CONDITION

Foxglove poisoning

Foxglove poisoning happens when toxic plant chemicals disrupt the heart, digestion, and nervous system.

WHAT IT IS
Poisoning by heart-active chemicals in the foxglove plant

BODY SYSTEM
Heart and circulation, digestive system, and nervous system

MAIN SYMPTOMS
Vomiting, slow or irregular heartbeat, weakness, vision changes

WHAT CAUSES IT
Swallowing foxglove cardiac glycosides

HOW IT IS DIAGNOSED
Exposure history, heart tracing, and blood tests

MAIN TREATMENT
Heart monitoring, supportive care, and digoxin-binding antidote

CAN IT BE CURED?
Yes - toxins clear with prompt treatment

IS IT AN EMERGENCY?
Yes - any suspected swallowing needs urgent poison advice

LONG-TERM OUTLOOK
Full recovery common; severe poisoning can be fatal

Overview

Foxglove poisoning is caused by swallowing part of a foxglove plant or a product made from it. Foxgloves belong to the Digitalis group of plants. Their tall stems of bell-shaped flowers are common in gardens and in the wild.

Every part of the plant can be poisonous, including the flowers, leaves, stems, roots, seeds, and water in which cut plants have stood. Drying or cooking the plant does not reliably make it safe.

Foxglove contains chemicals called cardiac glycosides. These chemicals affect the electrical signals and pumping action of the heart. Digoxin, a prescription heart medicine, was originally developed from related plant chemicals. A prescribed medicine has a carefully controlled dose, but the amount in a foxglove plant is unpredictable.

Poisoning can cause vomiting, confusion, changes in vision, and dangerous heart rhythms. Symptoms may not appear straight away. Any suspected swallowing needs immediate advice from a poison service or emergency medical professional, even if the person feels well.

Foxglove poisoning is usually a single, sudden event rather than a long-term condition. With prompt assessment and treatment, many people recover fully.

Symptoms

Symptoms commonly affect the stomach before or alongside changes in the heart. They may begin within several hours, although timing is not predictable.

Possible symptoms include:

Foxglove can produce several types of abnormal heart rhythm. Some people may not feel these changes, which is why hospital heart monitoring can be needed even when symptoms seem mild.

Severe poisoning may cause very low blood pressure, collapse, seizures, severe confusion, or cardiac arrest, meaning the heart has stopped pumping effectively. These are emergency symptoms.

Children, older adults, and people with heart or kidney problems may be more vulnerable to serious effects. However, severe poisoning can occur in anyone, and the plant's appearance does not show how much toxin it contains.

- Nausea, vomiting, stomach pain, or diarrhea
- Dizziness, weakness, unusual tiredness, or fainting
- A heartbeat that is very slow, fast, pounding, or irregular
- Blurred vision or changes in how colors appear
- Headache, confusion, agitation, or unusual sleepiness

Causes and risk factors

Poisoning usually happens when somebody eats foxglove leaves, flowers, seeds, or another part of the plant. Leaves may be mistaken for edible or medicinal plants, including comfrey. Poisoning has also followed drinking homemade foxglove tea or using unregulated herbal preparations.

Children may put parts of the plant in their mouths while playing. Garden clippings can also be

accessible to children or animals. Adults may be exposed after foraging or experimenting with a plant remedy.

Factors linked with greater risk include:

Touching foxglove is not the usual cause of whole-body poisoning. Plant sap may irritate the skin, however, and contaminated hands could transfer plant material to the mouth or eyes.

Intentional swallowing is also possible. If this happened during a period of distress or self-harm, emergency care should include compassionate mental health support as well as treatment for the poisoning.

- Eating an unidentified wild or garden plant
- Making tea, food, or herbal remedies from foxglove
- Keeping foxglove within reach of young children
- Having reduced kidney function, which can slow toxin removal
- Taking medicines that affect heart rhythm or body salts

Diagnosis

Foxglove poisoning is diagnosed from the possible exposure, symptoms, heart findings, and blood tests. If it is safe, a photograph or sample of the plant may help with identification. Do not handle or transport plant material in a way that could expose someone else.

An electrocardiogram, or ECG, records the heart's electrical activity. It can show a slow heartbeat, blocked electrical signals, or other abnormal rhythms. Continuous monitoring may be needed because the rhythm can change over time.

Blood tests usually check potassium and other body salts, kidney function, and signs that organs are being affected. A high potassium level can be a sign of severe acute cardiac glycoside poisoning.

A blood digoxin test may provide useful supporting information because some foxglove chemicals can react with the test. However, it was designed to measure prescription digoxin. The result does not reliably show how much foxglove was swallowed or how severe the poisoning will be. A low or negative result may not completely rule it out.

There is no widely used routine blood test that precisely measures every toxic chemical in a foxglove plant. Medical teams therefore consider the whole clinical picture rather than relying on one number.

Treatment and management

Foxglove poisoning is treated in an emergency department or hospital. Care focuses on protecting the heart and supporting breathing, circulation, and hydration while the toxins are cleared.

Treatment may include:

The antidote is called digoxin immune Fab, or digoxin-specific antibody fragments. It binds to cardiac glycosides so they can no longer act on the body. Clinicians may use it for life-threatening heart rhythms, cardiac arrest, very high potassium, or other evidence of severe poisoning. The decision is based mainly on symptoms and heart findings, not only on a digoxin test result.

Activated charcoal may sometimes be used to reduce absorption if the ingestion was recent and it can be given safely. It is not suitable in every situation, especially if the person is very drowsy or cannot protect their airway.

Do not make someone vomit. Do not give food, drinks, charcoal, or home remedies unless a poison specialist or medical professional specifically advises it.

Some abnormal heart rhythms need additional medicine or electrical support. Treatment choices require specialist care because standard approaches to an irregular heartbeat may work differently in cardiac glycoside poisoning.

- Continuous heart and blood pressure monitoring
- Repeated ECGs and blood tests
- Fluids and correction of abnormal body salts
- Medicines for certain slow or abnormal heart rhythms
- A specific antidote for severe poisoning

Complications

The main concern is disruption of the heart's electrical system. This can cause a very slow pulse, rapid abnormal rhythms, heart block, low blood pressure, or cardiac arrest.

Other possible complications include:

Severe foxglove poisoning can be fatal. The risk is higher when treatment is delayed or a dangerous heart rhythm develops. Lasting problems are not expected in many people who recover without major organ injury.

- A dangerously high potassium level
- Dehydration after repeated vomiting or diarrhea
- Kidney injury from low blood pressure
- Breathing problems or inhaling vomit
- Brain injury if circulation or oxygen levels become critically low

Prevention

Foxglove poisoning can usually be prevented by avoiding ingestion of the plant. There is no way to judge a safe amount, and identifying the exact species does not make homemade use safe.

Do not use foxglove in teas, foods, supplements, or home remedies. Only use regulated medicines containing digoxin when they have been prescribed for you and supplied with clear instructions.

If foxglove grows in your garden, consider whether young children, vulnerable adults, or pets could reach it. Dispose of cut stems and leaves where they cannot be eaten. Do not leave foxglove clippings mixed with edible plants.

Never eat a wild plant unless its identity and safety are certain. Foxglove leaves can resemble other plants, especially before the flower stalk develops. Phone apps and online photographs may not identify plants reliably enough for eating.

Wash your hands after handling the plant, particularly before eating or touching your face. Store gardening tools and gloves away from food preparation areas.

Living with it and what to expect

Foxglove poisoning is an acute condition. It does not usually continue for months or years once the toxins have cleared and the heart, kidneys, and body salts have returned to normal.

In hospital, monitoring continues until the heart rhythm and blood test results are stable. Digestive symptoms may settle before the risk to the heart has fully passed. This is why leaving before the recommended observation period can be unsafe.

Recovery time is influenced by the amount and type of plant swallowed, the severity of the heart effects, kidney function, and how quickly treatment began. Some people improve over a short hospital stay. Severe poisoning may require intensive care and a longer recovery.

After discharge, many people return to their usual activities without ongoing effects. Follow-up may be arranged if there was kidney injury, a prolonged abnormal heart rhythm, or another medical complication. Seek routine follow-up if symptoms such as unusual weakness, dizziness, or palpitations continue after discharge.

If the plant was swallowed deliberately, recovery also includes support for the distress that led to the event. Mental health follow-up can reduce the risk of another crisis.

When to get medical help

Get poison advice immediately after any suspected foxglove ingestion. Do not wait for symptoms. In the United States, call Poison Control at 1-800-222-1222 or use its online service. In other countries, contact the local poison information service or emergency medical service.

Call emergency services now if the person has:

If the person is unconscious but breathing, place them on their side if you can do so safely. Do not put anything in their mouth. Start cardiopulmonary resuscitation if they are not breathing normally and follow emergency-service instructions.

For plant material in the mouth, remove any remaining pieces without causing choking. For skin exposure, wash with soap and water. Eye exposure should be rinsed gently with clean water. Contact a poison service if irritation continues or if any material may have been swallowed.

Routine medical follow-up is appropriate after hospital treatment if the discharge team recommends repeat heart or kidney checks. New fainting, breathing difficulty, or an irregular heartbeat is not a routine follow-up issue and needs urgent assessment.

- Collapsed, fainted, or cannot be woken normally
- Trouble breathing
- A seizure
- Chest pain or a markedly slow, fast, or irregular heartbeat
- Severe confusion or sudden weakness
- Swallowed foxglove and is becoming unwell

Common questions

How much foxglove is poisonous?

There is no reliably safe amount to swallow. Toxin levels differ between plants and between different parts of the same plant. A small exposure should still be discussed immediately with a poison service.

How quickly does foxglove poisoning start?

Nausea, vomiting, or heart effects may begin within several hours, but symptoms can be delayed. Feeling well soon after an exposure does not confirm that it is safe.

Can touching foxglove poison me?

Serious whole-body poisoning usually follows swallowing the plant rather than touching it. Sap may irritate the skin, and plant material on the hands could reach the mouth or eyes. Wash exposed skin and hands.

Is foxglove the same as digoxin?

No. Foxglove contains several natural cardiac glycosides related to digoxin. Prescription digoxin is a purified medicine with a measured dose. Eating the plant cannot provide a controlled medicinal dose.

Can you survive foxglove poisoning?

Yes. Many people recover, particularly when they receive prompt monitoring and treatment. Severe heart rhythm problems can still be life-threatening, so early poison advice is important.

What should I do if my pet eats foxglove?

Contact a veterinarian or animal poison service immediately, even if the animal appears well. Do not use human treatments or make the animal vomit unless a veterinary professional directs you.

Sources

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