

Navigating Adolescent Addiction

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One classroom full of high school students
dies each week from drug overdose

Overdose and poisoning - the **3rd leading cause** of death in children and adolescents

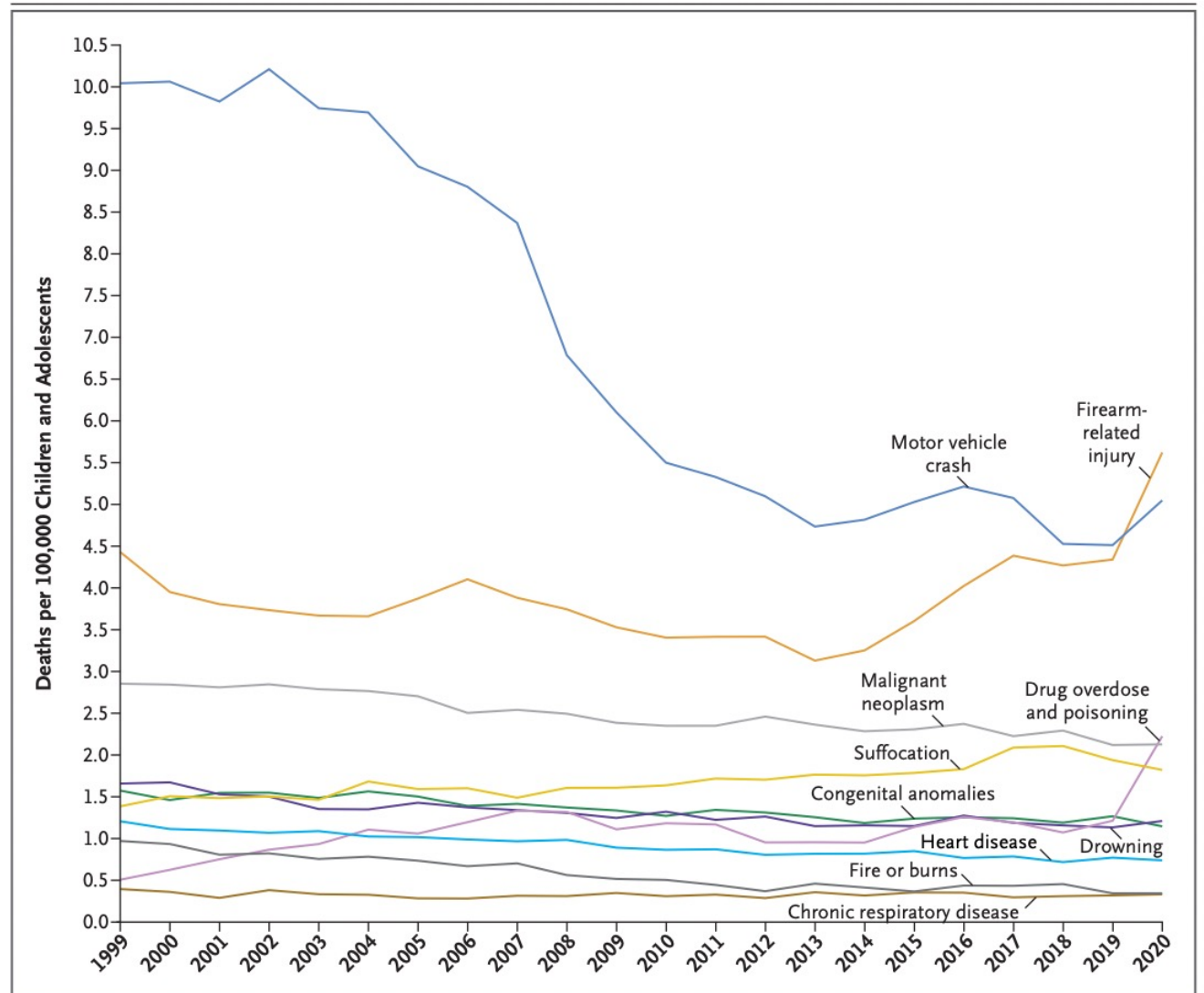
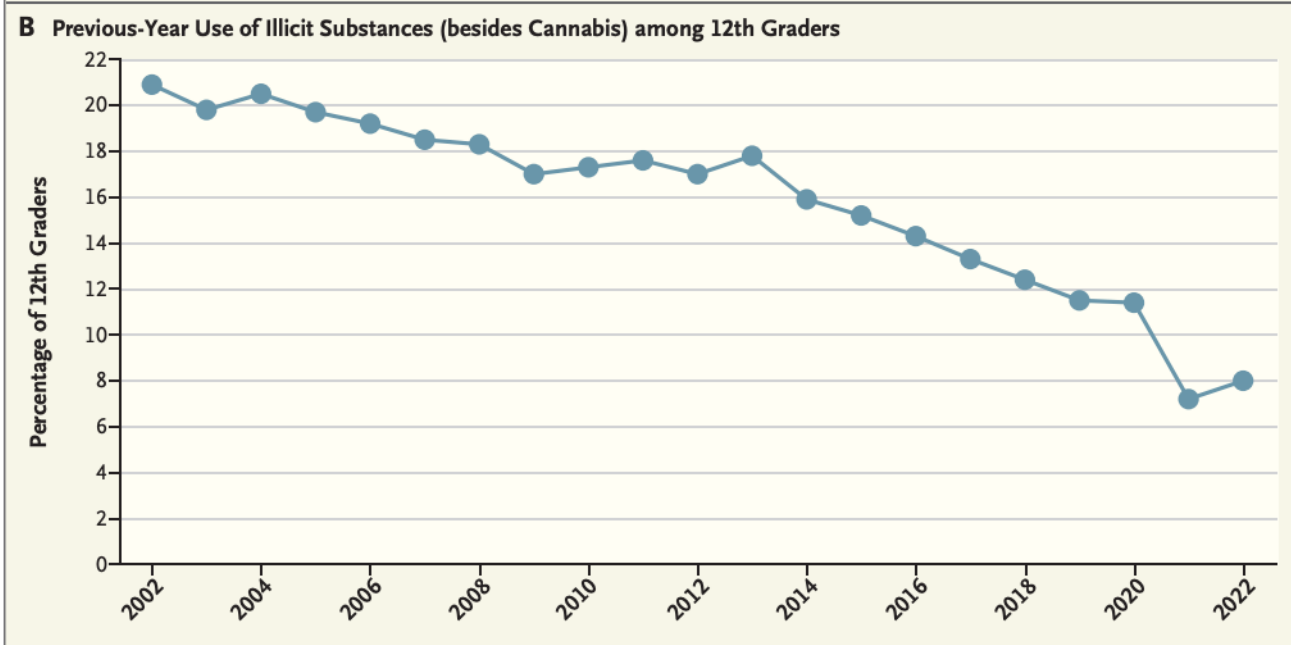
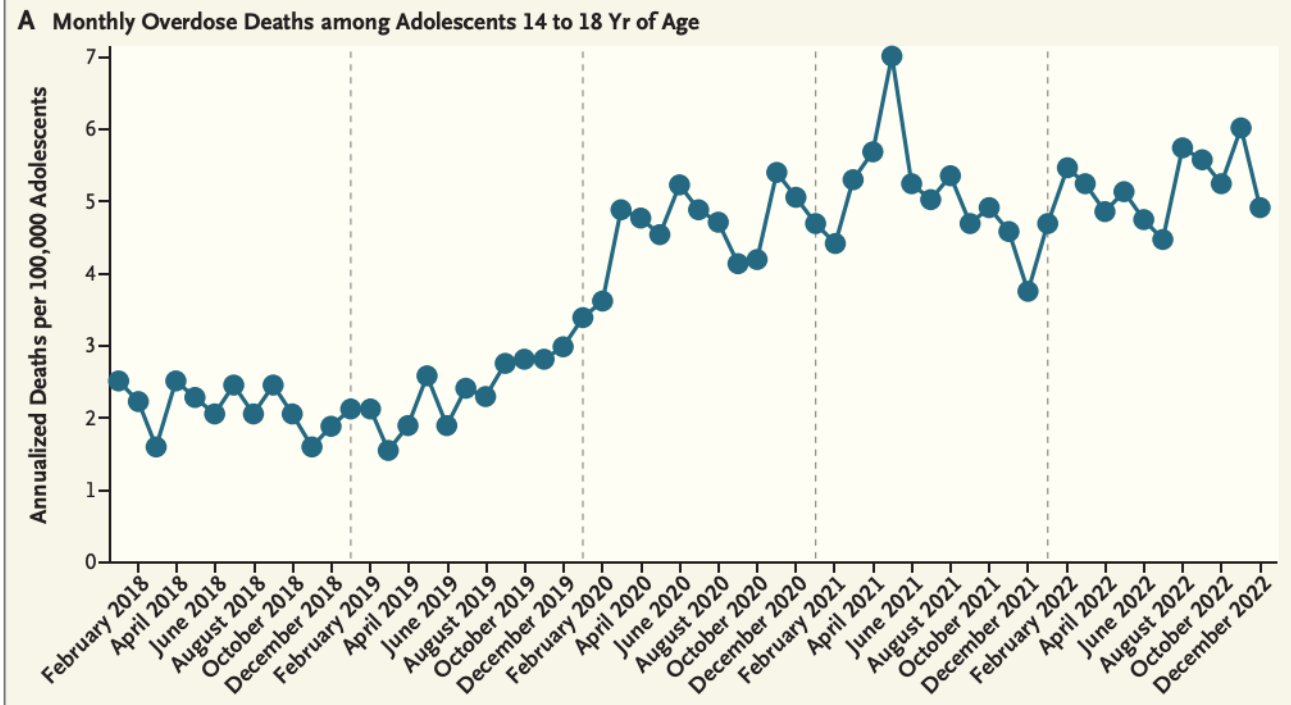


Figure 1. Leading Causes of Death among Children and Adolescents in the United States, 1999 through 2020. Children and adolescents are defined as persons 1 to 19 years of age.



Despite decrease in illicit drug use, **overdose deaths continue to rise** in adolescents

Overdose deaths among adolescents has increased 109% from 2019 to 2021

90% of deaths involved opioids

40% had documented mental health hx

Two thirds of deaths had a bystander present, but most provided no overdose response

Objectives

- Improving awareness of rise in opioid related overdose deaths
- Trends in substance use among adolescents
- Screening for substance use
- Treatment options – Buprenorphine is FDA approved for adolescents!
- Tx for AUD, CUD, and nicotine/tobacco use
- Harm Reduction – contraception, narcan, testing supplies
- Resources

The teenager's brain 🧠

- ↑ risk taking
- ↑ increase novelty/sensation seeking behaviors
- Heavy alcohol consumption
 - Decrements in memory, attention, and speed processing
 - Impaired executive functioning
- Regular cannabis uses:
 - Poor learning performance, cognitive flexibility and working memory

What are the implications?

- Adolescents and young adults are at highest risk of illicit drug use
- 90% of adults with SUD began using ETOH or drugs during adolescence
- Earlier initiation of substance use correlates with:
 - School related issues, involvement in criminal justice system, and neurocognitive and health impairments

What are the implications?

- High risk sexual behavior
- Increased risk of unplanned pregnancy
- Increase # of sexual partners
- Initiate sex at earlier age
- Increased risk of STI

Drug use trends in 2023 among adolescents

- Self reported illicit substance use continues to hold below pre-pandemic levels
- Reported illicit drug use in past year per grade:
 - 10.9% of 8th graders
 - 19.8% of 10th graders
 - 31.2% of 12th graders

Any Illicit Drug Use
Trends in **Lifetime** Prevalence by Grade



2023 Trends in Substance Use

Alcohol use

- 8th grade: 15.1%
- 10th grade: 30.6%
- 12th grade: 45.7%

Nicotine vaping

- 8th grade: 11.4%
- 10th grade: 20.5%
- 12th grade: 27.3%

Cannabis

- 8th grade: 8.3%
- 10th grade: 17.8%
- 12th grade: 29.0%

Delta-8-THC

- 12th grade: 11.4%

Illicit drug use except cannabis

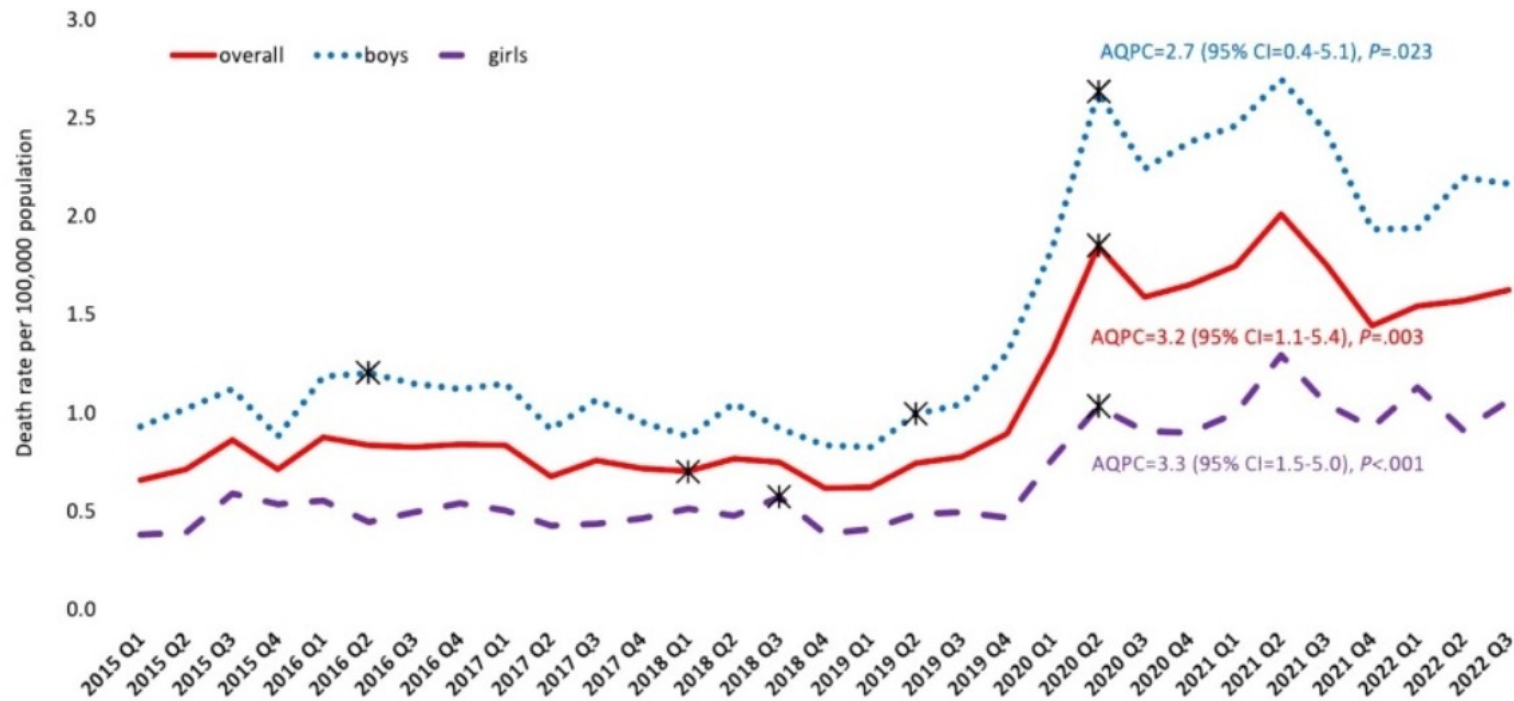
- 8th grade: 4.6%
- 10th grade: 5.1%
- 12th grade: 7.4%

“Narcotics” other than heroin

- 12th grade: 1.0%

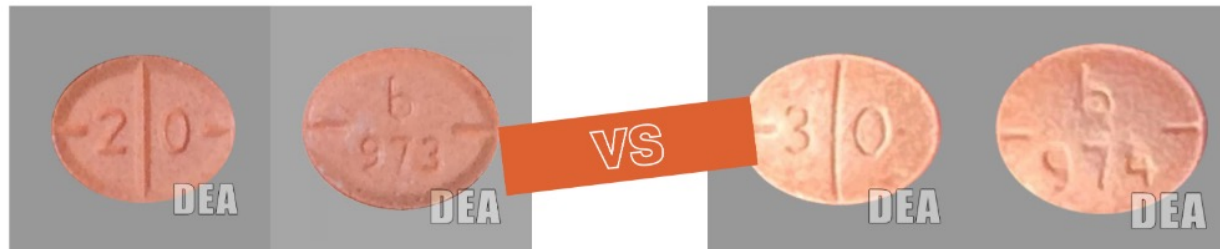
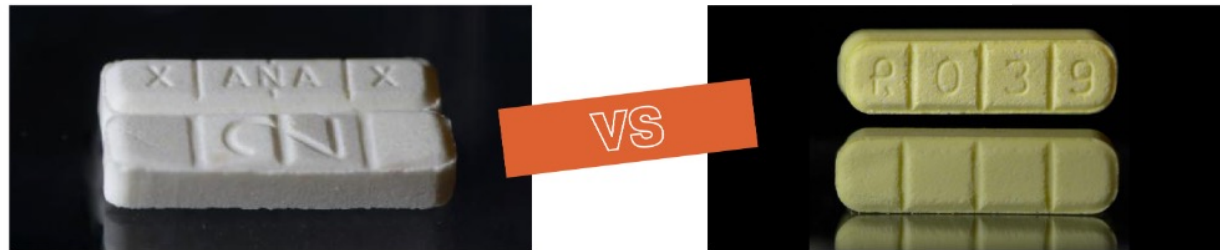
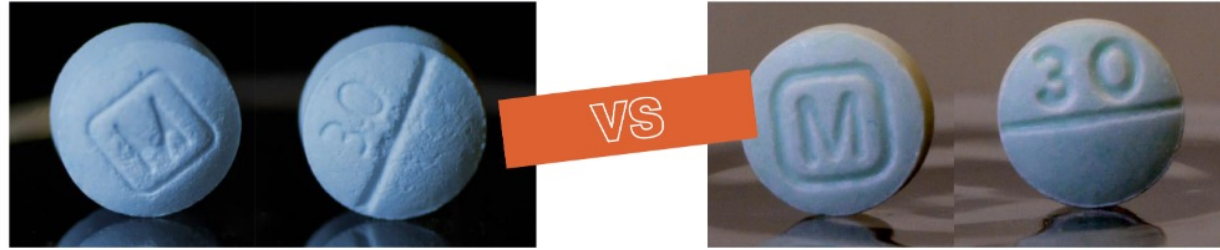
Rise in overdose deaths

Unintentional Drug Overdose Death Rates Among US Youth Aged 15-19



Data sources: National Vital Statistics System's multiple-cause-of-death 2019-2021 final and 2022-2023 provisional data and the U.S. census monthly data. *: Joinpoints identified indicate significant changes in nonlinear trends using Bayesian Information Criterion. AQPC=average quarter percentage change during 2019 Q1-2023 Q1.

Can you tell the difference?



Risk/Protective Factors for SUD

Risk Factors for High-Risk Substance Use

Risk factors for youth high-risk substance use can include:

- Family history of substance use
- Favorable parental attitudes towards the behavior
- Poor parental monitoring
- Parental substance use
- Family rejection of sexual orientation or gender identity
- Association with delinquent or substance using peers
- Lack of school connectedness
- Low academic achievement
- Childhood sexual abuse
- Mental health issues

High-Risk Substance Use Prevention

Research has improved our understanding of factors that help buffer youth from a variety of risky behaviors, including substance use.

These are known as protective factors. Some protective factors for high risk substance use include:

- Parent or family engagement
- Family support
- Parental disapproval of substance use
- Parental monitoring
- School connectedness

Refer parents to:

- **CDC – Adolescent and School Health**
- **NIDA Parents & Educators for tips/conversation starters**

Screening Tools

The CRAFFT Interview (version 2.1)

To be orally administered by the clinician

Begin: "I'm going to ask you a few questions that I ask all my patients. Please be honest. I will keep your answers confidential."

Part A

During the PAST 12 MONTHS, on how many days did you:

1. Drink more than a few sips of beer, wine, or any drink containing alcohol? Put "0" if none. # of days
2. Use any marijuana (weed, oil, or hash by smoking, vaping, or in food) or "synthetic marijuana" (like "K2," "Spice")? Put "0" if none. # of days
3. Use anything else to get high (like other illegal drugs, prescription or over-the-counter medications, and things that you sniff, huff, or vape)? Put "0" if none. # of days

Did the patient answer "0" for all questions in Part A?

Yes



Ask CAR question only, then stop

No



Ask all six CRAFFT* questions below

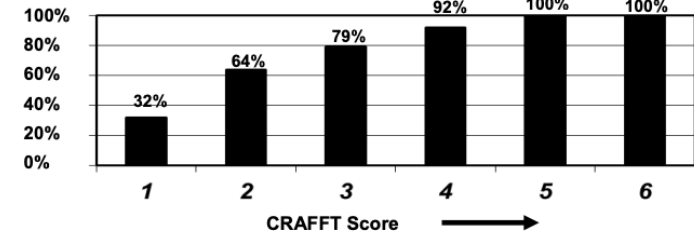
Part B

	No	Yes
C Have you ever ridden in a CAR driven by someone (including yourself) who was "high" or had been using alcohol or drugs?	<input type="checkbox"/>	<input type="checkbox"/>
R Do you ever use alcohol or drugs to RELAX , feel better about yourself, or fit in?	<input type="checkbox"/>	<input type="checkbox"/>
A Do you ever use alcohol or drugs while you are by yourself, or ALONE ?	<input type="checkbox"/>	<input type="checkbox"/>
F Do you ever FORGET things you did while using alcohol or drugs?	<input type="checkbox"/>	<input type="checkbox"/>
F Do your FAMILY or FRIENDS ever tell you that you should cut down on your drinking or drug use?	<input type="checkbox"/>	<input type="checkbox"/>
T Have you ever gotten into TROUBLE while you were using alcohol or drugs?	<input type="checkbox"/>	<input type="checkbox"/>

*Two or more YES answers suggest a serious problem and need for further assessment. See back for further instructions →

1. Show your patient his/her score on this graph and discuss level of risk for a substance use disorder.

Percent with a DSM-5 Substance Use Disorder by CRAFFT score*



*Data source: Mitchell SG, Kelly SM, Gryczynski J, Myers CP, O'Grady KE, Kirk AS, & Schwartz RP. (2014). The CRAFFT cut-points and DSM-5 criteria for alcohol and other drugs: a reevaluation and reexamination. Substance Abuse, 35(4), 376-80.

2. Use these talking points for brief counseling.



1. **REVIEW** screening results
For each "yes" response: "Can you tell me more about that?"



2. **RECOMMEND** not to use
"As your doctor (nurse/health care provider), my recommendation is not to use any alcohol, marijuana or other drug because they can: 1) Harm your developing brain; 2) Interfere with learning and memory, and 3) Put you in embarrassing or dangerous situations."



3. **RIDING/DRIVING** risk counseling
"Motor vehicle crashes are the leading cause of death for young people. I give all my patients the Contract for Life. Please take it home and discuss it with your parents/guardians to create a plan for safe rides home."



4. **RESPONSE** elicit self-motivational statements
Non-users: "If someone asked you why you don't drink or use drugs, what would you say?" Users: "What would be some of the benefits of not using?"



5. **REINFORCE** self-efficacy
"I believe you have what it takes to keep alcohol and drugs from getting in the way of achieving your goals."

3. Give patient Contract for Life. Available at www.crafft.org/contract

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(617) 355-5433 www.ceasar.org

For more information and versions in other languages, see www.ceasar.org.

Available on coloradosbirt.org

Screening to Brief Intervention (S2BI) Tool

The following questions will ask about your use, if any, of alcohol, tobacco, and other drugs. Please answer every question by checking the box next to your choice.

IN THE PAST YEAR, HOW MANY TIMES HAVE YOU USED:

Tobacco?

- Never
- Once or twice
- Monthly
- Weekly or more

S2BI Tool developed at Boston Children's Hospital with support from the National Institute on Drug Abuse.

It is best used in conjunction with "The Adolescent SBIRT Toolkit for Providers" mass.gov/maclearinghouse (no charge).

Alcohol?

- Never
- Once or twice
- Monthly
- Weekly or more

Marijuana?

- Never
- Once or twice
- Monthly
- Weekly or more

STOP if answers to all previous questions are "never." Otherwise, continue with questions on the back.

Prescription drugs that were not prescribed for you (such as pain medication or Adderall)?

- Never
- Once or twice
- Monthly
- Weekly or more

Illegal drugs (such as cocaine or Ecstasy)?

- Never
- Once or twice
- Monthly
- Weekly or more

Inhalants (such as nitrous oxide)?

- Never
- Once or twice
- Monthly
- Weekly or more

Herbs or synthetic drugs (such as salvia, "K2", or bath salts)?

- Never
- Once or twice
- Monthly
- Weekly or more

OVER

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SA3542
MAY 2015

Available on nida.nih.gov/s2bi

+ Screening → Treatment

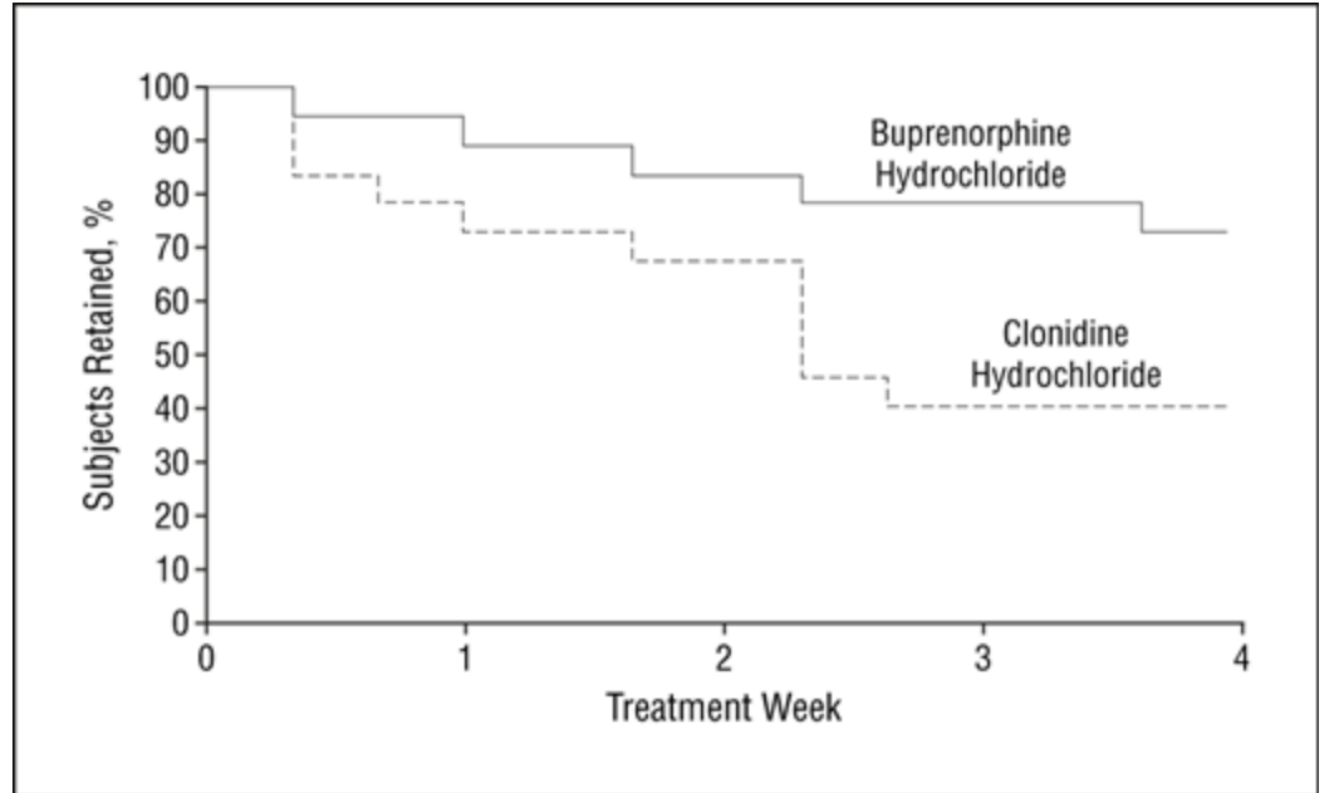
Opioid use disorder

Buprenorphine ↑ treatment retention

Outpatient detox with buprenorphine (≤ 8 mg) + placebo patch vs. clonidine (≤ 3 mg) patch + placebo tablets

↑ retention in buprenorphine (72%) vs clonidine (39%) ($p < 0.05$)

↑ % of negative UDS (64% vs. 32%, $p = 0.01$)



Buprenorphine RCTs

Clinical Trial	Sample Characteristics	Design	Interventions and dose	Results
Woody et al. (2008)	N = 152 treatment-seeking adolescents who met DSM-IV criteria for opioid dependence	Randomized, nonblinded 12-week trial	14-day outpatient detoxification (≤ 14 mg of buprenorphine) vs. 12-week buprenorphine/naloxone (≤ 24 mg)	12wk bup/naloxone (≤ 24 mg) with: ↓ Opioid-positive urine tests at week 4 & 8 ↓ reported opioid use before week 6 ↓ reported injections before week 6 ↓ cocaine and marijuana use
Marsh et al. (2016)	N = 53 youth who met DSM-IV opioid dependence criteria	Randomized, double-blind, placebo-controlled, multicenter randomized controlled trial	28-day or 56-day buprenorphine/naloxone detoxification and followed over a 63-day study period.	56-day buprenorphine taper: ↑ treatment retention by 11 days ↑ % negative UDS (35 vs. 17%).

Buprenorphine Rx Trends

Buprenorphine prescribing has dropped by ~25% in people <19yo from 2015 to 2019.

Decrease in buprenorphine Rx during COVID-19 pandemic among commercial insurance and cash payers

Alcohol use disorder

Naltrexone for AUD

- Small open label pilot study – naltrexone well tolerated in adolescents

- Two clinical trials

1. Miranda et al.:

naltrexone ↓ **likelihood of drinking and heavy drinking**

Blunted ETOH cravings

Rx was well tolerated

2. O'Malley et al.:

naltrexone did not reduce frequency of drinking nor heavy drinking days

Did **reduce drinking intensity** and BAL

Cannabis use disorder

Psychotherapy = gold standard for CUD

- Individual Psychotherapies:

- Cognitive behavioral therapy (CBT): ↓ cannabis use ↓ heavy use ↑ negative UDS
- Motivation enhancement therapy + CBT: ↓ cannabis use ↑ in recovery
- Adding contingency management: ↑ negative UDS ↑ abstinence - *however effects are not sustained once incentives discontinued*

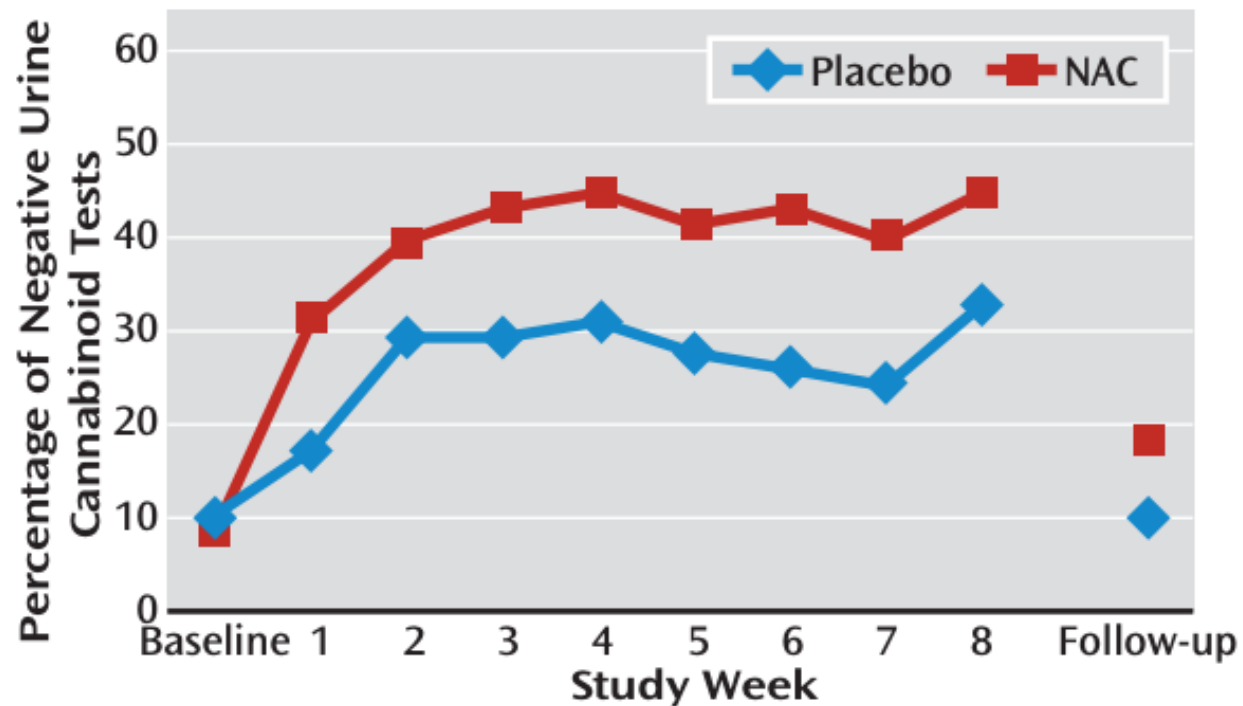
- Family Based Therapies

↑ abstinence/minimal use, ↓ # adolescent meeting criteria for CUD, ↓ heavy use

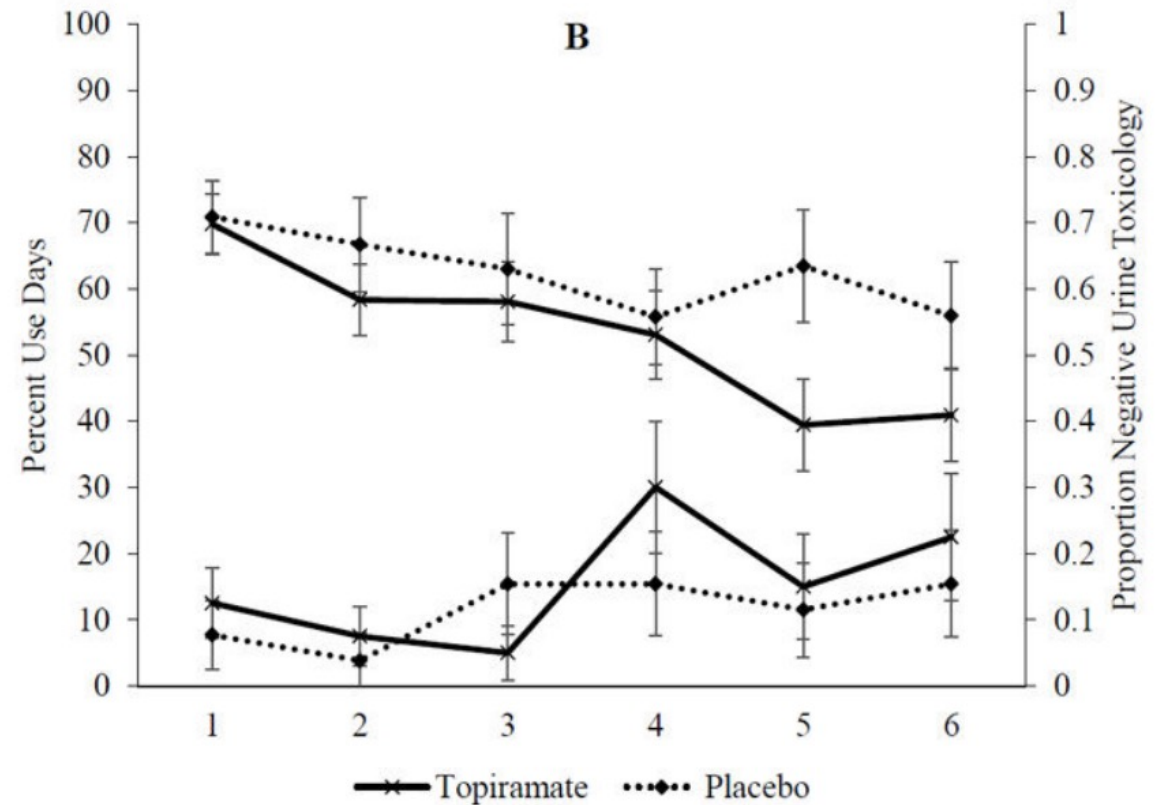
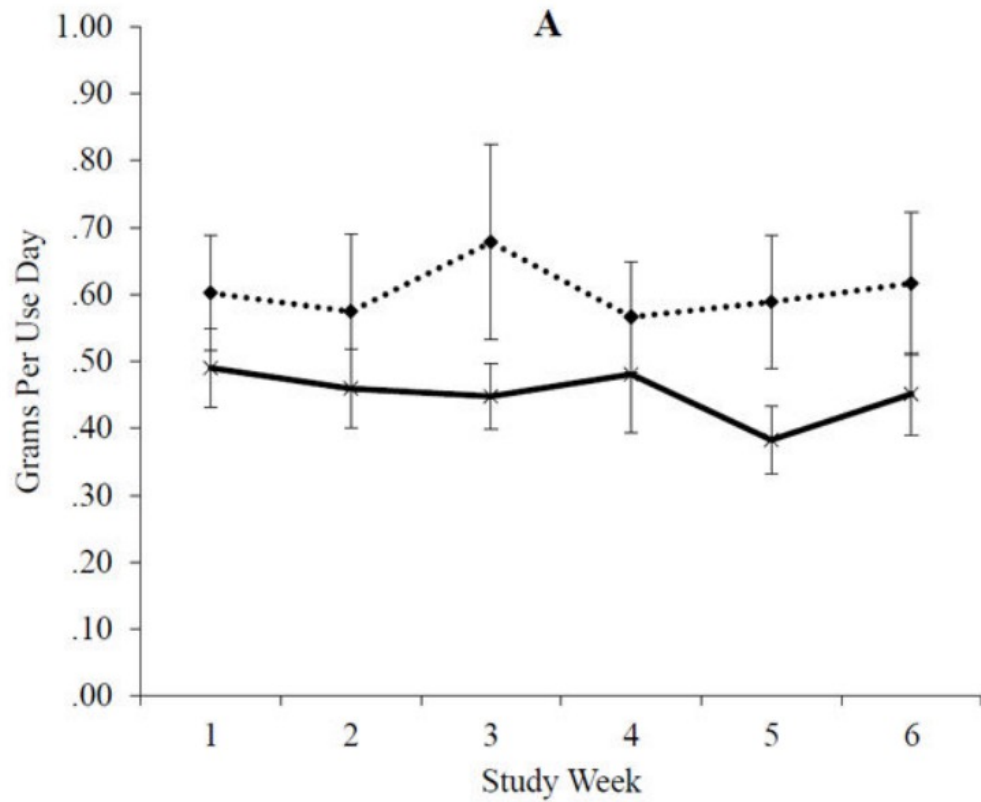
Pharmacotherapy for CUD - NAC

TRIAL OF N-ACETYLCYSTEINE IN CANNABIS-DEPENDENT ADOLESCENTS

FIGURE 1. Proportion of Negative Urine Cannabinoid Tests Over Time Among Cannabis-Dependent Adolescents in a Randomized Controlled Trial of N-Acetylcysteine (NAC)^a



Pharmacotherapy for CUD - topiramate



Nicotine vaping

CIGS IN AN E-CIG

1 Pack of Cigarettes
= -22mg of Nicotine

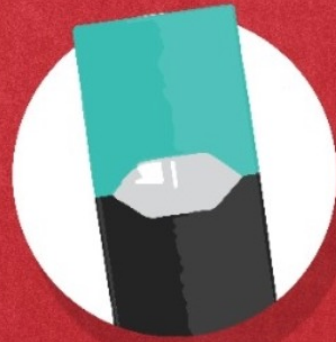


AMOUNT OF NICOTINE IN

~20
CIGARETTES



1 JUUL Pod
= -41.3mg of Nicotine



AMOUNT OF NICOTINE IN

~37
CIGARETTES



1 Flum Float
= -400mg of Nicotine



AMOUNT OF NICOTINE IN

~363
CIGARETTES



1 Elf Bar
= -650mg of Nicotine



AMOUNT OF NICOTINE IN

~590
CIGARETTES



Tobacco use disorder / Nicotine vaping

<i>SUD indication</i>	<i>Medication</i>	<i>Number of studies and participants</i>	<i>Safety/tolerability</i>	<i>SUD outcomes</i>
Tobacco use disorder	Nicotine replacement therapy	9 (<i>N</i> = 1118)	Positive (negative for nasal sprayer)	Mixed for patch, mostly negative for nasal sprayer
	Bupropion SR	3 (<i>N</i> = 657)	Positive	Positive at 300 mg
	Varenicline	3 (<i>N</i> = 258) + 1 pending publication (<i>N</i> = 307)	Positive	Preliminary/encouraging

Mental health treatment = MAT

- Major gap in care

Only 4.6% of youth receiving comprehensive dual diagnosis care (care for both a substance use disorder and a mental health condition)

- Screening + treatment/referral for GAD, MDD, ADHD

Harm reduction

Contraception = harm reduction

- Regardless of age or sexual activity – start the conversation
- Confidentiality is crucial
- **LARC - first line contraceptive** in adolescents
- offer emergency contraception
- Protection + screening STI – importance of condom use

HOW TO USE

nARCAN

(Naloxone)



REACH Lab



Use our **safetyfirst** curriculum to talk with your students

Recognize a Fentanyl Overdose

Knowing the signs of opioid overdose is crucial in saving a life.

Signs Include:

- Slow, shallow, and erratic breathing
- Unconscious and unresponsive
- Slow or no pulse
- Pale and clammy

Respond to the Emergency

Here are the steps to follow:

- Have Narcan ready to use
- Hold the device with your thumb on the bottom plunger and two fingers on the nozzle
- Insert the tip into either nostril
- Firmly press the plunger to release the dose
- Dial 911
- Repeat with additional Narcan

Click [here](#) to mail order Narcan or learn more



*Narcan does not cause harm if there is no overdose



Harm Reduction Resources

- [Dancesafe.org](https://dancesafe.org) – testing supplies
- [Stoptheclockcolorado.org](https://stoptheclockcolorado.org) - where naloxone is available
- Syringe access programs – list on CDPHE
- [Denvergov.org](https://denvergov.org) – naloxone and fentanyl test strips for Denver residents only

Resources

STEP Clinic at Denver Health

303-602-4848

Continuum of care - adolescent detox, 11 school based MAT/therapy, outpt clinic/MAT/therapy, in-home family therapy

Safety First Curriculum

CDC + NIDA

ColoradoSBIRT.org

Key Points

- Opioid overdose is a leading cause of death among adolescents
- Prescribe buprenorphine in OUD !
- Encourage dialogue with young patients/families about substance use

Questions?