

Cannabis and Cannabis Use Disorder: Considerations for Safe Practice

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Center for Dependency, Addiction and Rehabilitation



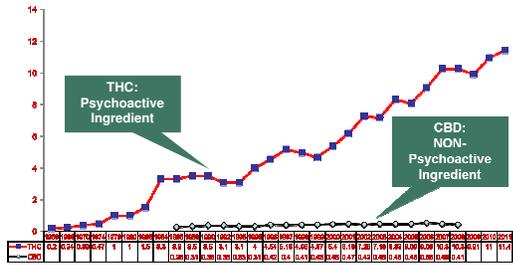
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Objectives

- Understand how cannabis affects the brain
- Review medical/psychological effects of cannabis use
- Describe current treatment approaches in working with clients with problematic cannabis use or Cannabis Use Disorder
- Discuss considerations for safe practice, particularly in States that have legalized medical and/or recreational cannabis

Average THC and CBD Levels in the U.S. 1960-2011



Mehmedic et al., 2010
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Average THC Levels in CO 2010-2016



RMH/DTA, 2016
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Commercialization of Cannabis Increases THC Content

- Marijuana enforcement levels, medical marijuana, decriminalization, presence of dispensaries, legalization and larger market supply/demand all have potential effects on potency
- States with medical marijuana (1999-2010) have 3.5% more potent marijuana (9% vs 5.6%)
- Increased potency may be associated with increasing rates of abuse/dependence and other health risks



Seigny et al 2014; Compton et al 2004
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Colorado Youth Cannabis Use

- Since the legalization of recreational cannabis in 2013, **COLORADO** youth past month cannabis use **increased 20%** from 2011/2012 to 2013/2014
- Nationally youth past month cannabis use **declined 4%** during the same time
- The latest 2013/2014 results show Colorado youth **ranked #1** in the nation for past month cannabis use, up from **#4** in 2011/2012 and **#14** in 2005/2006



RMHDTA, 2016

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Cannabis and Adolescents

- **1 in 6** adolescents who try cannabis will become addicted to it
- The adolescent brain is especially susceptible to cannabis use
- When kids use, they have a greater chance of developing addiction

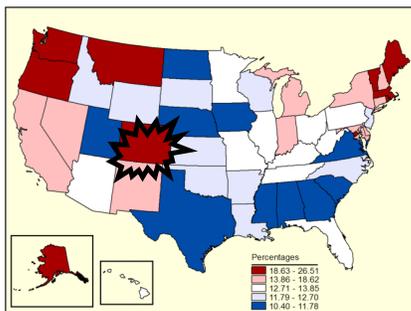


SAMHSA, 2017; Stone, A. L., Becker, L. G., Haber, A. M., & Catalano, R. F., 2012; Photo: Newsweek, 2016

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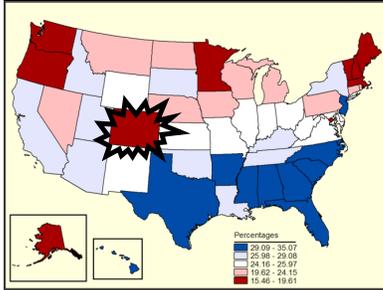
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Marijuana Use in the Past Year among Individuals Aged 12 or Older, by State: Percentages



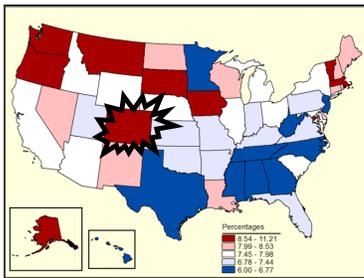
Annual Averages Based on 2016 and 2017 NSDUH; SAMHSA, 2018

Perceptions of Great Risk from Smoking Marijuana Once a Month among Individuals Aged 12 or Older, by State: Percentages



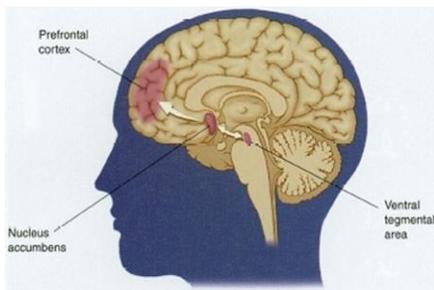
Annual Averages Based on 2016 and 2017 NSDUH; SAMHSA, 2018

Substance Use Disorder in the Past Year among Individuals Aged 12 or Older, by State: Percentages



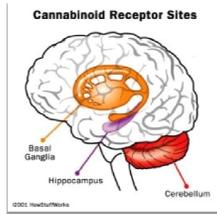
Annual Averages Based on 2016 and 2017 NSDUH; SAMHSA, 2018

The Physiology of Addiction



The Physiology of Cannabinoids

- The human body produces its own cannabis-like compounds, called endocannabinoids, that react with the body's cannabinoid receptors.
- Cannabinoid receptors in the brain stem and spinal cord play a role in pain control, vomiting reflex, appetite, emotional responses, motor skills, and memory formation.



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Therapeutic Effects of Cannabis

Moderate Quality Evidence for:

- Relieving nausea
- Increasing appetite
- Reducing muscle spasms and spasticity
- Pain reduction

Low Quality Evidence for:

- Chronic pain
- Nausea and vomiting specifically due to chemotherapy
- Weight gain with HIV infection
- Sleep disorders
- Tourette's syndrome



Whiting, Wolff, Deshpande, et al. 2015 (JAMA)

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Association of Cannabinoid Administration with Experimental Pain in Health Adults: Systematic Review and Meta-Analysis

- Pain Threshold: Small Improvement
- Pain Intensity: No Effect
- Pain Unpleasantness: Improvement
- Pain Tolerance: Improvement
- Mechanical Hyperalgesia: No Effect

Plant based products produced more tolerance and reduce unpleasantness more than synthetics

DeVita et al JAMA Psychiatry September 2018 e1-e10

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Acute Adverse Effects of Cannabis Use

- Dizziness
- Dry Mouth
- Nausea
- Fatigue
- Somnolence
- Euphoria
- Disorientation
- Confusion
- Loss of balance
- Hallucinations
- Vomiting



Whiting, Wolff, Deshpande, et al. 2015

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Other Adverse Effects

- Temporarily increases HR and BP
- Chronic bronchitis
- Depression
- Anxiety/panic attacks
- Suicidal ideation and suicide attempts
- Psychosis
- Infertility
- Cannabinoid Hyperemesis Syndrome



SAMHSA, 2017

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Cannabis Withdrawal Syndrome

- Withdrawal symptoms peak at 4 days
- Acute withdrawal period lasts 16 days
- Most severe symptoms include craving, restlessness, nervousness and sleeplessness
- Also can include irritability, depression, anger, vivid dreams, loss of appetite and headache
- Withdrawal symptoms more severe in women
- **Withdrawal symptoms are a negative reinforcement for continued use and are associated with less treatment adherence**

Bonnet and Pruss, 2017

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Possible Medication Interactions

- Increased risk of bleeding
- Affects blood sugar
- Increases drowsiness
- Affects the liver's cytochrome P450 enzyme system

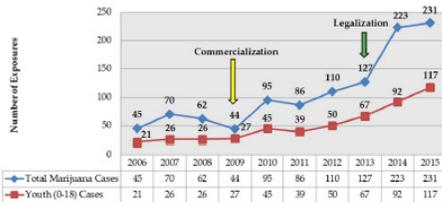


SAMHSA, 2017

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Colorado Cannabis-Related Exposures

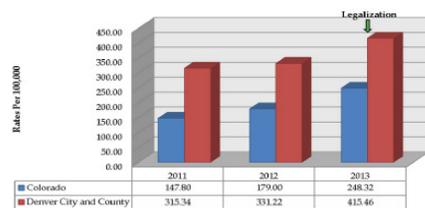


SOURCE: Rocky Mountain Poison and Drug Center Report, Colorado Marijuana Statistics for 2015

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Colorado Cannabis ED Visits



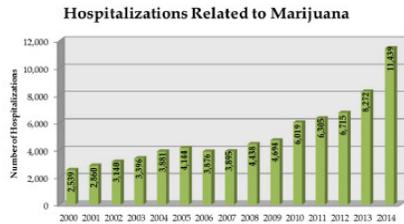
SOURCE: Denver Office of Drug Strategy, The Denver Drug Strategy Commission, Proceedings of the Denver Epidemiology Work Group (DEWG), October 29, 2014

◆ The highest rates from 2011 to 2013 were among young adults (18 to 25 years).

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Colorado Cannabis Hospitalizations



SOURCE: Colorado Hospital Association, Hospital Discharge Database. Statistics prepared by the Health Statistics and Evaluation Branch, Colorado Department of Public Health and Environment

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High Level of Cannabis Use within Colorado Cannabis Industry

- Survey of 214 Cannabis Industry Workers
- High levels of Use: 21% daily, 28% 2-4 times per day, 30% > 4 times per day
- High use while driving: 21% while driving at work, 43% while driving on personal time
- High while at work: 63% use before work, 46% use during work and 92% use after work
- 41% also smoke cigarettes

Walters et al American Journal of Industrial Medicine feb 2018 61:451-461



Budtenders are not health care providers, despite their willingness to offer recommendations

- Cross sectional survey via “mystery caller” approach of 400 dispensaries
- 3% deferred to health care provider
- 69% recommend cannabis products for morning sickness
- 36% endorsed safety of cannabis use during pregnancy
- 4.7% reported a risk of fetal harm
- “after 8 weeks everything should be good with consuming like alcohol and weed and stuff, but I would wait an extra week”

Dickson et al Obstetrics and Gynecology June 2018 131 (6) 1031-1038



Screening and Brief Intervention

Why Screen?

- 3rd most commonly used substance after tobacco and alcohol
- Associated with medical and behavioral health problems
- Current research doesn't provide safe limits of use
- Use of marijuana is likely to increase risk for developing other substance use problems



SAMHSA, 2017



CUDIT-R

1. How often do you use cannabis? (0-4 points)
2. How many hours were you "stoned" on a typical day when you had been using cannabis? (0-4 points)
3. How often during the past 6 months did you find that you were not able to stop using cannabis once you had started? (0-4 points)
4. How often in the past 6 months did you fail to do what was normally expected from you because of using cannabis? (0-4 points)
5. How often in the past 6 months have you devoted a great deal of your time to getting, using or recovering from cannabis? (0-4 points)
6. How often in the past 6 months have you had a problem with your memory or concentration after using cannabis? (0-4 points)
7. How often do you use cannabis in situations that could be physically hazardous, such as driving, operating machinery, or caring for children? (0-4 points)
8. Have you ever thought about cutting down, or stopping your use of cannabis? (0,3 or 4 points)

8+ points may be high risk use, 12+ points may be Cannabis Use Disorder

Adamson, Kay-Lambkin, Baker, Lewin, Thornton, Kelly and Sellman (2010)



Cannabis Use Disorder

2-3 = mild, 4-5 = moderate, 6+ = severe

Impaired control

1. Using for longer periods of time than intended/using larger amounts than intended
2. Wanting to reduce use, yet being unsuccessful
3. Spending excessive time getting/using/recovering
4. Cravings that are so intense it is difficult to think about anything else

Social impairment

5. Continued use despite work, family/social obligations
6. Continued use despite interpersonal problems
7. Important/meaningful social/recreational activities reduced or given up

Risky use

8. Repeatedly uses in physically dangerous situations
9. Continued use even though there is awareness of physical and psychological problems

Physiological indicators

10. Tolerance
11. Withdrawal

APA, 2013



The Natural Course of Cannabis Use Disorders

A 2015 study, n= 816, aged 16-30:

- 23% of men and 16% of women were diagnosed with CUD
- Average age of onset was 18 years old
- Mean duration of illness episode was 24 months in women and 41 months in men
- 82% of those with CUD achieved 1 year of recovery
 - 28% of those who achieved 1 year of recovery had a recurrence, most likely to occur within 3 years
- Recurrence was rare after 6 years of sustained recovery

Farmer et al 2015



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Treatment of Cannabis Use Disorder

- Outpatient vs residential treatment
- Psychosocial Interventions
- Pharmacotherapy



Gorelick, Saxon and Hermann, 2017

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Psychosocial Interventions and Outcomes

Interventions

- CBT
- MET
- Contingency Management
- Self Help Support Groups-12 Step Groups, SMART Recovery

Outcomes

- Enhance motivation to reduce or end use
- Improve social skills
- Improve social support and interpersonal functioning
- Manage painful feelings
- Education about consequences of use

Gorelick, Saxon and Hermann, 2017

Pharmacotherapy

NO MEDICATION has been approved for the treatment of Cannabis Use Disorder by the FDA or any other national regulatory agency



Gorelick, Saxon and Hermann, 2017

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Treatment - Pharmacotherapy

- Preliminary positive studies with N-acetylcysteine (1200mg BID) or Gabapentin (1200mg TDD)
- Mirtazepine (Remeron) may improve sleep and appetite during withdrawal
- Studies show **NO** benefit with:
 - Buspirone (Buspar)
 - Dronabinol (Marinol)
 - Nefazodone (Serzone)
 - Vilazodone (Vibryd)
 - Bupropion SR (Wellbutrin)
 - Divalproex (Depakote)
 - Naltrexone
 - Varenicline (Chantix)

Gorelick, Saxon and Hermann, 2017; Allsop et al., 2014

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Considerations for Safe Practice

- NCSBN Guidelines for Boards of Nursing: Complaints Involving a Licensee and Cannabis (2018)
The State Board of Nursing should have knowledge of:
 - Standards and limitations of current testing related to cannabis use
 - Guidelines regarding investigation of allegations of impairment/lack of fitness to practice while working

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Laboratory Testing and Cannabis

- Cannabis has over 100 different cannabinoids
- THC is the primary psychoactive component of cannabis
- A positive test indicates the presence of THC or THC metabolite
- THC is a fat soluble substance and isn't metabolized at a steady rate
- Peak THC levels can occur when low impairment is observed AND low THC levels can be present when there is a high level of impairment!

NCSBN, 2018; <https://www.colorado.gov/medicinalcannabis>, accessed 12/15/18

Provider Program Responses Related to Cannabis Ingestion

- ▶ +THC test
- ▶ Use in a state where cannabis is legal or illegal
- ▶ Allegations of impairment/lack of fitness for practice while working

Considerations:

"Legal use notwithstanding, ingestion of cannabis can be a violation of NPA or rules where on-the-job impairment creates an actual or potential impairment of the ability to practice nursing with reasonable skill and safety" (NCSBN,2018)

Cannabis Ingestion in States with Legal Use (Medical and/or Recreational)

- Assistance Program should consider all aggravating and mitigating factors
- Evaluate for further action on a case-by-case basis
- Colorado
 - Peer Assistance Services (PAS) has a zero tolerance for cannabis use for the actively practicing healthcare professional
 - Test for THC, along with other drugs of abuse. If +, then repeat every 5-7 days and look for changes in THC/Creatinine levels
 - Cease practice order given until there is no THC present in testing
 - Licensee enters into contract with PAS to monitor practice, laboratory testing, and provide education and support

- Washington
- DOH manages all licenses
- Cannabis use is treated like alcohol use- HCP's can use it, just cannot practice while impaired
- WHPS is an abstinence-based program- referred licensee's must test negative for THC
- There is no exemption for medical marijuana as it is *not prescribed, just recommended*
- Third party entities and employers can make referrals for concerns of impairment related to cannabis use
- In the past, post employment screens with +THC tests would trigger automatic referrals to WHPS- that is not true now
- Some licensees state that they are using CBD, not THC. This leads to more evaluation, education and referral to use of a hemp-based CBD product

Challenges

Dearth of up-to-date evidence-based research

- Limitations of conducting research
- Awareness of the rapidly changing nature of the drug and the ways it is used

Colorado cannabis lobby

- Numerous organizations that have carefully crafted messages
- Minimizes the dangers related to cannabis tourism and for those with the disease of addiction
- Exaggerates medical and psychiatric benefits of cannabis

Walmart 





Summary

- There is a relationship between increased potency of cannabis and increased ED visits and hospitalization
- Side effects of cannabis use can significantly effect patients and increase the complexity of the clinical presentation
- Withdrawal symptoms can be extreme and should be treated (pharm and non-pharm approaches)
- Consider screening patients for cannabis use and either referring for consultation and/or treatment
- Safe practice guidelines vary by state and focus on the combination of laboratory testing, reports of impairment and careful evaluation of each licensee

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