

SEEING BEYOND THE SMOKE

What You Need To Know About Vaping

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Memorial Hermann Memorial City Medical Center

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OUR MISSION

*Memorial Hermann
Health System is a
nonprofit, values-driven,
community-owned
health system dedicated
to improving health.*

OUR VISION

*To create healthier
communities, now and
for generations to come.*

Agenda/Objectives

1. Facts about vaping
2. Identifying vaping devices
3. Signs and symptoms of vaping
4. Effects of vaping
5. Conclusions
6. Additional resources
7. Questions



FACTS ABOUT VAPING

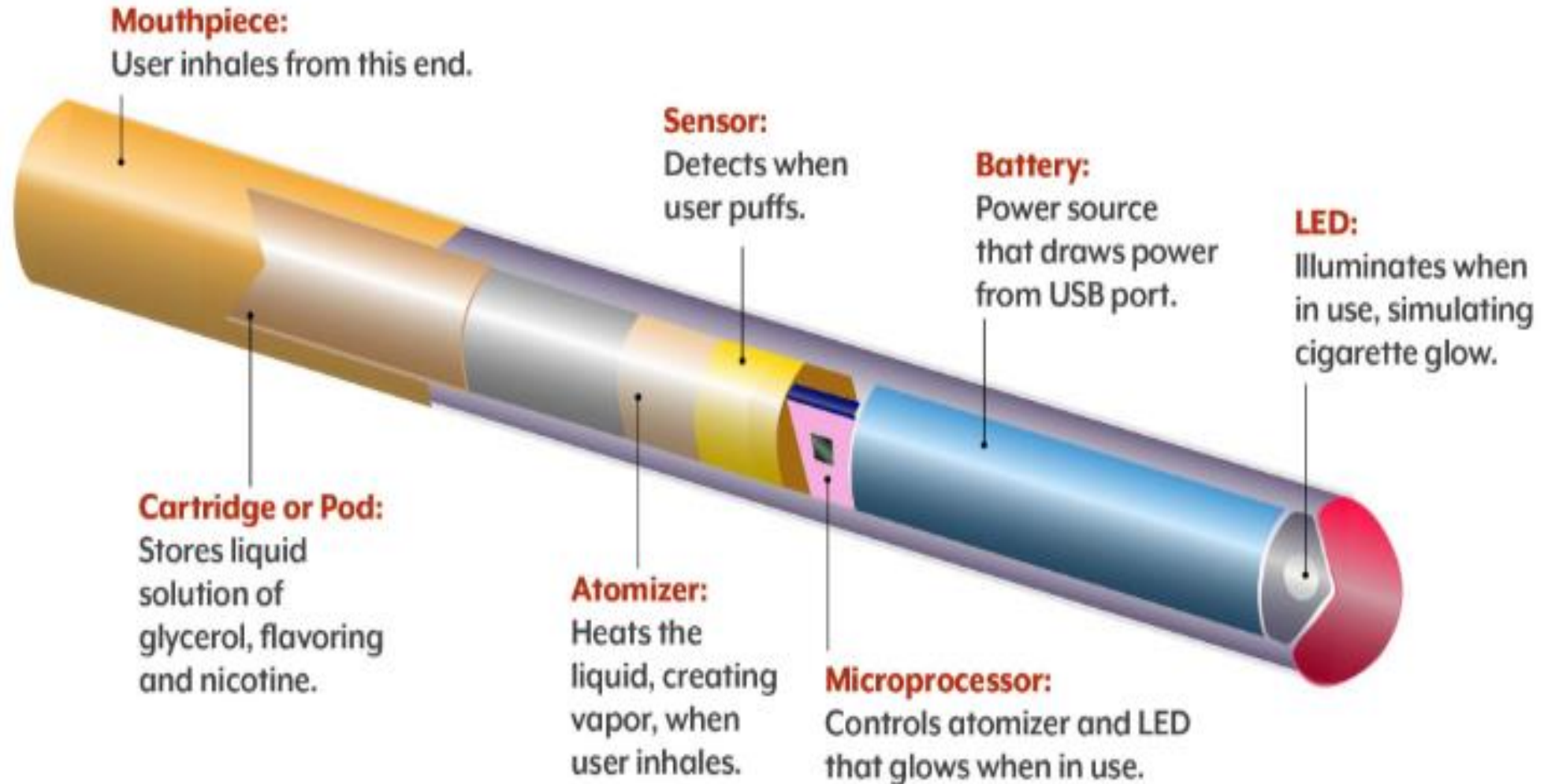
History of Electronic Cigarettes

- 1927: Joseph Robinson
- 1965: H.A. Gilbert, Inventor
- 1980s: Vaporized nicotine
- 2000s: Hon Lik, Chinese pharmacist and inventor
- 2006: Introduced to the mass market in the U.S.

What is Vaping?

- Inhaling and exhaling aerosol chemicals, not water vapors, using an electronic cigarette (e-cigarette) or other vaping device
 - Most contain nicotine
 - Claims of being “organic” or “all-natural”
- Vaping devices are also called:
 - E-cigarettes (E-cigs), vape pens, e-hookahs, e-pipes, tanks, mods, vapes, Electronic Nicotine Delivery Systems (ENDS)
- Also referred to by brand names:
 - JUUL (JUULing), BO, Blue, and others

Parts of an E-Cigarette



Chemicals in Vaping Solution

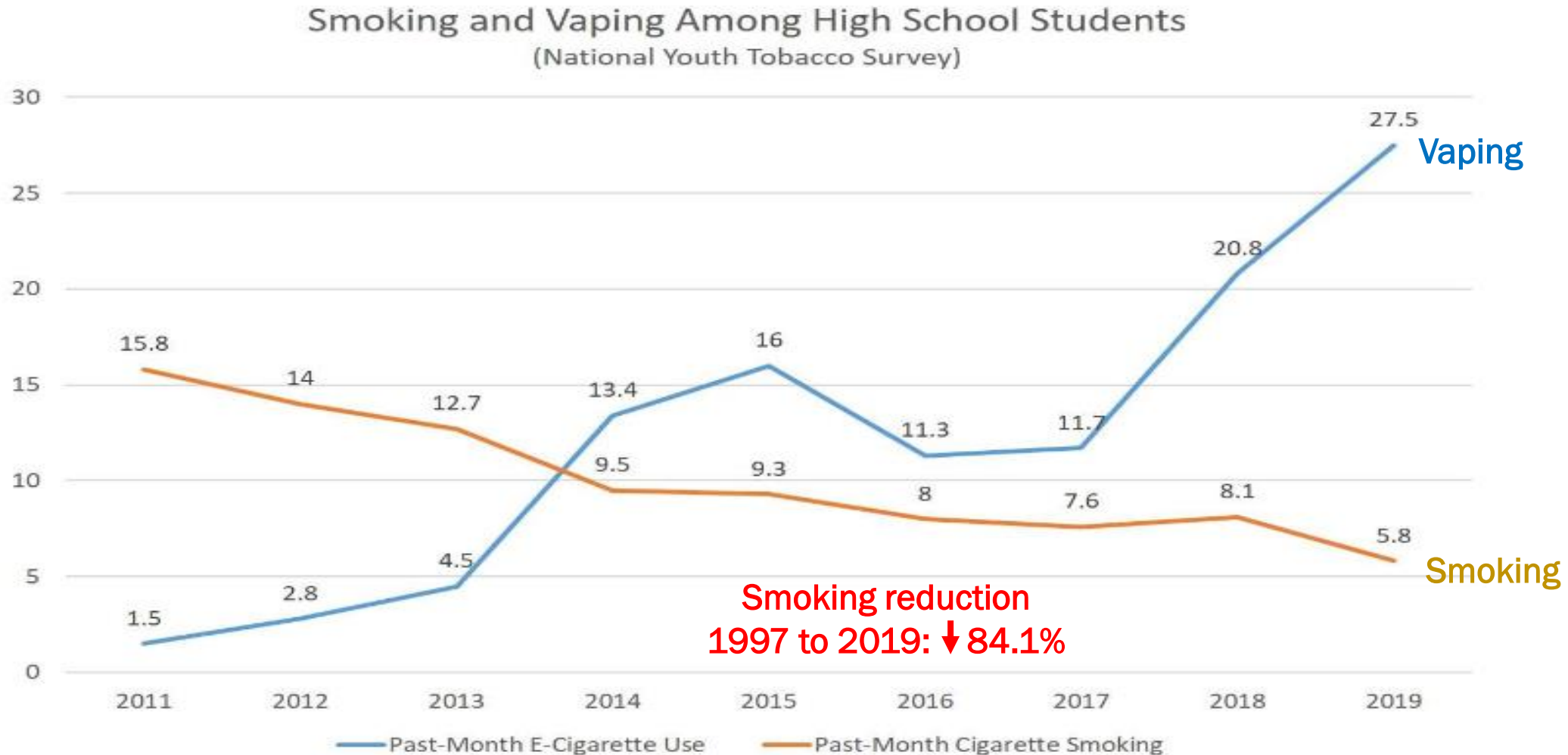
- Nicotine – decrease adolescent brain development
- Propylene glycol – antifreeze, paint solvent
- Formaldehyde – disinfectant, embalming fluid
- Acrolein – weed killer
- Diacetyl – chemical associated with Popcorn lung
- Cancer causing chemicals
- Heavy metals – nickel, tin, lead
- Benzene – chemical from car exhaust
- And more...

Vaping Devices

- 74-99% are sold at convenience stores and supermarkets
- 52% are supplied by friends and family
- 60% of teens think it only contains flavoring



Cigarette vs. E-Cigarette



(NYTS)

Dripping vs. Dabbing

- **Dripping** involves dropping e-cigarette liquid directly onto the hot coils of an e-cigarette which can result in high concentrations of compounds
- **Dabbing** involves superheating substances or flash vaporization concentrated oil



Nicotine Content

Cigarette vs. Vaping products

- An American tobacco cigarette contains ~ 9mg of nicotine
 - After it's burned/inhaled, only 1 mg of nicotine is absorbed
- Vaping products and e-cigarettes can contain nicotine
 - Each pod (200 puffs) can contain nicotine similar to 1 pack of cigarettes
- The content and nicotine levels in vaping products vary because they are unregulated

Vaping Product Nicotine Content

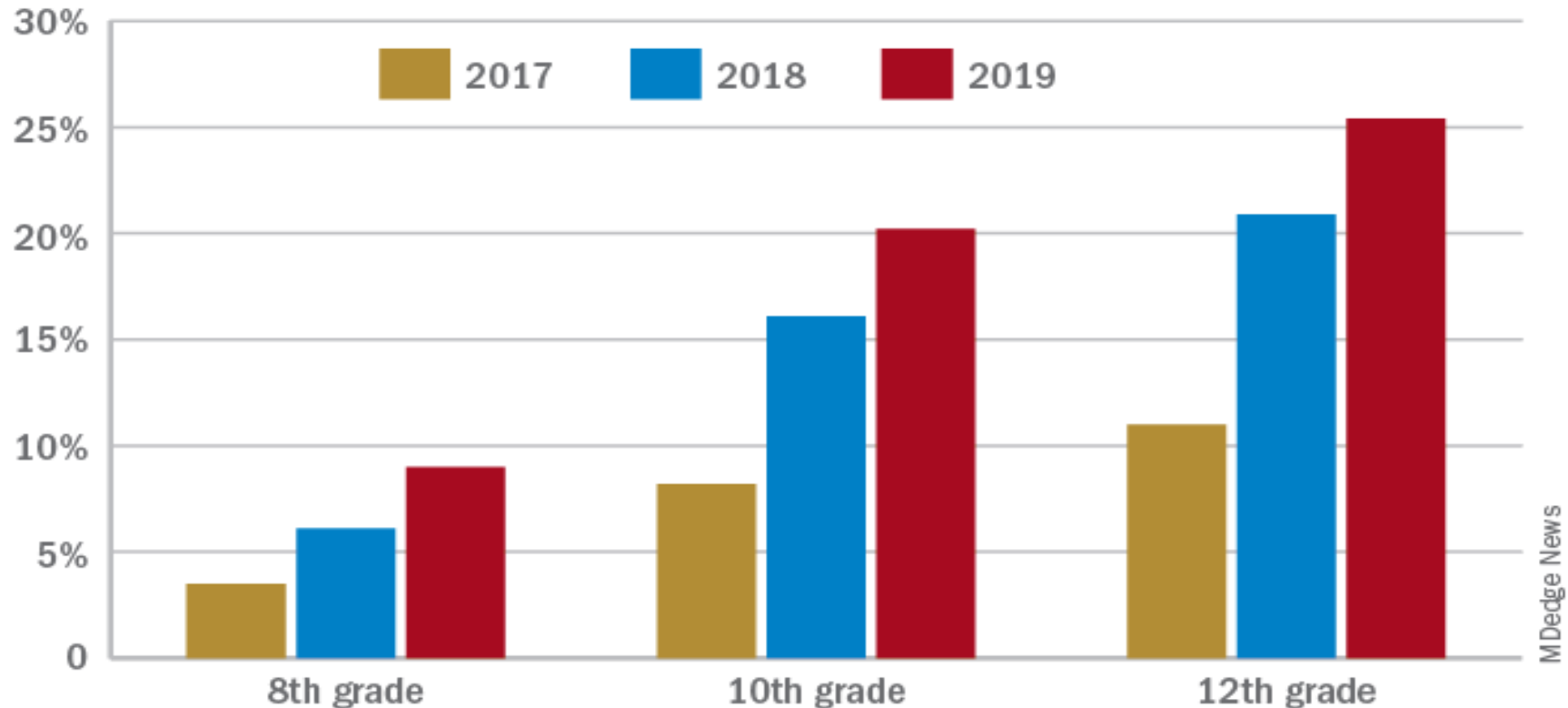
Example

South Beach Smoke® nicotine content per milliliter of vaping solution:

- No nicotine – 0 mg
- Ultra Light – 6 mg
- Light – 12 mg
- Full Flavored – 16 mg
- Bold – 24 mg

Vaping Trend

Prevalence of vaping among adolescents in the past 30 days



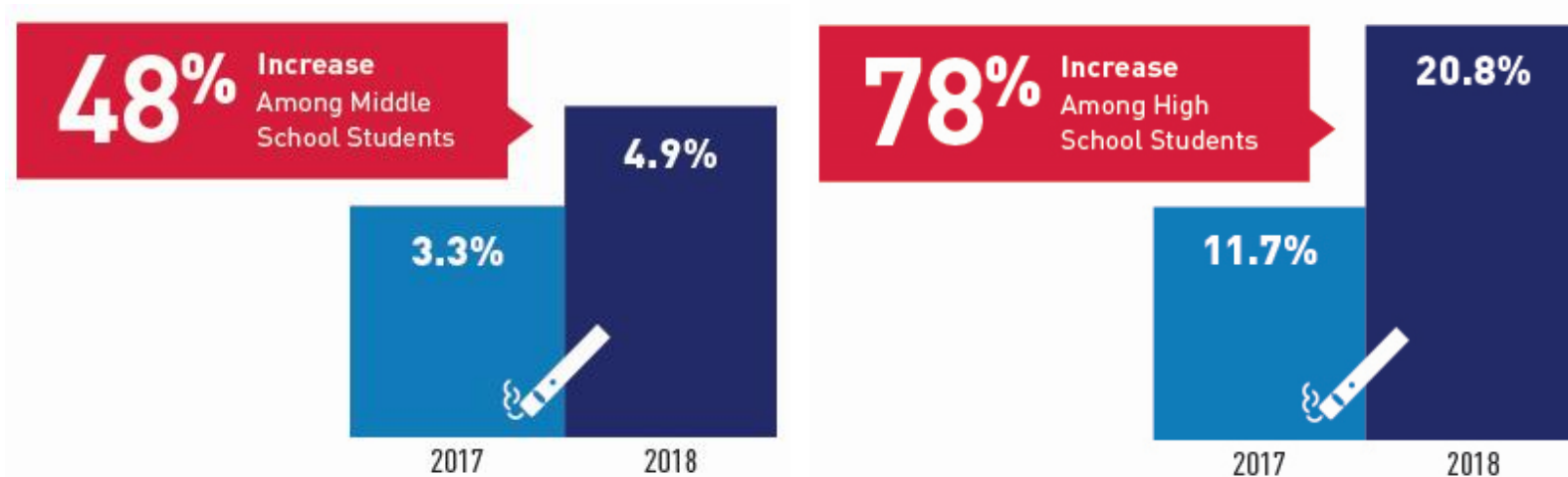
Note: Based on data from the Monitoring the Future surveys.

Source: N Engl J Med. 2019 Sep 18. doi: 10.1056/NEJMc1910739

Vaping Trend

10 years after the e-cigarette was introduced...

- An additional 3.6 million middle and high school students used e-cigarettes
- 48% increase in middle school students
- 78% increase in high school students



Industry Tactics

The tobacco and vaping industries target younger individuals by making their products:

- Sweet
- Cheap
- Easy to get



Cost of Cigarettes

Average cost of a pack of cigarettes in Texas:

- \$7.19 per pack
- \$215 per month (pack-a-day)
- \$2,600 per year

Texas Cigarette and Tobacco Excise Taxes

Total Texas Cigarette Taxes

\$1.41 / pack

Average Cost Per Pack

\$5.78 / pack

Cost of Vaping

Average cost on Amazon:

- JUUL 4 e-cigarettes + 4 Pods = \$17.95
 - \$4.49 per e-cigarette/pod



Advertising



NEW
CUSTOMERS RECEIVE
20% OFF FIRST ORDER

SAVE NOW

A promotional banner for new customers. The background is a teal color with a palm leaf pattern on the left and vertical bars in orange, yellow, and purple on the right. The text is in large, bold, sans-serif fonts. The word 'NEW' is in blue, while the rest is in white. A small orange button with white text is at the bottom center.



PRICE DROP
SMOK MICO ULTRA-PORTABLE
VAPE POD KIT

NOW
\$9.95

A promotional banner for a vape pod kit. The background is dark blue. The text is in white and yellow. A yellow circle with the word 'NOW' and the price '\$9.95' is on the left. Three colorful vape pod kits are shown at the bottom.



DEAL OF THE WEEK
10% OFF
CBD TOPICALS

A promotional banner for CBD topicals. The background is a light beige color with a faint line drawing of a person's head and shoulders. The text is in black. A jar of 'PACHAMAMA ATHLETIC RUB' and its box are shown on the left.

False Statements

by JUUL

- “much safer than cigarettes” and “FDA would approve it any day”
- “totally safe”
- “... should mention JUUL to his [nicotine-addicted] friend... because that’s a safer alternative than smoking cigarettes, and it would be better for the kid to use”
- “FDA was about to come out and say it [JUUL] was 99% safer than cigarettes”

Appeal

Having way too much fun at the #JUUL launch party #LightsCameraVapor #NYC



IDENTIFYING VAPING DEVICES

Vaping Devices or School Supplies



White Out



Pens



USB



Vaping Watch



Uwell Amulet Smartwatch Micro Vaporizer

\$ 36.95 ~~\$ 49.95~~

☆☆☆☆☆ No reviews



Vaping Devices



Vape or Candy



Vaping Products/Solutions



E-liquids and E-Juices



E-Juices or plain droppers



Pods



SIGNS AND SYMPTOMS OF VAPING

Signs Vaping is Occurring

- Unexplained Sweet Scent
 - Might be a flavored e-juice
- Unfamiliar Products
 - Unusual pens or USB drives
 - Unfamiliar battery or battery charging device
 - Dropper bottles

Symptoms of Vaping

- Coughing (throat irritation)
- Shortness of breath
- Chest pain
- Fast heart rate
- Fever
- Fatigue
- Nausea
- Vomiting
- Diarrhea
- Weight loss (reduced ability to taste food)
- Dryness of mouth, eyes, skin and lips
- Sensitive or bleeding gums
- Nose or gum bleeds
- Headaches

Onset and Duration

- Symptoms can develop over days, weeks or months
 - Once symptoms appear, the lungs can collapse within minutes
- Gastrointestinal symptoms sometimes precede respiratory symptoms

EFFECTS OF VAPING

Inhaling an Aerosol

- Inhaling various aerosolized chemicals can harm the lungs
- The lung's function is to take in oxygen and release carbon dioxide
- Scarred tissue from inhaling chemicals can be irreversible

Effects of Nicotine

- Nicotine damages developing adolescent brain
 - Harm brain's ability to control attention and leaning
 - Addictive
 - Mood disorders
 - Permanent lowering of impulse control (can't resist a temptation/an urge)
 - Decision-making part of the brain
- Due to changes in the brain, quitting is harder for those who start vaping or smoking at a younger age
- Harmful for pregnant women

Centers for Disease Control Findings

- August 19, 2019
 - 94 cases of severe pulmonary illness related to vaping
 - Average age ~20 years old
 - Male > female
 - 80% history of vaping THC
 - 94% history of vaping 1 week prior to onset
- September 2019
 - Ban the sale of most flavored E-cigarettes

Vaping Related Lung Damage

- First double lung transplant in the United States due to irreparable damage from vaping
- Patient was a healthy 16-year-old athlete
 - Sept 5: pneumonia
 - Sept 12: intubated then placed on a heart and lung machine
 - October 15: double lung transplant

Effects of Vaping

- Associated with reduced blood flow during exercise and at rest
- Increases heart rate and stiffens arteries
- Decreases good cholesterol (HDL) and increase bad cholesterol (LDL)
- Long term effects could include:
 - Heart disease
 - Heart attack
 - Stroke

EVALI

- **E**-Cigarette & **V**aping **A**ssociated **L**ung **I**njury
- Symptoms are similar to:
 - Bacterial Pneumonia
 - Viral infections
 - > Respiratory
 - > Gastrointestinal

EVALI

- October 2019

- 1,299 cases
- 26 deaths reported
 - > Median age of death = 49 years (17–75 years)

- November 2019

- 2,051 cases (752 more cases in one month)
 - > 163 new cases in 1 week
- 39 deaths reported (13 more deaths in one month)
- JUUL mint flavor taken off the market (70% of sales)

Potential Toxin

- All 29 lung tissue samples from patients were positive for Vitamin E Acetate
- Vitamin E is not harmful if taken by mouth or used topically on skin



Dipping vs. Dabbing



Essential Oils

- Essential oil pens do not contain nicotine but can still be risky to inhale
- Essential oils are a volatile organic compound (VOC) when heated to 150-180 degrees F
 - Can convert to abnormal compounds that can be damaging to lungs

CONCLUSIONS

Are E-Cigarettes Safe?

- E-cigarettes are **NOT** safe
 - Contain nicotine and other chemicals
- Secondhand vape is also unsafe
- More research is needed to understand the long-term health effects

Texas Law

- Effective September 1, 2019 – **Senate Bill 21**
 - Legal age to purchase any tobacco-related devices increases from 18 years old to 21 years old
- Tobacco related offense
 - \$72 and tobacco awareness course (parents)
 - \$275 and repeating tobacco awareness course and perform community service
 - \$500 and more
- Minors possessing THC (marijuana) in a vaping device face a **felony** arrest

Federal Action

- Congressional Hearing – July 2019
 - FDA warned JUUL for marketing their tobacco and other products as *low or free*
 - Marketing to youth

Talk With Your Child

- No “perfect time” to talk
- Be patient and ready to listen without judgment
- Put yourselves in their situation
- Be a positive example, open and honest
 - *Are you a tobacco user?*
- Be ready to answer questions
- Help them make good decisions
- Ask your child what they think

Talk to Your Child as a Trusted Adult

- Ask them what they see and what they think
 - Have they seen vapes and e-cigarettes
 - *“Different Products. Same Dangers.”* advertisements
- Provide facts about vaping
 - E-cigarettes often contain nicotine
 - It is not harmless water vapor
- Tell them the tobacco and vaping industries are targeting the youth to make money and hook them on their products



Testing

NICOTEST Vaping and E-Cigarette Nicotine/Cotinine Urine Test



at home™ NICOTINE TEST

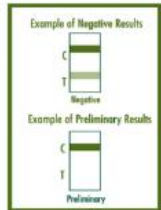
**VAPING
SMOKING &
TOBACCO USE
E-CIGARETTES**



Detect Nicotine and Cotinine in urine sample.
Instant results with laboratory confirmation included.

at home™ NICOTINE TEST

DETECT NICOTINE AND COTININE
IN URINE SAMPLE



Instructions:

1. Collect a urine sample.
2. Use the Instant Indicator component to determine possible presence of Nicotine / Cotinine. Results in 5 minutes.
3. Send the sample to our laboratory for confirmation.
4. Log on to our website in 1-3 days after receipt in laboratory to retrieve your results.

A preliminary result of the instant indicator test can be caused by tobacco use or exposure to tobacco and must be confirmed by the laboratory test.

What Can Vaping Lead To?

- Smoking cigarettes
- Vaping nicotine
- Vaping THC (marijuana)
- Vaping opioids
- Using opioids
- Abusing opioids

To be continued...

Additional Resources

- Say "No" to Alcohol, Drugs and Tobacco
 - > <https://www.pta.org/home/family-resources/health/Substance-Abuse>
- E-Cigarette Prevention
 - > <https://catchinfo.org/modules/e-cigarettes/>
- Tobacco Cessation
 - > <https://publichealth.harriscountytexas.gov/Services-Programs/Services/TobaccoCessation>

Questions?



THANK YOU

MEMORIAL[®]
HERMANN

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System of Care



Overview

- History of System of Care
- Facilitator of Mental Health and Crisis Team
- Substance Abuse Counselor

System of Care



How is SBISD educating on
substance use?

System of Care



What do I need to look for?

Code of Conduct



Tobacco Possession / Use (Level III Offense)

Smoking or vaping is not allowed on any SBISD premises or at school-related functions.

Students shall not possess the following related tobacco products and/or smoking paraphernalia, including but not limited to cigarettes, e-cigarettes, cigars, pipes, snuff, or chewing tobacco, smokeless tobacco, vape pens, vape liquids (whether or not they contain tobacco products), or Juul vaporizers. Misdemeanor tickets for minors in possession of alcohol and/or drugs/tobacco on school property may be issued by the SBISD Police Department.

Code of Conduct

Behaviors leading to such action may include, but are not limited to:

- Use/possession of tobacco [see Tobacco Possession/Use, p. C-21];

For Level III incidents: behaviors should be supported using one or more of the management techniques appropriate for the student, the school environment, and the situation:

- Assignment to in-school suspension (ISS); and/or
- Out-of-school suspension (up to three days); and/or
- Assignment to a DAEP (District or Highpoint); and/or
- Certain offenses may result in filing a charge by the SBISD Police Department;
- Special education students—refer to IEP; and §504 students—refer to 504 accommodations;
- A student who is involved in a Level III incident and is suspended or placed in a DAEP is prohibited from attending or participating in school-sponsored or school-related activities.