Juuls, Puff Bars and juice, Oh MY!! Presented by Melissa L. Groden, MS, HS-BCP, CFRS

About me...



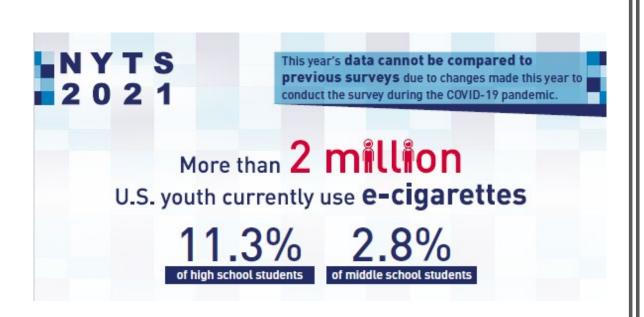


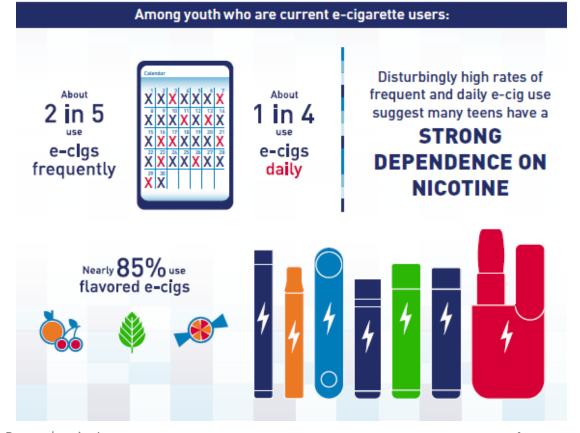
- Director of Prevention,
 Training & Education at
 The Council of Southeast
 Pennsylvania, Inc.
- Working with adolescents for the past 20 years
- Former smoker
- Parent to a 17-year-old

Learning Objectives

- Receive an overview of vape products on the market and review basics of vaping.
- Gain better understanding of how adolescent nicotine use impacts the ability to learn, form relations, and acquire healthy / prosocial coping mechanisms.
- Understand health effects of vaping and link to respiratory diseases such as EVALI and COVID-19.
- Learn about available prevention, intervention and treatment resources.

2021 National Youth Tobacco Survey tobaccofreekids.org







Risk Factors Associated With "ANOD" Use

Social and physical environments

- The way mass media show tobacco product use as a normal activity can make young people want to try these products.
- Youth are more likely to use tobacco products if they see people their age using these products.

Biological and genetic factors

- There is evidence that youth may be sensitive to nicotine and that teens can feel dependent on nicotine sooner than adults.
- Genetic factors may make quitting smoking harder for young people.

Mental health: There is a strong relationship between youth smoking and depression, anxiety, and stress.

https://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/index.htm

Risk Factors Associated With "A**N**OD" Use

- Personal views: When young people expect positive things from smoking, such as coping with stress better or losing weight, they are more likely to smoke.
- Other influences that affect youth tobacco use include:
 - Lower socioeconomic status, including lower income or education
 - Not knowing how to say "no" to tobacco product use

https://www.cdc.gov/tobacco/data statistics/fact sheets/youth data/tobacco use/index.htm

Nicotine

Nicotine is the addictive drug in tobacco products. Cigarettes, cigars, smokeless tobacco and nearly all e-cigarettes contain nicotine. People who use tobacco products quickly become addicted to nicotine and have a very hard time stopping.

Almost all tobacco users are dependent on nicotine. Research suggests that nicotine is as addictive as heroin, cocaine, or alcohol. That's one of the reasons it's so hard to quit. Nicotine is not safe

https://www.lung.org/quit-smoking/smoking-facts/health-effects/nicotine

E-Cigarettes Defined

E-Cigarettes, also called personal vaporizers, vape pens, e-cigars, e-hookah, vaping devices, mod systems or pod systems, are products that produce an aerosolized mixture containing flavored liquids and nicotine that is inhaled by the user.

https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Richmond-Center/Pages/Electronic-Nicotine-Delivery-Systems.aspx

Cigarette VS. Vape Juice Ingredients

Cigarettes

Cigarettes contain approximately 600 ingredients.

BUT! More than 7,000 chemicals are created when burned.

More than 60+ of these chemicals are cancer causing.

Vape Juice

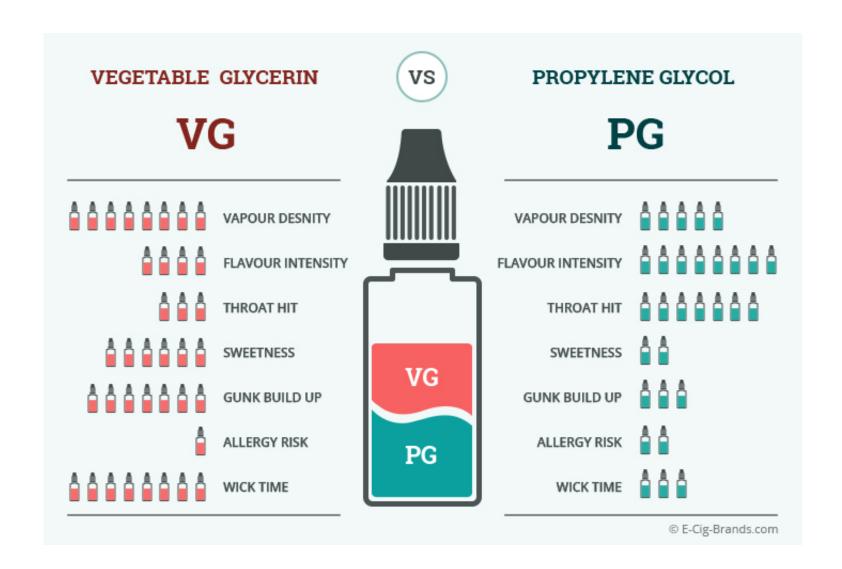
- Flavoring
- Nicotine (IF DESIRED)
- Vegetable Glycerin (VG)
 Found in food, cosmetics,
 and pharmaceutical
 drugs, including heart
 medication.
- Propylene Glycol (PG)
 Found in packaged foods, injectable medications, and a wide variety of hygiene and cosmetic products.



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VS.

VG vs. PG?

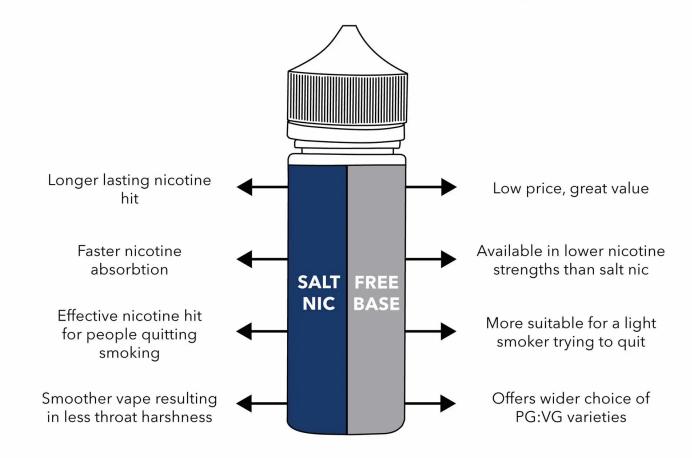


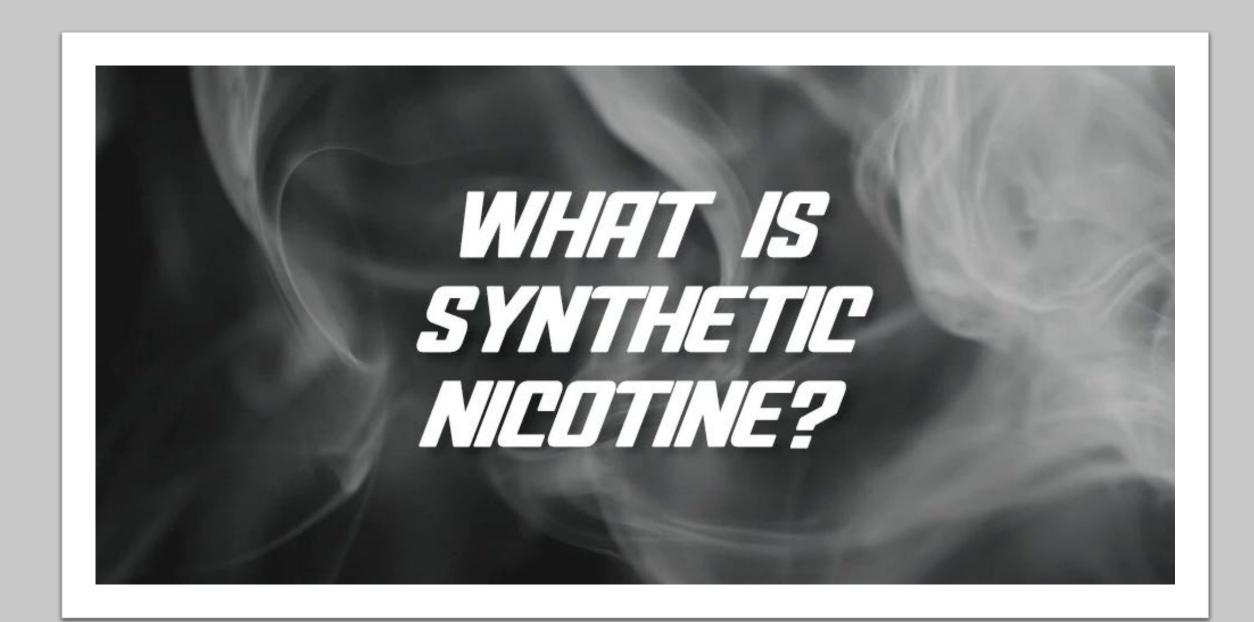
Nicotine Form of Concern

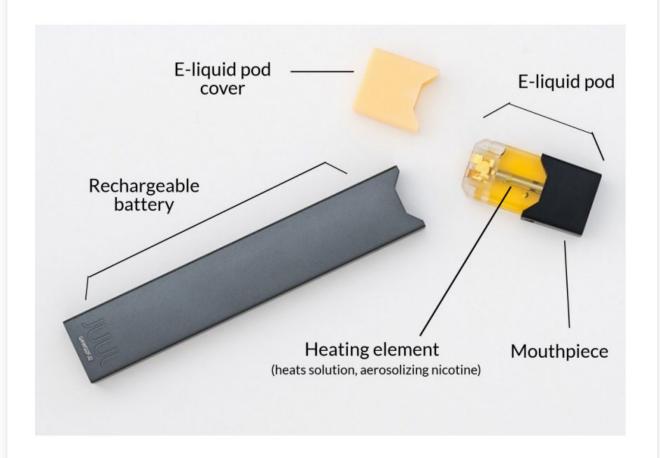
Nicotine Benzoate (Nicotine Salts)

- Which is tasteless and doesn't elicit a caustic sensation when it hits the back of the throat, as many other types of naturally occurring nicotine salts do.
- Nicotine benzoate is also able to cross the blood-brain barrier, making it to the brains pleasure center in around 10 seconds or less.

SALT NIC VS. FREE BASE







Electronic Nicotine Delivery Systems (ENDS)

Most e-cigarettes consist of three different components, including:

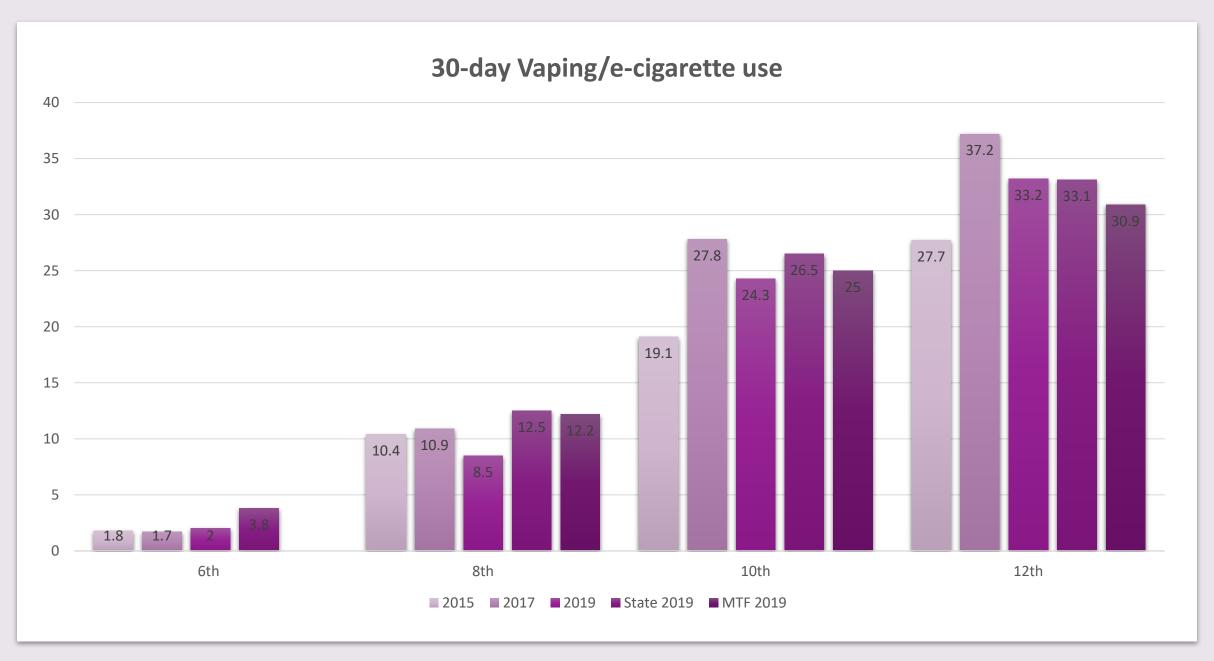
- Cartridge/Tank holds a liquid solution containing varying amounts of nicotine, flavorings, and other chemicals
- Heating device (atomizer)
- Power source (usually a battery)

E-cigs have fewer chemicals than cigarettes but some of the same toxins

To date, no e-cigarette has been approved as a cessation device or authorized to make a modified risk claim



Oral Nicotine Pouches



High Prevalence/Early Initiation Drugs

Just Flavoring 8th grade 60.6%

Nicotine

12th grade **72.2**%

Marijuana or Hash Oil 12th grade 46.4%

I don't know 6th grade 57.3%

Terminology

Vaping/E-cigarette products:

Brands: JUUL, Vuse, MarkTen, blu e-cigs, Logic, Puff Bars...

E-liquids, e-juice

Dabs, dab pens, dab cards (Marijuana)

Terminology

Techniques:

JUULing, vaping – using an e-cigarette

Drip, dripping or juicing – using e-liquids directly on heating coil

Ghosting – hiding e-cigarette vapor in the mouth/airways

Health Effects/problems:

Getting "nicked" – Euphoria experienced with high doses of nicotine

Getting "nic sick" – Heart palpitations, nausea/vomiting, light-headedness with nicotine e-cigarette overuse

EVOLUTION OF VAPING

VAPE PEN

(MID 2000'S)

CIG-A-LIKE

(2003)



MODS

(EARLY 2010'S)

POD MODS

(MID 2010'S)

Vaping is not in fact "vapor"

It is aerosol:

- In physics, a vapor is a substance in the gas phase whereas an aerosol is a suspension of tiny particles of liquid, solid or both within a gas.
- Vapor from an electronic cigarette simulates tobacco smoke, but the process of burning tobacco does not occur.
- The aerosol of electronic cigarettes is generated when the e-liquid reaches a temperature of roughly 200–500 °F within the coil chamber.
- The aerosol is made-up of liquid sub-micron particles of condensed vapor, which mostly consist of propylene glycol, glycerol, water, flavorings, nicotine, and other chemicals.

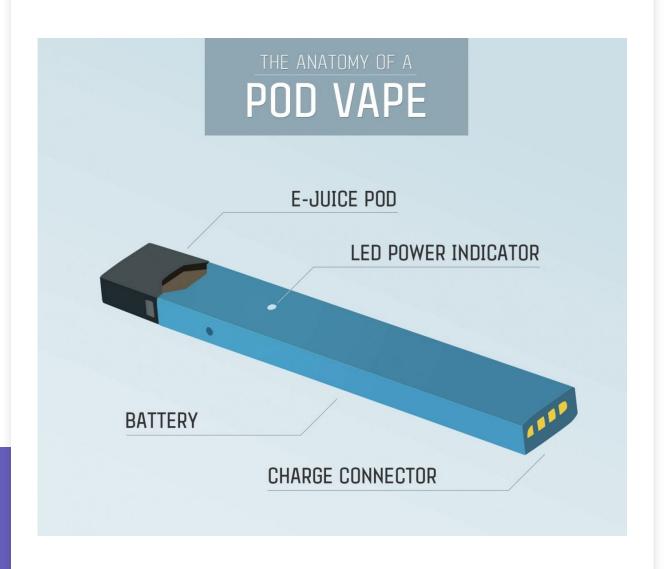
Top 3 Most Common Substances

- 1. Flavored e-liquids come in thousands of flavors, including bubble gum, cotton candy and grape, but also hot dog, banana bread and King Crab legs.
- 2. Flavored e-liquids may also contain different levels of nicotine, ranging from 2mg/ml to 59mg/ml. One of the more popular vape devices, Juul, contains 59mg/ml of nicotine in each pod. Each Juul pod is equal to one pack of cigarettes.
- 3. Marijuana can be vaped in both the leaf form or using THC and/or CBD oil. THC is the psychoactive compound in marijuana that creates a sense of being high.

Transition From ENDS to Tobacco Products

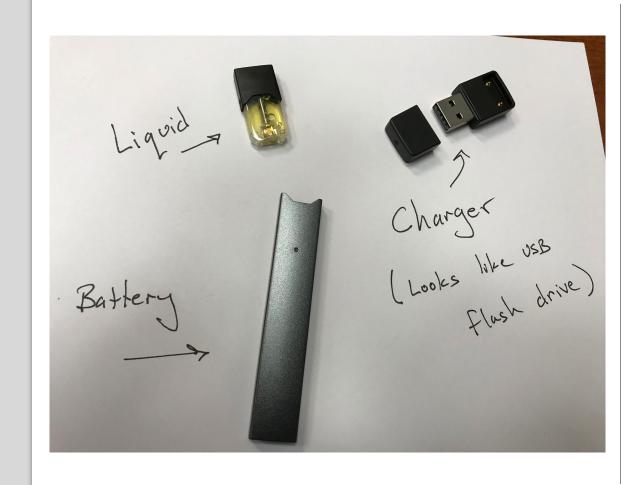
A study by the University of Pittsburgh Schools of the Health Sciences found that young adults who use e-cigarettes are more than four times as likely to begin smoking tobacco cigarettes within 18 months as their peers who do not vape.





Vape Devices















Not

Thumb

Drives

Puff Bars

- 25 different flavors
- 300 hits = 20 cigarettes
- 1.3ml of eliquid and nicotine
- Nicotine can last in bloodstream up to 10 days
- FDA has banned but you can purchase off internet



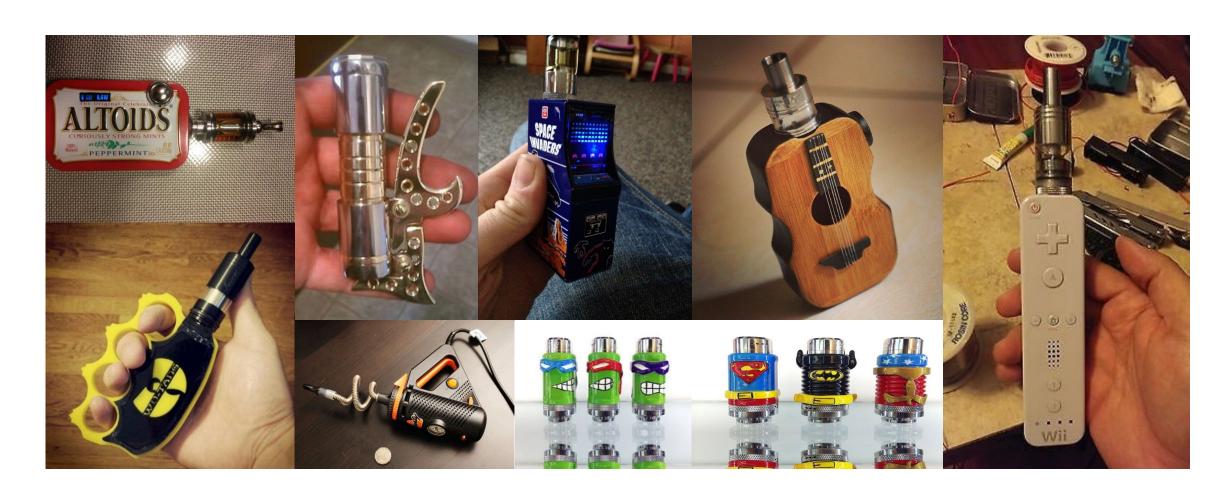
All PuffBar products listed on this website contain nicotine but do not contain tobacco or anything derived from tobacco. PuffBar products are not intended for use with any tobacco product or any component or part of a tobacco product.

WARNING: PuffBar products are not intended to diagnose, treat, cure, or prevent any disease, condition, or disorder and are not smoking cessation or nicotine replacement therapy products. The FDA has not reviewed these products, nor has it evaluated their safety or any of the statements made regarding these products. PuffBar products contain nicotine, which is a highly addictive substance, and are intended to be used only by adults at least 21 years of age who use combustible cigarettes or other tobacco or nicotine vaping products. Do not use PuffBar products if you are pregnant or nursing, if you have heart disease, high blood pressure, diabetes, ulcers, liver or kidney disease, throat disease, asthma, or difficulty breathing. Do not use PuffBar products if you are taking theophylline, ropinirole, or clozapine. As with other nicotine products, use of PuffBar products can increase your heart rate and blood pressure and may cause nausea or dizziness or aggravate existing respiratory conditions. Use of PuffBar products may expose you to certain chemicals identified as harmful and/or carcinogenic, including aldehydes, volatile organic compounds, and metals.

WARNING: PuffBar products can expose you to chemicals including glycidol, which is known to the States of California to cause cancer, and nicotine, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

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Custom/DIY Devices



Tanks



Offers extra power to personal vaporizers

Bigger battery

Power and voltage customizable for a cooler vape, warmer vape or more vape volume

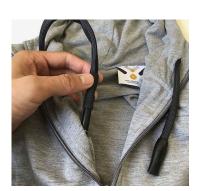
Generally used by advanced users

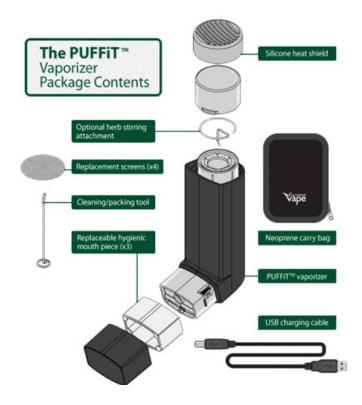












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Vape Products

Hookahs: 45 minute session = 9 cigarettes

- While many hookah smokers may think this practice is less harmful than smoking cigarettes, hookah smoking has many of the same health risks as cigarette smoking
- An hour-long hookah smoking session involves 200 puffs, while smoking an average cigarette involves 20 puffs.



E-Hookah Hookah Pens



- Flavored e-cigarette slightly larger than typical e-cig
- Flavors of hookah/shisha
- User-ready with e-juice













Why Vape Cannabis?

- Access, Discreet, Cost
- "You're buying them illegally, so who knows what's being put in them," she said. "It's funny because when you hit it, you can feel that it's hurting your lungs. It doesn't feel like hitting a joint or hitting anything. It hurts you.
- "But we just told ourselves for so long that it's fine, it'll be fine, it's weed, it can't hurt you. And then this stuff comes out and it's like, we knew this all along."
- Kesnig said she started smoking marijuana at about 15 but moved to vaping THC because of its ease. - <u>Laura Kesnig</u>
- CNN Article: 10 College Students on Their Vaping Habits

CANNABIS CONCENTRATES

Vaping and Marijuana Concentrates



CRUMBLE Dried oil with a honeycomb like consistency



BADDER/BUDDER Concentrates whipped under heat to create a cake-batter like texture



SHATTER
A translucent, brittle, &
often golden to amber
colored concentrate
made with a solvent



PISTILLATE
Refined cannabinoid oil that is typically free of taste, smell & flavor. It is the base of most edibles and vape cartridges



CRYSTALLINE Isolated cannabinoids in their pure crystal structure



DRY SIFT
Ground cannabis filtered
with screens leaving behind
complete trichome glands.
The end-product is also
referred to as kief

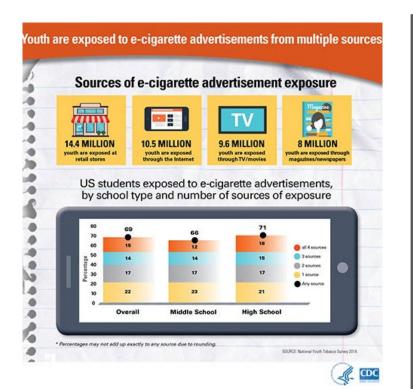


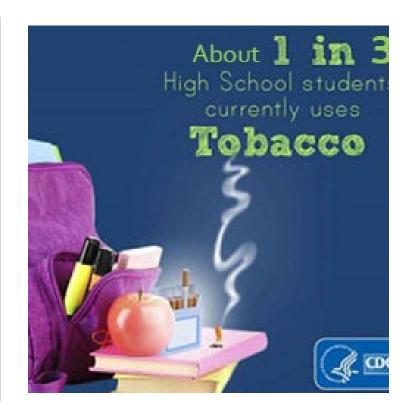
ROSIN End product of cannabis flower being squeezed under heat and pressure

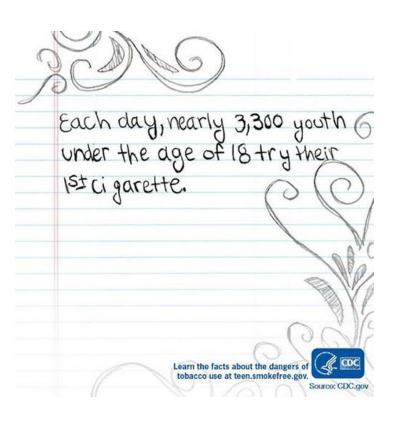


BUBBLE HASH
Uses water, ice, and mesh
screens to pull out whole
trichomes into a pastelike consistency

https://www.dea.gov/sites/default/files/2019-10/VapingMarijuana Brochure 2019 508.pdf

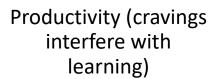






Tobacco use in schools







Truancy/Suspensions



Absences/Illnesses



Introduction of other substances and alcohol



Low test scores



Repeat violations

Effect of Nicotine on Schools

Cost of Vaping to Schools

- Drain on faculty resources
- Education Interruption
- Vape Detectors
- Testing for Substances
- Law Enforcement/School Resource Officers

Effect of Nicotine on Learning

- Nicotine raises pulse & heart rate. Brain EEG becomes same as when people are agitated.
- Nicotine has a half life of 2 hours. Students who smoke may have more challenges learning and trouble concentrating due to withdrawal symptoms.



Effect of Nicotine on Learning

 Youth report withdrawal symptoms with lower amount of consumption than adults, even as low as 5 cigarettes per week, or 1 JUUL pod per month!

 Smoking actually contributes to problems; withdrawal causes stress, anxiety.



Social-Emotional Cost of Vaping

- Loss of sense of belonging and engagement in schools
- Inability to learn how to experience typical adolescent development
- Increased stress levels
- Increased behavioral health challenges

VOICE OF ADDICTION

Withdrawal symptoms can cause discomfort and may even be painful. With the body wanting to return to feelings of relief and pleasure, addiction will influence one to return to their source of instant relief, even if it's not good for them. This is referred to as the voice of addition.

"Can I get away with hitting my vape in here?"

"I have to make sure to get more vape juice before I run out."

"I need to take a JUUL beak."

HALF-LIFE

The nicotine effects peak after around 2 hours, inviting the onset of withdrawal symptoms (feeling stressed or anxious, irritability, increased depression, etc.) as nicotine slowly leaves the blood. This is referred to as nicotine's half-life and can arrive sooner than 2 hours with frequent use.

HITS VAPE

Hitting the vape is when E-liquid, also known as vape juice (containing heavy metals, flavoring, propylene glycol, vegetable glycerin, and other unknown properties), or nicotine salts (allowing for a higher - and more addictive - concentration of nicotine) is electrically heated and aerosolized into vapor to be inhaled by the user.





NICOTINE TRAVELS

When inhaling, nicotine is carried into the lungs by attaching onto vapor droplets, then travels to and communicates with the brain within 7-10 seconds. This is why your vape may give you a more immediate reaction.

ALTERS FRONTAL LOBE

Reaching the "reward center" of the brain, nicotine effects release a rush of dopamine, allowing for one to feel a resemblance of relief and pleasure.

Addiction is a form of learning, making it easier for youth to form addictions. With the brain being in development until around age 25, frequent vaping in youth can lead to long-term cognitive challenges, in addition to being at risk for other health complications.

Signs of Vape Use

- Bloodshot eyes
- Increased thirst, because vaping dehydrates the mouth and throat
- Nosebleeds
- Adding extra salt or spices to food as a result of "vaper's tongue"—a reduction in the ability to perceive flavor
- Chronic cough due to the irritated lung tissue
- Vaping paraphernalia in their room—for example, items that look like USB drives or other electronic devices
- Sweet scents from the flavored vape liquid
- Being secretive and intensely protective of their privacy
- Irritability and moods swings as a result of withdrawal symptoms.

Effect of Nicotine on Body – Recent Study

- 63% of vapers and 50% of hookah smokers exhale through their nose, compared with 22% of cigarette smokers
- Exposes users' respiratory systems to higher levels of nicotine, carbon monoxide and other toxic chemicals

Effect of "Vaping" on The Lungs (COVID 19)

- CDC "Being a current or former cigarette smoker can make you more likely to get severely ill from COVID-19."
- National Institute on Drug Abuse "Because it attacks the lungs, the coronavirus that causes COVID-19 could be an especially serious threat to those who smoke tobacco or marijuana or who vape. ..."
- FDA "Smoking cigarettes can cause inflammation and cell damage throughout the body, and can weaken your immune system, making it less able to fight off disease."
- WHO "Smoking damages your lungs and other parts of your body, and it makes you more vulnerable to #COVID19 infection. It is the right time to quit smoking for a safer and better health."

E-cigarette
Vaping-use
Associated Lung
Injury

EVALI is a serious medical condition in which a person's lungs become damaged from substances contained in e-cigarettes and vaping products. Vaping involves using a device known as an e-cigarette—but also called a vape pen, mod, or tank—to heat up a small amount of liquid, turning it into a vapor that can be inhaled

Centers for Disease Control - EVALI

- CDC, the U.S. Food and Drug Administration (FDA), state and local health departments, and other clinical and public health partners are investigating a national outbreak of e-cigarette, or vaping, product use-associated lung injury (EVALI)
- As of January 7, 2020, a total of 2,602 hospitalized EVALI cases or deaths have been reported to CDC from all 50 states, the District of Columbia, and two U.S. territories (Puerto Rico and U.S. Virgin Islands).
- Fifty-seven deaths have been confirmed in 27 states and the District of Columbia (as of January 7, 2020).

• <u>Source: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html</u>

Cannabinoid Hyperemesis Syndrome Explained

Etiology

- Not fully understood
- Tetrahydrocannabinol (THC) is a necessary component, but cannabidiol (CBD) and cannabigerol (CBG) may contribute
- Most cannabis users don't develop, so an unknown genetic or environmental trigger may have role

Phases

- Prodromal
 - Days, weeks, or months of mild symptoms
- Hyperemetic
 - 24 to 48 hours of intense vomiting, epigastric or diffuse abdominal pain, sweating, and flushing
- Recovery
 - begins when vomiting ends and only after patients cease using cannabis

Treatment

- Symptom management
- Cannabis cessation
- Application of capsaicin-based creams to abdomen
- Traditional antiemetic medications usually aren't effective





Secondhand Emissions

In 2016, the Surgeon General concluded that secondhand emissions contain, "nicotine; ultrafine particles; flavorings such as diacetyl, a chemical linked to serious lung disease; volatile organic compounds such as benzene, which is found in car exhaust; and heavy metals, such as nickel, tin, and lead."

Advocacy Opportunities for Vape Education

Federal Tobacco 21

- Congress passed a \$1.37 trillion spending bill that included a provision to raise the minimum legal sales age for all tobacco products from 18 to 21 nationwide. Upon the President's signature on December 20, 2019, the age change became effective immediately.
- It is now a violation of federal law for any retailer to sell any nicotine or tobacco products to anyone under the age of 21.
- FDA will oversee enforcement of the minimum legal sales age at 21.



TRU – Tobacco Resistance Unit

- The Tobacco Resistance Unit (TRU) is a movement in Pennsylvania to help youth, ages 12 to 18, stay tobacco- and nicotine- free. A statewide movement, TRU is managed by the Pennsylvania Alliance to Control Tobacco (PACT) and the American Lung Association in Pennsylvania.
- www.truinpa.org



Prevention, Intervention and Cessation





YOUTH E-CIGARETTE PREVENTION PROGRAM

AGES 10-18 YEARS (GRADES 5-12)

Can be taught in one or multiple grade levels

DURATION FOUR LESSONS PER VERSION 30-40 MINUTES EACH

COST FREE

Thanks to support from CVS Health

Caron Digital Learning

Vaping and Marijuana Trends Among Youth

CONNECT 5

www.caron.org/digital-learning

Vape Educate

 VapeEducate is an online course originally designed to be completed by middle and high school students. Anyone can benefit from learning more about e-cigarettes, vaping and Juuling. It can also be used as an educational program for teachers, parents, and other community members. The program is designed to be used as a tool which provides supplemental material to educate students about vaping.



Vapeeducate.com



- Intervention for Nicotine Dependence: Education, Prevention, Tobacco and Health (INDEPTH) is a new, convenient alternative to suspension or citation that helps schools and communities address the teen vaping problem in a more supportive way.
- Session 1 Getting the Facts: Breaks down the program for participants
- Session 2 Addiction: Explains the harmful effects of nicotine and tobacco products
- Session 3 Alternatives: Helps teens understand their urges and identify healthy alternatives to replace tobacco use.
- Session 4 Past, Present, Future: Talks about next steps and how to avoid future tobaccorelated problems

https://www.lung.org/stop-smoking/helping-teens-quit/indepth.html

Not on Tobacco (N-O-T) Youth Cessation Program

- Session 1: Reasons for Quitting
- Session 2: Why I Smoke/Vape
- Session 3: Nicotine Addiction and Triggers
- Session 4: Effects of Smoking/Vaping
- Session 5: Physical, Psychological and Social Benefits of Quitting
- Session 6: Quitting Nicotine Use
- Session 7: Overcoming Obstacles to Quitting
- Session 8: How to Deal with Stress
- Session 9: Myths of Big Tobacco
- Session 10: Staying Committed to Quitting

https://www.lung.org/stop-smoking/helping-teens-quit/not-on-tobacco.html

PA Free Quit Line

The PA Quitline and PA QuitLogix programs are free, proven services to help Pennsylvanians quit smoking.

1-800-Quit-Now (784-8669)

My Life, My Quit

At My Life, My Quit we share the truth about nicotine, vaping and other tobacco products. If you decide you want to quit, we're here to help you do it successfully. Text "Start My Quit" to 855.891.9989 or call to talk with a coach who is ready to listen and cheer you on. It's YOUR LIFE and we're here to help you live it YOUR WAY.

My Life, My Quit is always free and confidential.

http://mylifemyquit.com/index.html



SmokefreeTXT for Teens

- Who is this program for?
- Young adults (13-19 years old) in the United States who want to be smokefree.
- How long is it?
- 6-8 weeks, depending on your quit date. You will receive 3-5 messages per day.
- To sign up, text QUIT to 47848.
- https://teen.smokefree.gov/become-smokefree/smokefreeteen-signup

 The quitSTART app is a free smartphone app that helps you quit smoking with tailored tips, inspiration, and challenges.

Available on Apple Store and Google Play

https://teen.smokefree.gov/become-smokefree/quitstart-app

quitSTART

truth initiative

- This is Quitting is a free mobile program from Truth Initiative designed to help young people quit vaping.
- This is Quitting is tailored based on age (within 13 to 24 years old) and product usage to give teens and young adults appropriate recommendations about quitting.
- Youth and young adults can access the new ecigarette quit program by texting "DITCHJUUL" to 88709. Parents and other adults looking to help young people quit should text "QUIT" to (202) 899-7550.

truthinitiative.org

Future Trends

- Smaller devices
- Continued refinement of Nicotine Salts
- Despite bans, increase in vaping flavor devices and add-ons
- Significant increase in disposables
- Increase in synthetic nicotine development and sales
- Continued increase in on-line sales vs. in store
- Inclusion of Smartphones



Additional Resources

https://www.tobaccofreekids.org/

https://truthinitiative.org/

https://teen.smokefree.gov/

https://www.lung.org/quit-smoking/helping-teensquit

https://www.pccd.pa.gov/Juvenile-
Justice/Pages/Pennsylvania-Youth-Survey-(PAYS).aspx



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