E-CIGARETTES: IMPLICATIONS FOR PUBLIC HEALTH POLICY AND PRACTICE

Promoting a Healthier Wyoming • September 19, 2019
<table>
<thead>
<tr>
<th>1</th>
<th>What Are They?</th>
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<td>2</td>
<td>Why Are They Popular?</td>
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<td>What Can We Do About it?</td>
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GOOD NEWS: CIGARETTE SMOKING IS DOWN…

Source: Adult cigarette smoking prevalence data are from the National Health Interview Survey (NHIS).
High school cigarette smoking prevalence data are from the National Youth Risk Behavior Survey.
...AND THE TOBACCO PRODUCT LANDSCAPE CONTINUES TO EVOLVE
THE EVOLUTION OF E-CIGARETTES

<table>
<thead>
<tr>
<th>1st Generation</th>
<th>2nd Generation</th>
<th>3rd Generation</th>
<th>4th Generation</th>
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<tbody>
<tr>
<td><img src="image1" alt="Image of 1st generation e-cigarette" /></td>
<td><img src="image2" alt="Image of 2nd generation e-cigarette" /></td>
<td><img src="image3" alt="Image of 3rd generation e-cigarette" /></td>
<td><img src="image4" alt="Image of 4th generation e-cigarette" /></td>
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E-CIGARETTE MARKET SHARE, BY DOLLAR SALES, US, 2013 - 2018

JUUL Market Share rose to over 75% in 2019


- Cigarette: 15.8%
- Cigar: 11.6%
- Smokeless: 7.9%
- Hookah: 4.1%
- Pipe: 4.0%
- E-cigarette: 1.5%

A VARIETY OF POD MODS CONTINUE TO ENTER THE U.S. MARKETPLACE

MarkTen Elite (Altria)
myBlu (Imperial Tobacco)
Vuse Alto (RJR)
Myle
Phix

Suorin Drop
Suorin Air
KandyPens Feather
Daze MFG ZOOR
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WHAT CAUSES YOUTH E-CIGARETTE USE?

Advertising  Flavors  Nicotine
YOUTH EXPOSURE TO E-CIGARETTE ADVERTISING

E-CIGARETTE ADS
REACH NEARLY
4 IN 5
U.S. MIDDLE AND HIGH SCHOOL STUDENTS

More than 20 million youth saw e-cigarette ads in 2016.

PERCENT OF STUDENTS EXPOSED TO E-CIGARETTE ADS

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<th>Year</th>
<th>Percent</th>
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<tr>
<td>2014</td>
<td>68.9</td>
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<tr>
<td>2015</td>
<td>73.0</td>
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<td>2016</td>
<td>78.2</td>
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YOUTH EXPOSURE TO E-CIGARETTE ADS, 2016

- RETAIL STORES: 68.0% 17.7 MILLION
- TELEVISION: 37.7% 9.7 MILLION
- INTERNET: 40.6% 10.6 MILLION
- NEWSPAPERS & MAGAZINES: 23.9% 6.2 MILLION

Efforts to reduce youth exposure to e-cigarette ads are important to prevent and reduce youth use of these products.

Source: National Youth Tobacco Survey
"We don’t think a lot about addiction here because we’re not trying to design a cessation product at all...anything about health is not on our mind”

JUUL R&D Engineer, quoted in The Verge, April 2015
USE OF FLAVORS IS PROMINENT AMONG YOUTH

NICOTINE SALTS ALLOW HIGH LEVELS OF NICOTINE TO BE INHALED MORE EASILY
All JUUL e-cigarettes have a high level of nicotine. According to the manufacturer, a single JUUL pod contains as much nicotine as a pack of 20 regular cigarettes.


CURRENT ELECTRONIC TOBACCO PRODUCT USE AMONG U.S. HIGH SCHOOL STUDENTS – BY STATE, YRBS 2017

Percentage
%

- 7.6 - 11.7
- 11.8 - 14.2
- 14.3 - 17.2
- 17.3 - 26.2
- No Data
JUUL USE AMONG U.S. YOUNG PEOPLE
(February – May, 2018)

PERCENTAGE

10
11
8
5
3
3
1
1
6

15-17 years
18-21 years
22-24 years
25-34 years

Ever Use
Current (Past 30 Day) Use

FREQUENCY OF YOUTH E-CIGARETTE USE, 2015-2017

EVER USE OF CANNABIS IN AN E-CIGARETTE AMONG YOUTH E-CIGARETTE USERS - NYTS, 2016

CURRENT E-CIGARETTE USE AMONG U.S. ADULTS, 2014-2018

Source: National Health Interview Survey 2014-2018
EVER USE OF E-CIGARETTES AMONG CURRENT, FORMER, AND NEVER ADULT CIGARETTE SMOKERS — 2010-2018

Source: CDC licensed data fielded by Porter Novelli Services. Summer Styles Survey. 2010-2018
USE OF E-CIGARETTES SHAPED LIKE USB FLASH DRIVES AMONG U.S. ADULTS, 2018

RELATIONSHIP BETWEEN CIGARETTE SMOKING AND E-CIGARETTE USE

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NET PUBLIC HEALTH BENEFIT OR HARM?
“The long-term safety of e-cigarettes is unknown.”

“Overall, the USPSTF found the evidence on the use of ENDS as a smoking cessation tool in adults, including pregnant women, and adolescents to be insufficient.”

Conclusion 17-1. Overall, there is limited evidence that e-cigarettes may be effective aids to promote smoking cessation.
E-CIGARETTES MAKE AEROSOL, NOT VAPOR

The e-cigarette aerosol that users breathe from the device and exhale can contain harmful and potentially harmful substances:

- Volatile organic compounds
- Ultrafine particles
- Nicotine
- Cancer-causing chemicals
- Heavy metals such as nickel, tin, and lead
- Flavoring such as diacetyl, a chemical linked to a serious lung disease
E-CIGARETTE POISONINGS

Poisoning Calls Related to E-Cigarettes Have Skyrocketed

Liquid Nicotine In E-Cigarettes Could Be Deadly

Source: American Association of Poison Control Centers
YOUR GUT CAN HANDLE MORE THAN YOUR LUNGS

Some e-cigarette manufacturers claim flavorings are safe because they meet the FDA definition of “Generally Recognized as Safe” (“GRAS”).

GRAS does not apply to products that are not food.
NICOTINE POSES UNIQUE DANGERS TO YOUNG PEOPLE

E-Cigarette Use Among Youth and Young Adults
A Report of the Surgeon General

Chapter 3
Conclusion 1, 2, & 5

1. Nicotine exposure during adolescence can cause addiction and can harm the developing adolescent brain.

2. Nicotine can cross the placenta and has known effects on fetal and postnatal development. Therefore, nicotine delivered by e-cigarettes during pregnancy can result in multiple adverse consequences, including sudden infant death syndrome, and could result in altered corpus callosum, deficits in auditory processing, and obesity.

5. Ingestion of e-cigarette liquids containing nicotine can cause acute toxicity and possibly death if the contents of refill cartridges or bottles containing nicotine are consumed.
It's not like you can buy a new brain.

https://e-cigarettes.surgeongeneral.gov/
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<th>POTENTIAL HEALTH RISKS OF E-CIGARETTES</th>
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<td>Leads to initiation of combustible tobacco use among non-smokers, particularly children</td>
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<td>Leads to relapse among former smokers</td>
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<td>Diminishes the chances that a smoker will quit</td>
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<td>Discourages smokers from using proven quit methods</td>
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<td>Exposes children, pregnant women, and non-users to secondhand aerosol</td>
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<td>Glamorizes or renormalizes tobacco use</td>
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<td>Results in poisonings among users or non-users</td>
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PUBLIC HEALTH ACTIONS TO ADDRESS E-CIGARETTES

- Federal Regulation
- Family Smoking Prevention and Tobacco Control Act

  - Signed into law on June 22, 2009
  - Granted FDA the authority to regulate tobacco products
  - Enhanced the ability to intensify policy to reduce tobacco industry influence:
    - Manufacturing
    - Marketing
    - Sale

- State, Local, Territory
- Potential Sub-National Action:

  - Including e-cigarettes in smokefree indoor air policies
  - Restricting youth access to e-cigarette in retail settings
  - Licensing retailers
  - Establishing specific package requirements
  - Setting price policies
“Action can be taken at the national, state, local, tribal, and territorial levels to address e-cigarette use among youth and young adults. Actions could include incorporating e-cigarettes into smoke-free policies, preventing access to e-cigarettes by youth, price and tax policies, retail licensure, regulation of e-cigarette marketing likely to attract youth, and educational initiatives targeting youth and young adults.”

EVERYONE HAS A ROLE IN ADDRESSING YOUTH E-CIGARETTE USE

- Implement evidence-based population-level strategies to reduce e-cigarette use among young people, such as including e-cigarettes in smoke-free indoor air policies, restricting young peoples’ access to e-cigarettes in retail settings, licensing retailers, implementing price policies, and developing educational initiatives targeting young people.
- Implement strategies to curb e-cigarette advertising and marketing that are appealing to young people.
- Implement strategies to reduce access to flavored tobacco products by young people.
E-cigarettes are a tobacco product that produces an aerosol by heating a liquid that typically contains nicotine, flavorings, and other chemicals.

Several factors have contributed to the popularity of e-cigarettes, including advertising and the vast array of available flavors.

E-cigarette use is higher among young people than adults. As of 2014, e-cigarettes were the most commonly used tobacco product among U.S. youth.

Youth use of e-cigarettes is unsafe. Adult smokers must completely quit to realize benefits from e-cigarettes.

As the tobacco product landscape continues to diversify, it’s important to modernize tobacco control strategies to adapt.
Michael A. Tynan
Office on Smoking and Health
mtynan@cdc.gov

www.cdc.gov/tobacco