



EMORY
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MEDICINE

Department of Psychiatry
and Behavioral Sciences

Treating Adolescent Substance Use: A Family Systems Perspective

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Learning Objectives

1. Recognize the intergenerational transmission of substance use.

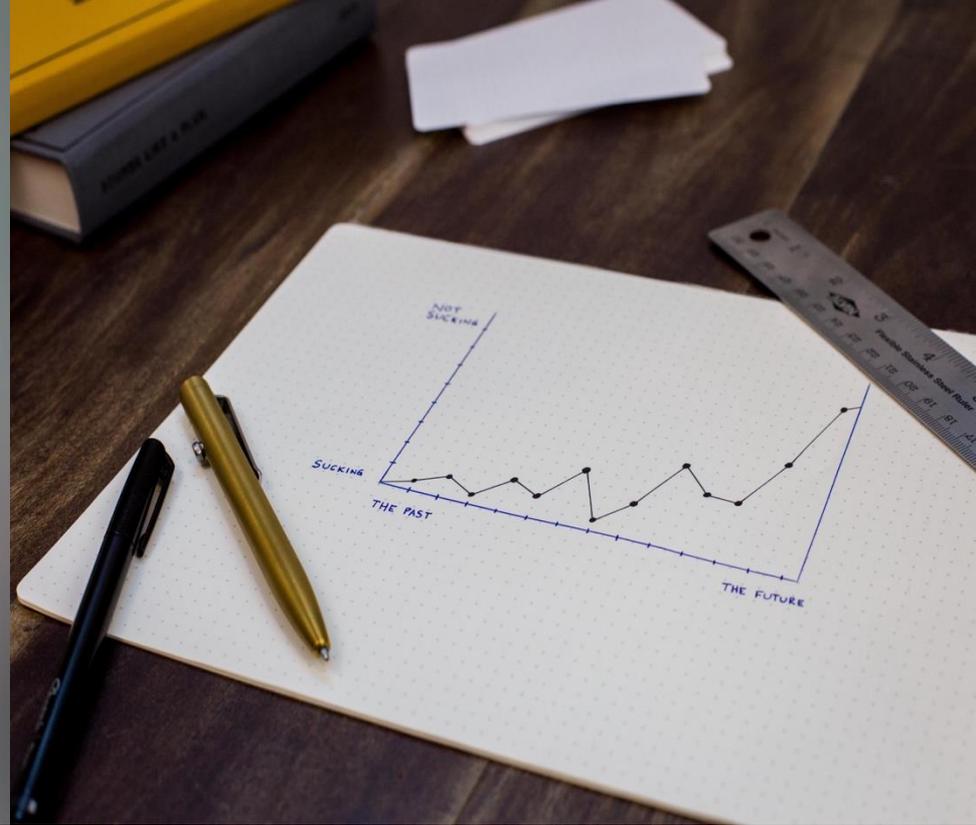
2. Identify at least three evidence-based treatments for adolescent substance use disorder.

3. Apply practical strategies for engaging families when treating adolescent substance use.

Outline

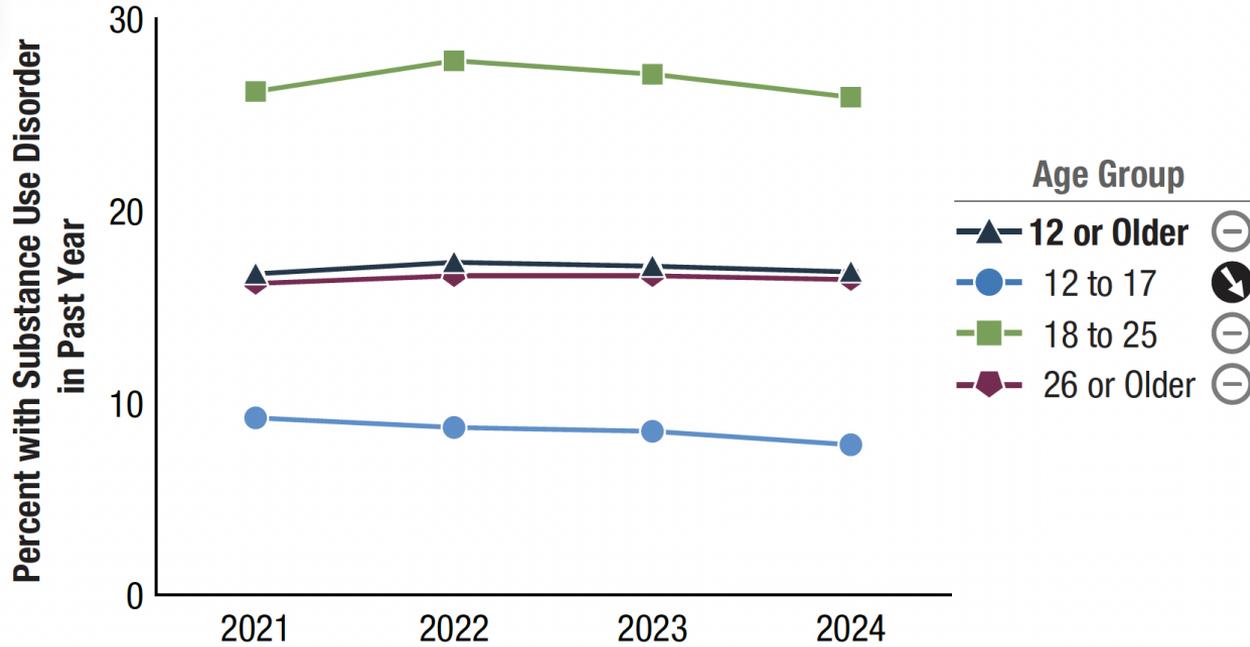
- Substance use (SU) rates
- Biopsychosocial influences on SU
- Treating the adolescent
 - Assessment
 - Engaging caregivers
 - Behavioral interventions
 - Medication management





Rates of SU

Rates of SUD

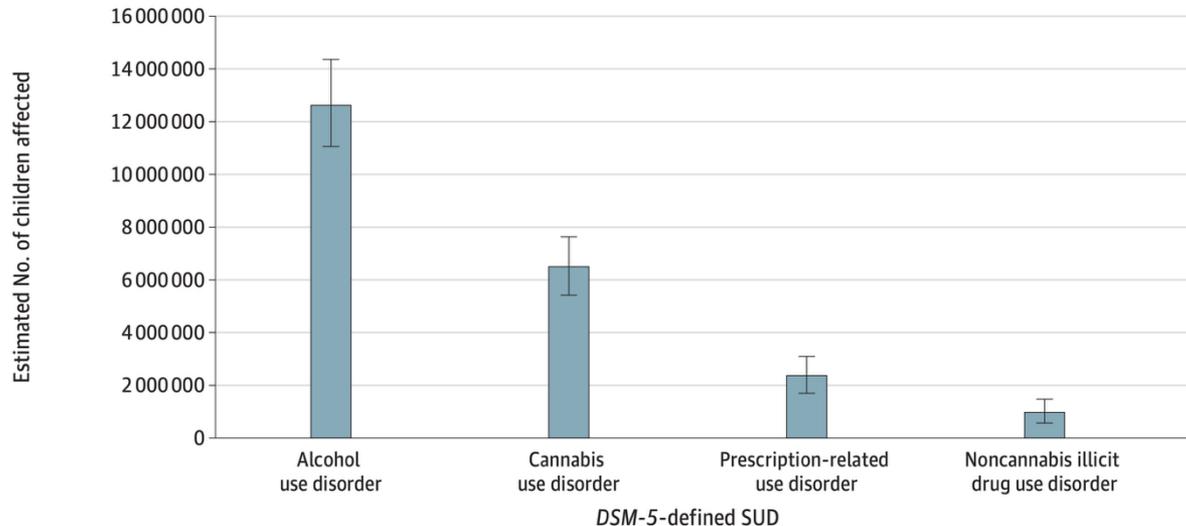


Extracted from: NSDUH (2025).

Rates of SU: Family

1 in 4 US children live in a household where one parent or primary caregiver has an SUD

Figure. US Children Living With Parents With a Substance-Specific *DSM-5*-Defined Substance Use Disorder (SUD)



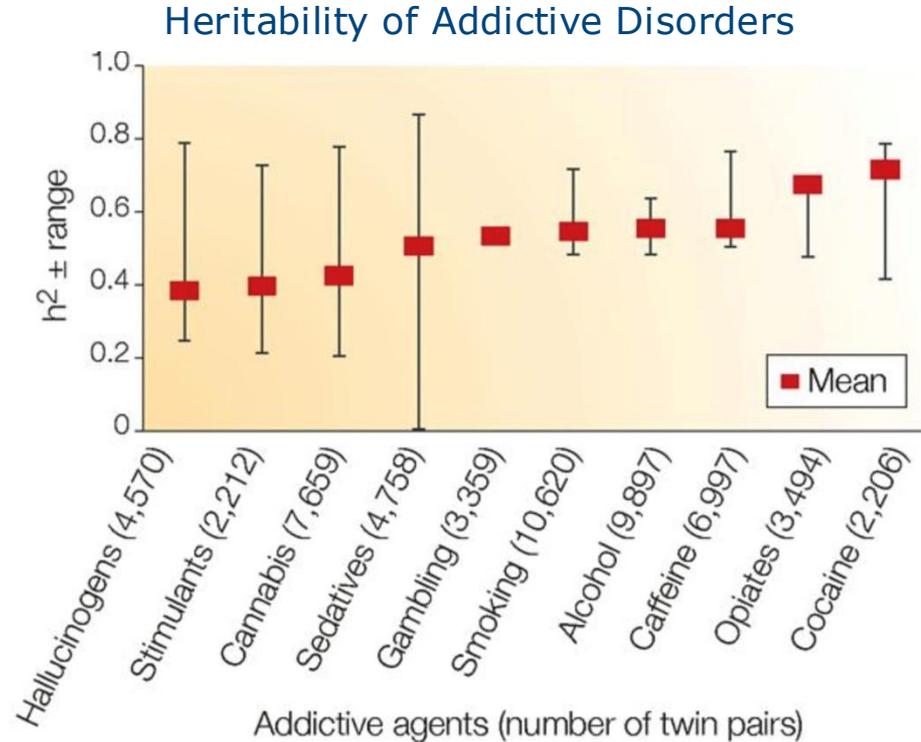
Extracted from: McCabe et al. (2025).



Biopsychosocial Influences

Biological: Genetics

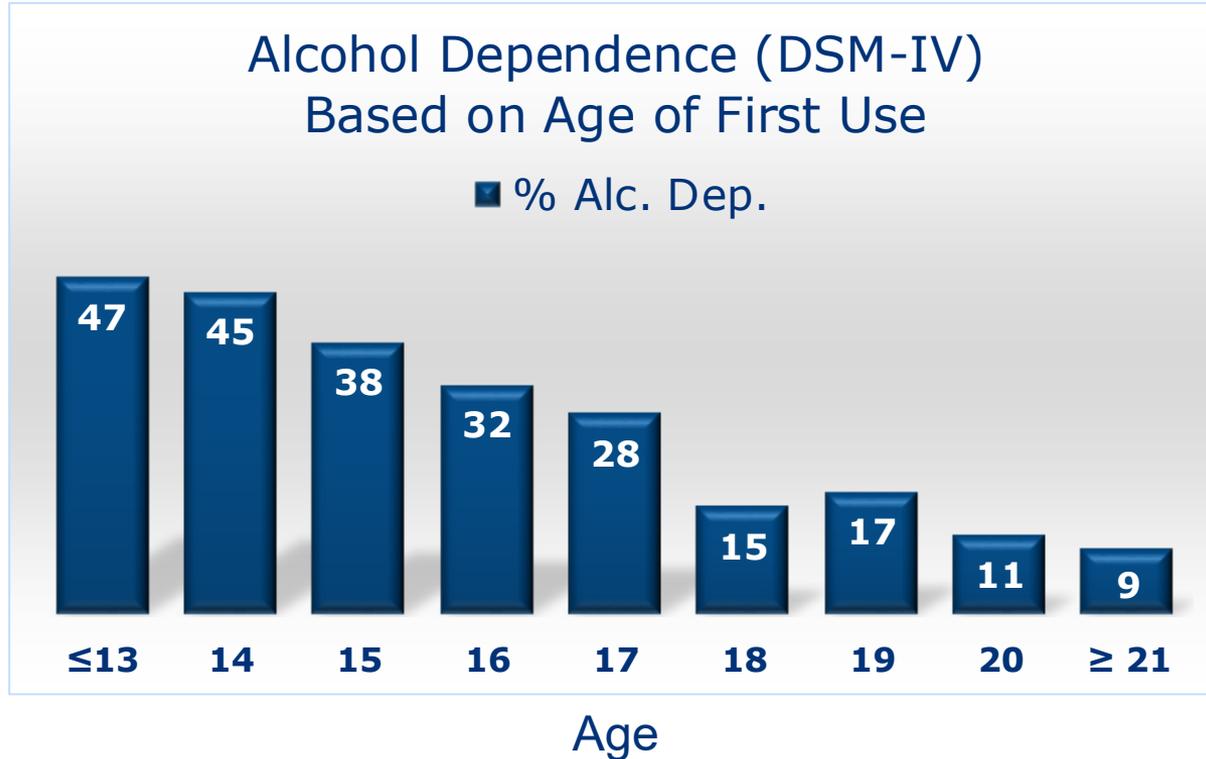
- **Highly heritable**
 - Approximately 50% of the risk is genetic



Biological: In Utero Exposure

- **In utero exposure is often more predictive of future SUD than FH alone.**
 - **Cocaine**
 - Increased risk use of cocaine by age 14 (Delaney-Black et al., 2015)
 - 2X likely to use tobacco, 2.2X alcohol, and 1.8X cannabis (Minnes et al., 2014)
 - **Cigarettes**
 - > 2X likely to smoke during adolescence (Porath & Fried 2005)
 - > 1/2 pop has 5.5X increased risk for early cigarette use (Cornelius et al., 2000)
 - **Alcohol**
 - Greater # of SUD symptoms for nicotine, alcohol, illicit drugs (Yates et al., 1998)
 - **Cannabis**
 - 2X more likely to use tobacco and cannabis use in adolescence (Day et al., 2006)

Biological: Early Exposure

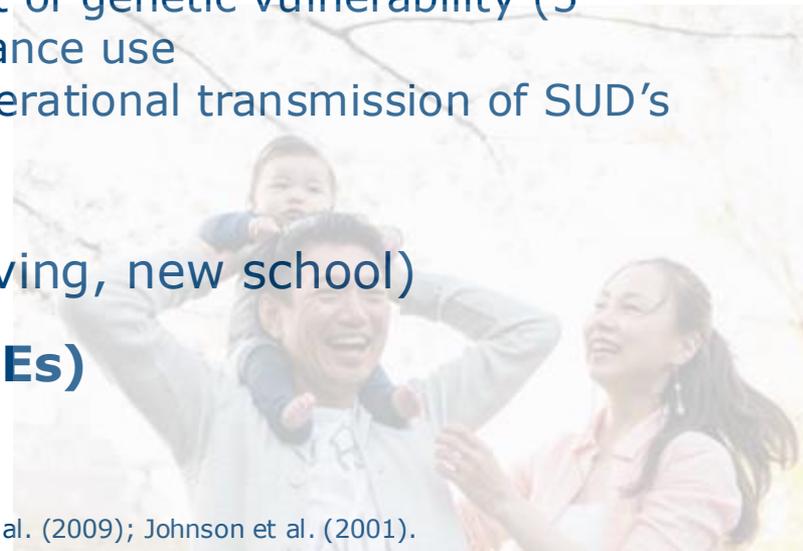


Biological: Early Exposure

- Modification of brain circuitry that may stabilize addictive behavior
- **Functional and structural changes** to the brain
 - Repeated ethanol exposure produces hippocampal dependent memory deficits and increased dendritic spine size
 - Smaller frontal and hippocampal volumes, altered white matter microstructure and poorer memory in adolescents with alcohol use disorder

Psychosocial: Risk Factors

- **Family history**
 - Family alcohol and drug behavior attitudes
 - Parental substance use
- **Parenting Practices**
 - Supportive parenting decreases the effect of genetic vulnerability (5-HTTLPR short allele) on adolescent substance use
 - Maladaptive parenting increases intergenerational transmission of SUD's
- **Unsupervised time** with peers
- **Transitions** to new environments (moving, new school)
- **Adverse childhood experiences (ACEs)**



Psychosocial: Adverse Childhood Experiences

ABUSE
Physical
Emotional
Sexual

A

HOUSEHOLD CHALLENGES

Mother-figure violence

Substance Use D/O

Mental Health D/O

Separation/Loss of Parent

Household member incarcerated

C

NEGLECT

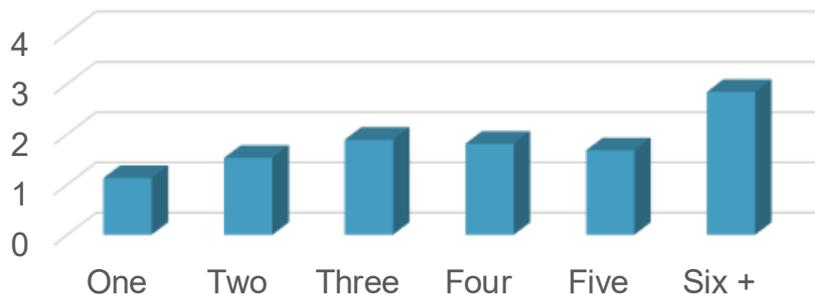
Physical
Emotional

E

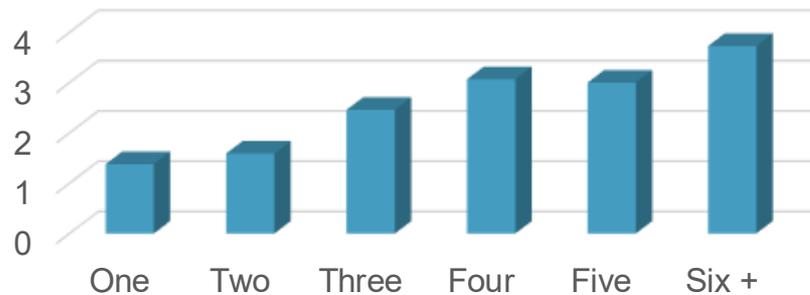


Psychosocial: Dose response and ACEs

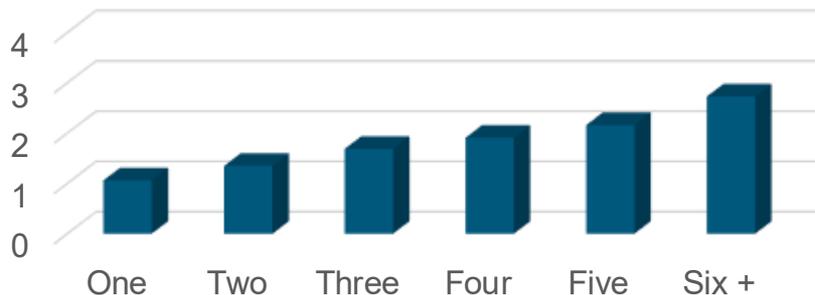
Moderate to Heavy Alcohol Use



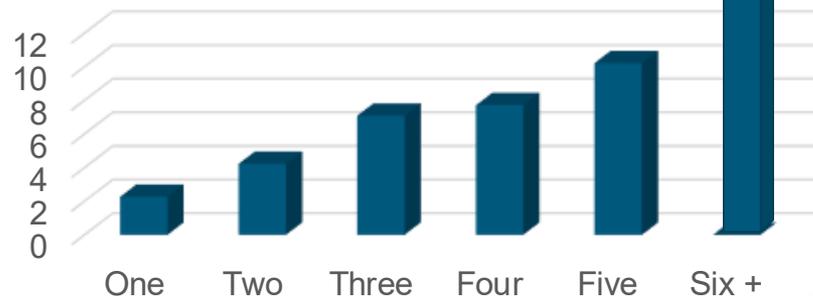
Illicit Drug Use



Depressed Affect



Suicide Attempts





Treatment

Treatment: Assessment



Initial Assessment

- **When someone comes into my office....**
 - **Assess family engagement**
 - Navigating disclosure, results sharing
 - Substance-related behaviors/attitudes in the family
 - Evaluate potential for **contingency management** plan
 - Level of monitoring (drug screening, breathalyzer)
 - Evaluate need for **individual and family level interventions**
 - Medication vs. therapy vs. both!
 - Encourage **recovery supports**
 - Ensure **safety**
 - Naloxone/fentanyl testing
 - Alternative transportation
 - Reporting concerns

Assessment: Confidentiality

- **Confidentiality**

- Review any limits in system including urine drug screens
- Breach of confidentiality for safety - ***Individualized***
 - Transition to injection drug use
 - Use of opioids in opioid naïve patient
 - History of overdose
 - **Use in dangerous and potentially lethal situations**
 - Driving under the influence
 - Getting in vehicle with someone who is high or impaired
 - Serious self-injury while impaired

Assessment: Confidentiality Example

Your right to confidential treatment is important. However, there are some limitations to what we can and can't keep private from our visits:

- 1. I am worried about your immediate safety or the safety of others around you.*
- 2. You share that you have been physically or sexually abused or harmed.*

For the safety item, there are some substance specific items that I'd like to explain. I would need to break confidentiality and share information with your parent/caregiver if you are:

- 1. At risk of overdosing, either by regularly using opioids or having had a recent overdose with risk of it occurring again. Another example would be transitioning to injecting substances when your parents were not aware. This is again because of that elevated overdose risk.*
- 2. If your use is putting you in the way of immediate harm, like you are planning on going out with friends and there is no designated driver for the evening, or you are at high risk of using and then driving yourself, friends, or even younger siblings.*

There are also some limitations to my system and what we can keep private. While I can make sure nobody from your family reads my notes, we do have a patient portal where they can see lab results, including urine drug screening results, as well as diagnoses and any medications I might recommend.

Assessment: Screening

■ Adolescent

- CRAFFT
- S2BI
- Sexual activity
- High risk behaviors

■ Parent/Caregiver

- SU history
- In utero exposure
- Current SU in household

Part B

Circle one

C Have you ever ridden in a **CAR** driven by someone (including yourself) who was “high” or had been using alcohol or drugs? **No** **Yes**

R Do you ever use alcohol or drugs to **RELAX**, feel better about yourself, or fit in? **No** **Yes**

A Do you ever use alcohol or drugs while you are by yourself, or **ALONE**? **No** **Yes**

F Do you ever **FORGET** things you did while using alcohol or drugs? **No** **Yes**

F Do your **FAMILY** or **FRIENDS** ever tell you that you should cut down on your drinking or drug use? **No** **Yes**

T Have you ever gotten into **TROUBLE** while you were using alcohol or drugs? **No** **Yes**



Treatment: Engaging Caregivers

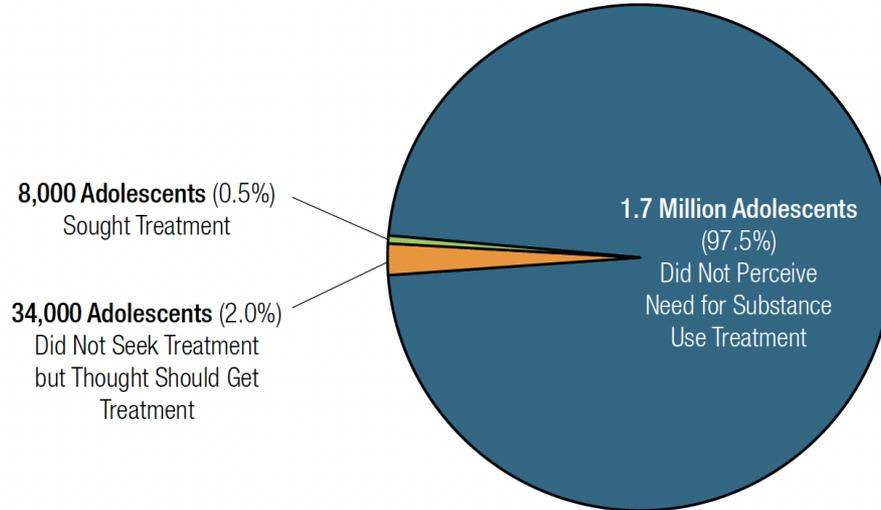
Engaging Caregivers

- **Motivate** for treatment
 - Psychoeducation
 - Neurobiology
 - Future risk
- **Reduce Access**
 - Remove items from the home
 - Support treatment
- **Safety**
 - Naloxone
 - Harm/risk reduction



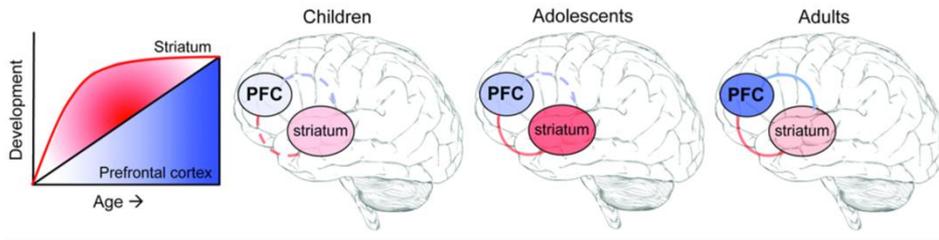
Caregivers: Motivation for Tx

Perception of those who did not receive SUD treatment in the past year

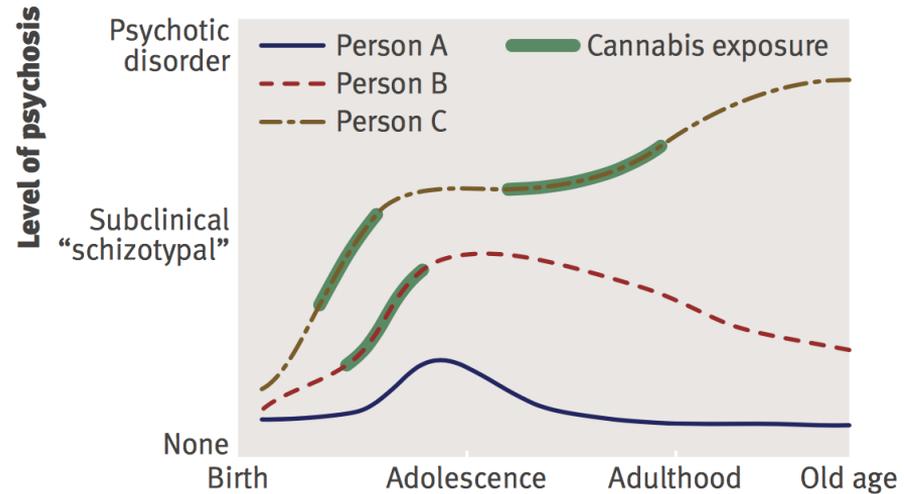


1.8 Million Adolescents with a Substance Use Disorder Who Did Not Receive Substance Use Treatment

Caregivers: Psychoeducation



Extracted from: Casey & Jones (2010).



Extracted from: Kuepper et al. (2011).

Caregivers: Modifying Risk

- Modify family SU behaviors and attitudes
- Promote positive parenting
 - Reduce ACE's
- Minimize **unsupervised time** with peers
- Address **co-occurring psychiatric disorders**
 - **Opioid use disorder**: ≥ 3X odds of having generalized anxiety disorder
 - **Stimulant (cocaine) use disorder**: ≥ 3X odds of having post-traumatic stress disorder
 - **Cannabis use disorder**: ≥ 2X odds of having externalizing behavior disorder

Caregivers: Modifying Risk

- Importance of **monitoring**
 - **Recognize**
 - There are no evidence-based treatments for many drug trends
 - Some aren't detectable on standard urine drug screens
 - **Limiting access**
 - Monitor spending/credit cards
 - Knowing where:
 - Gas stations
 - Smoke shops
 - Online
 - Delivery services

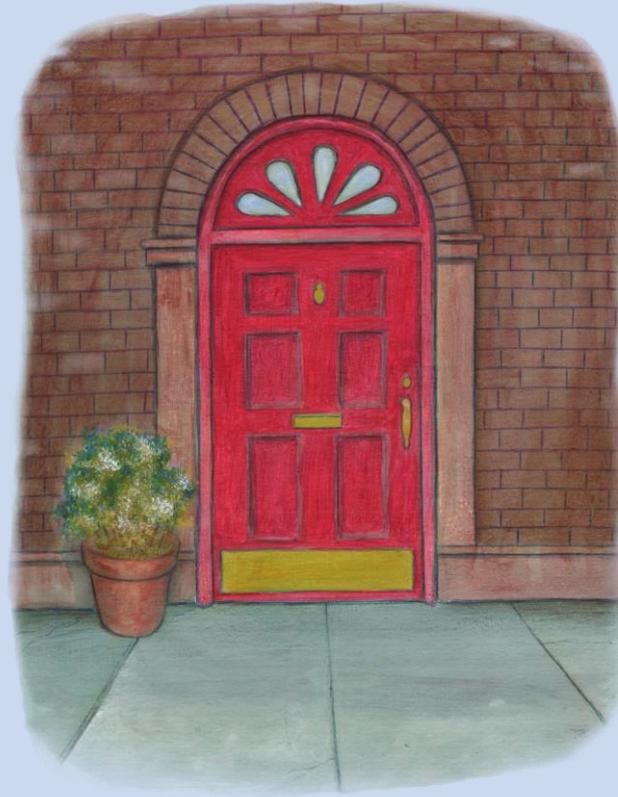


Caregivers: Modifying Risk

- Store all medications in a **locked box** (prescribed as well as cold and cough medications)
- Remove all **alcoholic** beverages (liquor, wine, beer)
- All alcohol-based products (hand sanitizer, cough syrup, mouthwash, windshield wiper fluid & antifreeze)
- Food products (canned whipped cream, nutmeg)
- Remove all **inhalants**
 - Household aerosol products (compressed air dusters, spray paints, hair or deodorant sprays, vegetable oil sprays)
 - Industrial or household products (paint thinners, lighter fluid)
 - Nitrites (room deodorizer, leather cleaners, liquid aroma)

Preventing Substance Use Starts at Home

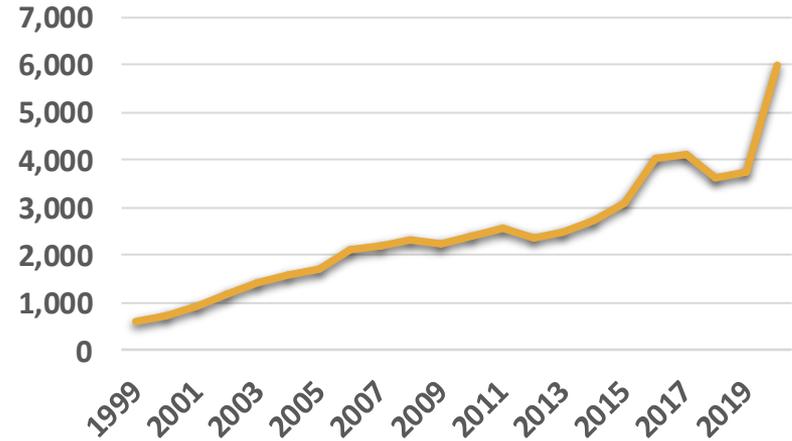
Safeguarding Your Children



<https://massclearinghouse.ehs.state.ma.us/PROG-BSAS-YTH/SA1037kit.html>

Caregivers: Safety

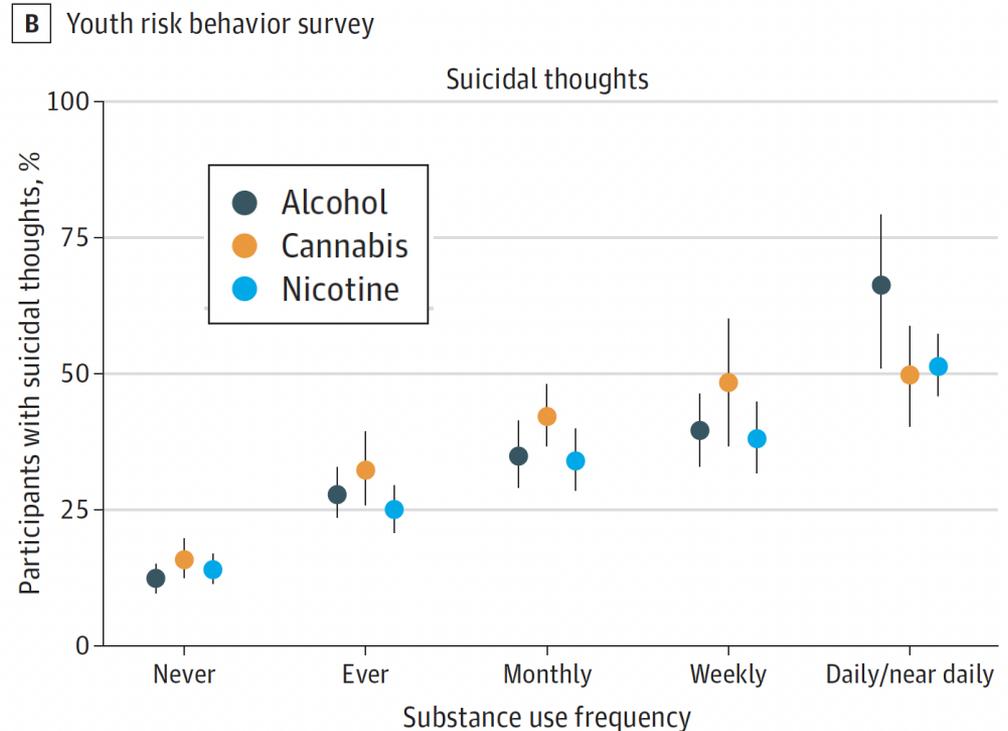
- **Often unintentional**
 - Other substances are laced with fentanyl
 - 12% of deaths ages 15-24
 - **Naloxone:** FDA approved in all pediatric ages
 - Rapidly reverses effects of opioid overdose
 - 1/2 life of 30-90 minutes
 - Counsel on any **Good Samaritan AND Medical Amnesty laws** in your state



**Opioid-Related Overdose Deaths
Ages 15-24**

Caregivers: Safety

- Youth with higher psychiatric comorbidity
 - Are at higher risk of **overdose**
 - Increased risk of **suicide attempts** and **self-harm**
 - Dose dependent relationship with substances

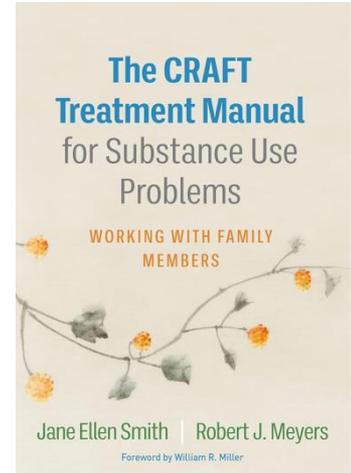




Treatment: Behavioral

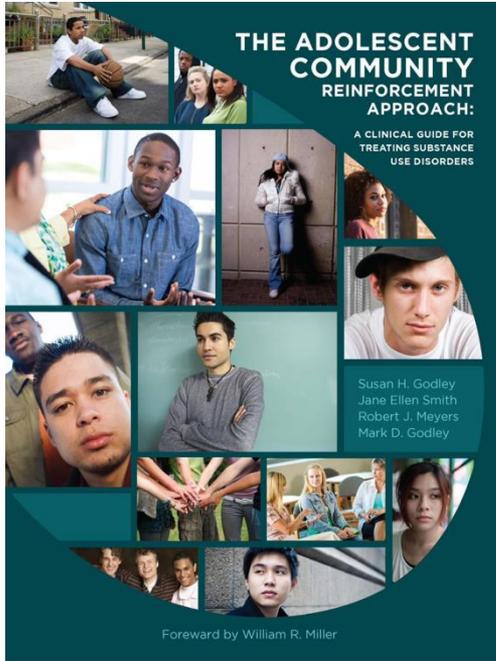
Behavioral: CRAFT

- **Community Reinforcement and Family Training**
 - 1) Functional analysis to identify the function of SU and develop contingency management strategies
 - 2) Contingency management training
 - 3) Avoidance of interfering with the natural negative consequences of SU
 - 4) Communication skills training
 - 5) Treatment entry training to effectively navigate ambivalence
 - 6) Self-care



Free online support groups based in CRAFT:
<https://drugfree.org/parenting-toward-recovery/>

Behavioral: A-CRA



- **Adolescent Community Reinforcement Approach**
 - CBT/harm reduction
 - Delivered individually or in groups
 - 10 Individual
 - 2 parent/2 family
 - Sobriety Sampling
 - Communication Skills
 - Problem Solving Skills
 - Medication Adherence/Monitoring

Behavioral: Contingency Management

- Based on **operant conditioning**
 - Reinforcement for meeting goals (target behavior)
 - Voucher-based reinforcement
 - Prize incentive
 - Perceived value
 - Escalating schedule
- **Punishment** has **less emphasis**
 - Removal of privileges (e.g. phone, car)
 - Grounding curfew



Behavioral: Recovery Supports

- Young adult **peer support**
 - <https://youngpeopleinrecovery.org/>
- **Self-help** meetings
 - Smart Recovery has adolescent meetings
- **Collegiate recovery** programs/communities
- Consider **Alateen** for adolescents with substance use in the household



Treatment: Medication

Medication: Alcohol Use Disorder

- **Naltrexone**

- Opioid antagonist, **same dosing** as adults
- Miranda et al. (2014) **N=22**, ages 15-19, 4-week RCT
 - Reduction in heavy drinking days, cravings, cue reactivity

- **Disulfiram- *** ethically questionable in minors**

- Inhibits metabolism of alcohol:flushing, headache, nausea
- Niederhofer et al. (2003) **N=26**, ages 16-19, 90-day RCT
 - Mean abstinence 68 vs. 28 days

- **Acamprosate- RETRACTED ARTICLE**

- Enhances GABA reception & transmission
- Niederhofer et al. (2003) **N=26**, ages 16-19, 90-day RCT
 - Mean abstinence 79.8 vs. 32.8 days

Medication: Monitoring AUD

- **Monitoring**

- **Etg/Ets**

- Up to 3-4 days following use
 - Levels do NOT correlate to amount consumed

- **Breathalyzer apps**

- Video recorded
 - Often used with college students

- **Phosphatidylethanol (PEth)**

- Biomarker of heavy alcohol use in blood
 - Use on case-by-case basis

Medication: Cannabis Use Disorder

- **N-acetylcysteine (NAC)**
 - NAC corrects downregulated cysteine/glutamate antiporter and restores normal function to the dopaminergic system
 - **More than doubles likelihood of abstinence**
 - Gray et al. (2012) N=116, ages 15-21, 8-week RCT
 - 1200 mg PO BID (acid reflux)
 - Replicated in ACCENT trial for ages 18-21
 - Negative results for ages 21+

Medication: Monitoring CUD

- **Monitoring**

- Home urine drug screening
 - Low levels of use often undetected with threshold of 50 ng/ml
- Quantitative testing
 - Need to **correct for creatinine** unless oral swab
 - Only trust corrected values
 - Levels can persist for 2-3 months
- **Analogs** (delta-8, delta-10)
 - Largely undetectable
 - May cross react on POC and be negative on quantitative testing

Medication: Opioid Use Disorder

■ Buprenorphine

- *****Only FDA approved addiction medication for adolescents**
- Sometimes need **lower doses** for youth
- Woody et al. (2008) N=152, ages 15-21 detox vs. maintenance
 - Supported maintenance therapy and not just taper!

■ Naltrexone XR injectable

- **Same doses** in youth
 - Mitchell et al. (2021) N=288, ages 15-21
 - Less opioid use in naltrexone group but was non-significant likely due to poor adherence: **Only 2/82** received all doses
 - Extremely low adherence to injections

Medication: Opioid Use Disorder

- **Methadone**

- Full opioid agonist
- "Fail first" medication
- **Few controlled studies in adolescents**

- **Opioid withdrawal**

- Buprenorphine over clonidine
 - Marsch et al. (2005) N=36, ages 13-18
 - 28-day outpatient RCT
 - **Greater tx retention, fewer opioid positive urines**

Medication: Nicotine Use Disorder

- Rates of remission are lower than in adults
 - **Only 10% continue to refrain from smoking at 6 months**
- Nicotine replacement therapy must be prescribed, not OTC
- **Behavioral Strategies**
 - Therapy
 - Texting lines



text **DITCHVAPE** to **88709**

•

Medication: Nicotine Use Disorder

- **Favorable data for bupropion**
 - Bupropion SR dose of 300 mg/day
 - 4 RCT's N=688; Improves rates of abstinence
- **Relatively poor evidence for varenicline for cigarettes**
 - Varenicline vs. placebo did not improve 12-week abstinence
 - Gray et al. (2019) N=157; ages 14-21; RCT
 - Gray et al. (2020) N= 312 ages 12-19; RCT
- **One RCT of varenicline for adolescent vaping**
 - Evins et al. (2025) N=261, ages 16-25; 12-week double-blind RCT
 - Continuous abstinence through week 24
 - Varenicline: 28%
 - Placebo: 7%
 - Enhanced usual care: 4%

Summary

- **Engage and evaluate family/caregivers when possible**
 - **Confidentiality is important!**
 - CRAFT, A-CRA and other family-based therapies
- **Limiting access is crucial**
- All use of medication for SUDs outside buprenorphine in minors is **“off-label”**
 - **Buprenorphine:** FDA ages 16+ for OUD
 - **Naltrexone** has good safety data
 - **NAC** for cannabis use
 - **Combination NRT** +behavioral interventions for nicotine use
 - Varenicline for vaping

