



Substance Use Disorders and
Problematic Substance Use

Parents' Medication Guide

AMERICAN ACADEMY OF
CHILD & ADOLESCENT
PSYCHIATRY

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The American Academy of Child and Adolescent Psychiatry promotes the healthy development of children, adolescents, and families through advocacy, education, and research. Child and adolescent psychiatrists are the leading physician authority on children's mental health.

The purpose of this guide is to provide a broad overview of available treatments for substance use disorders and problematic substance use. It is not meant to provide medical advice or to encourage any particular form of treatment. Instead, we hope this guide will provide sufficient information in lay terms to allow patients and families to have meaningful discussions with their healthcare providers about substance use treatments.



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Introduction

This guide will explain why, when, and how medications may be offered by a healthcare provider for your child's excessive substance use, often called a substance use disorder (**SUD**)—a medical condition characterized by the inability to control the use of substance despite harmful consequences—and problematic substance use (PSU). Youth may have PSU when

substance use symptoms cause problems in their lives but they don't meet all of the criteria of a disorder. In this guide, we will use SUD to refer to both SUD and PSU. It will also explain common mental health issues that can worsen your child's substance use. This guide will also help you to decide which treatment options might be best for your child and help your whole family find support and healing.



Frequently Asked Questions

What is SUD?

Many youth and young adults use drugs, or “substances,” to change how they think or feel, to relax, or to have fun. No use of substances by youth is considered healthy. Many youth experiment with substances and, for most, it does not become a lifelong problem. About 1 in 10 teens who use substances will develop a serious problem with substances. This can happen when a youth starts using substances more often, in larger amounts, or feels that they “need” a drug or alcohol to feel normal. Problematic substance use can also occur when use causes problems with friends, family, grades, or their physical or mental health. Youth substance use is often put into three categories: 1) using as an experiment; 2) using enough to risk their health or safety; and 3) using enough that the teen is considered to have a substance use disorder (SUD).

It is important to identify and treat youth substance use and SUDs early, because they increase the risk for injuries, overdose, and suicide. A healthcare provider is the best person to help you and your child understand how serious their use might be and make decisions together about how best to help. Substances used by youth include alcohol, cannabis (marijuana or ‘weed’), tobacco (vaping), prescription medications (like Xanax or OxyContin), drugs that can cause hallucinations (like ‘magic mushrooms’ and LSD or ‘acid’), cocaine, amphetamines (‘meth,’ ‘ice,’ or ‘speed’), opioids (like heroin and fentanyl), anabolic steroids, inhalants (like spray paint, compressed air, chemicals) and ketamine (‘special K’).

How common are SUDs in teens?

Among US teens aged 12 to 17 years, approximately 40% will have used alcohol or substances and 8.5% met the requirements for having a SUD in the past year. Seven percent

had a drug use disorder, and three percent had an alcohol use disorder.

What are the warning signs and symptoms that my teen's drug use may be problematic and that my teen might be helped by a healthcare provider?

Parents should watch for physical, emotional, and behavior changes such as restlessness and hyperactivity, agitation, tiredness, and isolating behaviors. Parents might also see less interest in personal care (showering irregularly, wearing the same clothes for days), declining grades and school attendance, and less interest in spending time with friends or family. Caregivers might find drugs or items used for drugs such as vapes, alcohol bottles, pipes/bongs/papers used for marijuana, or syringes or needles. They may also notice prescriptions of their own missing or coming up short on pills. Other changes may include engaging in new, risky behaviors such as sex with multiple partners or driving while drunk or high, car crashes, or stealing money or jewelry from the home.

How are SUDs diagnosed?

The family or youth who has concerns about substance use problems should meet with their doctor, nurse practitioner, or therapist. First meetings about SUD typically include first talking to the youth at length about their drug use. Topics will likely include what types of substances they use, how much, how often, and in what settings. They will be asked what draws them to use, what it helps with and how they feel it's changed their feelings, their ability to function, and their relationships with others. A healthcare provider may do a physical exam, evaluate for evidence of use, and/or order blood and urine tests to check for any physical problems developing because of drug use.

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Diagnosing an SUD at any age involves asking about symptoms or problems. To be diagnosed, a teen needs to have had significant problems within the past year and two more of these 11 problems related to the substance use listed in the box to the right.

Depending on the number of these problems that are happening, SUDs are sorted into mild (2–3), moderate (4–5), and severe (6 or more). Most cases tend to be in the moderate range.

What causes or prevents SUD in teens?

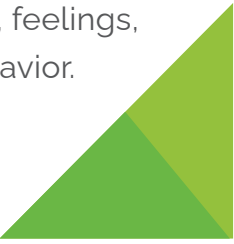
SUDs often begin during the teen years and can be caused by several reasons. A family history (genes passed down) of addiction can increase the risk. New or ongoing stress also plays a large role. Stress may be from relationships, community, safety, and trauma. How available a substance is to a teen is another risk factor. Untreated mental health conditions double the chances of developing an SUD. Youth who start to use substances at a younger age have a higher chance of developing problems with substances. Teens can move more quickly from using occasionally to heavy use, especially when they have these risk factors.

Studies from the Centers for Disease Control (CDC) show that parents and caregivers can help reduce SUD risk, by talking with their teen about drugs and alcohol, setting household rules around no teen drug or alcohol use, working toward healthy parent-teen relationships and involvement, close monitoring of teen behavior changes, and watching for drug-related items or missing money or valuables. When families talk about and set limits around alcohol and drug use, it reduces the child's unhealthy behaviors related to tobacco, alcohol, and other drugs such as delinquency, impulsivity, and risky sexual contact.

What do alcohol and drugs do to the brain?

Alcohol and drugs can change signals in the brain, altering thinking, feelings, and behavior. The brain cells that control natural emotions, feel pleasure

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SUD Diagnosis Criteria

- Using more drug than planned or for more time than planned
- Tried to cut down or quit but cannot
- Spending a large amount of time finding the substance, using it, or recovering from it
- A strong desire or urge to use the substance
- Failing to do what they need to do at work, school, or home
- Continuing to use even when problems at home, school, or in relationships are worsening
- Withdrawing from social activities or other hobbies and interests
- Using drugs in places where it is dangerous (such as while driving)
- Using drugs even after they have caused or worsened other physical health problems
- Having to use more and more of the drug to feel the same effect
- Experiencing withdrawal symptoms (e.g., sweating, tremor, stomach or headaches, severe cravings) when stopping the substance, or using the substance to make withdrawal symptoms go away

(i.e., reward, manage stress, and make decisions are affected by substance use. These changes can make quitting very hard, even when a person wants to stop. Drug use at an early age may also cause permanent changes to the brain.

Why are teens especially at risk for substance use and SUD?

During childhood, different brain areas or regions grow and mature at different rates. The areas of the brain that respond when pleasure or a reward is received or an emotion (like happiness, fear, anger) is felt mature earlier and are stronger during the



teenage years compared to the brain areas involved in planning, making decisions, inhibiting behavior and controlling impulses that mature later—sometimes up until age 25 years. These differences between brain areas may explain why teens are more emotional, more sensitive to rewards and social feedback, and more likely to make risky choices (like using substances) without thinking about the consequences compared to adults.

What about drug testing?

Drug use is often picked up by providers by talking with teens or by questionnaires. Some medical offices, employers, schools, and legal systems may use lab tests to check for and monitor suspected drug use. Tests for substances might use urine, blood, breath, and saliva. In general, drug testing is most commonly completed as part of SUD assessment and treatment.

Drug testing should be done by a healthcare provider, if possible. At-home

drug testing should generally be avoided, for a few reasons: 1) drug test results can be hard to read; 2) at-home testing has not been shown to lower teen drug use; 3) testing at home can harm the teen-caregiver relationship; and 4) home test results may come back positive when they should be negative, and negative when they should be positive

What are the privacy and legal rules around evaluation?

Each state has different laws about privacy when patients under 18 see healthcare providers about substance use. Some states allow teens of a certain age to have confidential visits and decide on their own treatment. For the most exact information, talk with a healthcare provider or a local legal expert or look up your state's online guides.

What help is available?

The best current treatments for SUD are talk therapy and medication.

Possible Causes of SUD Risk

- Family history
- New or ongoing stress
- Substance availability
- Untreated mental health conditions
- Age at first substance use

Talk Therapy for Substance Use Disorder

There are many different talk therapy treatments that can help children and adolescents with SUD.

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Motivational interviewing

Motivational interviewing (MI) is a type of talk therapy in which a safe, judgement-free conversation occurs between the provider and the teen about the teen's drug use that focuses on helping a teen be curious about how drug use affects their life. Motivational interviewing helps teens see how changes in their drug use could benefit them and helps them create goals to reduce or stop their use.

Cognitive behavioral therapy

Cognitive behavioral therapy (CBT) is a type of talk therapy that helps children and teens better understand the ways that thoughts, feelings, and behaviors affect urges to use drugs and patterns in where, why, and how they decide to use. CBT also teaches new skills to manage cravings, moodiness, boredom, or stressful situations to reduce or stop using.

Contingency management

Contingency management (CM) is a type of behavior therapy in which teens are rewarded for positive or healthy behavior change related to stopping substance use. When done within substance use or mental health clinics, CM typically focuses on rewarding a teen with a gift card or prize for having a negative urine drug test. CM can also be delivered by parents with support from a therapist and may involve different types of rewards (such as cell phone or car use) and target different behaviors (such as attending treatment sessions).

Family-based therapy

Family-based therapy is a type of talk therapy that involves working with both the teen and their family to help improve communication and learn new skills to cope during stressful situations. It also helps the parents or caregivers change their parenting related to the teen's drug use and be part of the treatment. The key is bringing the family together as a team to decrease their teen's substance use.





Medications Prescribed for Treating Teen Substance Use Disorder

How safe and effective are medications for SUD?

Some medications prescribed are tested by the Food and Drug Administration (FDA) and approved based on safety and how well they work. In many cases, a medication may be used “off label,” which means that either 1) a company making it has not applied for FDA approval; or 2) the studies showing how useful the medication is to treat a diagnosis have not yet been completed to a standard that the FDA will accept. However, off-label medications have often been shown to be safe and useful for other diagnoses or age groups.

General information about medication for SUD

Medication is only one possible part of the treatment plan for SUD. Treatment should also include counseling and support groups to help address the challenges of quitting. Although these are effective treatments for SUD, many teens aren't fully helped by talk therapy. Medications can be useful to help provide the support that is needed.

Nicotine/tobacco

Medications like varenicline, bupropion, and nicotine replacement therapies (NRTs) have been approved by the FDA for treatment of tobacco/nicotine use disorder in adults. Some studies show that these medicines might not work as well for teens as they do for adults. Still, research in teens suggests that the nicotine patch and medications such as bupropion and varenicline may improve the success of stopping tobacco use, especially when they are combined with talk therapy.

The nicotine patch is designed to deliver a constant dose of nicotine through the skin, helping reduce withdrawal symptoms and nicotine cravings. Bupropion is a medication that is FDA-approved to treat depression, ADHD, and to help stop tobacco use by reducing craving and withdrawal symptoms. Varenicline reduces the withdrawal, craving, and rewarding effects of nicotine and has been shown to help young people who vape nicotine quit.

Alcohol

Acamprosate, naltrexone, and disulfiram are medications that have been FDA-approved to treat alcohol use disorder in adults. However, less is known about how useful they are in teens because less research has been done. Naltrexone has helped reduce drinking in young adults ages 18–25 years. It comes in a pill and a long-acting monthly shot so that teens don't have to remember to take a pill every day. We have limited study information on how well it helps people under 18 years old to stop or reduce drinking.

Cannabis (marijuana, “weed”)

Although there are no FDA-approved medications for the treatment of cannabis use disorder, a few studies have been done with teens. One showed that the medication topiramate was helpful in reducing cannabis use, but the side effects it can sometimes have, like slowed thinking, made it hard to keep taking. In one study, a supplement called N-acetylcysteine (NAC) used with therapy improved the success of young people trying to stop cannabis use. Other medications sometimes used include buspirone (Buspar), gabapentin, mirtazapine, and quetiapine.

“Off Label” Medication

A medication may be used “off label,” which means that either 1) a company making it has not applied for FDA approval; or 2) the studies showing how useful the medication is to treat a diagnosis have not yet been completed to a standard that the FDA will accept.



Stimulants like cocaine and methamphetamine ("meth")

Treatment of stimulant use disorders focuses on therapy and behavior changes. There are no FDA-approved medications for the treatment of SUDs involving cocaine or methamphetamine. No studies have offered clear guidance on which medications might help teens with stimulant use disorder. Some young people find medications like topiramate and mirtazapine help them reduce or stop using stimulants. Some providers may also try using extended-release-prescribed stimulants (such as those used to treat ADHD) or medications that work in a similar way but on different parts of the brain (like modafinil) to try to reduce cravings and use.

Sedatives/hypnotics (benzodiazepines like Valium or Xanax, sleeping medications like Ambien)

For people with sedative/hypnotic use disorder, medications may help people safely stop using. Suddenly stopping some of these medications can cause serious, possibly deadly, withdrawal problems. In teens who experience withdrawal symptoms after taking benzodiazepines for over 2 weeks, a very slow dose decrease ("taper")—supervised by a healthcare provider—may be critical to safely stopping. Sometimes, staying in a hospital may be needed to safely complete the taper. There are no FDA-approved medications that reliably help people use these substances less or stop all together.

Hallucinogens and dissociative drugs (psilocybin or "magic mushrooms", LSD or "acid", ecstasy [MDMA] or "molly", ketamine or "special K", dextromethorphan [DXM] or "robo", phencyclidine [PCP] or "angel dust")

No medications have been FDA-approved for treatment of hallucinogen or dissociative drug use disorder in any age group, and no studies to date have given clear guidance on medications to help with hallucinogen or dissociative drug use disorder in teens. Teens can overdose

on MDMA as it is also a stimulant, and ketamine can also cause overdose in large quantities, which may result in breathing difficulties or changes in heart rate and blood pressure.

Opioids (prescription pain meds, heroin, fentanyl)

Misuse of opioids, whether they are prescribed for pain (medications like OxyContin or forms of fentanyl) or bought on the street (heroin, fentanyl), can lead to intoxication, addiction, severe injury, overdose, and death.

Medications have been FDA-approved for overdose rescue/reversal, opioid withdrawal management, and the treatment of opioid use disorders.

MEDICATION FOR OPIOID OVERDOSE (OR POISONING)

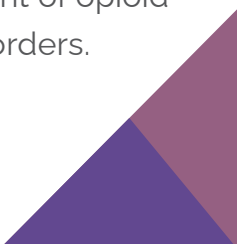
Naloxone (Narcan) and nalmefene (Opvee) are medications to treat opioid overdose. They are FDA-approved for use in both children and adults. These overdose 'rescue' medications work to prevent heart-lung collapse by reversing the toxic effects of high dose opioids on the body. These medications can be squirted into the nose or given in a shot. Families with youth that use opioids should learn about the signs of an overdose, have 'rescue' medications in their homes, and create a plan for what to do in case a teen shows signs of overdose.

OPIOID OVERDOSE PREVENTION & REVERSAL PLAN

Opioid overdose is life-threatening and requires immediate emergency attention. A teen who is having an overdose will not be able to save themselves. They should also learn how to recognize the signs of an overdose and administer 'rescue' medications. Caregivers should work with their teen's provider to create an action plan for what to do in case a teen shows signs of overdose. The action plan should involve administering 'rescue' medications, calling 911 or emergency services, and performing CPR if needed until emergency medical help arrives.

Signs of an opioid overdose include: the teen being sleepy, unresponsive,

Medications have been FDA-approved for overdose rescue/reversal, opioid withdrawal management, and the treatment of opioid use disorders.



or unable to speak, vomiting, making gurgling sounds, having a limp body, having a pale and clammy face, blue fingernails or lips, small pupils, and slow breathing or heartbeat. If an overdose of opioids is suspected, give reversal medication like intranasal naloxone right away. This medication works for a short time: maybe only 10 minutes. The person may need up to 4 doses of naloxone in a row to work. For that reason, as soon as the first dose is given, call 911 to get the teen to an emergency department for treatment.

MEDICATIONS FOR OPIOID WITHDRAWAL

Once someone has been using opioids regularly, suddenly stopping them can cause very uncomfortable withdrawal symptoms. They are usually not life threatening. These withdrawal symptoms can cause so much discomfort that

without help and support teens often return to using. Buprenorphine and methadone are medications that reduce or stop these withdrawal symptoms while also reducing the cravings for the opioid (see section below). Clonidine has also been shown to reduce withdrawal symptoms in teens, but often not as well as buprenorphine.

MEDICATIONS FOR OPIOID USE DISORDER (MOUD)

Right now, there are not many medications that treat core symptoms of opioid use disorder (OUD) in teens. Buprenorphine is currently the only medication approved by the FDA for OUD in teens age 16 years and older. Methadone and long-acting naltrexone are approved in adult patients and are occasionally used in teens. As a group, these medications reduce overdose and relapse risk, are linked to teens staying in treatment for longer periods of time and lower the chances of other high-risk behaviors.



BUPRENORPHINE

Buprenorphine works to partially activate parts of the brain where opioids work while also blocking opioid effects. It comes in different forms (tablets, films, and shots). It is usually started while a teen is in a treatment program, in the provider's office, or at home with your provider's instructions.

METHADONE

Since methadone is not FDA-approved for use in youth, federal law requires that when methadone is used to treat OUD, it must be prescribed and given out at an approved opioid treatment program. To receive methadone under the age of 18, a person requires special paperwork including parent consent.

NALTREXONE

Naltrexone comes as a daily pill and in a longer acting monthly shot (Vivitrol). These medications help both opioid and

alcohol use disorders. Naltrexone helps to decrease the cravings to use opioids and blocks the high and pain relief that comes with using opioids. It is not FDA-approved for youth under the age of 18 years but will still sometimes be used off label by providers.

WHY WOULD WE GIVE OUR TEEN ANOTHER TYPE OF OPIOID TO TREAT OPIOID MISUSE?

Using MOUD (that is, buprenorphine, methadone, and naltrexone) may seem surprising. We have learned over the years that MOUD and medical supervision are far less dangerous than other opioids like fentanyl and can help patients stay off the deadly forms of the drug. We can closely monitor, treat, and often help the teen eventually stop using any opioids with this "substituted" treatment. It has been shown to save lives and prevent harm by lowering the chance of injury and overdose, while helping the teen to function again.



Other Mental Health Problems with Substance Use Disorder

Most teens with SUDs also have other mental health conditions that make healing from SUD harder for them.

Among teens with SUDs, the most common mental health problems they may also have include ADHD, anxiety, post-traumatic stress disorder (PTSD), depression, and bipolar disorders. Some studies show that treating these conditions together with the substance use problem at the same time can lead to better results.

For youth with **bipolar disorder** and SUD, the use of mood stabilizing medications such as lithium and topiramate or antipsychotics like quetiapine (Seroquel) can improve mood symptoms, substance use, and overall functioning. They should be started promptly—often before or at the same time as treating a SUD. For youth with **depression** and SUD, medications such as fluoxetine (Prozac) have been shown to improve depressive symptoms. For youth with **ADHD** and SUD, the provider may choose to start with medication that is not a stimulant and does not have a risk of misuse. Some of these medications may also be helpful for **anxiety** or **depression** that might happen together with SUD. These are medications like atomoxetine (Strattera), viloxazine (Qelbree), or bupropion (Wellbutrin). If using stimulants, extended-release types such as Concerta, Azstarys, and Vyvanse are often given but should be supervised closely, as they can be misused. For treating **anxiety**, the use of serotonin reuptake inhibitors (SSRIs) such as escitalopram (Lexapro) or duloxetine (Cymbalta) may be helpful. AACAP parent medication guides for each

of the major disorders listed above are available at https://www.aacap.org/AACAP/Families_and_Youth/Family_Resources/Parents_Medication_Guides.aspx.

Youth with SUD who develop a **psychotic disorder** (one they already have, or one that develops after heavy drug use) may be helped by antipsychotic medication treatment such as risperidone, aripiprazole, or olanzapine.

Sometimes, patients will have one medication for their SUD (for example, naltrexone) and another for their mental health condition. Your healthcare provider will make sure that specific medications are safe to use together. They will also make sure there are no interactions with a given medication and a substance that the teen is using.

Ways you can help your child include making sure all prescriptions are stored safely and helping your child remember to take the medication regularly.

Medications taken for SUD or mental health conditions should be reviewed regularly with the healthcare provider and your child to make sure they are still effective and needed and are not causing side effects. The length of medication treatment will vary based on how strong the cravings are, how well the medication is helping, and whether the substance is still being used at times. Typically, medications should be continued until the teen has been stable with their sobriety and mental health for enough time that tapering off is thought to be safe and possible. A medication taper should involve the healthcare provider,

Medications taken for SUD or mental health conditions should be reviewed regularly with the healthcare provider and your child to make sure they are still effective and needed and are not causing side effects.

teen, and family closely monitoring cravings and mental health symptoms.

In summary, SUD in adolescents is not uncommon and can be diagnosed and treated effectively. Treatment can include individual, group, and family

therapies, as well as medication. Medications can help with preventing overdoses, reducing cravings and use, and treating mental health disorders that accompany SUD. Ongoing care, even after teens are stable, helps teens with SUD stay healthy.



TABLE 1. Negative consequences of common substances of misuse in teens and young adults*

Substance	Physical health effects	Mental health effects	Psychosocial effects
Alcohol	• Liver damage • Higher cancer risk for liver, breast, colon, esophagus, mouth, and throat • Severe withdrawal can result in seizures, hallucinations and can be deadly • Withdrawal syndrome (upon stopping after regular use)	• Increased risk of depression, anxiety, aggression, self-harm, and suicide • Problems with memory and attention	• Doing worse in school • Alcohol lowers our sense of fear. It can lead to risky decisions including drunk driving, breaking the law, risk of sexual assault (victim or perpetrator), and accidental death
Cannabis (marijuana, 'weed', THC)	• Problems with lung function • Can change the heart's structure and increase heart rate • May increase the risk for heart attacks and strokes • Heavy cannabis smoking may increase the risk for certain cancers (head, neck, and lung) • Withdrawal syndrome (upon stopping after regular use)	• Problems with attention and concentration. Heavy use can also cause problems with thinking, memory, and brain development • Increases the risk of depression and schizophrenia • May also cause anxiety, panic attacks, depression, suicidal behaviors, and problems knowing what is real	• Doing worse in school • Impulsivity • Legal problems • Risky decisions like driving while high or drunk
Nicotine (cigarettes and vapes, or chewable tobacco)	• Lung and heart problems • Nicotine gum can cause tooth decay, problems with the gums, and risk of mouth cancer • Increased risk of developing multiple other types of cancer • Withdrawal syndrome (upon stopping after regular use)	• Increased risk of anxiety, depression, and brain slowing	• Social problems • Increase in the risk of using other substances and legal issues
Opioids (such as heroin, fentanyl, prescription pain medications such as oxycodone/OxyContin)	• Physical dependence • Problems breathing • Infection if injecting • Overdose risk • Death	• Increased risk of depression and suicidal behaviors	• Legal problems getting opioids illegally • Avoiding schoolwork and daily responsibilities
Stimulants (such as cocaine, methamphetamine or "meth")	• High blood pressure • Heart problems • Seizures • Withdrawal syndrome (upon stopping after regular use)	• Anxiety • Seeing or hearing things that aren't there (psychosis) • Aggression	• Legal problems buying or selling the substance

* Most harmful effects above can happen with any of the substances listed. The table only mentions the more commonly associated harmful effects when each substance is used by teens or young adults.

TABLE 1. Negative consequences of common substances of misuse in teens and young adults* continued

Substance	Physical health effects	Mental health effects	Psychosocial effects
Hallucinogens and dissociative drugs (psilocybin or "magic mushrooms", LSD or "acid", ecstasy [MDMA] or "molly", ketamine or "special K", dextromethorphan [DXM] or "robo", phencyclidine [PCP] or "angel dust")	• Increased heart rate, blood pressure, respiration, and body temperature • Numbness • Body tremors • Dizziness • Memory loss • Problems breathing • Visual disturbances (seeing halos or trails) • Overdose risk • Withdrawal after stopping after regular use • Seizures • Death	• Seeing or hearing things that aren't there (psychosis) • Rapid mood swings with extreme panic, anxiety, paranoia, sadness, and aggression • Flashbacks • Feeling like you are not in your body • Feeling detached from reality • Disorganized thinking • Persistent hallucinations	• Impulsive behaviors • Legal problems from getting hallucinogens or dissociative drugs illegally
Inhalants (such as huffing glue, paint thinners)	• Nerve damage • Brain shrinking • Liver and lung damage	• Problems thinking or with memory	• Doing worse in school • Increased impulsive behaviors
Anabolic steroids	• Liver damage • High blood pressure • Acne • Lower chances of being able to have a baby	• Aggression ("Roid Rage") • Quickly changing emotions • Depression • Anxiety • Paranoia	• Body image concerns • Illegal use in sports such as to improve performance
Benzodiazepines (such as Xanax or Valium)	• Drowsiness • Slowed breathing (and overdose) especially when taken with opioids or alcohol • Stopping these suddenly can result in severe withdrawal and life-threatening seizures • Withdrawal syndrome (upon stopping after regular use)	• Memory impairment • Worsening of baseline anxiety	• Impulsive behaviors • Misuse of prescription drugs

* Most harmful effects above can happen with any of the substances listed. The table only mentions the more commonly associated harmful effects when each substance is used by teens or young adults.

TABLE 2. Medications available for treating substance use disorder

Substance	Medication used	How it works	Important side effects	Notes
Alcohol	FDA-approved in people 18+: • Naltrexone (oral and long-acting shot) • Acamprosate • Disulfiram	• Naltrexone reduces cravings and feeling high • Acamprosate restores brain balance disrupted by alcohol • Disulfiram causes severe illness if someone drinks alcohol	• Naltrexone can cause liver problems and needs regular labs and close monitoring • Naltrexone may cause sadness • Acamprosate can cause nausea or diarrhea • If you drink alcohol on disulfiram, you may have a severe reaction including flushing, headache, heart pounding, and if very severe, collapse • Disulfiram can cause metallic taste, liver problems, nerve pain and rarely breaks in reality (psychosis)	• Naltrexone is more effective in reducing active drinking • Acamprosate may work better when drinking has already stopped • Disulfiram cannot be taken with any alcohol in the system at any point in the day as it can cause severe illness • Disulfiram needs careful monitoring and is less often prescribed
	Off-Label: • Topiramate • Gabapentin	• Topiramate decreases craving by blocking those signals in the brain and increasing calming signals • Gabapentin can reduce craving and withdrawal symptoms	• Topiramate can cause weight loss, kidney stones, and slower thoughts or a feeling of brain fog • Gabapentin can cause drowsiness, especially when used with other medications	• Gabapentin may also help if the patient also has anxiety • Gabapentin has potential for misuse
Cannabis (marijuana, weed, [THC])	FDA-Approved: None Off-label: • N-Acetylcysteine (NAC) • Buspirone • Gabapentin • Mirtazapine • Quetiapine	• NAC and gabapentin decrease cravings • Mirtazapine and quetiapine may target anxiety in a way that overlaps with the effects of cannabis	• NAC is an over the counter (OTC) supplement. It can have a smell patients dislike • NAC can rarely cause stomach upset • Gabapentin, mirtazapine, and quetiapine can cause sleepiness • Mirtazapine can cause weight gain as can quetiapine	• NAC, when combined with specific types of talk therapy, has proven to be helpful in youth • Other medications may target disorders that can also be present, such as bipolar disorder (quetiapine), major depressive disorder (mirtazapine), and anxiety disorders (mirtazapine, gabapentin) • Gabapentin has potential for misuse

TABLE 2. Medications available for treating substance use disorder *continued*

Substance	Medication used	How it works	Important side effects	Notes
Nicotine (cigarettes, vapes)	FDA-approved in people 18+: - Nicotine replacement therapy (NRT) includes treatments like nicotine patches, gum, lozenges and nasal sprays - Varenicline - Bupropion	- NRTs provide small amounts of nicotine that can be slowly reduced to ease withdrawal - Varenicline works on brain signals to lower the effect of nicotine when patients vape or smoke - Bupropion works on brain signals (e.g., through dopamine) to reduce nicotine cravings	- All these medications can sometimes cause problems sleeping or nausea - Varenicline can very rarely cause mood changes, sleep disturbances, and symptoms such as nausea and vomiting - Bupropion can cause headaches, problems with sleep, agitation and increase risk of seizures	- While NRT is not FDA-approved for youth under 18, the American Academy of Pediatrics (AAP) believes the benefits of NRT outweigh the risks for youth with tobacco use disorders - Bupropion is also used for depression and ADHD - Varenicline has been shown to improve vape and e-cigarette addiction in youth
Opioids (painkillers, heroin, fentanyl)	FDA-approved in people 16+: Buprenorphine	Buprenorphine and opioids work on similar parts of the brain. Buprenorphine reduces cravings and withdrawal symptoms without the teen feeling high	Buprenorphine can cause sleepiness and constipation	Buprenorphine is also available as an injection in a weekly or monthly form
	FDA-approved in people 18+: - Methadone - Naltrexone (long-acting shot)	- Methadone is a longer-acting medication that works in the same areas that opioids work - Naltrexone blocks nerve receptors that allow opioids to work, lowering how much a patient wants the drug and its ability to get them high if they did take it	- Methadone can cause drowsiness and constipation - Naltrexone can cause stomach upset and liver problems - It can cause severe withdrawal if opioids are still in a teen's system	- Methadone can only be distributed by specially licensed clinics and requires special consent in those under 18 years of age - Naltrexone can only be given after all opioids have cleared from someone's system - Naltrexone is only approved as a long-acting medication given by monthly shot. It is generally not as helpful as methadone or buprenorphine
<i>Note that other medications may be used to treat opioid overdose (naloxone) or withdrawal with medications like clonidine or lofexidine, but these are usually short-term medications to relieve symptoms when the opioid is stopped.</i>				
Other substances	No other substance use disorders have FDA-approved medication treatments, and the benefits of other medications have been limited. However, there is some promising evidence for some off-label medications.			
Benzodiazepines (such as Xanax, Valium)	Gabapentin may help some people reduce their use of benzodiazepines. Benzodiazepines are sometimes prescribed to help people stop their use slowly, because suddenly stopping can be dangerous, risking seizures and other life-threatening problems.			
Stimulants (cocaine, methamphetamine)	Mirtazapine, topiramate, bupropion, or modafinil. Using other stimulant-like medications to treat stimulant use disorder is standard with all doctors and is an active area of research. Specialists may sometimes use other stimulants, as well.			
Hallucinogens (LSD, MDMA, psilocybin, ketamine), inhalants (such as paint thinner)	Heavy use of these substances may cause psychosis (problems knowing what is real, hearing things others don't), which can be treated with antipsychotic medication.			



Links and Resources for Additional Information

- **AACAP Facts for Families**—provide concise and up-to-date information on issues that affect children, teens, and their families
 - *Teens: Alcohol And Other Drugs*
 - *Marijuana and Teens*
 - *Drug and Alcohol Treatment for Adolescents*
 - *Tobacco And Kids*
 - *Opioid Use in Adolescents*
- **AACAP Substance Use Resource Center**—resources for families, clinicians, and youth
- **Al-Anon Family Groups**—help and hope for families and friends of alcoholics
- **National Institute on Alcohol Abuse and Alcoholism**—NIAAA supports and conducts research on the impact of alcohol use on human health and well-being
- **National Institute on Drug Abuse**—the latest science-based information about drug use, health, and the developing brain
- **National Alliance on Mental Illness**—the nation's largest grassroots mental health organization
- **Partnership to End Addiction**—practical, science-based information to help parents protect and support their children
- **Research Recovery Institute**—enhancing recovery through science
- **FindTreatment.gov**—confidential and anonymous resource for persons seeking treatment for mental and substance use disorders



Medication Tracking Form

Use this form to track your child's medication history. Bring this form to appointments with your clinician and update changes in medications, doses, side effects and results.

Date	Medication	Dose	Side Effects	Reason for keeping/stopping



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