

WHAT PARENTS NEED TO KNOW ABOUT ADOLESCENT MARIJUANA USE IN A GROWING LEGALIZED ENVIRONMENT

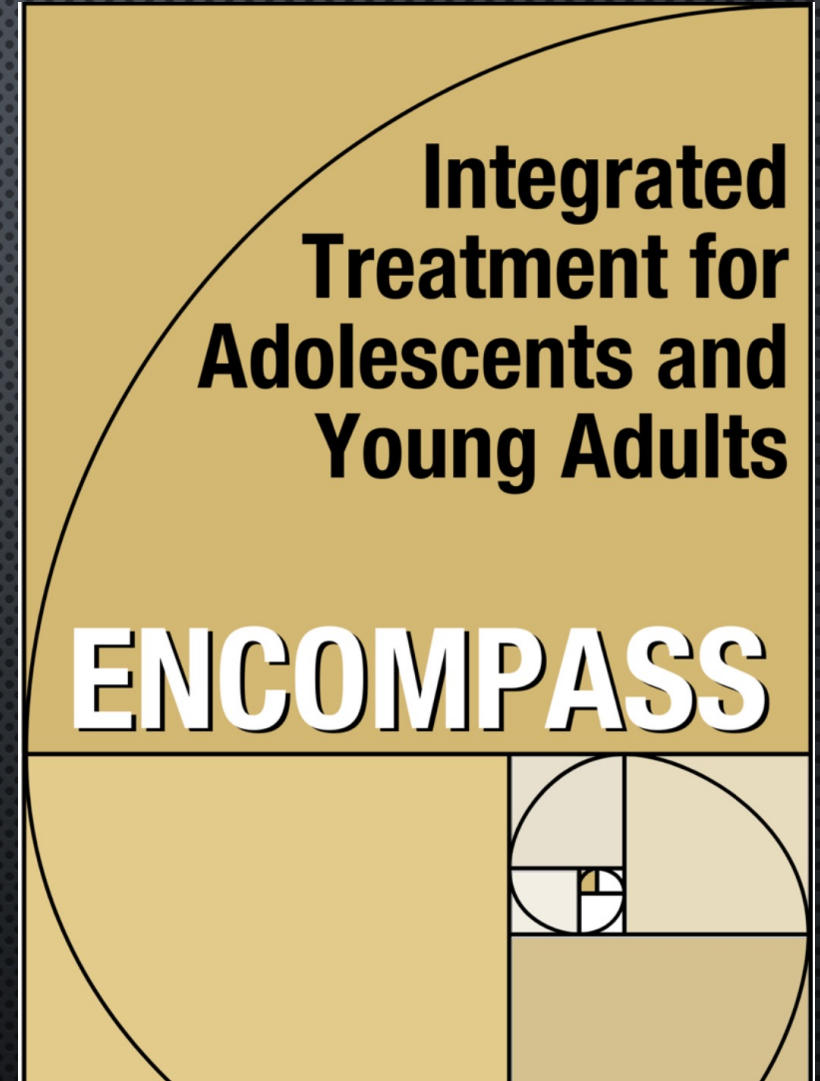
Johnny's Ambassadors
April 2, 2021

PAULA RIGGS MD, PROFESSOR & VICE CHAIR, FACULTY AFFAIRS
DIRECTOR, DIVISION OF ADDICTION SCIENCE, PREVENTION, AND TREATMENT
DEPT. PSYCHIATRY, UNIVERSITY OF COLORADO SCHOOL OF MEDICINE

DISCLOSURES

DEVELOPER AND EXECUTIVE DIRECTOR OF
*ENCOMPASS: INTEGRATED TREATMENT FOR
ADOLESCENTS AND YOUNG ADULTS*

RESEARCH GRANT FUNDING, NATIONAL
INSTITUTE ON DRUG ABUSE (NIDA)

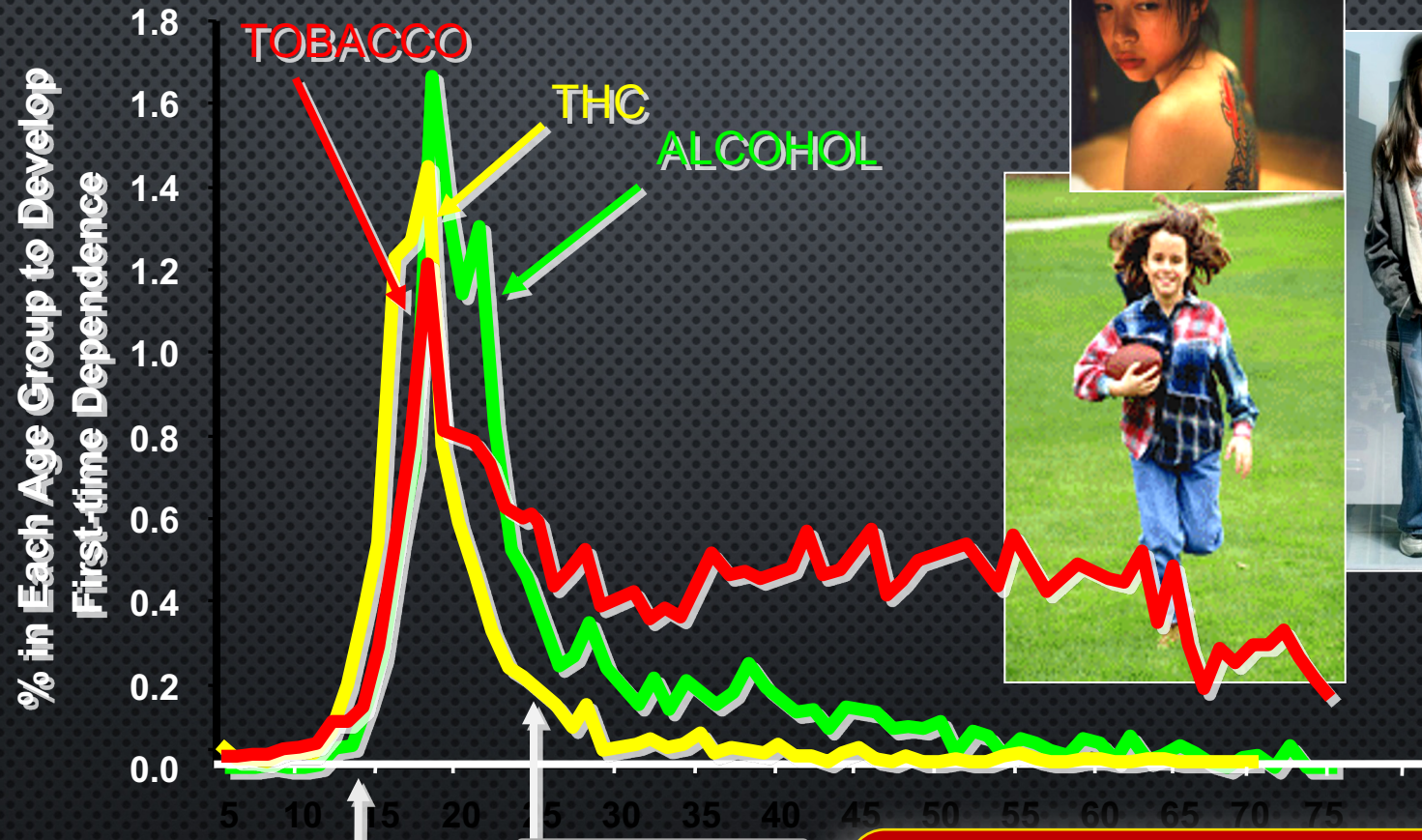


LEARNING OBJECTIVES

- RISKS OF MJ USE DURING ADOLESCENT DEVELOPMENT
- IMPACT OF CANNABIS LEGALIZATION
- IMPACT OF REGULAR MJ USE IN ADOLESCENTS ON
 - HEALTH
 - BRAIN DEVELOPMENT AND MENTAL HEALTH
 - PSYCHOSOCIAL OUTCOMES
- EVIDENCE-BASED TREATMENT FOR CANNABIS AND OTHER SUBSTANCE USE DISORDERS

Addiction and Mental Illness are Largely Pediatric-Onset

Most childhood-onset psychiatric disorders increase risk for adolescent-onset substance use. Adolescent-onset substance abuse increases risk for psychiatric illness and progression to other SUD



50%
psychiatric
disorders
onset < 15

75%
psychiatric
disorders
onset < age 24

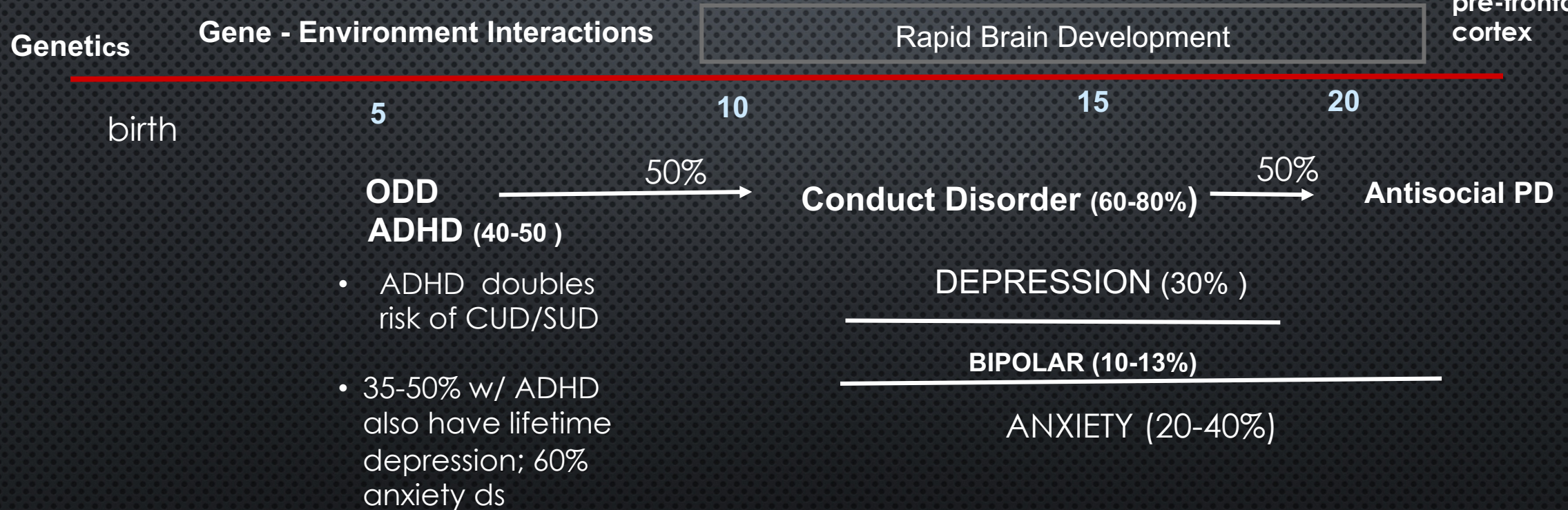
- 8-10% of people age 12 and older are addicted to drugs/alcohol in the US. Most started using as adolescents (Volkow et al 2015 NEJM)



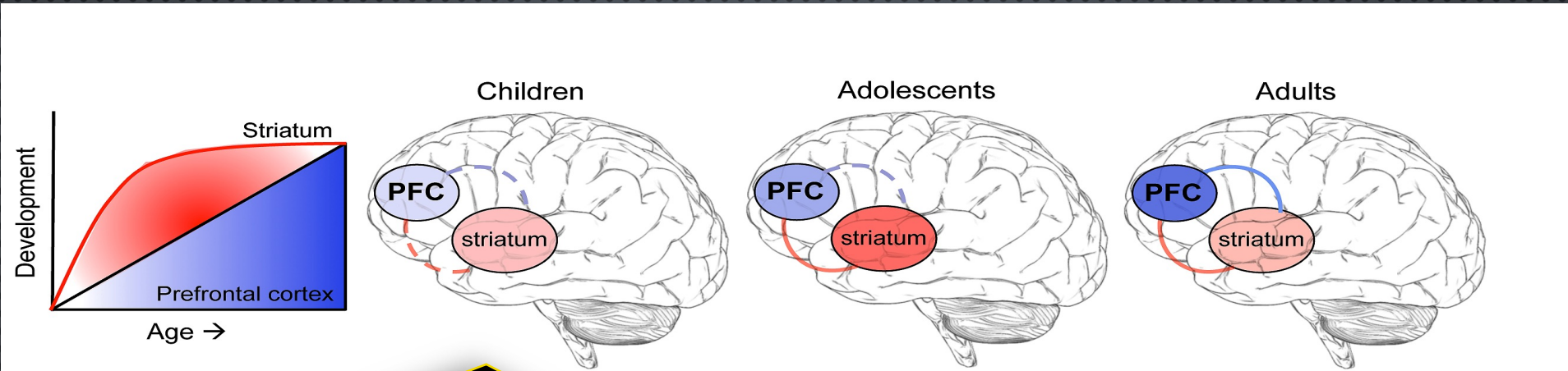
The Developmental Relationship Between Pediatric-Onset Psychiatric Disorders and CUD/SUD

- Most childhood-onset psychiatric disorders increase risk of adolescent-onset SUD/CUD
- 60% adolescents in community substance treatment have co-occurring psychiatric disorder
- 1/6 teens who use MJ progress to CUD
 - 4x > risk psychosis (7x > risk w AKT1 or COMT gene variant; also related to THC potency)
 - Increased suicide risk; 2x risk of depression /anxiety ds young adulthood
 - Weekly to daily MJ use < 18 linked to persistent neurocognitive deficits, potential reductions in adult IQ, increases risk of developing other SUD

THC binds to CB1 receptor which plays key role in regulating development of pre-frontal cortex



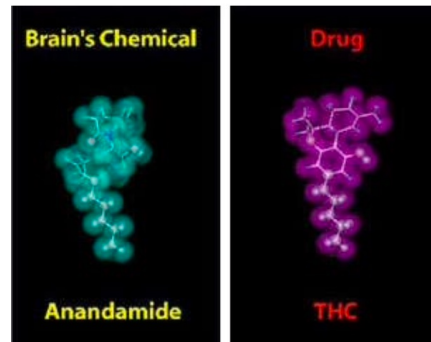
Why do many substance /psychiatric disorders emerge during adolescence?



Substance abuse during adolescence interferes with brain development and increases risk of chronic addiction and mental health problems

- “What teens do during their adolescent years, whether it's playing sports or playing video games can affect how their brains develop”
- Environment and activities during teenage years guides selective synapse elimination (“pruning”) during critical period of adolescent development

How does marijuana produce its effects?

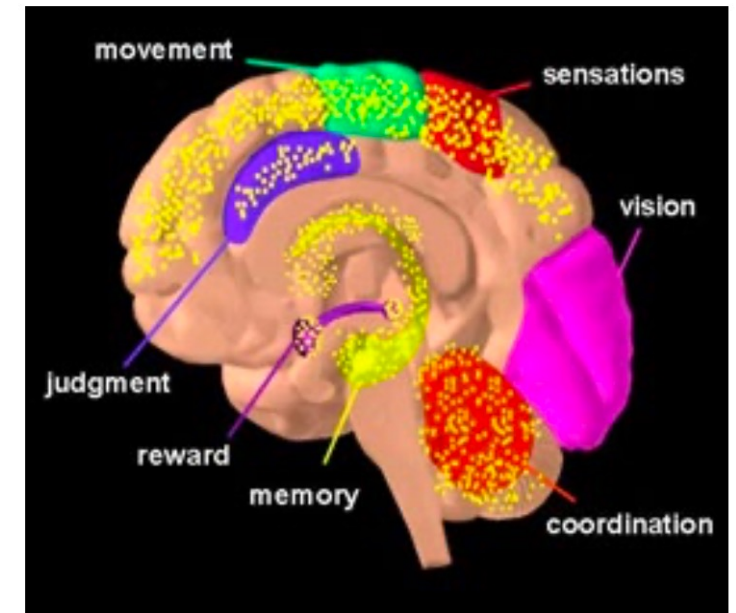


Courtesy of NIDA

THC's chemical structure is similar to the brain chemical anandamide. Similarity in structure allows drugs to be recognized by the body and to alter normal brain communication.

- Smaller brain volume in regions implicated learning, memory, stress (hippocampus), and inhibitory control (OFC)
- Decreased cognitive performance
 - Learning, delayed memory, attention, abstraction/shifting, inhibition, updating/ working memory; speed of information processing
- Reductions in IQ (Meier et al 2018)
- Significant cognitive recovery with abstinence

Hall, Leung,
Lynskey 2020



THC acts on numerous areas in the brain (in

<http://www.drugabuse.gov/sites/default/files/pages/colorbox/brain2.jpg>

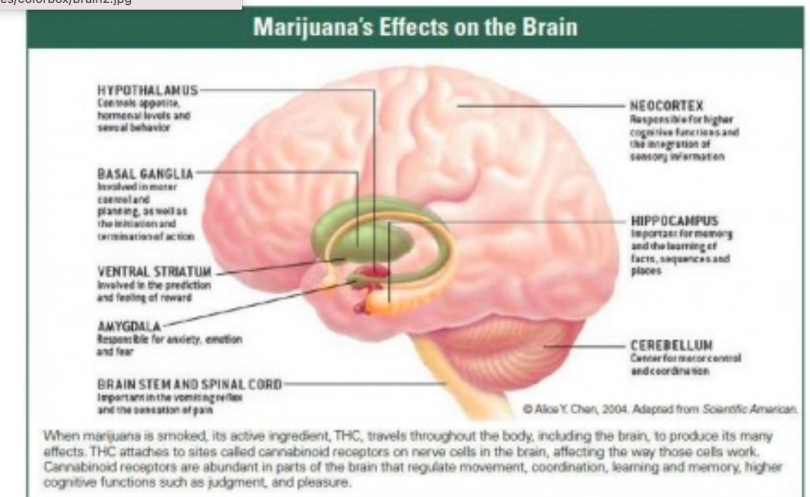
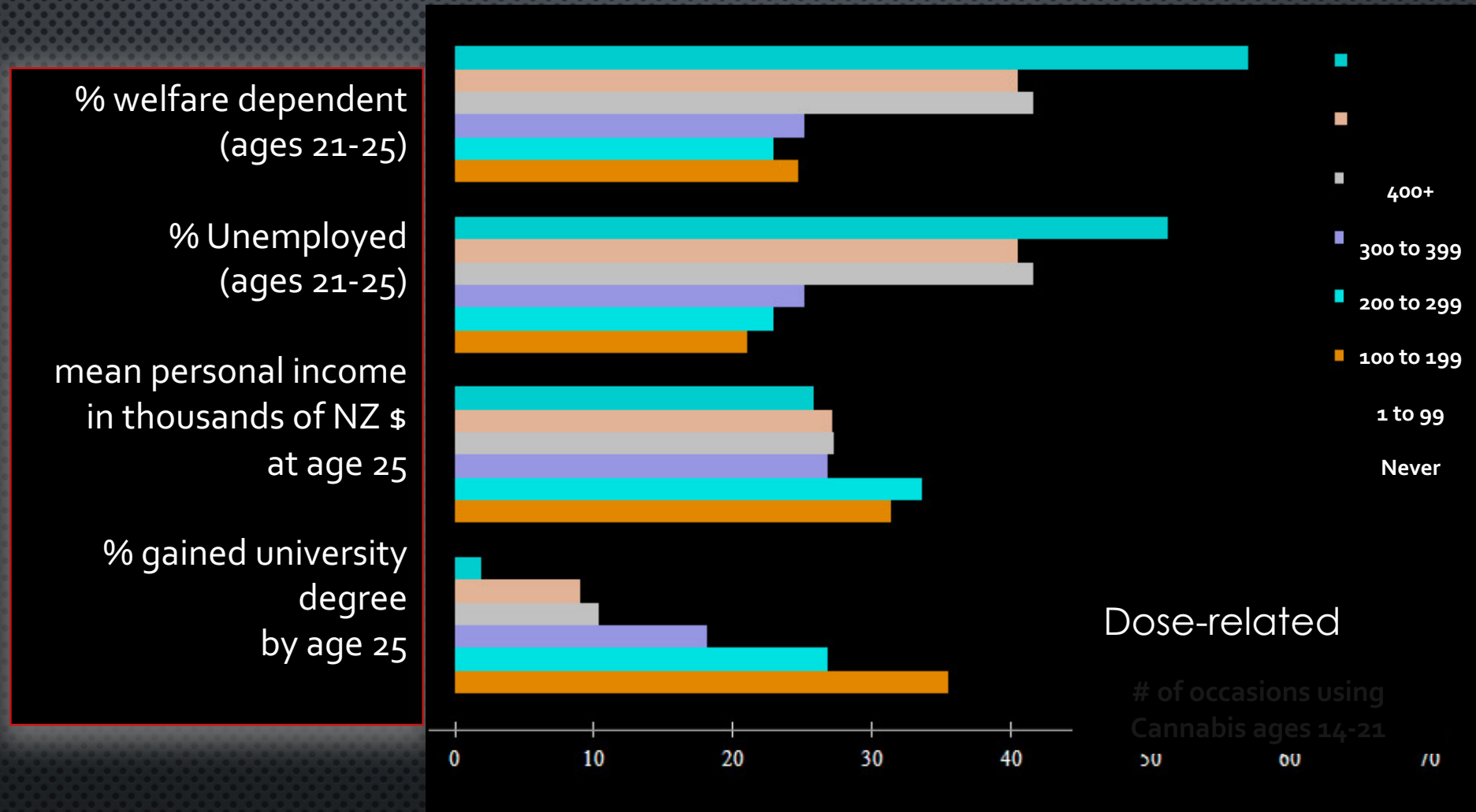


Diagram showing different parts of the brain and describing marijuana's effects on the brain

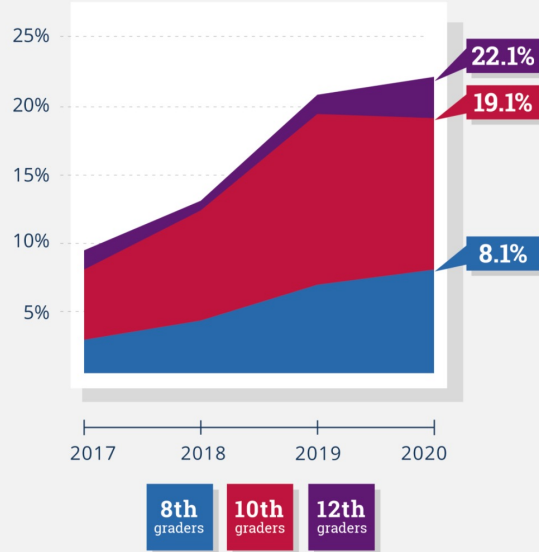
Cannabis Associated with Worse Social Outcomes at Age 25



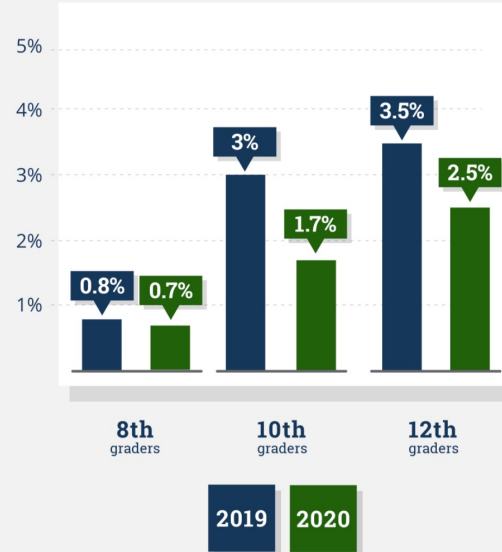
Compared with non-using peers, adolescents who use MJ are more likely to drop out of high school; decreased life satisfaction, poorer mental and physical health, memory, relationship problems, lower salaries, less career success

Past-Year Marijuana Vaping Holds Steady

Past-Year Marijuana Vaping

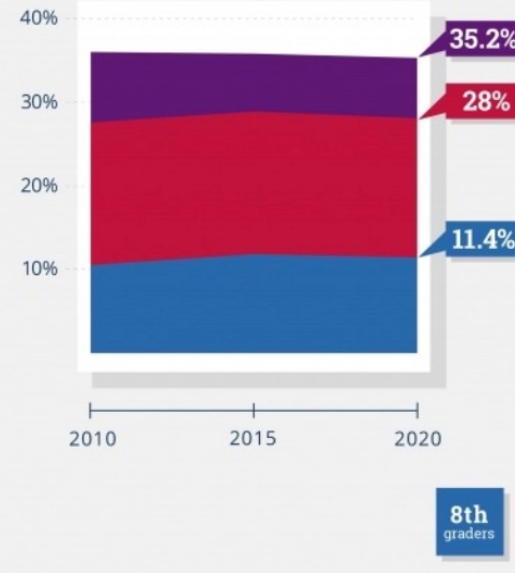


Daily or Near-Daily Marijuana Vaping Decreases Significantly Among 10th Graders

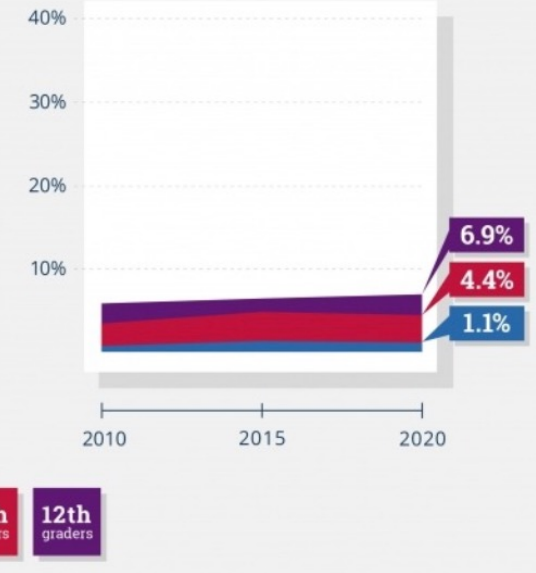


Marijuana Use Remains Steady

Past-Year Marijuana Use



Daily Marijuana Use



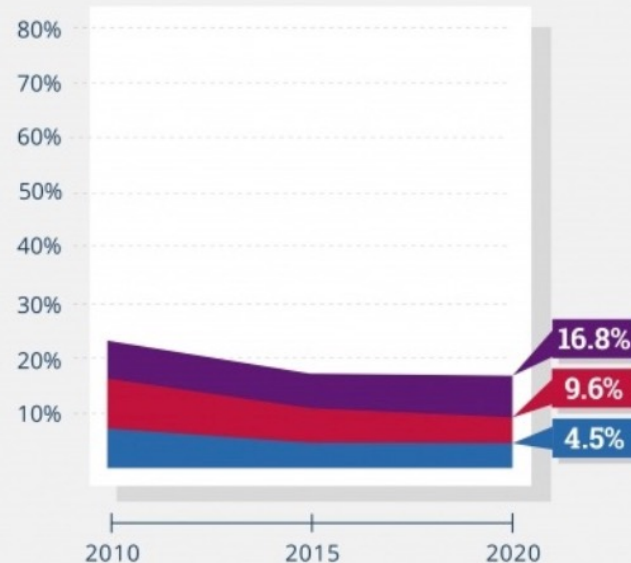
2020 MONITORING THE FUTURE

2020 MONITORING THE FUTURE

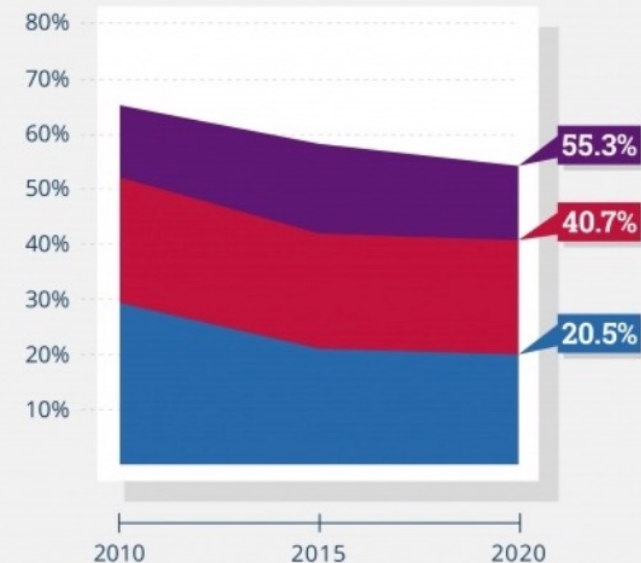
Gradual Decline in Alcohol Use Slows

Long-term trend of decreasing alcohol use among all grades levels off.

Binge Drinking*



Past-Year Alcohol Use



*5 or more drinks in a row
in the past two weeks

8th
graders

10th
graders

12th
graders

The Impact of Cannabis Legalization

- Reduced price & increased access to high potency MJ
- MJ legalized states have > first-time adolescent & adult cannabis users
- No consistent increases in adolescent cannabis use in legalized states so far, but > use of concentrates
- Increase in MJ-related MVAs & fatal crashes
- Increase in MJ-related ED visits, hospitalizations, calls to poison centers
- Increase in MJ-related suicides

NATIONAL TRENDS IN CANNABIS (THC) POTENCY

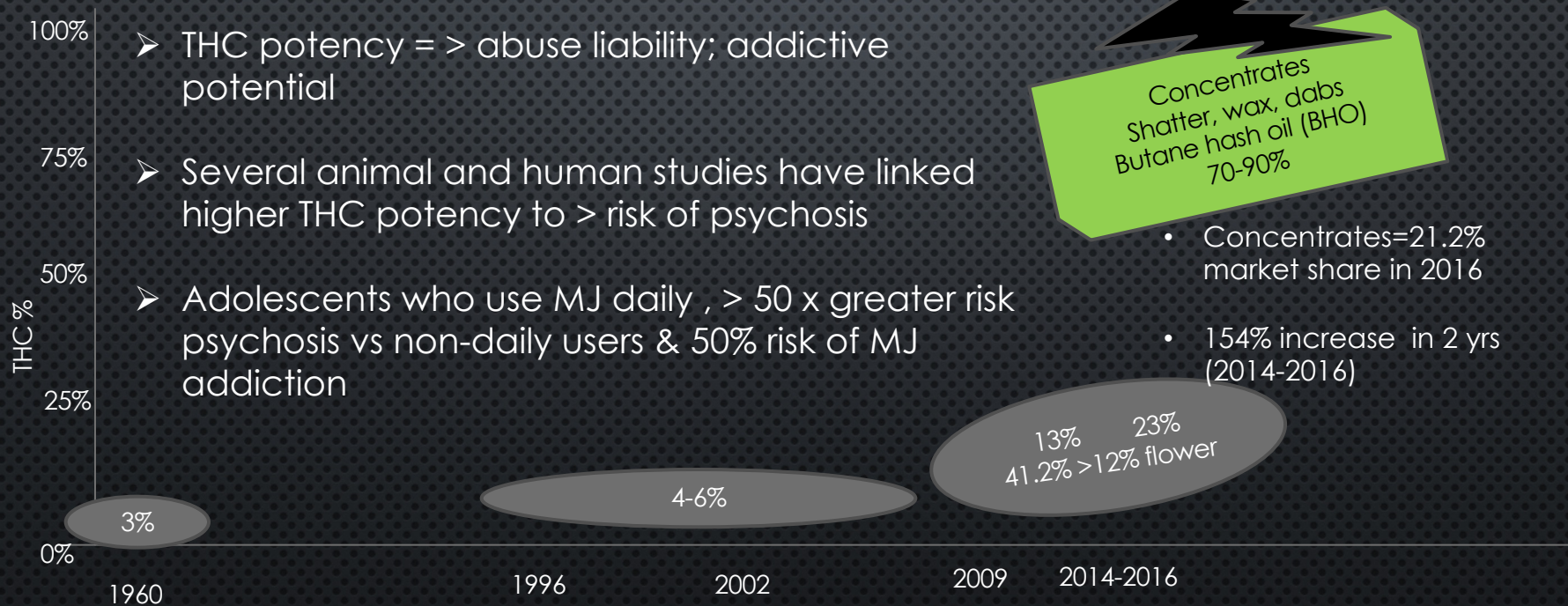
Yes, MJ is
addictive!

➤ 1/11 adults and 1/6 adolescents
who experiment will progress to addiction
based on low THC potency

➤ THC potency = > abuse liability; addictive
potential

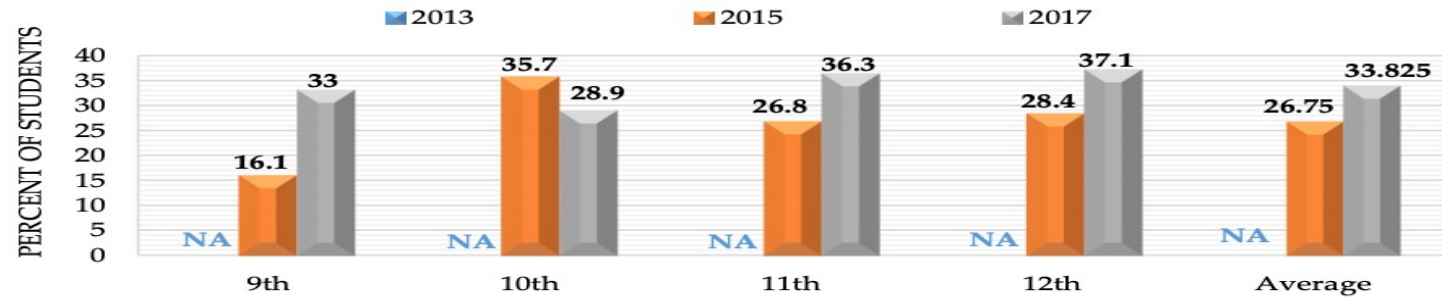
➤ Several animal and human studies have linked
higher THC potency to > risk of psychosis

➤ Adolescents who use MJ daily , > 50 x greater risk
psychosis vs non-daily users & 50% risk of MJ
addiction



Significant increase in past month adolescent use of MJ concentrates and edibles since cannabis legalization in Colorado

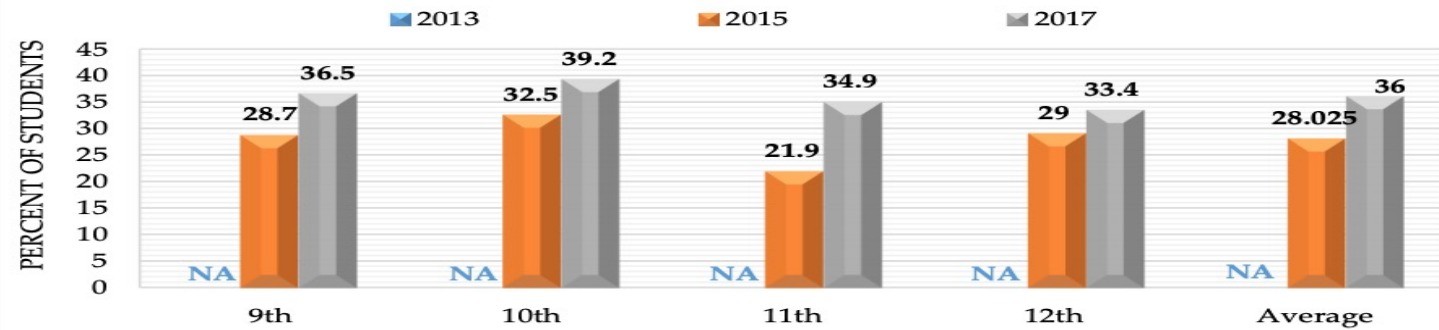
Among Students Who Used Marijuana within the Past 30 days, the Percentage Who Dabbed* it



*Dabbing is the process of vaporizing concentrated marijuana, usually in the form of wax or resin, by placing it on a heated piece of metal and inhaling the vapors. Concentrated marijuana is known to often contain 70 percent or higher levels of THC, the psychoactive component of marijuana.

SOURCE: Colorado Department of Public Health and Environment, Healthy Kids Colorado Survey

Among Students who Used Marijuana within the Past 30 Days, the Percentage Who Ate* it

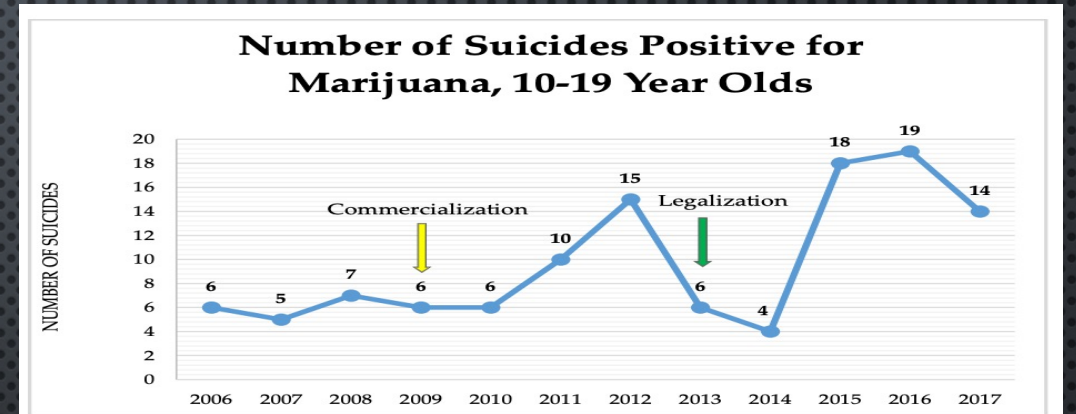


*Eating marijuana most commonly refers to edible products. Edible products contain marijuana concentrates and extracts that have been made for the use of being mixed with food or other products.

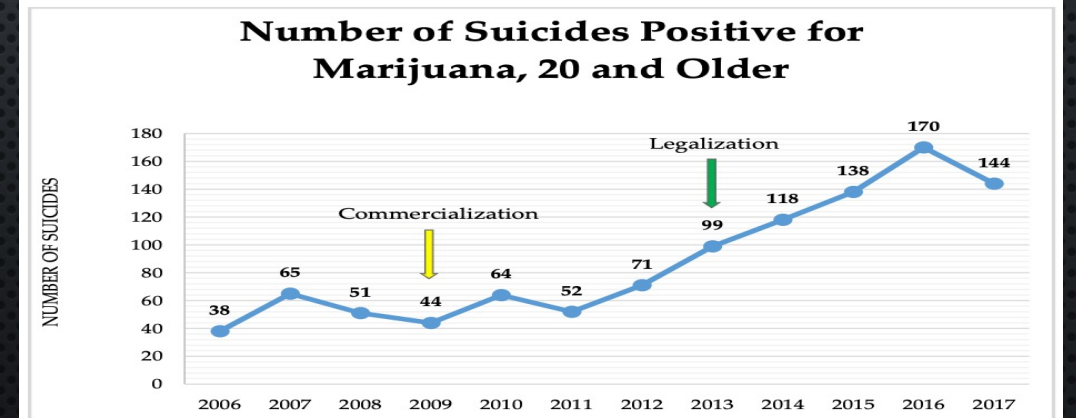
IMPACT OF MJ LEGALIZATION ON CANNABIS USE ON YOUNG PEOPLE

COLORADO 3 YEARS PRE-POST LEGALIZATION

- **AGES 12 AND OVER --45% INCREASE IN PAST MONTH MARIJUANA; 3RD IN THE NATION; 85% > NATIONAL AVERAGE.**
- **COLLEGE-AGE--18% INCREASE; 3RD NATIONALLY; 60% > NATIONAL AVERAGE**
- **ADOLESCENTS - 5% INCREASE, 7TH NATIONALLY; 54% > NATIONAL AVERAGE**
- **48% OF MJ USERS REPORT GOING TO WORK HIGH; 40% AT LEAST 1X WEEK**
- **170% INCREASE YOUTH ED OR URGENT CARE VISITS MARIJUANA-RELATED ILLNESSES 2005-2015**
- **148% INCREASE MJ-RELATED HOSPITALIZATIONS**



SOURCE: Colorado Department of Public Health and Environment (CDPHE), Colorado Violent Death Reporting System



SHORT-TERM EFFECTS OF MJ ON BRAIN, BODY, & BEHAVIOR

Anxiety, paranoia, suicidal thoughts

Learning, attention, and memory problems

Distorted perception (sights, sounds, time, touch)

Poor coordination and motor skills

Increased heart rate

in rare cases, risk of recurrent episodes of severe nausea and vomiting

LONG-TERM EFFECTS OF REPEATED MJ USE IN ADOLESCENTS

risk of marijuana addiction

Reductions in adult IQ which may or may not be permanent

long-term learning and memory problems if heavy use begins during youth

risk for chronic cough, bronchitis

risk of schizophrenia in some people with higher genetic risk

in rare cases, risk of recurrent episodes of severe nausea and vomiting

May increase risk of becoming addiction to other drugs tried later

CANNABIS WITHDRAWAL SYMPTOMS

Irritability

Sleep problems

Anxiety

Decreased appetite

GI and other symptoms of physical discomfort

Symptoms are generally mild and peak a few days after discontinuation

Gradually disappear within about 2 weeks

HOW CAN I TELL IF MY CHILD HAS BEEN USING MJ?

Changes in behavior or mood

Change in peer group

Changes in grades, academic performance,
truancy

Loss of interest in favorite activities

Changes in eating or sleeping habits

Getting in trouble in school or with law
enforcement

HOW CAN I TELL IF MY CHILD IS USING MJ?

Unusually giggly/uncoordinated

Bloodshot eyes, frequently uses eye drops

Difficulty remembering things that just happened

Drugs or drug paraphernalia

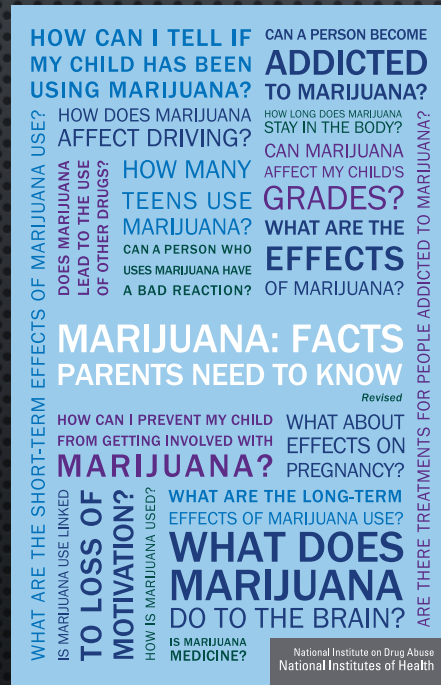
Strangely smelling clothes or bedroom

Use incense /other deodorizers

Posters, clothing, jewelry promoting drug use

Unexplained lack of money or extra cash on hand

TIPS FOR PARENTS



Be a good listener

Set clear expectations about drug and alcohol use, including real consequences for not following family rules

Help your child deal with peer pressure to use drugs

Get to know your child's friends and their parents

Monitor your child's whereabouts

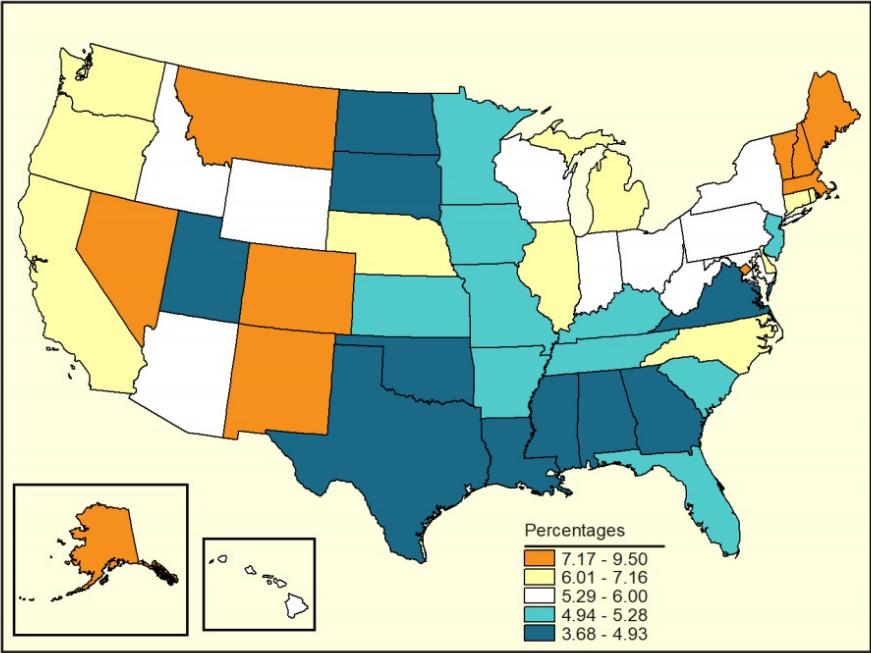
Supervise teen activities

Check in and talk to your child often

Colorado among the highest in US for adolescents 12-17 initiating MJ use

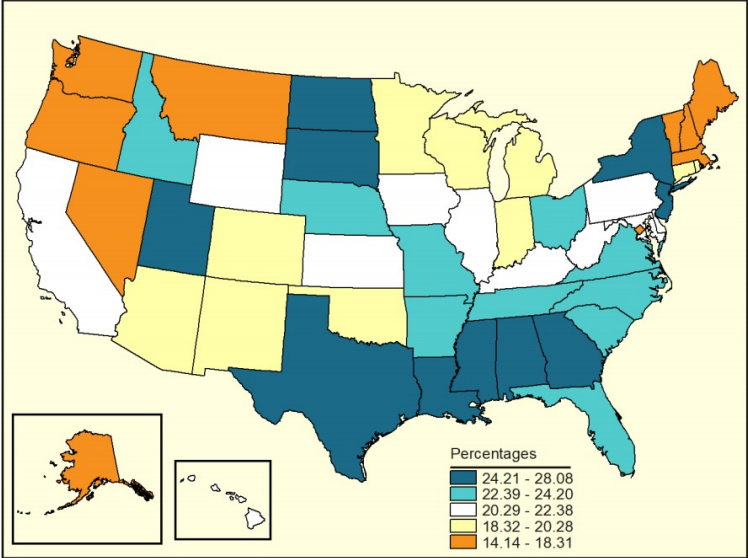
Colorado among the lowest perceived risk

Figure 5b *First Use of Marijuana among Youths Aged 12 to 17, by State: Average Annual Initiation Estimates (Expressed as Percentages of the At-Risk Population) Based on 2018 and 2019 NSDUHs*



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019.

Figure 4b *Perceptions of Great Risk from Smoking Marijuana Once a Month among Youths Aged 12 to 17, by State: Percentages, Annual Averages Based on 2018 and 2019 NSDUHs*



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2018 and 2019.

EVIDENCE-BASED SUBSTANCE AND PSYCHIATRIC TREATMENTS FOR ADOLESCENTS

PSYCHIATRIC DISORDERS

CONDUCT DISORDER (60-80%)

- ❖ FAMILY-BASED
- ❖ CBT

DEPRESSION, ANXIETY(30-40%)

- ❖ CBT
- ❖ PHARMACOTHERAPY

ADHD (30-50%)

- ❖ CBT
- ❖ PHARMACOTHERAPY

limitations
SUD
interventions
do not
address
co-occurring
psychiatric
disorders

SUBSTANCE USE DISORDERS

- ❖ FAMILY-BASED (MDFT, FFT, MST, BSFT, ACRA-WITH MET/CBT)

(**< 20% abstinence**)

- ❖ BEHAVIORAL/CONTINGENCY MANAGEMENT (CM) /INCENTIVES

Most effective treatment for CUD
(Gates et al 2016)

MET/CBT + CM
50% abstinence

- ❖ COGNITIVE BEHAVIORAL THERAPY (CBT)+ MET

(**30% abstinence**)


INTEGRATED TREATMENT OF INDIVIDUALS WITH CO-OCCURRING DISORDERS

The **BEST TREATMENT** for co-occurring disorders is an integrated approach, where both the substance abuse problem and the mental disorder are treated simultaneously.

RECOVERY depends on treating *both* disorders.

COMBINED TREATMENT IS BEST--ideally, combined mental health and addiction treatment from the same treatment provider or team.

Where Can I Find Substance Treatment for My Teenager?





Substance Abuse and Mental Health
Services Administration

[Home](#) | [Site Map](#) | [Contact Us](#)

[Search](#)

[Find Treatment](#) | [Practitioner Training](#) | [Public Messages](#) | [Grants](#) | [Data](#) | [Programs](#) | [Newsroom](#) | [About Us](#) | [Publications](#)

[Home](#) » [Find Treatment](#) » National Helpline

  [SHARE+](#)

Find Treatment

Alcohol, Tobacco, and Other Drugs

Behavioral Health Treatment and Services

Behavioral Health Treatment Services Locator

Disaster Distress Helpline

Early Serious Mental Illness Treatment Locator


Implementing Behavioral Health Crisis Care

Mental Health and Substance Use Disorders

National Helpline

National Suicide Prevention Lifeline [↗](#)

Opioid Treatment Program Directory



SAMHSA's National Helpline – [1-800-662-HELP \(4357\)](tel:1-800-662-HELP)

SAMHSA's National Helpline is a free, confidential, 24/7, 365-day-a-year treatment referral and information service (in English and Spanish) for individuals and families facing mental and/or substance use disorders.

Frequently Asked Questions

What is SAMHSA's National Helpline?

SAMHSA's National Helpline, [1-800-662-HELP \(4357\)](tel:1-800-662-HELP), (also known as the Treatment Referral Routing Service) or TTY: [1-800-487-4889](tel:1-800-487-4889) is a confidential, free, 24-hour-a-day, 365-day-a-year, information service, in English and Spanish, for individuals and family members facing mental and/or substance use disorders. This service provides referrals to local treatment facilities, support groups, and community-based organizations. Callers can also order free publications and other information.

Also visit the [online treatment locators](#).

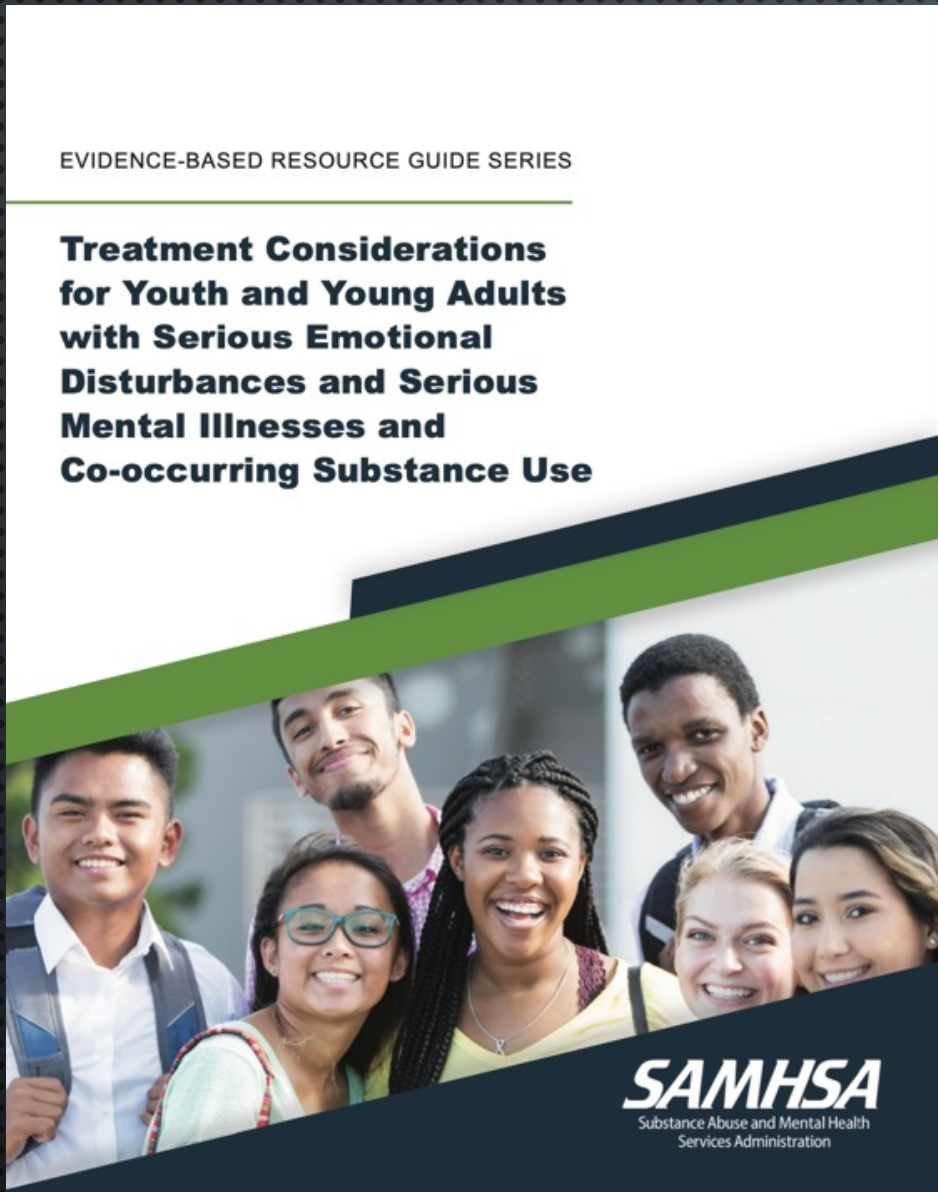
What are the hours of operation?

The service is open 24/7, 365 days a year.

What languages are available?

English and Spanish are available if you select the option to speak with a national representative.

ENCOMPASS



Featured in SAMHSA's
new Evidence-Based
Resource Guide Series:

*Treatment Considerations for
Youth and Young Adults with
Serious Emotional Disturbances
and Serious Mental Illnesses
and Co-occurring Substance
Use*

ENCOMPASS: INTEGRATED TREATMENT FOR ADOLESCENTS AND YOUNG ADULTS



Program Director:
Dr. Paula Riggs, MD, Professor
303.724.2235
Paula.Riggs@cuanschutz.edu



For more information about the Encompass Program, contact Dr. Paula Riggs
303.724.2235
Paula.Riggs@cuanschutz.edu

To schedule a clinic appointment, contact Joel Green, LCSW at:
303-724-9405
Joel.Green@uchealth.org



Department of Psychiatry
University of Colorado School of Medicine
Anschutz Medical Campus
13001 E. 17th Ave, 2nd Floor
Aurora, CO 80045

Integrated
Treatment for
Adolescents and
Young Adults

ENCOMPASS

Encompass
Integrated Treatment for
Adolescents and Young Adults



Encompass is an evidence-based treatment for adolescents and young people with mental health and substance use difficulties.

What is Encompass?

Encompass is an evidence-based treatment for adolescents and young people with substance use and mental health difficulties.

Encompass treatment components include:

- 12-16 weeks of individual, weekly Cognitive Behavioral Therapy (CBT) using Motivational Enhancement Therapy (MET)
- Contingency Management (CM)-Motivational incentives to reinforce abstinence (using urine drug screens), treatment compliance, and engagement in non-drug pro-social activities
- Comprehensive clinical and diagnostic evaluation to assess clinical progress and treatment response
- Medication management if clinically indicated



Encompass is a good fit for adolescents or young adults who have:

- Co-occurring substance use disorder and mental health issues
- The ability to participate in weekly talk therapy
- No acute safety risk, psychosis or mania

Treatment compliance, completion, substance use, and psychiatric outcomes are tracked throughout the Encompass program.

Research to date shows:

- ~70 percent completion rates
- >90 percent compliance with weekly MET/CBT sessions
- Clinically significant reductions in symptoms of psychiatric diagnoses
- Significant reductions in substance use

Thank you for your attention

Questions?
Comments?
Discussion?