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Putting an end to ENDS

How to address the public health crisis of adolescent vaping

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What are ENDS?

Electronic Nicotine Delivery Systems (ENDS) are handheld devices used to smoke or "vape" a solution. ENDS is an umbrella term that encompasses electronic cigarettes (e-cigarettes/e-cigars/e-hookahs), electronic vaping devices (vape pens/mods), and pod systems (JUUL). ENDS consist of four components: cartridge/pod/reservoir (holds solution), heating element, power source (battery), and mouthpiece to inhale the aerosol (vapor). ENDS have diverse designs, sometimes resembling common items such as pens, flashlights, or flash drives.[1]

ENDS solutions commonly contain varying levels of nicotine, flavoring chemicals, and unadvertised additives. There are no federal quality

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standards to ensure accuracy of ENDS constituents as labeled. Numerous chemicals have been found in ENDS solutions and emissions, including toxicants (aldehydes, antifreeze, diethylene glycol, metals), ultrafine particles, and carcinogens (tobacco-specific nitrosamines, polycyclic aromatic hydrocarbons), similar to cigarettes, many of which are known to cause adverse health effects.[1,2]

Who uses ENDS?

ENDS have rapidly become the most common nicotine product used by youth in the United States,[3] driven by easy availability, alluring advertisements, various flavors, and the belief that they are safer than cigarettes.

What can I do as a healthcare provider?

The most important thing to do as a provider is to TALK to adolescents about ENDS. The "5A's" model is a counseling method that has been shown to improve nicotine cessation in adults.[2] The following is a modified approach for adolescent ENDS users.

1 **ASK** about and document nicotine product use at all adolescent annual physical exams, when chief complaints warrant investigation, and as frequently as clinically feasible.

The Youth Risk Behavior Survey[3] (YRBS) is a national school-based survey conducted every two years by the Centers for Disease Control and Prevention (CDC) Health Alert Network to monitor health-related behaviors, such as nicotine use among youth in grades 9-12. In 2015, the survey began asking youth about ENDS use in addition to cigarette use. Review your current practice habits and begin incorporating the following question from the YRBS into your adolescent well-care questionnaire/history.

> *"Have you ever used an electronic vapor product? Electronic vapor products (such as JUUL, Vuse, MarkTen, and blu) include: e-cigarettes, vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods."*

With affirmative responses, assessing frequency with this follow-up question can aid in risk stratification.

> *"During the past 30 days, how many days did you use an electronic vapor product?"*

Any use is harmful, but individuals with 20 days or more of use will likely require more aggressive support in nicotine cessation.

2 **ADVISE** in a clear, strong manner the personally relevant risks of nicotine use and benefits to stopping.

Although ENDS were initially thought of as a potential harm reducer for smokers, studies are proving that ENDS are not safe. Laboratory models show that ENDS aerosol (even when no nicotine is present) increases inflammation and disables alveolar macrophages, decreasing an individual's ability to fight off bacterial infections. While the research of long-term ENDS use is in its infancy, exposure to nicotine condensate increases cell death and free radical formation. The CDC is investigating a noninfectious, severe pulmonary disease that is associated with ENDS use, resulting in more than 1,000 cases with 26 deaths, and recommends against continued ENDS use in young adults at the time of this article.[4] Of the cases reported, more than 50% of the patients are 24 years of age or under, and 15% are under 18 years of age.

ENDS mimic conventional cigarette use and help to renormalize smoking behaviors, serving as an introductory product for adolescents who will then go on to use traditional tobacco products. Adolescent ENDS users were seven times more likely to report that they smoked cigarettes at a six-month follow up, compared to non-ENDS users.[1] These results suggest that adolescents using ENDS are at a greater risk for smoking cigarettes in the future.

ENDS do not aid in nicotine cessation. Traditional tobacco users who used ENDS as a nicotine cessation tool were less likely to stop smoking, and in fact were found to smoke more cigarettes by the end of the study intervention.[1] We must not recommend ENDS as tobacco cessation tools to our patients and families.

Because current federal regulations are insufficient to protect youth from ENDS use, it is imperative for providers to counsel and advocate for a nicotine-free lifestyle for patients and families. Parents who model appropriate substance-use behaviors and have a moderate-to-high degree of parental monitoring, are protective factors in adolescent lives.

3 **ASSESS** the severity of nicotine dependence, including prior history of attempts to stop and changes that the adolescent is ready to make.

Nicotine is one of the most addictive substances on our planet. The pleasure derived from nicotine's interaction with the brain's reward circuit motivates people to use nicotine again and again. Eventually substance dependency forms, with withdrawal leading to depletion of dopamine, resulting in user anxiety, irritability, and cravings.

Utilizing motivational interviewing is important in determining adolescents' willingness to make a behavioral change. Ask adolescents open-ended questions regarding their use to allow for the discussion to be framed in their own words in an unbiased, nonjudgmental way. Affirm what adolescents tell you to highlight their strengths and prior efforts at behavior change. Be a reflective listener by clarifying meanings and their feelings regarding use. Most importantly, elicit "change talk" by asking adolescents about the level of importance they place on making a behavioral change, and how confident they are in their success. This is most easily done by asking the patient to rank their ability to change on a scale of 0 (not at all) to 10 (very).

> *"How important is it for you to stop using ENDS?"* and *"How confident are you that you will be able to stop using ENDS?"*

Follow this up with two probing questions.

> *"You chose (STATE NUMBER). Why didn't you choose a lower number?"* This question will elicit arguments for change by the adolescent.
>
> Then ask, *"What would it take to get you to a higher number?"* This aids in identifying barriers to ensure that they are addressed to allow for improved success.[5]

Rankings of seven or higher indicate a greater likelihood for behavioral changes.

4 **ASSIST** adolescents with tailored support addressing both their readiness to change and severity of addiction.

For adolescents ready to stop ENDS use, review lessons learned from previous attempts, discuss anticipated barriers, and ensure coping strategies. For those with minimal-to-mild-nicotine dependence, providing concrete and readily accessible support through behavioral-based programs that focus on problem-solving skills and encouragement, are beneficial.

The Iowa Department of Public Health provides nicotine cessation care to community members via Quitline Iowa.[6] Participants 13 years of age or older have access to certified Tobacco Treatment Specialists to coach them through preparing a quit plan, setting a quit date,

My Life, My Quit Youth Cessation Program

The *My Life, My Quit* program provides youth access to tailored resources for quitting tobacco use, including:

- Youth coaches who receive special training on building relationships with youth.
- Five coaching sessions by phone, live texting, or chat with a coach who listens and helps teens navigate social situations, while finding healthy ways to cope with stress.
- A dedicated toll-free number to call or text (1-855-891-9989) for real-time coaching.
- Additional text messages of support to quit vaping, smoking, or chewing tobacco.
- Simplified program registration and enrollment process to receive coaching more quickly.

Website (**mylifemyquit.com**) with online enrollment, ability to chat with a live coach, information about vaping and tobacco, and activities to support quitting.

Promotional and educational materials designed for youth with messages from youth about quitting tobacco and vaping, and how to ask for support.

A water-marked certificate of program completion.

For more information, visit Quitline Iowa at: **https://iowa.quitlogix.org/en-US/Just-Looking/Health-Professional**.

understanding ENDS triggers, managing cravings, and addressing relapses via phone, text, or instant messenger. In addition, young adult participants have access to pharmacotherapy interventions including nicotine replacement therapy, such as varenicline and bupropion.

In the United States, nicotine pharmacotherapy has not been approved by the FDA for use by people younger than 18 years of age. Research on pharmacotherapy for moderate-to-severe adolescent nicotine dependence is limited. However, given the high likelihood of transitioning to tobacco products, the severe harms of tobacco use, and the documented effectiveness of pharmacotherapy in adults, a nicotine-dependent adolescent who wants treatment can be offered pharmacotherapy for nicotine cessation by providers through prescription medication.[1,2]

5 **ARRANGE** follow-up.

Close follow-up is important regardless of the decision made by the adolescent as it allows providers to offer additional support at times of nonadherence and relapse. With precontemplative patients, it allows for continued exploration as a team regarding the benefits of cessation and navigating roadblocks to cessation.

6 **ANTICIPATING**, the "sixth A."

Anticipating a patient's future exposure and their risk of use is fundamental to empowering them to continue making healthy decisions. Adolescent brains are physiologically more vulnerable to addiction, with earlier use resulting in stronger addiction and more difficulty in quitting.[1] Our goal is to delay initiation of use for as long as possible. Studies show that providers should provide praise and reinforcement for patients of all ages who do not smoke and that children and adolescents value such messages from their pediatrician.[7]

Equally important is to provide youth with the tools to remain nicotine free. When youth become stressed, their first impulse is to relieve the discomfort associated with

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Examples of ENDS Products

Pictured from left:

Cigalike - disposable, high-nicotine content

Vape Pen - refillable/cartridge

MOD (modified) - refillable, low-smoke production

Pod (ultra-portable system) - comes with a cartridge

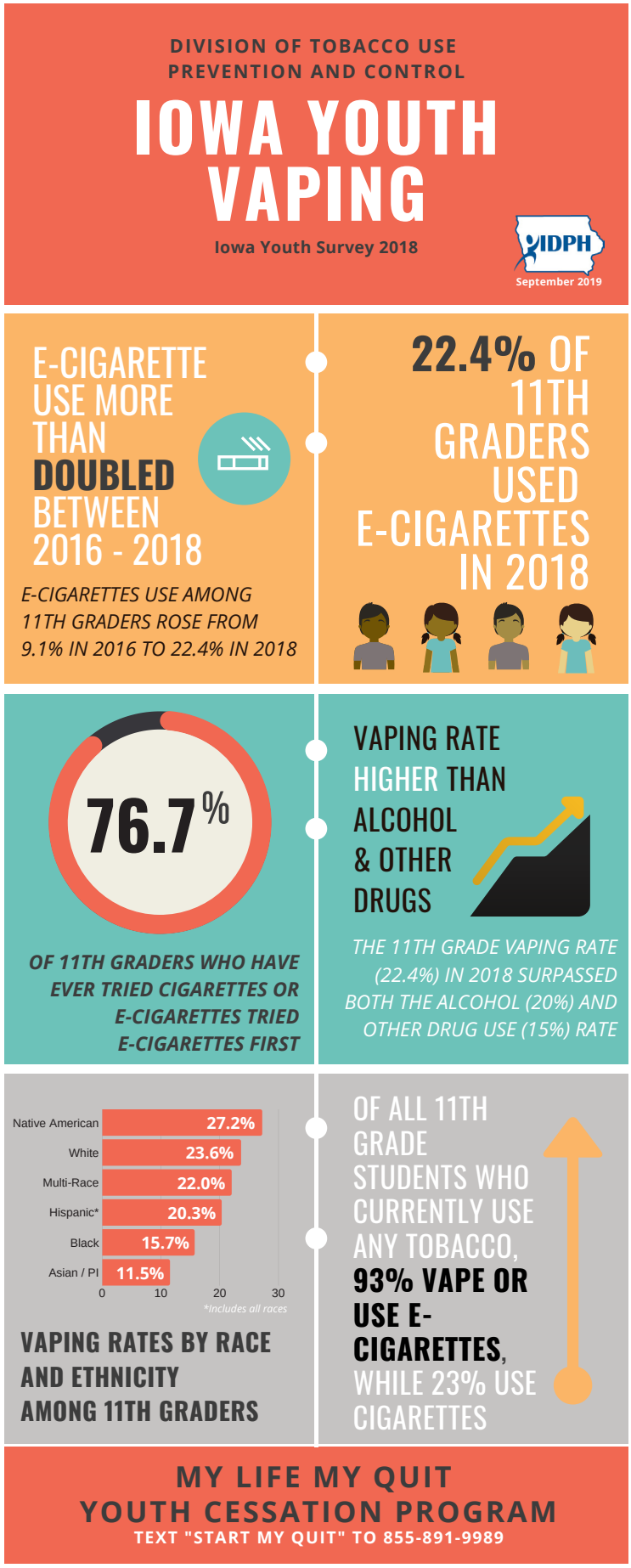
Sub Ohm Tank Box Mod - low-resistance coils, produces large clouds of smoke

JUUL- pod system, flavored cartridges

- 3% and 5% nicotine strength
- 30% propylene glycol/60% vegetable glycerin
- Benzoic acid (nicotine salts)

CME/CE opportunity

Addressing Tobacco Use Using 2As and an R
This CME- and CE-certified activity addresses how to use the brief, Ask, Advise and Refer intervention with all patients who use tobacco, and reviews approved pharmacotherapy that may help patients stop using tobacco.
https://quitlineiowa.org/en-US/



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that stress. Discussing the consequences of ENDS does not aid the youth in troubleshooting potentially stressful situations when they are first offered substances. As providers we should explore with our young patients what they would potentially do in such situations. Formulating strategies to "shift the blame" of not using onto another individual, such as their parents, improves adolescents' ability at rejecting behaviors.[8]

Work with families to establish a "code word" that youth may use over phone/text when in such situations. Use of the code word will prompt the parent to act visibly upset at the youth for requesting longer time with friends and lead to the parent insisting on the immediate removal of the adolescent from the situation. The youth is then able to "shift the blame" of no use to the family member. Parents should allow themselves to be "villainized" by their child through such statements as, "I can't smoke with you because my mother sniffs me when I get home." Providing youth with helpful tools may delay onset of first use, leading to healthier adult lives.

References

1. Jenssen BP, Walley SC. E-Cigarettes and Similar Devices. 2019;143(2):e20183652.
2. Pbert L, Farber H, Horn K, et al. State-of-the-art office-based interventions to eliminate youth tobacco use: the past decade. *Pediatrics*. 2015;135(4):734-747.
3. Substance Abuse and Mental Health Services Administration. Key substance use and mental health indicators in the United States: Results from the 2017 National Survey on Drug Use and Health. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration; 2018.
4. Centers for Disease Control and Prevention Health Alert Network. Severe Pulmonary Disease Associated with Using E-Cigarette Products. https://emergency.cdc.gov/han/han00421.asp. Published 2019. Updated 8/30/2019. Accessed 2019.
5. Resnicow K, Dilorio C, Soet JE, Ernst D, Borrelli B, Hecht J. Motivational interviewing in health promotion: it sounds like something is changing. *Health psychology: official journal of the Division of Health Psychology*, American Psychological Association. 2002;21(5):444-451.
6. Iowa Department of Public Health. Quitline Iowa. https://quitlineiowa.org/en-US/ Published 2019. Accessed 2019.
7. Stein RJ, Haddock CK, O'Byrne KK, Hymowitz N, Schwab J. The Pediatrician's Role in Reducing Tobacco Exposure in Children. *Pediatrics*. 2000;106(5):e66-e66.
8. Ginsburg KR, Jablow MM. *Building Resilience in Children and Teens*, 2nd Edition. 2005.

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