

Ear Problems

Ear problems are not uncommon amongst divers. There are essentially two different causes: inflammation and pressure damage.

Inflammation of the external ear canal (medical term: otitis externa) is the most common ear infection amongst divers. This infection is caused by moisture in the ear canal and is therefore particularly common among people who are frequently in the water, i.e. swimmers. Within just a few hours or days, a mild itch may develop into an often painful inflammation. Pressure pain of the tragus, the small flap of ear directly in front of the ear canal opening, as well as pain when pulling on the ear conch are typical symptoms. In the beginning, pressure equalisation usually doesn't cause any problems but may become painful later. Your hearing is also not impaired initially. If the skin of the ear canal becomes severely swollen due to inflammation, however, your hearing may be reduced.



Even the slightest injury to the sensitive skin of the ear canal may be a trigger and injuries can be caused by e.g. improper cleaning with cotton buds, wearing earplugs or irritation caused by salt crystals and wind. Even too much ear wax together with moisture provides a good breeding ground for bacteria and fungi. If you regularly suffer from ear infection during your diving holidays, you should consult an ENT doctor before your trip.

If you have an outer ear infection, carefully rinsing the ear canals with clean tap water, drying your ears with a hair dryer after diving and using alcohol and vinegar based disinfectant ear drops can help in mild cases. These measures may be carried out as a precaution in the event of recurring ear infections.

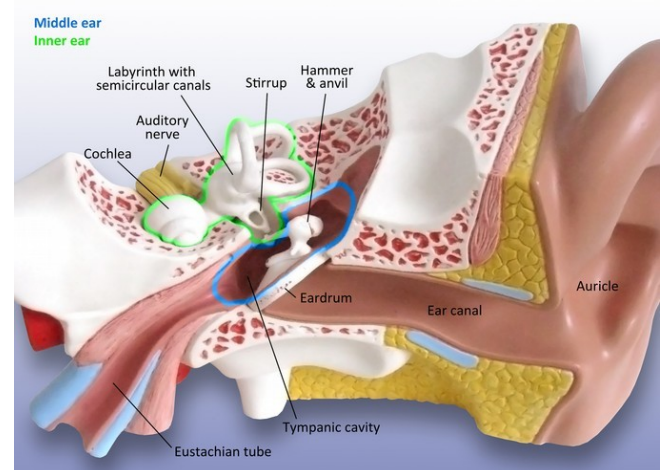
Severe infections require the use of antibiotics – in this case usually in the form of ear drops. The active ingredient ciprofloxacin is often used. These ear drops are only available on prescription. Some divers carry them in their medical kit in case they are needed. Anti-inflammatory pain relief such as Ibuprofen or Diclofenac is also often needed for the severe pain. Diving is not permitted with a severe ear infection. If

symptoms do not improve within a few days, you should visit a doctor.

A middle ear infection is not a typical diving illness. However, you can get one when diving with a cold or equalising pressure during air travel. Here, germs reach the tympanic cavity via the Eustachian tube and affect the mucous membrane in the middle ear. Reduced hearing on the affected side is typical and accompanied by a severe, throbbing earache that you get during a cold. Fever, dizziness and light-headedness may also occur. The eardrum may rupture in the event of severe inflammation, causing a discharge of pus.

It is important to distinguish between an inflammation of the middle ear and the external ear canal as treatment is completely different. Ear drops are ineffective for middle ear infections because they cannot penetrate the eardrum. Antibiotics must therefore be taken in tablet form. It should also be ensured that the middle ear is well ventilated. This is achieved by using nasal sprays or drops which reduce congestion in the mucous membrane of the nose and the Eustachian tube. The active ingredient xylometazoline is contained in most decongestant sprays. Of course, a person is not fit to dive until the infection has completely healed.

The increase in pressure in deep waters may cause damage to the eardrum and the structure of the middle ear. This is known as barotrauma of the middle ear. An affected diver usually reports problems with pressure equalisation preceding the earache. The eardrum is overstretched during the dive and may therefore rupture. Even if the eardrum does not rupture, there may be a build-up of fluids or blood in the middle ear. The diver experiences impaired hearing and when trying to equalise pressure, he may be aware of a squeaking or smacking sound. Often, only a dull feeling of pressure is noted, sometimes associated with dizziness.



Barotrauma is common amongst beginner divers who, due to the complex demands of diving, forget to equalise pressure regularly.

Version 02/2019

If severe pain suddenly occurs during the dive or pressure equalisation, this is usually an indication of a severe strain on the eardrum or a rupture. If cold water penetrates the middle ear through a rupture, this often results in dizziness, which can lead to disorientation and panic.

Germs can penetrate the tympanic cavity from the outside and subsequently cause a middle ear infection. If a rupture is suspected, it must always be assessed by a doctor so as to determine the necessary treatment and prevent any further damage. Some ear drops containing alcohol or certain antibiotics may permanently damage the inner ear if the eardrum is ruptured and must therefore not be used! In addition to painkillers, decongestant nasal drops are recommended in order to improve normal air supply to the middle ear via the Eustachian tube and to promote the discharge of secretions

from the middle ear through the nose. Antibiotics are often prescribed in tablet form for ruptured eardrums in order to prevent an inflammation until the rupture has closed. Small ruptures often heal by themselves although an operation may be necessary for larger ruptures.

In case of a perforated eardrum, diving is not permitted until the injury is fully healed, which can take several months. Following this, fitness to dive should be re-determined by an ENT doctor.

Ear problems can also indicate a decompression sickness: if you develop symptoms such as significant vertigo or severe loss of hearing during the first hours after a dive, please consult a doctor immediately.