

# Ear Infections in Adults

## Anatomy: Structure of the Ear

The ear is made up of three parts:

The **outer ear** includes the pinna (visible outer ear) and the canal (called the external auditory canal) that leads to the eardrum (tympanic membrane).

The **middle ear** is behind the eardrum and contains tiny bones (the ossicles: malleus, incus and stapes) that amplify sound.

The **inner ear** is where sounds are translated to electrical impulses by the cochlea and sent to the brain. Fluid-filled semicircular canals (labyrinth) attach to the cochlea and nerves in the inner ear. They send information on balance and head position to the brain. The eustachian (auditory) tube drains fluid from the middle ear into the throat (pharynx) behind the nose.

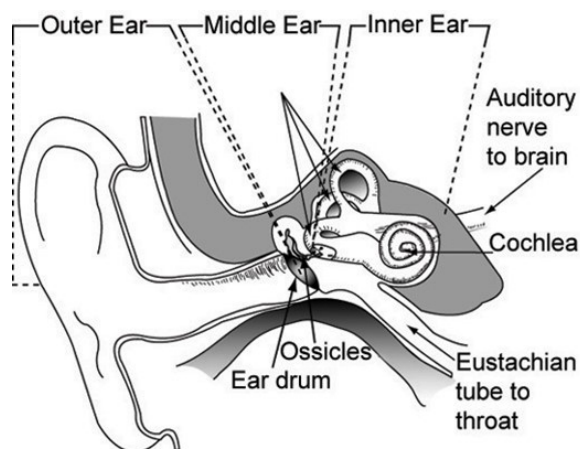


Image source: <http://education-portal.com/>

Although most ear infections occur in children, they are also common in adults.

## Symptoms of Ear Infections

The symptoms depend on the type of infection and where it occurs in the ear, but may include:

- earache
- mild deafness or the sensation that sound is muffled
- ear discharge
- fever
- headache

- loss of appetite
- itchiness of the outer ear
- blisters on the outer ear or along the ear canal
- noises in the ear, such as buzzing or humming
- vertigo (loss of balance).

## Causes of Ear Infections

Some of the many causes of ear infection and contributing risk factors include:

- upper respiratory tract infections (a “cold”)
- sudden changes in air pressure, such as during airline travel
- smaller than average Eustachian tubes
- swimming in polluted waters
- failing to dry the outer ear properly after swimming or bathing
- excessive cleaning of the ears with cotton buds, which can scratch the delicate tissues.

## Types of Ear Infections

Ear infections are usually diagnosed by physical examination, although laboratory tests may be necessary sometimes.

Less commonly, CT scans may be taken, and audiometry (a hearing test) may be required.

**Otitis externa** — Otitis externa is an infection or inflammation of the outer ear canal (external auditory canal) between the outside and the eardrum. This type of infection is also known as swimmer’s ear.

**Otitis media** — Otitis media is an infection of the middle ear. The infection is caused most commonly by a virus (antibiotics not required) and less commonly by bacteria (and may require antibiotics). Sometimes the eardrum will burst, leading to a discharge of fluid. This will usually heal up again by itself.

# Ear Infections in Adults

**Infectious myringitis** — Infectious myringitis is inflammation of the eardrum, caused by infection from either viruses or bacteria.

**Acute mastoiditis** — The bone that can be felt immediately behind the ear is called the mastoid. Acute mastoiditis is infection of this bone. The symptoms include reddened and swollen skin over the bone, fever, discharge from the ear and intense pain. This is a serious condition, which if not treated, can lead to deafness, blood poisoning, meningitis and paralysis of the face.

**Cholesteatoma** — A cholesteatoma is an abnormal growth of skin cells in the middle ear. It causes a chronic or recurring middle ear infection often with foul-smelling pus, and hearing loss. Any adult with chronic or recurring middle ear infections should discuss this with their GP who may arrange referral to an ear, nose and throat specialist for further investigation and treatment.

**Vestibular neuronitis** — Fluid-filled semicircular canals (labyrinth) attach to the cochlea and nerves (called vestibular nerves) in the inner ear. They send information on balance and head position to the brain. Vestibular neuronitis is inflammation of the vestibular nerve, probably caused by a viral infection.

The main symptom is sudden and dramatic vertigo (a feeling of spinning around), which may be accompanied by nausea and vomiting.

**Herpes zoster of the ear & Bell's palsy**— Herpes zoster of the ear is an infection of the auditory nerve by the herpes zoster virus. Symptoms include ear pain, vertigo (a feeling of spinning), and small blisters on the outer ear and ear canal and perhaps on the face and neck. The main nerve of the facial muscles may also become infected, leading partial paralysis, called "Bell's Palsy". Not all causes of Bell's Palsy are due to the Herpes Zoster virus.

## Treatment of Ear Infections

Treatment depends on the type and location of the infection and may include:

- professional cleaning of the ear canal
- keeping ears free of water, especially for otitis externa
- eardrops containing antibiotics or antifungal medication, and sometimes steroids (to reduce inflammation),
- oral antibiotics or sometimes antivirals
- pain-relieving or anti-inflammatory medications
- antihistamines or anti-nausea medications for vertigo
- intravenous antibiotics or surgery for very severe infections.

## Things to remember

- The ear can become infected by bacteria, fungi or viruses.
- Treatment depends on the type of infection, but can include antibiotics, antiviral, anti-inflammatory or pain-relieving medications, or surgery.
- Recurring or chronic ear infections are unusual in adults, and may be serious. Any adult with such infections should ask their GP to refer them to an ear, nose and throat specialist.

## Seeking help:



In a medical emergency go to your nearest emergency department or call 000.

