CONDITION

Ear infection - acute

An acute ear infection is inflammation and infection behind the eardrum that usually begins suddenly.

WHAT IT IS
Sudden infection and inflammation behind the eardrum

BODY SYSTEM
Ears and hearing

MAIN SYMPTOMS
Ear pain, fever, irritability, reduced hearing

WHAT CAUSES IT
Viral or bacterial infection behind the eardrum

HOW IT IS DIAGNOSED
Ear examination showing eardrum changes and middle-ear fluid

MAIN TREATMENT
Pain relief, observation, and sometimes antibiotics

CAN IT BE CURED?
Yes - most episodes clear completely

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

LONG-TERM OUTLOOK
Most recover fully; temporary middle-ear fluid may persist

Overview

An acute ear infection usually means acute otitis media , an infection of the middle ear. The middle ear is the small, air-filled space behind the eardrum. "Acute" means that symptoms begin suddenly and last for a relatively short time.

The condition is especially common in young children, although older children and adults can also develop it. It often follows a cold or another respiratory infection. Swelling can block the tube that normally drains the middle ear, allowing fluid and germs to collect behind the eardrum.

Ear pain can be intense, but most uncomplicated infections improve without lasting harm. Some are caused by bacteria and may benefit from antibiotics like amoxicillin or doxycycline . Others improve as the immune system clears the infection.

This article focuses on middle-ear infection. An infection of the outer ear canal, sometimes called swimmer's ear, is different. Outer-ear infection often causes pain when the outer ear is moved and may follow swimming or irritation of the ear canal.

Symptoms

Symptoms may affect one or both ears. They can begin during a cold or shortly after one.

Common symptoms include:

Babies may rub or pull at an ear, but this alone does not confirm an infection. Teething, tiredness, and irritation of the outer ear can cause similar behaviour.

If pressure behind the eardrum makes it tear, fluid or pus may drain from the ear. This is called a perforated eardrum . Pain may suddenly improve after drainage begins, but the ear still needs medical assessment.

Dizziness, vomiting, or balance problems can occasionally occur. Severe headache, confusion, neck stiffness, facial weakness, or swelling behind the ear are not routine symptoms and need urgent attention.

- Ear pain, pressure, or a feeling of fullness
- Fever
- Reduced or muffled hearing
- Irritability, poor sleep, or increased crying in young children
- Reduced appetite
- Fluid draining from the ear

Causes and risk factors

Acute middle-ear infection often starts when a cold, influenza, or another respiratory infection causes swelling around the Eustachian tube . This narrow tube connects the middle ear to the back of the nose and helps control pressure and drain fluid.

When the tube becomes blocked, fluid can build up behind the eardrum. Viruses or bacteria may then grow in that fluid. Some infections involve both.

Young children have shorter and more level Eustachian tubes than adults, so fluid does not drain as easily. Their immune systems are also still developing.

Factors linked with a higher chance of acute ear infection include:

An acute ear infection is not usually caught directly from another person. However, the cold or respiratory infection that came before it may be contagious.

- Recent cold or respiratory infection
- Exposure to tobacco smoke
- Close contact with other children, including childcare attendance
- A family tendency toward repeated ear infections
- Cleft palate or other differences affecting facial structure
- Conditions or medicines that weaken the immune system
- Feeding from a bottle while lying flat

Diagnosis

A clinician diagnoses acute middle-ear infection by asking about the symptoms and examining the ear with an otoscope , a lighted instrument that allows the eardrum to be seen.

Findings may include a bulging, cloudy, or inflamed eardrum and fluid behind it. A clinician may use a small puff of air to see how well the eardrum moves. An eardrum that moves poorly can suggest trapped fluid. Tympanometry , a pressure test of eardrum movement, may be used when the diagnosis is uncertain or fluid persists.

Redness alone does not always mean infection. Crying, fever, or irritation during the examination can also make an eardrum look red.

Middle-ear fluid without sudden pain, fever, or a bulging eardrum is called otitis media with effusion , or glue ear. This is not the same as an acute infection and generally does not require antibiotics.

Blood tests and scans are not routinely needed. They may be considered if symptoms suggest an unusual complication.

Treatment and management

Treatment aims to control pain while the infection clears. The best approach is influenced by age, symptom severity, examination findings, drainage from the ear, other health conditions, and whether follow-up is reliable.

Paracetamol, also called acetaminophen, or ibuprofen may help with pain and fever when suitable for the person taking it. Follow the product instructions or advice from a healthcare

professional. Aspirin should not be given to children or teenagers unless specifically prescribed.

A warm cloth held against the ear may feel soothing. Do not place cotton buds, oils, or unprescribed ear drops inside the ear. Some drops are unsafe when the eardrum is perforated or ear tubes are present.

Many uncomplicated infections improve without antibiotics. A clinician may recommend watching symptoms for a short period while using pain relief. This reduces unnecessary antibiotic use and avoids side effects such as diarrhoea, nausea, or rash.

Antibiotics may be recommended when symptoms are severe, are not improving, or affect someone at higher risk of complications. They may also be considered for certain young children, infections in both ears, or an infection with ear discharge. Recommendations differ by age and local guidance.

If antibiotics are prescribed, take them exactly as directed. Seek advice if doses cannot be kept down, significant side effects occur, or symptoms worsen rather than improve. Antibiotics do not treat viral infections and do not immediately remove fluid already trapped behind the eardrum.

Decongestants and antihistamines like cetirizine or loratadine have not been shown to clear an acute middle-ear infection and can cause side effects. They should not be used for this purpose unless recommended for another condition.

Repeated infections or persistent middle-ear fluid may lead to a hearing assessment or referral to an ear, nose, and throat specialist. Some children benefit from ventilation tubes, also called grommets, but these are not needed for a single routine episode.

Complications

Most acute ear infections settle without complications. Fluid may remain behind the eardrum after the infection has cleared, causing temporary muffled hearing.

A perforated eardrum usually heals, but persistent drainage or hearing loss needs follow-up. Repeated infections or long-lasting fluid can sometimes affect hearing and, in young children, speech and language development.

Rarely, infection spreads into the bone behind the ear. This is called mastoiditis . It can cause redness, tenderness, or swelling behind the ear and may push the outer ear forward.

Other rare complications include facial nerve weakness, infection of tissues around the brain, and inflammation of the brain's lining. These complications require urgent hospital care.

Prevention

Not every acute ear infection can be prevented. Young children may develop infections because of the natural shape and size of their Eustachian tubes.

Some measures can reduce the chance of infection:

Do not put cotton buds or other objects into the ear canal. This helps prevent outer-ear injury and infection, although it does not directly prevent most middle-ear infections.

- Keep recommended vaccinations, including influenza and pneumococcal vaccines, up to date
- Avoid tobacco smoke and vaping aerosols around children
- Reduce exposure to respiratory infections through handwashing
- Feed babies in a supported, more upright position rather than flat
- Breastfeeding, when possible and chosen, may lower the risk in infancy

Living with it and what to expect

Pain and fever often begin improving within a few days. A blocked feeling or reduced hearing may last longer because middle-ear fluid can remain for several weeks after the infection itself has settled.

Rest, fluids, and suitable pain relief can help during recovery. Children can usually return to school or childcare when they feel well enough and any fever has settled, subject to local policies. The ear infection itself is not usually contagious, but an accompanying cold may be.

Arrange routine follow-up if hearing remains reduced, symptoms keep returning, or fluid appears to persist. Follow-up is especially important when hearing difficulty affects speech, school, sleep, or communication.

Some people have repeated infections over months or years. This does not always mean there is a serious underlying problem, but the pattern may need assessment. Children generally become less prone to middle-ear infections as their Eustachian tubes grow and function more effectively.

When to get medical help

Seek prompt medical advice if ear pain is severe, symptoms are worsening, or there is no clear

improvement after a few days. An examination is also appropriate for ear discharge, repeated infections, persistent hearing loss, or symptoms in someone with a weakened immune system, a cochlear implant, or significant facial structural differences.

A baby younger than 3 months with a temperature of 38°C or higher needs urgent medical assessment. Babies younger than 6 months with a possible ear infection should also be assessed promptly.

Seek urgent same-day care or go to an emergency department for:

Call emergency services if the person is difficult to wake, has trouble breathing, or has a seizure that does not stop promptly.

Routine follow-up, rather than emergency care, is appropriate for lingering mild ear fullness or muffled hearing after the pain and fever have resolved. Arrange an appointment if these symptoms persist or interfere with daily life.

- Redness, tenderness, or swelling behind the ear
- An outer ear that is being pushed forward by swelling
- Severe headache, neck stiffness, confusion, or unusual drowsiness
- New facial weakness
- A seizure
- Severe illness, repeated vomiting, or signs of dehydration

Common questions

How long does an acute ear infection last?

Pain and fever often improve over two or three days, although the exact course differs. Fluid behind the eardrum can remain after the infection clears, so hearing may feel muffled for several weeks.

Does every ear infection need antibiotics?

No. Many acute middle-ear infections improve without antibiotics, particularly when symptoms are mild. A clinician considers age, examination findings, symptom severity, ear discharge, and medical history before recommending observation or antibiotics.

Can an ear infection spread to other people?

The middle-ear infection itself is not generally passed from person to person. The cold or respiratory virus that triggered it may spread through coughs, sneezes, hands, and shared surfaces.

Can I fly with an ear infection?

Changes in cabin pressure can increase ear pain and pressure, especially when the Eustachian tube is blocked. If travel cannot be postponed, ask a healthcare professional for advice, particularly for a young child, a perforated eardrum, recent ear surgery, or severe symptoms.

Can an ear infection damage hearing?

Temporary muffled hearing is common because fluid blocks sound movement through the middle ear. Permanent hearing loss from a single uncomplicated infection is uncommon. Persistent or repeated hearing problems need assessment.

Why does my child keep getting ear infections?

Young children have small Eustachian tubes that block easily. Frequent colds, childcare exposure, tobacco smoke, family tendency, and certain structural or immune conditions can also contribute. Repeated infections may warrant a hearing test or specialist review.

Sources

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