Ear infection

This fact sheet is for people who have presented to the emergency department with this condition.

This fact sheet provides general information. If you have specific concerns, speak to your healthcare professional for further information and advice.

What is an ear infection?

An ear infection is an infection found in one of the areas that make up the ear. The ear is made up of three parts:

Condition	Description
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 usually caused by a virus. Antibiotics are not required. Less commonly it is caused by bacteria and may require antibiotics. Sometimes the eardrum will burst, leading to a discharge of fluid. This will usually heal by itself.
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. If it is not treated it 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. The doctor may arrange a referral to an ear, nose and throat (ENT) specialist for further investigation and treatment.
Labyrinthitis	Labyrinthitis is inflammation of the labyrinth - a maze of fluid-filled channels in the inner ear
Vestibular neuritis/ neuronitis	Vestibular neuritis/neuronitis is inflammation of the vestibular nerve (the nerve in the inner ear) that sends information on balance and head position to the brain.

	The main symptom is sudden and dramatic vertigo (a feeling of spinning around). It may be accompanied by nausea and vomiting.
Herpes zoster oticus	Herpes zoster of the ear is when the auditory nerve is infected by the herpes zoster virus. Symptoms include ear pain, vertigo (a feeling of spinning), hearing loss, and small blisters on the outer ear and ear canal. The blisters may also appear on the face and neck. The main nerve of the facial muscles may also become infected, leading to facial weakness. Not all causes of facial weakness are due to the herpes zoster virus.

- **The outer ear** includes the parts of the ear you can see as well as the ear canal (called the external auditory meatus) that leads to the eardrum.
- **The middle ear** lies behind the eardrum and contains tiny bones (ossicles) that amplify sound.
- **The inner ear** is where the eustacian tube is found. This tube drains fluid from the middle ear to the throat. The cochlea is also in the inner ear. The cochlea translates electrical impulses to the brain to help with balance and head position.

Most ear infections occur in children, but they are also common in adults.

Types of ear infections

Symptoms

Your symptoms depend on the area of the ear that is infected. You may, or may not, also experience generalised symptoms such as loss of appetite, fever and headache. Some of the common infections and symptoms include the following:

Outer ear infection (swimmer’s ear or otitis externa)

- Itchiness
- Swelling, redness, heat around the outer skin or ear canal
- Pain or discomfort around or in the ear
- Discharge of pus or excessive fluid drainage

Middle ear infection (otitis media)

- Pain in the ear
- Mild deafness or noticing that sound is muffled
- Ear discharge

Inner ear infection (labyrinthitis, vestibular neuritis/neuronitis)

- Noises in the ear, such as buzzing or humming
- Loss of balance or feeling unsteady on your fee

Causes

Below is a list of causes and factors that contribute towards an ear infection:

- Bacteria, viral or fungal infections
- Upper respiratory tract infections, such as 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, as this can scratch the delicate tissues
- Cuts or scrapes to the outer ear area

Treatment

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

- 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 severe infections

What to expect

Recurring or chronic ear infections are unusual in adults and may be serious. Any adult with ear infections should ask their GP to refer them to an ENT specialist.

Return to your doctor if you experience any of the following:

- Severe ear pain with a headache
- An infection and you also have diabetes
- A worsening infection spreading around the outer ear and or the bone behind the ear
- Drooping of your face on the side of the ear infection
- Any other new symptoms affecting the muscle function of your face