

What Every Provider Should Know About Adolescent Substance Abuse

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- We received no funds from the manufacturers of alcohol, tobacco, or methamphetamines

Dependence Criteria

(3 or more during a 12 month period)

- Tolerance
- Withdrawal
- Use in larger amounts than intended
- Desire or unsuccessful attempts to cut down
- Chronic behaviors with excessive time: obtaining, using or recovering from the effects of the substance
- Reduced social, occupational, or recreational activities because of substance
- Continued use despite knowledge of physical or psychological effects of the substance

Abuse Criteria

(one or more during a 12 month period)

- Failure to fulfill work, school, home obligations
- Frequent use in potentially hazardous situations. (e.g. driving while impaired)
- Frequent legal problems
- Continued use despite recurrent social or interpersonal problems

DSM-5 Substance Use Disorders

Mild 2-3 Sx, Moderate 4-5 Sx, severe 6 or more

- Tolerance
- Withdrawal
- Use in larger amounts than intended
- Desire or unsuccessful attempts to cut down
- Chronic behaviors with excessive time: obtaining, using or recovering from the effects of the substance
- Reduced social, occupational, or recreational activities because of substance
- Continued use despite knowledge of physical or psychological effects of the substance
- Use in hazardous situations
- Cravings
- Failure to fulfill obligations
- Continued use despite social/interpersonal problems

Adolescent Risk Factors for Substance Abuse--Individual

- Family History of Addiction
- Perinatal complications
- Temperament: poor self control, high sensation seeking
- ADHD
- Conduct behaviors
- Alienation
- Rebelliousness

Adolescent Risk Factors for Substance Abuse--Family

- Parents who involve children in their substance using behaviors
- Older siblings using
- Lack of supervision
- Excessively severe or inconsistent punishment
- Poor family relationship quality
- Family conflict

Adolescent Risk Factors for Substance Abuse—School/peer

- Lack of involvement in activities
- Poor academic performance
- Peers who use

Psychiatric Co-morbidities

- Mood Disorders
- Anxiety Disorders
- ADHD
- Conduct Disorders
- Personality Disorders
- Suicide Attempts/Behaviors

Substance use within last 30 days

(NIDA 2012)

Alcohol

- 12th graders 41.5%
- 10th graders 27.6%
- 8th graders 11.0%

Illicit drugs

- 12th graders 25.2%
- 10th graders 18.6%
- 8th graders 7.7%

Nicotine use within last 30 days

(NIDA 2012)

- 12th graders 17.1%
- 10th graders 10.8%
- 8th graders 4.9%

Substance use within last 30 days

High School Seniors (NIDA 2012)

- Adderal 7.6%
- Vicodin 7.5%
- Cold meds 5.6%
- Oxycontin 4.5%
- Ritalin 2.6%
- Marijuana 36.4%
- Cocaine 2.7%
- Crack 1.2%
- Meth 1.1%
- Heroin 0.6%

Adolescent Substance Use Trends

(NIDA 2012)

- Alcohol, nicotine, illicit drug use trending down.
- Marijuana use trending up.
- Daily MJ users increased from 5.1% to 6.5%
- Increased Adolescent substance use rates are associated with decreased perception of harm

Oklahoma Adolescent Substance use within the last year(13-17)

(NSDUHS-SAMSA 2010-2011)

- Alcohol 12.79%
- Cannabis 13.6%
- Rx Opiates 7.04%
- Cocaine 0.84%
- Nicotine 14.38%
- 3.08% met criteria for alcohol dependence or abuse
- 4.13% met criteria for illicit substance dependence or abuse

Risk of Addiction

(Anthony et al, 1994)

- Tobacco 31.9%
- Heroin 23.1%
- Cocaine 16.7%
- Alcohol 15.4%
- Cannabis 9.1%

Substance Classes

- Alcohol
- Sedatives, Hypnotics, Anxiolytics
- Cannabinoids
- Stimulants
- Opiates
- Hallucinogens
- Dissociatives
- Inhalants
- Nicotine
- Other

Alcohol

- Beer 3-8% (ethanol by volume)
- Wine 11-13%
- Hard liquor >30%



Alcohol (FAQs)

- CNS Depressant
- GABA_A and glycine receptor enhancement
- Zero order kinetics
- Medicinal uses: disinfectant, solvent, beverage.

Alcohol

Intoxication

- Euphoria
- Disinhibition
- Impaired Judgment
- Sexual Dysfunction
- Coordination Problems
- Ataxia
- Confusion
- Respiratory Depression
- Coma/Death

Withdrawal

- Nausea & Vomiting
- Tremors
- Weakness
- Autonomic Hyperactivity
- Anxiety
- Irritability
- Insomnia
- Hallucinations
- Delirium
- Seizures

Alcohol: Findings suggestive of use

- Enlarged Liver
- Increased LFTs
- HTN
- Smell

Sedatives, Hypnotics, Anxiolytics

- **Benzodiazepines:** Xanax/alprazolam (zannies, footballs, bars) ativan/lorazepam, midazolam/versed, temazepam/restoril, clonazepam/klonopin, valium/diazepam, librium/chlordiazepoxide, rohypnol/flunitrazepam (rufilin, roofies)
- **Barbituates:** Phenobarbital, Secobarbital, (Quaaludes)
- **Non-Benzodiazepine Hypnotics:** Eszopiclone/lunesta, zolpidem/ambien, Zaleplon
- **Other:** Meprobamate, Methaqualone, GHB

Sedatives, Hypnotics, Anxiolytics (FAQ)

- CNS depressants
- GABA_A receptor enhancement
- Medicinal uses: insomnia, anxiety, seizure, spasticity, conscious sedation, alcohol/sedative withdrawal.

Sedatives, Hypnotics, Anxiolytics

Intoxication

- Similar to alcohol
- Memory Impairment (anterograde amnesia)
- Slurred Speech
- Incoordination
- Unsteady Gait
- Stupor
- Coma

Withdrawal

- Similar to Alcohol
- Nausea & Vomiting
- Tremors
- Weakness
- Autonomic Hyperactivity
- Rebound Anxiety
- Irritability
- Insomnia
- Hallucinations
- Seizures
- May present as a life threatening delirium

Sedatives, Hypnotics, Anxiolytics

Potential Findings Suggestive of use

- Sleep Difficulties
- Anxiety
- Personality Changes
- Seizures

Opiates

- Heroin, Morphine, Oxycodone/Percocet, Oxycontin (Oxy's, roxy's), Hydrocodone/Lortabs (tabs), meperidine/demerol, Codeine (lean), Methadone, Fentanyl, Buprenorphine/suboxone, subutex, loperamide, **Desomorphine** (Krocodile)

Opiates (FAQs)

- CNS depressants
- Mu receptor agonist
- Medicinal uses: pain control, cough suppression, anti-diarrhea.

Opiates

Intoxication

- Euphoria
- Miosis
- Drowsiness
- Slurred Speech
- Memory Impairments
- Respiratory Depression
- Coma

Withdrawal

- Anxiety/Restlessness
- Lacrimation
- Rhinorrhea
- Pupillary Dilation
- Tachycardia/mild HTN/Fever
- GI Dysfunction

*Treat with naloxone (Narcan)

Opiates

Potential Findings Suggestive of use

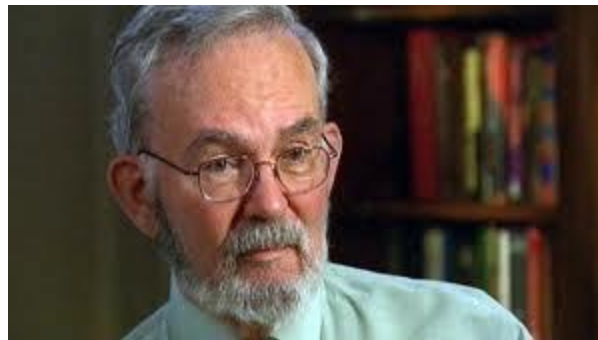
- Abscesses
- Cellulitis/Phlebitis
- Track Marks
- Chronic Constipation
- Constricted pupils

Cross Tolerance

- Alcohol and sedative hypnotics are cross tolerant
- Opiates and sedative hypnotics are not

Cannabinoids

- Marijuana: Tetrahydrocannabinol (THC), 60+ psychoactive cannabinoids
- Synthetic cannabinoids: JWH-018 (John W. Huffman), JWH-073, JWH-200, CP-47,947, etc (K2, K3, Spice, incense, Black Magic, legal, etc)



Cannabinoids (FAQs)

- Binds to endocannabinoid receptors, CB1, CB2.
- Involved in neuroplasticity???, pruning???
- Medicinal uses: antiemetic, appetite stimulation, anticonvulsant, spasticity, neuropathic pain, glaucoma

Cannabinoids

Intoxication

- Euphoria/Dysphoria
- Conjunctival Injection
- Increased appetite
- Dry Mouth
- Tachycardia
- Paranoia
- Impaired Judgment
- Sensation of slowed time
- Social Withdrawal

Withdrawal

- Irritability
- Aggression
- Nervousness/Anxiety
- Insomnia
- Decreased appetite
- Depressed Mood
- Stomach Pain, Sweating, tremors, fever, Chills

Cannabinoids

Potential Findings Suggestive of use

- Chronic Cough
- Wheezing
- New Onset Attention/Concentration Deficits
- Amotivational Syndrome

Examples of Cannabinoids

- Marijuana
- K2/Spice (Synthetic THC)



Stimulants

- Plant Derived Stimulants: Caffeine, Cocaine, Ephedra, Khat
- Prescription Synthetic Stimulants: Amphetamines, Adderall, Ritalin, Vyvanse, Concerta, Dextroamphetamine
- Illicit Synthetic Stimulants: Methamphetamine, MDPV, Mephedrone, (Bath salts)



Synthetic Drugs and Bath Salts



Mr. Happy 	G-20 (Botanical Sachet) 	G-13 	Atomic 	Wow 
California Dreams 	Blueberry Blast 	Strawberry Blast 	Da Bomb 	Makes Scents 
Amped 	Blast Off 	Cherry Blast 	Bernie 	Mr. Nice Guy 
Nirvana 	Tiger Shark 	Wicked 	Mr. Sticky 	Burnie 

Stimulants (FAQs)

- Dopamine reuptake blockade and presynaptic release
- Direct stimulation of peripheral sympathetic nerves
- Medicinal uses: alertness, arousal, narcolepsy, weight loss, ADHD, topical anesthetic (cocaine)

Stimulants

Intoxication

- Euphoria
- Tachycardia/HTN
- Hypervigilance/Alertness
- Restlessness/Talkativeness
- Confusion
- Impaired Judgment
- Seizures/CVA/MI

Withdrawal

- Dysphoria/Depression
- Irritability/Anxiety
- Fatigue
- Insomnia/Hypersomnia
- Vivid Dreams
- Increased appetite

Stimulants

Potential Findings Suggestive of use

- Erosion of dental Enamel/ Gingival Ulceration
- Chronic Rhinitis
- Dilated pupils
- Perforated Septum
- Paranoia/Psychosis
- Choreoathetoid Movements
- Skin Picking/Ulcerations
- Cardiac Arrhythmia/HTN

Hallucinogens

- Plant Derived: LSD (acid), Mescaline, Peyote, Psilocybin (mushrooms)
- Synthetic: 2C class (2C-E's, 2C-B's (Bromo-dragonfly, 2C-I's), Tryptamine class (DMT, DIPT, Foxy)
- Enantiomers: MDMA (ecstasy/Molly), MDE (Eve)

Hallucinogens (FAQs)

- 5HT (serotonin) receptor agonists
- Medicinal uses: psychotherapy, depression, drug withdrawal, spiritualism
- Most ecstasy tabs in Oklahoma are Meth based

Hallucinogens

Intoxication

- At lower doses, similar to Cannabis intoxication
- Anxiety
- Panic
- Dysphoria
- Paranoia
- Culminating in suicidal ideation

Withdrawal

- Limited evidence to support withdrawal syndrome
- Fatigue, depression, irritability, anhedonia???
- Flashbacks
- Tracers

Suggestive of use

- Psychosis
- Depression
- Personality Changes

Dissociatives

- Ketamine (special K), Phencyclidine (PCP), Nitrous Oxide (whip hits, laughing gas), Dextromethorphan (DXM, Triple C's, Robo tripping)

Dissociatives (FAQs)

- NMDA receptor antagonists

Dissociatives

- Ketamine



- Phencyclidine



Dissociatives

Intoxication

- Aggression
- Altered Perception
- Confusion
- HTN
- Muscular Rigidity
- Analgesia/Numbness
- Ataxia
- Seizures
- Respiratory Depression/Coma

Withdrawal

- No recognized withdrawal syndrome
- Depression, irritability, anxiety, hypersomnolence, diaphoresis, tremor
- Flashbacks

Findings Suggestive of Dissociative Use

- Psychosis
- Depression
- Personality Changes

Inhalants

- Volatile alkyl nitrates: Amyl nitrate, Butyl nitrate (poppers)
- Organic Solvents, fuels: -anes (e.g. propane, ethane, gasoline), Ethers, Esters, ketones, toluene/xylene (glue, paint remover), trichloroethane (spray paints), Difluoroethane/tetrafluoroethane, dichlorodifluoromethane (airduster)
- Freon

Inhalants (FAQs)

- Wide range of compounds with multiple not fully known effects
- Intoxication through anoxia and some similar alcohol receptor effects

Inhalants

Intoxication

- Euphoria (Partly due to asphyxiation)
- Dizziness/Blurred Vision
- Nystagmus
- Slurred Speech
- Unsteady Gait
- Tremor
- Lethargy
- Stupor/Coma

Withdrawal

- Cravings
- Tachycardia
- Diaphoresis
- Anxiety/Irritability
- Nausea/Vomiting
- Insomnia
- Aggression
- Excessive Sweating
- Hand Tremors
- Hallucinations/Psychosis

Findings Suggestive of Inhalant Use

- Irritation of mucus membranes
- Neurological Changes

Nicotine

- Cigarettes
- Cigars
- Dip/Chew
- SNUS
- Patches Gum

Nicotine

Intoxication

- N/A

Withdrawal

- Dysphoria
- Depressed Mood
- Insomnia
- Irritability
- Insomnia
- Increased Appetite
- Weight Gain
- Almost identical to cannabis withdrawal with the exceptions of increased appetite and weight gain

Findings Suggestive of Nicotine Use

- Chronic Cough
- Wheezing
- Smells of tobacco
- Round circle in back pocket



Other Drugs of Adolescent Abuse

- Steroids
- Antihistaminergic agents: benadryl, trazadone, seroquel
- Cold meds: Sudafed
- Salvia (Kappa agonist)
- Choke out game

Prevention

- Social Resistance Skills
- Normative education
- Competence Enhancement

Screening Adolescents for Substance Use

- Interview without parent or guardian
- Nonjudgmental
- Empathetic
- Open ended questions
- Focus more on the problems associated with use than the amount or frequency of use

Screening Adolescents for Substance Use

- CAGE: Effective tool for adults but data does not support use with adolescents.
- HEADSS: Adolescent psychosocial screening tool with wide range of high risk behaviors
- CRAFFT: Adolescent substance screening tool

Screening Adolescents for Substance Use: HEADSS

- Home, Education, Activities/Alcohol, Drugs, Sex, Suicidality
- Drugs section 3 questions:
 - Have you ever drunk alcohol?
 - Have you ever smoked marijuana?
 - Have you ever used anything else to get high:
Illicit drugs, Rx drugs, OTC drugs or inhalants

Screening Adolescents for Substance Use: CRAFFT

- Have you ever ridden in a **C**ar driven by someone including yourself who was high or had been using drugs or alcohol?
- Have you ever used drugs or alcohol to **R**elax, feel better about yourself, or fit in?
- Have you ever used alcohol or drugs while you are by yourself, **A**lone?
- Have you ever **F**orgotten things you did while using drugs or alcohol?
- Have you ever had your **F**riends or **F**amily tell you that you should cut down your drinking or drug use?
- Have you ever gotten into **T**rouble while using drugs or alcohol?

Screening Adolescents for Substance Use: CRAFFT

- If no positives, provide praise and encouragement for not using.
- If only one positive, provide brief advice to stop using drugs and/or alcohol.
- If 2 or more are positive, either provide or refer for a more thorough substance assessment.
- If **Car +**, provide risk reduction advice.
Example SADD contract for life

Examples of Brief Advice

(Randal 2009)

- My advice is for you to stop using drugs and alcohol at all, because they can pose a serious risk to your health.
- Smoking MJ damages your lungs and can effect your sports performance.
- MJ directly effects your brain and can hurt your school performance and your future.
- MJ can cause life long problems in some people.
- Alcohol can cause high blood pressure, heart problems and liver problems.
- Alcohol can cause accidents.
- Drug and alcohol use can lead to sexual assault, sexually transmitted diseases, and unintended pregnancies.

