



THC and Vaping

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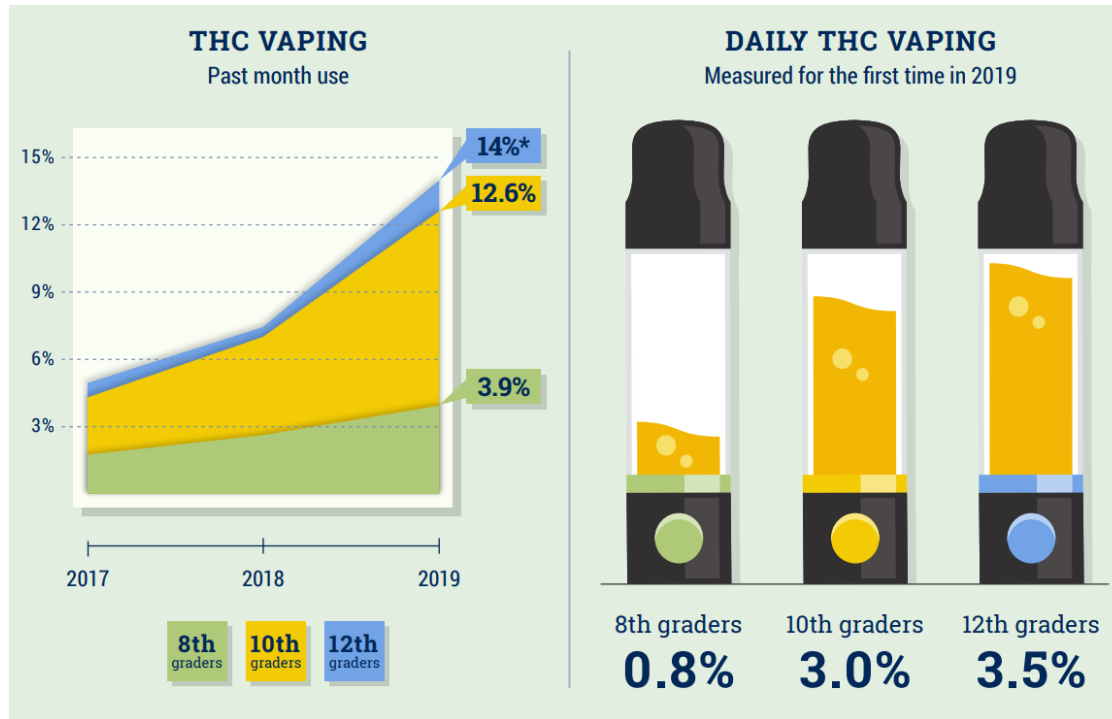
Disclosures

I have no conflicts to disclose.

Acknowledgements

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- Decreasing perceptions of harm
- Low discontinuation rate (18% in 12th graders in 2018)

Source: NIDA, Monitoring the Future



“The number of seniors who reported vaping marijuana during the past month increased from 7.5% in 2018 to 14% in 2019.

This is the second largest one-year jump for any substance in the 45-year survey history, behind past month nicotine vaping (2017 to 2018).”

Source: National Institute on Drug Abuse; National Institutes of Health; U.S. Department of Health and Human Services.



Prevalence of Vaping THC vs. Nicotine/Tobacco Products

Grade	THC Vaping	Nicotine Vaping
8 th	3.9%	9.6%
10 th	12.6%	19.9%
12 th	14%	25.5%

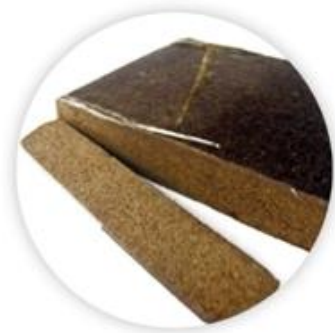
Source: NIDA, Monitoring the Future



THC Products

- **Marijuana** – dried leaves, flowers, stems, seeds of *Cannabis sativa* or *Cannabis indica*;
 - Smoke (joints, blunts, pipes, water pipes/bongs) or Vapor
- **Extracts** - THC-rich resins extracted from marijuana plant / “dabs”
 - **Hash oil or honey oil** – gooey liquid
 - **Wax or budder** – soft solid with a texture like lip balm
 - **Shatter** – hard, amber-colored solid

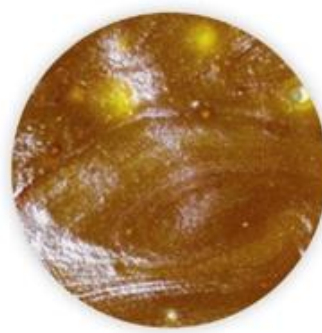




HASH



BUBBLE HASH



HASH OIL



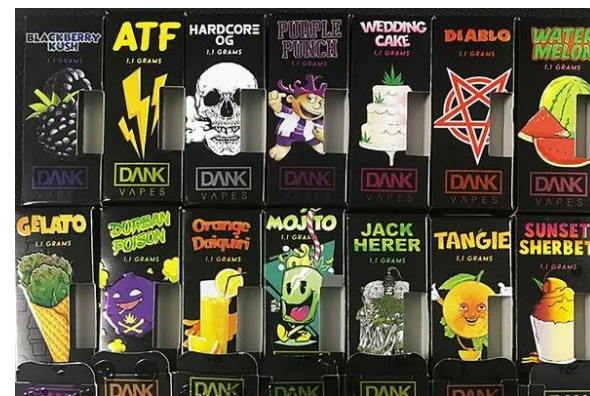
WAX



SHATTER



LIQUID THC



smartcolorado.org



Devices



**Dray Dry
Herb Vaporizer**



The PAX 2 and 3



**Khan Dry
Herb Vaporizer**



**The Crafty
Vaporizer**



**Mig Vapor Sol
E-Nectar
Collector**



DaVinci IQ



Herb-E



Pro 50 Combustor



**Mig Vapor - Mig Rig
(formerly known as La Queef)**



Volcano Vaporizer



The Dr. Dabber Switch

Colorado Dept of Health



THC Vaping in Adolescents

- Most commonly use vape pens, concentrates
- Among those who prefer to vape cannabis (vs. smoking)...
 - Consider vaping to be healthier, better tasting, more easily hidden from parents/teachers, produce stronger effects

Knapp et al., 2019



Composition of THC Vaping Products

- THC concentrations in vaping products can be 4-30X higher than dried cannabis leaves
 - Marijuana cigarettes: ~15-20% (increasing; 1995: 4%, 2014: 12%)
 - Solvent-based extracts: ~54-80+%
 - Non-solvent-extracts: ~39-60%
- Vaping products can contain concentrated levels of solvents, pesticides, toxins
- Overheating of cannabis vaping products can lead to inhalation of carbon-monoxide, tar, and ammonia

Morean et al., 2015; King, 2018



Associated Risks

- High risk of developing dependence / addiction with exposure to high concentrations of THC
- Higher doses associated with anxiety, agitation, paranoia, psychosis
- Butane extraction – burns, explosions

NIDA, 2020; Freeman & Winstock, 2015



Associated Risks

- Vitamin E acetate in THC vaping products is associated with elevated EVALI risk
 - Addictive found in many foods, dietary supplements, and cosmetic products
 - Inhalation of Vitamin E reduces lung functioning
 - 48/51 EVALI cases were found to have Vitamin E acetate in fluid samples from their lungs

Centers for Disease Control and Prevention. (2020). Outbreak of Lung Injury Associated with E-cigarette Use, or Vaping. Retrieved from: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html



Vaping Illness Update: FDA Warns Public to Stop Using Tetrahydrocannabinol (THC)-Containing Vaping Products and Any Vaping Products Obtained Off the Street

FDA strengthens warning to public to stop using THC-containing vaping products and any vaping products obtained off the street.

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10/04/2019

Regulated Product(s)

Tobacco



Recommendations

- Screen and assess for THC use – quantity, frequency, duration, products used, method, dosing
- Educate adolescents and parents on risks of high potency THC consumption
- Recognize symptoms of cannabis overconsumption (drowsiness, confusion, rapid heart rate, irritability, panic, anxiety, nausea/vomiting, short-term psychosis)
- Treatment for cannabis use disorder, when indicated

Struble, Ellis, & Lundahl, 2019

