

Marijuana Trends Amongst Youth

Exploring the Intersection of Drug Access, Environment & Public Health

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The Bucks County Drug & Alcohol Commission, Inc.



Bucks County
DRUG & ALCOHOL COMMISSION, INC
215-444-2700

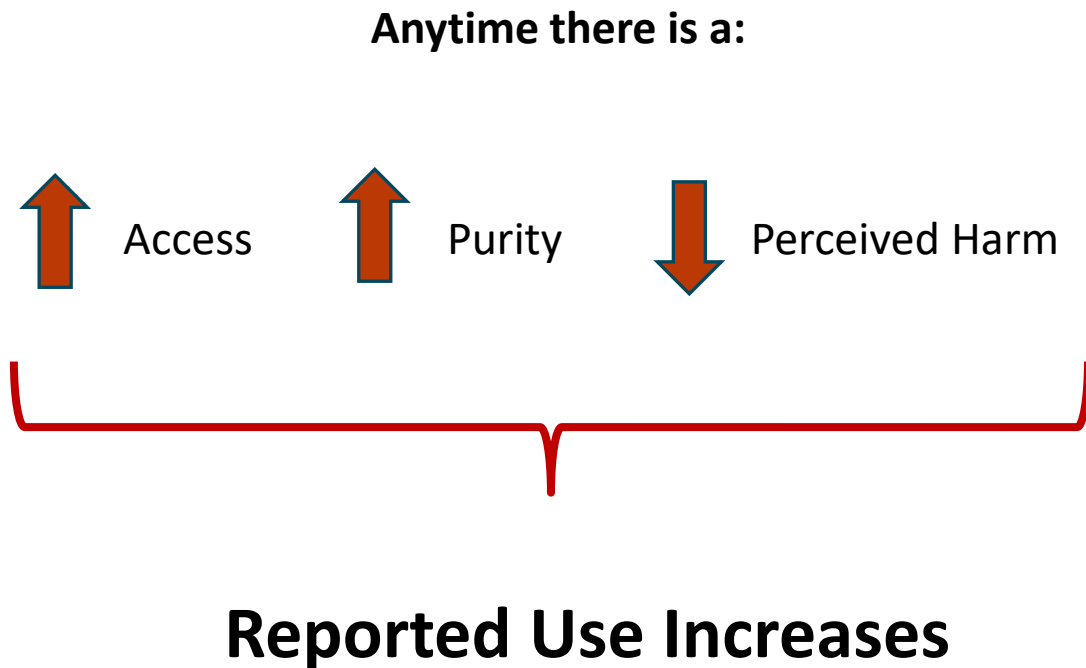


Mission is to reduce the use of tobacco and eliminate the use of illegal drugs and the abuse, misuse of and addiction to alcohol and other drugs.

215-444-2700

www.bcdac.org

Factors Linked To Substance Use



Access:

- There are over 100 medical marijuana dispensaries in Montgomery, Philadelphia and Bucks county Region
- There is currently no legal “adult use marijuana” (aka recreational)
- Many recreational close to borders of PA
- Delta 8 is easy to access for any age

Age of exposure

- Persistence exposure to marijuana can change brain chemistry

Purity:

- Marijuana today is much more potent than prior generations

Perceived Level of Harm

- Social norms and media have influenced an all-time acceptance of marijuana use by the US population.

Does using marijuana increase risk of harmful substance use in future?

Yes! — [Study Taylor M, Collin SM, Munafò MR, MacLeod J, Hickman M, Heron J. Patterns of cannabis use during adolescence and their association with harmful substance use behaviour: findings from a UK birth cohort. J Epidemiol Community Health. 2017 Aug;71\(8\):764-770. doi: 10.1136/jech-2016-208503. Epub 2017 Jun 7. PMID: 28592420; PMCID: PMC5537531.](#)

- 80% of teens did not use marijuana
- 17% of teens used marijuana occasionally
- 3% of teens used marijuana regularly (1 or more times per week)

Outcome:

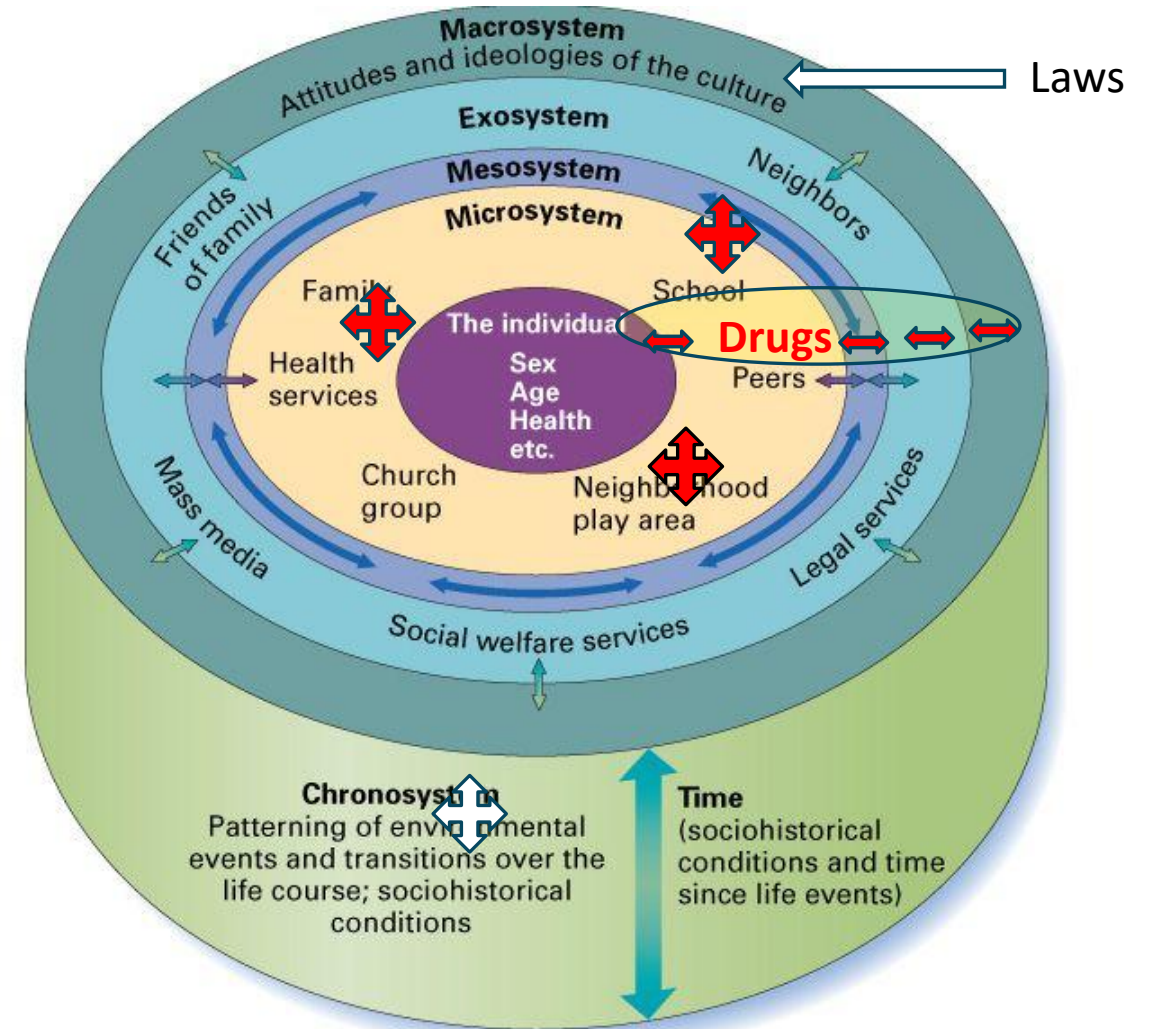
- 14% of teens who did not use marijuana progressed to harmful substance use behaviors in early adulthood
- **83%** of teens who occasionally used marijuana progressed to harmful substance use behaviors in early adulthood
- **94%** of teens who regularly used marijuana progressed to harmful substance use behaviors in early adulthood

Intersectionality of Drug Legality & Public Health

Health is shaped by a multi-dimensional overlapping of factors:

- Time
- Class, income
- Education, age
- Laws
- Access to resources
- Social norms
- Access to harm

Source: [1](#), [2](#), [3](#)



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Why are adolescents at risk of substance use?

- Overlapping of factors
 - Environment: what is available?
 - Social Norms
 - Purity of substances
 - Access
 - Perceived risk
 - Boredom
 - Trauma

Chronic Complex Trauma & Vulnerability?

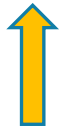
Prolonged exposure to high cortisol levels can cause:

- Cortisol / hypervigilance
 - Gang
 - Abuse
 - Neglect
 - Fear
 - Bullying
 - “ACE’s”
 - Bear in woods syndrome
- Anxiety, depression, and other mood disorders.
 - Reduces memory function
 - Depletes the adrenal glands, which produce hormones that help the body deal with stress.
 - Shuts down certain functions (like reproduction and the immune system) so that our body can focus all its energy on dealing with the stress at hand.
 - Prevents REM sleep
 - Alters digestion

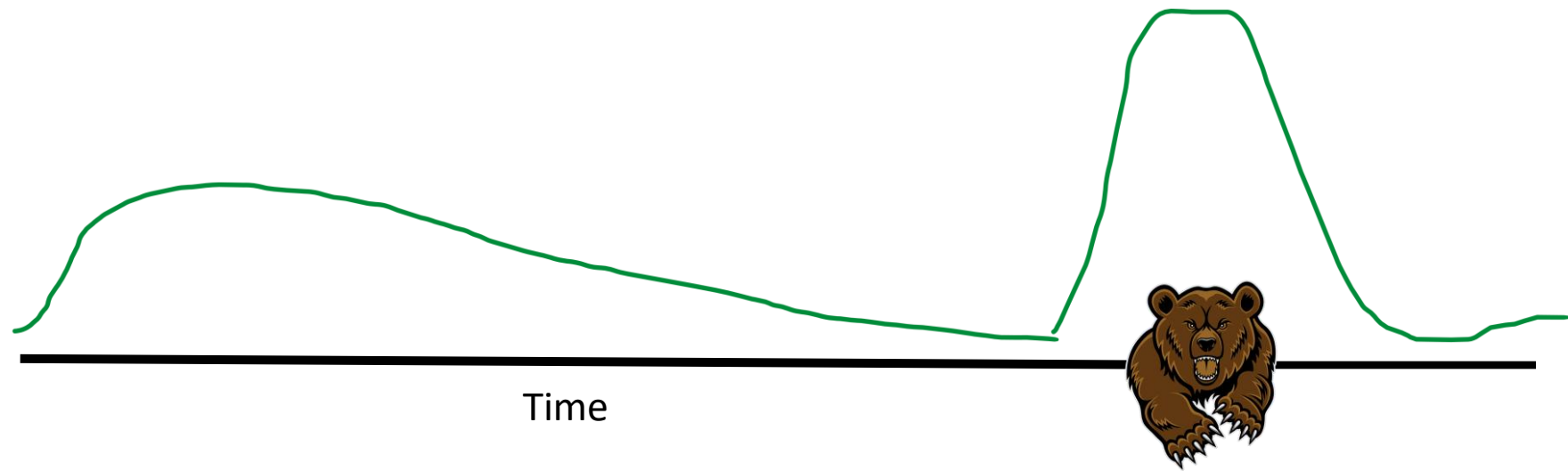
<https://www.ptsduk.org/10-unexpected-physical-symptoms-of-ptsd/>

Normal Cortisol Production

Response to Danger

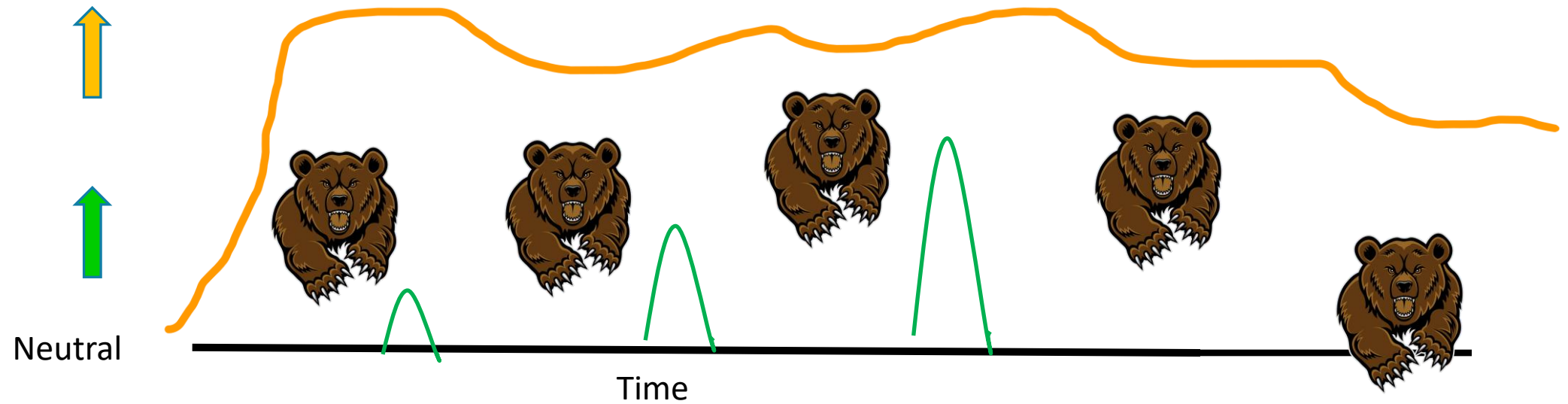


Neutral

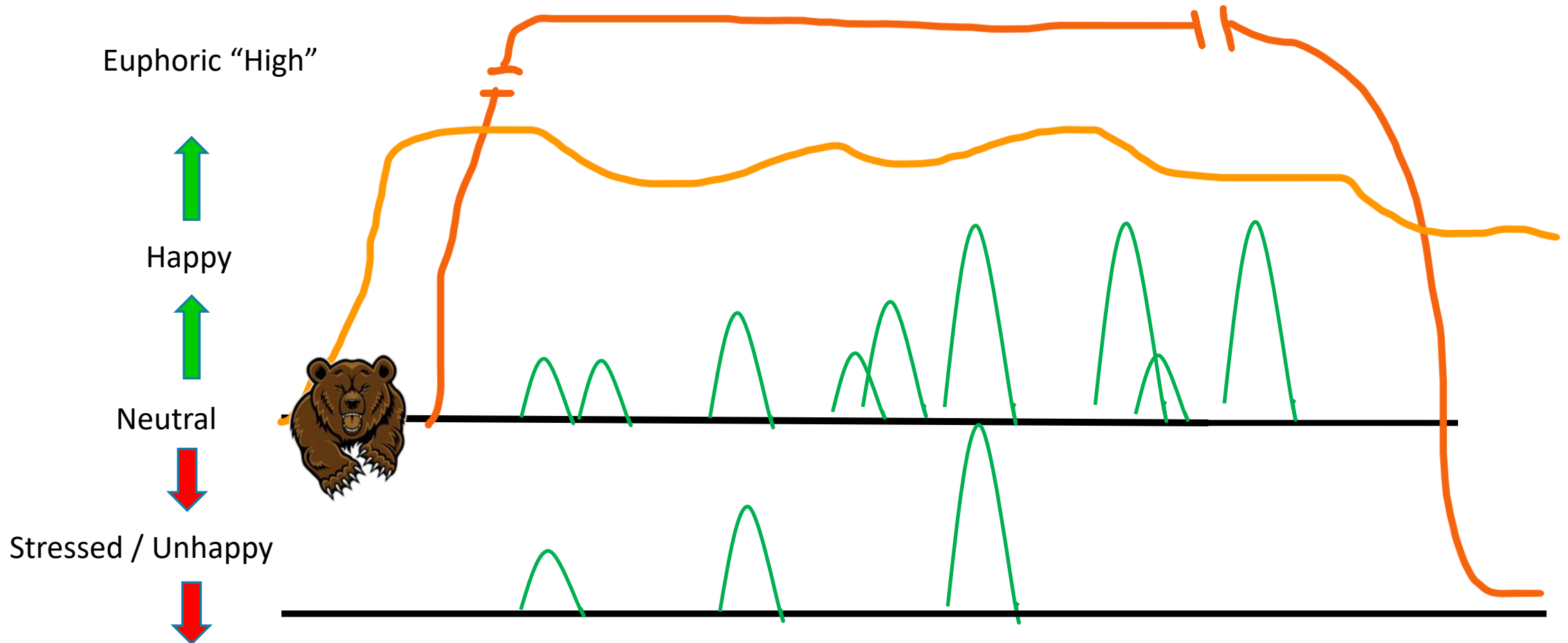


Cortisol Production

Response to Danger



Dopamine Production



Purity, Access & Harm

“It used to be 2% to 4% THC. ... We have kids getting 70% to 80% to 90% THC.”

Yasmin Hurd, the director of the Addiction Institute at Mount Sinai Hospital.

We must look at potential health outcomes when consuming something that is 15 to 20 times stronger at the “reported” same or increased rate!

<https://www.science.org/content/article/cannabis-laws-relax-neuroscientist-warns-its-dangers-developing-brain>

Marijuana is no Longer Natural

Marijuana was as nature intended “dioecious”:

- Male and female flowers are present on different plants.
- In nature males pollinate the females.
- When pollination occurs, seeds develop, diminishing limiting the THC and CBD produced in the plant flower.

Today the industry clones' female plants or genetically feminizes seeds (seeds bred to produce only female plants)!

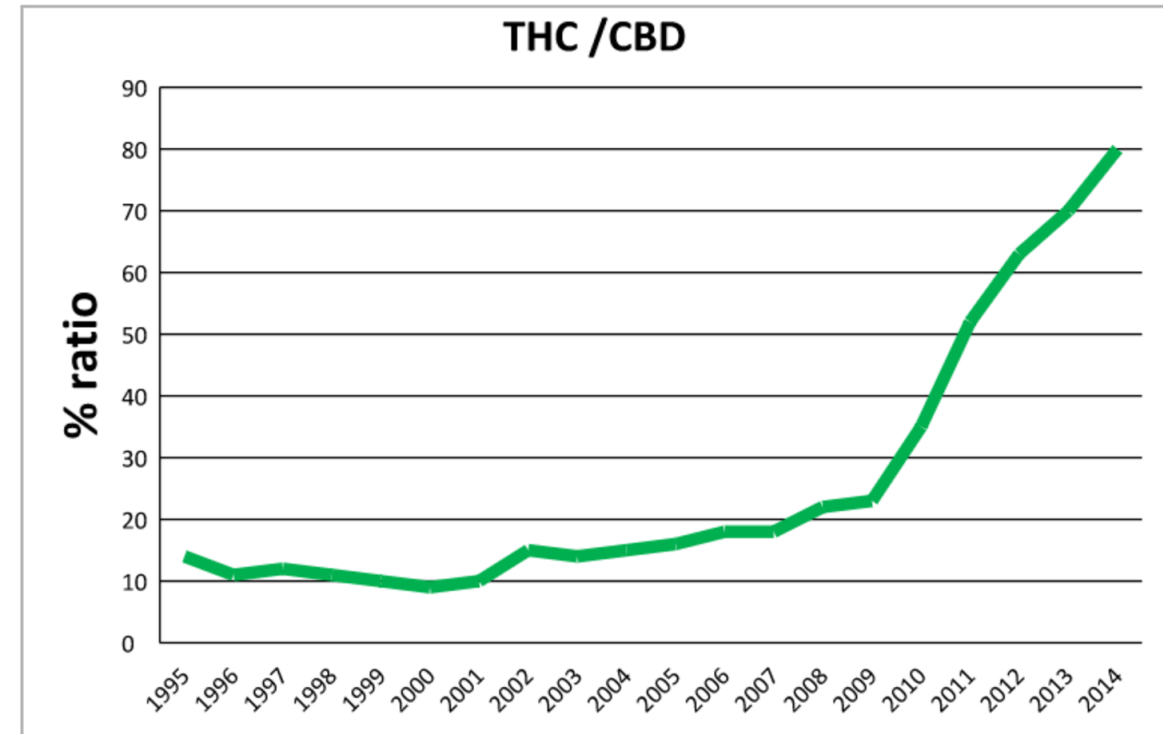
Marijuana Product Potency

National average of marijuana's THC content:

- 1978 was 1.37%
- 1988 it was 3.59%
- 1998 4.43%
- 2008 8.49% University of Mississippi's Potency Monitoring Project (UMPMC)







Colorado average of marijuana's THC content:

- 2016 17.1% Colorado Health Research Council (CHRC)
- 2020 19.6% Colorado Department of Public Health & Environment



Marijuana Product Potency

THC Percentage Chart

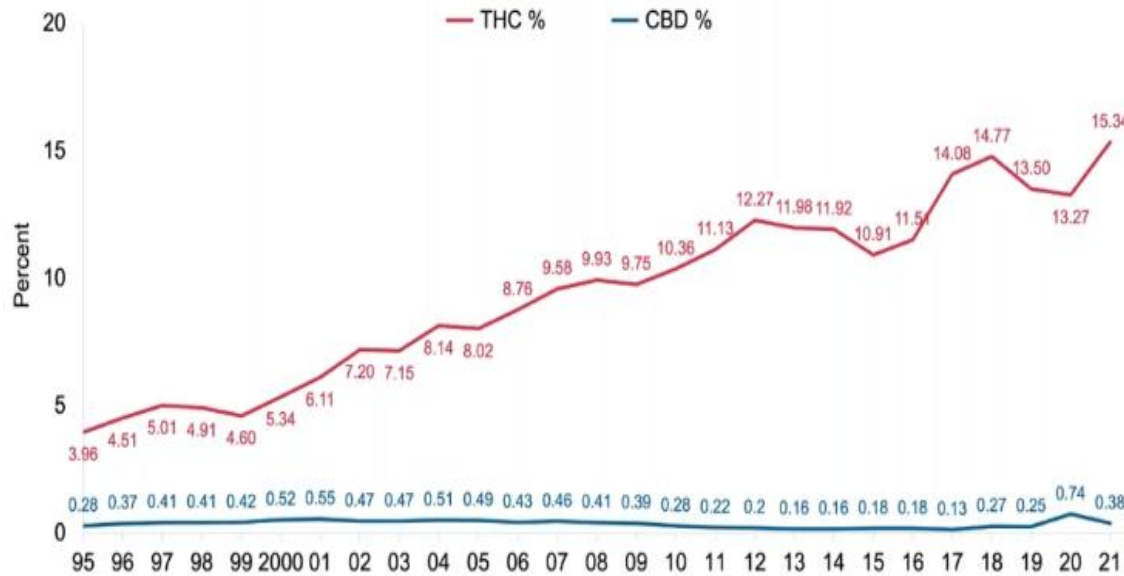
| Format | THC |
|--|---------------------|
|  Weed | 10-30% |
|  Shatter, Budder, Crumble | 60-80% |
|  Live Resin | 65-95% |
|  Live Rosin Vapes | 65-90% |
|  Distillate | 85-90% |
|  Edibles | 5-10mg per serving* |

*Cannabis edibles are measured in milligrams of THC per serving as opposed to percentages. See below for more information.

Marijuana Product Potency

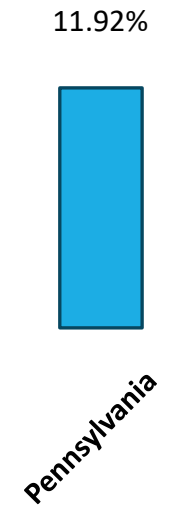
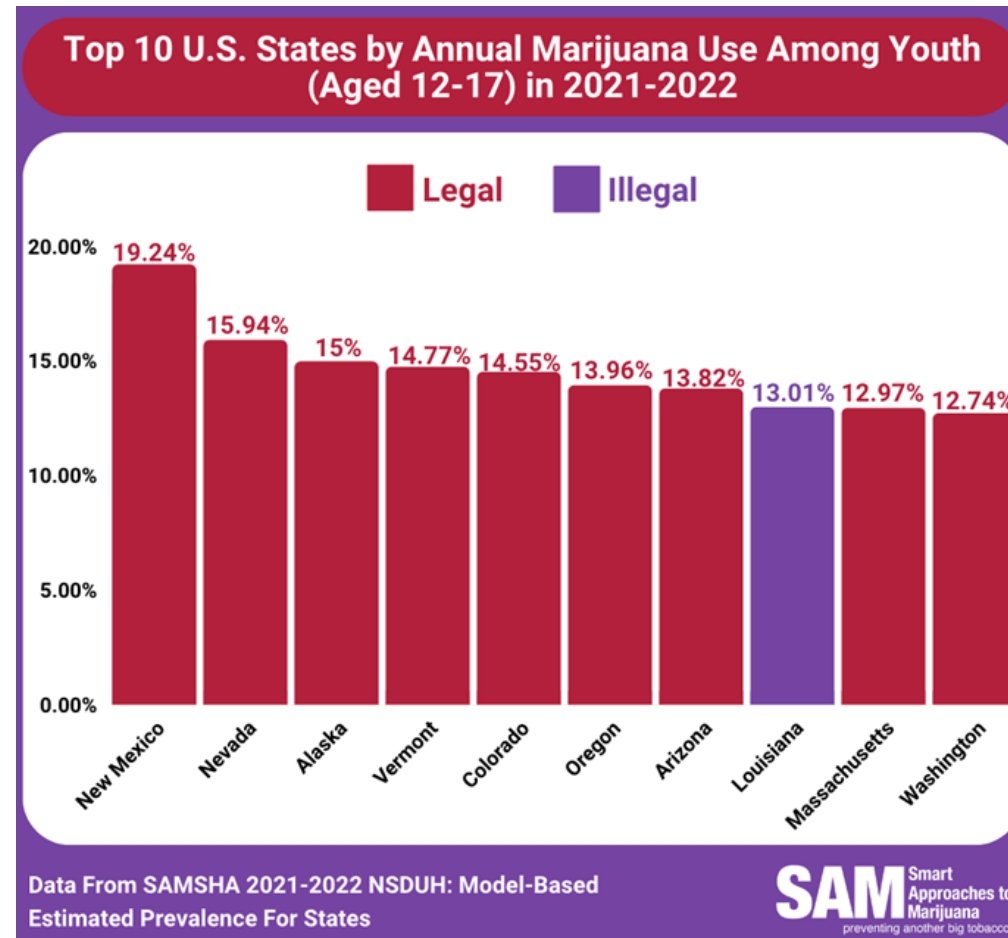
More THC, More Consequences

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



Increase Access = Increased Use

Nine out of the top 10 U.S. states by annual marijuana use among youth (ages 12-17) have legalized the drug for recreational use.



Pre- Marijuana Industry

(“Dark Ages” of Weed up to ~ 2000)



High Times
top
40

1. Oaxacan Red 2. Guerrero Gold 3. Oaxacan Sinsmillá 4. Oaxacan Gold
5. Acapulco Gold 6. Thai 7. Guerrero Gold 8. Thai
9. Colombian Gold 10. Thai 11. Oaxacan 12. Colombian Chibo
13. Hawaiian 14. Hawaiian 15. Colombian Gold 16. Guerrero

The High Times Top 40 is the Fortune 500 of dope. This guide to the most potent, precious and prettiest crops of 1977 shows exactly the kind of things grass gourmets look for when they inspect fresh stash—which they do, by the way, and in a good light, before even thinking about smoking it! A fine strain of marijuana, like a fine wine or cigar, has its own characteristic flavor, appearance and aroma; it is as unlike any other plant as two snowflakes. Learn to distinguish the vulgar or presumptuous, domestic window-box hybrid from the truly amusing, little-imported thoroughbred. Study these leaf and twig formations for clear guidance on smokability!

The High Times Top 40 were chosen because they, above all other pot plants, are truly representative of this great vintage year 1977. For wine lovers, great years may fall a quarter of a century apart. But in pot, there's always another great year in store—in fact, there's one due in '78. ♪

88

Post Marijuana Industry

Sundae Driver:

- 20% THC
- 1% CBD

Banana Punch:

- 25% THC
- 1% CBD

Ice Cream Cake:

- 25% THC
- 2% CBD



Hash Oil Product

(Concentrates)

Concentrates

- Budder
- Wax / Crumble
- Shatter
- Oil

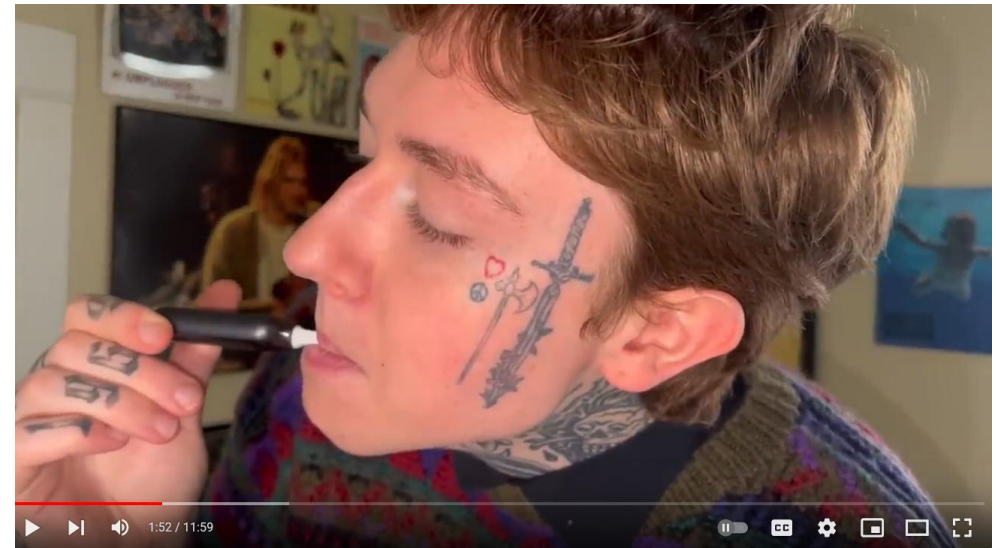
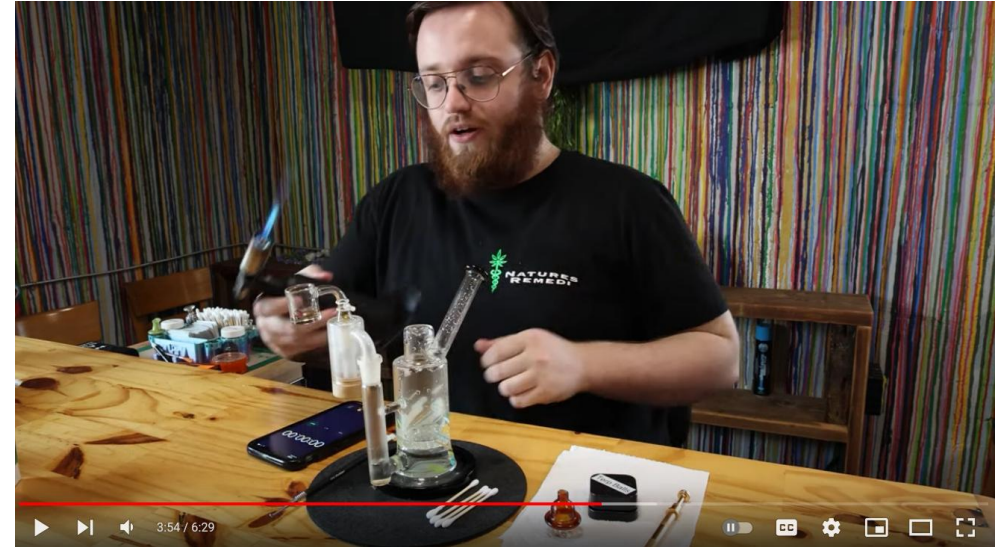


Hash Oil Product

(Concentrates)

Methods of use

- Dabbing
- Dab Pens
- Vaping (Carts)
- Knife Hits
- Infusing in food



Kief



Moon Rocks



“Shake”

Small pieces of cannabis flower that break off from larger buds during handling, processing, and packaging thus retains its high potency. (trim is less potent by about 1/2)

KUTZ

Kutz | Apple Banana Soap | Pre-packed Shake

1 oz
\$25.00

20% THC

1 ▾

 ADD TO CART

*Sales tax will be added at checkout.

THC: 20.5% ⓘ CBD: 0.2% ⓘ



“Shake”



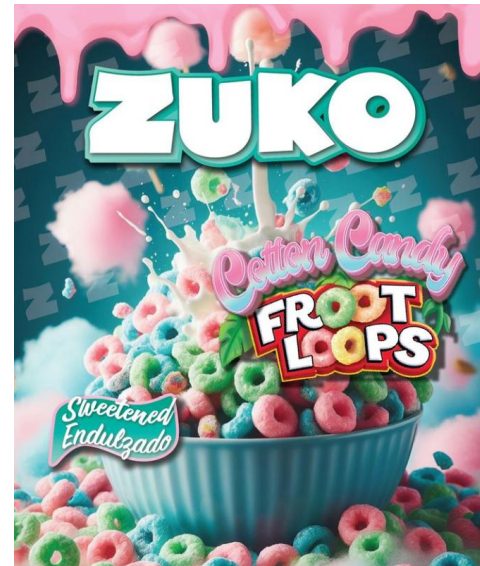
Spray / Infused Packs

Weighted Spray packs: Spraying on weighted substrate

Artificial Terpene spray packs: Low quality & high Quality marijuana sprayed with aroma (food grade) to alter the flavor.

Flavors!

Here to stay and very concerning!



Edibles

Harder to I.D. by parents, teachers, etc.

- Are you going to go up and investigate every time you see a student eat a gummy bear?

Easy to consume a large quantity


- A half a gummy is often considered on dose
- Eating multiple or even one can result in unexpected levels of impairment

Other Concerns

- Accidental ingestion not knowing that the gummy is a THC product
- Pranking someone
- Not just gummies
 - Candy
 - Cookies
 - Ice cream,



Current “Appropriate” Medical Marijuana Strains per - 28 Pa. Code § 1151.34(e).

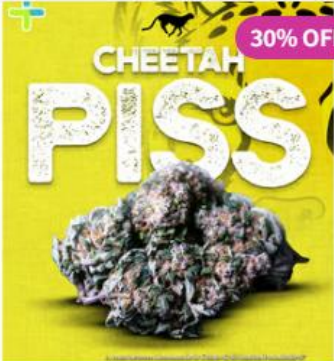


GRASSROOTS™
medical marijuana flower
NET WT. 0.035 OZ (1.0g)

Hybrid
Funky Charms
Grassroots
★★★★★ 47
Flower *please check ... (...
THC 36.54%

~~\$120.00~~ \$120.00/14g

Add to bag




CHEETAH P.ISS 30% OFF

Sativa
Cheetah P.
FarmaceuticalRx
★★★★★ 51
Premium Flower (3.5G)
THC 29.33%

~~\$45.00~~ \$31.50/3.5g

Add to bag




SCROOPY NOOPERS 30% OFF

Hybrid
Scroopy Noopers
FarmaceuticalRx
Ground Flower (14G)
THC 27.78%

~~\$106.00~~ \$74.20/14g

Add to bag



Hybrid
Girl Scout Cookies
Grassroots
★★★★★ 116
Cartridge (1G)
THC 80.86%

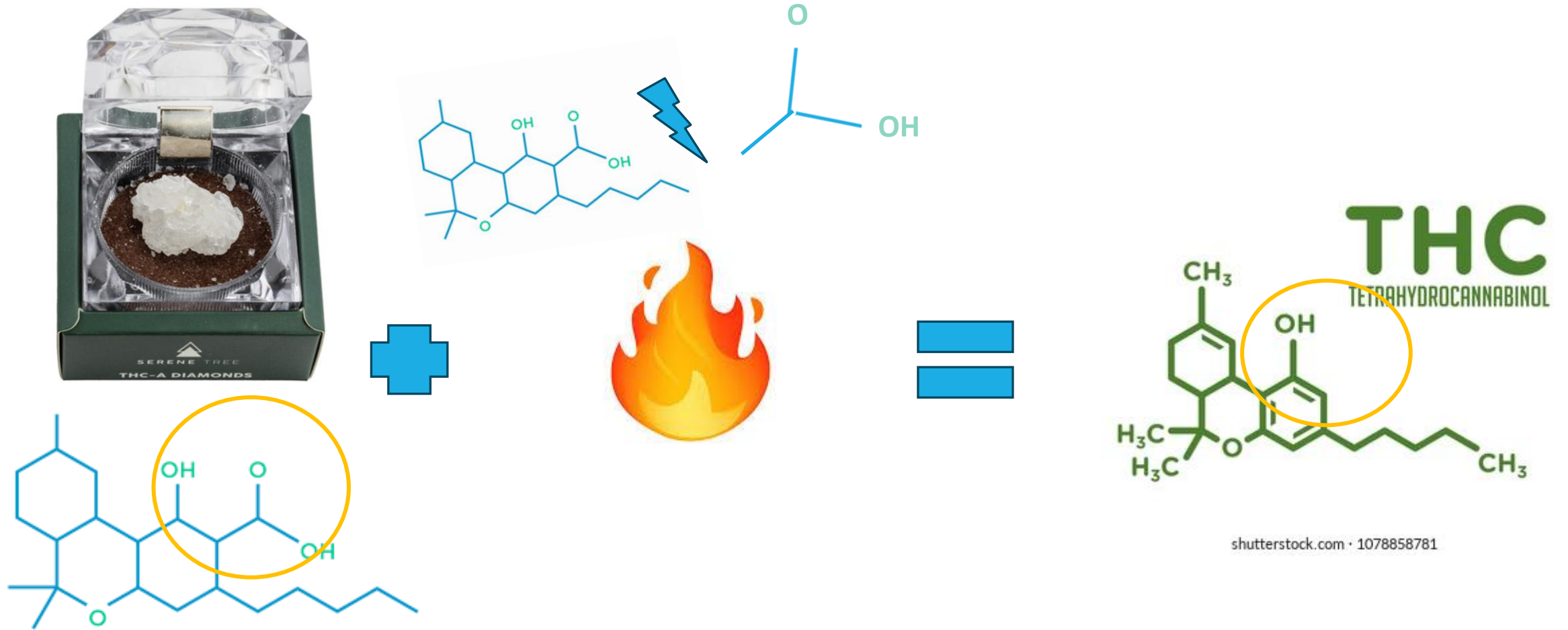
~~\$60.00~~ \$60.00/1g

Add to bag

[Click here](#)

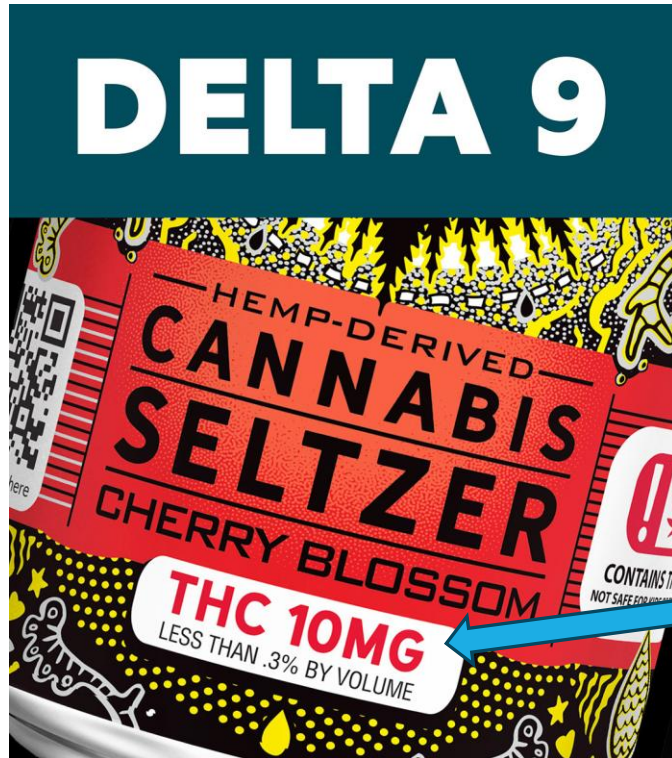


THCA (Hemp derived Delta 9) Precursor to THC



shutterstock.com · 1078858781

THCA (Hemp derived Delta 9) Precursor to THC



New “users” should not typically consume more than 2 to 3 milligrams to avoid negative side effects.

“Contains 10mg of the good stuff, which equals less than .3% by volume”

Delta 8 (THC O) (Hemp derived)

Delta-8 products are hemp-derived and fell under the guidelines of the 2018 Farm Bill.

This meant that the end product had to contain less than 0.3% THC per total volume. Delta-8 tetrahydrocannabinol

- Very similar to Delta-9 THC
- Delta-8 provides similar effects as Delta-9
 - Less potent
- Will test positive for marijuana on drug test due to its metabolites



Amber Delta 8 Hemp Distillate

\$16.25 - \$1,950.00



Baked Cherry Pie

\$15.00 - \$700.00

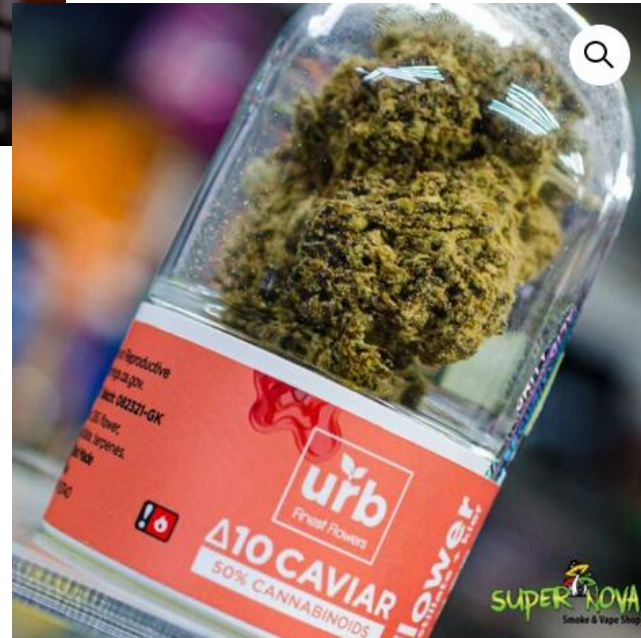


Baller Jar Dab – Golden GOAT (Hybrid)

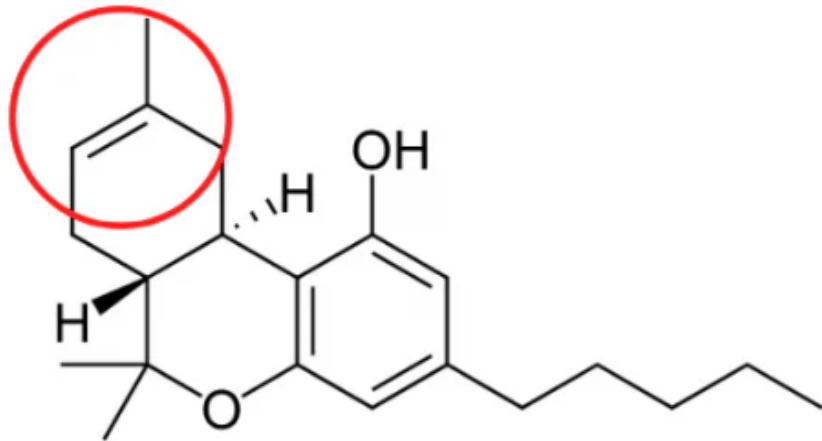
\$50.00

In just three years, the market for delta-8 THC and other hemp-derived cannabinoids increased nearly 1,300%

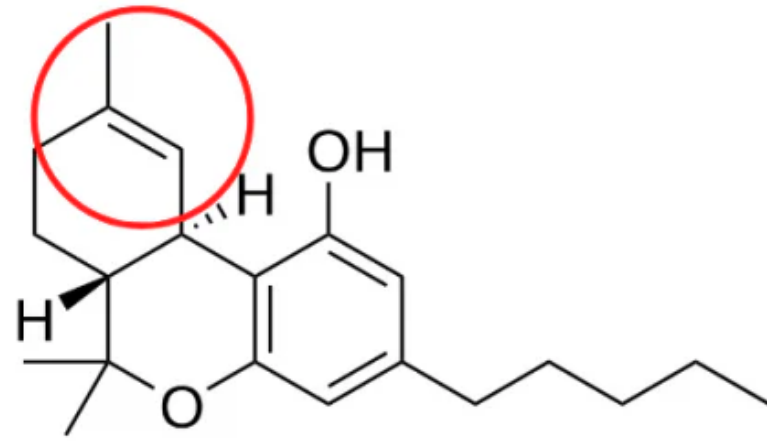
- \$200.5 million in sales in 2020 to nearly \$2.8 billion in 2023, according to a recent [report from cannabis analytics](#) firm Brightfield Group.



Delta 8 vs. Delta 9 THC

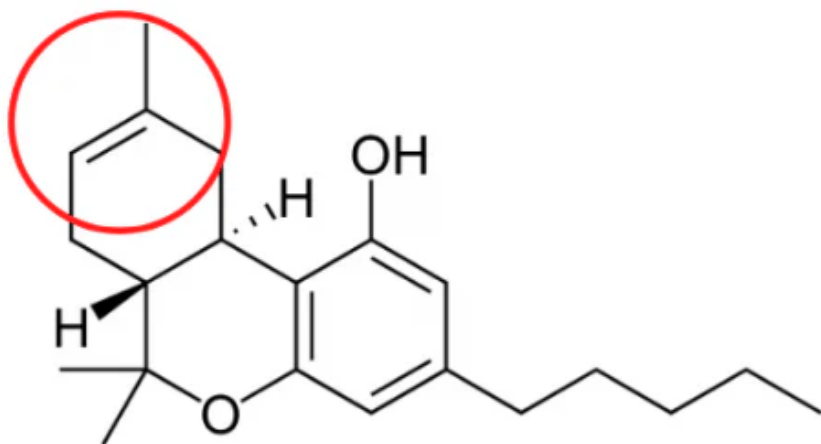


Delta-8-THC

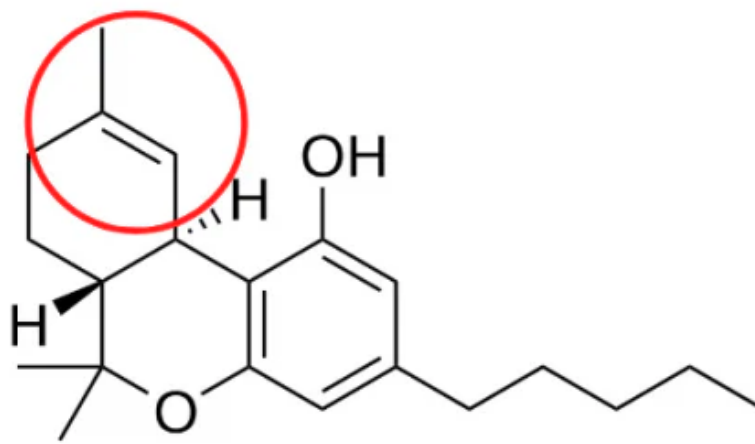


Delta-9-THC

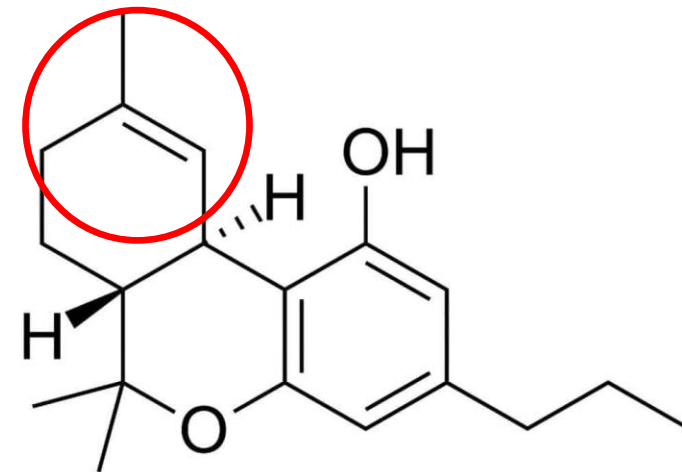
Delta 8 (THC 0), Delta 9, Delta 10 THC



Delta 8



Delta 9



Delta 10 THC

Legalizing Concerns

In states such as CO where Marijuana is recreationally legal, increased access and public acceptance of marijuana resulted in increased use amongst all ages and increased traffic deaths related to marijuana use.

- Past month marijuana use for ages 12 and older increased 26% and is 61% higher than the national average, currently ranked 3rd in the nation.
- Past month adult marijuana use (ages 18 and older) increased 20% and is 62% higher than the national average, currently ranked 3rd in the nation.
- Past month college age marijuana (ages 18-25) use increased 10% and is 53% higher than the national average, currently ranked 3rd in the nation.
- Traffic deaths where drivers tested positive for marijuana increased 138% while all Colorado traffic deaths increased 29%.
- Traffic deaths involving drivers who tested positive for marijuana more than doubled from 55 in 2013 to 131 people killed

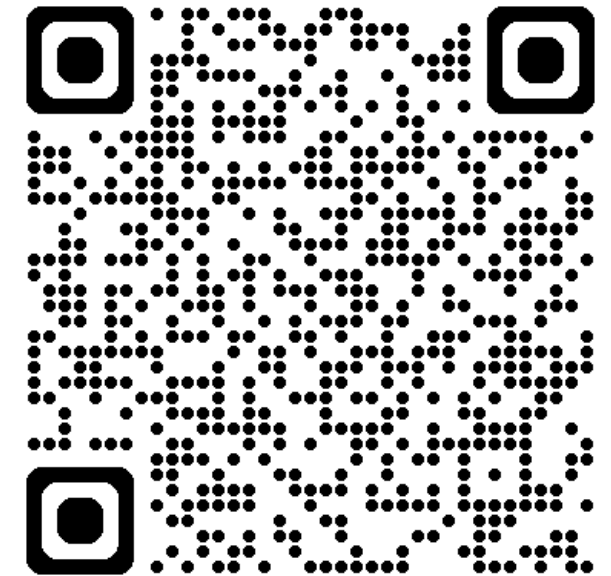
[CLICK](#)



Increased Access = Increased Harm

Suicide Rates In States with Marijuana Industry

A study, published in the Journal of the [*American Academy of Child & Adolescent Psychiatry*](#), found that legalization of medical and recreational marijuana was associated with increased suicide-related mortality among female youth and among boys and girls age 14 to 16. A follow-up study, presented at last year's American Academy of Child and Adolescent Psychiatry's annual meeting, in October, found similar associations among Hispanic and Asian youth.



Schizophrenia & Cannabis Use Disorder

The Association Between Cannabis Use and Schizophrenia: Causative or Curative? A Systematic Review



Young men at highest risk of schizophrenia linked with cannabis use disorder



Studies report up to 50% of cannabis users that have ED presentations with subsequent hospitalization for cannabis induced psychosis, will go on to develop schizophrenia (*P value=.04 or “significant” - thus meaning this is a “real relationship”*)



Cannabis Psychosis

Change in perception of reality

- **Loss of contact with reality!**
- Paranoid delusions
- Suicidal ideations
- Suspiciousness
- Sense of grandiosity
- Disorganized and disturbed thoughts
- Inappropriate emotional responses
- Unusual changes in behavior

Considerations

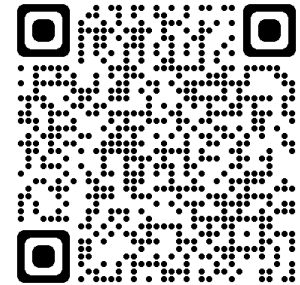
- Titration (amount used)
- Frequency of use
- Potency
- Past history (MH / ATOD)

Cannabis Hyperemesis Syndrome

- **Cannabis hyperemesis syndrome (CHS)**

- Frequent, severe nausea and vomiting.
- Higher risk of developing CHS if you use cannabis at least once a week
- Higher risk if you have used cannabis since adolescence.
- The only way to cure CHS is to stop using cannabis.

Cannabis has multiple effects on the gastrointestinal system, including secretions, appetite stimulation, modulation of inflammation, and motility. However, its use is also associated with CHS, signifying its biphasic effect.



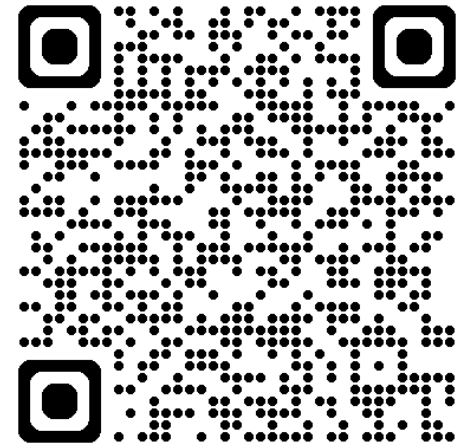
[Perisetti A, Gajendran M, Dasari CS, Bansal P, Aziz M, Inamdar S, Tharian B, Goyal H. Cannabis hyperemesis syndrome: an update on the pathophysiology and management. Ann Gastroenterol. 2020 Nov-Dec;33\(6\):571-578. doi: 10.20524/aog.2020.0528. Epub 2020 Sep 16. PMID: 33162734; PMCID: PMC7599351.](#)

Greening Out

Derived from “blacking out” from drinking too much alcohol

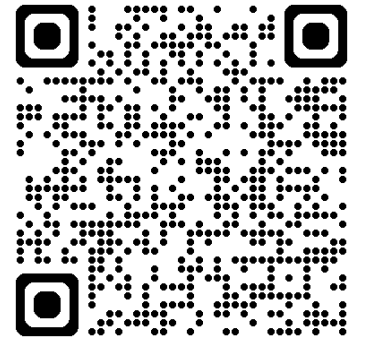
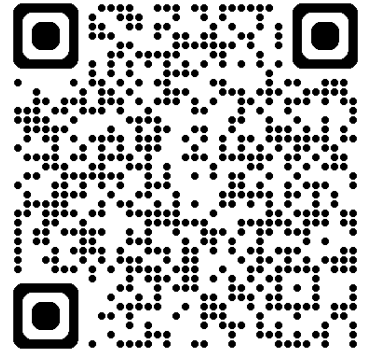
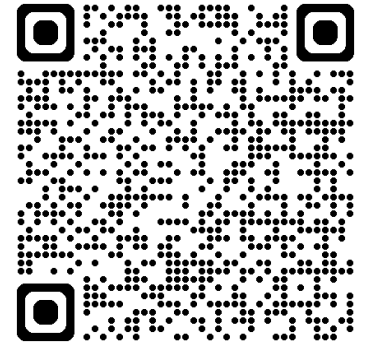
Cannabis reduces the amount of blood inside the heart between beats (in technical terms, it lowers diastolic pressure without raising systolic pressure), so the heart must beat faster to provide itself with oxygen.

- This can cause a person to faint or pass out and / or experience altered reality, paranoia.
- Nausea or vomiting is often a symptom



Tools for Identifying use

- CRAFFT 2.1+N
- CUDIT-R
- Motivational Interviewing with focus on movement from precontemplation to contemplation
 - Allows youth to talk about their ambivalence and not feel guilty about it!
 - What do you like?
 - What don't you like?
 - On a scale of 1 to 10 where do you see yourself as willing to
 - “Great! You say you’re a 4, that’s great, I’m curious, why did not say a 2?”
 - Collaboration through change talk!



Questions & Answers

Sources (not linked in slides)

- [Ecological Models of Human Development. V: International Encyclopedia of Education, Vol. 3*](#)
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- Lipari RN, Ahrnsbrak RD, Pemberton MR, Porter JD. [Risk and Protective Factors and Estimates of Substance Use Initiation](#): Results from the 2016 National Survey on Drug Use and Health. 2017 Sep. In: CBHSQ Data Review. Rockville (MD): Substance Abuse and Mental Health Services Administration (US); 2012–. PMID: 29431965.
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