

# The Importance of Addressing E-cigarettes in Clinical Practice

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



© 2019 American Academy of Pediatrics

# LEARNING OBJECTIVES

At the end of this session, participants will be able to:

- Summarize the health effects of e-cigarettes for youth
- Describe why pediatric health providers should address e-cigarettes in clinical practice
- Describe USPSTF and AAP recommendations for addressing e-cigarettes in pediatric practice



# Patient Education: Health Effects

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



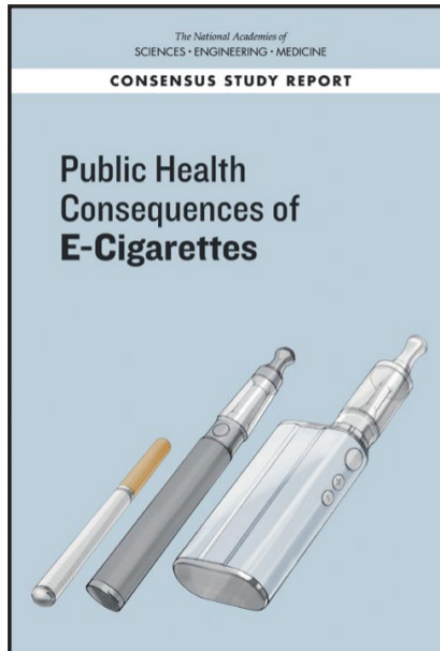
## Known and potential risks

# RISKS

1. Initiation of combustible tobacco products
2. Nicotine addiction
3. Safety risks
4. ? Long term health risks



# INITIATION OF COMBUSTIBLE TOBACCO PRODUCTS



**Conclusion 16-1:** There is substantial evidence that e-cigarette use increases risk of ever using combustible tobacco cigarettes among youth and young adults.<sup>1</sup>

Image source: National Academies of Sciences, Engineering, and Medicine. 2018. *Public health consequences of e-cigarettes*. Washington, DC: The National Academies Press. doi: <https://doi.org/10.17226/24952> Cover

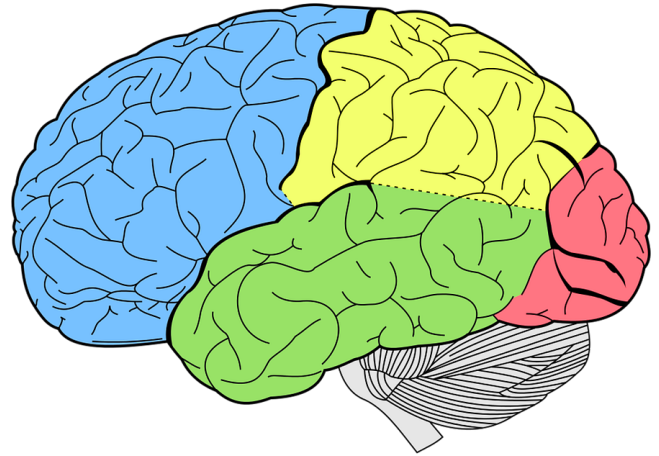
American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



# NICOTINE ADDICTION

The adolescent brain is uniquely  
vulnerable to the rewarding  
effects of nicotine.<sup>2</sup>



[“Brain Lobes Neurology”](#) by ArtsyBee is licensed under [CC BY 2.0](#).



# NICOTINE ADDICTION

Pod system e-liquids (including JUUL):

**59 mg/ml**

E-cigarettes can deliver

higher levels of nicotine

than traditional cigarettes.<sup>3</sup>

**63%**

Of JUUL users do not know that the product always contains nicotine.<sup>4</sup>

# TEEN NICOTINE DEPENDENCE PROGRESSES FAST<sup>5</sup>

Experimentation



Nicotine dependence, indicated by craving,  
starts *prior* to daily or regular use

**Interventions may be  
delivered at any stage**



Regular Use



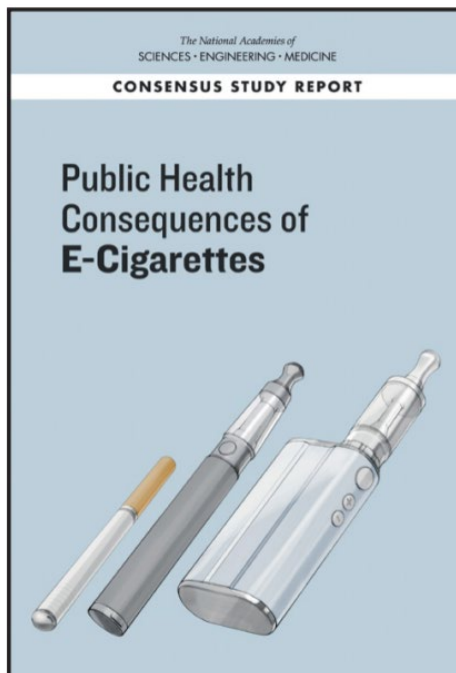


# SAFETY RISKS

- **Burns**
  - **2,035** explosion and burn injuries seen in US Emergency Departments from 2015-2017<sup>6</sup>
- **Poisonings**
  - **8,269** liquid nicotine exposures reported among children <6 from 2012-2017<sup>7</sup>
  - Child-resistant packaging laws associated with decreasing exposure rates



# ?LONG TERM HEALTH RISKS



**Conclusion 5-1:** There is *conclusive evidence* that in addition to nicotine, most e-cigarette products **contain and emit numerous potentially toxic substances.**<sup>1</sup>

Image source: National Academies of Sciences, Engineering, and Medicine. 2018. *Public health consequences of e-cigarettes*. Washington, DC: The National Academies Press. doi: <https://doi.org/10.17226/24952> Cover



# Why Should Pediatricians Address E-Cigarettes in Practice?

American Academy of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN®



# WHY SHOULD PEDIATRICIANS ADDRESS E-CIGARETTES WITH YOUTH?

- E-cigarette use has direct, negative health effects<sup>1</sup>
- Young e-cigarette users are at increased risk of transitioning to combustible tobacco products<sup>1</sup>
- Majority of adult tobacco users initiate tobacco use by age 18<sup>2</sup>
- E-cigarettes are the most common tobacco product used by youth<sup>3</sup>



# WHY SHOULD PEDIATRICIANS ADDRESS E-CIGARETTES WITH YOUTH?

- Adolescent brain is uniquely vulnerable to nicotine addiction<sup>2</sup>
  - Executive function and neurocognitive processes in the adolescent brain are not fully developed
- Physiologically more vulnerable to addiction<sup>8</sup>
  - The earlier youth start, the stronger the addiction and the more difficult it is to quit<sup>9</sup>



# REINFORCE ABSTINENCE IN NON-USERS<sup>10,11</sup>



Interventions to prevent the initiation of tobacco use should be provided to all youth who have not started using tobacco products yet, regardless of the presence or absence of other risk factors



Various behavioral counseling intervention types are effective in preventing tobacco initiation in children, including face-to-face counseling, telephone counseling, and computer-based and print-based interventions



# WHY ADDRESS CESSATION IN PRACTICE?

- Tobacco dependence is a chronic, relapsing condition<sup>12</sup>
  - Nicotine is addictive
  - Every person who uses tobacco should be offered treatment
- Adolescent tobacco users want to quit, but don't always know they can receive help<sup>13</sup>
- Youth are less likely than adult tobacco users to use effective cessation supports<sup>14</sup>



# RECOMMENDATIONS FOR THE PEDIATRIC SETTING

- AAP Policy recommends that pediatricians:
  - Screen for e-cigarette use and exposure<sup>15,16</sup>
  - Provide prevention counseling<sup>15,16</sup>
  - Provide counseling that all places where children spend time should be free of tobacco and e-cigarette use<sup>15,26</sup>
  - Not recommend e-cigarettes as a tobacco cessation product<sup>15</sup>
  - Support adolescent tobacco users in their quit attempts<sup>16</sup>
- The US Preventive Services Task Force recommends that pediatricians provide education and brief counseling to youth to prevent initiation of tobacco use, including e-cigarettes.<sup>11</sup>





# RECOMMENDATIONS FOR THE PEDIATRIC SETTING

- For adolescent patients who use e-cigarettes, especially those who do not disclose their use, it is important to have resources readily available and accessible
- Allow for access without having to disclose
- Resources for the waiting and clinic rooms include:
  - Posters
  - Brochures
  - Videos



Image source: Getty images

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



# KEY POINTS

- E-Cigarettes increase risk of youth progressing to traditional tobacco use
- E-cigarettes are addictive
- E-Cigarettes have short- and long-term health risks.
- Pediatric health providers should address e-cigarettes in clinical practice



# REFERENCES

1. National Academies of Sciences, Engineering, and Medicine. *Public health consequences of e-cigarettes*. Washington, DC: The National Academies Press. 2018.
2. US Department of Health and Human Services. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014
3. US Department of Health and Human Services. *E-Cigarette Use Among Youth and Young Adults. A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2016
4. Willett JG, Bennett M, Hair EC, et al. Recognition, use and perceptions of JUUL among youth and young adults. *Tobacco Control* 2019;28:115-116
5. DiFranza JR, Savageau JR, Fletcher K, et al. Symptoms of Tobacco Dependence after Brief Intermittent Use. *Arch Pediatr Adolesc Med*. 2007;161(7):704-710
6. Rossheim ME, Livingston MD, Soule EK, Zeraye HA, Thombs DL. Electronic cigarette explosion and burn injuries, US Emergency Departments 2015–2017. *Tobacco Control* 2019;28:472-474
7. Govindarajan P, Spiller HA, Casavant MJ, Chounthirath T, Smith GA. E-Cigarette and Liquid Nicotine Exposures Among Young Children. *Pediatrics*. 2018;144(5)
8. Pentz MA, Shin H, Riggs N, Unger JB, Collison KL, Chou CP. Parent, peer, and executive function relationships to early adolescent e-cigarette use: a substance use pathway? *Addict Behav*. 2015;42:73–78



# REFERENCES

9. Siqueira LM, Committee on Substance Use and Prevention. Nicotine and tobacco as substances of abuse in children and adolescents. *Pediatrics*. 2017;139(1):e20163436
10. Selph S, Patnode C, Bailey S, et al. Primary Care Relevant Interventions for Tobacco and Nicotine Use Prevention and Cessation in Children and Adolescents: A Systematic Review for the U.S. Preventive Services Task Force. Evidence Synthesis No. 185.AHRQ Publication No. 19-05254-EF-1. Rockville, MD: Agency for Healthcare Research and Quality; 2019
11. US Preventive Services Task Force. Draft Recommendation Statement: *Prevention and Cessation of Tobacco Use in Children and Adolescents: Primary Care Interventions*. USPSTF website.  
<https://www.uspreventiveservicestaskforce.org/Page/Document/draft-recommendation-statement/tobacco-and-nicotine-use-prevention-in-children-and-adolescents-primary-care-interventions>. Accessed January 24, 2020
12. Fiore MC, Jaén CR, Baker TB, et al. *Treating Tobacco Use and Dependence: 2008 Update*. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. May 2008
13. Balch GI, Tworek C, Barker DC, Sasso B, Mermelstein R, Giovino GA. Opportunities for youth smoking cessation: Findings from a national focus group study. *Nicotine Tob Res* 2004;6(1):9-17
14. Barker DC, Giovino G, Gable J, Tworek C, Orleans CT, Malarcher A. Use of Cessation Methods Among Smokers Aged 16-24 Years -- United States, 2006. *MMWR Morb Mortal Wkly Rep* 2006;55(50):1351-1354
15. Jenssen BP, Walley SC, AAP Section on Tobacco Control. E-Cigarettes and Similar Devices. *Pediatrics*. 2019;143(2) e20183652
16. AAP Section on Tobacco Control. Clinical Practice Policy to Protect Children from Tobacco, Nicotine, and Tobacco Smoke. *Pediatrics*. 2015;136:1008-1017

