CONDITION

H2 receptor antagonists overdose

An H2 receptor antagonist overdose happens when someone takes too much of an acid-reducing H2-blocker medicine.

WHAT IT IS
Too much H2-blocker medicine in the body

BODY SYSTEM
Digestive, nervous, heart and circulation

MAIN SYMPTOMS
Nausea, drowsiness, confusion, abnormal heartbeat

WHAT CAUSES IT
Taking more H2-blocker medicine than intended

HOW IT IS DIAGNOSED
Exposure history, examination, ECG, and blood tests

MAIN TREATMENT
Poison-centre guidance, monitoring, and supportive care

CAN IT BE CURED?
Yes - most effects are temporary

IS IT AN EMERGENCY?
Sometimes - with collapse, breathing trouble, or severe confusion

LONG-TERM OUTLOOK
Most recover without lasting effects

Overview

H2 receptor antagonists, also called H2 blockers, are medicines that reduce stomach acid. They block the action of histamine at H2 receptors in the stomach. Common examples include famotidine, cimetidine, and nizatidine.

These medicines are used for heartburn, acid reflux, and ulcers. Some are available without a prescription, which can make dosing mistakes easier.

An overdose happens when someone takes more than the intended amount. This may occur by accident, such as taking a second dose after forgetting the first. It may also happen because of a medication mix-up or an act of self-harm.

Many single-medicine H2-blocker overdoses cause mild or no symptoms. However, the

outcome cannot be predicted from the medicine name alone. The amount taken, kidney function, age, symptoms, and any other substances involved all matter.

Any suspected overdose should be discussed promptly with a poison centre. Do not wait for symptoms before calling.

Symptoms

Symptoms can begin within several hours, although timing differs between medicines and people. Mild symptoms may resemble the medicine's usual side effects.

Possible symptoms include:

Older adults and people whose kidneys do not work well may be more likely to develop confusion or prolonged effects. The kidneys remove much of these medicines from the body.

Symptoms that are unusually severe may indicate that another medicine or substance was also taken. Alcohol, sedatives, pain medicines, heart medicines, and other products can change the risks considerably.

An allergic reaction is different from an overdose. Swelling of the lips or tongue, widespread hives, wheezing, or sudden breathing trouble requires emergency help, even if the correct dose was taken.

- Nausea, vomiting, diarrhoea, or stomach discomfort
- Headache, dizziness, flushing, or sweating
- Drowsiness, restlessness, confusion, or unusual behaviour
- A fast, slow, or irregular heartbeat
- Low blood pressure, weakness, or fainting
- Breathing difficulty in severe cases

Causes and risk factors

The direct cause is taking more H2-blocker medicine than the body can safely process. This may involve one large dose or repeated extra doses over time.

Accidental overdose may happen when someone:

Children may swallow tablets they find. Older adults may be at risk when they use several medicines or have memory, vision, or dexterity problems.

Cimetidine can affect how the body processes several other medicines. This may raise the level of medicines such as warfarin, phenytoin, or theophylline. That is a medicine-interaction problem rather than a simple H2-blocker overdose, but it can make the situation more complex.

Intentional overdose is another possible cause. Even if symptoms seem mild, intentional ingestion needs urgent medical and mental health assessment because other substances may have been taken.

- Uses both a prescription and non-prescription product containing an H2 blocker
- Misreads a label or confuses one medicine with another
- Repeats a dose because they cannot remember taking it
- Takes a medicine prescribed for somebody else
- Has reduced kidney function but continues an unsuitable dose
- Gains access to medicine that was not stored securely

Diagnosis

There is no routine blood test that directly confirms an H2-blocker overdose. Diagnosis is usually based on what was taken, the estimated amount, when it was taken, and the symptoms.

A poison specialist or healthcare professional may ask about:

In a medical setting, assessment may include heart rate, blood pressure, breathing, temperature, and alertness. An electrocardiogram, or ECG, records the heart's electrical activity and can identify an abnormal rhythm.

Blood tests may check blood sugar, salts called electrolytes, and kidney or liver function. Tests for other common overdoses may be needed when the substance is uncertain or the ingestion was intentional.

Bring the package or a clear photograph of the label if it is safe to do so. Do not delay emergency care while searching for it.

- The medicine name, strength, and formulation
- How many tablets or how much liquid may be missing
- The time of the most recent dose
- Other medicines, alcohol, or substances involved

- Kidney disease and other health conditions
- Whether the overdose may have been intentional

Treatment and management

There is no specific antidote that reverses an H2-blocker overdose. Treatment supports breathing, circulation, and other body functions while the medicine is cleared.

First, contact a poison centre for individual guidance. In the United States, Poison Help is available at 1-800-222-1222. Elsewhere, use your local poison service or emergency number. A poison specialist may recommend observation at home for a low-risk dosing mistake, but only after reviewing the details.

Do not make the person vomit. Do not give charcoal, food, milk, or large amounts of water unless a poison specialist specifically recommends it. These actions do not reliably remove the medicine and may cause choking.

Treatment in an emergency department may include:

Activated charcoal may sometimes be considered soon after a potentially serious ingestion. It is only suitable in selected situations and can enter the lungs if the person is drowsy or vomiting. It should not be used at home.

The healthcare team will also look for effects from other substances. In many serious poisonings, a second medicine causes more concern than the H2 blocker itself.

People who took the medicine intentionally should receive a safety and mental health assessment before leaving care. This is part of treating the overdose, not a judgement about why it happened.

- Monitoring of breathing, blood pressure, alertness, and heart rhythm
- Intravenous fluids for low blood pressure or dehydration
- Oxygen or breathing support when needed
- Treatment for seizures or significant heart-rhythm problems
- Blood tests and observation until symptoms improve

Complications

Serious complications from an H2 blocker alone are uncommon, but they are possible. Reported problems include very low blood pressure, an abnormal heart rhythm, severe

confusion, seizures, or breathing difficulty.

Drowsiness or vomiting can lead to aspiration, which means stomach contents enter the lungs. Fainting or confusion can also cause falls and other injuries.

Effects may last longer when kidney function is reduced because the medicine leaves the body more slowly. Complications are also more likely when several medicines or substances were taken.

A straightforward overdose that resolves without organ injury usually does not cause long-term damage. Persistent symptoms need further assessment because they may indicate a complication, another substance, or an unrelated condition.

Prevention

Most accidental H2-blocker overdoses can be prevented. Keep prescription and non-prescription medicines in their original labelled containers. Store them where children and anyone at risk of self-harm cannot reach them.

Check the active ingredient before combining heartburn products. Brand names can differ even when products contain the same medicine.

Use a written schedule, pill organiser, or medication reminder if missed or repeated doses are a concern. If you cannot remember whether you took a dose, check with a pharmacist rather than automatically taking another one.

Do not share medicines. Ask a pharmacist to review your medicines if you have kidney disease, take several prescriptions, or are using cimetidine with other treatments.

If someone in the household is at risk of intentional overdose, reducing access to large quantities of medicine can help. A healthcare or mental health professional can help make a practical safety plan.

Living with it and what to expect

An H2-blocker overdose is an acute event, not a long-term illness. Many people with a mild, single-medicine exposure remain well or improve after several hours of observation. Recovery can take longer when the dose was large, kidney function is reduced, or another substance was involved.

After an uncomplicated recovery, ongoing symptoms over months or years are not expected. Follow-up may still be appropriate if kidney problems affected the overdose, a medication

error could happen again, or symptoms continue after the expected observation period.

You may still need treatment for the heartburn, reflux, or ulcer that led to H2-blocker use. A clinician or pharmacist can help decide whether the same medicine remains suitable and how to reduce future dosing errors.

After an intentional overdose, recovery also includes support for the circumstances behind it. Follow-up with mental health services can reduce future risk and provide help with distress, depression, or other concerns.

When to get medical help

Contact a poison centre promptly after any suspected overdose, even if there are no symptoms. Early advice may prevent unnecessary treatment while identifying situations that need medical observation.

Call emergency services now if the person:

Do not drive someone who is very drowsy, confused, or medically unstable. Keep the medicine package nearby for emergency staff.

An intentional overdose needs urgent help even when the amount seems small. Stay with the person if it is safe, remove access to more medicine, and contact emergency or crisis services. Do not leave them alone to "sleep it off."

Routine follow-up is appropriate after recovery if dosing mistakes are recurring, the medicine causes ongoing side effects, or there are questions about kidney function or medicine interactions.

- Is difficult to wake, collapses, or has a seizure
- Has trouble breathing or has blue or grey lips
- Has severe confusion, agitation, or unusual behaviour
- Has chest pain or a very fast, slow, or irregular heartbeat
- Faints or cannot stand because of weakness
- Took several substances or an unknown product

Common questions

Can an H2-blocker overdose be fatal?

Severe poisoning is possible, but many overdoses involving only an H2 blocker are not

life-threatening. Risk increases with a large or unknown amount, serious symptoms, kidney impairment, or other substances. A poison centre should assess the specific exposure.

How much famotidine or cimetidine counts as an overdose?

There is no single amount that is safe for everyone. Product strength, age, body size, kidney function, timing, and other medicines all affect risk. Do not use an online dose threshold to decide whether help is needed.

What if I accidentally took two doses?

Do not take another dose until you have received advice. Check the package strength and contact a pharmacist or poison centre with the exact details. A single repeated dose may not cause serious harm, but it still deserves an individual assessment.

How long do overdose symptoms last?

Mild effects may settle over several hours as the medicine leaves the body. Symptoms can last longer after a large ingestion or when kidney function is reduced. Continued confusion, fainting, vomiting, or heartbeat changes need medical review.

Can I sleep after taking too much?

Do not simply sleep it off without poison-centre advice. New or unusual drowsiness can be a symptom of poisoning. Someone who is difficult to wake, breathing abnormally, or becoming more confused needs emergency help.

Will drinking milk or water help?

Milk and water do not neutralise an H2 blocker. Drinking a large amount may trigger vomiting and increase the risk of choking. Follow the poison centre's instructions instead.

Sources

- MedlinePlus Medical Encyclopedia. H2 receptor antagonists overdose . US National Library of Medicine
- DailyMed. Famotidine tablet prescribing information , including renal impairment and overdosage sections. US National Library of Medicine
- DailyMed. Cimetidine tablet prescribing information , including drug interactions and overdosage sections. US National Library of Medicine
- StatPearls. H2 Blockers . StatPearls Publishing and NCBI Bookshelf
- Merck Manual Consumer Version. Overview of Poisoning . Merck & Co.



- America's Poison Centers. Poison Help and emergency poison guidance