

Protecting our Youth from Marijuana

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This presentation has been endorsed by

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Edibles: How long does it take for them to kick in?

According to [research](#), cannabis infused edibles are slower to kick in but last longer compared to inhalation. This is because compared to smoking, where cannabis is absorbed quickly into the bloodstream and distributed [rapidly](#) in the brain, edibles first need to enter the digestive system.

One [study](#) indicates that oral ingestion of THC **requires 30–90 minutes for effects to begin**. These effects reach their peak after 2–3 hours.

According to one study, the effects of edibles last 4–12 hours, depending on the dose and a person's characteristics, such as tolerance and metabolism.

MEDICALNEWS TODAY Risks and side effects

As edibles take longer to take effect, a person may consume more than they intend, subsequently experiencing a more intense and longer-lasting high.

According to [research](#), people may take extra doses, believing cannabis is not affecting them **until the delayed effects commence**.

A [2017 review](#) suggests that even daily users may consume a higher dose than expected, while people tend to eat an entire edible rather than a piece or serving.

[Research](#) indicates that the effects of cannabis overdose may include [anxiety](#) and [panic attacks](#), heart rate increases, and changes in [blood pressure](#).

According to a [study](#) of emergency department admissions in Colorado, acute psychiatric events and cardiovascular symptoms from cannabis are more common with edibles than inhalation products.



A 150 pound male drinking for one hour on an empty stomach would likely have the following BAC levels:



2 drinks	.05 BAC
4 drinks	.10 BAC
8 drinks	.20 BAC
12 drinks	.30 BAC

*After two drinks, Blood Alcohol Content (BAC) level is at **Driving With Ability Impaired (DWAI) = .05 BAC***

*After 4 drinks, BAC level is above **Driving Under the Influence (DUI) = .08 BAC***

Comparisons:

1 oz. 100 proof = 12 oz. beer = 5 oz. wine
or
(1½ oz. 80 proof)



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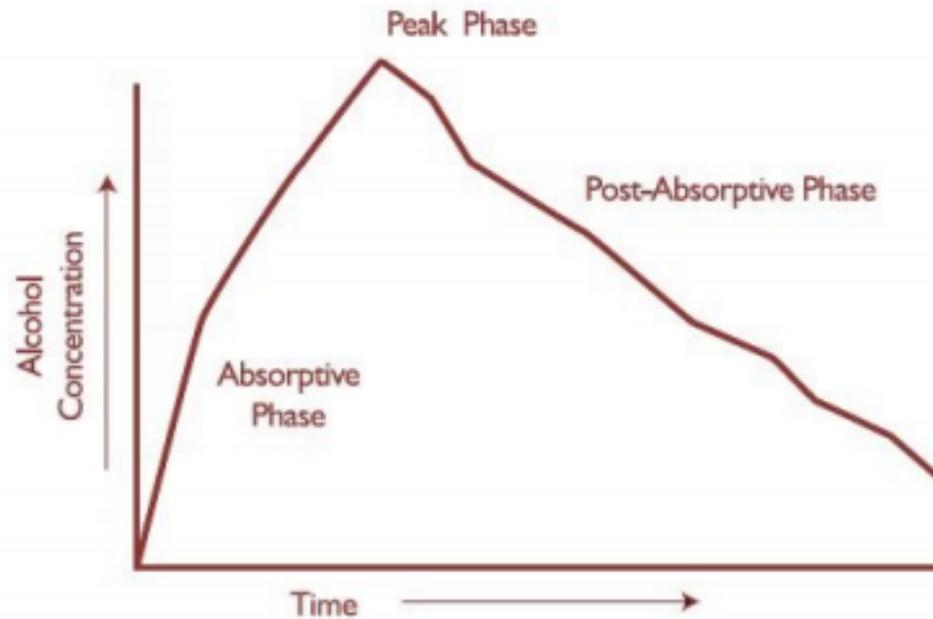
All contain .5 ounces of pure alcohol

Alcohol and Impaired Driving



<https://www.codot.gov/safety/alcohol-and-impaired-driving>

General Alcohol Concentration Curve



Marijuana-Impaired Driving A Report to Congress

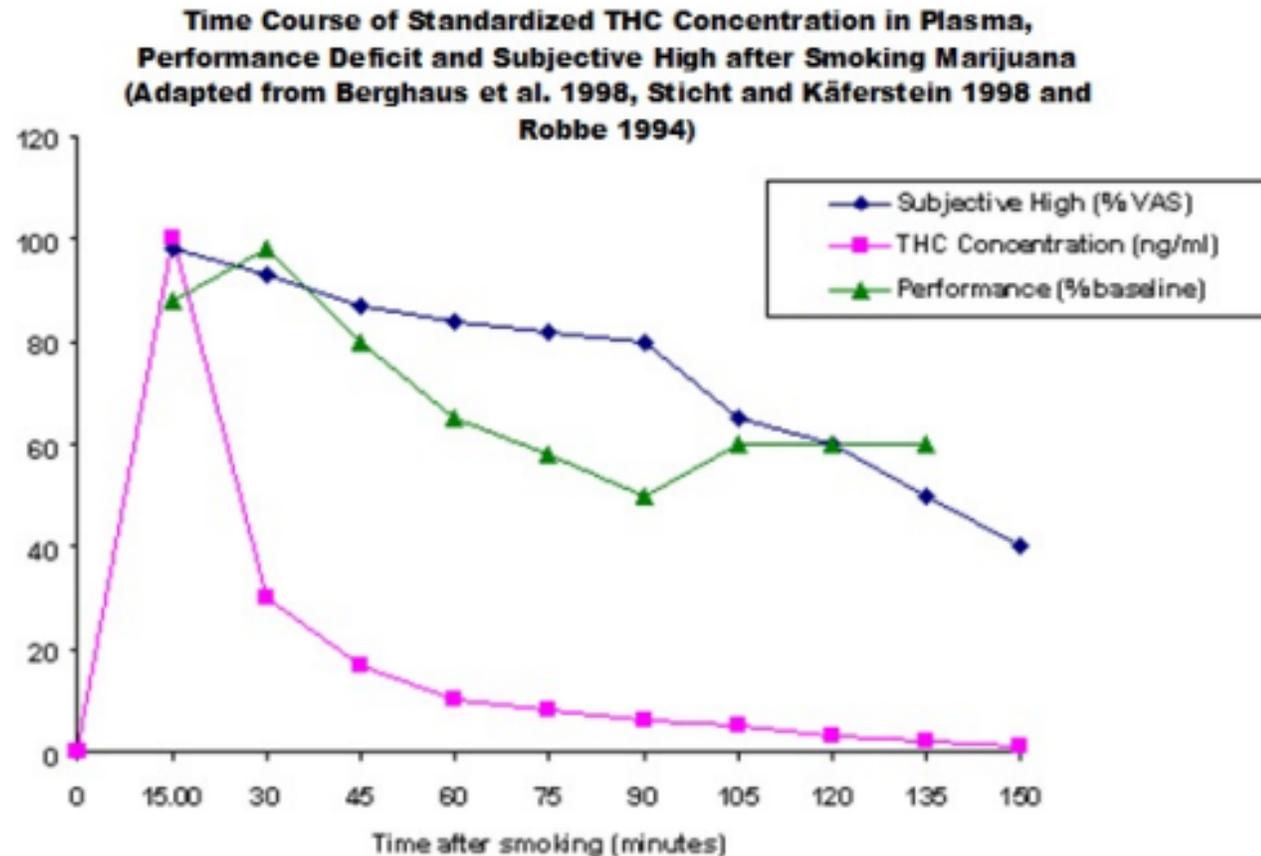
In summary, ethyl alcohol is a relatively simple drug whose absorption, distribution and elimination from the body along with the behavioral and cognitive effects are fairly well documented.

In comparison, the absorption, distribution and elimination from the body of marijuana (and many other drugs), along with the behavioral and cognitive effects is very different from the case with alcohol. The term marijuana refers to the plant known as marijuana (*cannabis sativa*). The typical way in which marijuana is consumed has been through smoking the plant material (leaves, flowers, seeds and stem), though other means of ingestion have been used, like through eating food products laced with an active ingredient of marijuana. The use of edible marijuana products has been increasing in recent years and presents some interesting new challenges that will be discussed briefly later in this report.

<https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812440-marijuana-impaired-driving-report-to-congress.pdf>

While fewer studies have examined the relationship between THC blood levels and degree of impairment, in those studies that have been conducted the consistent finding is that the level of THC in the blood and the degree of impairment do not appear to be closely related. Peak impairment does not occur when THC concentration in the blood is at or near peak levels. Peak THC level can occur when low impairment is measured, and high impairment can be measured when THC level is low. Thus, in contrast to the situation with alcohol, someone can show little or no impairment at a THC level at which someone else may show a greater degree of impairment.

Figure 4



<https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812440-marijuana-impaired-driving-report-to-congress.pdf>

Conclusion:

Unlike alcohol, there is no correlation between rising THC level and driver impairment.

Some research studies have found that peak performance deficits are observed long after the peak THC level occurs.

How long should I wait before driving after using Marijuana?

What researchers found was a "significant impairment on complex and novel driving-related tasks." Also finding that **such impairment was still present even 5 hours** after the subjects had initially gotten high. Other external studies have also found that the effects of cannabis **depending on how much you can consume can last up to 24 hours.**

“Six hours is a general guideline for inhaling, but it doesn’t apply to medical users, new users or people who are mixing it with alcohol or other drugs, who all have to wait longer,” Murie says. **“Edibles are a lot less predictable – nobody’s comfortable putting a number on it.”**

<https://www.theglobeandmail.com/drive/mobility/article-how-long-should-i-be-waiting-to-drive-after-consuming-edible-cannabis/>

THE FACTS ABOUT MARIJUANA-IMPAIRED DRIVING



COLORADO LOST 596

people on state roadways in 2019.

049

FATALITIES

involved a vehicle operator with Delta-9 THC, the impairing substance in cannabis, above the legal limit of 5ng at the time of the crash.



ANY AMOUNT OF DELTA-9 THC

in your blood puts you at risk for a DUI.

IN 2018

57% OF VEHICLE OPERATORS

charged with DUI who were also screened for marijuana tested positive for Delta-9 THC.

IN 2018

22% OF MARIJUANA CONSUMERS

reported driving within 2 to 3 hours of consuming marijuana.

Impaired Driving

- The economic and human costs of consequences of impaired driving are immense. If a community is considering allowing increased access to marijuana, impaired driving risks cannot be left out of the discussion.
- There is substantial evidence that recent marijuana use by a driver increases their risk of motor vehicle crash. **Increased crash risk could be up to seven times greater** for those who used marijuana compared to those who did not⁴.
- In Colorado in 2017 - in DUI cases that tested for multiple substances - [51% tested positive for both alcohol and THC](#). In 2018 it increased to 57%.
- [Successful impaired driving prevention programs](#) have included a multi-faceted approach including, public education, and media advocacy designed to gain the support of policy makers and the general public.

Impaired Driving

Recommendations that have the potential to reduce impaired driving include:

- Provide and promote ride sharing programs
- Creation of parking provisions to allow free options for business patrons
- Include local data collection and reporting requirements for marijuana impaired driving
- Require local businesses to notify law enforcement when a patron is clearly too impaired to operate a motor vehicle
- Require local DUI/DWUI enforcement efforts

Examples of Partners to Engage:

Local Transportation Agencies
Local Law Enforcement
Marijuana Business Owners
Community Members
Chamber of Commerce and/or
Business Districts



COLO R A D O

Division of Criminal Justice

Department of Public Safety

Impacts of Marijuana Legalization in Colorado
A Report Pursuant to Senate Bill 13-283
October 2018

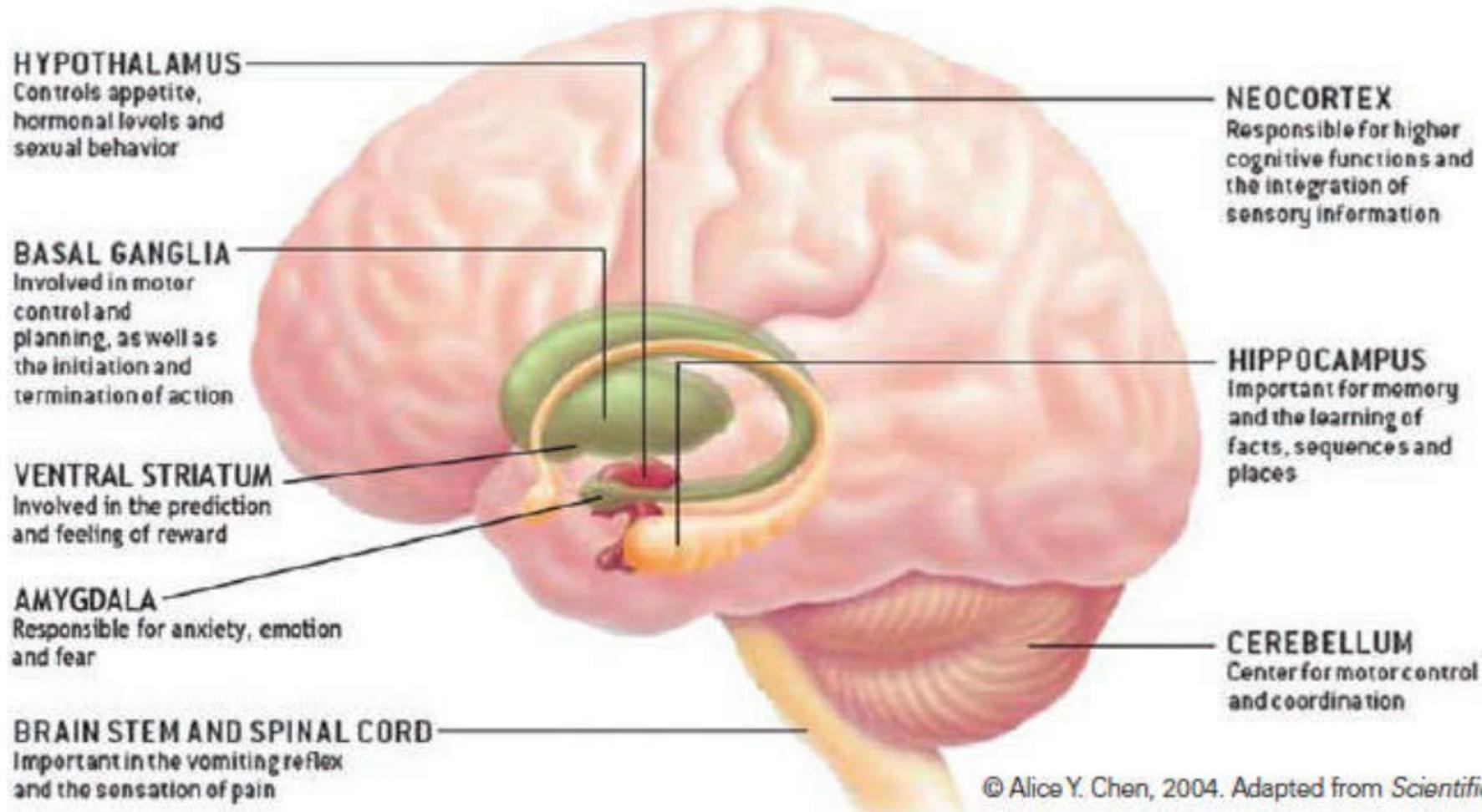
<https://ors.colorado.gov/ors-mjimpacts>

Youth who use marijuana regularly are more likely to have difficulty learning, memory issues, and have lower math and reading scores. The more marijuana youth use, the harder it may be for them to learn. These effects can last weeks after quitting.

Using marijuana before the age of 25 can also affect brain development, and especially in high doses, can be addictive, affect reaction time and coordination and cause temporary psychosis (not knowing what is real, hallucinations and paranoia) while the user is high.

<https://responsibilitygrowshere.com/youth-and-marijuana/#health-effects>

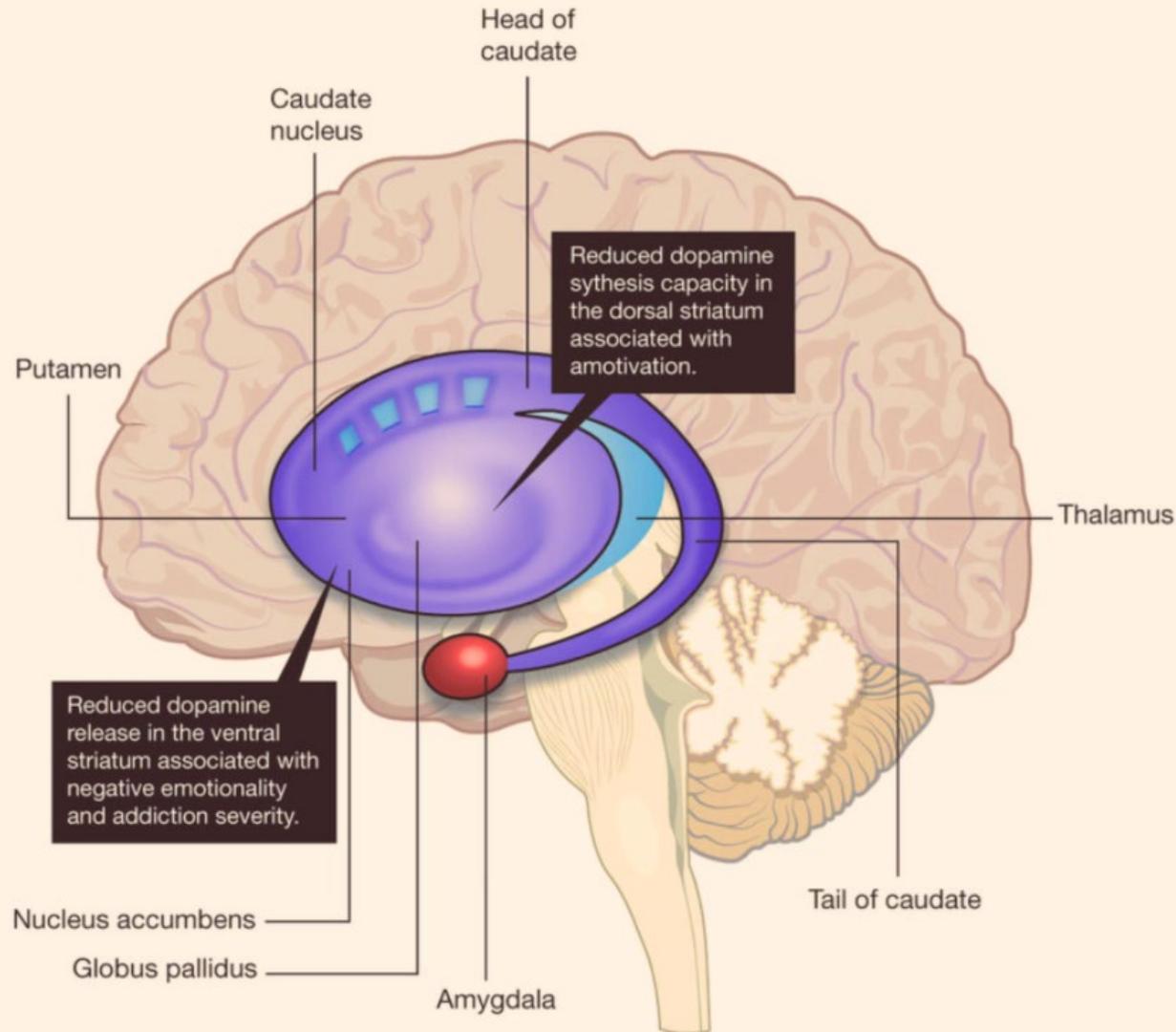
Marijuana's Effects on the Brain



When marijuana is smoked, its active ingredient, THC, travels throughout the body, including the brain, to produce its many effects. THC attaches to sites called cannabinoid receptors on nerve cells in the brain, affecting the way those cells work. Cannabinoid receptors are abundant in parts of the brain that regulate movement, coordination, learning and memory, higher cognitive functions such as judgment, and pleasure.

<https://www.drugabuse.gov/publications/research-reports/marijuana/how-does-marijuana-produce-its-effects>

Long-Term Marijuana Use Blunts Brain's Reward System, Say



Regular use of cannabis over many years lowers levels of dopamine, a key chemical in the brain's reward center, says an international team of researchers led by Imperial College London's Professor Oliver Howes.

<http://www.sci-news.com/medicine/marijuana-brains-reward-system-04402.html>

Marijuana Use May Be Linked to Suicidal Thoughts in Young Adults

New Study: June 24, 2021

[Marijuana](#) use could be linked to increased risk of suicidal thoughts, plan, and attempt among young adults, [according to researchers](#) who analyzed data from the National Surveys on Drug Use and Health between 2008-2019.

The study was conducted by researchers at the [National Institute on Drug Abuse \(NIDA\)](#) and published recently in *JAMA Network Open*. They looked at data from 281,650 adults between ages 18 and 35.

They found that among people without depression, about 3% of non-marijuana users had suicidal thoughts. In comparison, the percentage for daily marijuana users was 9%, and 14% for people who had a substance use disorder.

“While we cannot establish that cannabis use caused the increased suicidality we observed in this study, these associations warrant further research, especially given the great burden of suicide on young adults,” NIDA Director Nora Volkow, M.D., said. “As we better understand the relationship between cannabis use, depression, and suicidality, clinicians will be able to provide better guidance and care to patients.” [Read more.](#)

Youth Marijuana Prevention

- Youth marijuana use can be detrimental to a young person's development both socially and physically. Prevention efforts to mitigate the use of marijuana among young people should be a priority in our communities.
- For Colorado high school students, there have been recent changes in methods of marijuana consumption.
 - In 2019, the overall current or past 30 day marijuana use prevalence among Colorado high school students was 20.6%.
 - Colorado youths' perceptions of risk for using marijuana have been consistently lower than the national average.
 - Comparing methods of use by youth in 2017 and 2019 - the Healthy Kids Colorado Survey shows that the prevalence of dabbing and vaporizing as methods of marijuana use are increasing.
 - In 2019, 10.2% of Colorado high school students dabbled at least once compared to 6.9% in 2017.
 - Dabbing became the second most (3.9%) usually used method next to smoking (10.6%) among high school students.

Youth Marijuana Prevention

- [Research shows](#) that marijuana advertising influences the perceptions of young people, normalizing use and decreasing perceptions of harm.
- The [number of marijuana dispensaries](#) within a community can be directly correlated with increased youth marijuana use. Studies suggest that efforts to limit the number of marijuana outlets in a community may help to curb youth marijuana use.
- As [suggested by literature](#) on tobacco and alcohol, marijuana businesses located close to schools may increase the risk of marijuana use among adolescents.

Youth Marijuana Prevention

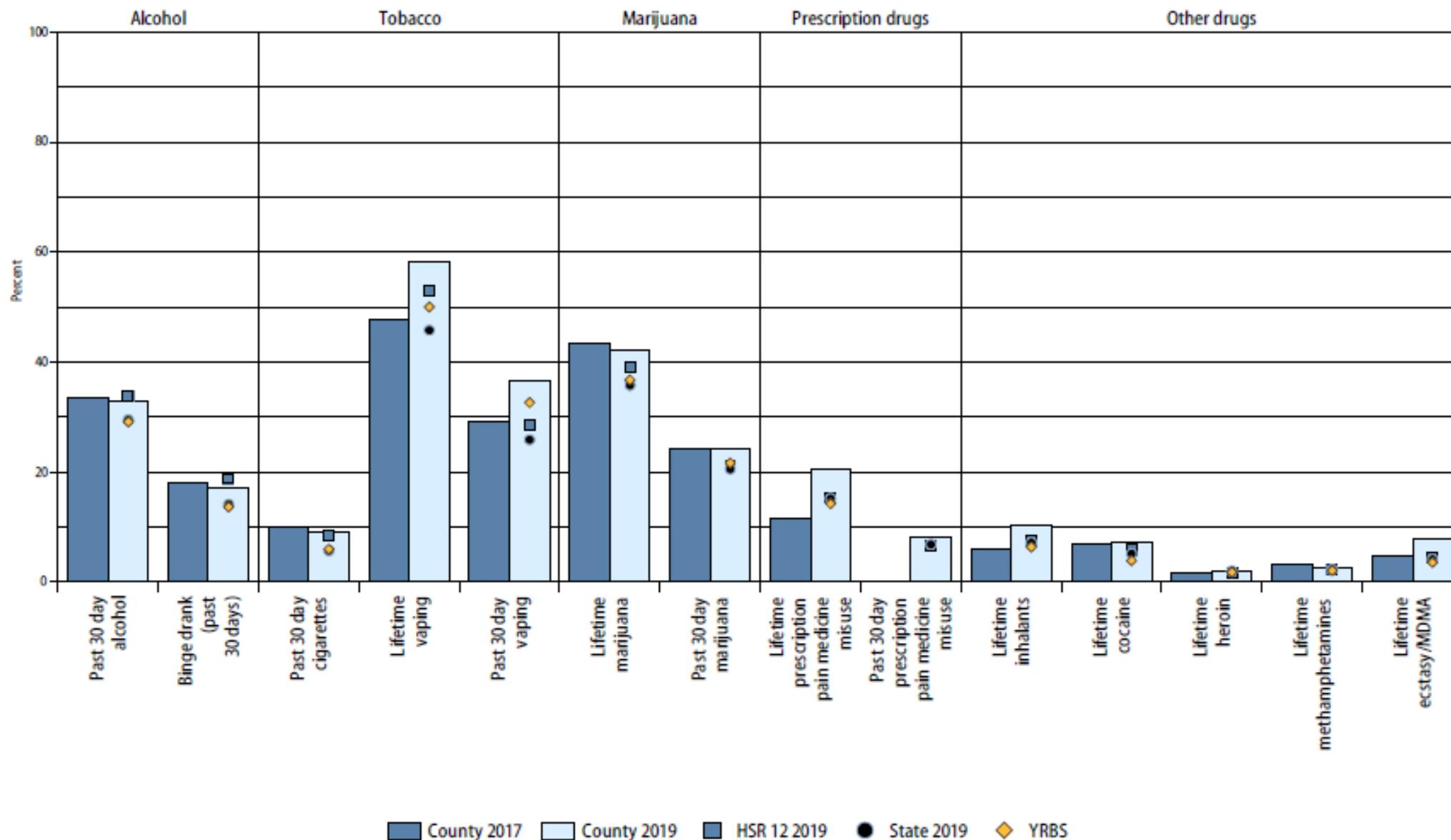
Recommendations that support youth prevention include:

- Limit youth access to and exposure to marijuana in their community:
 - Through local licensing and enforcement, restrict the time, place and manner of hospitality establishment sales
 - Restriction on marijuana advertising in a community
 - Limit the number of marijuana businesses in a community
 - Zoning (proximity) restrictions near places where youth frequent
- Include data collection and reporting requirements
- Retailer and community education

Examples of Partners to Engage:

Youth
Community Members
Marijuana Business Owners
City/County Staff (City Planners)
Chamber of Commerce and/or
Business Districts
Local Law Enforcement

Grand County 2017 and 2019 Healthy Kids Colorado Youth Survey, All grades



Marijuana Hospitality Establishments (on-site consumption or lounges)

- Allowing any amount of marijuana hospitality establishments in Winter Park would **introduce new health risks** that residents and visitors are currently protected from.
- There is [strong evidence](#) that marijuana smoke, both firsthand and secondhand, contains many of the same cancer-causing chemicals as tobacco smoke.
- Allowing marijuana smoking and vaping in indoor settings will create a newly unprotected class of workers. Smoke-free and vapor-free policies protect workers and the public from exposure to health hazards caused by exposure to secondhand smoke and secondhand vapor.
- The only way to fully protect people from potential secondhand marijuana smoke/vapor exposure is to maintain clean indoor air protections, and not allow smoking and vaping in indoor spaces.



Questions?

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