CONDITION

Rhubarb leaves poisoning

Rhubarb leaves poisoning is caused by swallowing toxic leaves, which can upset digestion, lower calcium, and damage the kidneys.

WHAT IT IS
Toxic effects after swallowing rhubarb leaves

BODY SYSTEM
Digestive system, kidneys, heart, and nervous system

MAIN SYMPTOMS
Nausea, vomiting, abdominal pain, weakness

WHAT CAUSES IT
Oxalates and other natural chemicals in rhubarb leaves

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

MAIN TREATMENT
Poison-centre guidance and supportive medical care

CAN IT BE CURED?
Yes - supportive care often allows full recovery

IS IT AN EMERGENCY?
Sometimes - seizure, collapse, breathing trouble, or severe weakness

LONG-TERM OUTLOOK
Usually full recovery; severe poisoning may damage kidneys

Overview

Rhubarb leaves poisoning happens when someone swallows leaves from the rhubarb plant. The thick red or green stalks are commonly used in food, but the large leaves should not be eaten.

Rhubarb leaves contain oxalates, including oxalic acid. These natural chemicals can bind to calcium in the body. In a significant poisoning, this may lower the calcium level in the blood and form calcium oxalate crystals that injure the kidneys. Other chemicals in the leaves may add to their effects, especially nausea, vomiting, and diarrhea.

Many accidental tastes do not lead to severe illness. However, there is no reliable amount of rhubarb leaf that can be called safe. The concentration of oxalates differs between plants and growing conditions, and the risk also relates to how much was swallowed and the person's

body size and health.

If you or someone with you has swallowed rhubarb leaves, contact a poison information service for advice. Do not wait for symptoms before calling.

Symptoms

Symptoms may begin with irritation in the mouth and digestive system. Possible early symptoms include:

Repeated vomiting and diarrhea can cause dehydration. Signs include thirst, a dry mouth, dizziness, and passing less urine than usual.

More serious poisoning may lower the blood calcium level. Calcium is important for normal muscle, nerve, and heart function. Symptoms can include tingling around the mouth, muscle cramps, twitching, marked weakness, confusion, or an abnormal heartbeat.

Severe poisoning can cause seizures, collapse, difficulty breathing, or loss of consciousness. Kidney injury may lead to very little urine, blood in the urine, or swelling. Kidney problems may become clearer over the following hours or days rather than immediately.

Symptoms alone cannot show how serious an exposure is. Poison-centre staff or a medical professional will consider the amount, timing, symptoms, and the person's age and health.

- Burning or discomfort in the mouth or throat
- Nausea and vomiting
- Abdominal pain or cramping
- Diarrhea

Causes and risk factors

The cause is swallowing the leaf blade of a rhubarb plant. The stalk and leaf are chemically different. Properly prepared rhubarb stalk is eaten as food, while the leaf is not considered edible.

Oxalic acid and related oxalates are the main toxic chemicals of concern. Soluble oxalates can enter the bloodstream and bind to calcium. The resulting calcium oxalate crystals may collect in the kidney's small filtering tubes and interfere with kidney function. Other plant compounds, including substances with a laxative effect, may contribute to digestive symptoms.

The amount of oxalate in a leaf is not fixed. It can differ with the plant variety, growing

conditions, and the part of the leaf tested. Cooking or boiling does not make rhubarb leaves reliably safe to eat.

Risk may be greater when a large amount is swallowed, when the person has a lower body weight, or when vomiting and diarrhea cause dehydration. Existing kidney problems may also make it harder for the body to manage an oxalate exposure.

A single accidental taste is different from deliberately eating a serving of leaves or repeatedly using the leaves in food, tea, or homemade remedies. Even after a small exposure, poison-centre advice is useful because estimating the swallowed amount can be difficult.

Diagnosis

There is no routine home test for rhubarb leaves poisoning. Diagnosis is usually based on a clear history of exposure, symptoms, and medical tests that look for the effects of oxalates.

If you need hospital assessment, the medical team may test your blood for calcium and other salts, kidney function, blood acidity, and signs of dehydration. An electrocardiogram, or ECG, records the heart's electrical activity and can detect rhythm changes.

Urine tests can help assess kidney function. Calcium oxalate crystals may be found in urine, but their presence does not prove that rhubarb leaves caused the problem. Their absence also does not rule poisoning out.

There is not usually a rapid, widely available test that measures a specific rhubarb-leaf toxin. Medical assessment therefore combines the exposure history with examination findings, blood results, urine results, and heart monitoring when needed.

If possible, identify the plant without exposing anyone else. A photograph can be helpful. Do not bring loose plant material into a healthcare setting unless poison-centre or medical staff ask you to do so.

Treatment and management

After someone swallows rhubarb leaf, remove any remaining plant material from the mouth and rinse the mouth gently with water. Do not make the person vomit. Do not give home remedies or try to neutralize the chemicals with another substance.

Contact a poison information service promptly. In the United States, Poison Control is available at 1-800-222-1222. In other countries, use the local poison centre or urgent medical advice service. Be ready to describe the plant, the estimated amount, when it happened, the person's

age or approximate weight, and any symptoms.

Poison-centre staff may recommend observation at home after a minor exposure, or they may advise assessment in an emergency department. This decision is based on the details of the exposure rather than on a single amount that applies to everyone.

Hospital treatment is supportive, meaning it protects the body while the toxic effects settle. It may include:

Activated charcoal is sometimes considered soon after certain poisonings, but it is not suitable for every exposure. It should only be used when recommended and supervised by a poison specialist or medical team.

Severe kidney injury or major disturbances in the body's salts and acid balance may require dialysis. Dialysis is a treatment that filters the blood when the kidneys cannot do so adequately. It is not needed for most accidental exposures.

- Fluids to treat dehydration and support kidney function
- Medicines to control significant nausea or vomiting
- Calcium replacement when low calcium causes symptoms or heart changes
- Blood, urine, and heart monitoring
- Treatment for seizures or abnormal heart rhythms if they occur

Complications

The main complications are dehydration, low blood calcium, abnormal heart rhythms, seizures, and acute kidney injury. Acute means the kidney problem begins over a short period, usually hours to days.

Calcium oxalate crystals can block or inflame the kidney's filtering tubes. Kidney function often improves with treatment, but recovery can take time. Severe injury can occasionally lead to lasting loss of kidney function.

Heavy vomiting can also allow stomach contents to enter the lungs, especially if the person becomes very drowsy or has a seizure. This is one reason not to make someone vomit after an exposure.

Prevention

Rhubarb leaves poisoning can be prevented by not eating or preparing the leaves as food.

Cut the leaf away from the stalk and discard it where children and animals cannot reach it. Make sure children understand that the edible-looking leaf is not safe to taste. Label stored or harvested stalks clearly if other leafy plants are kept nearby.

Do not use rhubarb leaves in salads, smoothies, teas, soups, homemade extracts, or herbal remedies. Boiling, baking, soaking, or freezing the leaves does not make them reliably safe.

Wash your hands after gardening or preparing rhubarb, especially before eating. Touching an intact leaf is not expected to cause systemic poisoning, but washing removes plant sap and prevents accidental transfer to the mouth.

Rhubarb leaves may also be harmful to pets and livestock. If an animal eats them, contact a veterinarian or animal poison service rather than waiting for symptoms.

Living with it and what to expect

Rhubarb leaves poisoning is usually a one-time event rather than a long-term condition. After a minor exposure, a poison centre may advise monitoring for digestive or neurological symptoms for a set period. If no symptoms develop, no further care may be needed.

People treated for mild nausea, vomiting, or dehydration often recover without lasting effects. Improvement may occur over hours to several days, but the course cannot be predicted from the plant's appearance or taste.

If blood tests show kidney injury or low calcium, follow-up may continue after you leave hospital. Repeat blood and urine tests can show whether kidney function and mineral levels are returning to normal. Recovery from significant kidney injury may take weeks or longer.

A previous exposure does not provide immunity. Future poisoning can be prevented by avoiding the leaves. Properly separated rhubarb stalk does not need to be avoided solely because someone previously swallowed a leaf, unless a medical professional has given different advice for another health reason.

When to get medical help

Contact a poison information service promptly whenever rhubarb leaf has been swallowed, even if there are no symptoms. This is routine poison advice and does not always mean an emergency department visit will be needed.

Seek urgent medical assessment if there is repeated vomiting, worsening abdominal pain, marked weakness, muscle cramps, confusion, blood in the urine, or much less urine than usual.

These symptoms may require blood tests and monitoring.

Call emergency services now if the person:

Do not give food, drink, or activated charcoal to someone who is unconscious, having a seizure, or unable to swallow safely. Place an unconscious but breathing person on their side if you can do so safely, and follow the emergency call handler's instructions.

- Has trouble breathing
- Has a seizure
- Collapses or cannot be awakened
- Develops severe confusion or weakness
- Has signs of a serious abnormal heartbeat, such as fainting

Common questions

Are rhubarb stalks poisonous too?

The stalk is the part normally used in pies, sauces, and other foods. Both red and green stalks may be edible. Remove the entire leaf and do not use leaf material in cooking. The stalk is naturally tart, but tartness does not mean it is poisonous.

How much rhubarb leaf is toxic?

There is no dependable safe amount. Oxalate levels differ between leaves, and the effect relates to the amount swallowed, body size, hydration, and kidney health. A small taste is less concerning than eating a serving, but it is still sensible to contact a poison centre for case-specific advice.

What should I do if my child took one bite?

Remove any pieces from the mouth, rinse the mouth, and call a poison information service. Do not make the child vomit. Have an estimate of the bite size, the time of exposure, and the child's approximate weight available. Many small accidental tastes can be managed with poison-centre guidance.

Does cooking rhubarb leaves remove the poison?

No cooking method makes the leaves reliably safe. Boiling may move some soluble chemicals into the cooking water, but neither the leaves nor the liquid should be consumed. Baking, freezing, or drying is also not a safe solution.

Is this the same as having kidney stones?

Not exactly. Many kidney stones contain calcium oxalate, but acute oxalate poisoning can

affect the whole body. It may lower blood calcium and cause crystals to injure the kidney's filtering tubes rather than forming one typical stone.

Can my dog or cat be poisoned by rhubarb leaves?

Yes. Animals can develop drooling, vomiting, weakness, tremors, and kidney problems after eating oxalate-containing plants. Contact a veterinarian or animal poison service promptly. Do not use human treatment advice for a pet.

Sources

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