

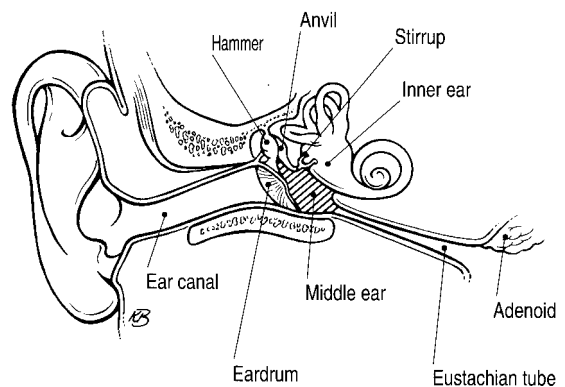
Earaches in Children

A painful problem for many children

How does the ear work?

The ear works by receiving sound waves and sending messages to the brain. The *outer ear* includes the part of the ear you can see and the ear canal. The sound waves go through the ear canal and hit the eardrum and cause it to vibrate.

The *middle ear* includes the space behind the eardrum. The *eustachian tube* connects the middle ear to the back of the nose. The vibration of the eardrum causes three tiny bones (called the *hammer*, *anvil* and *stirrup*) to move. This movement sends the sound waves to the *inner ear*, which then sends sound messages to the brain.



What causes earaches?

Earaches commonly occur when the eustachian tube becomes blocked. Blockage of the eustachian tube prevents fluid from draining out of the tube. Fluid in the middle ear provides a good place for an infection to start. Blockage also increases pressure behind the eardrum, which in turn causes much of the pain.

The eustachian tubes can become blocked because of swelling of the tubes during a cold or other infection. Ear infections can be caused by bacteria or a virus. Sometimes allergies can cause the eustachian tubes to swell. In other cases, the *adenoids* (glands near the ear) become enlarged and block the eustachian tubes.

Acute ear infections usually clear up within one or two weeks. But they often come back. Sometimes, ear infections become *chronic*. After an infection, fluid may stay in the middle ear. This may lead to repeat infections and hearing loss.

Why are earaches so common in children?

This may be because their eustachian tubes are shorter and smaller than those of adults. More than three-fourths of children will have at least one ear infection by their third birthday. Nearly half of them will have had three or more infections before they are three years old.

What are the symptoms of ear infections?

The most common symptoms of an acute ear infection are ear pain (which may be sudden and severe) and fever. Your child may also be irritable or listless, complain of a feeling of fullness in the ear, have trouble hearing, or not feel like eating.

If your child is too young to tell you what hurts, he or she may cry and fuss. The ear pain may appear to be worse when your child lays his or her head down on the side of the affected ear. If the eardrum bursts, there may be pus or blood coming from the ear.

A child with fluid in the ear may not have such obvious symptoms, making it easy to miss.

Will earaches hurt my child's hearing?

Middle ear infections are the most common cause of temporary hearing loss in children. Children who have ongoing problems with hearing from other causes have been shown to have trouble developing their speech and language skills. It's possible that hearing loss caused by earaches could have the same effect.

Things that may put children at higher risk of ear infections

- Being around people who smoke
- Having had ear infections before, particularly if the infections occurred before the child's first birthday
- Having a family history of ear infections
- Being bottle-fed instead of breast-fed
- Staying in day care
- Being premature or having had a low birth weight
- Being a boy (Boys tend to have more middle ear infections than girls.)

What is the treatment for earaches?

The treatment for earaches may include any of the following:

Antibiotics are usually prescribed. These medicines kill the bacteria that cause many infections. It's very important to follow the directions for taking these medicine, and to finish all of the medicine.

Pain relievers like acetaminophen (Panadol, Tempra, Tylenol) can help make your child feel better and reduce fever. Don't give your child aspirin unless your doctor says it's okay. Aspirin can cause *Reye's syndrome* in children who have the flu or the chickenpox. *Reye's syndrome* is a serious illness that can lead to death.

A warm, not hot, **heating pad** held over the ear can also help relieve pain.

If the eardrum has burst, your doctor may prescribe **antibiotic drops**.

Your doctor may want to see your child again after treatment to make sure the ear infection has been cured.

What can be done to prevent ear infections from returning?

Some children seem to get one ear infection after another. If your child has had three ear infections in six months or four in one year, your doctor may suggest that your child take a low dose of antibiotics every day, usually during the winter, when these infections are most common. It's also a good idea to keep your child away from cigarette smoke.

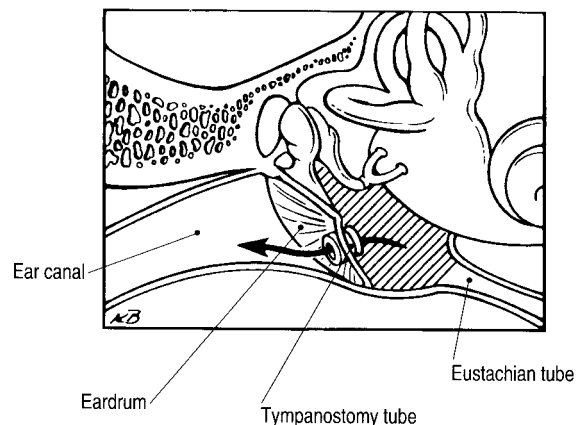
What about fluid that stays in the middle ear?

Your child's hearing may be affected if fluid stays in the middle ear after an infection. This may also lead to repeat infections. Usually the fluid goes away in two to three months, and hearing returns to normal. Your doctor may want to check your child again at this time to see if fluid is still present.

If the fluid stays for more than a few months, your doctor may want to check your child's hearing. Your doctor may recommend ear tubes (*tympanostomy tubes*) to drain the fluid if your child's hearing is decreased a lot. In such cases, ear tubes may also decrease the number of repeat infections that occur.

What are tympanostomy tubes?

These tiny plastic tubes help balance the pressure in your child's ears and allow the fluid to drain. They're put into the eardrum (which is also called the *tympanic membrane*) during surgery and stay in place for an average of six to nine months. The tubes are usually left in place until they fall out on their own or your doctor decides your child no longer needs them. Sometimes, another set of tubes may be needed.



What are the risks of putting in tympanostomy tubes?

Placing tubes in the ears is an operation and has some risks. Your child will need a general anesthesia when the tube is inserted. Your child must keep from getting water in his or her ears while the tube is in place. And sometimes the tube can cause scarring or even leave a hole in the eardrum and affect hearing.



For more information about earaches in children, call the Agency for Health Care Policy and Research Publications Clearinghouse at 800-358-9295 and ask for the publication for patients on earaches in children.

This handout provides a general overview on this topic and may not apply to everyone. To find out if this handout applies to you and to get more information on this subject, talk to your family doctor.



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