

DrugFacts

www.drugabuse.gov

Prescription CNS Depressants

What are prescription CNS depressants?

Central Nervous System (CNS) depressants are medicines that include sedatives, tranquilizers, and hypnotics. Sedatives primarily include barbiturates (e.g., phenobarbital) but also include non-benzodiazepine sedative hypnotics such as Ambien® and Lunesta®. Tranquilizers primarily include benzodiazepines, such as Valium® and Xanax®, but also include muscle relaxants and other anti-anxiety medications. These drugs can slow brain activity, making them useful for treating anxiety, panic, acute stress reactions, and sleep disorders.



Photo by ©iStock.com/[DNY59](#)

Some examples of CNS depressants grouped by their respective drug class are:

Benzodiazepines	Non-Benzodiazepine Sedative Hypnotics	Barbiturates
<ul style="list-style-type: none"> • diazepam (Valium®) • clonazepam (Klonopin®) • alprazolam (Xanax®) • triazolam (Halcion®) • estazolam (Prosom®) 	<ul style="list-style-type: none"> • zolpidem (Ambien®) • eszopiclone (Lunesta®) • zaleplon (Sonata®) 	<ul style="list-style-type: none"> • mephobarbital (Mebaral®) • phenobarbital (Luminal®) • pentobarbital sodium (Nembutal®)

How do people use and misuse prescription CNS depressants?

Most prescription CNS depressants come in pill, capsule, or liquid form, which a person takes by mouth. Misuse of prescription CNS depressants means:

- taking medicine in a way or dose other than prescribed
- taking someone else's medicine
- taking medicine for the effect it causes — to get high

When misusing a prescription CNS depressant, a person can swallow the medicine in its normal form or can crush pills or open capsules.

How do CNS depressants affect the brain?

Most CNS depressants act on the brain by increasing activity of *gamma-aminobutyric acid* (GABA), a chemical that inhibits brain activity. This action causes the drowsy and calming effects that make the medicine effective for anxiety and sleep disorders. People who start taking CNS depressants usually feel sleepy and uncoordinated for the first few days until the body adjusts to these side effects. Other effects from use and misuse can include:

- slurred speech
- poor concentration
- confusion
- headache
- light-headedness
- dizziness
- dry mouth
- problems with movement and memory
- lowered blood pressure
- slowed breathing

If a person takes CNS depressants long term, he or she might need larger doses to achieve therapeutic effects. Continued use can also lead to dependence and withdrawal when use is abruptly reduced or stopped. Suddenly stopping can also lead to harmful consequences like seizures.

Can a person overdose on CNS depressants?

Yes, a person can overdose on CNS depressants. An overdose occurs when the person uses enough of a drug to produce life-threatening symptoms or death (read more on our [Intentional vs. Unintentional Overdose Deaths](#) webpage).

When people overdose on a CNS depressant, their breathing often slows or stops. This can decrease the amount of oxygen that reaches the brain, a condition called hypoxia. Hypoxia can have short- and long-term mental effects and effects on the nervous system, including coma and permanent brain damage.

How can a CNS depressant overdose be treated?

The most important step to take is to call 911 so a person who has overdosed can receive immediate medical attention. Flumazenil (Romazicon®) is a medication that medical personnel can use to treat benzodiazepine overdose and has also been shown effective in treating overdose from sleep medicines. The drug might not completely reverse slowed breathing and can lead to seizures in some patients who are taking certain

antidepressants. Flumazenil is short acting, and the patient may need more of it every 20 minutes until he or she recovers. For barbiturates and nonbenzodiazepines, body temperature, pulse, breathing, and blood pressure should be monitored while waiting for the drug to be eliminated.

Can prescription CNS depressant use lead to addiction and substance use disorder?

Yes, use or misuse of prescription CNS depressants can lead to problem use, known as a *substance use disorder (SUD)*, which takes the form of addiction in severe cases. Long-term use of prescription CNS depressants, even as prescribed by a doctor, can cause some people to develop a tolerance, which means that they need higher and/or more frequent doses of the drug to get the desired effects. A SUD develops when continued use of the drug leads to negative consequences such as health problems or failure to meet responsibilities at work, school, or home, but despite all that the drug use continues.

Those who have become addicted to a prescription CNS depressant and stop using the drug abruptly may experience a withdrawal. Withdrawal symptoms—which can begin as early as a few hours after the drug was last taken—include:

- seizures
- shakiness
- anxiety
- agitation
- insomnia
- overactive reflexes
- increased heart rate, blood pressure, and temperature with sweating
- hallucinations
- severe cravings

People addicted to prescription CNS depressants should not attempt to stop taking them on their own. Withdrawal symptoms from these drugs can be severe and—in the case of certain medications—potentially life-threatening.

How can people get treatment for prescription CNS depressant addiction?

There isn't a lot of research on treating people for addiction to prescription CNS depressants.

However, people addicted to these medications should undergo medically supervised detoxification because the dosage they take should be tapered gradually. Counseling, either in an outpatient or inpatient program, can help people through this process. One type of counseling, cognitive-behavioral therapy, focuses on modifying the person's thinking, expectations, and behaviors while improving ways to cope with life's stresses. Cognitive-behavioral therapy has helped people successfully adapt to stop using benzodiazepines.



Photo by © NIDA

Often prescription CNS depressant misuse occurs along with the use of other drugs, such as alcohol or opioids. In those cases, the person should seek treatment that addresses the multiple addictions.

Learn More

For more information about prescription CNS depressants, see our:

- [Commonly Abused Drugs chart](#)
- [Misuse of Prescription Drugs Research Report](#)

This publication is available for your use and may be reproduced **in its entirety** without permission from the NIDA. Citation of the source is appreciated, using the following language:

Source: National Institute on Drug Abuse; National Institutes of Health; U.S. Department of Health and Human Services.

Points to Remember

- Prescription CNS depressants are medicines that can slow brain activity to treat anxiety and sleep disorders.
- Prescription CNS depressants act on the brain by increasing activity of GABA, a chemical that slows brain activity.
- People who start taking prescription CNS depressants usually feel sleepy and uncoordinated at first. They can also have poor concentration, confusion, lowered blood pressure, and slowed breathing.
- A person can overdose on prescription CNS depressants. Flumazenil (Romazicon®) can be used to treat benzodiazepine and sleep medicine overdoses. Body temperature, pulse, breathing, and blood pressure should be monitored while waiting for the drug to be eliminated.
- Prescription CNS depressant use or misuse can lead to a substance use disorder, which takes the form of addiction in severe cases, even when used as prescribed by a doctor.
- Withdrawal symptoms include: seizures; shakiness; anxiety; agitation; insomnia; overactive reflexes; increased heart rate, blood pressure, and temperature; hallucinations; and severe cravings.

Updated March 2018