CONDITION

Dextromethorphan overdose

Dextromethorphan overdose is poisoning caused by taking more cough suppressant than the body can safely process.

WHAT IT IS
Toxic effects from too much dextromethorphan

BODY SYSTEM
Brain, nerves, breathing, heart, and circulation

MAIN SYMPTOMS
Confusion, poor coordination, hallucinations, unusual sleepiness

WHAT CAUSES IT
Excess dose, misuse, interactions, or combination-product poisoning

HOW IT IS DIAGNOSED
Clinical assessment, exposure history, and complication-focused tests

MAIN TREATMENT
Poison-center guidance, monitoring, and supportive hospital care

CAN IT BE CURED?
Yes - acute effects usually resolve with treatment

IS IT AN EMERGENCY?
Yes - suspected overdose needs immediate poison-center advice

LONG-TERM OUTLOOK
Most recover fully; severe poisoning can cause lasting injury

Overview

Dextromethorphan is a cough suppressant found in many nonprescription cold and cough medicines. Product labels may shorten its name to "DM" or "DXM." It comes as liquids, tablets, capsules, lozenges, and long-acting products.

A dextromethorphan overdose happens when someone takes more than their body can safely process. This may be accidental, such as taking doses too close together or using several cold medicines with the same ingredient. It may also happen when dextromethorphan is taken intentionally for its mind-altering effects.

Large amounts can disrupt how the brain controls awareness, movement, heart rate, and breathing. Dextromethorphan also affects serotonin, a chemical used by the nervous system. When combined with certain medicines, it can contribute to a dangerous reaction called

serotonin syndrome.

Many dextromethorphan products contain other active ingredients. These may include acetaminophen, antihistamines like cetirizine or loratadine , decongestants, or expectorants. An overdose of a combination product can therefore cause several forms of poisoning at once. Some ingredients, especially acetaminophen, can cause serious harm before clear symptoms appear.

A suspected overdose needs immediate advice from a poison center or emergency service. Do not wait for symptoms to develop.

Symptoms

Symptoms depend on the amount taken, the type of product, other substances involved, and how quickly the body breaks down the medicine. Long-acting products may cause delayed or prolonged effects.

Possible symptoms include:

Severe poisoning may cause seizures, loss of consciousness, slowed or irregular breathing, or coma.

Serotonin syndrome is another possible complication, especially if dextromethorphan was combined with medicines that raise serotonin. Signs can include marked agitation, heavy sweating, diarrhea, fever, muscle stiffness, shaking, overactive reflexes, and confusion. Severe symptoms require emergency care.

Symptoms caused by other ingredients may look different. For example, acetaminophen poisoning may initially cause few symptoms but can later damage the liver. Antihistamines can cause severe drowsiness, agitation, abnormal heart rhythms, or seizures. Decongestants may raise heart rate and blood pressure.

- Nausea, vomiting, or stomach discomfort
- Dizziness, unusual sleepiness, or difficulty staying awake
- Slurred speech, unsteady walking, or poor coordination
- Confusion, agitation, panic, or unusual behavior
- Blurred vision or rapid, uncontrolled eye movements
- Hallucinations or feeling detached from the body or surroundings
- Fast heartbeat or changes in blood pressure

- Sweating, flushed skin, or raised body temperature

Causes and risk factors

The immediate cause is exposure to more dextromethorphan than the body can safely handle. Common circumstances include:

Drug interactions can increase the risk of serious effects. Dextromethorphan should not be combined with monoamine oxidase inhibitors, also called MAOIs. These are medicines used for some forms of depression and other conditions. Other medicines that raise serotonin, including certain antidepressants like sertraline or fluoxetine , can also increase the risk of serotonin syndrome.

Some people break down dextromethorphan more slowly because of genetic differences or medicines that block the liver enzyme responsible for processing it. This can make its effects stronger or longer-lasting.

Combination products create an added risk because their other ingredients may reach toxic levels. The amount of dextromethorphan alone does not show the full danger of the exposure.

- Taking another dose too soon
- Misreading a liquid medicine label or measuring it incorrectly
- Using several products that all contain dextromethorphan
- Taking an adult product instead of a child-specific product
- Intentional misuse for hallucinations or other mind-altering effects
- A young child swallowing medicine left within reach
- Combining it with alcohol, sedatives, stimulants like methylphenidate or lisdexamfetamine , or recreational drugs

Diagnosis

Dextromethorphan overdose is usually diagnosed from the product history, symptoms, physical examination, and vital signs. There is no widely used rapid blood test that reliably confirms the amount of dextromethorphan in the body.

Medical staff will try to identify:

Tests are chosen according to the situation. They may include blood glucose, an electrocardiogram to check the heart's electrical activity, and blood tests for organ function or

other toxic ingredients. An acetaminophen level is often important when the product contains acetaminophen or its ingredients are uncertain.

Standard urine drug screens do not reliably identify dextromethorphan. Test results must be interpreted together with the history and examination.

- The exact product and whether it is long-acting
- How much may have been taken and when
- Other medicines, alcohol, or drugs involved
- Whether the exposure was accidental or intentional
- Any health conditions that could affect treatment

Treatment and management

Treatment focuses on protecting breathing and circulation while the body clears the medicine. The safest setting depends on the symptoms, product, amount, and other ingredients involved.

A poison center may advise observation at home for selected low-risk mistakes, but that decision should come from a poison specialist. People with symptoms, intentional exposures, uncertain amounts, or combination-product poisoning may need assessment in an emergency department.

Hospital treatment may include:

Activated charcoal may reduce absorption in some recent overdoses, but it is not appropriate for everyone. It should only be used when a poison specialist or medical professional recommends it, particularly because a sleepy or vomiting person could inhale it into the lungs.

Naloxone, a medicine commonly used for opioid overdose, may sometimes improve severe sleepiness or breathing problems associated with dextromethorphan. It does not reliably reverse every effect and is not a substitute for emergency assessment.

Do not make the person vomit. Do not give food, drinks, charcoal, or home remedies unless a poison center or medical professional tells you to do so.

- Close monitoring of breathing, heart rate, blood pressure, and temperature
- Oxygen or breathing support when needed
- Intravenous fluids
- Medicines to control severe agitation or seizures

- Cooling measures for a dangerously high temperature
- Treatment for serotonin syndrome or other ingredient-specific poisoning

Complications

Most people recover without lasting harm when the exposure is recognized and managed promptly. Serious complications are more likely after large exposures, delayed treatment, or poisoning involving several substances.

Possible complications include:

Repeated misuse can affect school, work, relationships, and mental health. Some people develop cravings, tolerance, or difficulty stopping. These problems are treatable and deserve the same medical support as other substance-use concerns.

- Breathing failure and low oxygen levels
- Injury from falls, crashes, or unsafe behavior while confused
- Aspiration pneumonia from inhaling vomit into the lungs
- Seizures or dangerously high body temperature
- Abnormal heart rhythms or major blood pressure changes
- Muscle breakdown, which can injure the kidneys
- Brain injury if breathing or circulation is severely impaired
- Liver injury from acetaminophen in a combination product

Prevention

Dextromethorphan overdose can often be prevented. Use the measuring device supplied with liquid medicine rather than a kitchen spoon. Read the active-ingredient list each time, even if you have used the brand before, because products with similar names can contain different medicines.

Avoid taking more than one cough or cold product unless you have confirmed that their active ingredients do not overlap. Follow the package directions and do not take extra doses because a cough has not improved.

Check with a pharmacist or prescriber before using dextromethorphan with antidepressants or other medicines that affect serotonin. Avoid alcohol and recreational drugs while taking it.

Keep medicines in their original, child-resistant containers and store them out of children's sight and reach. Do not call medicine candy.

If misuse is a concern, storing medicine securely and seeking confidential support can reduce the chance of another overdose. Prevention may involve treating the reason for use, such as distress, substance dependence, or pressure from other people.

Living with it and what to expect

Dextromethorphan overdose is usually a short-term poisoning rather than a lifelong condition. Symptoms may change over several hours as the medicine is absorbed and cleared. Long-acting products, interacting medicines, and combination ingredients can extend the course.

Many people who have mild or moderate poisoning improve within a day with observation and supportive care. Severe poisoning may require a longer hospital stay, particularly if there have been seizures, breathing problems, serotonin syndrome, liver injury, or complications involving other ingredients. Recovery cannot be predicted from early symptoms alone.

After discharge, temporary tiredness, poor concentration, dizziness, or emotional distress may continue. Follow the discharge instructions about rest, driving, work, school, and restarting medicines.

Routine follow-up may be useful if symptoms continue, there was an important medication interaction, or the overdose happened because medicine instructions were confusing. A pharmacist can help review cough, cold, and prescription products for duplicate ingredients.

If the overdose was intentional or involved repeated misuse, recovery also includes addressing what led to it. Support may involve primary care, mental health services, or substance-use treatment. Most people can return to their usual activities, but severe oxygen deprivation or organ damage can cause longer-term problems.

When to get medical help

Contact a poison center immediately for any suspected overdose, even if there are no symptoms. In the United States, call Poison Control at 1-800-222-1222 or use its online tool. Elsewhere, contact your local poison information service or emergency service.

Call emergency services now if the person:

If possible, keep the package nearby. Be ready to provide the product name, active ingredients,

strength, estimated amount, time taken, age, and current symptoms. Do not delay the call while trying to collect every detail.

Seek routine follow-up after the immediate event for ongoing dizziness, concentration problems, mood changes, medication questions, or repeated dextromethorphan use. New breathing trouble, fainting, seizures, marked confusion, or worsening symptoms are not routine follow-up concerns; they need urgent assessment.

- Cannot be awakened, collapses, or has a seizure
- Has slow, difficult, or irregular breathing
- Has blue, gray, or unusually pale lips or skin
- Is severely confused, agitated, rigid, or dangerously hot
- Has chest pain or a very fast or irregular heartbeat
- May have taken the medicine intentionally to cause self-harm

Common questions

Can you overdose on ordinary cough medicine?

Yes. Nonprescription does not mean risk-free. Dextromethorphan can cause serious poisoning in excess, and combination cough medicines may contain other harmful ingredients. Always check the active-ingredient panel rather than relying on the brand name.

How long does a dextromethorphan overdose last?

Many effects improve within a day, but the course can be longer after a large exposure, a long-acting product, an interaction, or a combination-product overdose. Severe complications may require several days of hospital care.

Can dextromethorphan cause serotonin syndrome?

Yes. The risk is higher when it is combined with medicines or drugs that also raise serotonin. Agitation, heavy sweating, fever, shaking, muscle stiffness, diarrhea, and confusion need urgent medical assessment.

What if the cough medicine also contains acetaminophen?

Tell the poison center or emergency team immediately. Acetaminophen can damage the liver, and early poisoning may cause few obvious symptoms. A blood test and time-sensitive treatment may be needed.

Should I make someone vomit after taking too much?

No. Vomiting can cause choking or allow stomach contents to enter the lungs. Call a poison center and follow its instructions instead.

Will naloxone reverse a dextromethorphan overdose?

Naloxone may improve breathing or alertness in some cases, but it does not consistently reverse dextromethorphan poisoning. If naloxone is available and the person is not breathing normally, use it according to its emergency instructions while calling emergency services.

Sources

- National Library of Medicine. Dextromethorphan overdose . MedlinePlus Medical Encyclopedia
- Journey JD, Bentley TP. Dextromethorphan Toxicity . StatPearls, NCBI Bookshelf
- Chyka PA, Erdman AR, Manoguerra AS, et al. Dextromethorphan poisoning: An evidence-based consensus guideline for out-of-hospital management . Clinical Toxicology . 2007;45(6):662-677
- National Capital Poison Center. Dextromethorphan: An over-the-counter drug with dangerous effects
- U.S. National Library of Medicine. DailyMed drug labeling database . Dextromethorphan-containing nonprescription product labels