



Children's National.

The Vaping and E-Cigarette Youth Epidemic

Susan Walley, MD, MHCM, NCTTP, FAAP

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Financial Disclosures

No financial conflicts of interest to disclose. I do own stocks in Gilead Sciences and Atea Pharmaceuticals.

I will be discussing Nicotine Replacement Therapy, which is not FDA approved under 18 years of age.

Objectives

- 1) Describe vaping and e-cigarettes and epidemiology of youth use
- 2) Understand the reasons for youth use of e-cigarettes, including flavors, targeted marketing and advertising, and high levels of nicotine
- 3) Discuss the negative health effects of vaping and e-cigarette use
- 4) Discuss clinical management and treatment of patients in the primary care setting

New Tobacco Products

- E-cigarettes/vape
- Nicotine pouches
- Nicotine gummies
- IQOS



E-Cigarettes and Vape Devices



Designing the Perfect Product to Attract Adolescent Use



Designing



ct to Attract

Reasons Youth Use E-Cigarettes: Flavors



Reasons Youth Use E-Cigarettes: Marketing and Advertising



E-Cigarette



Cartoon

Reasons Youth Use E-Cigarettes: Marketing and Advertising



E-Cigarette



Toy



E-Cigarette



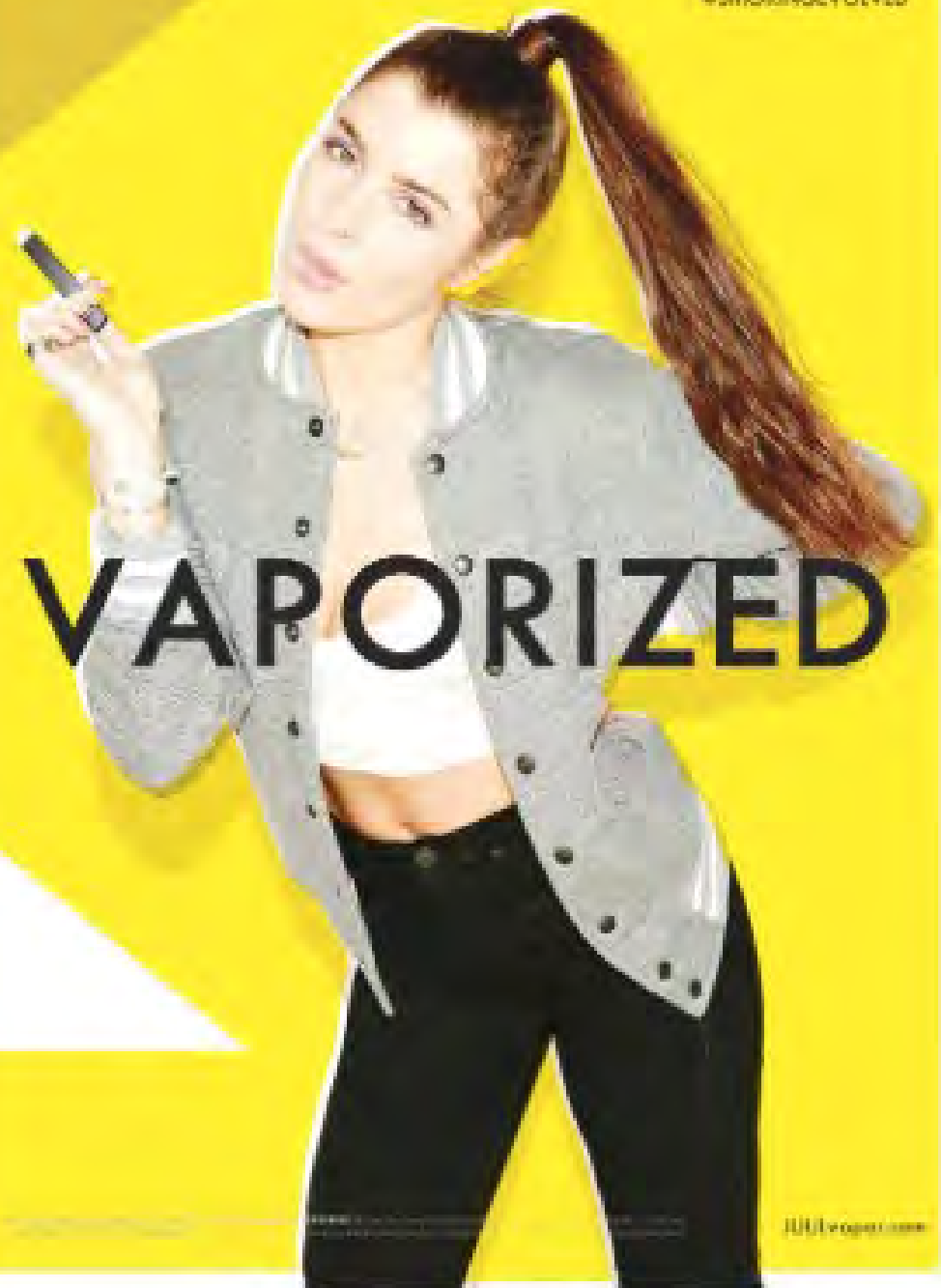
Cartoon

JUUL



VAPORIZED

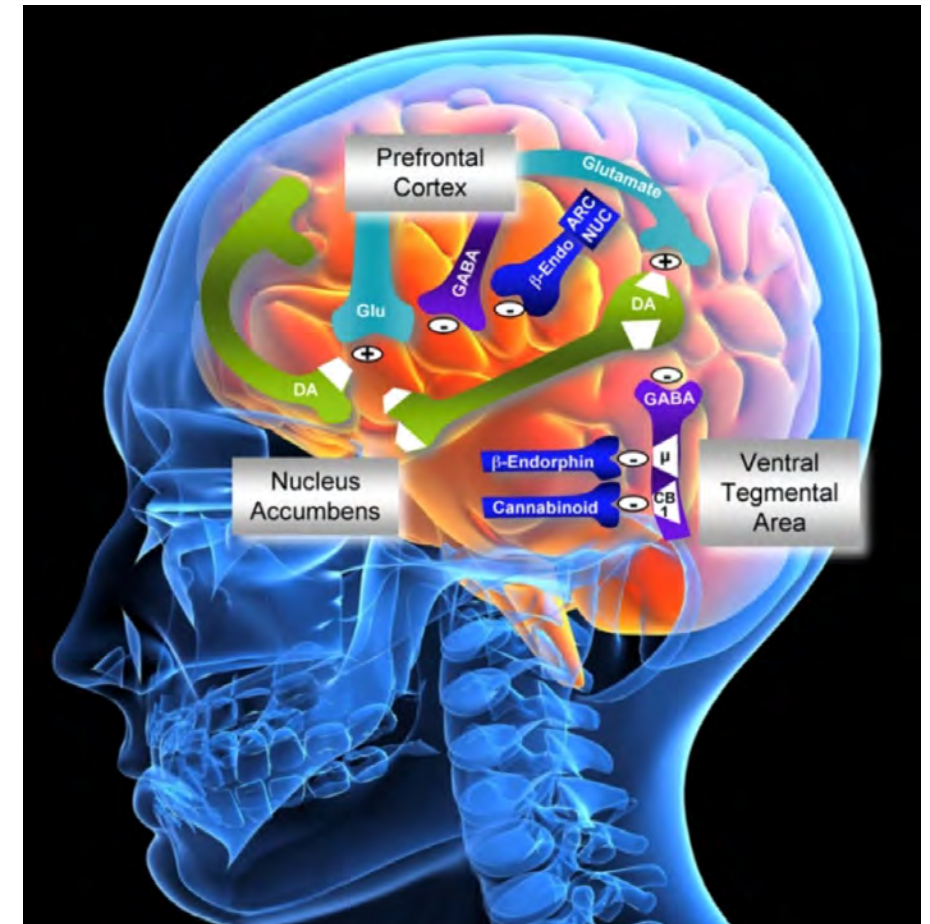
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JUULvapor.com

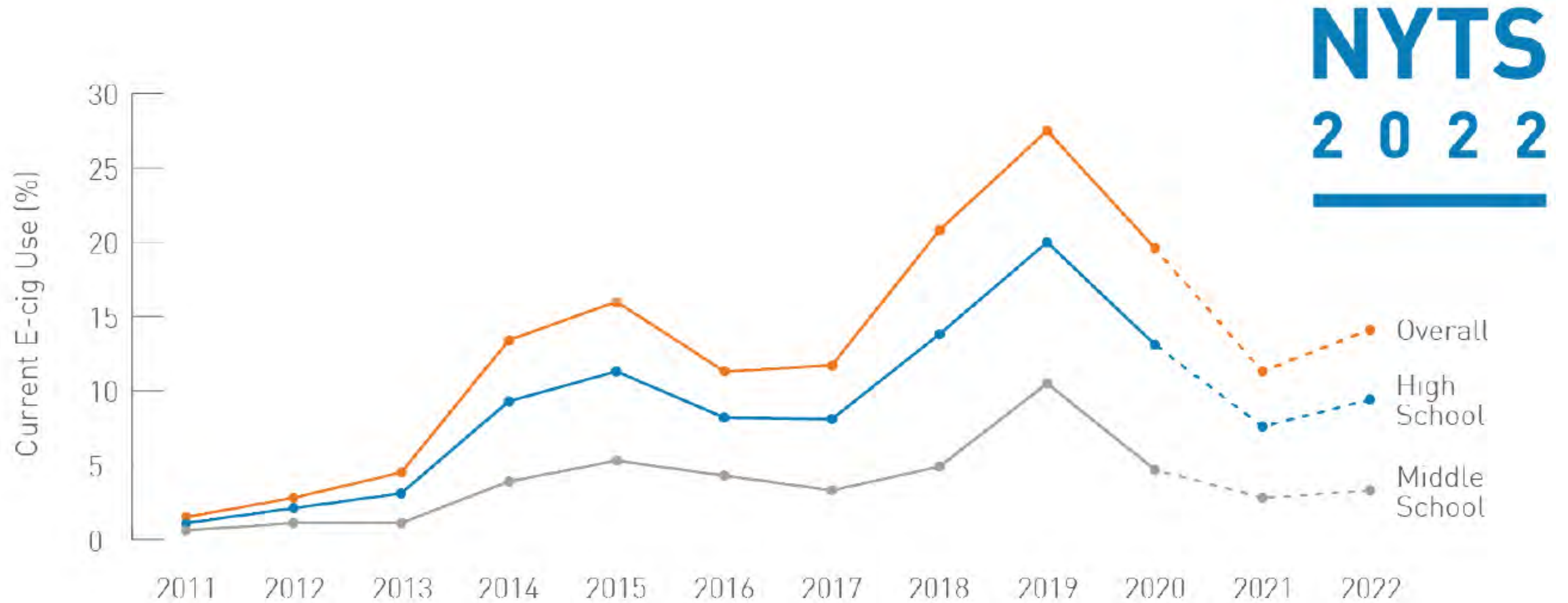
Reasons Youth Use E-Cigarettes: Nicotine Addiction

- The adolescent brain is uniquely susceptible to nicotine addiction
- Nicotine salts in newer e-cigarettes allow higher levels of nicotine



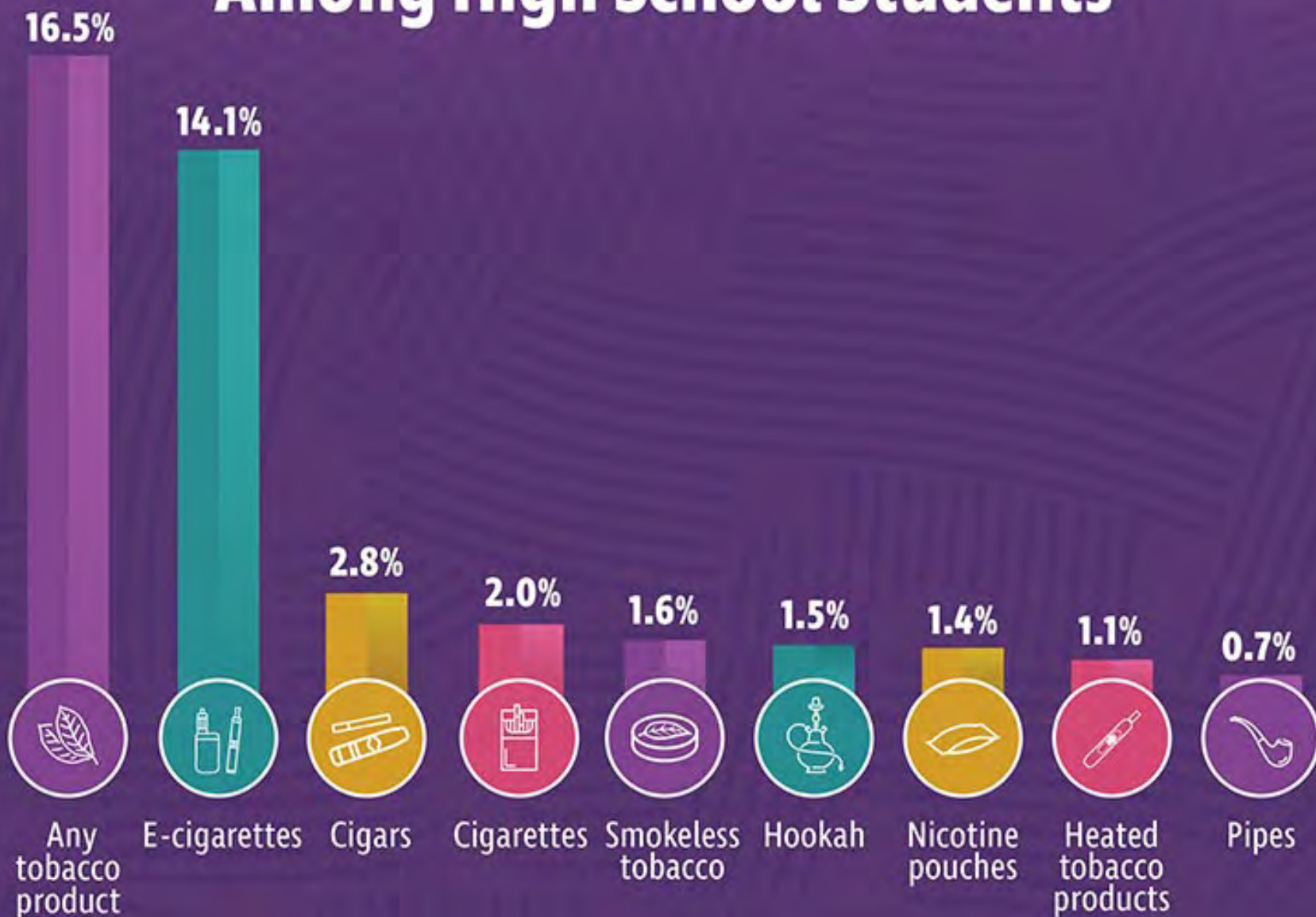
Tobacco Product	Amount	Cigarette Equivalent
1 pack cigarettes	20 cigarettes	
1 JUUL pod	1 pod "5% nicotine by volume"	
1 PHIX pod	1 pod "5% nicotine by volume"	
1 Suorin pod	1 cartridge "5.4% nicotine by volume"	

Current US high school student e-cigarette use 2011 - 2022



Note: The dashed lines between 2020 – 2022 denote that due to shifts in methodology, the estimates may not be directly comparable.

Current Tobacco Product Use Among High School Students



Accessed
Sept 12,
2023

What's in a Name?

- Tobacco is a plant (*Nicotiana tabacum*)
- Contains >4000 chemicals, including nicotine
- Leaves are processed for consumption





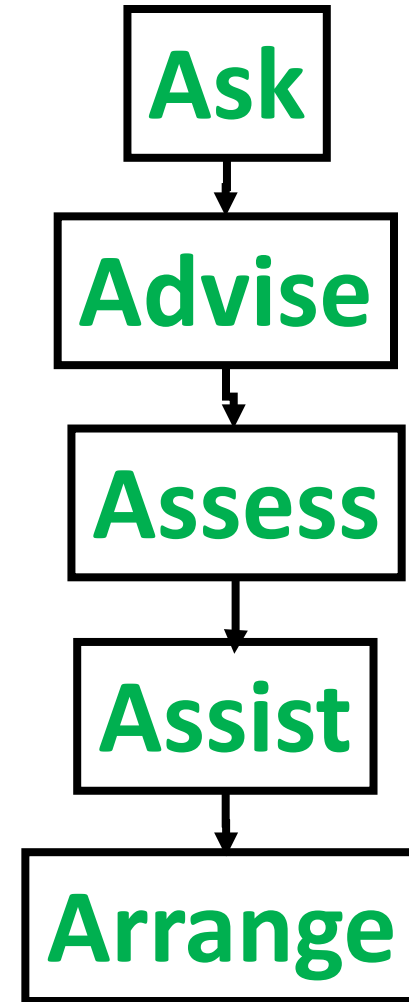






**How can I help my
adolescent patients
quit?**

Tobacco Use Treatment Basics: The 5 A's



For Adolescents: The ACT Model

- Tobacco treatment model from the American Academy of Pediatrics
 - Ask
 - Counsel
 - Treat



AMERICAN ACADEMY OF PEDIATRICS

Julius B. Richmond Center of Excellence

Treating Teen Tobacco Use

ACT Model: Ask

- Ask about tobacco use and secondhand aerosol exposure at every visit
- Teens call e-cigarettes by the brand name (i.e. JUUL, PuffBar)
- Use clear, personalized and non-judgmental messages

Treating Teen Tobacco Use

ACT Model: Counsel

- Be specific with your recommendation to quit
 - “I’m really concerned about your asthma, and as your doctor, I strongly advise you to quit vaping for your health.”

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- Let them know you can help
 - “I can help you quit”

Talking to Teens

- Emphasize short-term health effects
- Ask for permission to make suggestions and offer help
 - “May I make a suggestion...?”
 - Offer help – not “rules”
- Help the teen to set their own goals for behavior change

Miller, Rollnick, Conforti.

Motivational Interviewing: Preparing People for Change.

Treating Teen Tobacco Use


ACT Model: Treat

- Hooked on Nicotine Checklist (HONC)

HONC

The Hooked on Nicotine Checklist.

	YES	NO
1) Have you ever tried to quit, but couldn't?	_____	_____
2) Do you vape <u>now</u> because it is really hard to quit?	_____	_____
3) Have you ever felt like you were addicted to vaping?	_____	_____
4) Do you ever have strong cravings to vape?	_____	_____
5) Have you ever felt like you really needed an e-cigarette/vape?	_____	_____
6) Is it hard to keep from vaping in places where you are not supposed to, like school?	_____	_____
When you tried to stop vaping... (or, when you haven't used an e-cigarette/vape for a while...)		
7) did you find it hard to concentrate because you couldn't vape?	_____	_____
8) did you feel more irritable because you couldn't vape?	_____	_____
9) did you feel a strong need or urge to vape?	_____	_____
10) did you feel nervous, restless or anxious because you couldn't vape?	_____	_____

 Tobacco Prevention Toolkit
Division of Adolescent Medicine, Stanford University
www.tobaccopreventiontoolkit.stanford.edu, tobprevtoolkit@stanford.edu



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HONC

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AAP Clinical Practice Policy: Addressing Adolescents with Moderate to Severe Nicotine Addiction

- Nicotine Replacement Therapy (NRT) is not FDA-approved for <18 years of age
- NRT can be considered for teens <18 years of age for moderate to severe nicotine addiction
- Use NRT if having nicotine withdrawal symptoms

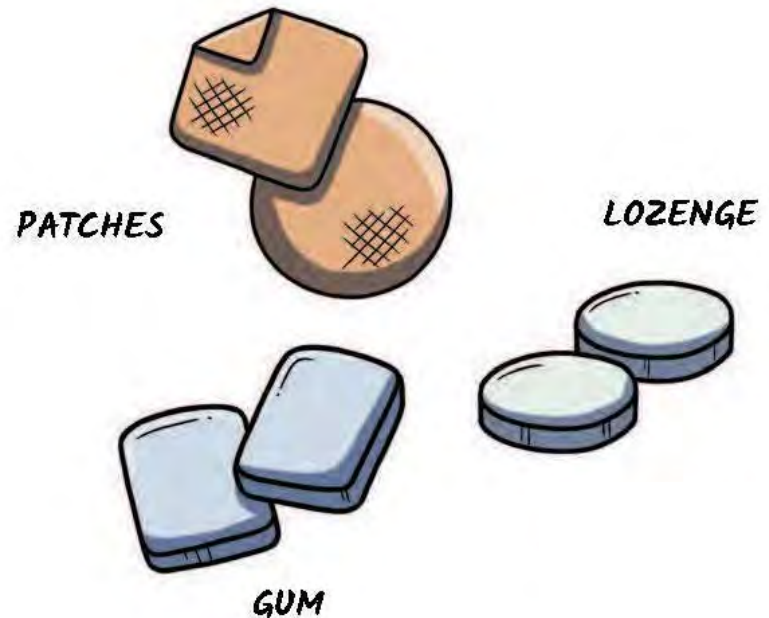
Signs of Nicotine Withdrawal

- Cravings to use
- Irritability
- Restless
- Difficulty concentrating
- Trouble sleeping
- Feeling hungry
- Feeling sad or depressed



Treating Withdrawal: Nicotine Replacement Therapy (NRT)

- Most effective way is to combine long-acting and shorter-acting
- **Long-Acting**
 - Nicotine Patch (OTC)
- **Shorter-acting**
 - Nicotine Gum (OTC)
 - Nicotine Lozenge (OTC)
 - Nicotine Spray (Rx)
 - Nicotine Inhaler (Rx)



Nicotine Transdermal Patch (OTC)

Dosage

- 21mg, 14 mg, 7 mg
- Start with 21 mg (>10 cigarettes/day)
- Start with 14 mg (6-10 cigarettes/day)
- Use for 6 weeks and then “step down” to lower dose
- Use lower dose for 2 weeks and then “step down” or discontinue, then repeat



Nicotine Transdermal Patch (OTC)

Side effects

- Redness
- Itching
- Sleep disturbance
- Skin irritation
- Insomnia

Advantages

- Good compliance
- Sustained blood levels



Nicotine Gum (OTC)

Advantages

- Flexible dosing
- Rapid blood level

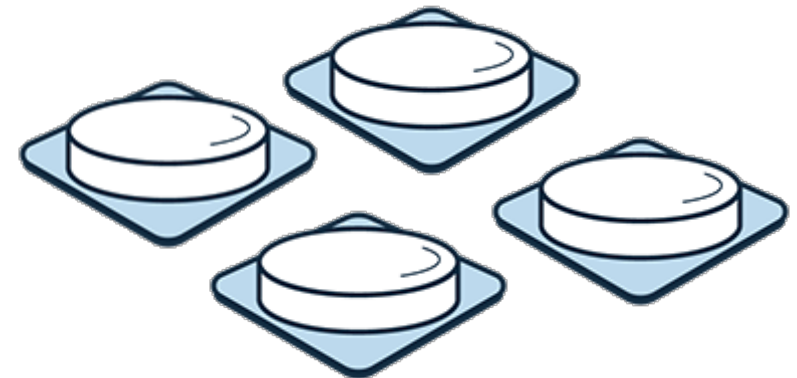
Disadvantages

- Poor compliance and under-dosing
- Dietary influence
- People with poor dentition may have difficulty



Nicotine Lozenge (OTC)

- Dosage
 - 1mg, 2 mg and 4 mg (delivering 2 mg of nicotine if properly used)
- Advantages
 - Flexible dosing
 - Rapid blood level (4 mg lozenge give 25% higher blood level than 4 mg gum)
 - No chewing (discrete)
- Disadvantages
 - Under-dosing
 - Oral pH



Treating Teen Tobacco Use

ACT Model: Treat

- Schedule a phone or in-person follow up with patient
 - Asking again makes a big impression
 - If they set a quit date, schedule follow-up soon after the quit date
- Refer to 1-800-QUIT-NOW line





Where can you buy e-cigarettes/vape?

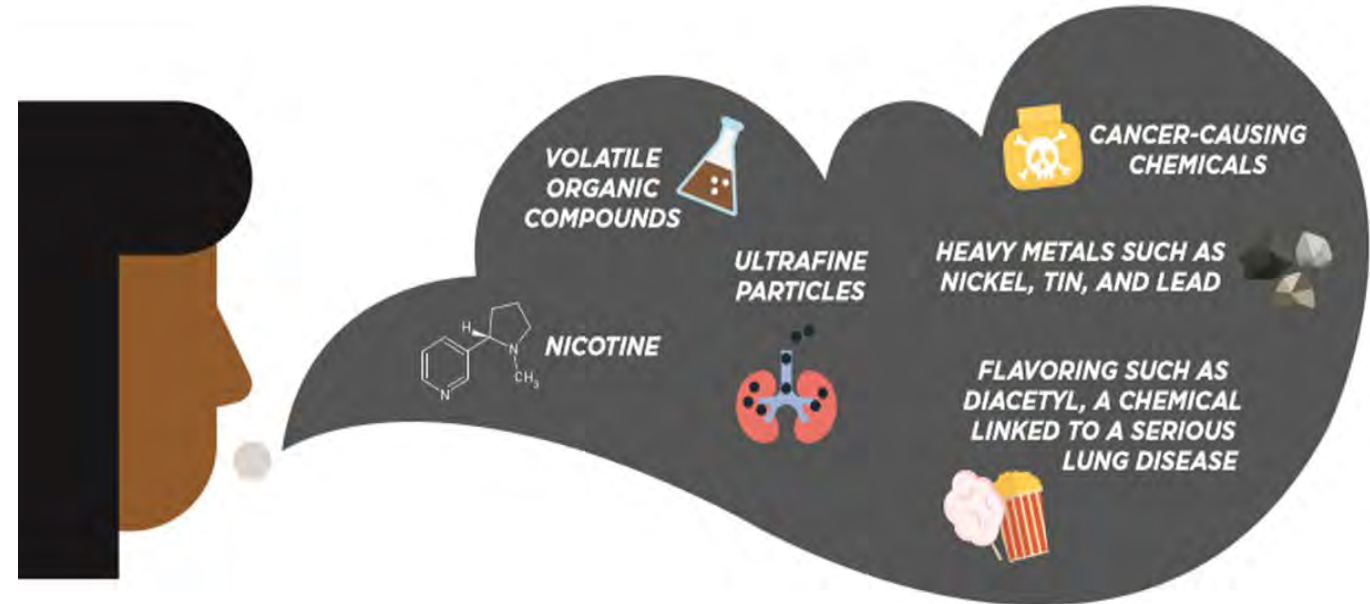
What ingredients are advertised in e-cigarette solutions?

- Humectant
 - Vegetable glycerin
 - Propylene glycol
- Flavoring
- +/- Nicotine



What actually is in e-cigarette solution and emissions?

- Humectant
- Flavoring
- +/- Nicotine
- Toxicants
- Ultrafine Particles
- Microscopic metal particles (from the coil/heating element)
- Other psychoactive ingredients (added by user)



CDC Infographic

swalley@childrensnational.org

