

Electronic Nicotine Delivery Systems (ENDS) – “Vaping”

Health Concerns For Students & Schools

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Nicotine

Effect of Nicotine on Body

- Nicotine is an addictive substance, distributed quickly through the blood stream and oxidized into its metabolite cotinine.
- Although nicotine itself is usually not referred to as a carcinogen, there is ongoing debate whether nicotine functions as a ‘tumor enhancer’ by deregulating essential biological processes like angiogenesis, apoptosis, and cell-mediated immunity [31].

Effect of Nicotine on Body

- Increased risk of cardiovascular, respiratory, gastrointestinal disorders.
- Decreased immune response and it also poses ill impacts on the reproductive health.
- Nicotine affects the cell proliferation, oxidative stress, apoptosis, DNA mutation by various mechanisms which leads to cancer. It also affects the tumor proliferation and metastasis and causes resistance to chemo and radio therapeutic agents.



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.
- Youth report withdrawal symptoms with lower amount of consumption than adults, even as low as 5 cigarettes per week.
- Smoking actually contributes to problems; withdrawal causes stress, anxiety.

Nicotine / THC Which Comes First

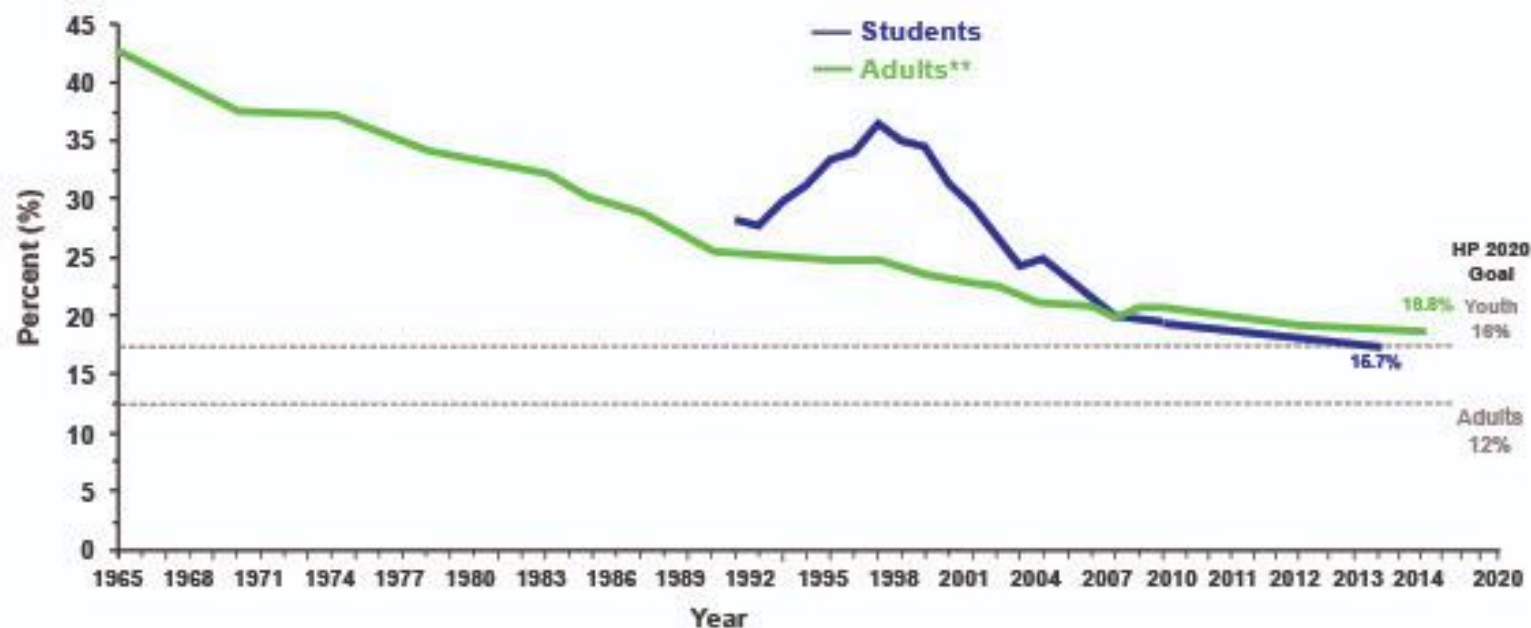
- **Electronic Cigarettes and Future Marijuana Use: A Longitudinal Study.**
 - E-cigarette use predicts subsequent marijuana use among youth, with a stronger associations among young adolescents.
 - Reducing youth access to e-cigarettes may decrease downstream marijuana use.
- **Marijuana Use indicates high likely hood of nicotine use**
 - Cannabis users are 3 times more likely to begin smoking than non-cannabis users.
 - Studies suggest that tobacco is a partial driver of cannabis dependence in young people who use cannabis and tobacco.



Traditional Tobacco

Tobacco Trends

Trends in Current Cigarette Smoking by High School Students* and Adults — United States, 1965-2014**



*Percentage of high school students who smoked cigarettes on 1 or more of the 30 days preceding the survey (Youth Risk Behavior Survey, 1991-2013).

**Percentage of adults who are current cigarette smokers (National Health Interview Survey, 1965-2014).

Not a “Habit Anymore”



Tiny cigars

- Black & Mild
 - Trendy
 - Viewed safer than cigarettes.
- Cigarillos
 - Blueberry
 - Cherry
 - Watermelon



Tiny Cigars

- Black and Mild's, Cigarillos, etc. are to be smoked as cigars, which means that they should not be inhaled but only have to be puffed in and out of the mouth.
- Substantially more nicotine and tar than the cigarette counterpart
- No filters
- One Black & Mild = 10+ cigarettes

Blunts & Wraps



How to Freak a Black & Mild



Champ A Black



Getezhype LLC @getezhypellc · 30 Oct 2018

Champing your black means removing the cancer paper inside the cigar. This paper contains the harmful chemicals that cause a lot of respiratory diseases and other serious health conditions.

#ChampingYourBlack #GetezhypeLLC



Menthol Cigarettes

- The Food and Drug Administration (FDA) concluded
 - Menthol cigarettes make it easier to start smoking and harder to quit.
- Menthol has some pain-relieving properties
 - In cough drops to relieve minor throat irritation
- Menthol makes cell membranes more “permeable” (i.e., opens up) to nicotine and other harmful substances in tobacco.
- Menthol cigarettes have been shown to inhibit nicotine metabolism, leading to increased systemic nicotine exposure



VAPING

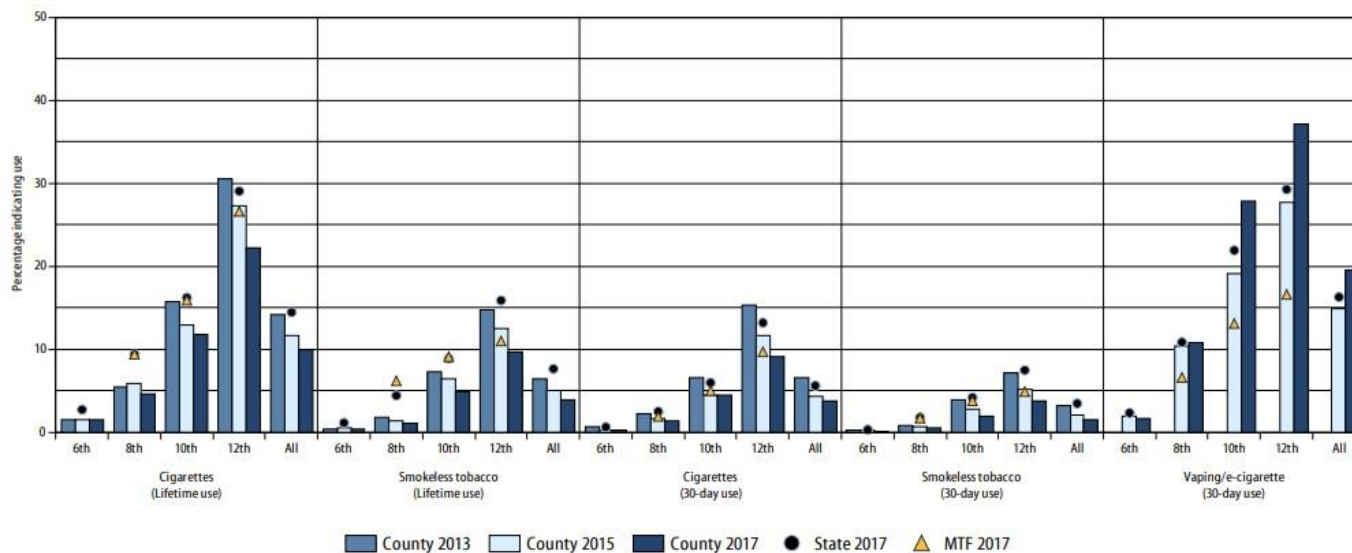
Electronic Nicotine / non Nicotine Delivery System
(ENDS)

Current Statistics

Bucks County

PAYS2017 ATOD Use and Access: High prevalence/early initiation drugs

Tobacco and Vaping - Lifetime and 30-day use Bucks County 2017 Pennsylvania Youth Survey

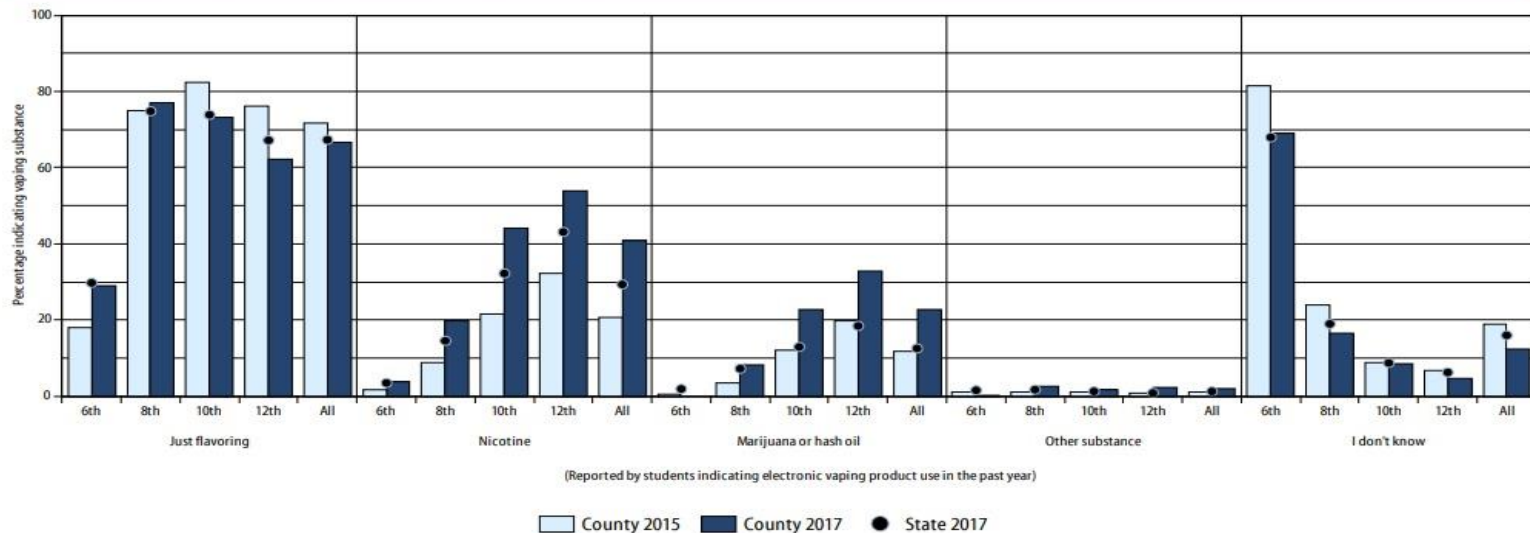


Grade	Cigarettes (Lifetime use)					Smokeless tobacco (Lifetime use)					Cigarettes (30-day use)					Smokeless tobacco (30-day use)					Vaping/e-cigarette (30-day use)				
	County 2013	County 2015	County 2017	State 2017	MTF 2017	County 2013	County 2015	County 2017	State 2017	MTF 2017	County 2013	County 2015	County 2017	State 2017	MTF 2017	County 2013	County 2015	County 2017	State 2017	MTF 2017	County 2013	County 2015	County 2017	State 2017	MTF 2017
6	1.5	1.5	1.5	2.7	n/a	0.3	0.5	0.3	1.1	n/a	0.6	0.2	0.3	0.6	n/a	0.2	0.2	0.1	0.3	n/a	n/a	1.9	1.7	2.3	n/a
8	5.4	5.8	4.6	9.4	9.4	1.8	1.4	1.1	4.4	6.2	2.3	1.7	1.3	2.5	1.9	0.7	0.6	0.5	1.8	1.7	n/a	10.4	10.9	10.9	6.6
10	15.8	12.9	11.7	16.2	15.9	7.3	6.4	4.9	8.9	9.1	6.6	4.5	4.4	6.0	5.0	3.9	2.8	1.9	4.2	3.8	n/a	19.1	27.8	21.9	13.1
12	30.4	27.3	22.2	29.0	26.6	14.8	12.5	9.7	15.9	11.0	15.3	11.7	9.2	13.2	9.7	7.1	5.2	3.7	7.5	4.9	n/a	27.7	37.2	29.3	16.6
All	14.2	11.7	9.9	14.5	n/a	6.5	5.0	3.9	7.6	n/a	6.6	4.4	3.7	5.6	n/a	3.2	2.1	1.5	3.5	n/a	n/a	14.8	19.5	16.3	n/a

Current Statistics

Bucks County

Vaping substances used by students indicating electronic vaping product use in the past year
Bucks County 2017 Pennsylvania Youth Survey



	Just flavoring				Nicotine				Marijuana or hash oil				Other substance				I don't know			
Grade	County 2013	County 2015	County 2017	State 2017	County 2013	County 2015	County 2017	State 2017	County 2013	County 2015	County 2017	State 2017	County 2013	County 2015	County 2017	State 2017	County 2013	County 2015	County 2017	State 2017
6	n/a	17.9	28.9	29.8	n/a	1.7	3.8	3.5	n/a	0.4	0.0	1.9	n/a	1.1	0.3	1.6	n/a	81.4	69.1	68.0
8	n/a	75.0	77.1	74.8	n/a	8.9	19.9	14.6	n/a	3.5	8.3	7.2	n/a	1.2	2.7	1.7	n/a	23.8	16.4	19.0
10	n/a	82.2	73.1	73.9	n/a	21.6	44.0	32.2	n/a	12.1	22.9	12.9	n/a	1.1	1.8	1.3	n/a	8.7	8.6	8.7
12	n/a	76.2	62.1	67.2	n/a	32.3	53.9	43.1	n/a	19.7	32.9	18.5	n/a	0.9	2.2	0.9	n/a	6.9	4.5	6.3
All	n/a	71.6	66.7	67.3	n/a	20.7	40.8	29.4	n/a	11.8	22.6	12.6	n/a	1.0	2.1	1.3	n/a	19.0	12.3	16.0

“ENDS”

- According to the FDA, ENDS are devices that allow users to inhale an aerosol (vapor) containing nicotine or other substances. (**E**lectronic **N**icotine **D**elivery **S**ystem)
- The main component of ENDS is the e-liquid contained in cartridges.
- To create an e-liquid, nicotine is extracted from tobacco and mixed with a base (usually propylene glycol), and may also include flavorings, colorings and other chemicals.

5 “Ideas” about ENDS

1. ENDS are less harmful than traditional smoking
2. ENDS are harmful
3. ENDS are equally addictive to cigarettes
4. ENDS are NOT the best smoking cessation aid
5. ENDS are getting a new generation hooked on nicotine!!

How.....?

Youth Marketing

- Cigarette ads have been banned from TV since 1971
- ENDS now marketed on TV & mainstream media channels
 - Candy-flavored products
 - Youth-resonant themes such as rebellion, glamour & sex
 - Celebrity endorsements



Home Moments



Scott Disick 
 @ScottDisick

For all inquiries please email
 disickindustries@gmail.com

NY-LA

talentless.co

Joined January 2010

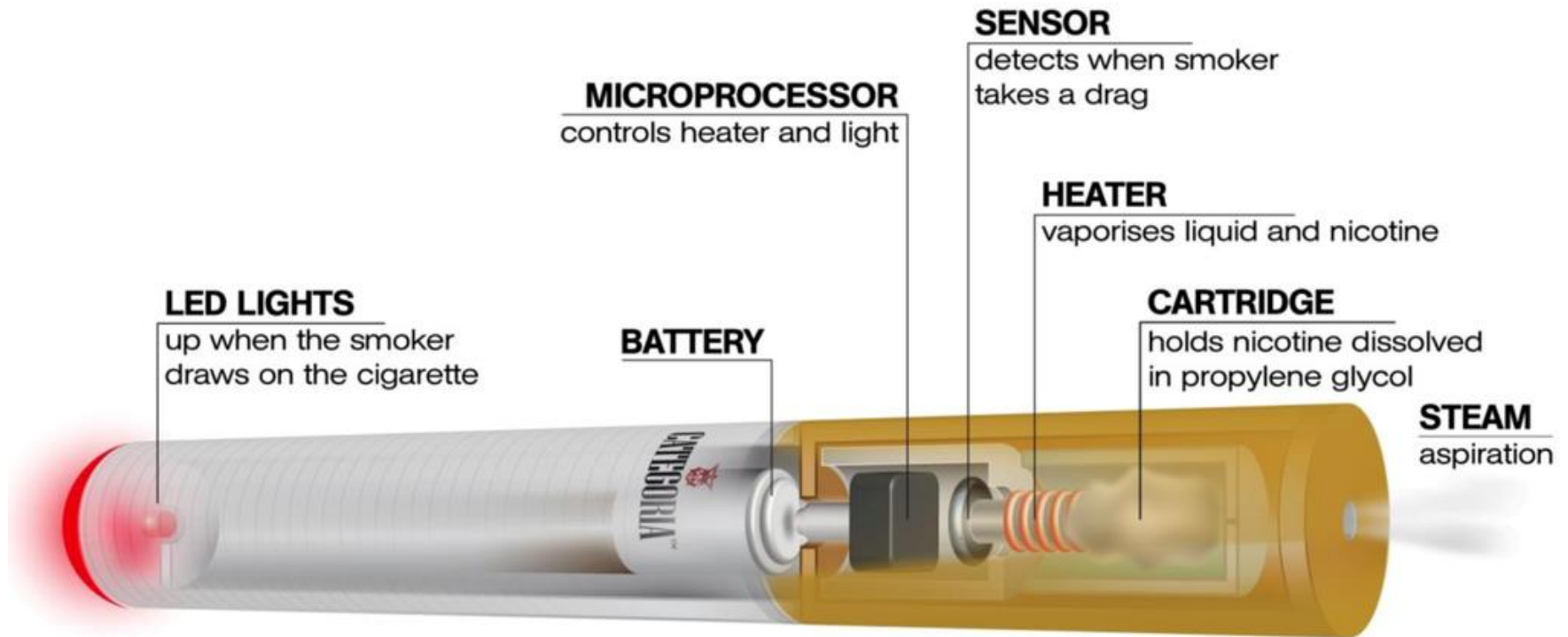
Scott Disick 
 @ScottDisick

Just found this new vape brand @EonSmoke and they are unbelievable. They are completely compatible with Juul and my favorite flavor is mango. Click here to check them out >> eonsmoke.com/12-buy-juul-co ... #ad



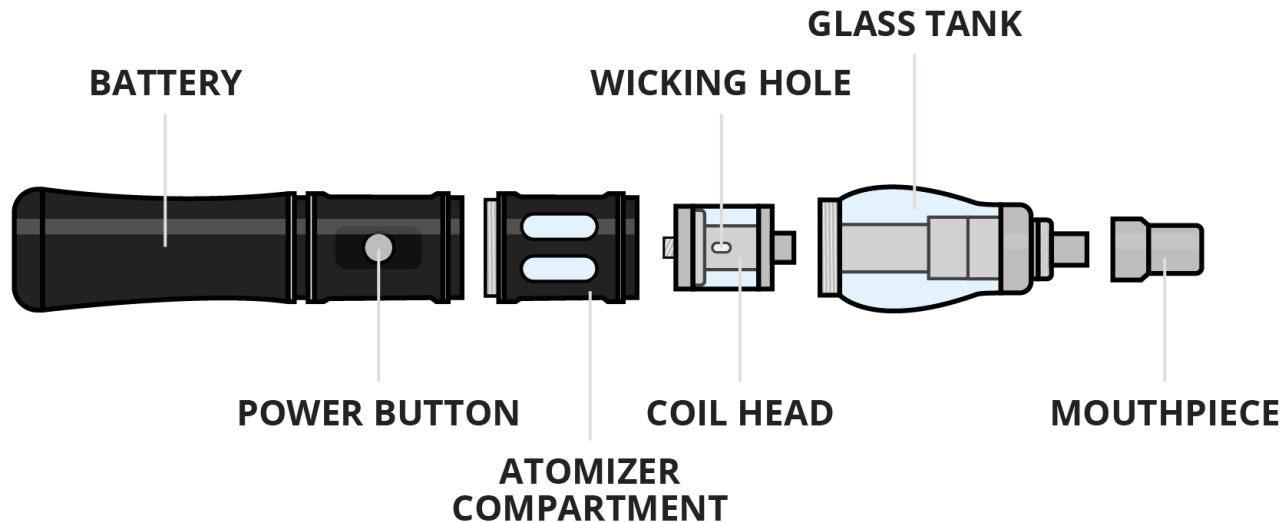
Take Back Your Freedom featuring Stephen Dorff - Brought To You By blu Electronic Cigarettes

Anatomy of an E-Cigarette



Anatomy of A Hookah Pen

THE ANATOMY OF A HOOKAH PEN



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.

Electronic Nicotine Delivery Systems (ENDS)

- E-cigarettes
- Vape pens
- Hookah pens
- E-Hookah
- Personal vaporizers
- Tanks
- Mods



Vape “Mods”

- 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



<https://www.youtube.com/watch?v=MyYHaOMkUMY>

UWELL AMULET



Suorin Air Ultra Portable



UWELL CALIBURN POD SYSTEM



“Uwell presents the Caliburn Pod System, a low profile refillable pod device that is made for salt nic juice vaping. This dual method firing device is pocket sized and ready for adventure.”



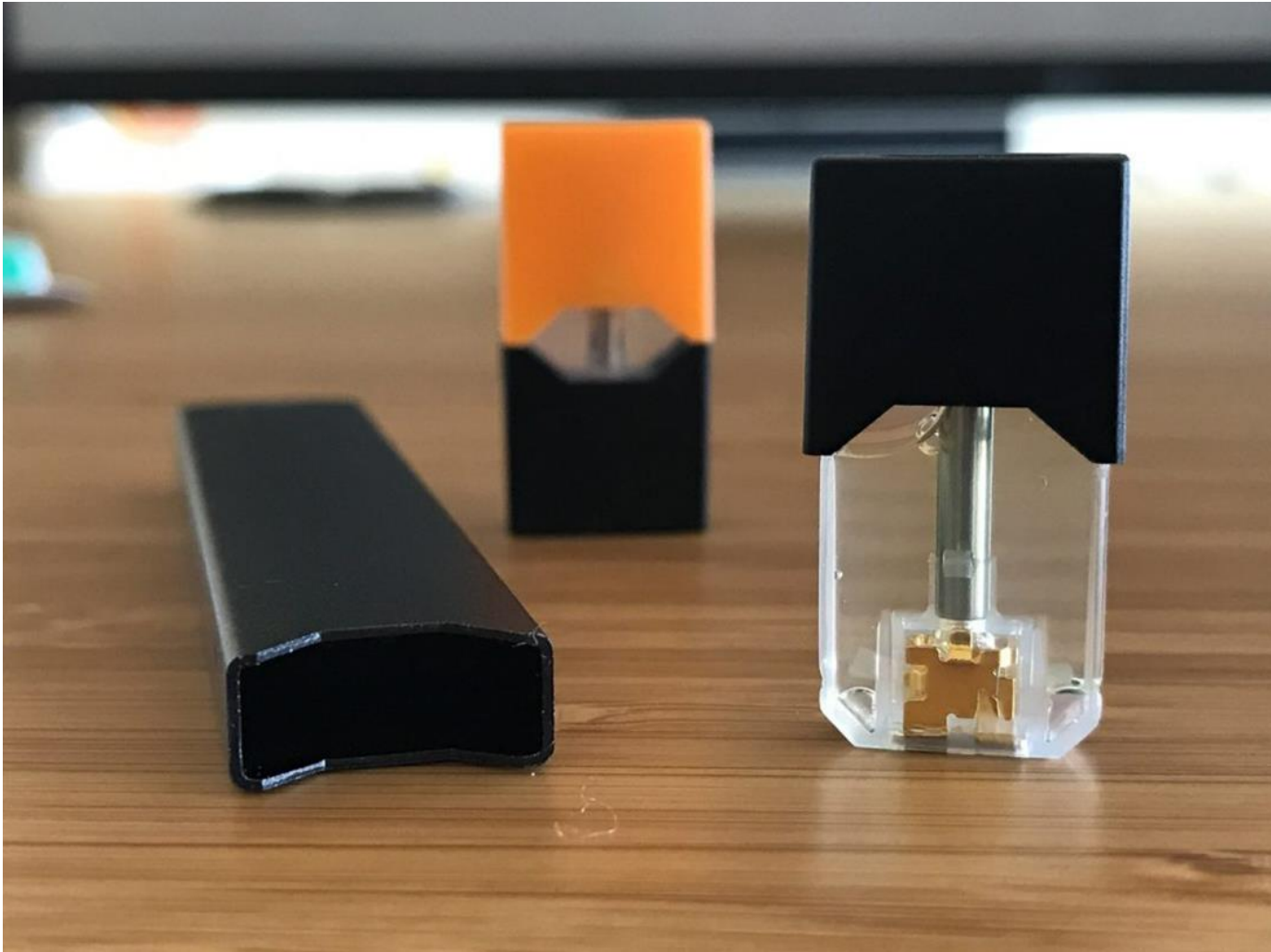
#1 Vape Trend

- Discreet
- Easily concealable
- Trendy
- Viewed as “harmful” as coffee
- Cost: Around \$50.00 for a starter kit
 - Refill pods are \$20.00 for 4 pack
 - 1 pod = nicotine equivalent of 1 pack of cigarettes



NPR Article on JUUL: <https://www.npr.org/sections/health-shots/2017/12/04/568273801/teenagers-embrace-juul-saying-its-discreet-enough-to-vape-in-class>

#1 Vape Trend Amongst HS Age Youth



#1 Vape Trend Amongst HS Age Youth



*NOTE: The poll was done on vaping360.com and the results reflect more than 2,000 votes.

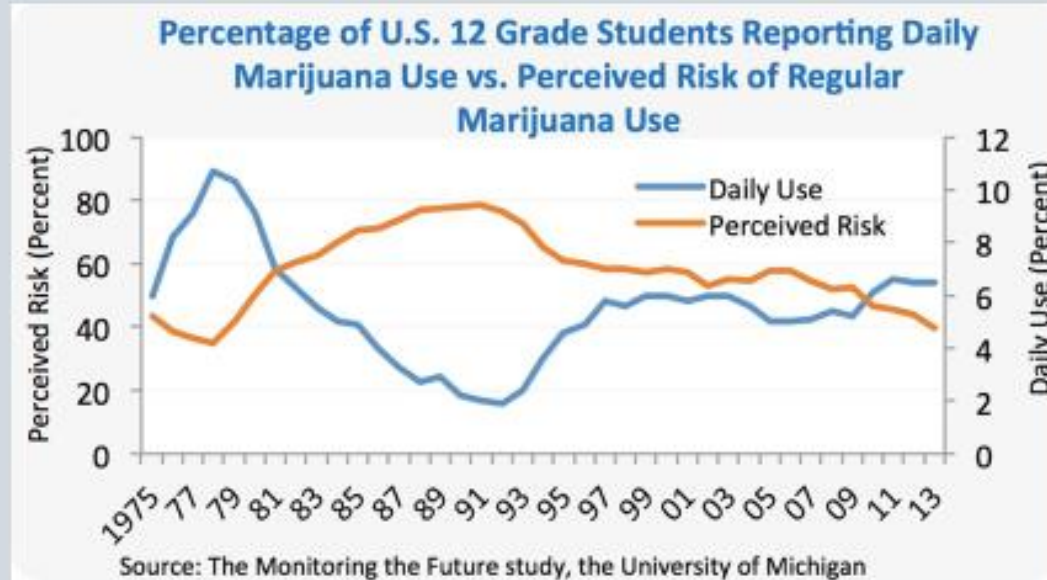
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Cannabis

“Marijuana”

Cannabis & Cross Utilization of ENDS

A Low Perception of Harm



Cannabis

Academic and Vocational Outcomes

- High School
 - Lower grades, higher dropout rates, increased school disciplinary problems
 - May be social/functional, may be cognitive, may be both
 - Earlier use = worse outcomes
 - Greater frequency = worse outcomes
- College
 - Increased chance to skip class
 - Lower GPA
 - Potentially longer time to graduate
- Decreased lifetime earning potential



(Volkow, 2014) (Castellanos-Ryan et al., 2017) (Suerken et al., 2016) (Arria et al., 2015)

Cannabis

Click to save a picture to your desktop.

Cannabis – A Particularly Bad Idea for Kids

- Increased risk for addiction
- Negative academic and vocational outcomes
- Brain morphology changes
 - Residual impairment in memory, processing speed, and decision-making
- Impaired judgement
 - Increased risky sexual behavior
- Psychotic breaks
 - Increases with higher % THC

(Volkow, 2014)

It's personal to us.

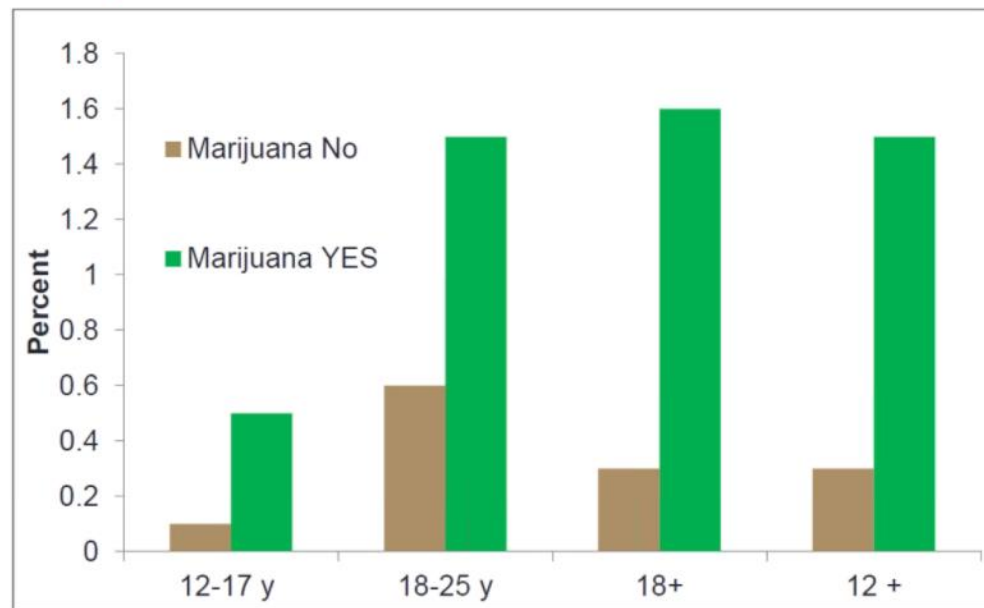


Cannabis

[Click to save a picture to your desktop.](#)

Gateway Drug?

Prevalence Of Heroin Use Among Marijuana Users in the US



SAMHSA's Center for Behavioral Health Statistics and Quality: NSDUH 2015

(DuPont, 2017)

Comparing rates of Cannabis use to other ATOD

Monitoring the Future Study: Trends in Prevalence of Various Drugs for 8th Graders, 10th Graders, and 12th Graders; 2015 - 2018 (in percent)*

Drug	Time Period	8th Graders				10th Graders				12th Graders			
		2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
Marijuana/Hashish	Lifetime	15.50	[12.80]	13.50	13.90	[31.10]	29.70	30.70	[32.60]	44.70	44.50	45.00	[43.60]
	Past Year	11.80	[9.40]	10.10	10.50	25.40	23.90	25.50	[27.50]	34.90	35.60	37.10	[35.90]
	Past Month	6.50	[5.40]	5.50	5.60	14.80	14.00	[15.70]	16.70	21.30	22.50	22.90	22.20
	Daily	1.10	[0.70]	0.80	0.70	3.00	2.50	2.90	3.40	6.00	6.00	5.90	5.80
OxyContin	Past Year	0.80	0.90	0.80	0.80	2.60	2.10	2.20	2.20	3.70	3.40	2.70	2.30
Ritalin	Past Year	0.60	0.80	[0.40]	0.50	1.60	1.20	0.80	-	2.00	[1.20]	1.30	0.90
K2/Spice (Synthetic Marijuana)	Past Year	3.10	2.70	[2.00]	1.60	4.30	3.30	2.70	2.90	5.20	3.50	3.70	3.50



Comparing rates of Cannabis use to other ATOD

Monitoring the Future Study: Trends in Prevalence of Various Drugs for 8th Graders, 10th Graders, and 12th Graders; 2015 - 2018 (in percent)*

Drug	Time Period	8th Graders				10th Graders				12th Graders			
		2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
Alcohol	Lifetime	26.10	[22.80]	23.10	23.50	47.10	[43.40]	42.20	42.20	64.00	61.20	61.50	[58.50]
	Past Year	21.00	[17.60]	18.20	18.70	41.90	[38.30]	37.70	37.80	58.20	55.60	55.70	[53.30]
	Past Month	9.70	[7.30]	8.00	8.20	21.50	19.90	19.70	[18.60]	35.30	33.20	33.20	[30.20]
	Daily	0.20	0.20	0.20	0.10	0.50	0.50	0.60	0.50	1.90	[1.30]	1.60	1.20
Cigarettes (any use)	Lifetime	13.30	[9.80]	9.40	9.10	[19.90]	[17.50]	15.90	16.00	[31.10]	[28.30]	26.60	[23.80]
	Past Month	[3.60]	[2.60]	[1.90]	2.20	[6.30]	[4.90]	5.00	4.20	[11.40]	10.50	9.70	[7.60]
	Daily	1.30	[0.90]	[0.60]	0.80	3.00	[1.90]	2.20	1.80	[5.50]	4.80	4.20	3.60
	1/2-pack+ /day	0.40	0.30	0.20	0.30	1.00	[0.60]	0.70	0.70	2.10	1.80	1.70	1.50
E-cigarettes	Past Month	9.50	6.20	-	-	14.00	11.00	-	-	16.20	12.50	-	-
Any Vaping	Lifetime	21.70	17.50	18.50	[21.50]	32.80	29.00	30.90	[36.90]	35.50	33.80	35.80	[42.50]
	Past Year	-	-	13.30	[17.60]	-	-	23.90	[32.30]	-	-	27.80	[37.30]
	Past Month	8.00	6.20	6.60	[10.40]	14.20	11.00	13.10	[21.70]	16.30	12.50	16.60	[26.70]

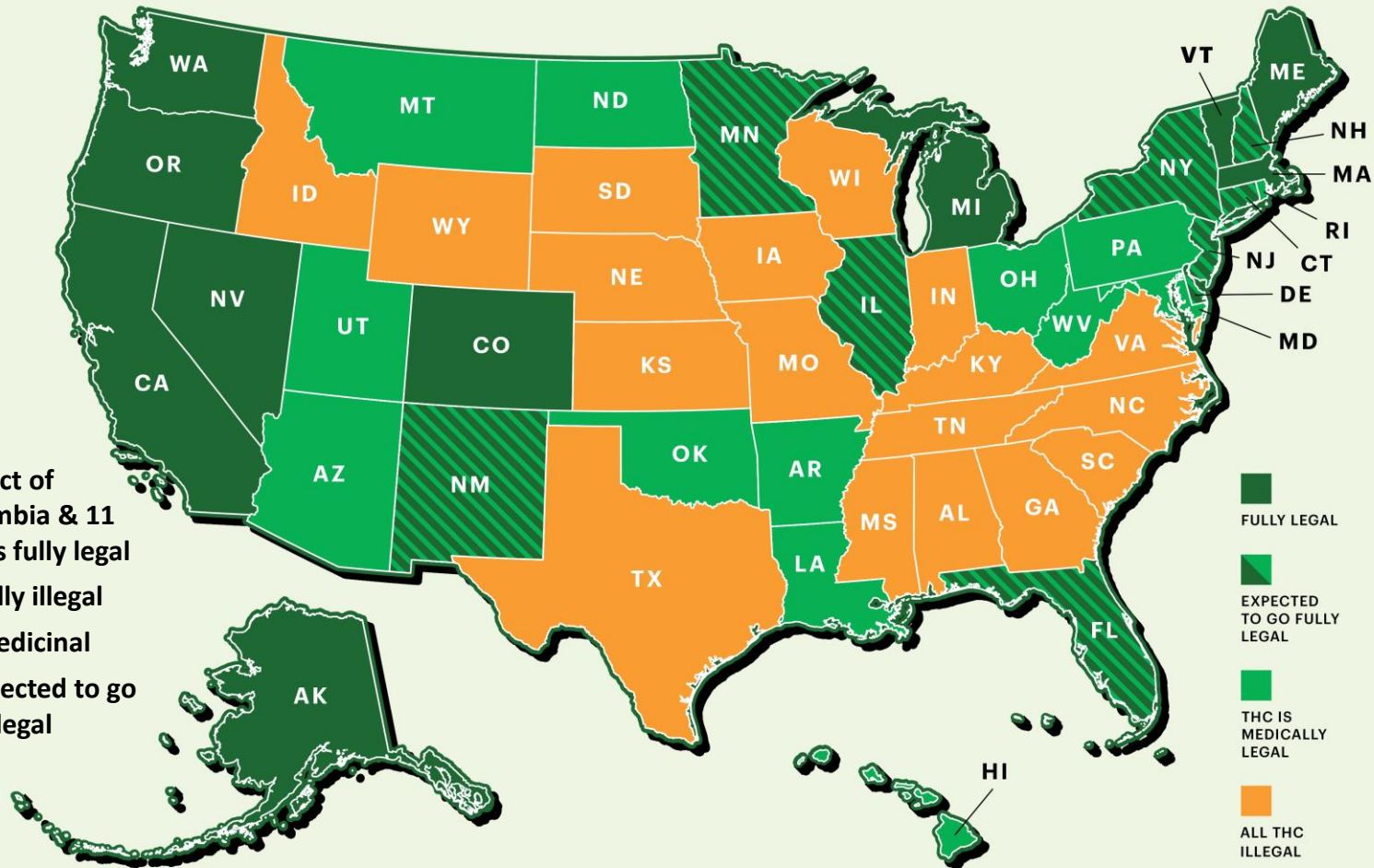


PA Medical Marijuana

- Under Act 16 of 2016 (the Pennsylvania Medical Marijuana Act or the Act), the term “medical marijuana” refers to marijuana obtained for a certified medical use by a Pennsylvania resident with a serious medical condition and is limited by statute in Pennsylvania to the following forms:
 - Pill
 - Oil
 - Topical forms, including gel, creams, or ointments
 - A form medically appropriate for administration by vaporization or nebulization, excluding dry leaf or plant form
 - Tincture
 - Liquid
 - Plant material (for vaporization only)

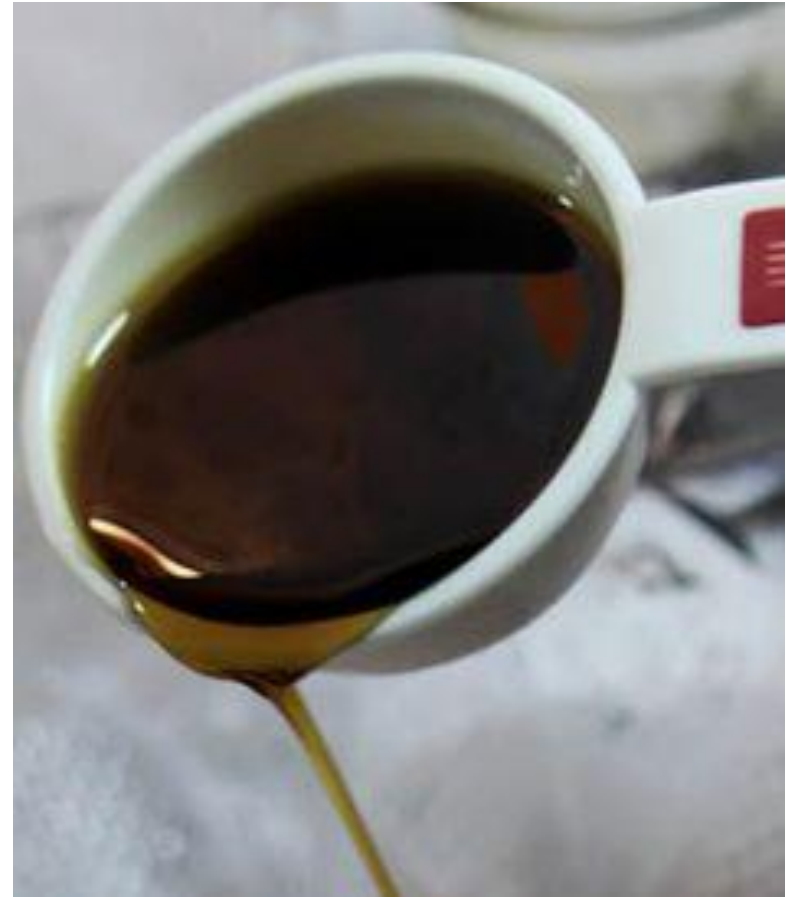
Current Legal Status

- District of Columbia & 11 states fully legal
- 18 fully illegal
- 13 medicinal
- 8 expected to go fully legal



Vaping Cannabis

- Hash Oil : Several types
 - BHO: Butane extraction
 - Heavy metals & pesticide concentrates.
 - Brain lesions
 - NHO: Naphtha extraction
 - benzene, hexane
 - Cancer hazards
 - CDHO: Cannabinoids are drawn out by pressure and carbon dioxide to separate plant material. (expensive)



Vaping Forms of Cannabis

“DABS”

- Wax :
 - Another product from the butane & carbon dioxide process
- Shatter :
 - Yet another butane & carbon dioxide process product
- Crumble :



Specialty Vaping Products

- **PAX:** Manufactured by PAX LAB's, the same company that makes the JUUL
 - Can vape dry leaf
 - Can vape hash oil
 - <https://www.paxvapor.com/>



Above pic showing:

- Oil vape pod
- Wax vape pod
- Dry herb vape pod
- Concentrate vape pod

Vaping Hash Oil In a Juul

- https://www.youtube.com/watch?v=v_BHibYQH0A



Questions?



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- www.quitnet.com
- www.determinedtoquit.com
- Quit smoking classes
available

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