

Puff, Puff, Pass? The “blunt” truth about Cannabis Use Disorder in adolescent and young adult populations.

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Objectives

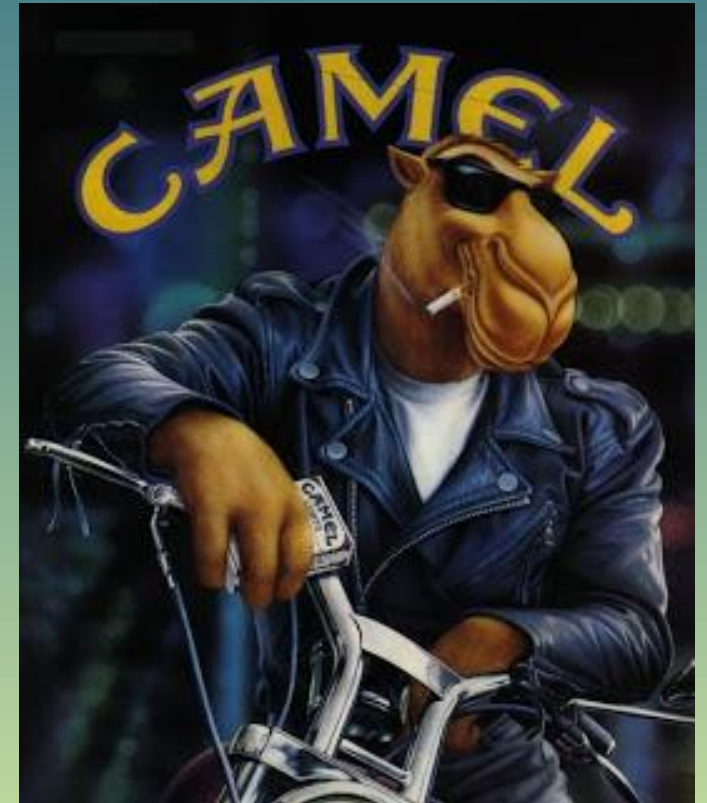
- ▶ Identifying current trends in adolescent and young adult substance use and abuse
- ▶ Evaluating the influence that legalization has on perception and use of THC
- ▶ Highlighting the relationship between cannabis use and mental health in adolescent and young adult populations
- ▶ Exploring the impact of Cannabis Use Disorder on schools, homes, and communities

Drug Use And Abuse Trends

- ▶ Alcohol
- ▶ Marijuana and related Cannabinoids
- ▶ Nicotine

- ▶ Hallucinogens
 - ▶ LSD
 - ▶ Mushrooms

- ▶ Over the Counter Medications



Drug Use And Abuse Trends, cont.

- ▶ Prescription medications
 - ▶ Amphetamines
 - ▶ Opioids
 - ▶ Benzodiazepines
- ▶ Cocaine
- ▶ Fentanyl
- ▶ Meth



Monitoring the Future

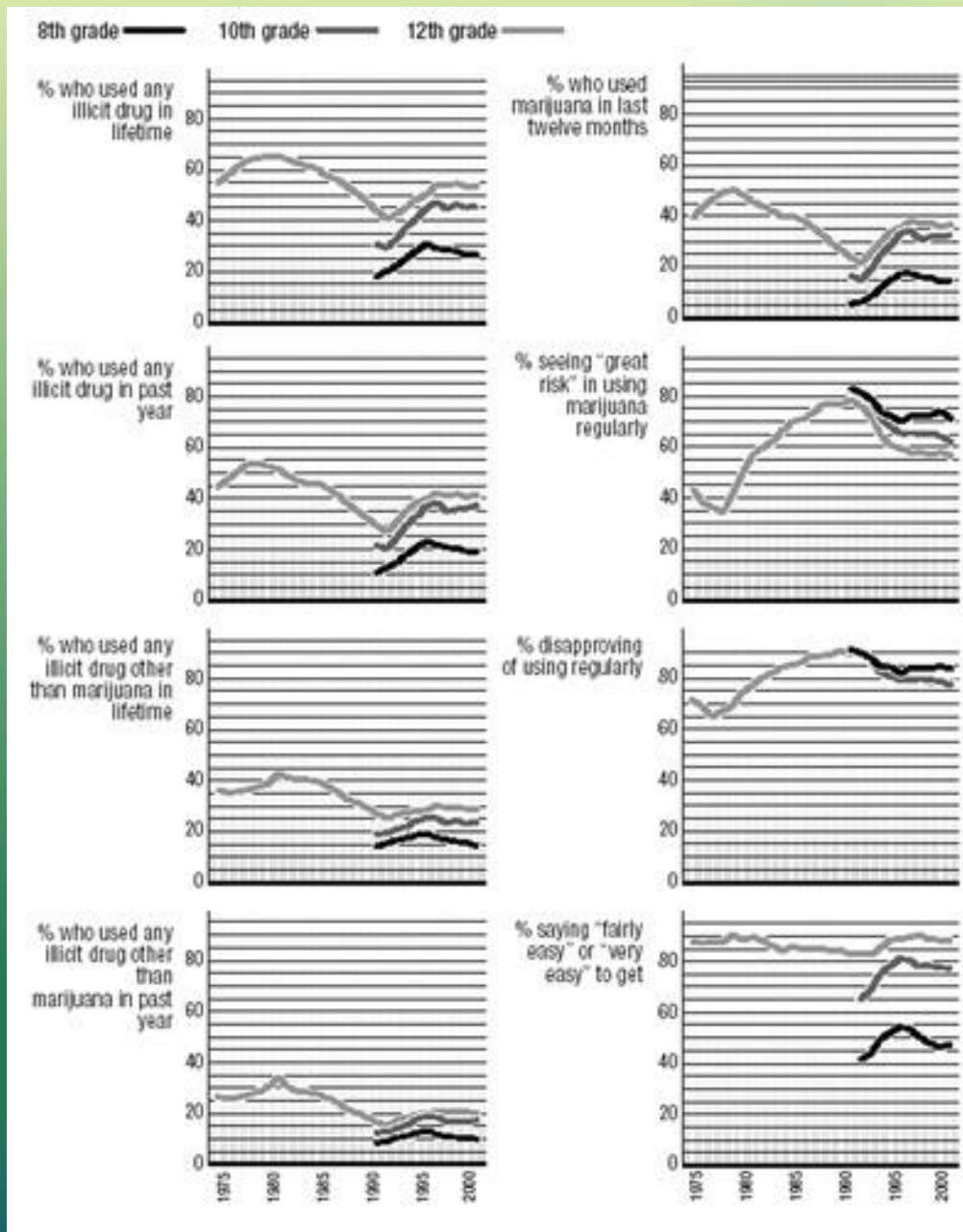
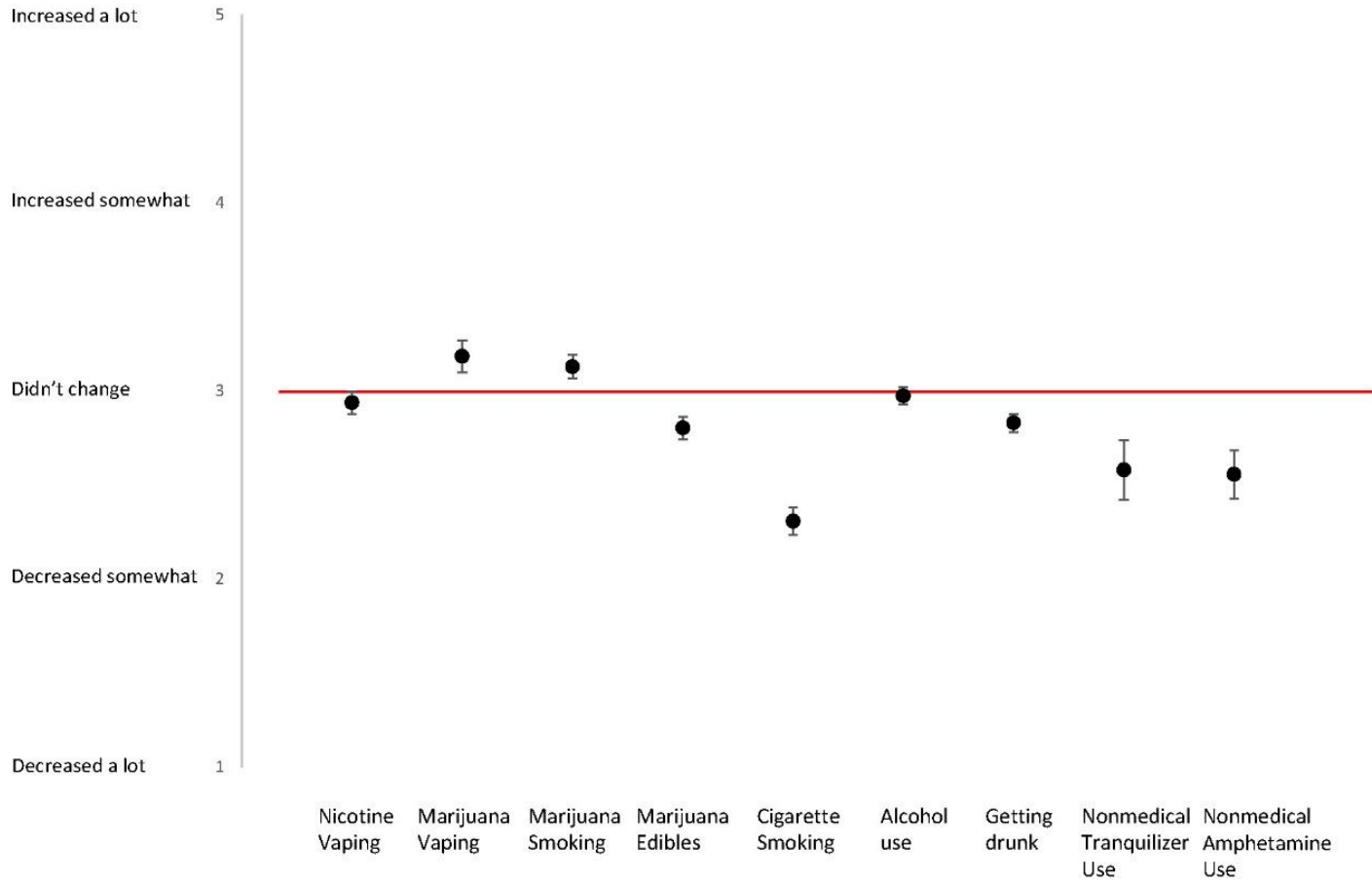


Figure 4: Mean of Self-Reported Change in Drug Use Since Pandemic Among Past Year Users in **All Three Grades Combined**, 95% Confidence Intervals



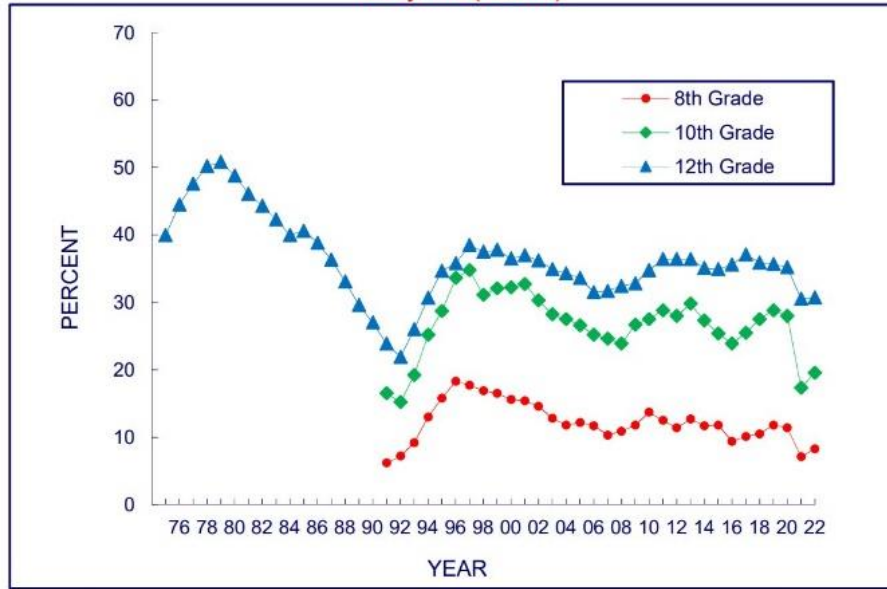
U.S. Students Reporting Any Past-Year Illicit Drug Use*



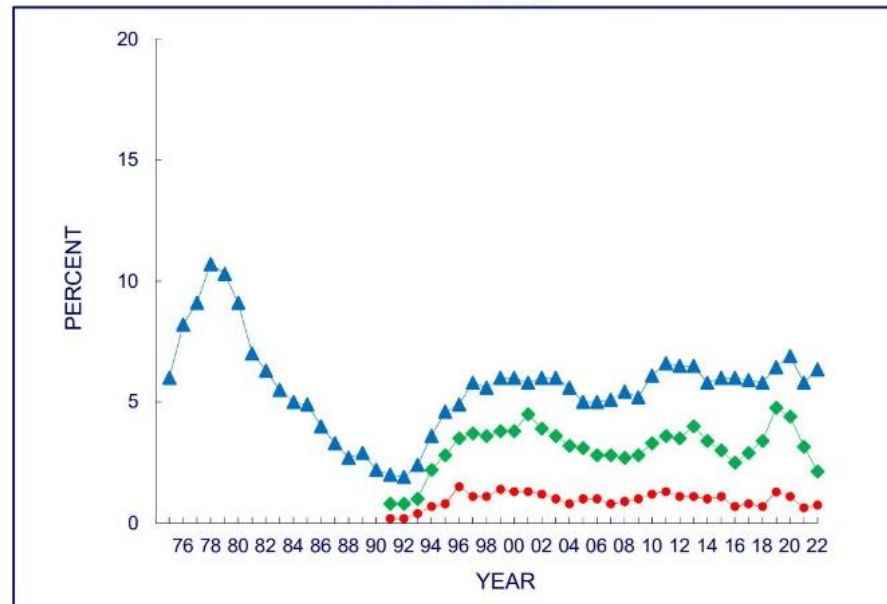
*Illicit drug use in this survey was defined as use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any use of narcotics other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders.

Source: 2021 Monitoring the Future Survey

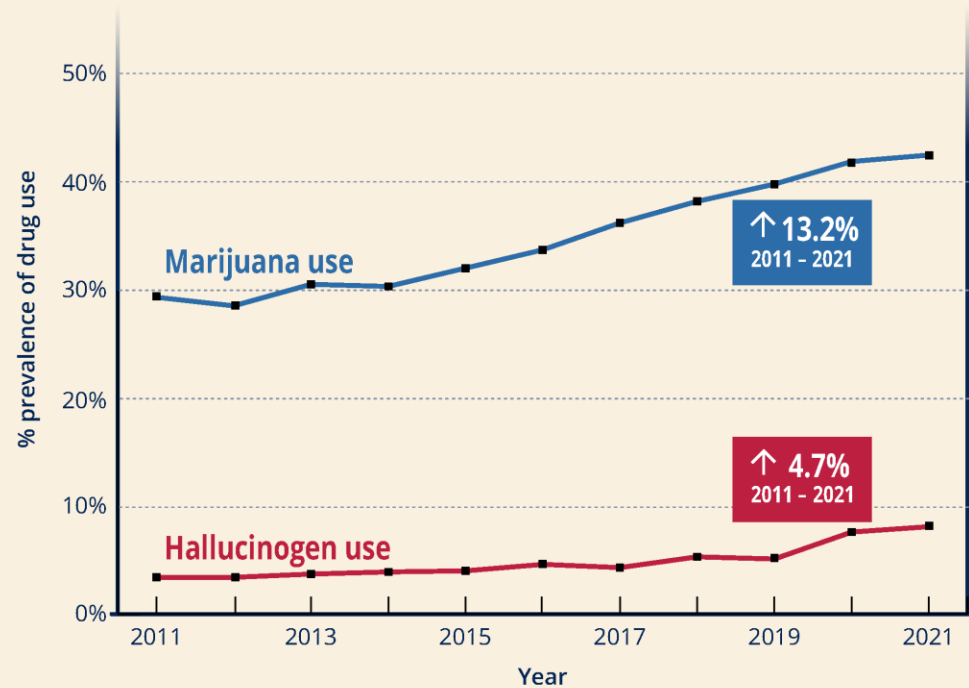
Marijuana (Annual)



Marijuana (Daily)



Historic Highs in Past-Year Marijuana and Hallucinogen Use Among Young Adults (Ages 19-30) in 2021

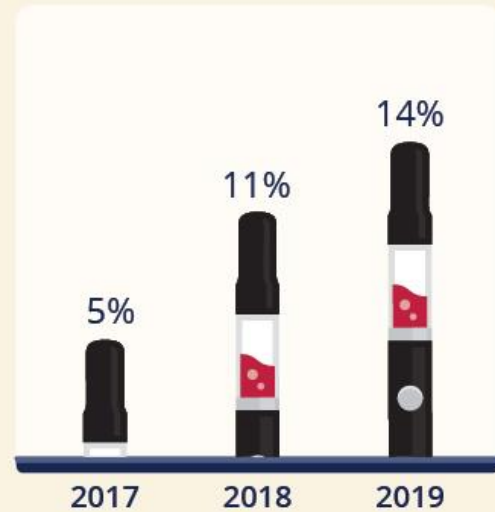


Source: 2021 Monitoring the Future Panel Survey

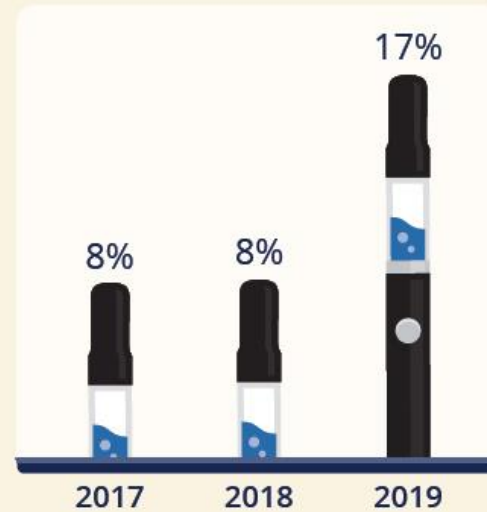
Past month **CANNABIS VAPING** increased sharply among non-college young adults in 2019.

2019 Monitoring the Future College Students and Young Adults Survey Results

 **COLLEGE**



 **NON-COLLEGE**



Figures have been rounded to the nearest whole number.

What are we even talking about?

- ▶ Cannabis is a plant with hundreds of chemical compounds including about 100 cannabinoids
- ▶ THC and CBD are two of the most present compounds
- ▶ Marijuana Plant (high in THC and low in CBD)
- ▶ Hemp Plant (high in CBD and low in THC)
- ▶ THC = Delta-9
- ▶ Some cannabis products are naturally occurring, and others are synthetic or man-made

What are we even talking about?



- ▶ Demand for higher potency led to refining the product
- ▶ Vaping or dabbing has become one of the most popular methods of use

What are we even talking about – synthetics?

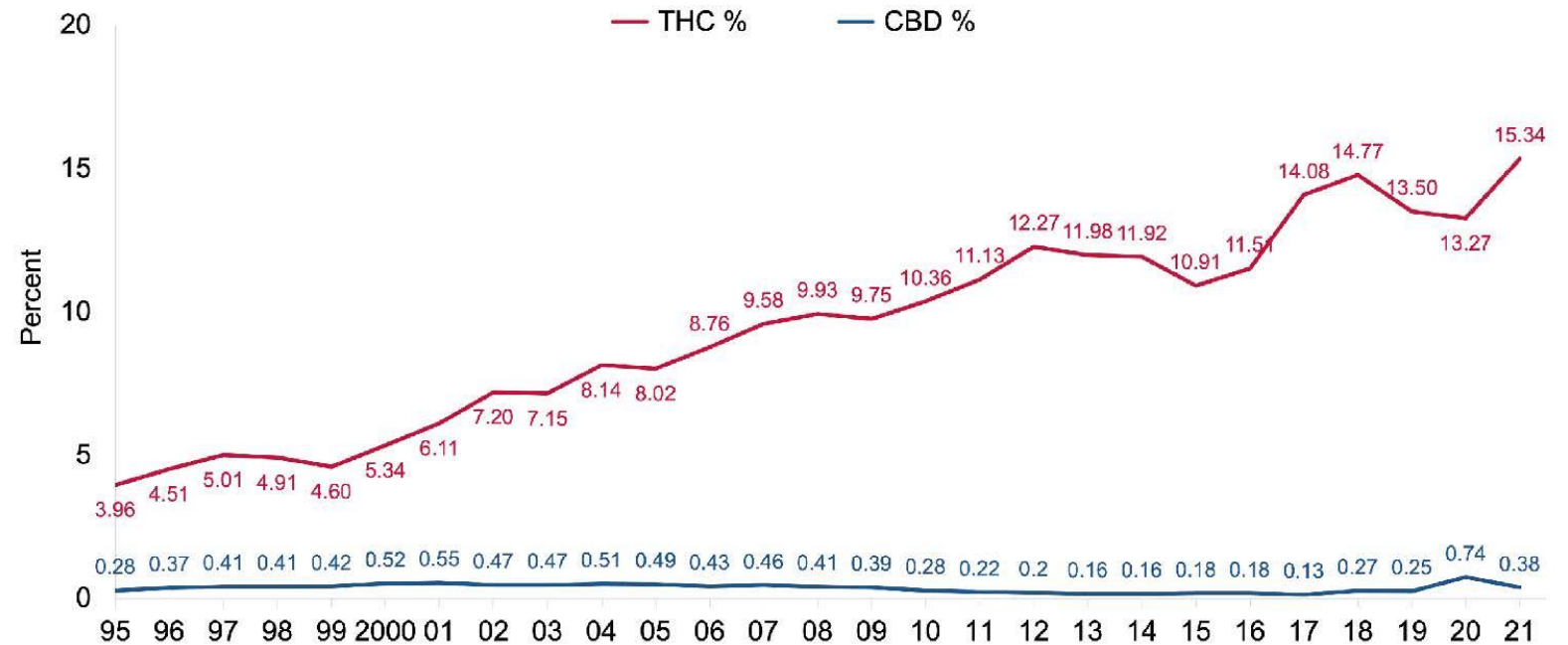
- ▶ Delta-8 is derived from hemp/CBD
- ▶ Up to 75% as psychoactive as Delta-9
- ▶ THC-O is derived from Delta-8
- ▶ Thought to be up to 3 times as strong as THC



Myth Buster

- ▶ THC, Delta-8, and any other cannabinoid that binds to CB1 receptors and produces a high is, in fact addictive
- ▶ Addition rates of marijuana are 10-30% depending on the study - to put that in perspective, alcohol addiction rates are closer to 8-10%

Percentage of THC and CBD in Cannabis Samples Seized by the DEA, 1995-2021



SOURCE: U Miss, Potency Monitoring Project

Legalization Movement



- ▶ Medical Marijuana is currently approved in 38 states
- ▶ Recreational Marijuana is legal in 24 states
- ▶ Delta 8 is legal and/or unregulated in 22 states

- ▶ FDA has not approved medical marijuana for any medical conditions
- ▶ Marijuana prescriptions are filled unlike any other prescription
- ▶ Marijuana and related cannabinoids are administered in many different ways
- ▶ One primary form of consumption is smoking and/or vaping, which is the antithesis of medicinal



What does the research show?

- ▶ Appetite stimulation and nausea suppression are the only two medical concerns that quality research have shown benefits from THC
- ▶ Cannabinoids, primarily CBD-only or CBD with low dose THC, have shows to benefit Epilepsy and Insomnia
- ▶ Research shows mixed results related to cannabinoids and pain
- ▶ **This is incongruent with states who have approved (by legislature) the treatment of over 50 conditions with THC**

Using THC in therapeutic/healing process... actually inhibits growth

- ▶ Studies exploring the use of cannabis in the treatment of opioid use disorder in adolescent and young adult populations demonstrated an increase in cravings and higher rates of relapse among participants who used cannabis
- ▶ Research with veterans diagnosed with PTSD concluded that cannabis use increased intrusive symptoms over time
- ▶ Research indicating mental health benefits from cannabis are largely resulting from low quality, small population studies



Not Ya Son's Weed
Gummies THCA 150mg



STNR THCA Diamond +
Live Rosin 2G Disposable



Delta Beverages HHC
Day Drinker

Flower



Space Gods Edibles
Crisps



Zaza D10 Disposable



Zaza D8 Carts

BOGO SALE



Happy Fruit Gummies
Mellow Mango D9



Happy Fruit Gummies
Strawberry Bounce D10



Happy Fruit Gummies
Cherry Lifted Limeade
D9 + THCv



Happy Fruit Gummies
Blueberry Dream CBN +
D9



★ ★ ★ ★ ★ No reviews

Rejuvenate Your Soul
Organic Ayurvedic Delta-8
Tea | Celestial Cannabis

\$19.99

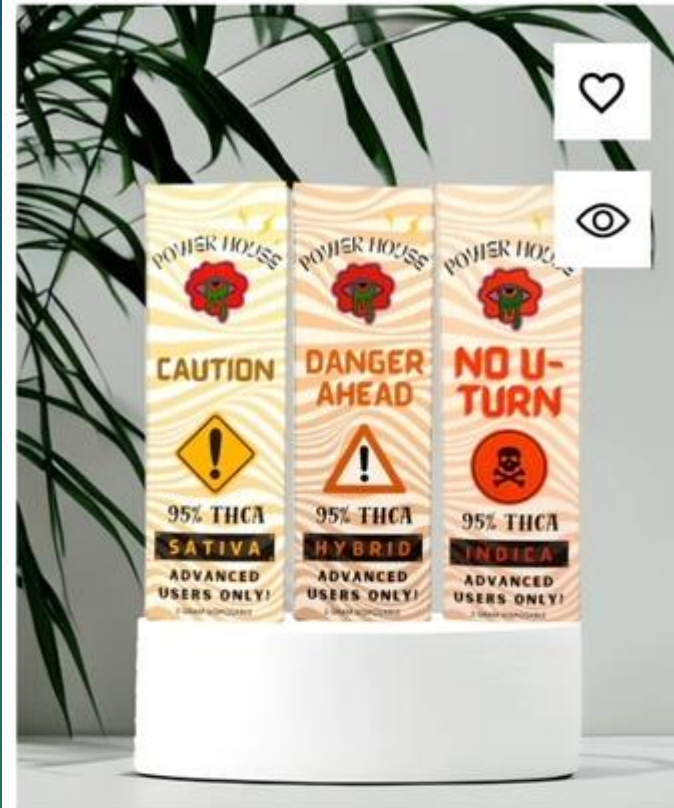


★ ★ ★ ★ ★ No reviews

Happy Hour Alcohol
Substitute Delta-9
Cannabis Tea | Celestial

Cannabis

\$24.99



★ ★ ★ ★ ★ No reviews

95% Pure THCA Disposables
(2mL) | Power House





\$74.99



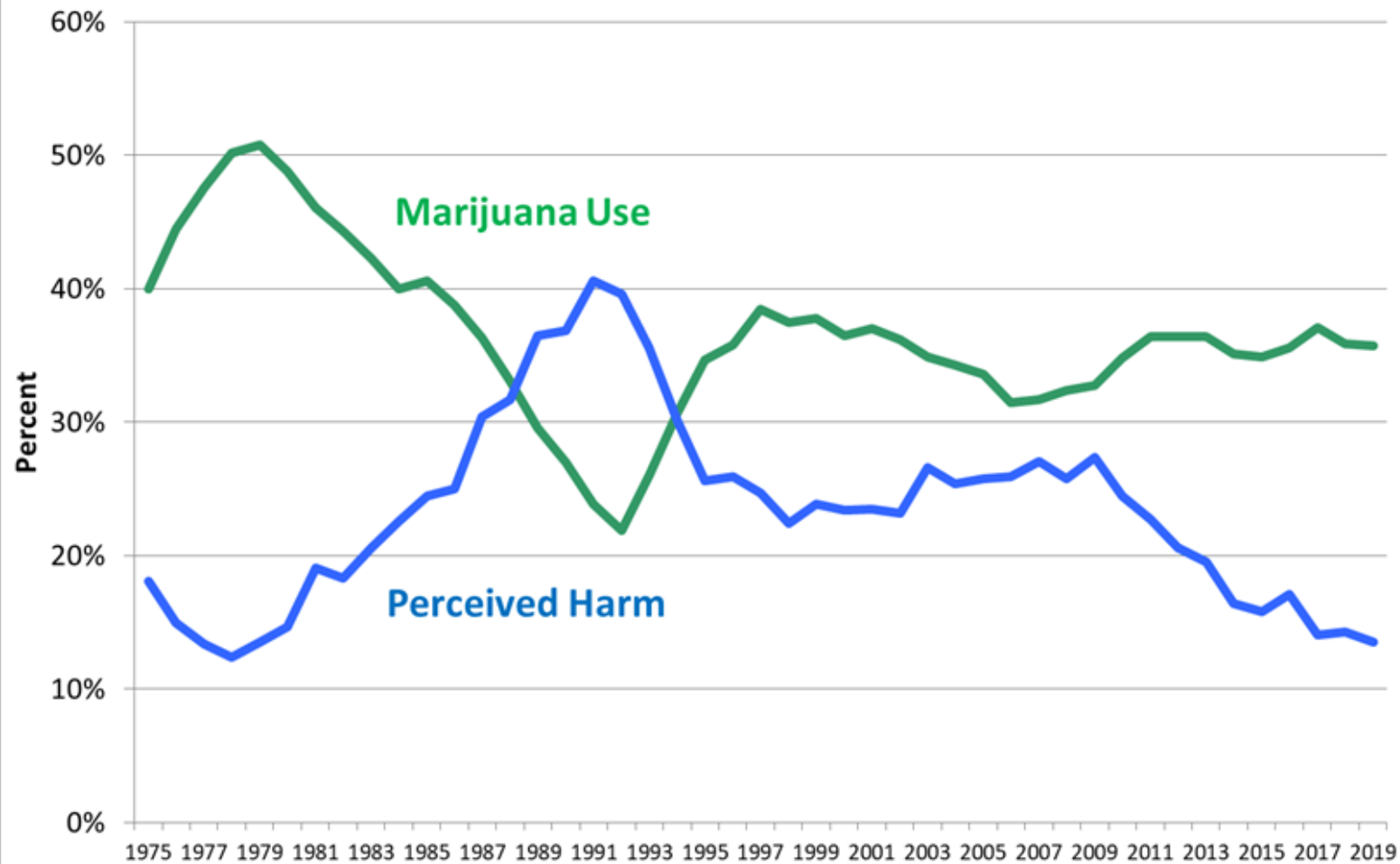
H Healer

THC Dosage Chart

Tinctures, Edibles, Flower, & Vapes

 Tinctures	 Edibles	 Flower	 Vapes
<p>Start: 1 - 2 mg THC per dose up to 3x day</p> <p>Onset: 10 - 45 mins</p> <p>Duration: 3 - 8 hrs</p>	<p>Start: 1 - 2.5 mg THC per serving</p> <p>Onset: 1 - 2 hrs</p> <p>Duration: 4 - 12 hrs</p>	<p>Start: 1 inhalation</p> <p>Onset: 1 - 5 mins</p> <p>Duration: 1 - 6 hrs</p>	<p>Start: 1 inhalation</p> <p>Onset: 1 - 5 mins</p> <p>Duration: 1 - 6 hrs</p>
<ul style="list-style-type: none"> • Add: 1 to 2 mg to your dose every 2 days until desired effects • Easy to microdose • Provides beneficial compounds lost in smoking, edibles and distillates 	<ul style="list-style-type: none"> • Add: 1 to 2.5 mg after 2 hours if needed • Cut higher dosage edibles into smaller portions • Taking with food can increase absorption by 2 to 5x 	<ul style="list-style-type: none"> • Increase by 1 inhalation after 5 mins until desired effects • Use a herbal vaporizer • Optimal temperature: 360°F • Combine with oral and topical delivery for better results 	<ul style="list-style-type: none"> • Increase by 1 inhalation after 5 mins until desired effects • Contain highly concentrated cannabis extract, may need fewer inhalations than with flower • Safety concerns

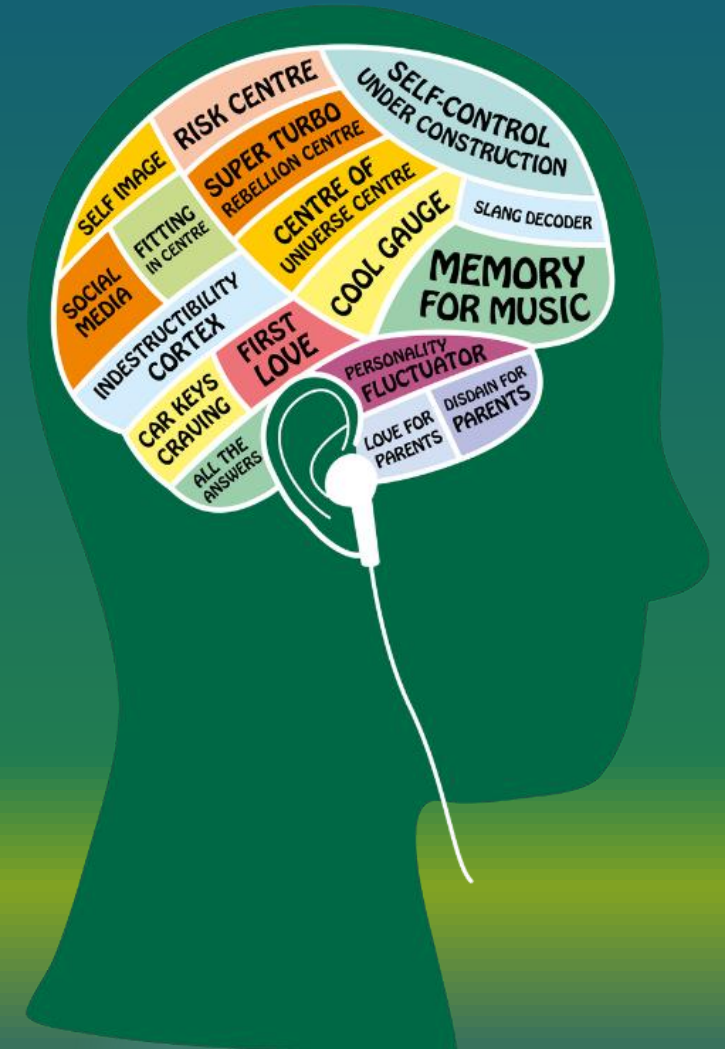
Past Year Marijuana Use and Perceived Risk of Harm of Occasional Marijuana Use Among 12th Graders, 1975-2019



Source: Monitoring the Future

Risk Perception vs. Reality

- ▶ Increase in marijuana-related traffic fatalities
- ▶ Edible-related hospitalizations and deaths (overdose)
- ▶ Lung/Respiratory Disease
- ▶ Cannabinoid Hyperemesis Syndrome
- ▶ Heart Attacks



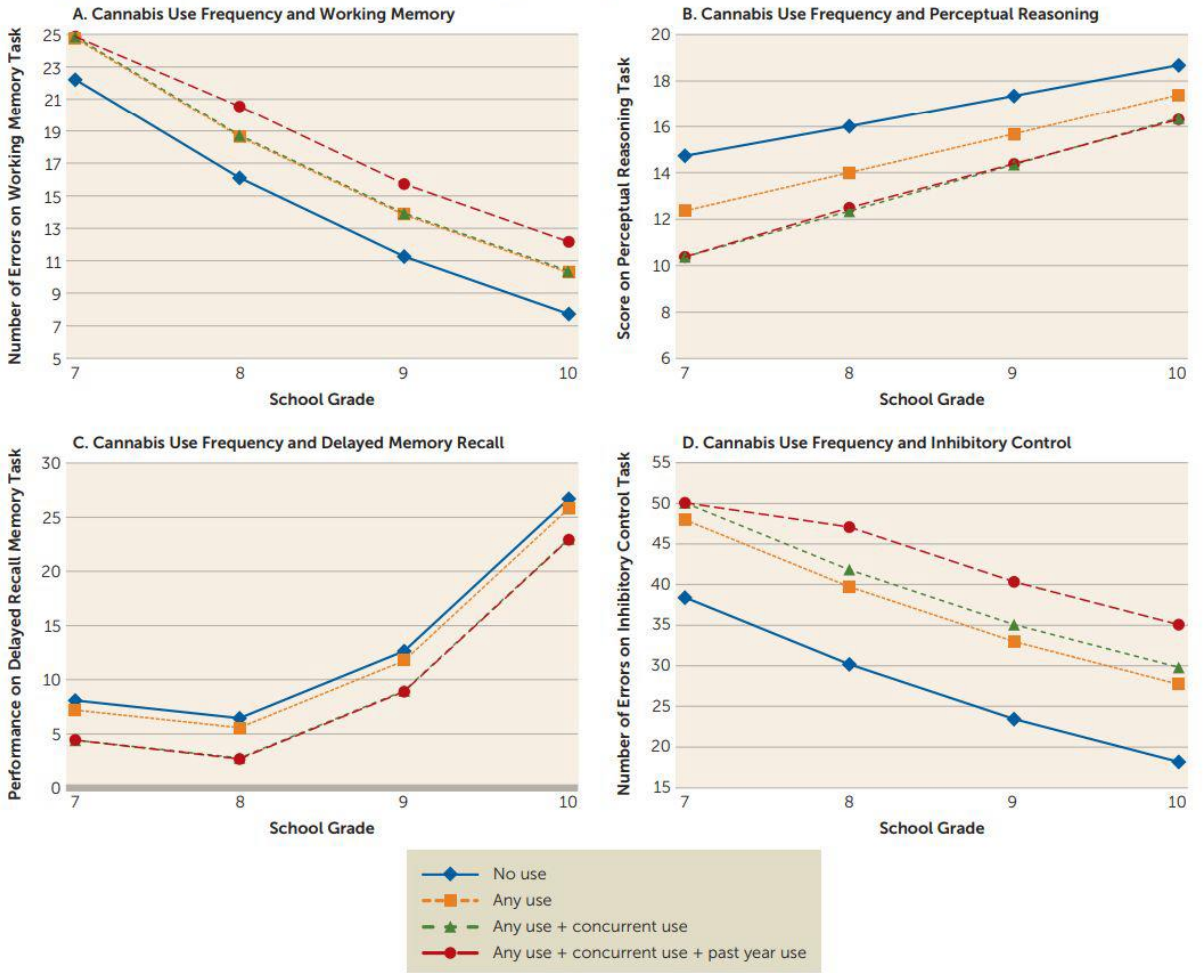
Risk Perception vs. Reality

- ▶ Decreased motivation, including lack of motivation to engage in typically rewarding behaviors
- ▶ Lower IQ over time
- ▶ Increase in adolescent addiction rates
- ▶ Withdrawal symptoms have been found to be similar to that of other drugs – irritability, disrupted sleep, changes in appetite, nausea, GI implications, shaking, sweating, headache, increased depression, increased anxiety

A Population-Based Analysis of the Relationship Between Substance Use and Adolescent Cognitive Development

Jean-François G. Morin, B.A., Mohammad H. Afzali, Ph.D., Josiane Bourque, M.Sc., Sherry H. Stewart, Ph.D., Jean R. Séguin, Ph.D., Maeve O'Leary-Barrett, Ph.D., Patricia J. Conrod, Ph.D.

FIGURE 2. Between-Subject and Within-Subject (Concurrent and Lagged) Relationships Between Cannabis Use Frequency and Working Memory Errors, Perceptual Reasoning Performance, Delayed Memory Recall Performance, and Inhibitory Control Errors^a



Risk Perception vs. Reality

- ▶ Decreases emotional regulation and/or dysregulation of feel-good chemicals naturally occurring in the body
- ▶ Negatively impacts anxiety and depression
- ▶ Increases (some studies say can double) the risk of schizophrenia
- ▶ Contributes to earlier onset of psychiatric disorders
- ▶ Hallucinogen Persisting Perception Disorder
- ▶ Cyclical relationship



Implications

- ▶ Personal impacts of the progression of Cannabis Use Disorder contribute to tensions in the home, lack of motivation at school, decreased desire for further education and/or involvement in a career
- ▶ Already stressed systems including emergency rooms, psychiatric hospitals, and treatment centers have been impacted by the changing trends in cannabis use
- ▶ Early intervention by families, school systems, and even the legal system have decreased due to mis-information about cannabis

Resource

- ▶ <https://www.cdc.gov/marijuana/health-effects/addiction.html>
- ▶ <https://www.hazeldenbettyford.org/addiction/marijuana-symptoms>
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6223748/>
- ▶ <https://monitoringthefuture.org/>
- ▶ <https://news.umich.edu/marijuana-and-hallucinogen-use-binge-drinking-reach-historic-highs-among-adults-35-50/>
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10176789/#:~:text=The%20extant%20literature%20revealed%20mixed,use%20rates%2C%20substance%20use%20rates>
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4308295/>
- ▶ <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-8253-4>
- ▶ <https://pubmed.ncbi.nlm.nih.gov/26842658/>
- ▶ <https://www.ncbi.nlm.nih.gov/books/NBK423845/>
- ▶ <https://www.samhsa.gov/marijuana>

Resource

- ▶ <https://nida.nih.gov/publications/research-reports/marijuana/there-link-between-marijuana-use-psychiatric-disorders>
- ▶ <https://www.apa.org/monitor/2023/06/marijuana-effects-brain>
- ▶ <https://www.sciencedirect.com/science/article/pii/S266711822100009X#:~:text=Twenty%2Dsix%20adolescent%2Fyoung%20adult,opiates%20and%20promoted%20opiate%20relapse.>
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10134049/#:~:text=It%20suggests%20starting%20with%20a,or%20achieving%20the%20desired%20outcome.>
- ▶ <https://nida.nih.gov/research/research-data-measures-resources/cannabis-potency-data>
- ▶ <https://ascpjournal.biomedcentral.com/articles/10.1186/s13722-015-0032-7>
- ▶ <https://pubmed.ncbi.nlm.nih.gov/36093358/>
- ▶ <https://pubmed.ncbi.nlm.nih.gov/32546286/>
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8222769/>

Resource

- ▶ https://sc.edu/uofsc/posts/2023/02/conversation_marijuana.php#:~:text=But%20few%20people%20know%20that,found%20across%20all%20vertebrate%20species.
 - ▶ <https://ppacentral.org/2020/05/13/marijuana-extracts-thc-concentrates/>
 - ▶ <https://www.ahajournals.org/doi/10.1161/JAHA.123.030178>
 - ▶ <https://pubmed.ncbi.nlm.nih.gov/22927402/>
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