CONDITION

Otitis media with effusion

Otitis media with effusion is fluid behind the eardrum without an acute ear infection.

WHAT IT IS
Fluid behind the eardrum without acute infection

BODY SYSTEM
Ears and hearing

MAIN SYMPTOMS
Muffled hearing, ear fullness, popping, balance problems

WHAT CAUSES IT
Poor Eustachian tube drainage, often after colds

HOW IT IS DIAGNOSED
Ear examination, tympanometry, and age-appropriate hearing tests

MAIN TREATMENT
Observation, hearing support, and sometimes ear tubes

CAN IT BE CURED?
Sometimes - often clears without treatment

IS IT AN EMERGENCY?
Sometimes - facial weakness or swelling behind the ear

LONG-TERM OUTLOOK
Usually clears; persistent cases can affect hearing and learning

Overview

Otitis media with effusion means that fluid has collected in the middle ear, the air-filled space behind the eardrum. It is often called "glue ear" because the fluid can become thick and sticky.

This condition is not the same as an acute middle-ear infection. There may be no fever, marked ear pain, or other signs of infection. However, the fluid can stop the eardrum and the tiny middle-ear bones from moving normally. This may cause temporary hearing loss.

Otitis media with effusion is especially common in children because their Eustachian tubes are smaller and more horizontal. These tubes connect the middle ears to the back of the nose and help control pressure and drain fluid. Adults can also develop the condition.

Hearing loss may be mild and difficult to notice. In a child, it can affect speech, classroom participation, behaviour, or learning if it lasts. In adults, persistent fluid-particularly in one

ear-needs assessment to find out why the ear is not draining normally.

Symptoms

Some people have no obvious symptoms. The condition may be found during an ear examination or hearing test.

Possible symptoms include:

A young child may not be able to describe hearing loss. You may notice that they turn up the television, ask people to repeat themselves, speak more loudly, seem distracted, or do not respond when called. School staff may notice changes in attention or participation.

Speech and language development may be affected when hearing loss is significant or continues for a long time. Behaviour that looks like ignoring instructions may actually reflect difficulty hearing them.

Severe ear pain, a high fever, or pus draining from the ear is not typical of uncomplicated otitis media with effusion. These symptoms may point to an acute infection or another ear problem.

- Muffled or reduced hearing
- A blocked, full, or pressurised feeling in the ear
- Popping or crackling sounds
- Mild ear discomfort
- Problems hearing speech when there is background noise
- Mild balance problems or clumsiness

Causes and risk factors

The fluid develops when a Eustachian tube does not ventilate and drain the middle ear properly. Air in the middle ear is gradually absorbed, creating pressure that draws fluid into the space.

This often happens during or after a cold. Swelling around the opening of the Eustachian tube can continue after the other cold symptoms have gone.

In children, enlarged adenoids can contribute. Adenoids are pads of immune tissue behind the nose, close to where the Eustachian tubes open. They can block drainage or become inflamed.

Factors linked with a greater chance of persistent or repeated effusion include:

Nasal allergy may contribute to congestion in some people, but not every case is caused by allergy. Allergy treatment does not automatically clear middle-ear fluid.

In an adult, fluid can follow a cold, sinus inflammation, air travel, or another cause of Eustachian tube blockage. Persistent one-sided fluid should be assessed because, rarely, a growth in the nose or throat can obstruct the tube.

- Frequent colds or upper respiratory infections
- Exposure to tobacco smoke
- Enlarged adenoids
- Cleft palate or other differences in the structure of the face and palate
- Down syndrome
- Conditions that affect Eustachian tube function

Diagnosis

A healthcare professional examines the ear with an otoscope, a lighted instrument used to look at the eardrum. Fluid may make the eardrum look dull, pulled inward, or less mobile. An air bubble or fluid level may sometimes be visible.

Pneumatic otoscopy can help confirm the diagnosis. During this examination, a small puff of air is used to check whether the eardrum moves normally. An eardrum with fluid behind it usually moves less.

Tympanometry is another useful test. A soft probe changes the air pressure in the ear canal and measures how the eardrum responds. It does not test hearing directly, but it can show whether fluid is likely to be present.

An age-appropriate hearing test measures how much the fluid is affecting hearing. Young children can be tested through play or by watching their response to sounds. Older children and adults may wear headphones and respond to tones.

If an adult has persistent fluid, especially in only one ear, an ear, nose, and throat specialist may examine the back of the nose with a thin flexible camera. Scans are not routinely needed for uncomplicated cases.

Treatment and management

Many cases clear without an operation or medicine. If symptoms are mild and hearing is not

causing significant problems, planned observation may be recommended. This should include follow-up rather than simply ignoring the condition.

When hearing loss affects both ears, reassessment after about three months is common. Earlier review may be appropriate when hearing difficulties are affecting communication, development, education, work, or safety.

Useful support while waiting for the fluid to clear may include:

Autoinflation may help some children who are old enough to use it correctly. This involves inflating a special nasal balloon to open the Eustachian tube and equalise pressure. It requires regular cooperation and is not suitable for every child.

Antibiotics like amoxicillin or doxycycline do not usually help because uncomplicated effusion is not an acute bacterial infection. Decongestants, antihistamines like cetirizine or loratadine , and oral or nasal steroids like fluticasone or mometasone are not routinely used to treat the fluid itself.

If hearing loss continues or has a meaningful effect on daily life, options may include hearing aids or ventilation tubes. Ventilation tubes, often called grommets, are placed through the eardrum during a short procedure. They allow air into the middle ear while the Eustachian tube recovers.

Grommets can improve hearing while they remain open, but fluid can return after they come out. Possible problems include ear discharge, blockage of the tube, scarring, or a small hole in the eardrum that does not close.

Removal of the adenoids may be considered in selected children, sometimes at the same time as grommet surgery. The choice depends on age, nasal or adenoid symptoms, palate structure, hearing needs, and previous treatment.

- Reducing background noise during conversation
- Facing the person with hearing difficulty
- Speaking clearly at a normal pace
- Seating a child near the teacher
- Checking that instructions have been heard
- Using temporary hearing devices when appropriate

Complications

The main complication is conductive hearing loss. This means sound is being blocked as it

passes through the outer or middle ear. It is usually temporary and improves when the fluid clears.

Persistent hearing loss can make speech harder to understand, especially in a noisy room. In children, this may affect speech development, learning, confidence, and social interaction. The effect differs from child to child and is influenced by how much hearing is reduced and how long it lasts.

Long-lasting middle-ear pressure can sometimes change the shape or strength of the eardrum. Repeated episodes may also occur. Permanent hearing damage is uncommon from uncomplicated effusion alone, but another hearing condition may be present at the same time.

Prevention

Otitis media with effusion cannot always be prevented. Children's Eustachian tubes naturally become larger and function better as they grow, but there is no reliable way to stop every episode while this development is taking place.

Avoiding tobacco smoke may reduce irritation and respiratory illness. Handwashing and other practical steps that reduce the spread of colds may also reduce some triggers, although they cannot guarantee prevention.

Treating a diagnosed nasal condition may improve nasal symptoms, but medicines should not be used solely in the hope of preventing glue ear unless they have been recommended for another clear reason.

Living with it and what to expect

Many episodes clear over several weeks or months. Hearing may fluctuate during that time, and one ear may improve before the other. Colds can temporarily make the pressure or hearing worse.

Children often have fewer episodes as their Eustachian tubes mature. However, fluid can return, particularly during periods of frequent respiratory infections. Some children need repeated hearing checks or more than one course of treatment.

Most people's hearing returns to its previous level after the fluid clears. Persistent difficulty should not automatically be blamed on glue ear; a hearing test can check for another cause.

At home and school, small communication changes can make a real difference. Get the person's attention before speaking, face them, and avoid calling instructions from another

room. Teachers can provide written information and check understanding without singling a child out.

Keep planned follow-up appointments even if the hearing seems better. The fluid and hearing level may change without obvious symptoms. Adults with continuing one-sided symptoms should complete the recommended assessment rather than waiting indefinitely.

When to get medical help

Arrange a routine appointment if you or your child has muffled hearing, a blocked-ear feeling, or communication difficulties that last for several weeks. A review is also appropriate if a child's hearing appears to be affecting speech, learning, behaviour, or participation at school.

Adults should seek assessment for persistent symptoms in one ear, recurrent fluid, unexplained nasal blockage, or a neck lump. These symptoms usually have a non-serious cause, but they need a proper examination.

Seek urgent medical advice for:

Seek emergency care for swelling or redness behind the ear that pushes the ear outward, new facial weakness, confusion, neck stiffness, or a severe headache with significant illness. These are not usual features of otitis media with effusion.

- Hearing that drops suddenly over hours or a few days
- Severe or increasing ear pain
- Ear discharge with fever or feeling significantly unwell
- New severe dizziness or difficulty walking
- Symptoms after a significant head or ear injury

Common questions

Is glue ear the same as an ear infection?

No. Glue ear is fluid behind the eardrum without the signs of an acute infection. An acute middle-ear infection often causes more pain, fever, and a bulging, inflamed eardrum. An infection can leave fluid behind after it has settled.

How long does glue ear last?

Many episodes improve within weeks to a few months. Some last longer or return after another cold. Follow-up hearing tests are important when symptoms persist or interfere with

daily life.

Do antibiotics clear the fluid?

Antibiotics are not routinely used for uncomplicated otitis media with effusion because the fluid is not usually caused by an active bacterial infection. They may be needed if a separate acute bacterial infection develops.

Can glue ear cause permanent hearing loss?

The hearing loss is usually temporary and improves when the middle-ear fluid clears. Long-lasting fluid can affect communication and learning, and another type of hearing loss can coexist, so persistent symptoms should be tested.

Can you swim or fly with glue ear?

Ordinary surface swimming is generally possible when the eardrum is intact. Flying may cause pressure or discomfort, especially during descent, but uncomplicated effusion does not usually make air travel dangerous. Ask the surgical team for specific advice after grommet or other ear surgery.

Can a child with glue ear go to school?

Yes. Most children can continue attending school or nursery. A seat near the teacher, less background noise, clear face-to-face speech, and written instructions can help while hearing is reduced.

Sources

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