Swimmer's ear

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Swimmer's ear is an infection or inflammation of the canal between the eardrum and the outer ear. This condition can be triggered by exposure to water, or mechanical damage due to overzealous cleaning. The infection can be caused by fungi or bacteria. Another name for swimmer's ear is otitis externa.

The ear is made up of three different parts:

- **Outer ear** - the part you can see
- **Middle ear** - separated from the outer ear by the eardrum. The middle ear contains tiny bones that amplify sound waves
- **Inner ear** - where sound waves are translated into electrical impulses and sent to the brain. It also houses the vestibular apparatus that controls position awareness and balance.

### Symptoms of swimmer's ear

Some of the symptoms of swimmer's ear include:

- Pain
  - The pain may be exacerbated by moving the head or pulling at the ear
- Itchiness
- Foul-smelling yellow or green pus in the ear canal
- Reduced hearing
- Noises inside the ear, such as buzzing or humming.

### Causes of swimmer's ear

Some of the causes and risk factors include:

- **Water** - dirty water can deliver bacteria to the ear canal. A wet ear canal is also prone to dermatitis. Tiny cracks or splits in the skin can allow bacteria to enter.
- **Mechanical damage** - attempts to clean the ears using fingernails, cotton buds or other objects may cut the delicate tissues of the ear canal and lead to infection.
- **Chemical irritation** - hairsprays, shampoos and hair dyes may get into the ear canal and irritate the tissues.
- **Middle ear infection (otitis media)** - an infection within the middle ear can trigger an infection or inflammation in the ear canal.
- **Diabetes** - this condition can make earwax too alkaline, which creates a more hospitable environment for infectious agents.
- **Folliculitis** - an infected hair follicle within the ear canal can trigger a generalised infection.
- **Narrow ear canals** - some people's ear canals are narrower than usual. This means that water can't drain as effectively.

### Complications of swimmer's ear

Some of the possible complications of swimmer's ear include:

- **Chronic otitis externa** - infection persists, or else keeps recurring.
- **Narrowing of the ear canal** - repeated infections can cause the ear canal to be narrowed by scar tissue. The risk of swimmer's ear is increased if water can't drain out properly. Narrow ear canals may also affect hearing.
- **Facial infection** - the infection may escape the ear canal, down small holes in the surrounding cartilage, and lead to painful facial swelling.
- **Malignant otitis externa** - the infection may spread to the bones and cartilage of the skull.

### Malignant otitis externa is a dangerous complication

Malignant otitis externa is the spread of infection to the bones of the ear canal and lower part of the skull. This may cause structural damage in severe cases. Without treatment, the infection may reach the cranial nerves and the brain. People with reduced immunity or diabetes are at increased risk of this complication. Malignant otitis externa is a medical emergency. If you have swimmer's ear and experience strange symptoms, such as dizziness or muscular weakness in your face, seek immediate medical help.

### Diagnosis of swimmer's ear

Swimmer's ear is diagnosed by physical examination. The skin of the ear canal will appear red, scaled and peeling when examined using an otoscope. The eardrum may
be inflamed and swollen. Microscopic examination of the discharge in the ear canal will, in most cases, tell the doctor whether the infection is caused by bacteria or fungi. The diagnosis can be confirmed by culturing a swab of pus. In the case of malignant otitis externa, further tests - including skull x-rays, magnetic resonance imaging (MRI) and computed tomography (CT) scans - are taken. Treatment depends on the degree of bone infection (osteomyelitis), but is generally lengthy and involves prolonged courses of antibiotics. Surgery may also be necessary.

Treatment for swimmer's ear

Treatment for swimmer's ear depends on the severity of the infection and the type of infectious agent, but may include:

- Thorough cleaning and drainage of the ear canal
- Measures to keep the ear canal dry, such as using earplugs or a shower cap while bathing
- Painkillers
- Heat packs held to the ear
- Anti-fungal preparations
- Antibiotic ear drops
- Steroid-based ear drops
- A wick inserted into the ear canal to deliver medicated drops close to the eardrum
- Oral antibiotics
- Intravenous antibiotics
- Surgery, to treat and drain infected skull bones.

Prevention strategies

Suggestions to reduce the risk of swimmer's ear include:

- Avoid swimming in dirty or polluted waters.
- Wear earplugs when you swim.
- Dry your ears thoroughly after exposure to water.
- To make sure that ear canals are completely dry, use a couple of drops of one part alcohol and one part vinegar in each ear.
- Plug your ears with cotton wool when using hair spray, shampoo or other chemical products.
- Don't be too enthusiastic about cleaning your ears.
- Avoid poking your fingers in your ears, because fingernails can cut the skin of the ear canal.

Where to get help

- Your doctor
- Ear specialist

References


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More information

Ear nose and throat

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- Ear basics
- Ear conditions
- Hearing loss
- Nose conditions
- Throat conditions

Ear basics

- Ear problems in children
  Babies and young children are more likely to develop middle ear infections because they are still building up their immunity.
- Ears
  The brain uses the inner ear, the eyes and muscles to pinpoint the position of the body at all times.
- Ear wax
  In most cases, blockage of the ear canal with wax is a harmless event.

Ear conditions

- Acoustic neuroma
In its earlier stages, an acoustic neuroma can present similar symptoms to other, less serious conditions, which may delay diagnosis and treatment.

- Benign paroxysmal positional vertigo (BPPV)
  Benign paroxysmal positional vertigo (BPPV) is a condition characterised by episodes of sudden and severe vertigo.

- Dizziness and vertigo
  Dizziness is generally treatable and rarely indicates serious brain disease.

- Ear infections
  It is estimated that around four out of five children will experience a middle ear infection at least once.

- Ears - Meniere's disease
  Meniere's disease affects the ear, which is the centre of hearing and balance.

- Ears - otosclerosis
  Otosclerosis eventually affects both ears, but the condition doesn't cause total deafness.

- Labyrinthitis and vestibular neuritis
  Labyrinthitis and vestibular neuritis are disorders that result in inflammation of the inner ear and the nerve connecting the inner ear to the brain.

- Middle ear infections
  Middle ear infections often happen during or after a child has a cold.

- Swimmer's ear
  Swimmer's ear can be triggered by exposure to water or mechanical damage due to overzealous cleaning.

- Tinnitus
  Tinnitus cannot be cured, but it can be managed with some lifestyle changes.

Hearing loss

- Deafness - a range of causes
  Deafness is caused by many different events including injury, disease and genetic defects.

- Ears - ways to protect your hearing
  Once hearing is damaged, it often can't be restored.

- Hearing loss - auditory neuropathy
  Auditory neuropathy is hearing loss caused by a disruption of nerve impulses travelling from the inner ear to the brain.

- Hearing loss - communication in the workplace
  If you are unsure how to best communicate with a colleague who has a hearing impairment, ask them.

- Hearing loss - how it affects people
  Many people with hearing loss experience a drop in self-esteem and confidence because of their impaired ability to communicate.

- Hearing loss - lipreading
  Lipreading can help people who are hearing impaired to cope better with their hearing loss.

- Hearing problems - hyperacusis
  Reduced sound tolerance can confine a person to their home, affect their career and social life, and make everyday activities impossible.

- Hearing problems in children
  The earlier that hearing loss is identified in children, the better for the child's language, learning and overall development.

- Hearing tests
  A ringing sensation in the ears (tinnitus), or people complaining that you talk too loudly are signs you may need to have your hearing checked.

- Sign language - Auslan
  Like any language, Auslan continues to evolve to meet the communication needs of people who are deaf.

Nose conditions
Adenoids
Since adenoids are constantly in the path of germs, infections are common.

Anosmia - loss of smell
People are less sensitive to smells the older they get, and women tend to have a more acute sense of smell than men.

Nosebleeds
Bleeding from the nose is common in children and is usually not severe or serious.

Polyps
Nasal polyps can sometimes interfere with breathing.

Sinusitis
If you suffer from sinusitis, it's important to see if there is any trigger which can be treated.

Throat conditions

Croup
Croup is a viral infection of the throat and windpipe that causes noisy breathing, a hoarse voice and a harsh, barking cough.

Larynx
Prolonged exposure to air pollutants, such as dust, can irritate the larynx and cause chronic laryngitis.

Rheumatic fever
Untreated rheumatic fever can lead to serious complications such as rheumatic heart disease.

Sleep apnoea
A person with sleep apnoea may wake hundreds of times every night.

Streptococcal infection - group A
Streptococcal infection ? group A can cause sore throats (pharyngitis), scarlet fever or impetigo (school sores).

Throat cancer
Risk factors for throat cancer include smoking and heavy alcohol consumption.

Related Information

Bird flu (avian influenza)
The symptoms of bird flu in humans are similar to those of regular influenza.

Flu (influenza)
Influenza (the flu) is caused by a virus. The flu is more than just a bad cold and can occasionally lead to serious complications, including death. Specific antiviral medication is available. It is...

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