



PENNSYLVANIA
Statewide Tobacco-Free
Recovery Initiative

Vaping: What we know and what we don't know

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TOBACCOFREERECOVERYPA.COM

PA STFRI Mission/Vision

The mission of the **Pennsylvania Statewide Tobacco-Free Recovery Initiative** (PA STFRI) is to facilitate partnerships among academia, state agencies, county public health departments, treatment providers and recovery advocates to advance recovery-oriented evidence-based tobacco use disorder interventions in behavioral health services.

We envision a behavioral health system that fully recognizes that addressing tobacco serves to maximize treatment outcomes, reduce social stigma, mitigate health disparities, and allows all Pennsylvanians to thrive in their recovery.



Learning tobacco-free coping skills increases your chance of long-term recovery from substance use disorders by **25%**. Get free help at tobaccofreerecoverypa.com and **1-800-QUIT-NOW**.



PA STFRI Guiding Principles

- **Treating tobacco concurrently with other behavioral disorders is safe and maximizes treatment outcomes.** Due to a bidirectional relationship between tobacco craving and withdrawal and the use of opioids and other substances, tobacco interventions integrated into SUD treatment is associated with sustained drug and alcohol recovery. Tobacco abstinence is correlated to decreased anxiety, depression, and improvements to overall mood and quality of life.
- **Person-centered tobacco use disorder interventions align with harm reduction strategies and do not interfere with treatment access.** Proposed clinical performance standards reflect American Society of Addiction Medicine guidelines and comprise pathways of care that account for individual readiness and self-determination.
- **Addressing tobacco in behavioral health demonstrates a commitment to health justice.** Tobacco use among Pennsylvanians with mental and substance use disorders is three times higher than the general population. They have disproportional tobacco-related health disparities and inadequate access to appropriate tobacco treatment services. A systems tobacco intervention approach tailored to vulnerable populations shows support for human rights and helps to mitigate societal stigma.

Learning Objectives

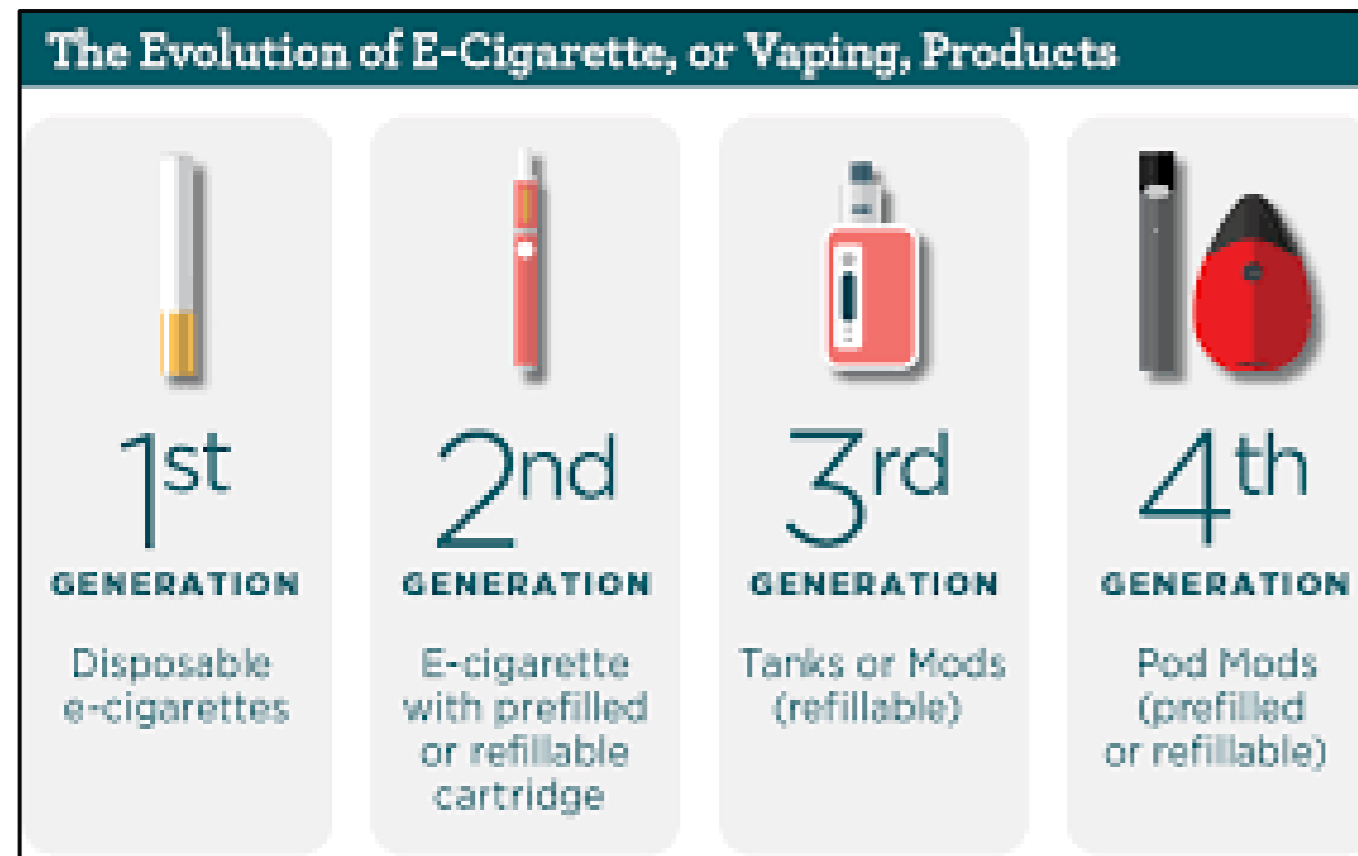
- Provide a description of current vaping products on the market today.
- Identify the association between combustible tobacco and vaping product use, mental health, and other substance use.
- Review data on the safety and efficacy of e-cigarettes to stop smoking.
- Present an overview of community resources for prevention and treatment.

What are Vaping Devices?

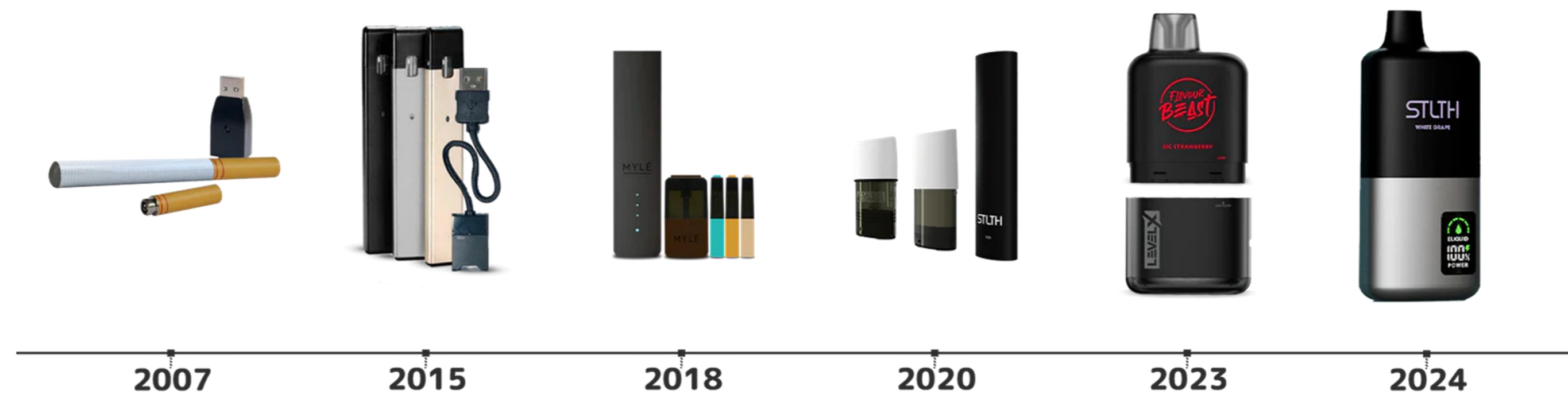
- E-cigarettes (aka "e-cigs", "vapes," or "ENDS") are handheld, battery-powered devices that heats a liquid to produce an inhaled aerosol that is exhaled into the environment.
- The liquid usually contains nicotine, flavorings and other chemicals, or other substances.



Products on the market today have become bigger (contain more e-liquid), stronger (higher nicotine concentration) and cheaper.



There are currently over 6,000 different e-cigarette products available in the United States with over 7,000 distinct e-cigarette flavors on the market.



Youth Vaping Remains a Pressing Issue



- During 2023–2024, current e-cigarette use among middle and high school students declined from **7.7%** to **5.9%**.
- However, a large percentage of youth e-cigarette users, including **42%** of high school users and **27%** of middle school users, reported frequent or daily use.
- The most commonly used devices among current e-cigarette users are **disposables (55.6%)**, followed by **prefilled/refillable pods or cartridges (15.6%)**.

National Youth Tobacco Survey 2024

Flavorings



More than 85% of youth who currently use e-cigarettes or nicotine pouches **report using flavored products.**



Source: National Youth Tobacco Survey, 2024

Influencing Factors

**POSITIVE MESSAGING ON SOCIAL MEDIA +
FLAVORINGS + LOW HARM PERCEPTION
= E-CIGARETTE USE**

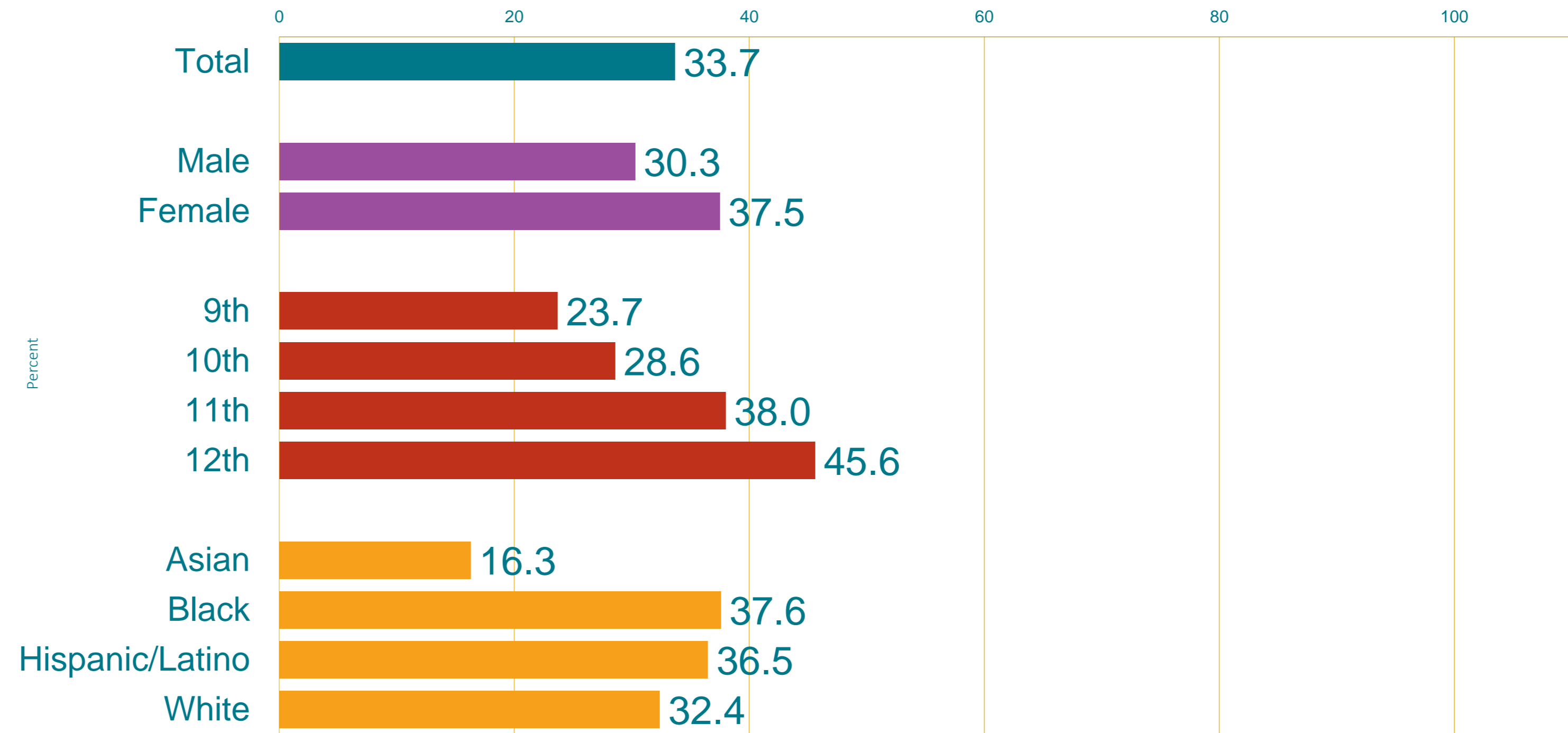


- Advertisement of e-cigarettes mainly found in online sources.
- TikTok videos comprise a large number of videos that positively depict vaping.
- Well established correlation between sociodemographic factors and e-cigarette use in adolescents and young adults.
- Lower perceived risk of e-cigarettes largely based on:
 - socioeconomic status - lower-income family,
 - ethnic background - non-Hispanic Black, and
 - parental educational attainment - both parents having no college degree

High School Data

Percentage of High School Students Who Ever Used an Electronic Vapor Product

2023 Pennsylvania Youth Risk Behavior Survey

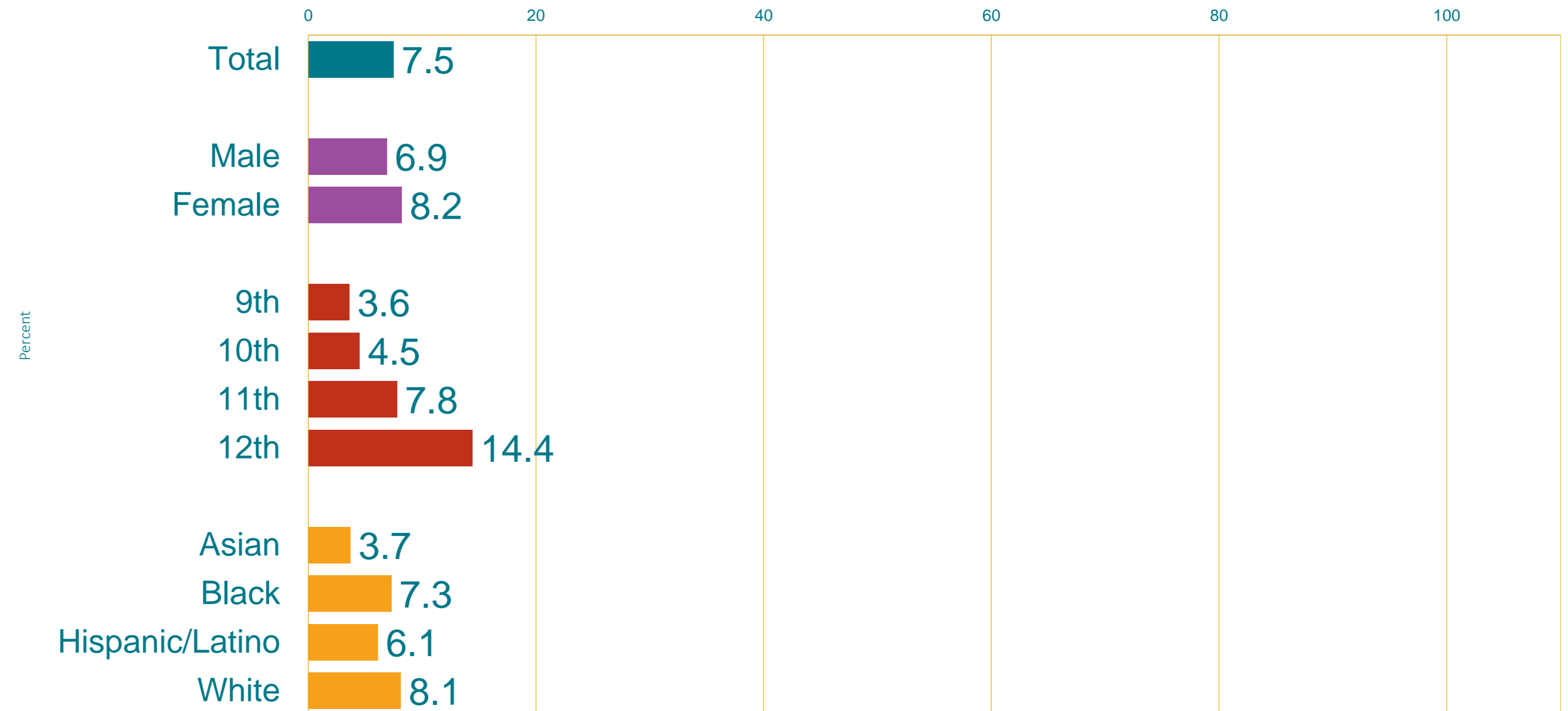


High School Data



Percentage of High School Students Who Currently Use an Electronic Vapor Product

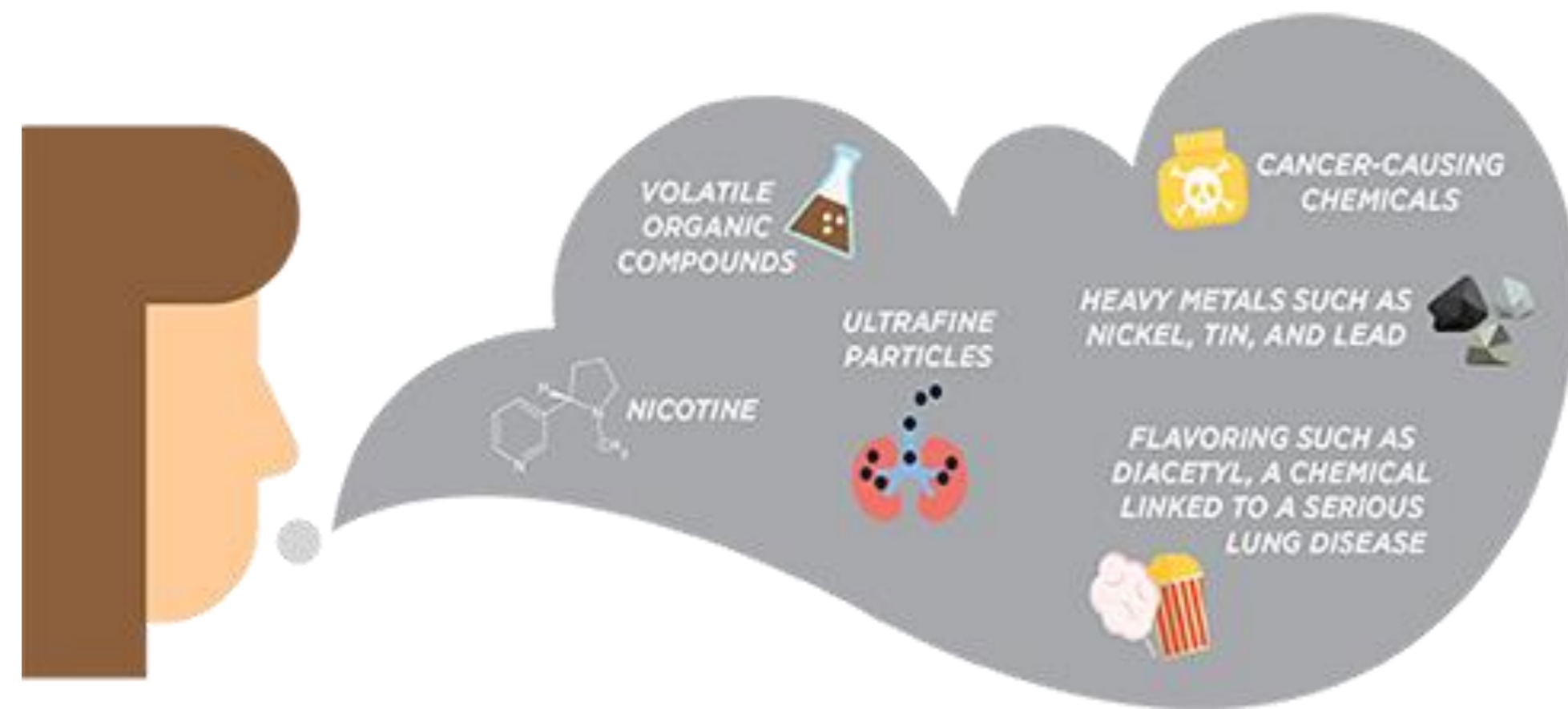
2023 Pennsylvania Youth Risk Behavior Survey



What's in the Aerosol?

While the aerosol from e-cigarettes generally contains fewer toxic chemicals than the smoke from cigarettes or cigars,

VAPING IS NOT HARMLESS



CDC.gov

Solvents, Sweeteners and Flavorings

- **Formaldehyde, Acetaldehyde, Sucralose**
(carcinogenic)
- **Vegetable glycerin**
(Acrolein linked to lung & heart disease)
- **Vitamin E acetate**
(interferes with normal lung functioning)
- **Metal particles (heating coil)**
(may cause blood vessel damage, inflammation, and nervous system effects)
- **Propylene glycol - cloud**
(inhalation injury)

U.S. Adult Nicotine Use

In 2021, an estimated 46 million U.S. adults (18.7%) reported currently using a tobacco product, including:



- Cigarettes (11.5%)
- E-cigarettes (4.5%)
- Cigars (3.5%)
- Smokeless tobacco (2.1%)
- Pipes including hookah (0.9%)

CDC, MMWR, 2021

Pennsylvania Adult E-Cigarette Use

Ever used an e-cigarette: **22%**

Among those who have ever used an e-cigarette, currently use (every day or some days): **7%**

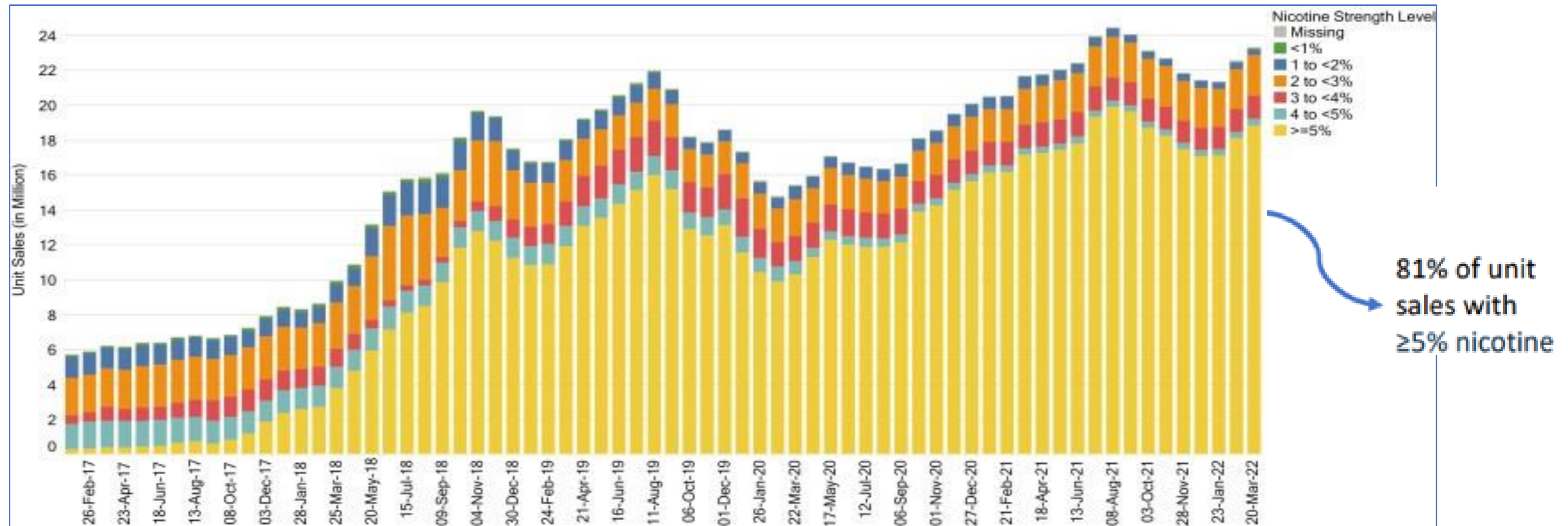
Among those who have ever used any form of tobacco, currently use (every day or some days): **20%**



Behavioral Risk Factor Surveillance System, 2022

A Nicotine Arms Race:

High nicotine content vapes are the norm in the marketplace.

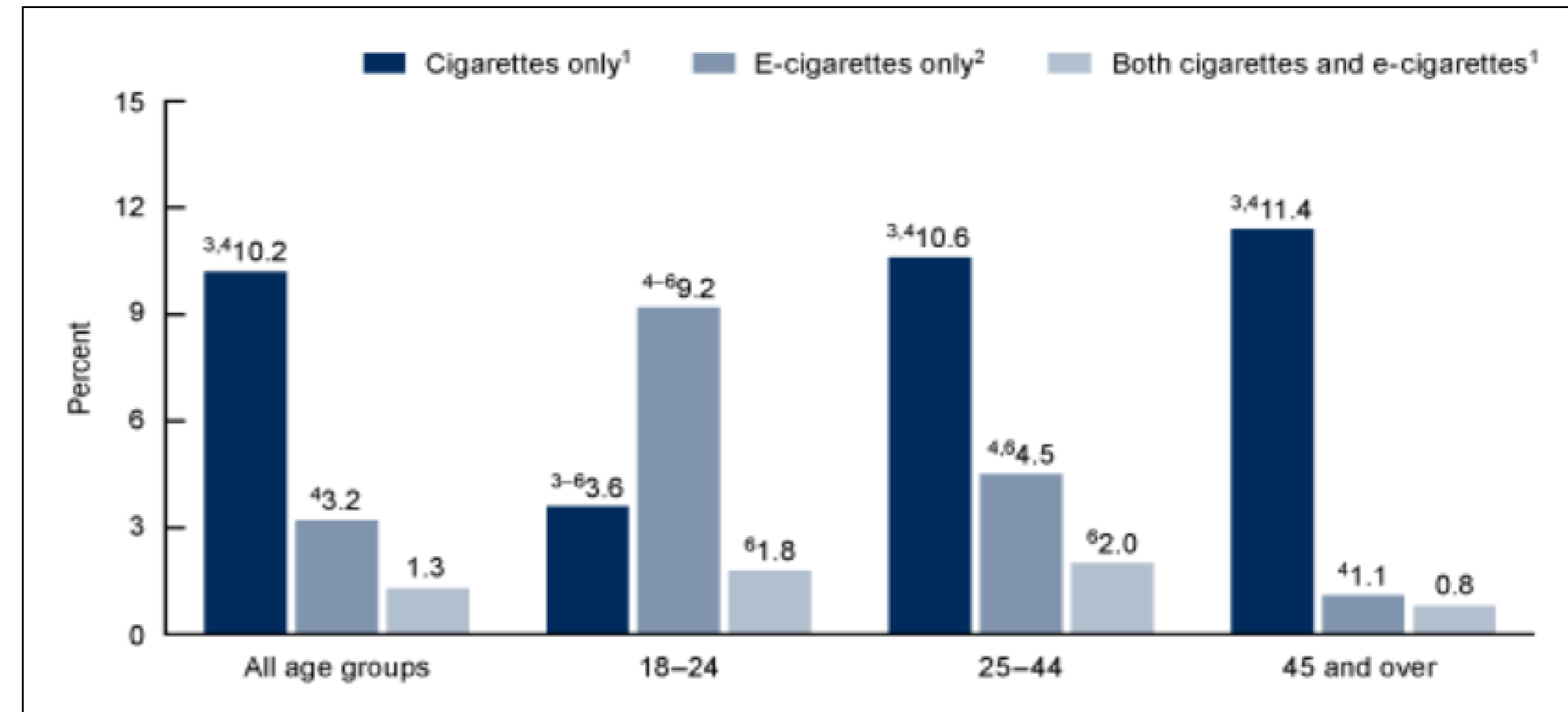


There is currently no federal cap on the amount of nicotine in vaping products in the United States.

Dual Use Among Adults



Figure 4. Percentage of adults aged 18 and over who currently smoke cigarettes and use e-cigarettes, by age group: United States, 2021



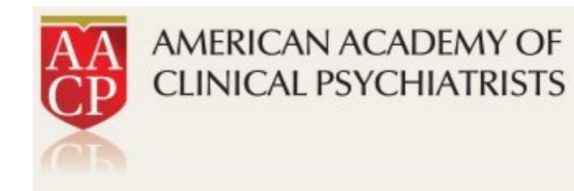
National Center for Health Statistics, 2021.

Use of E-Cigarettes by Individuals with Mental Health Conditions



- Individuals living with depression, anxiety, or other mental health conditions are **twice** as likely to have tried vaping products and **three times** as likely to be current users of these products, as people without mental health disorders
- Users of vaping products are significantly more likely to report low self-esteem, impulsivity, and to have mental health histories of attention-deficit disorder, anxiety, depression, other SUD's.

Annals of Clinical Psychiatry. 2019 Feb; 31(1): 27–35.



Impact on Mental Health



Vaping is often used as a coping strategy by individuals suffering from depression, anxiety or other mental health conditions. However, it could potentially worsen the existing mental health conditions. Nicotine interrupts the cerebral dopamine pathway leading to an increase in depressive symptoms.

NICOTINE CONSUMPTION:

- Associated with impulsivity, mood disorders, anxiety, suicidality and depression.
- Increases sensitivity to stress and alters the coping mechanism in the brain.
- Results in a dose-response relationship – an increase in symptoms with increased exposure to nicotine.
- Depression and vaping have been shown to have a bidirectional association.

Impact on Mental Health

“ Research has previously shown that individuals who consume THC are three times as likely as those who do not to develop a psychotic disorder. Vaping solutions increase this risk more than sixfold due to the potency of the vaping solution, which on average contains 52% THC versus the 13% THC contained in the marijuana flower. ”

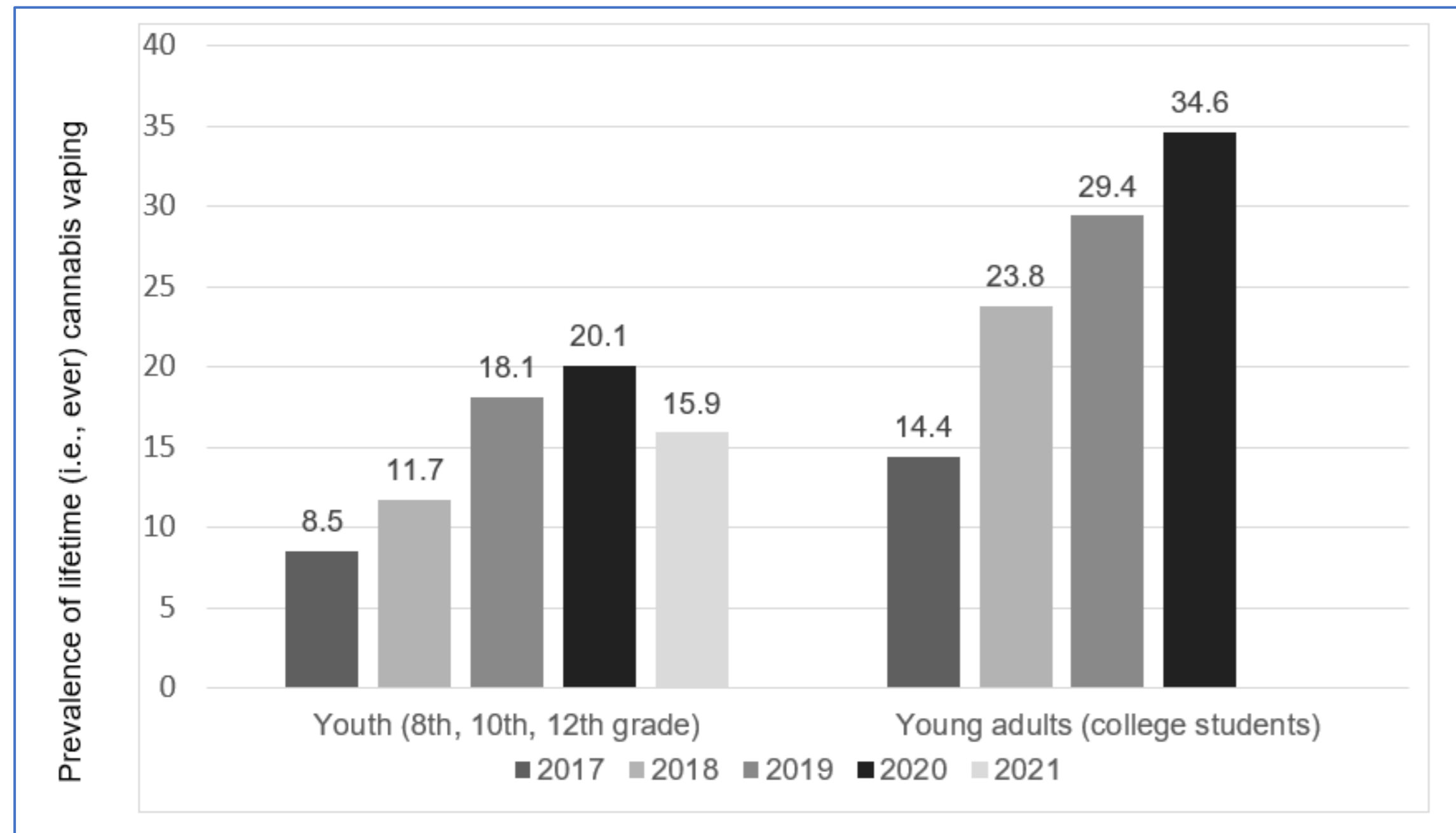
— Chad Percifield, DO

Researcher on vaping and mental health



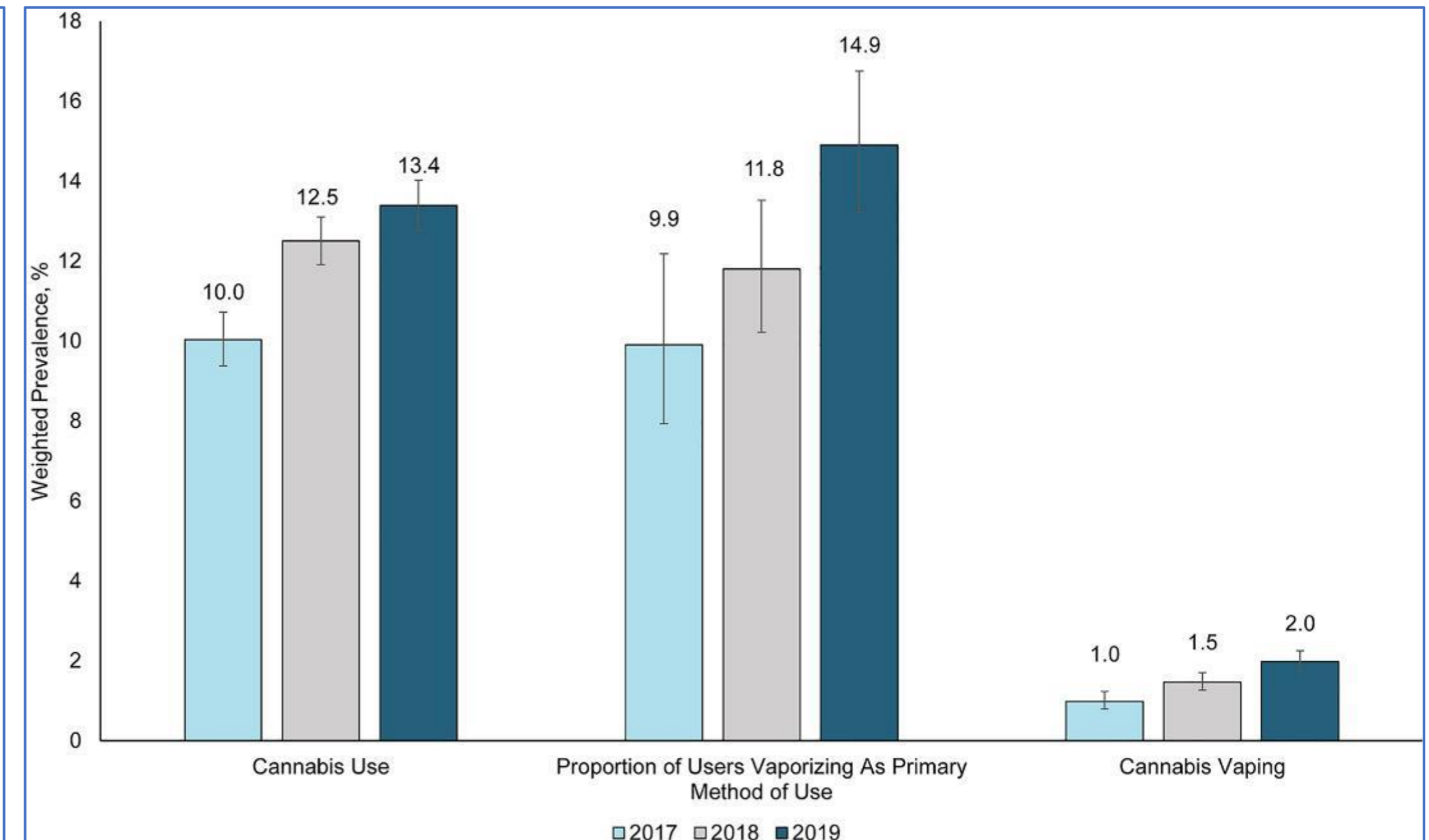
Preference for Cannabis Products Shifting from Combustible Herb to Vaporizable Extracts

YOUTH AND YOUNG ADULT



JAMA Pediatrics. 2022;176(1):42-51. doi:10.1001

ADULT



Preventive Medicine, Volume 153, December 2021

Vaping Cannabis

- Vaporized cannabis has been shown to be twice as damaging to the lungs than vaping or smoking nicotine.
- High-potency concentrates, like those found in vape pens correlates with a higher incidence of mental health problems.
- High risks include acute anxiety, paranoia, psychosis, and cannabis hyperemesis syndrome (severe bouts of vomiting and nausea).



Chadi N, Minato C, Stanwick R. Cannabis vaping: Understanding the health risks of a rapidly emerging trend. *Pediatric Child Health*. 2020

Types of Marijuana Vaporizers

Disposable vape pens: These lightweight pens are pre-filled with cannabis oil and can be used out of the box. The entire pen is disposed of once the oil is used up.

Refillable vape pens: These pens come with a rechargeable battery and a refillable cartridge to use the cannabis oil of your choice. Some have adjustable voltage and temperature controls.

Dry herb vape pens: These pens consist of a heating chamber that you fill with dried marijuana flower rather than cannabis oil. Instead of turning the flower into smoke, it heats it below combustion so that a potent vapor is produced.

Dual-use vape pens: These pens have both a heating chamber for dried flower and a refillable cartridge for cannabis oil.

Dab pens: These pens have a coiled heating element that vaporizes cannabis oil concentrates. These include concentrates called "budder," "crumble," and "shatter," which respectively have a buttery, crumbly, and brittle texture.

Dabbing Cannabis Extract



- **Dabbing** is the inhalation of an aerosol generated by high temperature vaporization of a solid or semi-solid cannabis extract (a dab) with a dabbing accessory (dab rig).
- A “dab,” is a concentrated form of cannabis. Unlike traditional flower or edibles, dabs are made by extracting THC and other cannabinoids using a solvent like butane. The result is a sticky hash oil, sometimes called wax, shatter, or budder, depending on its consistency and appearance.
- Dabbing involves heating the concentrate on a hot surface, usually a nail, and then inhaling the vaporized oil through a dab rig. This method allows for a more potent and immediate effect.

Concern Over Exacerbating Cannabis Risk Factors



- Acute and chronic cannabis use is associated with cognitive impairments of verbal learning, memory, and attention, with more impairment of psychomotor function following acute exposure.
Acute and chronic effects of cannabinoids on human cognition-A systematic review. Biological Psychiatry. 2016
- Cannabis use is associated with the development of psychosis and schizophrenia, anxiety disorder, suicide, depressive disorder, and bipolar disorder.
National Academies of Sciences, Engineering, and Medicine. 2018
- Cannabis use at an early age is associated with adolescent brain abnormality and cannabis and other substance use disorder.
Effects of cannabis on the adolescent brain. Current Pharmaceutical Design. 2014

E-Cig or Vaping Use Associated Lung Injury

EVALI Symptoms? Call 911

- Shortness of breath or [shallow, rapid breathing](#)
- Cough
- [Chest pain](#)
- [Fever](#) and chills
- Diarrhea
- [Nausea](#) and vomiting
- Abdominal pain
- [Rapid heartbeat](#)

If you notice these symptoms after vaping, get emergency medical attention. ^[12]

- Make sure the products you choose are legal and fully tested.
- Always purchase vape products from a **PA DOH Medical Marijuana Program** dispensary.
- Vaporizer products purchased from a dispensary are safer than black-market vape products.
- Dispensaries are able to provide a full report of the product's lab results.



Safer Ways to Consume Cannabis

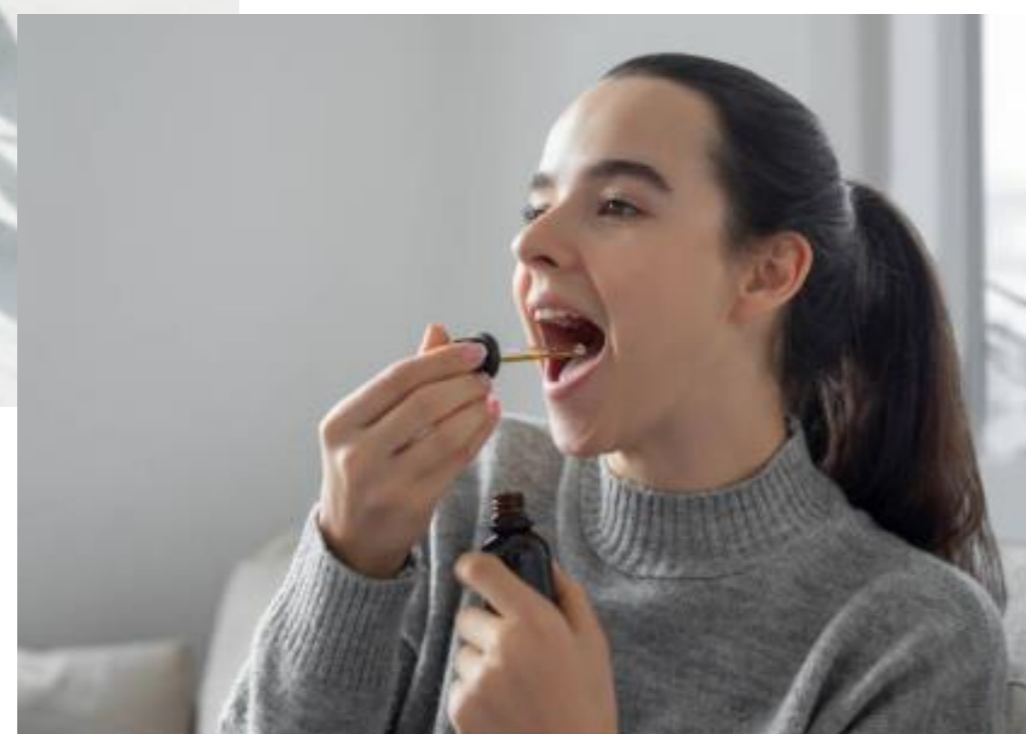
Edibles

- Cannabis extract oils or butter can be used to cook or bake any number of sweets, savory foods, or even beverages.
- However, dosing can be tricky. It can take about two hours to notice an edible's effects.
- It's common for people to think the product isn't working and take more. That can lead to dangerous side effects.



Safer Ways to Consume Cannabis

Sublingual Forms (under the tongue)



- Tinctures are alcohol-based cannabis extracts that are often cut with hemp oil or CBD (cannabidiol) oil.
- They can be just as potent as edibles but kick in faster. You just put a few drops under your tongue and generally feel the effects within 20 minutes.
- Tinctures should come with a dropper that makes it easier to keep doses consistent. Other forms include mouth sprays, dissolvable tablets, strips or films.

Safer Ways to Consume Cannabis

Suppositories



- Suppositories are products designed to be inserted into the rectum or vagina, where they release the drug as they dissolve.
- Rectal cannabis suppositories are sometimes used to treat: Irritable bowel syndrome, hemorrhoids, Constipation, and other digestive or urinary issues.
- Vaginal suppositories can also be used to treat: menstrual cramps and endometriosis
- A benefit of suppositories is that they don't get you high.

Electronic cigarettes for smoking cessation

Results from the most recent Cochrane update

January 2024

Lindson N, Butler AR, McRobbie H, Bullen C, Hajek P, Begh R, Theodoulou A, Notley C, Rigotti NA, Turner T, Livingstone-Banks J, Morris T, Hartmann-Boyce J. Electronic cigarettes for smoking cessation. Cochrane Database of Systematic Reviews 2024, Issue 1. Art. No.:CD010216.

NIHR | National Institute for Health and Care Research



The updated Cochrane review results are based on few studies for most outcomes and, for some outcomes, the data varied widely. It included 88 studies (47 were randomized controlled trials) representing over 27,235 participants.

REVIEW- How many people:

- stopped smoking for at least six months; and
- had unwanted effects, reported on after at least one week of use.

RESULTS:

- People are more likely to stop smoking for at least six months using nicotine e-cigarettes than using nicotine replacement therapy.
- Nicotine e-cigarettes may help more people to stop smoking than no support or behavioral support only.

Electronic cigarettes for smoking cessation

Results from the most recent Cochrane update

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NIHR | National Institute for Health and Care Research



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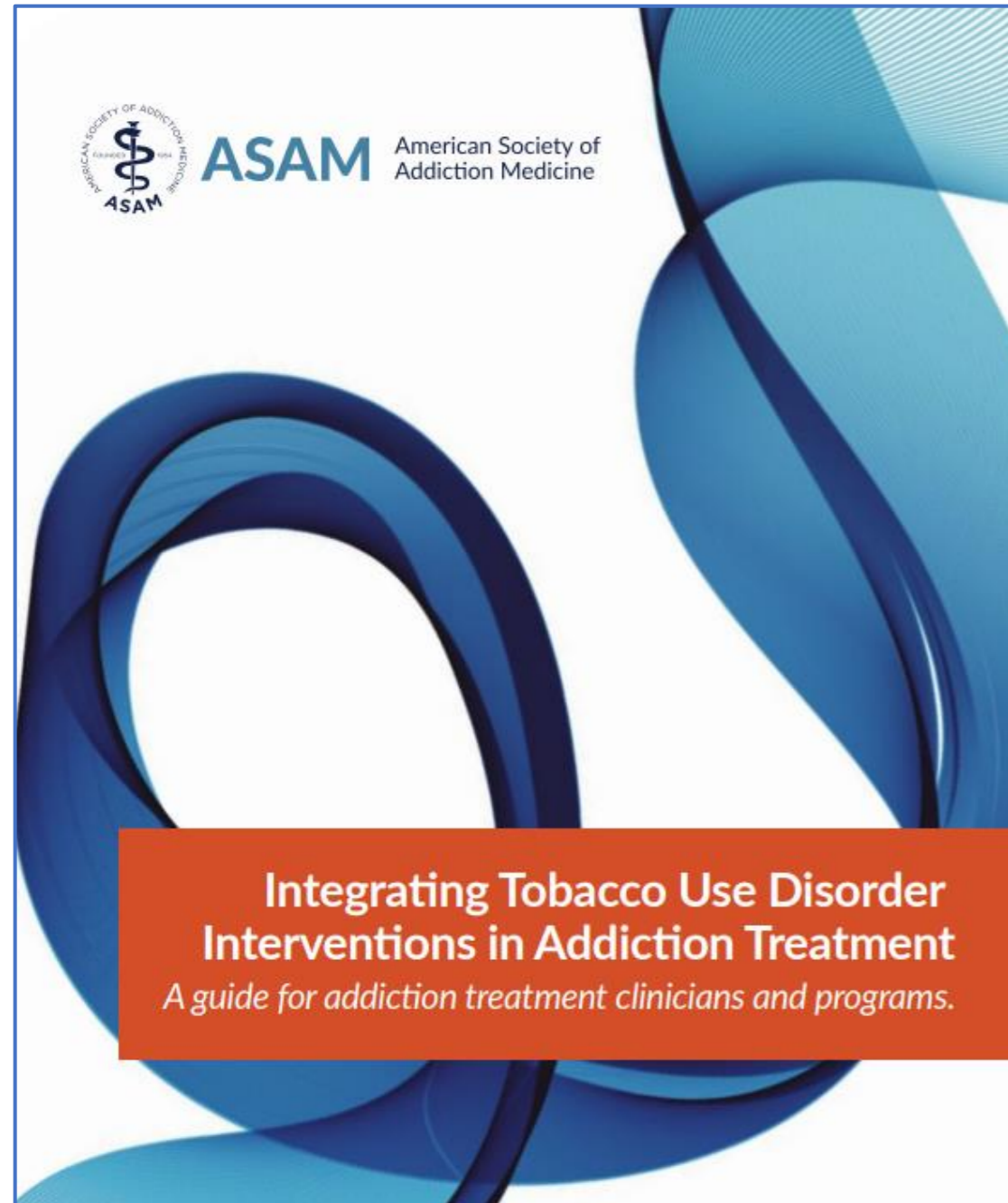
RESULTS:

- It is uncertain if there is a difference between how many unwanted effects occur using nicotine e-cigarettes compared with nicotine replacement therapy, no support or behavioral support only.
- The unwanted effects reported most often with nicotine e-cigarettes were throat or mouth irritation, headache, cough and feeling sick, similar to those people experience when using NRT.

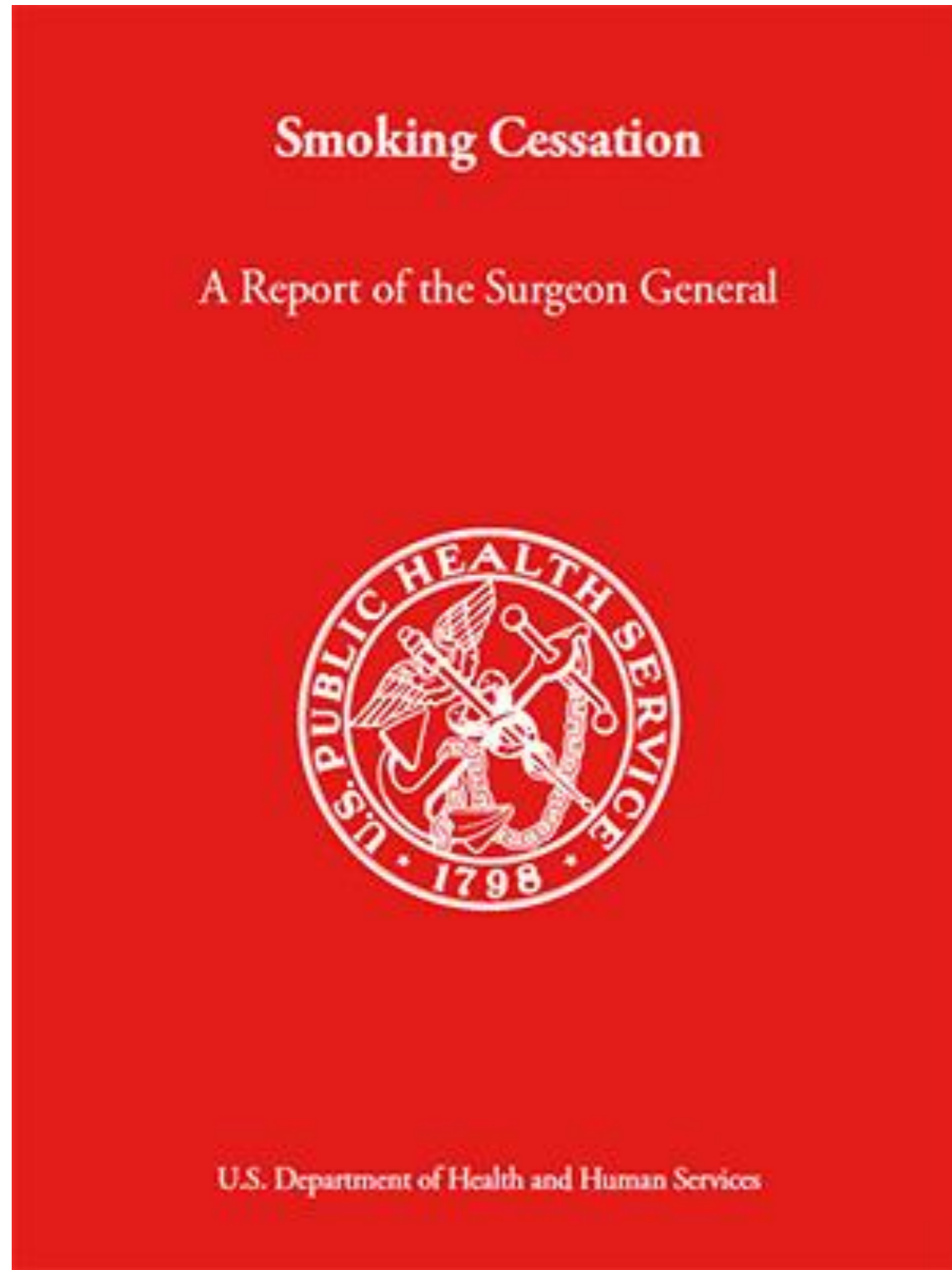
ASAM Guidelines

“Utilize harm reduction principles to reduce harms associated with tobacco use.”

- FDA-approved Nicotine Replacement Therapy products
- Snus and Electronic Nicotine Delivery Systems (ENDS) - while not completely safe, they expose the patient to far less harmful constituents and do not deliver carbon monoxide.



“There is ongoing controversy over the potential effectiveness of ENDS. Some ENDS products may help to reduce the use of combustible cigarettes and their associated harms. **However, these products have not been approved as safe and effective medical interventions for tobacco use disorder in the United States.** Patients who use vaping devices, particularly those who vape marijuana, should be informed of the risks for lung injury.” **March 2022**



[Am J Public Health](#). 2021 February; 111(2): 230–246.

Published online 2021 February. doi: [10.2105/AJPH.2020.305999](https://doi.org/10.2105/AJPH.2020.305999)

E-Cigarette Use and Adult Cigarette Smoking Cessation: A Meta-Analysis

[Richard J. Wang, MD](#), [Sudhamayi Bhadriraju, MD](#), and [Stanton A. Glantz, PhD](#)

“As consumer products, in observational studies, e-cigarettes were not associated with increased smoking cessation in the adult population.”

“There is presently inadequate evidence to conclude that e-cigarettes, in general, increase smoking cessation.”



“E-cigarettes as consumer products are not shown to be effective for quitting tobacco use at the population level.”



E-cigarettes are not safe for youth, young adults, and pregnant women, as well as adults who do not currently use tobacco products.

What's the bottom line?

- No tobacco products, including e-cigarettes, are safe.
- E-cigarettes should not be used by youth, young adults, or people who are pregnant.
- Adults who have never smoked or used other tobacco products, including e-cigarettes, should not start.
- E-cigarettes may have the potential to benefit adults who smoke and are not pregnant if they are used as a complete substitute for smoked tobacco products. However, no e-cigarette has been approved by the FDA as a smoking cessation aid.
- More research is needed to better understand the short- and long-term health effects of using e-cigarettes as well as whether e-cigarettes can be effective at helping adults quit smoking.

No Magic Bullet

CHANGE TO PEOPLE, PLACES & THINGS

Manage withdrawal and craving while developing a behavioral change plan that includes learning replacement coping skills, realigning daily routines, and rearranging settings to reduce environmental triggers.



PHYSICAL

- Nicotine dependence

BEHAVIORAL

- Routines & Rituals
- Environmental triggers

EMOTIONAL

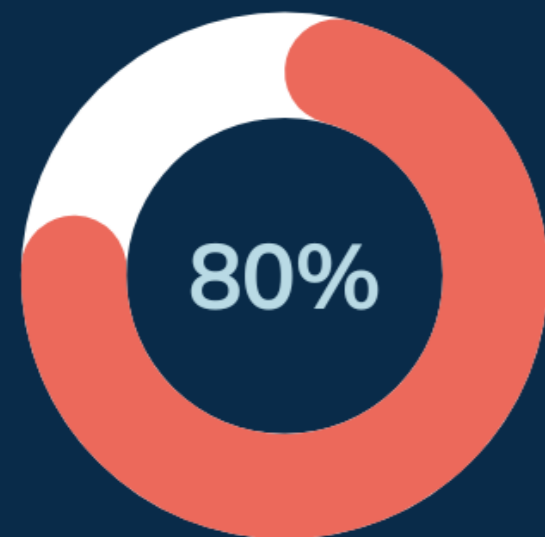
- Mood-regulation

2023 Public Health Management Corporation (PHMC) Member Survey

LET'S TALK HISTORY

PHMC
Survey Data
2023

Patients in behavioral health settings ARE trying to stop their tobacco-use!



Nearly 8 out of 10 Pennsylvanians reported smoking or vaping in the past 30 days



Nearly 75% of Pennsylvanians have tried to stop tobacco-use for 24 hours or longer



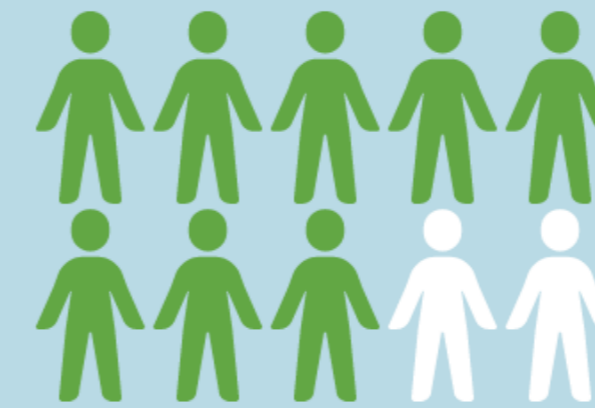
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LET'S TALK INTEREST

PHMC
Survey Data
2023

Patients in behavioral health settings ARE trying to stop their tobacco-use!



Over 8 in 10 Pennsylvanians are interested in stopping their tobacco-use



Nearly 3/4 of Pennsylvanians believe coping skills are helpful to recovery



TOBACCOFREERECOVERYPA.COM





pennsylvania
DEPARTMENT OF HEALTH



Coaching over the telephone, online and technology-based support including email, text, and chat.

PA Free Quitline

1-800-QUIT-NOW (784-8669)

1-855-DEJELO-YA (335-3569)

pa.quitlogix.org

It's Free. It's Confidential. No Judgement.



- 24/7 availability
- Multi-lingual services
- Specialized services for pregnant and postpartum callers and Pennsylvanians with behavioral health challenges
- Free nicotine replacement therapy if medically eligible



pennsylvania
DEPARTMENT OF HEALTH

#MYLIFEMYQUIT
FREE HELP,
JUST FOR TEENS.

QUIT WHEN
YOU WANT,
HOW YOU WANT.



1-855-891-9989

mylifemyquit.com

TEXT 36072

JOIN THOUSANDS OF TEENS WHO ARE TAKING THEIR LIFE BACK

100% Confidential

My Life, My Quit™

If you're a teen between 13–17 and you want help quitting vaping, smoking or using other commercial tobacco products, this completely free and confidential program is for you. Talk or text with coaches and get other resources to help you when you are ready to quit nicotine. From practicing how to say “no” to tips for managing stress and peer pressure, we can help. Worried about weight gain or additional anxiety? Our coaches can get you through the rough spots. Do you have a friend struggling with smoking or vaping? Let them know we're here to help.





A free and anonymous text messaging program from Truth Initiative designed to help young people quit vaping. The first-of-its-kind program incorporates messages from other young people who have attempted to, or successfully quit, e-cigarettes.

The program is tailored based on age (within 13 to 24 years old). Appropriate evidence-based tips and strategies are also sent to teens and young adults.

This is Quitting has helped over 750,000 youth and young adults on their journey to quit vaping.



<https://truthinitiative.org/thisisquitting>



What we don't know


UNANSWERED QUESTIONS:

- Are there long-term health risks to using vaping products?
- Is the tobacco industry really interested in harm reduction? If so,...
- Why are they resistant to reducing high levels of nicotine concentration in their products?
- And why are they opposed to eliminating flavoring from their products?

Live Webinar Training

Register with QR code or at <https://tobaccofreerecoverypa.com/trainings/>

- **The Rationale: Addressing Tobacco Use in Behavioral Health Services**
- **Tobacco Recovery: Learning to be Tobacco-Free!**
- **Pharmacotherapy: Managing Tobacco Withdrawal With Confidence**
- **Vaping: What we know and what we don't know**




TOBACCO TRAININGS

Pennsylvania Statewide Tobacco-Free Recovery

Interested in learning more about how you can support tobacco recovery?
We offer FREE live 60-minute webinar presentations every month!

[HTTPS://TOBACCOFREERECOVERYPA.COM/TRAININGS/](https://tobaccofreerecoverypa.com/trainings/)

REGISTER HERE:



BACKGROUND

The Pennsylvania Statewide Tobacco-Free Recovery Initiative's goal is to facilitate partnerships among academia, state agencies, county public health departments, treatment providers and recovery advocates to advance recovery-oriented evidence-based tobacco use disorder interventions in behavioral health services.

We envision a behavioral health system that fully recognizes that addressing tobacco serves to maximize treatment outcomes, reduce social stigma, mitigate health disparities, and allows all Pennsylvanians to thrive in their recovery.

It is highly recommended to complete our foundational training, *The Rationale: Addressing Tobacco Use in Behavioral Health Services*, prior to other webinars.

On-Demand eLearning

Course 1: The Rationale for Addressing Tobacco Use in Behavioral Health Services

Course 2: Tobacco Use Disorder Treatment in Behavioral Health Services: Pharmacological Treatments

Course 3: Tobacco Use Disorder Treatment in Behavioral Health Services: Behavioral Counseling Interventions

Course 4: Tobacco Recovery in Behavioral Health Services

Module 1: Proposed Clinical Performance Standards

Module 2: Tobacco Policy

COMING SOON!



Pennsylvania
Department of Drug and
Alcohol Programs
Training Management System

PA STFRI Media Toolkit

Posters *English*



Download content [here](#).

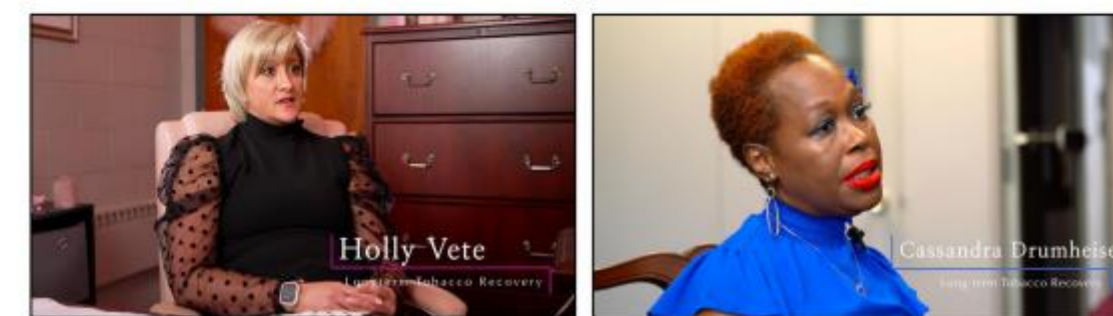
Brochure



Download content [here](#).

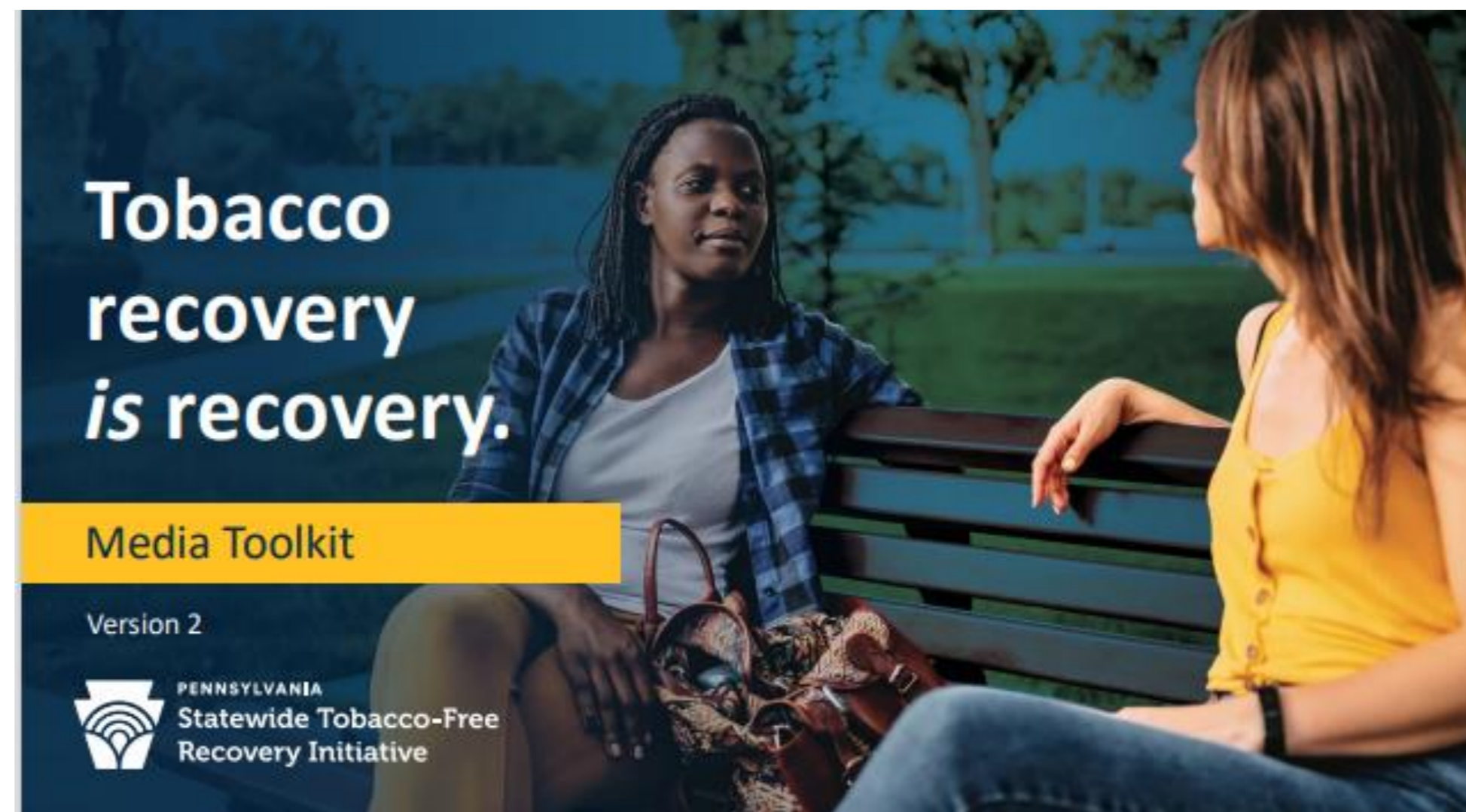
Campaign Social Media Messages

Recovery is Recovery Videos



Download content [here](#).

<https://tobaccofreerecoverypa.com/resources/>



Banner Ads

Provider



Download content [here](#).

Mesmerize Screens

597x768



Download content [here](#).

Campaign Social Media Messages

Participant, Spanish

Facebook: ¿Cómo puede aumentar sus probabilidades de recuperarse a largo plazo del consumo de sustancias? Si no consume tabaco ni vapea, la recuperación PUEDE ser más fácil. Obtenga ayuda GRATUITA hoy mismo en tobaccofreerecoverypa.com o llamando al 1-800-QUIT-NOW. #RecuperacióndetabacoenPA

Instagram: ¿Cómo puede aumentar sus probabilidades de recuperarse a largo plazo del consumo de sustancias? Si no consume tabaco ni vapea, la recuperación PUEDE ser más fácil. Obtenga ayuda GRATUITA hoy mismo en tobaccofreerecoverypa.com o llamando al 1-800-QUIT-NOW. #RecuperacióndetabacoenPA

Primer comentario: #Apoyoderecuperación #Sintabaco



Download content [here](#).



**Tobacco recovery is safe, achievable,
reduces social stigma,
improves mental and physical health and
enhances quality of life.**



*Thank
You*



PENNSYLVANIA
**Statewide Tobacco-Free
Recovery Initiative**

CONTACT US

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PENNSYLVANIA

**Statewide Tobacco-Free
Recovery Initiative**

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