

Pediatric Tobacco Exposure: Screening and Assessment

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Cigarettes/Tobacco




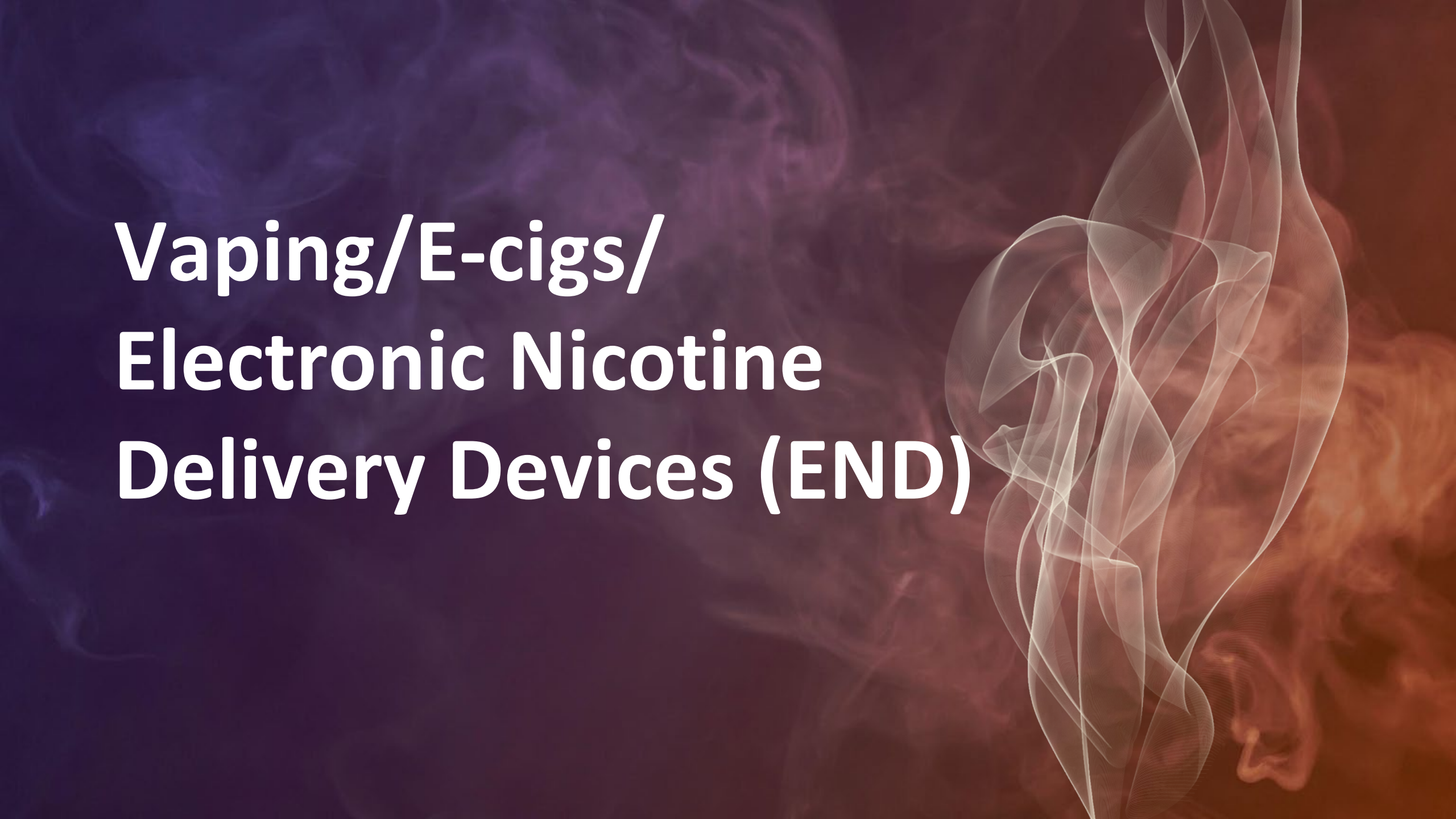
Facts about Cigarettes



- Tobacco use is one of the most important health threats to children, adolescents, and adults.
- Tobacco use accounted for more than 8,600 deaths and over 1.8 billion dollars in health care costs in Alabama in 2023, making it one of the state's most significant health problems.
- Every year, an estimated 8,200 children in Alabama become new smokers. More than half of US children are regularly exposed to tobacco smoke.
- Tobacco is unique among consumer products in that it causes disease and death when used exactly as intended

Tobacco smoke exposure harms children from conception forward by causing or increasing the risk of

- Prematurity, low birth weight
 - Congenital malformations
 - Stillbirth
 - Infant death
 - ~ 1000 infant deaths per year (~8% of all infant deaths)
 - 17% of all sudden infant death syndrome cases
 - Childhood obesity
 - Behavior problems and neurocognitive deficits
 - Wheezing, more severe asthma, more severe bronchiolitis, pneumonia, cough and reduced lung function
 - Middle ear infections
 - Cancer
 - Secondhand tobacco smoke exposure is a risk factor for the development of childhood cancers
 - May increase the likelihood of smoking among young adult cancer survivors.
 - Decreased glomerular filtration rate
 - Preclinical atherosclerosis-in adolescents.
- 



Vaping/E-cigs/ Electronic Nicotine Delivery Devices (END)

In 2024, 5.9% of middle and high school students reported current e-cigarette use (down from 7.7 % in 2023)

87% of all who vape (and 54.6% of youth) used flavored e-cigs in the past month

IN THE U.S., YOUTH ARE MORE LIKELY THAN ADULTS TO USE E-CIGARETTES



3.5% of middle schoolers

1.63 MILLION

U.S. middle and high school students used e-cigarettes in the past 30 days, including:

7.8% of high schoolers



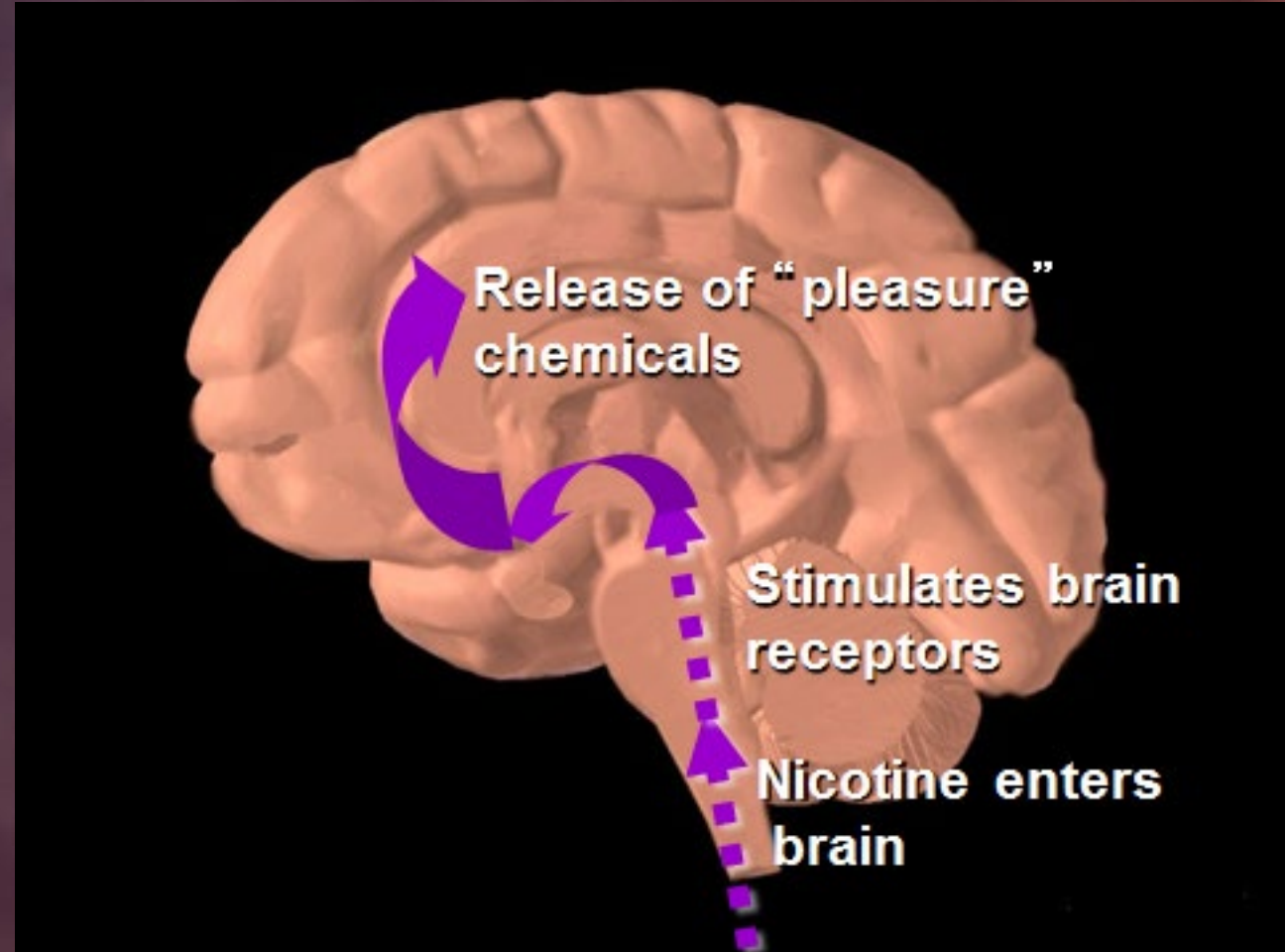
Young ppl using e-cigs are 4x more likely to start smoking

The most commonly reported brands reported among current e-cigarette users were: Elf Bar (36.1%), Breeze (19.9%), Mr. Fog (15.8%), Vuse (13.7%) and JUUL (12.6%)

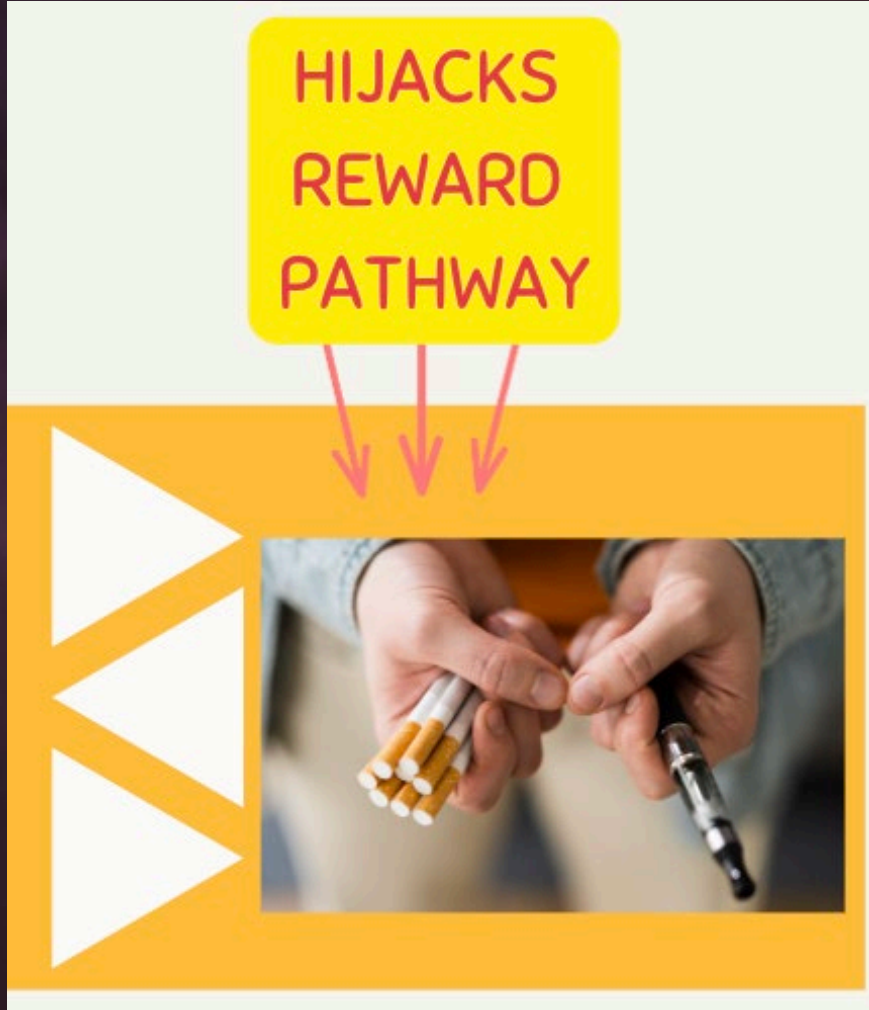
Drugs and the Brain

Reward Pathway-

things that make you feel good
stimulate the release of
dopamine, which activates the
reward pathway



Nicotine and the Brain



- Drugs cause 2 - 10 times dopamine release of survival activities
- The release is almost immediate, and lasts longer
- Nicotine use creates floods of dopamine & intense feelings, so people feel good initially after smoking or vaping
- The pleasure centers in the brain adapt to drug use by sensing the extra dopamine and then begin to produce less of it.
- This means that the user has a hard time creating natural feelings of pleasure without nicotine-craving and addiction.

What Are E-Cigarettes?

Nicotine aerosol



Battery

Atomizer/coil

Absorbent material/cotton:

Nicotine
Propylene glycol
Vegetable glycerin
Flavorants





Stanford
MEDICINE

REACH Lab

CIGS IN AN E-CIG



1 Pack of Cigarettes
= ~22mg of Nicotine



~20
CIGARETTES



1 JUUL Pod
= ~41.3mg of Nicotine



~37
CIGARETTES



1 Flum Float
= ~400mg of Nicotine



~363
CIGARETTES



1 Elf Bar
= ~650mg of Nicotine



~590
CIGARETTES



What's in E-Cig Aerosol?

- Propylene glycol
- Glycerin
- Flavorings (many)
- Nicotine
- NNN
- NNK
- NAB
- NAT
- Ethylbenzene
- Benzene
- Xylene
- Toluene
- Acetaldehyde
- Formaldehyde
- Naphthalene
- Styrene
- Benzo(b)fluoranthene

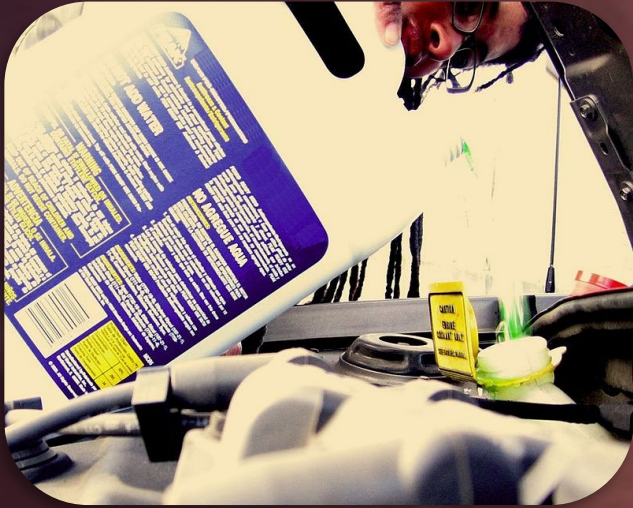
- Chlorobenzene
- Crotonaldehyde
- Propionaldehyde
- Benzaldehyde
- Valeric acid
- Hexanal
- Fluorine
- Anthracene
- Pyrene
- Acenaphthylene
- Acenaphthene
- Fluoranthene
- Benz(a)anthracene
- Chrysene
- Retene
- Benzo(a)pyrene
- Indeno(1,2,3-cd)pyrene

- Benzo(ghi)perylene
- Acetone
- Acrolein
- Silver
- Nickel
- Tin
- Sodium
- Strontium
- Barium
- Aluminum
- Chromium
- Boron
- Copper
- Selenium
- Arsenic
- Nitrosamines,
- Polycyclic aromatic hydrocarbons

- Cadmium
- Silicon
- Lithium
- Lead
- Magnesium
- Manganese
- Potassium
- Titanium
- Zinc
- Zirconium
- Calcium
- Iron
- Sulfur
- Vanadium
- Cobalt
- Rubidium

Where Else Can You Find These Chemicals?

Propylene glycol → Antifreeze



Acetone → Nail Polish Remover



Ethylbenzene → Paints, Pesticides



Formaldehyde → Embalming



Arsenic → Poison (pesticides, rats)



Rubidium → Fireworks

Effects of vaping

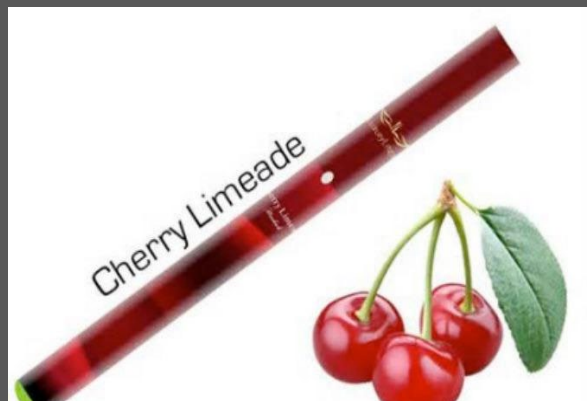
- Lungs:
 - Airway inflammation and Irritation
 - Destruction of air sacs
 - Weaker immune response to infection
 - EVALI- strongly linked to THC containing products, particularly those with Vit E acetate as thickening agent
 - antibiotics, corticosteroids, inhalers, oxygen therapy, and in severe cases, mechanical ventilation.
 - 68 deaths and 2807 hospitalizations as of 2020
- Heart
 - blood vessel damage-arterial stiffness, coronary artery disease
 - increased blood pressure and heart rate
 - increased risk of heart failure (19% more likely) and stroke
 - Development of atherosclerosis

Effects of Vaping

- Brain
 - In teens, harms parts of the brain that control attention, learning, mood, and impulse control
- GI
 - Increased GER
- Oncology
 - Increased risk of lung cancer, head and neck cancer, and bladder cancer



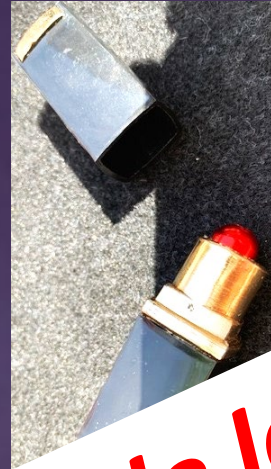
Flavors



Flavoring agents with local anesthetic properties, such as menthol, decrease the natural sensation of harshness of the tobacco smoke and make it easier to inhale the smoke deeply.



Hide and Seek



Adults don't need to hide legal products.



Emma, a 15-year-old high school student who was diagnosed with asthma at 4 years old. Her asthma has been relatively well-managed with the use of a daily inhaled corticosteroid and a rescue inhaler for acute symptoms.

Recently, Emma's asthma symptoms have worsened, leading to frequent visits to the school nurse and occasional trips to the emergency room.

During a routine check-up, Emma's pediatrician noted the increase in her asthma exacerbations and decided to investigate potential triggers.

Emma's mother mentioned that she had noticed Emma spending more time with friends who vape and smoke cigarettes. Emma admitted to occasionally vaping and smoking with her friends

What next?

Top reason youth start vaping?

1. peer influence
2. curiosity, experimentation
3. appeal of flavors and exposure (marketing)
4. cope with stress, anxiety, or depression,
5. decrease appetite.
6. safer alternative to traditional cigarettes
7. Easier to conceal than smoking



We routinely ask parents and patients about smoke/vaping exposure ?

1. Once a year
2. At all well child visits
3. At every visit
4. When we remember
5. At the patient's first visit only
6. Never



In 2020

- 63.9% of students who currently used e-cigarettes reported wanting to quit
- 67.4% reported trying to quit in the last year.

Additionally, research shows that teens who have vaped are almost four times as likely to go on to smoke traditional cigarettes.



The American Academy of Pediatrics has developed the Youth Tobacco Cessation App.

Ask-Counsel-Treat model in a tool designed for use within a clinical encounter.

Recommend Screening start at age 11 y

<https://www.aap.org/en/patient-care/tobacco-control-and-prevention/tobacco-cessation-progressive-web-application/>

<https://www.aap.org/en/patient-care/tobacco-control-and-prevention/youth-tobacco-cessation-toolkits>



**When it comes to talking to families
about the risks of smoking and vaping**

- a. I am very comfortable**
- b. I am somewhat comfortable**
- c. I find the conversation a little awkward**
- d. I am not comfortable**
- e. I do not talk to families about this**

Youth Tobacco Cessation: How to ACT (Ask-Counsel-Treat) in 2-3 Minutes

This tip sheet provides 3 easy steps that every pediatric health clinician should follow to address youth tobacco use at every clinical encounter. The steps are designed to allow for a meaningful intervention with minimal workflow disruption. For a full, detailed strategy for addressing youth tobacco cessation, please visit www.aap.org/youthcessation.

ASK: Screen for tobacco use with every youth age 11+ at every clinical encounter.

"Do you use any tobacco or vaping products, like cigarettes, e-cigarettes, or dip?"

TIPS:

- Use specific examples of products commonly used in your community
- Incorporate question into existing screeners
- If possible, screen confidentially, without a parent or guardian present

No

Reinforce behavior and screen again at next visit.

Yes

COUNSEL: Counsel all patients who use tobacco about quitting, regardless of amount used.

"Nicotine can harm your brain development."

"Quitting will protect your health, save money, and increase your independence."

"Quitting is hard, but I believe you can do it. I'm here to help."

"Are you interested in quitting today?"

TIPS:

- Use a strengths-based perspective and non-judgmental language
- Use personal examples of the benefits of quitting (eg, better athletic performance)

No

Revisit at next visit.*

*For inpatient settings, also connect with youth's PCP for follow-up.

Yes

TREAT: Link youth to appropriate behavioral supports; consider prescribing cessation medication when indicated.

"There are programs that can help you quit. Would you rather get support by text, online, or phone?"

"This program will help you make a quit plan and stick with it. It will also help you deal with cravings and triggers."

"I'll follow up with you in a few weeks to see how it's going."

TIPS:

Choose a program that meets youth's needs and link them while they're in your office. Options include:

- Text: Text "QUIT" to 47848
- Online: www.teen.smokefree.gov
- Phone: 1-800-QUIT-NOW

For a full list of programs, visit www.aap.org/help2quit

Assess whether NRT may be appropriate for your patient:

For full details on prescribing NRT to youth, including contraindications and dosing guidelines, visit www.AAP.org/NRT

Follow up with youth after their quit date to assess progress and offer additional support. Anyone on the patient care team can handle this follow-up conversation; follow your typical office workflow.

ASK: Screen for Use

Has the patient been identified as using tobacco products (e.g., e-cigarettes, cigarettes)?

Counsel: Determine Quitting Interest

Counsel all patients who use tobacco about quitting, regardless of amount used.

Use a strengths-based perspective and non-judgmental language.

Use personal examples of the benefits of quitting (e.g., better athletic performance).

If the patient is uncertain about quitting, or only wants to cut down, consider discussing the “5Rs:”

Relevance of quitting

Risks of not quitting

Rewards related to quitting

Roadblocks that may arise

Repetition: it may take several attempts to succeed.

The 2-Week Challenge: A Strategy for Youth who Aren't Ready to Quit

- If the patient isn't ready to quit or tells you they can “quit anytime they want,” challenge them to completely stop their tobacco use for 2 weeks.
- At the end of the 2 weeks, check in to hear how it went and revisit the conversation about cessation support.

TIP: If the patient isn't ready to stop for 2 weeks, ask them to try for 1-3 days

If patient is willing to quit, assess severity of addiction

- 1. I find myself reaching for my e-cigarette without thinking about it**
- 2. I drop everything to go out and get e-cigarettes or e-juice**
- 3. I vape more before going into a situation where vaping is not allowed.**
- 4. When I haven't been able to vape for a few hours, the craving gets intolerable.**

Never

Rarely

Sometimes

Often

Almost Always

Self-Select Dependency Option

Low

Behavioral Support Options

Moderate and Severe Dependency

- NRT works best when paired with behavioral cessation support.
- Pharmacologic Treatment for **Moderate Dependency**
- *For best results, pair a long-acting NRT (patch) with a shorter-acting form (e.g., gum, lozenge).*

1. Let them know that quitting is hard and relapse is common. Remind them that you're here to help.
2. Follow up about 2 weeks after their quit date to:
 - Assess progress.
 - Offer additional support.
 - Adjust treatment as needed.
 - Provide additional intervention in the event of relapse.
3. If patient was unwilling to make a quit attempt, follow up at next visit or clinical encounter.

READY TO QUIT VAPING?

**YOU
QUIT
THIS**

Text **EXPROGRAM** to **88709**

for an easy-to-use, confidential (and free)
support system that's available 24/7.

ex program

Take Control

1-800-QUIT-NOW

Call. It's free. It works.

1-800-784-8669

For details on your state services, go to: <http://map.naquitline.org>