PROCEDURE

Ear tube insertion

Ear tube insertion places a small ventilation tube through the eardrum to drain fluid and improve middle-ear airflow.

PURPOSE
Ventilate the middle ear and reduce fluid-related hearing problems

PROCEDURE TYPE
Therapeutic, minimally invasive surgery through the ear canal

WHERE IT IS DONE
Operating theatre or outpatient clinic

ANAESTHESIA
General for children; local or general for adults

HOW LONG IT TAKES
About 10 to 20 minutes

PREPARATION
Fasting for general anaesthesia; review medicines and transport

RECOVERY
Same day; no driving after general anaesthesia or sedation

MAIN RISKS
Drainage, blockage, scarring, or a persistent eardrum opening

RESULTS
Tube placement confirmed immediately; hearing reassessed during follow-up

Overview

Ear tube insertion places a tiny hollow tube through the eardrum to ventilate the middle ear and drain trapped fluid. A myringotomy is the small opening made in the eardrum; a tympanostomy tube is the tube placed in it.

Ear tubes are most common in children, but adults may also need them. Most tubes fall out naturally after several months or longer, depending on their type, and the eardrum usually closes afterward.

Why the procedure is performed

Ear tubes may be offered when middle-ear fluid or repeated infections affect hearing, comfort, balance, or daily life. Reasons include:

Middle-ear fluid without active infection is called otitis media with effusion . It often clears without surgery, so tubes are generally considered when it persists or causes meaningful problems.

Persistent fluid in an adult, particularly on one side, may require assessment for a blockage or another cause.

- Fluid behind the eardrum lasting several months
- Hearing difficulty caused by persistent fluid
- Repeated middle-ear infections when fluid remains between infections
- Fluid-related balance problems, pressure, discomfort, or reduced quality of life
- Risk that temporary hearing loss could affect speech, language, learning, or development
- Difficulty equalising pressure, including some pressure injuries

Who should and should not have it

The decision considers hearing-test results, how long fluid has been present, infection frequency, developmental needs, everyday effects, and surgical risks.

Tubes are generally not recommended for a child with repeated acute ear infections if no middle-ear fluid is present when assessed. Short-lived fluid is often monitored, although children with developmental, sensory, or learning risks may need earlier assessment.

The procedure may be avoided or delayed if:

Tubes may improve fluid-related hearing loss but do not guarantee improvements in speech, school performance, or development. Those concerns may require separate support.

- There is no problem a tube is likely to improve
- A temporary illness makes general anaesthesia less safe
- An ear-canal infection needs treatment first
- A bleeding disorder or medicine requires additional planning
- An existing eardrum opening already provides ventilation
- Expected benefits are small compared with the risks

How to prepare

Follow the treating facility's instructions, which may vary by age, anaesthetic plan, and medical history.

For general anaesthesia, follow instructions about when to stop eating and drinking. Contact the facility if the instructions are unclear or fasting was not completed correctly.

Tell the team about:

Do not stop prescribed medicine unless instructed. Arrange for a responsible adult to provide transport after general anaesthesia or sedation. For a child, bring familiar comfort items and explain the visit in simple terms.

- All medicines, vitamins, and supplements
- Blood-thinning medicines or bleeding disorders
- Allergies or previous anaesthesia problems
- Recent fever, cough, breathing problems, vomiting, or other illness
- Changes in hearing, drainage, or ear pain

What happens during the procedure

Children usually receive general anaesthesia. Adults may receive local anaesthesia to numb the ear or, sometimes, general anaesthesia.

Working through the ear canal, the surgeon makes a tiny opening in the eardrum and may suction out fluid. A tube is fitted into the opening, and the process may be repeated in the other ear. No skin incision or stitches are usually needed.

Antibiotic ear drops may be used. Selected children may also have their adenoids removed during the same anaesthetic.

Recovery and what to expect afterward

Pain is usually mild. Brief discomfort, popping, or unusually loud sounds may occur. Use recommended pain relief and prescribed ear drops as directed. Do not put cotton swabs or other objects into the ear canal.

Clear, blood-tinged, or slightly cloudy drainage may occur briefly. Eating and drinking can usually restart after anaesthesia according to the facility's advice.

Most people resume light activity the same day and usual activity by the next day. Children

may return to school or childcare when they feel well; many adults return to work the next day.

Follow advice about swimming. Routine earplugs are usually unnecessary for clean, shallow water, but may be advised for discomfort, deep submersion, or unclean water.

After general anaesthesia or sedation, do not drive, cycle on roads, operate machinery, or make important decisions for the period specified by the facility. A responsible adult must take you home.

Risks and possible complications

Possible complications include:

Minor scarring often does not affect hearing. A persistent opening may need surgical closure, and a retained tube may require removal.

Tubes do not prevent every ear infection. Infection may instead cause drainage through the tube.

- Fluid or pus draining through the tube
- Tube blockage, irritation, or early loss
- A tube remaining longer than intended
- Eardrum scarring or calcium deposits
- A persistent hole after the tube comes out
- Continued or recurring fluid, infection, or hearing difficulty
- Risks from general anaesthesia

Results and follow up

The surgeon confirms tube placement immediately. If fluid caused the hearing loss, hearing may improve soon after it is removed, with formal testing performed later when appropriate.

Children should have an ear examination within about three months and periodic checks while the tubes remain in place. Follow-up checks tube function, drainage, infection, hearing, and the eardrum after each tube falls out.

Further treatment may be needed if fluid returns, infections continue, hearing remains reduced, or a tube does not come out as expected.

Alternatives

Alternatives depend on the reason for treatment:

- Observation with repeat checks: Allows fluid to clear without surgery, but hearing effects may continue.
- Treatment of individual infections: Pain relief and appropriate antibiotics like amoxicillin or doxycycline can treat acute infection, but antibiotics do not reliably clear long-standing, non-infected fluid.
- Hearing aids or other support: Improves access to sound but requires fitting and regular use and does not ventilate the ear.
- Autoinflation: A suitable child uses a nasal balloon to help equalise pressure. It requires cooperation and may not work for everyone.
- Adenoid removal: May help selected children, especially with nasal blockage or enlarged adenoids, but is more extensive and often accompanies tubes.
- No procedure: May be reasonable for mild symptoms or short-lived fluid, with continued hearing and development monitoring.

When to call your healthcare team

Contact the team during normal hours for persistent drainage, a blocked-looking tube, returning hearing difficulty, swimming or drop questions, or follow-up concerns. Also call if a tube appears to come out early; this is usually not an emergency.

Seek prompt medical advice for worsening ear pain, fever with ear symptoms, foul-smelling drainage, or drainage lasting longer than expected.

Call emergency services for trouble breathing, severe difficulty waking after anaesthesia, heavy bleeding, or another rapidly worsening reaction.

Common questions

Will I be asleep?

Children usually receive general anaesthesia. Adults may have local or general anaesthesia.

Can I drive home?

Not after general anaesthesia or sedation. Arrange an adult driver and follow instructions

about resuming driving.

How painful is ear tube insertion?

Pain is usually mild and brief. Temporary pressure, popping, or sound sensitivity may occur.

When will I know whether it worked?

Placement is confirmed during the procedure. Hearing may improve quickly, but follow-up testing provides a clearer result.

Can the ears get wet?

Routine earplugs are usually unnecessary for clean, shallow water. Follow specific advice about deep or unclean water.

Will the tubes need to be removed?

Most fall out naturally. A retained or troublesome tube may need specialist removal.

Sources

- Rosenfeld RM, Tunkel DE, Schwartz SR, et al. "Clinical Practice Guideline: Tympanostomy Tubes in Children (Update)." Otolaryngology-Head and Neck Surgery . 2022;166(1 Supplement):S1-S55.
- National Institute for Health and Care Excellence. Otitis Media With Effusion in Under 12s . NICE Guideline NG233. 2023.
- Steele DW, Adam GP, Di M, et al. Tympanostomy Tubes in Children With Otitis Media . Agency for Healthcare Research and Quality, Comparative Effectiveness Review No. 185. 2017.
- Venekamp RP, Javed F, van Dongen TMA, Waddell A, Schilder AGM. "Ventilation Tubes (Grommets) for Otitis Media With Effusion in Children." Cochrane Database of Systematic Reviews . 2023.