CONDITION

Ruptured eardrum

A ruptured eardrum is a hole or tear in the thin tissue separating the ear canal from the middle ear.

WHAT IT IS
A hole or tear in the eardrum

BODY SYSTEM
Ears and hearing

MAIN SYMPTOMS
Ear pain, hearing loss, discharge, ringing

WHAT CAUSES IT
Infection, injury, pressure changes, or loud noise

HOW IT IS DIAGNOSED
Ear examination, sometimes hearing tests

MAIN TREATMENT
Keeping ear dry, infection treatment, sometimes surgical repair

CAN IT BE CURED?
Yes, most heal or are repairable

IS IT AN EMERGENCY?
Sometimes, after major injury or sudden severe hearing loss

LONG-TERM OUTLOOK
Most heal within weeks; some need repair

Overview

A ruptured eardrum is a hole or tear in the eardrum, also called the tympanic membrane. This thin layer of tissue separates your ear canal from your middle ear. It vibrates when sound reaches it, helping transfer sound deeper into the ear.

A rupture can happen because of a middle ear infection, a direct injury, a sudden pressure change, or an extremely loud sound. It may cause pain, reduced hearing, fluid leaking from the ear, or ringing called tinnitus.

Most small ruptures close on their own over several weeks. During healing, the ear needs protection from water and further injury. A rupture that does not close may require a procedure or surgery.

The eardrum also helps protect the middle ear from water, dirt, and germs. While it is open, infection is more likely. Severe trauma can sometimes damage the tiny hearing bones or inner ear as well as the eardrum, so the cause and degree of hearing loss matter.

Symptoms

Symptoms may begin suddenly. They can affect one or both ears, although one-sided rupture is more common.

Possible symptoms include:

When a middle ear infection causes the rupture, pressure behind the eardrum may be released. This can make the pain improve even though fluid starts draining from the ear.

The amount of hearing loss is not always a reliable sign of the tear's size. Hearing may be more affected if there is fluid in the middle ear or damage to the tiny hearing bones. Sudden major hearing loss needs prompt assessment because it can also come from inner-ear or nerve problems.

- Sharp ear pain, which may ease quickly after the eardrum tears
- Reduced or muffled hearing
- Clear fluid, pus, or blood draining from the ear
- Ringing, buzzing, or another sound that comes from inside the ear
- A blocked or full feeling in the ear
- Dizziness or a spinning sensation called vertigo
- Nausea related to vertigo

Causes and risk factors

A middle ear infection is a common cause. Fluid and pus can build up behind the eardrum, increasing pressure until a small opening forms.

Physical injury can also tear the eardrum. Examples include putting a cotton swab or another object into the ear canal, being struck over the ear, or having an object pushed into the ear accidentally. Attempts to remove earwax or a foreign object can cause injury.

A rapid pressure difference between the middle ear and the outside environment is called barotrauma. It can happen during air travel, scuba diving, or a sudden blast. Congestion from a cold or allergy may make it harder for the ear to balance pressure.

An explosion or extremely loud sound can create a pressure wave strong enough to rupture the eardrum. These events may also injure other parts of the ear.

Risk is higher when you have:

Some ruptures happen despite reasonable precautions, particularly when they are caused by infection or an unexpected injury.

- A current middle ear infection
- Previous eardrum problems or ear surgery
- Frequent exposure to major pressure changes
- Work or activities involving explosions or very loud impulse noise
- A habit of placing objects into the ear canal

Diagnosis

A healthcare professional can often confirm a ruptured eardrum by looking into the ear with an otoscope, a lighted magnifying instrument. The opening may be directly visible. Fluid, blood, earwax, or swelling can sometimes make the eardrum difficult to see.

The ear canal and the type of drainage are also checked for signs of infection or injury. You may be asked how the symptoms began, whether you recently had an infection, and whether there was air travel, diving, loud noise, or trauma.

A hearing test called audiometry may be arranged if hearing is reduced, the injury was severe, or symptoms continue. This measures how well you hear different sounds. Other tests can assess movement of the eardrum and middle-ear function, although they are not needed in every case.

Imaging such as a CT scan is not routine for a simple rupture. It may be considered after significant head trauma or when damage to deeper ear structures is suspected.

Treatment and management

Many uncomplicated ruptures heal without a procedure. The main goals are to keep the ear dry, manage pain, treat infection when present, and check that hearing and the eardrum recover.

Protect the ear from water while it heals. Avoid swimming and do not place your head underwater. When showering, a clinician may suggest protecting the outer opening of the ear

with a water-resistant barrier. Do not push anything into the ear canal.

Avoid using ear drops unless a healthcare professional has confirmed they are suitable for a perforated eardrum. Some products that are safe when the eardrum is intact may harm deeper parts of the ear if they pass through a hole.

Standard pain relief may help with discomfort if it is safe for you. A pharmacist or healthcare professional can help you choose an appropriate option. Antibiotics like amoxicillin or doxycycline are not needed for every rupture. They may be prescribed when there is a bacterial infection or a contaminated injury.

Try not to blow your nose forcefully. The pressure can travel through the tube connecting the back of the nose to the middle ear and may interfere with healing.

If the opening does not close, an ear, nose, and throat specialist may place a patch over it. A persistent or larger hole can sometimes be repaired with surgery called tympanoplasty. This uses your own tissue or another suitable material to close the eardrum. If the small hearing bones are damaged, they may also need repair.

Follow-up may include another ear examination and a hearing test. This is especially important when drainage, hearing loss, or the opening continues.

Complications

Most ruptured eardrums heal without lasting problems. Possible complications include:

A cholesteatoma is uncommon, but it can gradually damage nearby structures. Persistent smelly drainage, repeated infections, or worsening hearing should be assessed rather than managed only at home.

- A hole that remains open
- Repeated or long-lasting middle ear infections
- Ongoing conductive hearing loss, meaning sound is not transferred efficiently
- Damage to the tiny hearing bones
- Persistent tinnitus or balance symptoms
- A cholesteatoma, an abnormal collection of skin cells inside the middle ear

Prevention

Not every ruptured eardrum can be prevented. Infections and unexpected injuries may still

occur.

You can reduce avoidable injury by not putting cotton swabs, tools, or other objects into the ear canal. Seek help if an object is stuck in the ear rather than trying to remove it deeply.

Protect your ears from explosive noise and other intense sound. Use appropriate hearing protection when working around firearms, machinery, or blasts.

During air travel, swallowing, yawning, or chewing may help the ears adjust gradually during takeoff and landing. Avoid forceful pressure-clearing techniques. Do not scuba dive with ear pain, an active ear infection, or difficulty balancing ear pressure. Follow trained diving guidance for equalising pressure and safe ascent.

Prompt assessment of severe or persistent ear infection symptoms may reduce pressure-related complications, although treatment cannot prevent every rupture.

Living with it and what to expect

A small, uncomplicated rupture often closes over several weeks, and hearing usually improves as the eardrum heals and middle-ear fluid clears. Some take longer, particularly when the opening is large, infection continues, or the ear has been injured before.

While healing, everyday activities are usually possible as long as the ear stays dry and is protected from further pressure or trauma. Swimming and diving need to wait until a healthcare professional confirms that the eardrum has closed. Air travel may be possible in some situations, but recent surgery, significant symptoms, or difficulty equalising pressure requires individual advice.

Temporary muffled hearing can affect conversations, school, work, and awareness of sounds around you. Reduce background noise and position yourself so your better-hearing ear faces the speaker. Take extra care near traffic, alarms, or machinery.

If the eardrum does not close naturally, patching or surgery can often repair it. Recovery after a procedure takes time, and hearing may improve gradually rather than immediately. The long-term result is influenced by the size and location of the rupture, repeated infections, and whether deeper ear structures were damaged.

When to get medical help

Arrange a medical assessment if you think your eardrum may have ruptured, especially if you have ear discharge, bleeding, ongoing pain, or reduced hearing. This is usually a prompt

outpatient or urgent-care issue rather than an emergency.

Seek urgent same-day medical care for:

Seek emergency care after a major head injury, particularly if there is clear or bloody fluid from the ear, confusion, loss of consciousness, weakness, severe headache, repeated vomiting, or difficulty staying awake.

Follow-up is important if the ear continues to drain, the hearing remains reduced, or the hole has not closed. These findings do not always mean there is permanent damage, but they may require a hearing test or specialist assessment.

- Sudden or severe hearing loss
- Significant dizziness, spinning, vomiting, or trouble walking
- Increasing pain, fever, or pus-like discharge
- An object stuck in the ear
- Symptoms following a loud explosion, diving injury, or forceful blow
- Hearing or drainage that is not improving as expected

Common questions

Will a ruptured eardrum heal by itself?

Many small ruptures close without a procedure, often over several weeks. Healing can take longer if the hole is large, the ear becomes infected, or there has been repeated damage. An opening that remains may be patched or surgically repaired.

Can I hear with a ruptured eardrum?

Usually, but hearing may sound muffled or quieter. The degree of hearing loss can be affected by the tear, middle-ear fluid, and damage to the hearing bones. Sudden severe hearing loss needs urgent assessment because the inner ear or hearing nerve may be involved.

Can I shower with a ruptured eardrum?

You can usually shower if you keep water out of the affected ear. Do not aim water into the ear canal or submerge your head. Ask a healthcare professional how to protect the ear safely, particularly after surgery.

Can I fly with a ruptured eardrum?

An open eardrum may reduce pressure discomfort in some cases, but flying is not suitable for everyone. Recent ear surgery, active infection, severe pain, dizziness, or other injuries can

change the advice. Check before travelling if you have significant symptoms or have had a procedure.

Should I use ear drops?

Do not use ear drops unless a healthcare professional says that the specific product is safe with a perforated eardrum. Some drops can pass into the middle ear and damage hearing or balance structures.

Is a ruptured eardrum permanent?

Usually not. Many heal naturally, while persistent openings can often be repaired. Lasting hearing problems are more likely when there is repeated infection or damage beyond the eardrum.

Sources

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