CONDITION

Phenobarbital overdose

Phenobarbital overdose is dangerous poisoning caused by taking more phenobarbital than the body can safely handle.

WHAT IT IS
Poisoning from too much phenobarbital

BODY SYSTEM
Nervous system, lungs, heart and circulation

MAIN SYMPTOMS
Severe drowsiness, slow breathing, poor coordination, low blood pressure

WHAT CAUSES IT
Taking more phenobarbital than the body can process

HOW IT IS DIAGNOSED
Blood phenobarbital level plus clinical assessment

MAIN TREATMENT
Breathing support, monitoring, activated charcoal, sometimes dialysis

CAN IT BE CURED?
Yes - most recover with supportive care

IS IT AN EMERGENCY?
Yes - whenever overdose is suspected

LONG-TERM OUTLOOK
Often full recovery; severe oxygen loss can cause disability

Overview

Phenobarbital is a barbiturate medicine. It slows activity in the brain and nervous system. It may be used to control certain seizures and, less commonly, for other medical purposes.

An overdose happens when someone takes more phenobarbital than their body can safely handle. The amount that causes poisoning is not the same for everyone. A person may overdose from one large amount, repeated extra doses, or a combination of phenobarbital with other substances that slow breathing.

Phenobarbital is long-acting. Symptoms can worsen over several hours and may last for days. Severe poisoning can suppress breathing, lower blood pressure, and cause coma. There is no specific antidote, but hospital treatment can support the body while the medicine is removed.

A suspected overdose is an emergency even if the person is still awake or does not yet look unwell.

Symptoms

Early symptoms may look like extreme tiredness or intoxication. They can include:

As poisoning becomes more severe, breathing may become slow or shallow. The person may be difficult or impossible to wake. Their blood pressure and body temperature may fall, and their pulse may become weak.

Severe signs include coma, very slow breathing, blue or grey lips, and collapse. Some people develop fluid in the lungs or inhale vomit into the airway. Skin blisters can occasionally form after a severe barbiturate overdose, especially when someone has remained unconscious in one position.

Symptoms alone cannot show exactly how much phenobarbital was taken. Other medicines, alcohol, medical conditions, and a person's usual phenobarbital use can change how the overdose appears.

- Unusual sleepiness or difficulty staying awake
- Slurred speech, confusion, or poor judgment
- Unsteady walking and poor coordination
- Dizziness, blurred vision, or unusual eye movements
- Nausea or vomiting

Causes and risk factors

An overdose may be accidental. Someone might misunderstand instructions, repeat a dose after forgetting they already took it, or use the wrong measuring device for a liquid medicine. Children may swallow medicine that was not stored securely.

Phenobarbital remains in the body for a long time. Repeated extra doses can therefore build up and cause poisoning, even without one very large dose.

Intentional self-poisoning is another cause. Anyone who has taken phenobarbital to harm themselves needs immediate medical care and compassionate mental health support.

The effects are more dangerous when phenobarbital is combined with other substances that slow the brain and breathing. These include alcohol, opioids like oxycodone or morphine ,

benzodiazepines like diazepam or lorazepam , sleep medicines, and some other sedating medicines.

Risk may also be higher when the body clears phenobarbital more slowly, such as with significant liver or kidney problems. Older adults may be more sensitive to sedating medicines. People who regularly take phenobarbital may have some tolerance, but this does not protect them from serious or fatal poisoning.

Diagnosis

Emergency clinicians first assess breathing, circulation, alertness, temperature, and the risk of choking or inhaling vomit. Treatment may begin before the cause is confirmed.

A blood test can measure the phenobarbital level. The result is interpreted alongside symptoms, the time of the last dose, and whether the person takes phenobarbital regularly. One result may not show whether the level is still rising, so testing may be repeated.

Other tests commonly check:

Information from medicine containers, prescription records, family members, or emergency responders can help. A routine urine drug screen may not identify every substance involved and does not replace clinical assessment.

- Blood sugar, electrolytes, kidney function, and liver function
- Oxygen, carbon dioxide, and acid levels in the blood
- Heart rhythm with an electrocardiogram, or ECG
- Evidence of muscle injury after prolonged unconsciousness
- Possible use of other medicines or substances

Treatment and management

There is no medicine that directly reverses phenobarbital. Treatment focuses on maintaining breathing and circulation while the body clears the drug.

A person with mild symptoms still needs close observation because phenobarbital is long-acting. Monitoring may include oxygen level, heart rhythm, blood pressure, temperature, urine output, and repeated checks of alertness.

If breathing is inadequate, oxygen and assisted ventilation may be needed. This can include placing a breathing tube and using a ventilator. Fluids given through a vein can treat low blood

pressure; additional medicines may be used if fluids are not enough.

Activated charcoal binds phenobarbital in the digestive tract. It may be considered when clinicians judge that it can be given safely. In serious poisoning, repeated doses can sometimes speed phenobarbital removal. Charcoal can enter the lungs if a very drowsy person cannot protect their airway, so it is not suitable in every case.

Hemodialysis filters blood through a machine. Although often associated with kidney failure, it can also remove phenobarbital. It may be used for severe poisoning involving prolonged coma, ongoing shock, serious breathing failure, or toxicity that is not improving with other care.

Treatment also addresses complications such as low body temperature, aspiration into the lungs, pressure injuries, or muscle breakdown.

Do not try to make someone vomit. Do not give charcoal, food, drinks, or home remedies unless a poison specialist or emergency clinician specifically instructs you to do so.

Complications

The most immediate complication is respiratory failure, meaning breathing is too weak to supply the body with enough oxygen. Prolonged oxygen loss can injure the brain and other organs.

Vomiting while very drowsy can allow stomach contents to enter the lungs. This is called aspiration and may cause airway blockage or pneumonia.

Other possible complications include:

Complications are more likely when treatment is delayed, breathing remains impaired, or several sedating substances were taken together.

- Dangerously low blood pressure and shock
- Low body temperature
- Muscle breakdown and kidney injury
- Pressure injuries or skin blisters after prolonged immobility
- Brain injury after severe oxygen deprivation
- Death in severe or untreated poisoning

Prevention

Most accidental overdoses can be prevented, although not every poisoning can be anticipated.

Take phenobarbital only as shown on the prescription label. If a dose may have been taken twice, contact a pharmacist, prescriber, or poison centre rather than guessing what to do next. Use the supplied measuring device for liquid medicine instead of a household spoon.

Keep an up-to-date medicine list. Before starting a new prescription, over-the-counter product, or supplement, check whether it adds to drowsiness or affects phenobarbital levels. Combining phenobarbital with alcohol, opioids, sleeping tablets, or other sedatives can be dangerous unless the combination has been specifically reviewed.

Store phenobarbital locked away from children and anyone for whom it was not prescribed. Keep it in its labelled container and dispose of unwanted medicine through an approved medicine-return service.

Do not stop long-term phenobarbital suddenly to avoid an overdose. Abrupt withdrawal can cause seizures and other serious symptoms. A prescriber can plan a gradual change when treatment needs to be reduced or stopped.

If there is concern that someone may use medicine for self-harm, reducing access to large quantities and seeking prompt mental health support can improve safety.

Living with it and what to expect

Phenobarbital overdose is an acute event rather than an illness that usually continues for years. Because the medicine leaves the body slowly, marked drowsiness and poor coordination may continue for several days. Severe cases may require intensive care, ventilation, or dialysis.

Many people recover fully with timely supportive treatment. Recovery can take longer after prolonged coma, aspiration pneumonia, shock, or a period of low oxygen. Lasting disability is mainly linked to these complications rather than to a stable amount of phenobarbital remaining in the body.

After discharge, tiredness and reduced concentration may persist for a time. Follow the discharge advice about driving, work, alcohol, and restarting medicines.

Routine follow-up may include reviewing how the overdose occurred, checking that the phenobarbital dose is still appropriate, and discussing safer medicine storage. If phenobarbital is being used for seizures, any change must be planned because sudden interruption can trigger seizures.

After intentional self-poisoning, follow-up should also address emotional distress and ongoing safety. This is part of treating the overdose, not a judgment about why it happened.

When to get medical help

Call emergency services or a poison centre immediately if an overdose is known or suspected. Do not wait for symptoms. If you are in the United States, Poison Help is available at 1-800-222-1222. Elsewhere, use your local poison information service.

Emergency signs include:

Do not leave the person alone or let them drive. If they are unconscious but breathing, place them on their side if you can do so safely. If they are not breathing normally, begin CPR and follow emergency instructions. Bring the medicine container or a photograph of the label to the hospital, but do not delay getting help to find it.

Routine follow-up is appropriate after emergency treatment for medication review, seizure care, or support related to the circumstances of the overdose. New breathing trouble, worsening drowsiness, fainting, or confusion after discharge requires urgent reassessment.

- Difficulty waking the person
- Slow, shallow, irregular, or stopped breathing
- Blue, grey, or unusually pale lips or skin
- Collapse, coma, or a seizure
- Severe confusion or inability to stand
- Suspected intentional overdose
- Phenobarbital taken with alcohol, opioids, or other sedatives

Common questions

How much phenobarbital causes an overdose?

There is no single amount that predicts poisoning in every person. Risk is affected by age, body size, usual phenobarbital use, kidney and liver function, other substances, and the time since it was taken. Do not use a calculated amount to decide whether help is needed. Contact emergency services or a poison centre after any suspected overdose.

Can you sleep off a phenobarbital overdose?

No. Normal-looking sleep may deepen into coma or breathing failure, and the medicine's long action means symptoms may worsen later. Someone who may have taken too much needs urgent assessment and should not be left alone.

Is there an antidote for phenobarbital?

There is no specific reversal drug. Hospital care supports breathing, blood pressure, and other body functions. Activated charcoal may increase removal in selected cases, and hemodialysis may be used for severe poisoning.

How long does phenobarbital overdose last?

Effects may last for several days because phenobarbital is cleared slowly. The course is longer after a large exposure, repeated extra doses, severe complications, or reduced drug clearance. Blood levels and the person's condition help the hospital team follow recovery.

Can phenobarbital overdose cause permanent damage?

Many people recover without permanent effects. Lasting brain, lung, kidney, or muscle problems can occur after prolonged low oxygen, shock, aspiration, or immobility. The individual outlook becomes clearer as alertness and organ function recover.

What if I accidentally took an extra dose?

Do not take another dose or try to correct the schedule without advice. Contact a poison centre or pharmacist immediately and provide the tablet strength, amount taken, usual schedule, time of the dose, and any other medicines or alcohol involved. Call emergency services for drowsiness, confusion, poor coordination, or breathing changes.

Sources

- U.S. National Library of Medicine. DailyMed: Phenobarbital tablet prescribing information . Warnings, clinical pharmacology, and overdosage sections
- MedlinePlus, U.S. National Library of Medicine. Phenobarbital overdose
- Mactier R, Laliberté M, Mardini J, et al. Extracorporeal Treatment for Barbiturate Poisoning: Recommendations From the EXTRIP Workgroup . American Journal of Kidney Diseases . 2014;64(3):347-358
- American Academy of Clinical Toxicology and European Association of Poisons Centres and Clinical Toxicologists. Position Statement and Practice Guidelines on the Use of Multi-Dose Activated Charcoal in the Treatment of Acute Poisoning . Journal of Toxicology: Clinical Toxicology . 1999;37(6):731-751
- Merck Manual Professional Edition. Sedatives . Barbiturate toxicity, diagnosis, and treatment sections