THE MODERN DEBATE ABOUT E-CIGARETTES

“Young people have taken a technology that was supposed to help grownups stop smoking and invented a new kind of bad habit, one that they have molded in their own image. The potential public-health benefit of the e-cigarette is being eclipsed by the unsettling prospect of a generation of children who may really love to vape.”

Vaping

THE DIFFERENT DELIVERY DEVICES

- Vaping is an umbrella term describing the process of inhaling and exhaling the vapor produced by an electronic cigarette or similar device that heats a substance, such as nicotine, without smoke or tar.
- E-cigarettes
- Juul
- E-liquid contains nicotine salts extracted from leaf-based tobacco.
- "The nicotine in a single Juul pod is roughly equal to a pack of cigarettes."
- Sold online from the company website and in stores and gas stations.
- Juul’s website uses ID match and age verification technology, and the company has found it effective at reducing sales and penalties in place for resellers.

American Academy of Pediatrics, "JUULing: What Pediatricians and Families Need to Know?"
Vaping
TNP 2019

WHAT IS KNOWN ABOUT THE VAPOR TODAY

- E-cigarette users inhale
- The chemical aerosol is not “just” water vapor
- Studies so far show it contains:
  - Nicotine
  - Propylene Glycol
  - Formaldehyde
  - Chromium
  - Fine and ultrafine (UF) particles
  - Low levels of known carcinogens
  - Nanoparticles of chromium, lead, nickel and tin
  - Volatile organic compounds (VOCs)

HEALTH CONCERNS

- Youth-friendly flavors are a primary draw of e-cigarettes
- Many kids incorrectly think they are only vaping flavor
- Majority of youth surveyed in 2016
  - Majority of youth surveyed in 2016
    - 99% sold in U.S. in 2015 had nicotine according to CDC
  - Nicotine affects the development of brain circuits
  - Increases the risk of mood disorders and permanent problems with impulse control

HEALTH CONCERNS

• Evidence is mounting for a link between e-cigarettes and eventual smoking
  • Teens Vaping E-Cigarettes Up to 7 Times More Likely To Smoke, Later, But Not Vice Versa NIH-funded study published in Pediatrics, Dec. 2017
  • Teens who use e-cigarettes are more likely to try smoking, report shows A consensus report by National Academies of Sciences, Engineering and Medicine, January 2018
  • E-cigarette increases the risk of beginning tobacco cigarette use in young adults. A study by University of Pittsburgh School of the Health Sciences published in the American Journal of Medicine 2017

• Potentially harmful chemicals found in e-cigarettes
  • Tar
  • Generateds
  • Animal carcinogens
  • Evidence that adjusting the heating element to the higher ranges converts the propylene glycol and vegetable glycerin to formaldehyde and acetaldehyde
  • Link between e-cigarettes and heart disease and cancer
  • Link between e-cigarettes and respiratory disorder

NICOTINE

• Highly addictive substance
• Large amounts of nicotine are fatal
• The number of poisoning cases linked to e-cigarettes liquid was 2,555 in 2018
POTENTIAL AS A "GATEWAY" DRUG
(OBJECTIVE 4)

- Teens’ developing brains are uniquely susceptible to the effects of nicotine
- Teen years are critical for brain development
- Nicotine affects the development of the brain’s reward system
- Increased risk of addiction to cocaine and other drugs
- Nicotine greatly enhanced the effect of cocaine in mice
- Cocaine dependence is greater in heavy smokers (>100 cigarettes before using cocaine)
- Nicotine acts as a gateway drug with the effects of addiction, especially in adolescents

National Institute on Drug Abuse. "Electronic Cigarettes (E-cigarettes)" (March 2018)

TRENDS IN CIGARETTE USE

- Cigarette use is at lowest levels in survey’s history
- Peaked in the mid-1990s, then started a sharp decline

TRENDS IN ALCOHOL USE

- Peak use leveled off in 2017 after a long decline
- Binge drinking declined by almost a third from 1997 to 2015
- A moderate increase in the 1990s was followed by a steady and significant decline
- Rates in 2017 were up slightly suggesting a leveling off of the decline

[University of Michigan National Alcohol Epidemiology Center, "Monitoring the Future 2018"]
TRENDS IN MARIJUANA USE

• Key trend in 2017 marijuana use was vaping
• In 2018 daily marijuana use exceeds daily cigarette use

FDA WARNINGS (OBJECTIVE 4)

• E-cigarettes can increase nicotine addiction among young people and may lead kids to try other tobacco products
• The products may contain ingredients that are known to be toxic to humans

CALLS FOR GOVERNMENT ACTION

• FDA did not regulate e-cigarettes as tobacco products until 2016
• FDA crackdown on sales to youth focuses on Juuls in April 2018
• FDA opens process for flavor regulation
• Already banned cigarettes with kid-appealing flavors
• Examining options for regulating other flavored tobacco products (menthol)
• Now dedicated to understanding how flavors influence tobacco use and addiction

Kate Smiley, "FDA Cracks Down on 'Juuling' Among Teenagers," The New York Times (April 24, 2018); FDA, "Menthol and Other Flavors in Tobacco Products" (March 2018)
QUESTIONS?

"I don't know who this is. Can I go to the park?

Why can't I go to the park anymore?"