

Vaping



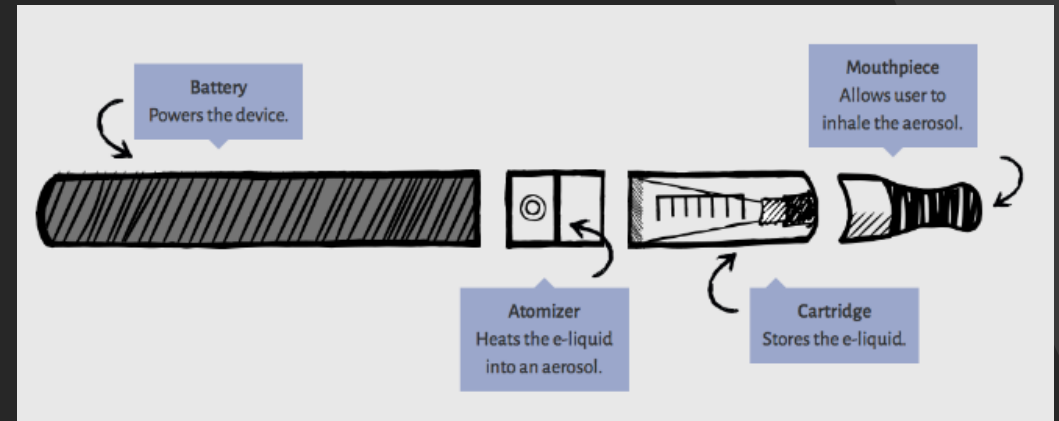
What is VAPING?



- The act of inhaling vapor produced by any kind of e-cigarette or personal vaporizer.
- Users load a liquid or oil solution containing their “drug” of choice into the device.
- When they draw on the device, the battery heats the liquid, which is then atomized into an inhalable vapor.

What is vaping?

- Vaping is the act of inhaling and exhaling the aerosol, often referred to as “vapor,” produced by an e-cigarette or similar device. Components include:
 - Cartridge or reservoir to hold a e-liquid
 - Heating element (atomizer)
 - Power source (battery)
 - Mouthpiece to inhale



It's Just Water Vapor



AEROSOL COMPOSITION

- | | | | |
|-------------------------------|---------------------------------|----------------------|------------------|
| • Propylene glycol | • Chlorobenzene | • Benzo(ghi)perylene | • Cadmium |
| • glycerin | • Crotonaldehyde | • Acetone | • Silicon |
| • Flavorings (many) | • Propionaldehyde | • Acrolein | • Lithium |
| • Nicotine | • Benzaldehyde | • Silver | • Lead |
| • NNN | • Valeric acid | • Nickel | • Magnesium |
| • NNK | • Hexanal | • Tin | • Manganese |
| • NAB | • Fluorine | • Sodium | • Potassium |
| • NAT | • Anthracene | • Strontium | • Titanium |
| • Ethylbenzene | • Pyrene | • Barium | • Zinc |
| • Benzene | • Acenaphthylene | • Aluminum | • Zirconium |
| • P,m, xylene | • Acenaphthene | • Chromium | • Calcium |
| • Toluene | • Fluoranthene | • Boron | • Iron |
| • Acetaldehyde | • Benz(a)anthracene | • Copper | • Sulfur |
| • Formaldehyde | • Chrysene | • Selenium | • Vanadium |
| • Naphthalene | • Retene | • Arsenic | • Cobalt |
| • Styrene | • Benzo(a)pyrene | | • Rubidium |
| • Benzo(b)fluoranthene | • Indeno(1,2,3-cd)pyrene | | |

Compounds in **yellow** are from FDA 2012,
Harmful and Potentially Harmful
Substances – Established List

What do we know

- Youth e-cigarette use rose 1,800% from 2011 to 2019.
- Two-thirds of young vape users (ages 15 to 21) don't know that the product always contains nicotine.
- 61% of teens who vape do it “to experiment”
- 42% because they like the taste
- 29% to feel good or get high
- More than 30% of teens who start using e-cigarettes begin smoking traditional tobacco products within six months

Growing Teen Use

A majority of youth report flavoring as a leading reason for using tobacco products.⁶ This includes:

82% of e-cigarette users

79% of hookah users

74% of cigar users

69% of smokeless users

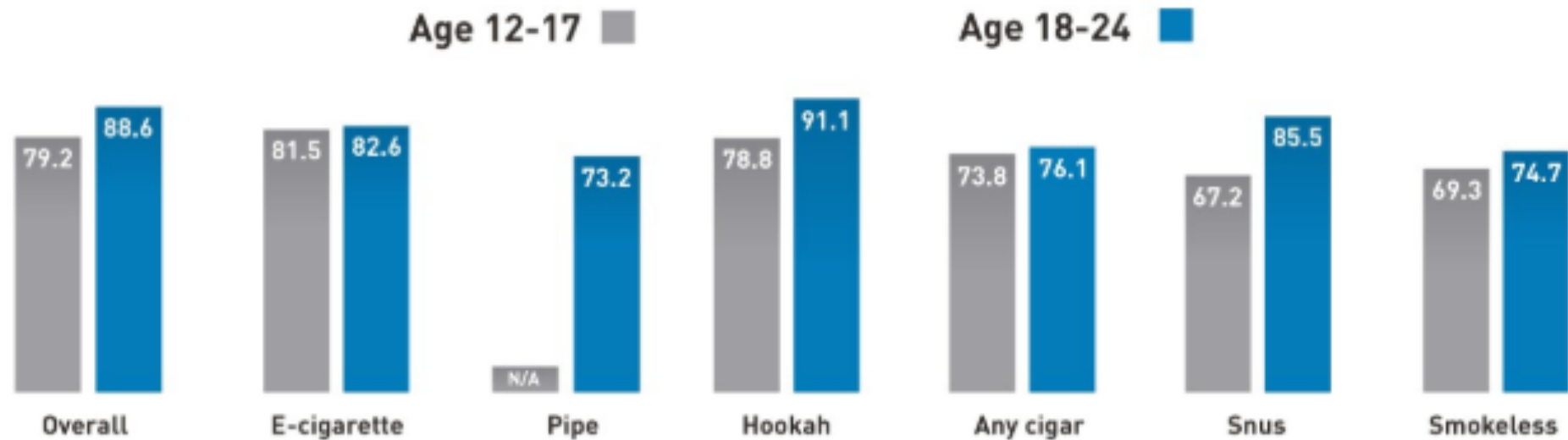
The chemical Diacetyl, found in 75% of flavored e-liquids, is linked to bronchiolitis obliterans (“popcorn lung”) which causes **irreversible lung damage**.^{10,11}



80% of young people who have ever used tobacco **started with a flavored tobacco product.**⁶



Percentage of Tobacco Users Who Use Because “Product Comes in Flavors I Like”



Participants were asked to check all reasons for using tobacco and some have selected multiple reasons.

WHAT'S THE DIFFERENCE

Combustible Cigarettes

1 cigarette = 1mg = 20 mg in a pack



Electronic Cigarettes

1 e-cigarette cartridge = approx. 20 mg



WITH OR WITHOUT ELECTRONIC CIGARETTES BIG TOBACCO KNOWS HOW TO MAKE MONEY



VAPING AND PENNSYLVANIA YOUTH

State Epidemiological Outcomes Workgroup, 2019

Vaping can be done with any combination of flavoring, nicotine, marijuana or hash oil*



Next generation of e-cigarette/vaping devices:
Rechargeable, often **odorless** and **easy to conceal**

*Hash oil is a derivative of marijuana



Fun Delicious Flavors



e-Liquid CottonCandy
10ml eLiquid



ECIGARETTE USA
ARTIFICIALLY FLAVORED SUGAR

10ml

Logic Smoke
e-Liquid
The Pleasures of Vaping

10ml

CottonCandy Flavor

x high (24mg)
high (16mg)
med (11mg)
low (6mg)
non (0mg)



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Vaping and Schools

- Products that look like pens or highlighters can easily be hidden by students in schools and classrooms
- Teachers may not recognize e-cigs, and smoke detectors won't catch the aerosol
- There is no odor



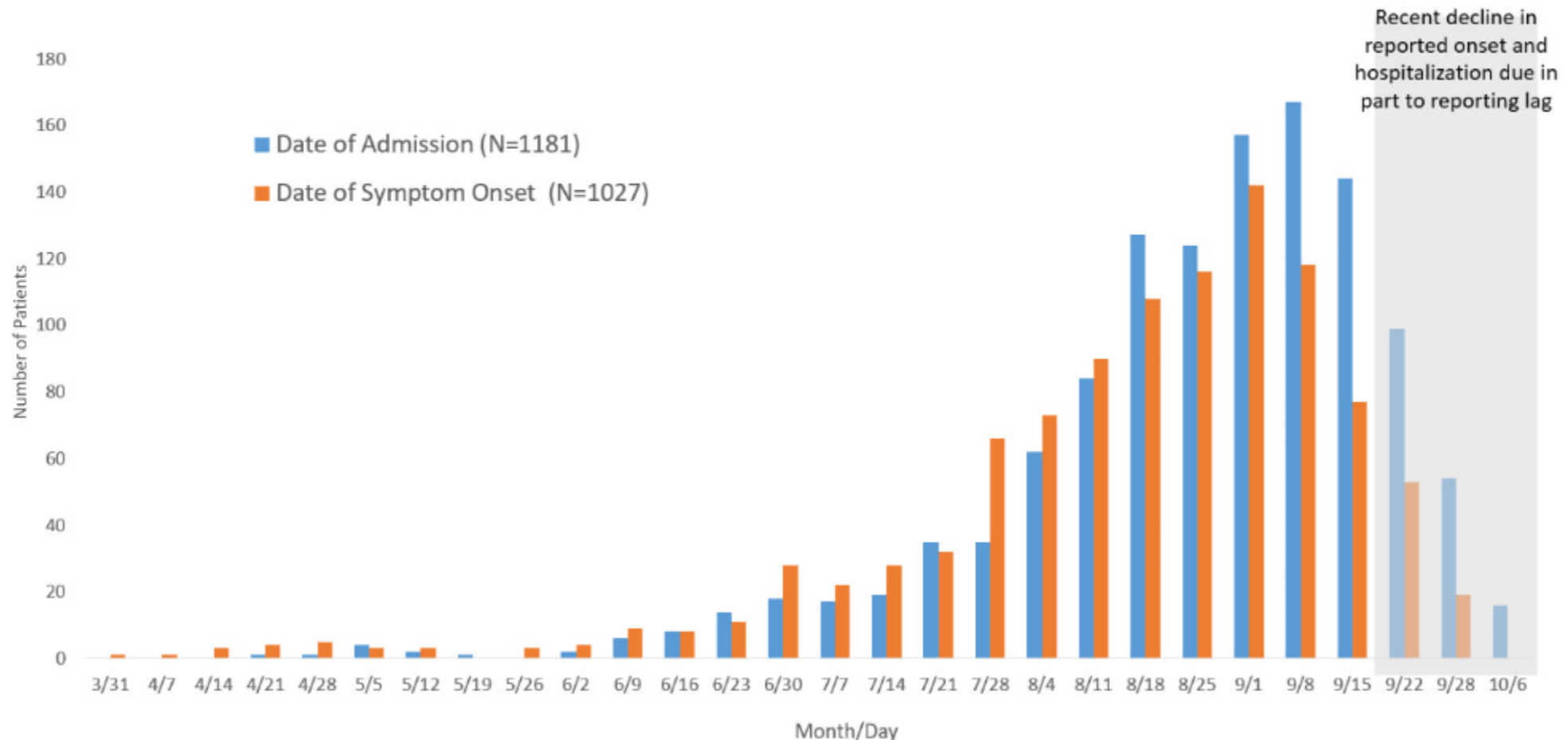
Legal:

- Currently, the Pa age to buy cigarettes and e-cigarettes is 18 years old. There is current legislation that would raise the age from 18 to 21 years old.
- E-cigarettes and vaping are **NOT** banned in indoor public areas in Pennsylvania under the state's *Clean Indoor Air Act*.
- Ban e-cigarette, hookah, pipe tobacco, and cigar sales to minors
- Ban free samples of e-cigarettes and other tobacco products



Public:

Dates of symptom onset and hospital admission for patients with lung injury associated with e-cigarette use, or vaping — United States, March 31–October 12, 2019



Home:

- Talk to your kids about drugs, addiction, smoking or drinking.
- Teach your teen about e-cigarettes and regular cigarettes.
- Talk about the uncertainty of e-cigarette safety and about the definite possibility of addiction to nicotine that goes along with vaping
- Be the message. If you don't want your kids to vape, don't vape, either.



Marijuana for Vaping

- Dry herbal marijuana (flowers), marijuana oil or wax and synthetic forms of marijuana
- Liquid THC is applied to a vaping device the same way that flavored nicotine liquid is
- Use of hash oil, is becoming more common



Dabbing:



- It uses butane, which is highly flammable, to extract THC from the cannabis plant
- While marijuana in its traditional plant form has a THC concentration of about 20 percent, the wax used for dabbing can have a concentration of up to 80 percent



HARMFUL EFFECTS OF VAPING

BRAIN

- Nicotine addiction
- Headaches
- Dizziness
- Seizures
- Tremors
- Anxiety
- Restlessness
- Confusion
- Attention problem
- Learning and mood disorders

LUNGS

- Rapid, shallow breathing
- Coughing
- Wheezing
- Permanent lung damage from diacetyl, a flavoring chemical, which scars tiny air sacs making airways thick and narrow

IMMUNE SYSTEM

- Can harm your immune system increasing your risk of illnesses

EYES

- Irritation
- Blurry Vision

MOUTH

- Irritation
- Can cause gum disease

THROAT

- Sore throat

HEART

- Increased risk of heart attack and stroke
- Chest pain

STOMACH & INTESTINES

- Vomiting
- Nausea
- Abdominal pain

ARTERIES

- Increases blood pressure and risk of heart attack and stroke

Questions

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