Drug addiction (substance use disorder)

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Overview

Drug addiction, also called substance use disorder, is a disease that affects a person's brain and behavior and leads to an inability to control the use of a legal or illegal drug or medicine. Substances such as alcohol, marijuana and nicotine also are considered drugs. When you're addicted, you may continue using the drug despite the harm it causes.

Drug addiction can start with experimental use of a recreational drug in social situations, and, for some people, the drug use becomes more frequent. For others, particularly with opioids, drug addiction begins when they take prescribed medicines or receive them from others who have prescriptions.

The risk of addiction and how fast you become addicted varies by drug. Some drugs, such as opioid painkillers, have a higher risk and cause addiction more quickly than others.

As time passes, you may need larger doses of the drug to get high. Soon you may need the drug just to feel good. As your drug use increases, you may find

that it's increasingly difficult to go without the drug. Attempts to stop drug use may cause intense cravings and make you feel physically ill. These are called withdrawal symptoms.

Help from your health care provider, family, friends, support groups or an organized treatment program can help you overcome your drug addiction and stay drug-free.

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Symptoms

Drug addiction symptoms or behaviors include, among others:

- Feeling that you have to use the drug regularly — daily or even several times a day
- Having intense urges for the drug that block out any other thoughts
- Over time, needing more of the drug to get the same effect
- Taking larger amounts of the drug over a longer period of time than you intended
- Making certain that you maintain a supply of the drug
- Spending money on the drug, even though you can't afford it
- Not meeting obligations and work responsibilities, or cutting back on social or recreational activities because of drug use
- Continuing to use the drug, even though you know it's causing problems in your life or causing you physical or psychological harm
- Doing things to get the drug that you normally wouldn't do, such as stealing

- Driving or doing other risky activities when you're under the influence of the drug
- Spending a good deal of time getting the drug, using the drug or recovering from the effects of the drug
- Failing in your attempts to stop using the drug
- Experiencing withdrawal symptoms when you attempt to stop taking the drug

Recognizing unhealthy drug use in family members

Sometimes it's difficult to distinguish normal teenage moodiness or anxiety from signs of drug use. Possible signs that your teenager or other family member is using drugs include:

- Problems at school or work — frequently missing school or work, a sudden disinterest in school activities or work, or a drop in grades or work performance
- Physical health issues — lack of energy and motivation, weight loss or gain, or red eyes
- Neglected appearance — lack of interest in clothing, grooming or looks
- Changes in behavior — major efforts to bar family members from entering the teenager's room or being secretive about going out with friends; or drastic changes in behavior and in relationships with family and friends
- Money issues — sudden requests for money without a reasonable explanation; or your discovery that money is missing or has been stolen or that items have disappeared from your home, indicating maybe they're being sold to support drug use

Recognizing signs of drug use or intoxication

Signs and symptoms of drug use or intoxication may vary, depending on the type of drug. Below you'll find several examples.

Marijuana, hashish and other cannabis-containing substances

People use cannabis by smoking, eating or inhaling a vaporized form of the drug. Cannabis often precedes or is used along with other substances, such as alcohol or illegal drugs, and is often the first drug tried.

Signs and symptoms of recent use can include:

- A sense of euphoria or feeling "high"
- A heightened sense of visual, auditory and taste perception
- Increased blood pressure and heart rate
- Red eyes
- Dry mouth
- Decreased coordination
- Difficulty concentrating or remembering
- Slowed reaction time
- Anxiety or paranoid thinking
- Cannabis odor on clothes or yellow fingertips
- Major cravings for certain foods at unusual times

Long-term use is often associated with:

- Decreased mental sharpness
- Poor performance at school or at work
- Ongoing cough and frequent lung infections

K2, Spice and bath salts

Two groups of synthetic drugs — synthetic cannabinoids and substituted or synthetic cathinones — are illegal in most states. The effects of these drugs can be dangerous and unpredictable, as there is no quality control and some ingredients may not be known.

Synthetic cannabinoids, also called K2 or Spice, are sprayed on dried herbs and then smoked, but can be prepared as an herbal tea. A liquid form can be vaporized in electronic cigarettes. Despite manufacturer claims, these are chemical compounds rather than "natural" or harmless products. These drugs can produce a "high" similar to marijuana and have become a popular but dangerous alternative.

Signs and symptoms of recent use can include:

- A sense of euphoria or feeling "high"
- Elevated mood
- An altered sense of visual, auditory and taste perception
- Extreme anxiety or agitation
- Paranoia
- Hallucinations
- Increased heart rate and blood pressure or heart attack
- Vomiting
- Confusion
- Violent behavior

Substituted cathinones, also called "bath salts," are mind-altering (psychoactive) substances similar to amphetamines such as ecstasy (MDMA) and cocaine. Packages are often labeled as other products to avoid detection.

Despite the name, these are not bath products such as Epsom salts. Substituted cathinones can be eaten, snorted, inhaled or injected and are highly addictive. These drugs can cause severe intoxication, which results in dangerous health effects or even death.

Signs and symptoms of recent use can include:

- Feeling "high"
- Increased sociability
- Increased energy and agitation
- Increased sex drive
- Increased heart rate and blood pressure
- Problems thinking clearly
- Loss of muscle control
- Paranoia
- Panic attacks
- Hallucinations
- Delirium
- Psychotic and violent behavior

Barbiturates, benzodiazepines and hypnotics

Barbiturates, benzodiazepines and hypnotics are prescription central nervous system depressants. They're often used and misused in search for a sense of relaxation or a desire to "switch off" or forget stress-related thoughts or feelings.

- Barbiturates. An example is phenobarbital.
- Benzodiazepines. Examples include sedatives, such as diazepam (Valium), alprazolam (Xanax), lorazepam (Ativan), clonazepam (Klonopin) and

chlordiazepoxide (Librium).

Hypnotics. Examples include prescription sleeping medicines such as zolpidem (Ambien) and zaleplon (Sonata).

Signs and symptoms of recent use can include:

Drowsiness

Slurred speech

Lack of coordination

Irritability or changes in mood

Problems concentrating or thinking clearly

Memory problems

Involuntary eye movements

Lack of inhibition

Slowed breathing and reduced blood pressure

Falls or accidents

Dizziness

Meth, cocaine and other stimulants

Stimulants include amphetamines, meth (methamphetamine), cocaine, methylphenidate (Ritalin, Concerta, others) and amphetamine-dextroamphetamine (Adderall XR, Mydayis). They're often used and misused in search of a "high," or to boost energy, to improve performance at work or school, or to lose weight or control appetite.

Signs and symptoms of recent use can include:

Feeling of happy excitement and too much confidence

Increased alertness

- Increased energy and restlessness
- Behavior changes or aggression
- Rapid or rambling speech
- Larger than usual pupils, the black circles in the middle of the eyes
- Confusion, delusions and hallucinations
- Irritability, anxiety or paranoia
- Changes in heart rate, blood pressure and body temperature
- Nausea or vomiting with weight loss
- Poor judgment
- Nasal congestion and damage to the mucous membrane of the nose (if snorting drugs)
- Mouth sores, gum disease and tooth decay from smoking drugs ("meth mouth")
- Insomnia
- Depression as the drug wears off

Club drugs

Club drugs are commonly used at clubs, concerts and parties. Examples include methylenedioxymethamphetamine, also called MDMA, ecstasy or molly, and gamma-hydroxybutyric acid, known as GHB. Other examples include ketamine and flunitrazepam or Rohypnol — a brand used outside the U.S. — also called roofie. These drugs are not all in the same category, but they share some similar effects and dangers, including long-term harmful effects.

Because GHB and flunitrazepam can cause sedation, muscle relaxation, confusion and memory loss, the potential for sexual misconduct or sexual assault is associated with the use of these drugs.

Signs and symptoms of use of club drugs can include:

- Hallucinations
- Paranoia
- Larger than usual pupils
- Chills and sweating
- Involuntary shaking (tremors)
- Behavior changes
- Muscle cramping and teeth clenching
- Muscle relaxation, poor coordination or problems moving
- Reduced inhibitions
- Heightened or altered sense of sight, sound and taste
- Poor judgment
- Memory problems or loss of memory
- Reduced consciousness
- Increased or decreased heart rate and blood pressure

Hallucinogens

Use of hallucinogens can produce different signs and symptoms, depending on the drug. The most common hallucinogens are lysergic acid diethylamide (LSD) and phencyclidine (PCP).

LSD use may cause:

- Hallucinations
- Greatly reduced perception of reality, for example, interpreting input from one of your senses as another, such as hearing colors
- Impulsive behavior

- Rapid shifts in emotions
- Permanent mental changes in perception
- Rapid heart rate and high blood pressure
- Tremors
- Flashbacks, a reexperience of the hallucinations — even years later

PCP use may cause:

- A feeling of being separated from your body and surroundings
- Hallucinations
- Problems with coordination and movement
- Aggressive, possibly violent behavior
- Involuntary eye movements
- Lack of pain sensation
- Increase in blood pressure and heart rate
- Problems with thinking and memory
- Problems speaking
- Poor judgment
- Intolerance to loud noise
- Sometimes seizures or coma

Inhalants

Signs and symptoms of inhalant use vary, depending on the substance. Some commonly inhaled substances include glue, paint thinners, correction fluid, felt tip marker fluid, gasoline, cleaning fluids and household aerosol products. Due to the toxic nature of these substances, users may develop brain damage or sudden death.

Signs and symptoms of use can include:

- Possessing an inhalant substance without a reasonable explanation
- Brief happy excitement
- Behaving as if drunk
- Reduced ability to keep impulses under control
- Aggressive behavior or eagerness to fight
- Dizziness
- Nausea or vomiting
- Involuntary eye movements
- Appearing under the influence of drugs, with slurred speech, slow movements and poor coordination
- Irregular heartbeats
- Tremors
- Lingering odor of inhalant material
- Rash around the nose and mouth

Opioid painkillers

Opioids are narcotic, painkilling drugs produced from opium or made synthetically. This class of drugs includes, among others, heroin, morphine, codeine, methadone, fentanyl and oxycodone.

Sometimes called the "opioid epidemic," addiction to opioid prescription pain medicines has reached an alarming rate across the United States. Some people who've been using opioids over a long period of time may need physician-prescribed temporary or long-term drug substitution during treatment.

Signs and symptoms of narcotic use and dependence can include:

- A sense of feeling "high"
- Reduced sense of pain
- Agitation, drowsiness or sedation
- Slurred speech
- Problems with attention and memory
- Pupils that are smaller than usual
- Lack of awareness or inattention to surrounding people and things
- Problems with coordination
- Depression
- Confusion
- Constipation
- Runny nose or nose sores (if snorting drugs)
- Needle marks (if injecting drugs)

When to see a doctor

If your drug use is out of control or causing problems, get help. The sooner you seek help, the greater your chances for a long-term recovery. Talk with your health care provider or see a mental health provider, such as a doctor who specializes in addiction medicine or addiction psychiatry, or a licensed alcohol and drug counselor.

Make an appointment to see a provider if:

- You can't stop using a drug
- You continue using the drug despite the harm it causes
- Your drug use has led to unsafe behavior, such as sharing needles or unprotected sex

- You think you may be having withdrawal symptoms after stopping drug use

If you're not ready to approach a health care provider or mental health professional, help lines or hotlines may be a good place to learn about treatment. You can find these lines listed on the internet or in the phone book.

When to seek emergency help

Seek emergency help if you or someone you know has taken a drug and:

- May have overdosed
- Shows changes in consciousness
- Has trouble breathing
- Has seizures or convulsions
- Has signs of a possible heart attack, such as chest pain or pressure
- Has any other troublesome physical or psychological reaction to use of the drug

Staging an intervention

People struggling with addiction usually deny they have a problem and hesitate to seek treatment. An intervention presents a loved one with a structured opportunity to make changes before things get even worse and can motivate someone to seek or accept help.

It's important to plan an intervention carefully. It may be done by family and friends in consultation with a health care provider or mental health professional such as a licensed alcohol and drug counselor, or directed by an intervention professional. It involves family and friends and sometimes co-workers, clergy or others who care about the person struggling with addiction.

During the intervention, these people gather together to have a direct, heart-to-heart conversation with the person about the consequences of addiction. Then they ask the person to accept treatment.

Request an appointment

Causes

Like many mental health disorders, several factors may contribute to development of drug addiction. The main factors are:

Environment. Environmental factors, including your family's beliefs and attitudes and exposure to a peer group that encourages drug use, seem to play a role in initial drug use.

Genetics. Once you've started using a drug, the development into addiction may be influenced by inherited (genetic) traits, which may delay or speed up the disease progression.

Changes in the brain

Physical addiction appears to occur when repeated use of a drug changes the way your brain feels pleasure. The addicting drug causes physical changes to some nerve cells (neurons) in your brain. Neurons use chemicals called neurotransmitters to communicate. These changes can remain long after you stop using the drug.

Risk factors

People of any age, sex or economic status can become addicted to a drug. Certain factors can affect the likelihood and speed of developing an addiction:

Family history of addiction. Drug addiction is more common in some families and likely involves an increased risk based on genes. If you have a blood relative, such as a parent or sibling, with alcohol or drug addiction, you're at greater risk of developing a drug addiction.

Mental health disorder. If you have a mental health disorder such as depression, attention-deficit/hyperactivity disorder (ADHD) or post-traumatic stress disorder, you're more likely to become addicted to drugs. Using drugs can become a way of coping with painful feelings, such as anxiety, depression and loneliness, and can make these problems even worse.

Peer pressure. Peer pressure is a strong factor in starting to use and misuse drugs, particularly for young people.

Lack of family involvement. Difficult family situations or lack of a bond with your parents or siblings may increase the risk of addiction, as can a lack of parental supervision.

Early use. Using drugs at an early age can cause changes in the developing brain and increase the likelihood of progressing to drug addiction.

Taking a highly addictive drug. Some drugs, such as stimulants, cocaine or opioid painkillers, may result in faster development of addiction than other drugs. Smoking or injecting drugs can increase the potential for addiction. Taking drugs considered less addicting — so-called "light drugs" — can start you on a pathway of drug use and addiction.

Complications

Drug use can have significant and damaging short-term and long-term effects. Taking some drugs can be particularly risky, especially if you take high doses or combine them with other drugs or alcohol. Here are some examples.

Methamphetamine, opiates and cocaine are highly addictive and cause multiple short-term and long-term health consequences, including psychotic behavior, seizures or death due to overdose. Opioid drugs affect the part of the brain that controls breathing, and overdose can result in death. Taking opioids with alcohol increases this risk.

GHB and flunitrazepam may cause sedation, confusion and memory loss. These so-called "date rape drugs" are known to impair the ability to resist unwanted contact and recollection of the event. At high doses, they can cause seizures, coma and death. The danger increases when these drugs are taken with alcohol.

MDMA — also known as molly or ecstasy — can interfere with the body's ability to regulate temperature. A severe spike in body temperature can result in liver, kidney or heart failure and death. Other complications can include severe dehydration, leading to seizures. Long-term, MDMA can damage the brain.

One particular danger of club drugs is that the liquid, pill or powder forms of these drugs available on the street often contain unknown substances

that can be harmful, including other illegally manufactured or pharmaceutical drugs.

Due to the toxic nature of inhalants, users may develop brain damage of different levels of severity. Sudden death can occur even after a single exposure.

Other life-changing complications

Dependence on drugs can create a number of dangerous and damaging complications, including:

Getting an infectious disease. People who are addicted to a drug are more likely to get an infectious disease, such as HIV, either through unsafe sex or by sharing needles with others.

Other health problems. Drug addiction can lead to a range of both short-term and long-term mental and physical health problems. These depend on what drug is taken.

Accidents. People who are addicted to drugs are more likely to drive or do other dangerous activities while under the influence.

Suicide. People who are addicted to drugs die by suicide more often than people who aren't addicted.

Family problems. Behavioral changes may cause relationship or family conflict and custody issues.

Work issues. Drug use can cause declining performance at work, absenteeism and eventual loss of employment.

Problems at school. Drug use can negatively affect academic performance and motivation to excel in school.

Legal issues. Legal problems are common for drug users and can stem from buying or possessing illegal drugs, stealing to support the drug addiction, driving while under the influence of drugs or alcohol, or disputes over child custody.

Financial problems. Spending money to support drug use takes away money from other needs, could lead to debt, and can lead to illegal or unethical behaviors.

Prevention

The best way to prevent an addiction to a drug is not to take the drug at all. If your health care provider prescribes a drug with the potential for addiction, use care when taking the drug and follow instructions.

Health care providers should prescribe these medicines at safe doses and amounts and monitor their use so that you're not given too great a dose or for too long a time. If you feel you need to take more than the prescribed dose of a medicine, talk to your health care provider.

Preventing drug misuse in children and teenagers

Take these steps to help prevent drug misuse in your children and teenagers:

Communicate. Talk to your children about the risks of drug use and misuse.

Listen. Be a good listener when your children talk about peer pressure and be supportive of their efforts to resist it.

Set a good example. Don't misuse alcohol or addictive drugs. Children of parents who misuse drugs are at greater risk of drug addiction.

Strengthen the bond. Work on your relationship with your children. A strong, stable bond between you and your child will reduce your child's risk of using or misusing drugs.

Preventing a relapse

Once you've been addicted to a drug, you're at high risk of falling back into a pattern of addiction. If you do start using the drug, it's likely you'll lose control

over its use again — even if you've had treatment and you haven't used the drug for some time.

Follow your treatment plan. Monitor your cravings. It may seem like you've recovered and you don't need to keep taking steps to stay drug-free. But your chances of staying drug-free will be much higher if you continue seeing your therapist or counselor, going to support group meetings and taking prescribed medicine.

Avoid high-risk situations. Don't go back to the neighborhood where you used to get your drugs. And stay away from your old drug crowd.

Get help immediately if you use the drug again. If you start using the drug again, talk to your health care provider, your mental health provider or someone else who can help you right away.

By Mayo Clinic Staff

Drug addiction (substance use disorder) care at Mayo Clinic

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