

EAR INFECTIONS

Patient Information Fact Sheet

›What are ear infections?

The ear is made up of three sections: the external ear, the middle ear and the inner ear. The external ear is visible and helps conduct sound. It includes the tube or canal that leads inward to the eardrum. The middle ear transfers sound vibrations from the eardrum to the inner ear, while the inner ear transmits information to the nerves and also provides information to aid balance.

Ear infections are classified as internal (“otitis media”) or external (“otitis externa”). External ear infections are often called “swimmer’s ear” because it is frequently caused by water that remains in the ear after swimming. Otitis media is a very common complaint, particularly in children. The middle ear becomes infected and inflamed. It often occurs rapidly and lasts a short time, although it can become chronic (long-lasting). Otitis externa can also be acute or chronic.

›What are the symptoms of an ear infection?

Otitis media is often associated with an upper respiratory tract infection such as a common cold. A fever often accompanies the infection. Pain is caused by a build-up of fluid and pus in the middle ear, which can also cause temporary hearing loss. Very young children may become irritable and have feeding problems; older children will complain of pain and a feeling of fullness in the ear.

Some children suffer from recurrent ear infections, which can cause hearing problems. This may lead to difficulties in speech in young children who are learning to talk. Children with speech problems are often found to have fluid in their ears; this condition is sometimes referred to as “glue ear.” In very severe infections, the pressure build-up from the increased amount of fluid in the ear may cause the eardrum to rupture. If the eardrum bursts, the excess fluid will drain into the outer ear canal, resulting in a discharge of watery fluid or pus from the ear.

Otitis externa causes itchiness and a feeling of fullness in the ear. The ear canal may become inflamed and painful. If the ear canal becomes very swollen it may shut. This is often associated with swelling to the side of the face. Fluid will usually drain from the ear in otitis externa.

›What causes ear infections?

Otitis media is not infectious, although the cold or other respiratory tract infection that caused it may be. Most infections are caused by one of two types of bacteria: *Streptococcus pneumoniae* or *Haemophilus influenzae*. Infections of the middle ear are more common in young children than in adults because the tube, which leads from the ear to the throat (the Eustachian tube), is much shorter and more horizontal, causing poor drainage of fluid from the ear. Children with cleft palate are also more prone to ear infections because of abnormalities in the structure of the muscle that opens the Eustachian tube. There is also an increased risk of otitis media in bottle-fed babies compared with breastfed babies, who are usually positioned at a better angle to aid drainage of fluid from the ear.

Otitis externa is usually caused by bacteria, either of the streptococcus, staphylococcus or pseudomonas species. If water is frequently present in the ear canal, infections can grow. Excessive exposure to water and poking cotton swabs inside the ear, which damages the delicate skin of the external ear,

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are also causative factors. Chronic otitis externa can sometimes occur if a person has a nervous habit of scratching the ear frequently. Eczema of the ear causes itchiness and scratching to relieve the itch may also lead to infections.

›How are ear infections treated?

Otitis media is often treated with oral antibiotics, although current research suggests that they are frequently not needed, as a significant proportion of infections are viral, not bacterial (antibiotics do not help viral infections and their use in this setting contributes to antibiotic resistance). Guidelines recommend relieving pain in children, especially in the first 24 hours, with **ibuprofen** or **acetaminophen**. After the acute symptoms settle, up to 40% of children are left with some residual fluid in the ear, which can cause temporary hearing loss for up to six weeks. In most children this problem usually resolves without any further treatment. If your doctor thinks antibiotics are necessary he or she will usually prescribe **amoxicillin** (Amoxil). **Azithromycin** (Zithromax) is an alternative that may be used for people allergic to penicillin. If a child has recurrent bouts of otitis media, a decision may be made to insert a tympanostomy tube into the ear. These tubes, also known as grommets, aid the drainage of fluid from the middle ear.

Otitis externa is usually treated with ear drops containing an antibiotic such as **ciprofloxacin** and **ofloxacin** (Floxin Otic). Antibiotics are often combined with steroids to reduce swelling and inflammation. Ear drops may contain a combination of a steroid and an antibiotic, such as **ciprofloxacin** and **hydrocortisone** or **dexamethasone** (Cipro HC Otic, Ciprodex Otic), as well as a generic combination of **polymyxin B sulfate**, **neomycin sulfate**, and **hydrocortisone** (Cortisporin Otic Solution, Pediotic). If there is a problem with ear wax blocking the outer ear canal, ear drops to soften the wax to help its removal may be prescribed. Syringing the ear is seldom necessary. If a fungal ear infection is suspected, ear drops containing an antifungal such as **chloroxylonol** (Zoto-HC) may be prescribed.

›Self-help measures

- Wear earplugs when swimming to avoid recurrence of otitis externa. Check with a doctor prior to swimming again.
- Do not to scratch the ear or poke things such as cotton swabs inside the ear canal to stop the itching.
- Steroid lotion such as **betamethasone** may be prescribed for chronic dermatitis or eczema of the ear. This cannot be used if there is an infection present.

›Further Information

Medline Plus: www.nlm.nih.gov/medlineplus/earinfections.html

American Academy of Pediatrics: www.healthychildren.org/English/health-issues/conditions/ear-nose-throat/Pages/Middle-Ear-Infections.aspx

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