



Latest Trends on Teen Vaping

Jon Macy, PhD, MPH – School of Public Health - Bloomington

Presentation Outline

- Overview of Electronic Nicotine Delivery Systems (ENDS)
- Prevalence Data
- Vaping and COVID-19



Say what?

- Vaping
- E-cigarettes
- E-hookahs
- Juuling & JUULpods
- ENDS



Electronic Nicotine Delivery Systems (ENDS)



Electronic Nicotine Delivery Systems (ENDS)



JUUL and JUULpods



How they work

- Most have a battery, a heating element, and a place to hold a liquid
- Produce an aerosol by heating the liquid that usually contains nicotine, flavorings, and other chemicals
- User inhales this aerosol into their lungs



Health Effects of ENDS Use

- Long-term effects are unknown
- But nicotine has known health effects:
 - Nicotine is highly addictive
 - Nicotine can harm adolescent brain development, which continues into the early to mid-20s
- The aerosols in ENDS can contain harmful substances



The Great Vaping Debate

- There may be a public health benefit if current cigarette smokers switch to e-cigarettes or use them to cut down or quit
- The public health benefit will be diminished if e-cigarette use leads to initiation of combustible cigarette smoking



Public Health Communication Challenge

To Current Adult Smokers:

“You should switch to e-cigarettes because they are not as harmful.”

To Adolescents:

“You should not use e-cigarettes because you might someday switch to combustible cigarettes.”

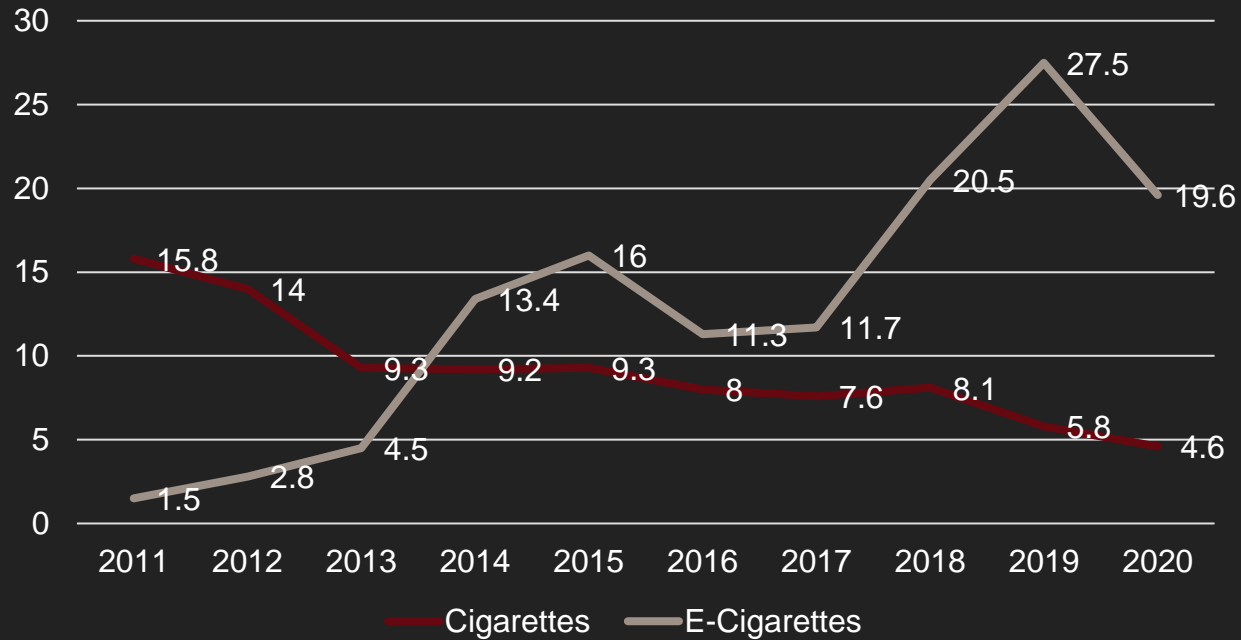


Data from CDC

- 75% increase in number of high school students who have used e-cigarettes in the past 30 days from 2017 to 2018
 - 1.5% of students in 2011 to 27.5% in 2019
 - Fell to 19.6% in 2020, but a rise in disposable vapes
- 3 million high school students are using e-cigarettes



Cigarette & E-Cigarette Use Rates Among High School Students, 2011 to 2020



JUUL dominated the market in 2018-2019

- 73% of the market share 2018
- 64% of the market share in 2019



Vaping and COVID-19



Is there an association between Vaping/Smoking & COVID-19?

- Survey of 4,351 13 to 24 year olds in the U.S. in May 2020
- Past 30-day use of e-cigarettes and dual use of e-cigarettes and cigarettes were associated with COVID-19 testing
- Past 30-day dual use associated with COVID-19 symptoms and a COVID-19 diagnosis
- Reference: Gaiha et al. (2020). *Journal of Adolescent Health*



We found no evidence of a link in a sample of IU students

- Students tested for COVID antibodies in September and November 2020
- Among those who tested negative at baseline and were retained for follow-up testing (n=750), we tested the association between vaping/smoking behavior and seroconversion
- 5.3% seroconverted over the course of the semester; 19.3% reported e-cigarette use, 1.5% reported cigarette use, 4.5% reported dual use
- Compared to students who reported no nicotine use, there was no increased risk of seroconversion among nicotine users



Four Take Home Messages

- ENDS use rose rapidly in a relatively short amount of time
- JUUL dominated the market through 2019; now disposables are gaining popularity
- Recent data suggest that vaping has declined, but still 3 million high school students vaping
- Conflicting evidence on whether vaping and COVID-19 may be influencing each other

