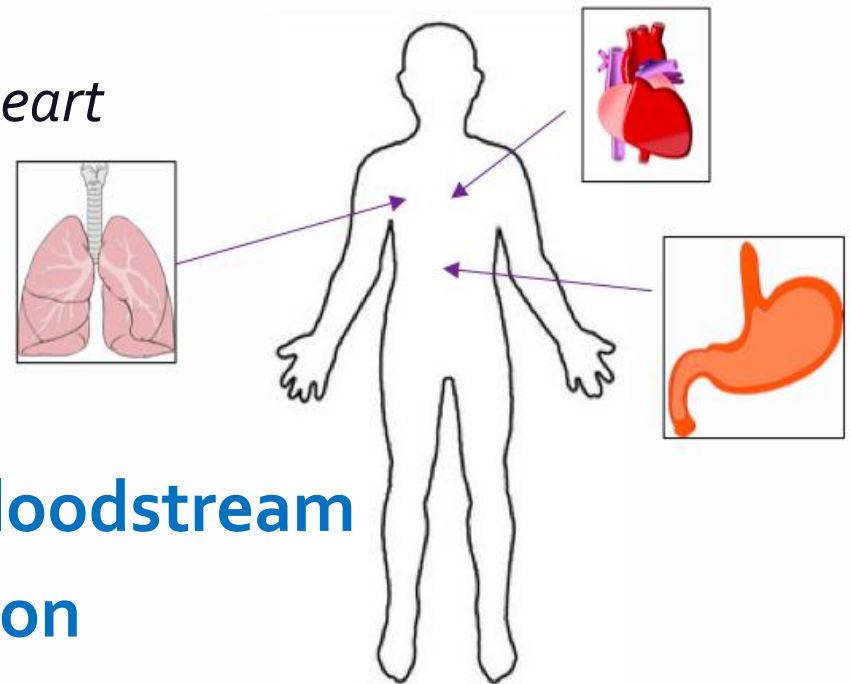
<https://www.merriam-webster.com/dictionary/nicotine>



- Nicotine is a **STIMULANT**
- Activates **CNS**
- Causes **immediate changes** in mood, appetite, alertness
- **Changes** how **brain** works
- **Highly addictive**

■ Instructs the brain to release adrenaline

- ✓ *Stimulates central nervous system*
- ✓ *Increases heart rate & blood pressure*
- ✓ *Constricts blood vessels*
- ✓ *Decreases blood flow to heart*

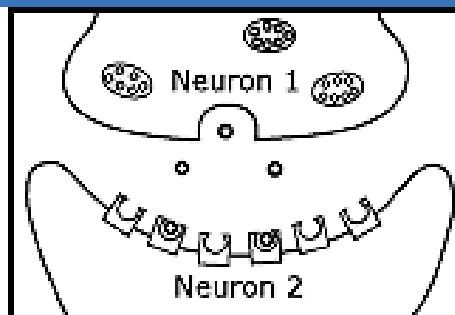


- Releases glucose into bloodstream
- Inhibits insulin production

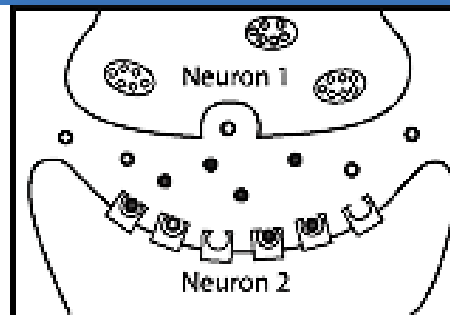
In 1988, the Surgeon General
declared that

**nicotine is as
addictive as heroin
and cocaine.**

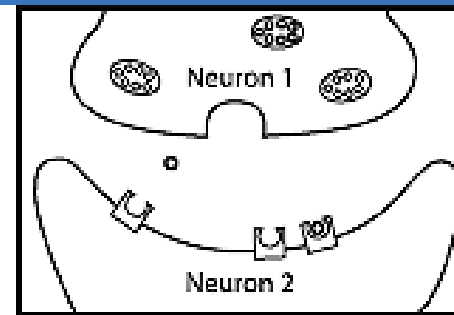
Key	
○	Acetylcholine
●	Nicotine
□	Receptor



Nonsmoker



New Smoker



Quitting Smoking

Source: <https://www.drugabuse.gov/>

Most e-cigarettes contain **NICOTINE**, which causes **ADDICTION**, may harm brain development, and could lead to continued tobacco product use among youth.



- ATTENTION
- LEARNING
- ADDICTION
- MOOD
DISORDERS
- IMPULSE
CONTROL



Nicotine can harm brain development, which continues to about age 25.

Know the Risks.
Visit E-cigarettes.SurgeonGeneral.gov



- Nicotine serves to keep the “pilot light” of addiction on
- Continued use of nicotine may be a factor in relapse to alcohol and/or illicit substance use
- Research: Recovery rates are enhanced by not using nicotine
- Many e-liquid flavors are designed to smell/taste like alcoholic drinks; may contain ethyl alcohol
- Some e-liquids contain varying levels of alcohol

ONE
DAY
AT A
TIME

Nicotine exposure during pregnancy has negative long-term consequences and risks:

- Impaired **fetal brain** development
- Impaired **fetal lung** development
- Preterm delivery
- Stillbirth
- Narrows blood vessels = *less oxygen and fewer nutrients for growing baby*



Nicotine Withdrawal Symptoms

What are they?

How long do they last?

What can help?

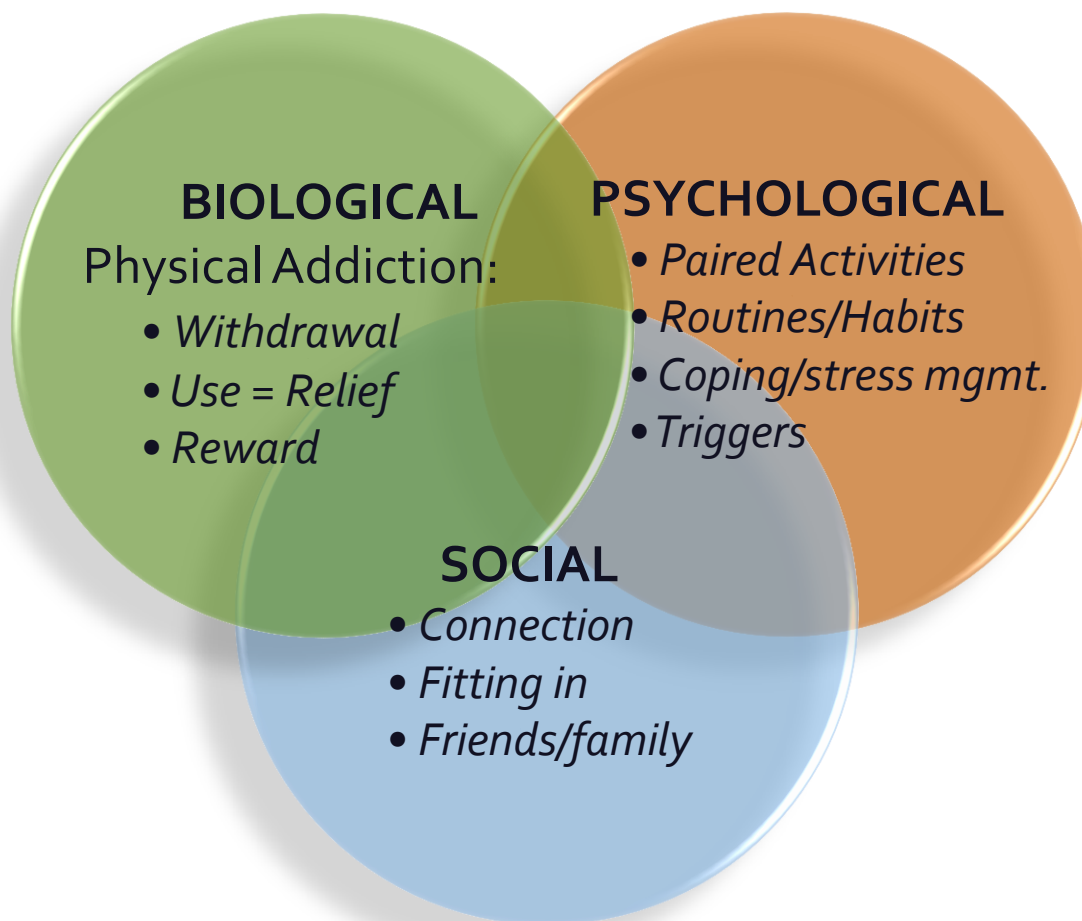


Hooked On Nicotine Checklist (HONC)

- 10 Questions
- Measures loss of autonomy in **adolescents** regarding nicotine
 - Indicator of *diminished* autonomy
 - Measure of *severity* of diminished autonomy



Bio-psychosocial Model



Overview: E-Cigarettes and other **Electronic Nicotine Delivery** **System (ENDS) Products**

Historical Timeline of E-Cigarettes

2003: The electronic cigarette dispensing nicotine was developed in China by a chemist/pharmacist

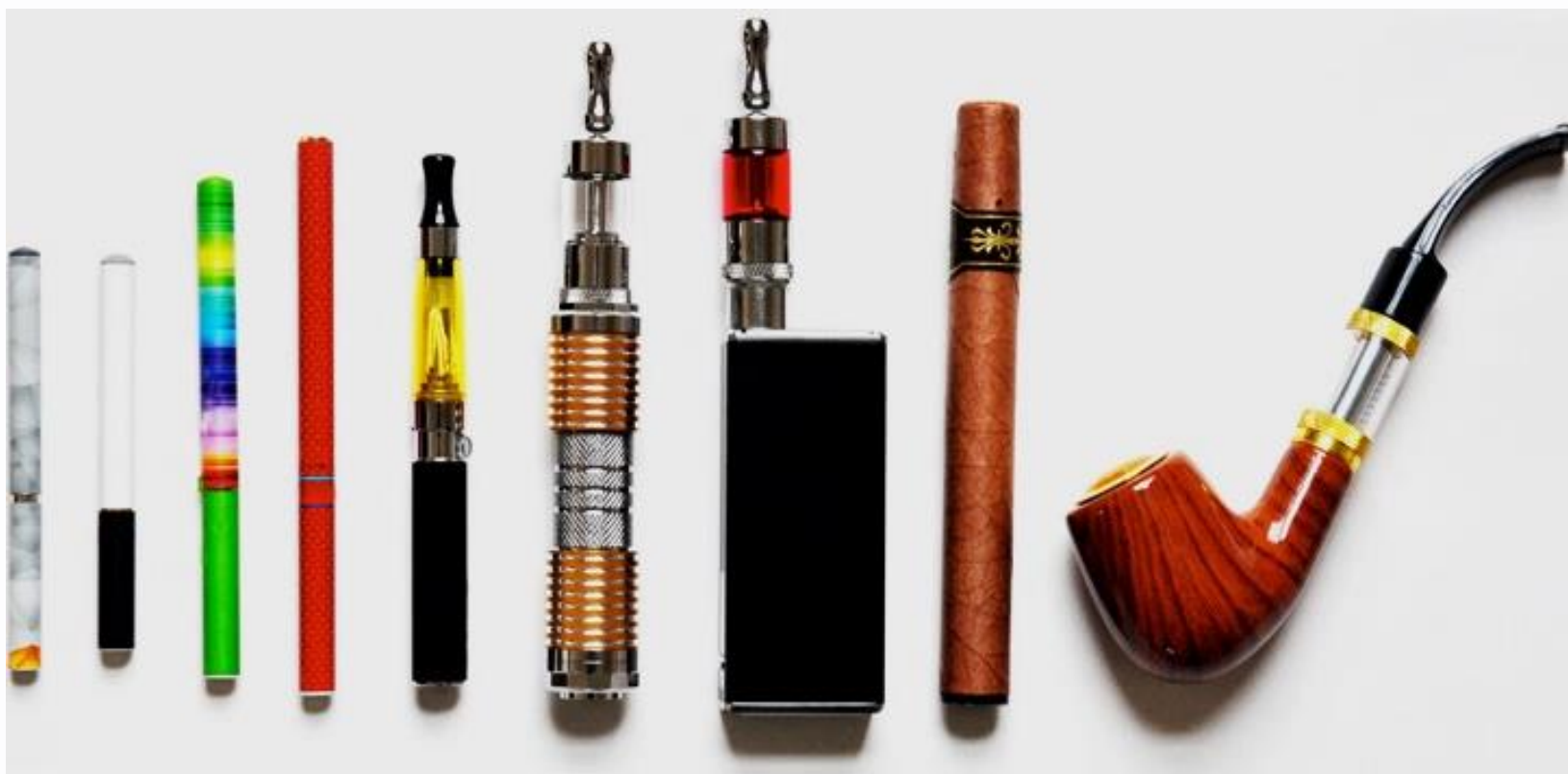
2004: E-cigarettes introduced/marketed in CHINA

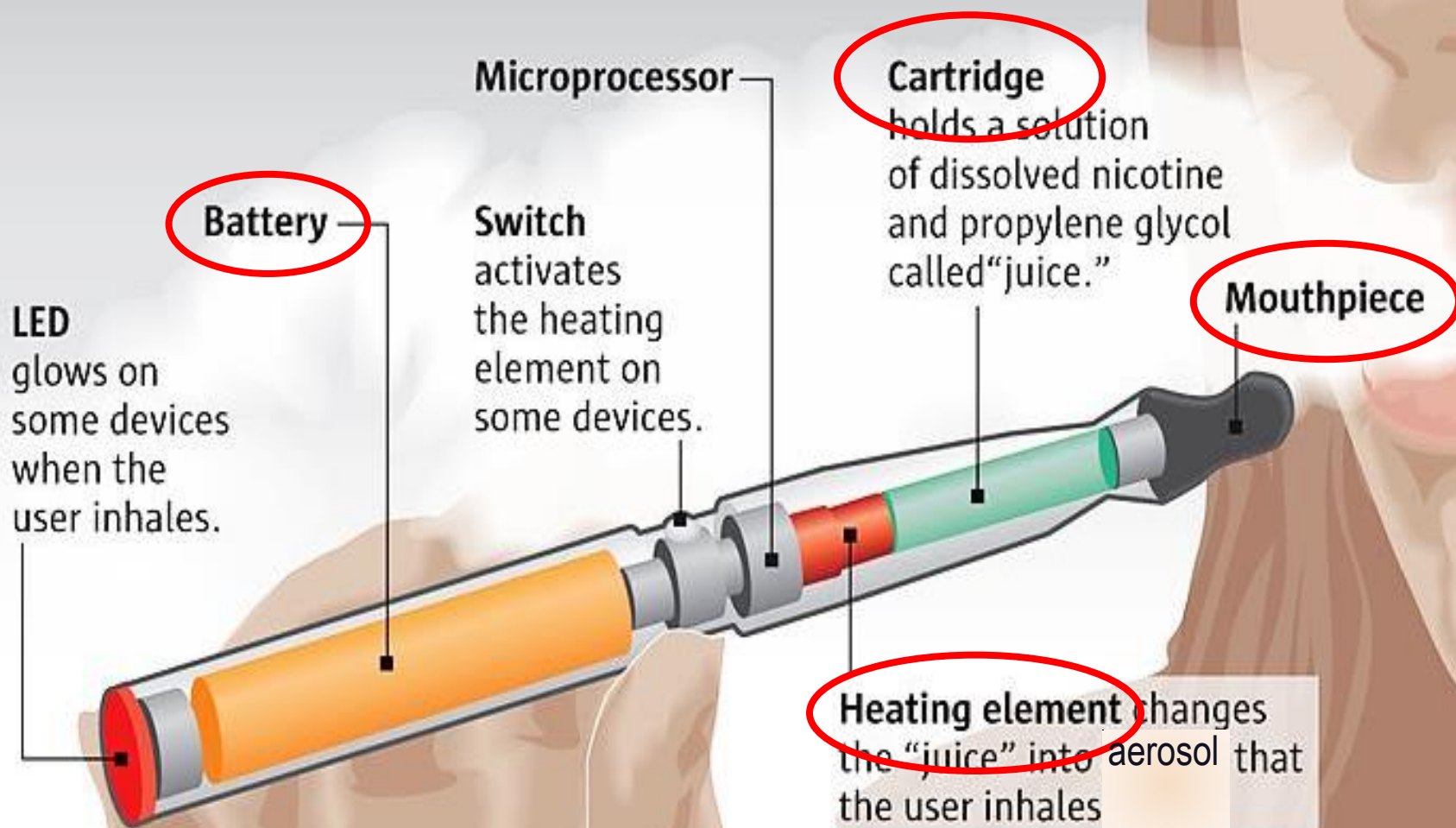
2006: Introduced in EUROPE



Late 2006 – Early 2007: Introduced in UNITED STATES

Electronic Nicotine Delivery System (“ENDS”) Products





Source: U.S. Fire Administration

"Vape Juice"

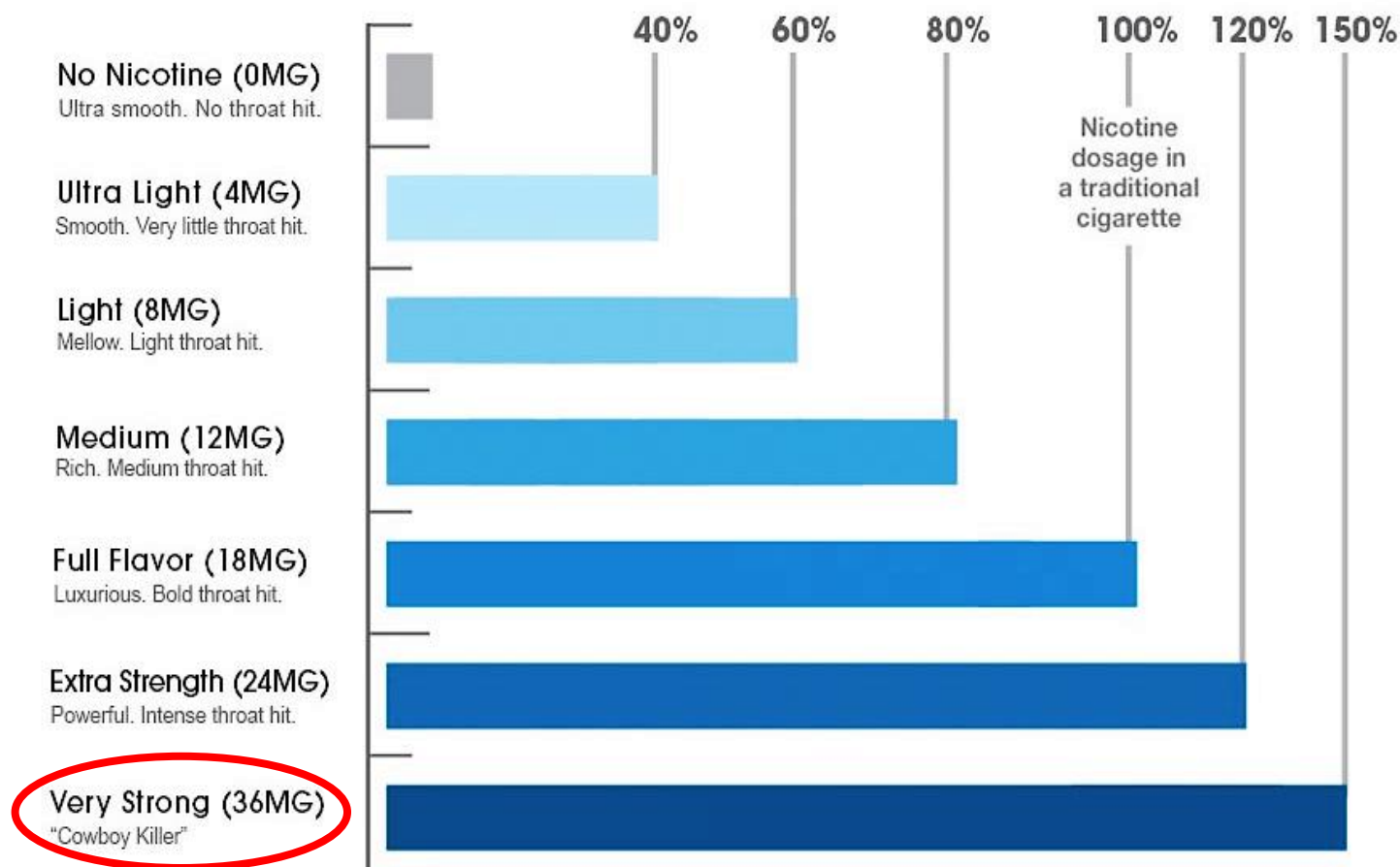
"E-Juice"



BASIC INGREDIENTS

1. Concentrated nicotine
(extracted from tobacco)
2. Flavoring chemicals
3. Propylene glycol or
vegetable glycerine

Nicotine Level Chart





← Minis or Cig-a-likes

← Hookah Pens

← Vape Pen or E-Go

← Mods, Tanks, PVs



JUUL



Suorin Drop



myblu™



JUULpods available in **3%** and **5%** nicotine by weight
5% strength = amount of nicotine in 1 pk. of cigarettes

MARIJUANA can be used in products designed for THC and in many types of e-cigarettes.

When individuals vape (rather than smoke) THC, they tend to **consume higher concentrations** and there is **no smell**, *which means it is easy to hide.*



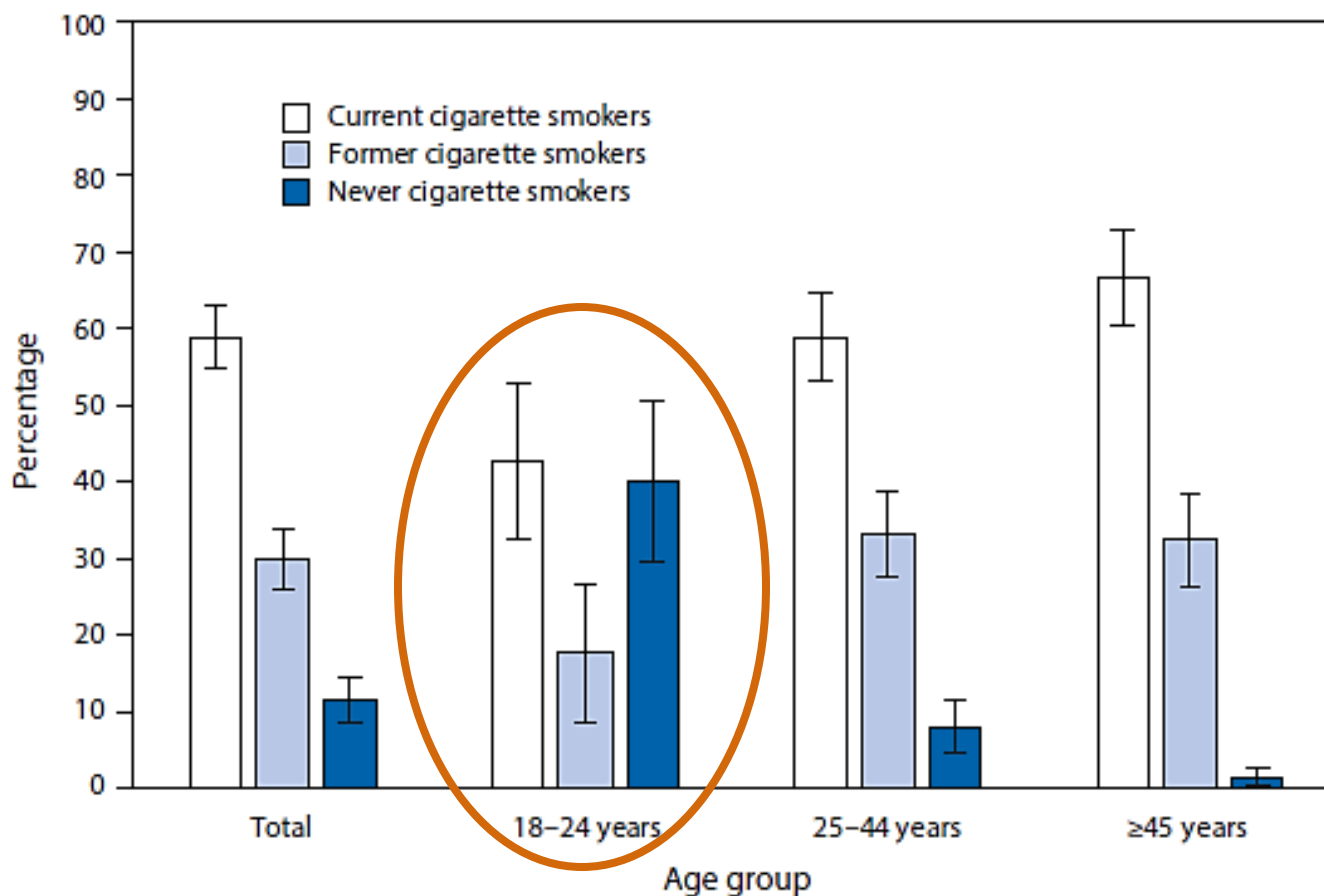
"Premium wax vaporizer"



"Liquid shatter" pen

Prevalence of ENDS Product Use among Adults and Youth

Cigarette Smoking Status* Among Current Adult E-cigarette Users,[†] by Age Group — National Health Interview Survey,[§] United States, 2015

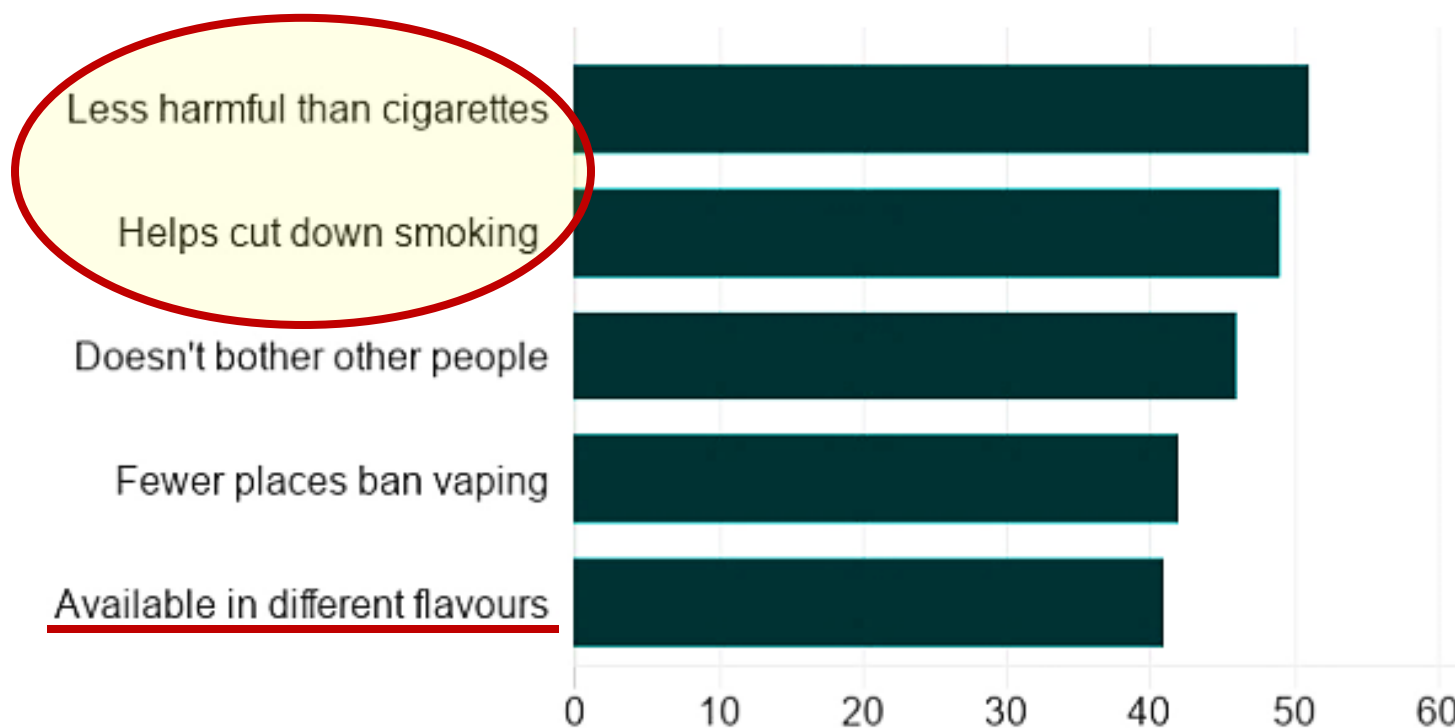


Current ENDS Product Use: ADULTS



What Drives Adult Use?

Survey of 3,000 regular e-cigarette users in 2015 (%)



Source: Kantar, Ernst & Young analysis

BBC

ENDS Product Use (2017/2018): YOUTH

High school

2017

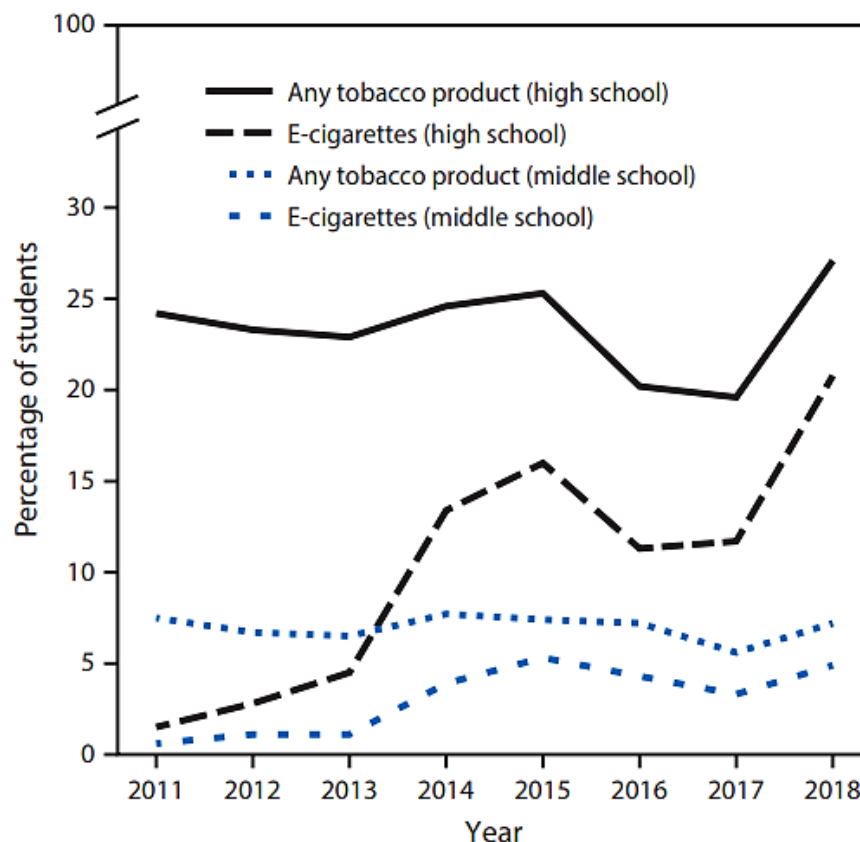
2011 1.5

Middle school

2017

.6 20

FIGURE. Percentage of middle and high school students who currently use e-cigarettes* and any tobacco product† — National Youth Tobacco Survey, United States, 2011–2018



11.7

0%

12%

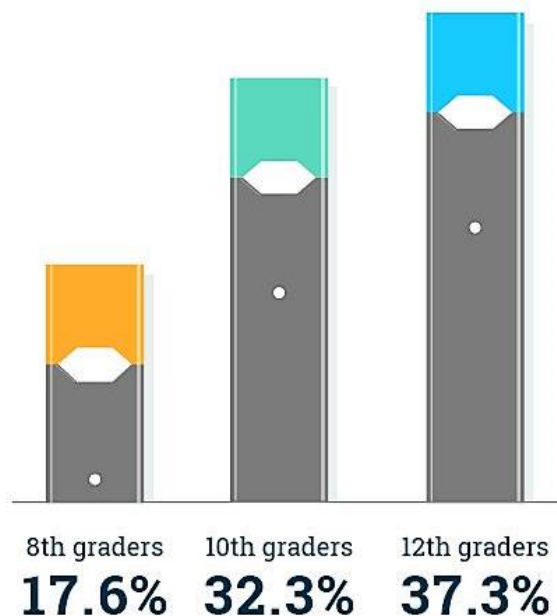
Youth ENDS Product use in Massachusetts

- Nearly **24%** of **HS students** use ENDS product
- Almost **50%** have **tried them at least once**
- **HS student use: 9 X more than adults**

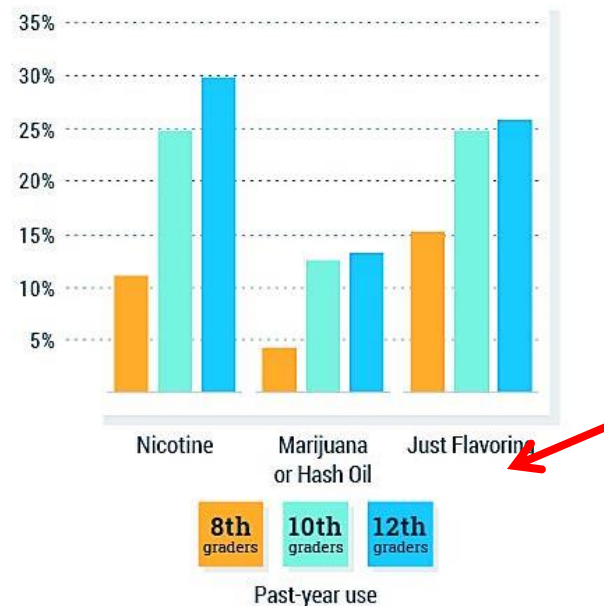
Source: MA Department of Public Health – 2017

What Teens Think They are Inhaling

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.

63% of JUUL users ages 15-24 did NOT know that this product *always* contains nicotine.

- Truth Initiative Schroeder Institute 2017 Study

What Drives Youth Use?

39% **Friend/family** member used them

31% Availability of **flavors**

17.1% Believe they are **less harmful** than
other forms of tobacco

Source: 2016 National Youth Tobacco Survey

Marketing Tactics

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

2014	68.9
2015	73.0
2016	78.2

YOUTH EXPOSURE TO E-CIGARETTE ADS, 2016



RETAIL STORES

68.0% 17.7 MILLION



INTERNET

40.6% 10.6 MILLION



TELEVISION

37.7% 9.7 MILLION



NEWSPAPERS & MAGAZINES

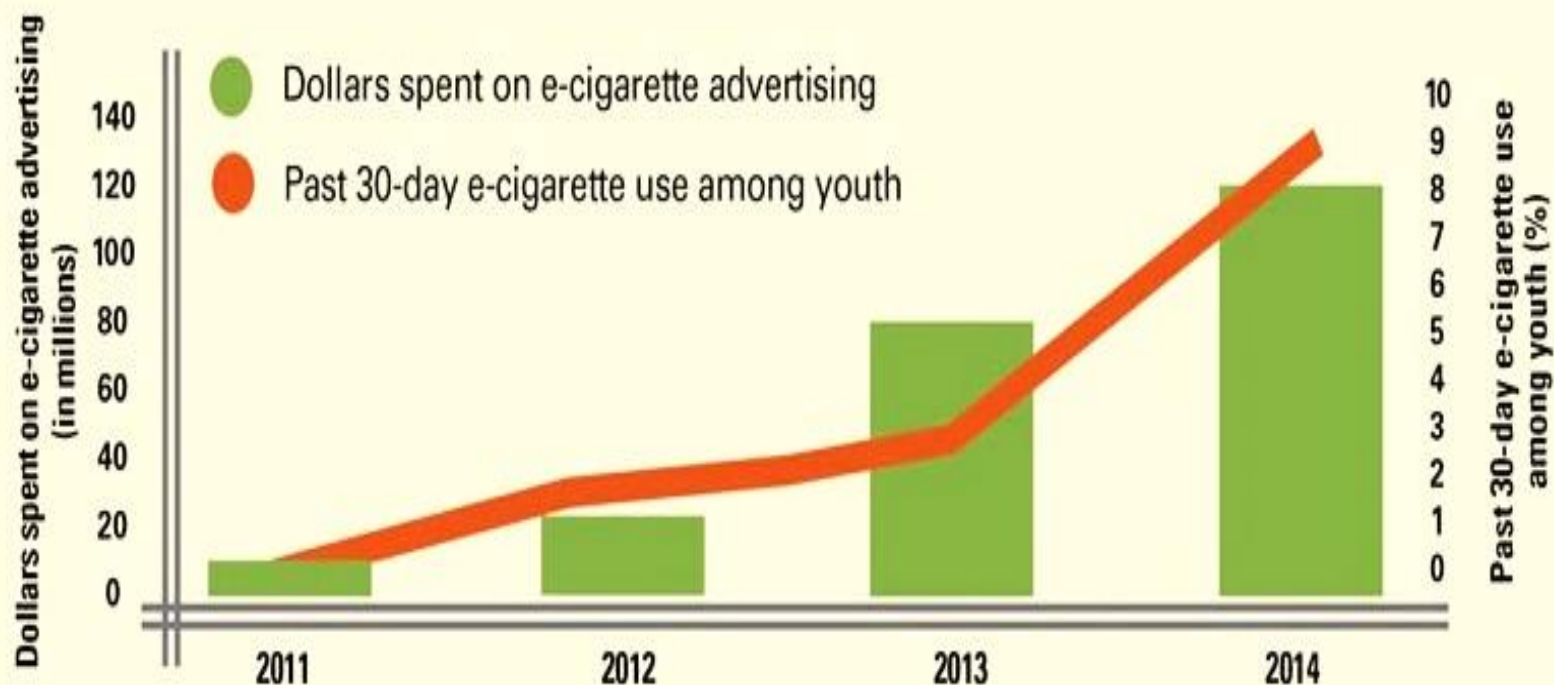
23.9% 6.2 MILLION

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



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).



- To do list
1. Study
 2. Groceries
 3. Band practice
 4. Vape time



KANDYPENS
K-VAPE
TRUE CONVECTION
TECHNOLOGY



WWW.VAPORNATION.COM
YOUR ONLINE VAPORIZER SUPERSTORE

#400 PUFFS

...AND YOU'LL
Love it
FROM THE
FIRST ONE.

SO WHAT ARE YOU
WAITING FOR?!



JUST SLIDE IT
OUT OF THE BOX
AND YOU'RE
GOOD TO GO!

- 3 AWESOME FLAVORS
- NO ODOR OR ASH
- EQUALS **2 PACKS***


blu ELECTRONIC
CIGARETTES

Ask for a blu™

DISPOSABLE

at a store near you. blucigs.com/store-locator

NOT FOR SALE TO MINORS. ©2005 LOEC, Inc. WARNING: This product contains nicotine derived from tobacco. Nicotine is an addictive chemical. blu™, blu eCigs® and the blu logo are trademarks of Lorillard Technologies, Inc.



FINcigs @FINcigs · Sep 18

FIN ecigs look & feel like traditional [#cigarettes](#). Customers smoke our [#ecig](#) as an alternative to tobacco cigarettes



2

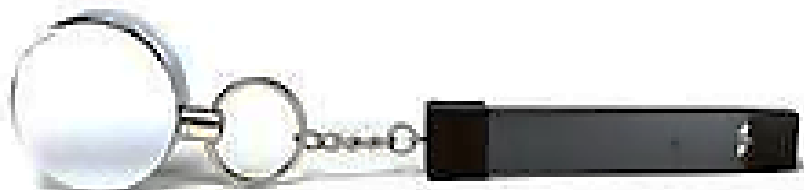


4





Users can customize the look of their JUUL and pods:



Images courtesy of Etsy.com



Images courtesy of Etsy.com

Appealing Flavors



<https://truthinitiative.org/news/4-marketing-tactics-e-cigarette-companies-use-target-youth>



e-Liquid Black Beer

10ml eLiquid



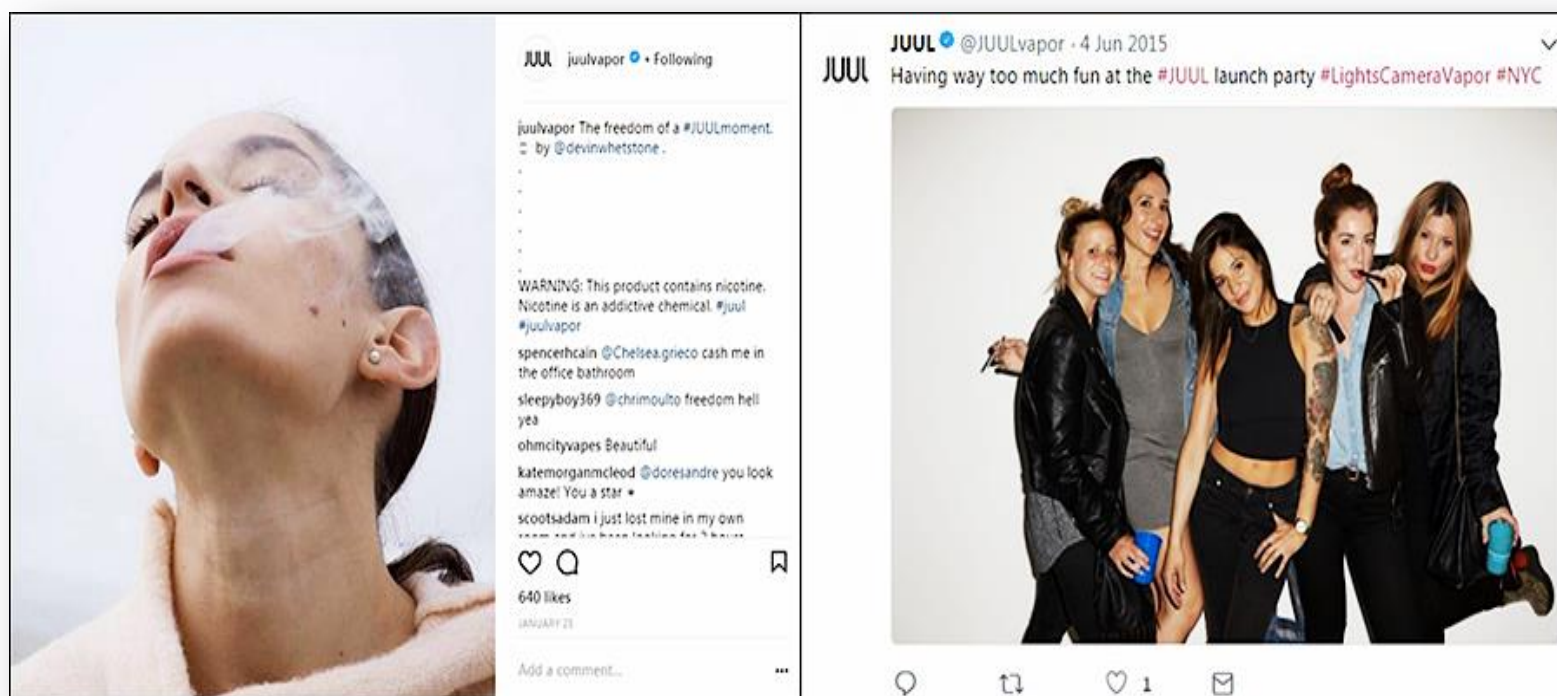
x high (24mg)
high (16mg)
med (11mg)
low (6mg)
non (0mg)



**Over 15,500
E-Liquid Flavors available**



Creating a Buzz on Social Media




<https://truthinitiative.org/news/4-marketing-tactics-e-cigarette-companies-use-target-youth>

Misleading Advertising

What is **E-JUICE / VAPE JUICE**?

- E-juice or vape juice is the fluid used in vaporizers to create ~~vapor~~ **aerosol**
- E-juice or vape juice comes in a variety of flavors and nicotine levels. Including zero nicotine options.
- E-juice or vape juice is made of propylene glycol (PG) or vegetable glycerin (VG), food flavoring, water, and comes with or without

E-juice and vape juice is primarily...



According to the CDC: Food flavoring that meets the FDA definition of “Generally Recognized as Safe” (GRAS) *applies to additives for use in foods, NOT for inhalation. The health effects of inhaling these substances are currently unknown.*

nicotine throughout the liquid.

or nicotine

Veppo.

Health and Safety Concerns: What we know (*so far*)

- Substantial evidence that e-cigarette use among youth increases risk of cigarette use

E-Cigarette Use Among Youth and Young Adults

A Report of the Surgeon General

2016



U.S. Department

The National Academies of
SCIENCES • ENGINEERING • MEDICINE


CONSENSUS STUDY REPORT

Public Health Consequences of E-Cigarettes

2018



- Mixed evidence on health consequences
- Long-term health consequences unknown
- Limited evidence as a cessation device

A close-up photograph of a person's mouth and nose exhaling a thick white aerosol from an e-cigarette. A hand is visible holding the e-cigarette. A yellow and white comic-style speech bubble is overlaid on the left side of the image.

E-cigarettes contain
nicotine, ultrafine particles,
heavy metals, and volatile
organic compounds.

Aerosol

Not "Water Vapor"

Image source: <https://e-cigarettes.surgeongeneral.gov/knowtherisks.html>

IT'S **NOT** JUST
"HARMLESS WATER VAPOR"

E-cigarette aerosol contains
at least **10 chemicals** on
California's Proposition 65 list

WHAT ABOUT SECOND-HAND EXPOSURE
TO E-CIGARETTE AEROSOL?

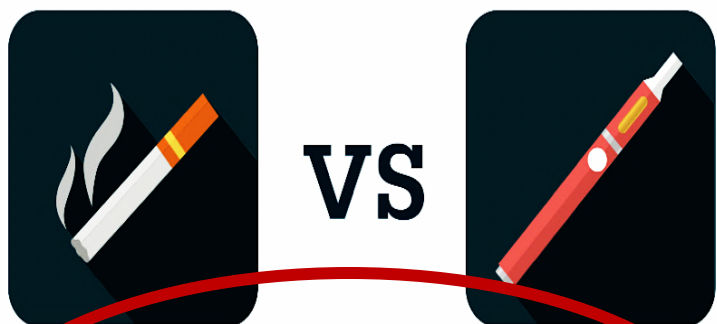
CONSIDER ALL OF THE LEVELS OF SELECTED CARBON MONOXIDE AND TOBACCO IN VAPOR FROM ELECTRONIC CIGARETTES. TOBACCO CONTROL 2014; 23(2): 135-7.
WILLIAMS, M., ET AL. VIRAL AND SILENT PASTIGLES INCLUDE NO NANOPARTICLE REMOVAL IN SELECTED ELECTRONIC CIGARETTE CARTRIDGE FLUID AND KROXOL PLUS CIGARETTE. JOURNAL OF TOBACCO STUDIES 2014; 33(1): 1-10.
SCHWARTZ, P. ET AL. TOBACCO AND CIGARETTE EXPOSURE FROM CALIFORNIA PROPOSITION 65. TOBACCO CONTROL 2014; 23(2): 135-7.

©2014 CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

- **NOT SAFE:** Youth, young adults, pregnant women, or adults not currently using tobacco products
- **YOUTH:** Use increases the risk of initiating combustible tobacco cigarettes among youth
- **CESSATION:** Maybe, *but more research is needed*
- **HEALTH IMPACT:** Long-term health effects unclear
- **POTENTIAL BENEFIT:** For adult smokers, who are not pregnant, if used as a complete substitute for regular cigarettes/other smoked tobacco products.

https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm

Are E-cigarettes less harmful than regular cigarettes?



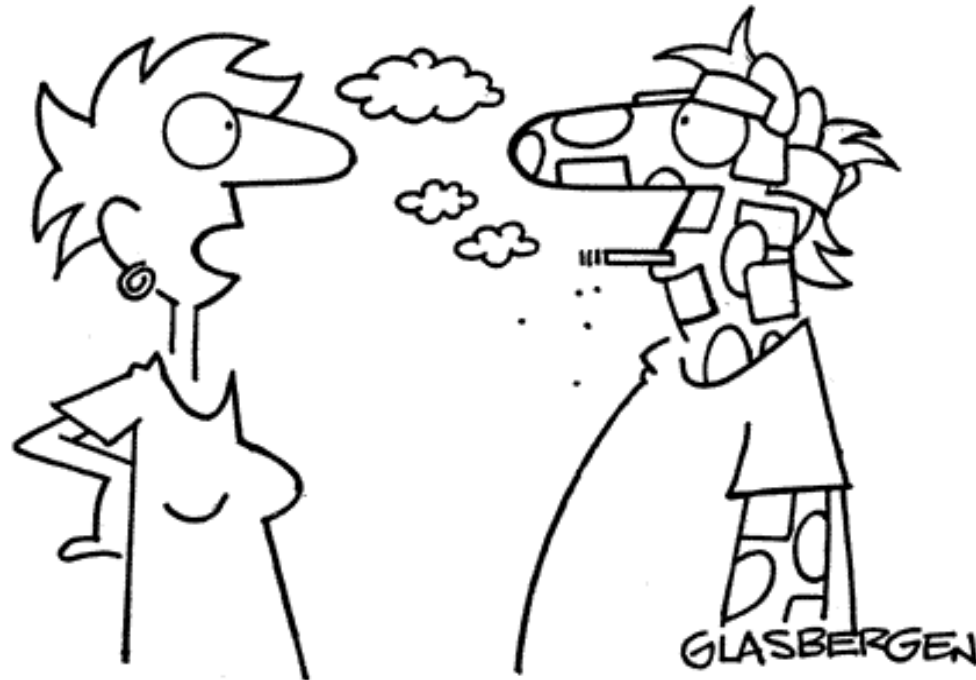
YES, but that doesn't
mean e-cigarettes are safe.

E-cigarette aerosol generally contains fewer toxic chemicals than the deadly mix of 7,000 chemicals in smoke from regular cigarettes. However, e-cigarette aerosol is not harmless. It can contain harmful and potentially harmful substances, including nicotine, heavy metals like lead, volatile organic compounds, and cancer-causing agents.

Less harmful, NOT harmless

Source: U.S. Health & Human Services – Centers for Disease Control and Prevention (CDC)

Public Health Debate



“If patches don’t work for you, try something else!”

Can e-cigarettes help a person quit smoking tobacco cigarettes?

Potential Public Health Benefits

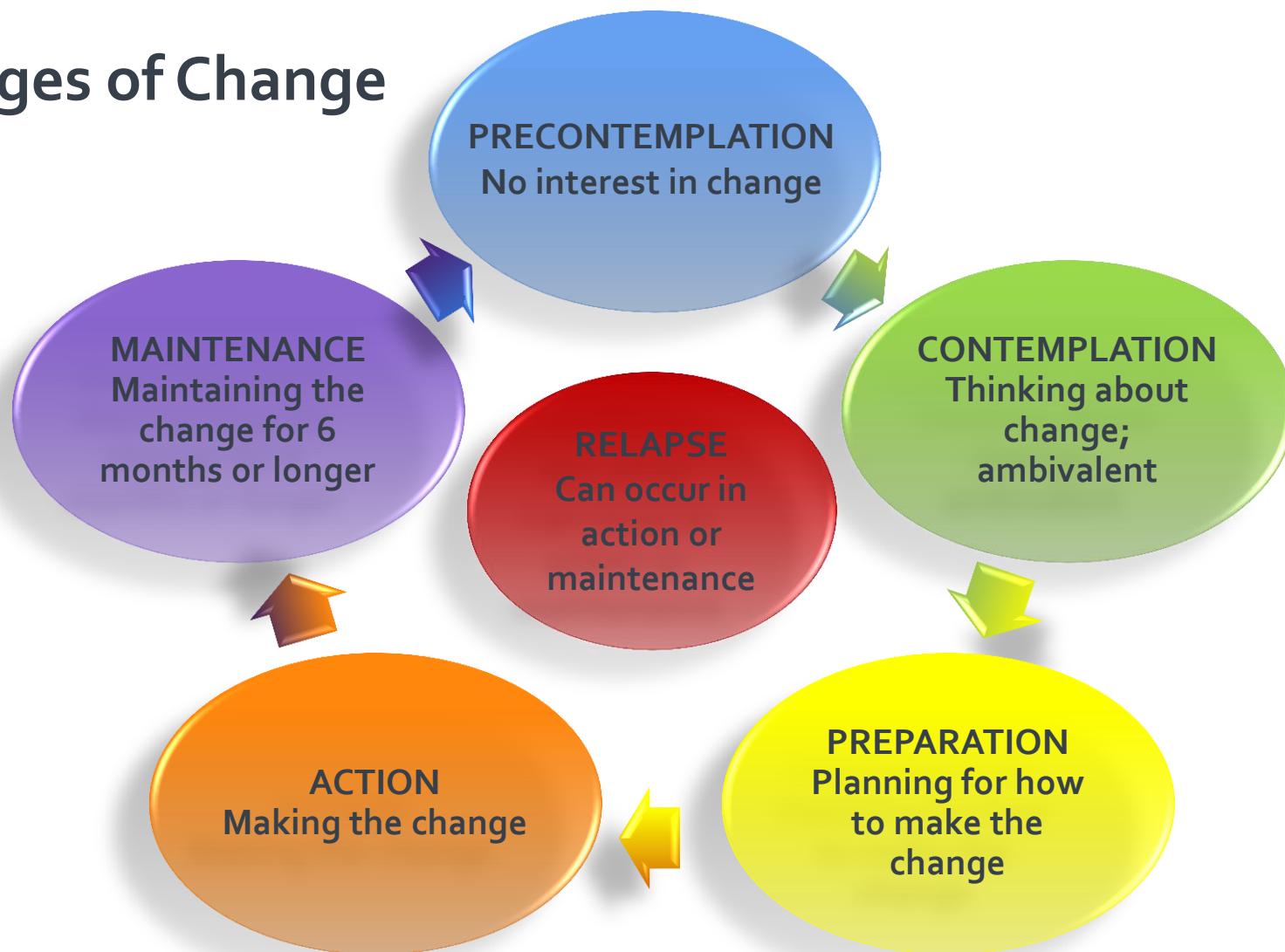
- **LESS HARMFUL THAN CIGARETTES:** Contain fewer toxic chemicals and lower concentrations of carcinogens than combustible cigarettes
- **SAVE LIVES:** Substituting ENDS products for combustible cigarettes could save lives and reduce disease
- **SMOKING CESSATION:** May help people quit smoking combustible cigarettes

Potential Public Health Harms

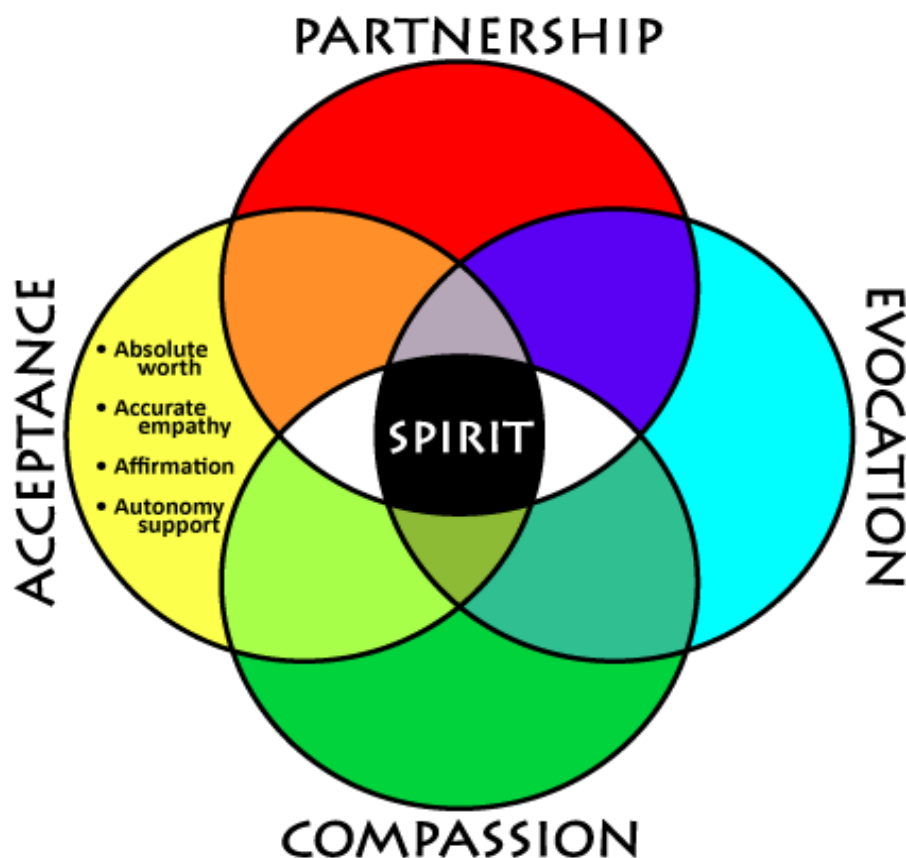
- Gateway to combustible tobacco cigarettes for youth
- Foster addiction in youth who never smoked before
- Lead to relapse in former smokers
- Renormalize smoking and **increase** number of people addicted to combustible cigarettes.
- May discourage smokers from quitting: *most adult ENDS users continue to smoke tobacco cigarettes*
- Long-term health consequences UNKNOWN

Ways to Talk about Vaping

Stages of Change



Spirit of Motivational Interviewing



Motivational Interviewing

- Resist the righting reflex
- Understand motivation
- Listen
- Empower the individual

Skills and Techniques

- *Ask permission to give advice*
- *Explore decisional balance*



Open-ended questions

Affirmations

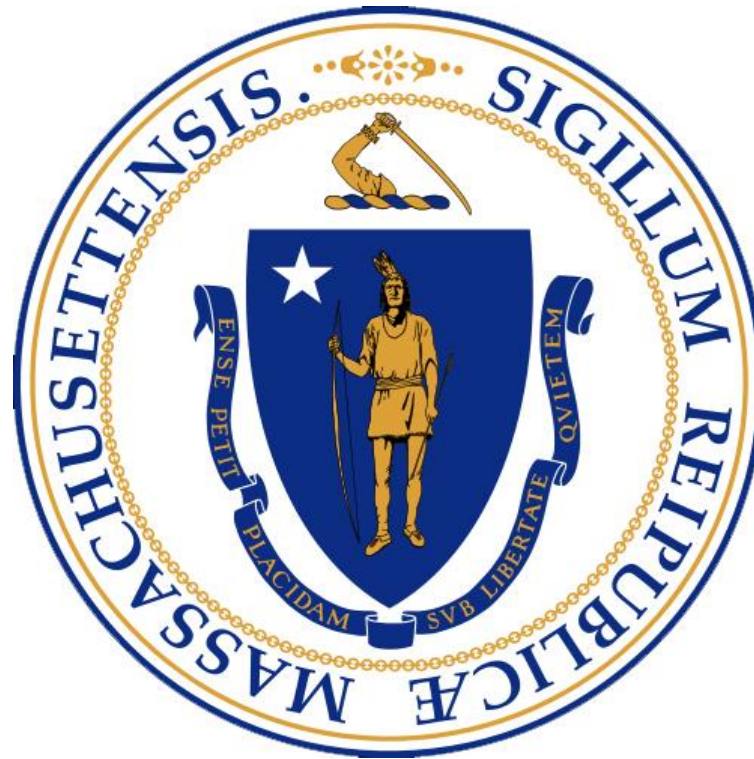
Reflective listening

Summaries

*What messages do
I give about using
e-cigarettes?*

Regulations and Laws

State Regulations – Massachusetts



2018: Changes in MA Laws, effective December 31



- *Tobacco Product Definition*
- *Minimum Legal Sales Age*
- *Parents and Guardians*
- *Sales in Health Care Institutions*
- *Vaping in Public*
- *Smoking and Vaping in Schools*

RESOURCES

For More Information

The New Look of **NICOTINE ADDICTION**

**TALK WITH YOUR KIDS ABOUT
THE DANGERS OF VAPING**



- Adult Campaign: Billboards, Public Transport (2018)
- Toolkit for schools and parents:
<http://makesmokinghistory.org/dangers-of-vaping/>
- MA Clearinghouse materials:
<http://massclearinghouse.ehs.state.ma.us/category/Vaping.html>



- Youth Campaign (2019)
- Information for Youth:
 Website: www.mass.gov/vaping
 Instagram: [@GetTheVapeFacts](https://www.instagram.com/GetTheVapeFacts)
 YouTube (MassDPH):
[Vapes & E-Cigarettes.Get the Facts.](https://www.youtube.com/Vapes%20&%20E-Cigarettes.Get%20the%20Facts)
- Clearinghouse materials:
 - ✓ *Mirror Clings*
 - ✓ *Handout*
 - ✓ *Poster*<http://massclearinghouse.ehs.state.ma.us/category/Vaping.html>

- A statewide movement of youth fighting tobacco in MA
- Youth groups in HS or community organization who want to fight against Big Tobacco sign up to become an **84 Chapter**
- On *Kick Butts Day* chapters educate their legislators at the State House







Truth Initiative

Text **QUIT** to
[706-222-QUIT](tel:706-222-QUIT) to leave
JUUL or your e-cig.

Text **QUITNOW** to
[202-759-6436](tel:202-759-6436) to quit
cigarettes.

www.thisisquitting.com

Massachusetts Smokers' Helpline

1-800-QUIT-NOW

KeepTryingMA.org

- Phone counseling + NRT
- FREE NRT for one month



The MA Smokers' Helpline offers free support to **quit smoking.**

I QUIT on my 7th TRY
Keep Trying!

1-800-QUIT-NOW

For more information about the Helpline and to enroll online, visit **KeepTryingMA.org**

Massachusetts Department of Public Health

Resources from IHR and the MA Clearinghouse

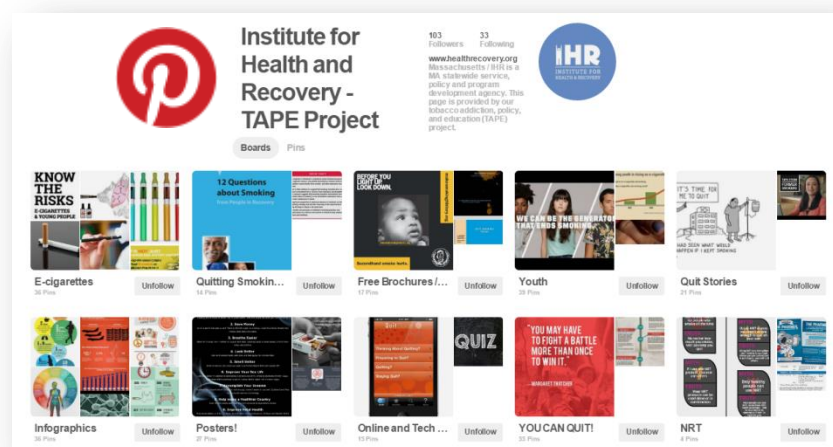


 Online Training


On-PAR Online Training

 Online Training

Smoke-Free Families Online Training



<https://www.pinterest.com/healthrecovery/>



Questions?
Comments?



Thank you!