CONDITION

Ear infection

An ear infection is inflammation caused by germs in the middle or outer ear, often leading to pain and temporary hearing changes.

WHAT IT IS
Infection of the middle or outer ear

BODY SYSTEM
Ears and hearing

MAIN SYMPTOMS
Ear pain, fever, discharge, reduced hearing

WHAT CAUSES IT
Usually viruses or bacteria; sometimes fungi

HOW IT IS DIAGNOSED
Ear examination, sometimes tympanometry or hearing tests

MAIN TREATMENT
Pain control, observation, or antimicrobial medicines

CAN IT BE CURED?
Sometimes - acute infections clear, but recurrences can happen

IS IT AN EMERGENCY?
Sometimes - swelling behind ear or severe illness

LONG-TERM OUTLOOK
Most clear; fluid or hearing changes may persist

Overview

"Ear infection" usually means an infection of the middle ear or outer ear canal. These affect different parts of the ear and may need different treatment.

A middle ear infection , or acute otitis media, develops behind the eardrum. It often follows a cold and is especially common in young children because their middle ear drainage tubes are smaller and more easily blocked.

An outer ear infection , also called otitis externa or swimmer's ear, affects the ear canal. Water, eczema, skin irritation, or damage from objects placed in the ear can allow germs to grow.

Ear infections often cause pain and temporary hearing changes. Many improve without lasting problems, although some need antibiotic tablets or medicated drops. Fluid may remain behind

the eardrum after a middle ear infection clears, causing muffled hearing without an active infection.

Inner ear conditions are different. Problems such as labyrinthitis mainly cause vertigo and balance symptoms rather than typical ear pain.

Symptoms

A middle ear infection may cause:

Ear tugging alone does not confirm an infection because teething, tiredness, and other discomfort can cause similar behaviour.

An outer ear infection commonly causes pain and itching in the canal. Moving the outer ear or pressing the small flap in front of it may worsen the pain. The canal may become swollen or produce watery or pus-like discharge. Swelling and debris can muffle hearing.

Fluid behind the eardrum without an active infection is called otitis media with effusion , or glue ear. It usually causes reduced hearing or a blocked feeling without marked pain or fever. Persistent hearing difficulty in children may affect attention, speech, or learning.

Symptoms may affect one or both ears. Their severity does not reliably show whether an infection is viral or bacterial.

- Ear pain, pressure, or fullness
- Fever
- Reduced or muffled hearing
- Fluid draining from the ear if the eardrum tears
- Irritability, poor feeding, disturbed sleep, or ear tugging in young children

Causes and risk factors

Middle ear infections often begin when a cold causes swelling around the eustachian tube, which drains the middle ear into the back of the nose. Blockage allows fluid to collect behind the eardrum, where viruses or bacteria may grow.

Children have shorter, more horizontal eustachian tubes, making drainage harder. Group childcare, tobacco smoke, and frequent respiratory infections increase risk. Susceptibility may also be higher with a cleft palate, Down syndrome, or conditions affecting the immune system or eustachian tubes.

Outer ear infections develop when the canal's protective skin is damaged or remains wet. Possible triggers include swimming, scratching, cotton swabs, earbuds, hearing aids, eczema, and attempts to remove earwax. Bacteria are the usual cause; fungi are less common.

Diabetes and a weakened immune system increase the risk of a rare but severe outer ear infection that can spread into nearby tissue and bone. This needs prompt assessment.

Ear infections are not usually passed directly between people, although a preceding cold or respiratory virus may be contagious.

Diagnosis

A healthcare professional usually diagnoses an ear infection by discussing symptoms and examining the ear with an otoscope , a lighted instrument used to view the canal and eardrum.

With a middle ear infection, the eardrum may look bulging, inflamed, or cloudy, with fluid behind it. Reduced eardrum movement when air pressure is gently changed may suggest trapped fluid.

With an outer ear infection, the canal may look red, swollen, or filled with discharge. The eardrum should be checked when possible because a hole can affect which drops are safe.

Tympanometry measures eardrum movement and may help confirm middle ear fluid. Hearing tests may be offered when fluid or hearing problems persist, recur, or affect speech and learning.

Laboratory tests are not usually needed. Discharge may be tested if infection is severe, recurrent, not responding to treatment, or occurs in someone at higher risk of complications.

Treatment and management

Treatment depends on the affected part of the ear, symptom severity and duration, age, examination findings, and general health.

Pain relief is important. A pharmacist or healthcare professional can recommend a suitable non-prescription medicine. Children should not take aspirin because it is associated with the rare but serious Reye syndrome.

Many uncomplicated middle ear infections improve without antibiotics. A clinician may recommend monitoring mild symptoms for a short period. Antibiotics like amoxicillin or doxycycline may be considered for someone who is very unwell, at higher risk of complications, or has ongoing or worsening symptoms or examination findings suggesting

bacterial infection. Antibiotics do not treat viruses and may cause diarrhoea, nausea, or rash. Take prescribed antibiotics exactly as directed.

Outer ear infections are commonly treated with prescription drops containing an antibiotic, antifungal medicine, steroid like prednisone or hydrocortisone , or combination. A clinician may clear debris so drops can reach the skin. If the canal is very swollen, an ear wick may be inserted to carry medicine into it.

Do not put oil, cotton swabs, unprescribed drops, or other objects into a painful or draining ear. Some products are unsafe when the eardrum has a hole or ear tubes are present.

Persistent middle ear fluid does not automatically need antibiotics and often clears gradually. Lasting hearing difficulty, speech concerns, or repeated problems may require hearing assessment or an ear, nose and throat referral. Some people benefit from ventilation tubes, also called grommets.

Complications

Most ear infections settle without permanent harm. Temporary reduced hearing is common while fluid or swelling remains.

Possible complications include:

Mastoiditis is an infection of the bone behind the ear. Increasing pain, redness or swelling behind the ear, fever, or an ear pushed outward requires urgent hospital assessment.

A severe outer ear infection can rarely spread into surrounding bone, particularly in older adults with diabetes or people with weakened immune systems. Deep or severe pain, especially at night, ongoing discharge, or facial weakness needs urgent assessment in these groups.

Lasting hearing loss is unusual after one uncomplicated infection, but persistent changes should be checked, especially if a child's speech, behaviour, or learning may be affected.

- A small tear in the eardrum, often with sudden drainage
- Persistent middle ear fluid and temporary hearing loss
- Repeated infections
- Ongoing discharge through a perforated eardrum
- Damage to the eardrum or middle ear structures
- Spread of infection to nearby tissue

Prevention

Not every ear infection can be prevented. Measures that may lower risk include:

To help prevent outer ear infections, avoid putting cotton swabs, fingernails, or other objects into the canal. Let wet ears drain and dry naturally after swimming or bathing. Use a towel only on the outside.

People with repeated swimmer's ear, ear tubes, previous eardrum surgery, or a known perforation should seek individual advice before using earplugs or preventive drops.

- Keeping routine vaccinations up to date
- Avoiding tobacco smoke and vaping aerosols around children
- Washing hands and limiting close contact with people who have respiratory infections when practical
- Breastfeeding infants when possible and desired

Living with it and what to expect

Pain and fever from an uncomplicated middle ear infection often begin improving within a few days. Muffled hearing or blockage may last longer because fluid can remain after the infection ends. This does not necessarily mean treatment failed.

Outer ear infections usually improve when the canal is kept dry and prescribed drops reach the affected skin. Symptoms may persist if the canal is blocked or an underlying skin condition remains uncontrolled.

Some children have repeated middle ear infections during the preschool years. These often become less frequent as the eustachian tubes grow and work better. Persistent fluid may require hearing checks rather than repeated antibiotics.

Keep water, shampoo, and objects out of an infected ear if advised. Wipe discharge only from the outside with clean gauze or tissue; do not block the canal with cotton.

Arrange follow-up if pain or discharge does not improve as expected, symptoms repeatedly return, or hearing remains reduced. Children should be reviewed if hearing difficulty affects speech, school progress, sleep, or behaviour.

When to get medical help

Seek prompt medical advice for severe or increasing pain, ongoing fever, new discharge, marked hearing loss, dizziness, repeated infections, or symptoms that are not beginning to improve. Babies, people with weakened immune systems, and people with diabetes may need earlier assessment.

Get urgent same-day medical help for:

Call emergency services for confusion, extreme drowsiness, a seizure, a stiff neck with severe headache, difficulty waking, or other signs of serious illness. These are not typical of a simple ear infection.

- Redness, tenderness, or swelling behind the ear
- An ear that appears pushed outward
- Sudden hearing loss in one or both ears
- Severe outer ear pain in someone with diabetes or reduced immunity
- New facial weakness
- A child or adult who appears very unwell

Common questions

How long does an ear infection last?

Pain and fever often improve over several days. Fluid and muffled hearing may remain for weeks after a middle ear infection. Symptoms that worsen, fail to improve, or recur need assessment.

Do all ear infections need antibiotics?

No. Many middle ear infections improve without them, particularly when symptoms are mild. Outer ear infections often need medicated drops rather than tablets. Treatment depends on the examination, age, symptoms, and complication risk.

Can I swim with an ear infection?

Avoid swimming during an outer ear infection or while an ear is draining because water can irritate the canal and interfere with treatment. Ask a healthcare professional when it is safe to return.

Is ear discharge a sign that the eardrum has burst?

It can be. Pressure from a middle ear infection may cause a small tear that allows fluid to drain, but discharge can also come from the outer canal. An examination is needed to identify the cause and choose safe treatment.

Why can I still not hear properly after the pain has gone?

Fluid may remain behind the eardrum and temporarily reduce hearing. Arrange a hearing assessment if the problem persists or affects communication, learning, or daily activities.

Are ear infections contagious?

The ear infection itself is not usually contagious, but the cold or respiratory infection that preceded it may spread through coughs, sneezes, hands, and shared surfaces.

Sources

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