

## ABOUT ARENA

**ARena aims at maintaining the effectiveness of antibiotics in the long run. To achieve this, resistance must be avoided or at least slowed.**

→ Within the scope of ARena, the necessity of antibiotics prescriptions is checked. The project focuses on certain common diseases, such as infections of the upper respiratory tract and otitis media or sinusitis, that only rarely require treatment with antibiotics.

→ Doctors in 14 networks in Bavaria and North Rhine-Westphalia have agreed to have a closer look at whether antibiotic prescriptions are really necessary. To improve essential knowledge, participating doctors take part in continual training, meet in quality circles with colleagues, obtain information and discuss in which cases antibiotics make sense and in which they do not. Some doctor's offices receive the support of special software tools; in others, non-medical staff are specifically trained. Additionally, patients and the public in the regions included in the project are informed concerning "treatment with antibiotics".

## GET WELL SOON

**and please always  
keep in mind:**

**Antibiotics are a precious commodity!**

**Antibiotics are not necessary in every case!**

**Help us maintain the effectiveness  
of these powerful drugs!**



### DO YOU WANT TO KNOW MORE?

Please visit our website at:  
[www.arena-info.de](http://www.arena-info.de)

# Choose to relax!



INFORMATION ON  
**MIDDLE EAR INFECTIONS**

**AND A SUCCESSFUL RECOVERY  
WITHOUT ANTIBIOTICS**

ARena

aQua  
ZUKUNFT DURCH QUALITÄT

MINISTERIUM FÜR GESUNDE  
LEBENSWEISE  
ARZTNETZE

KVB  
Kassenärztliche  
Vereinigung  
Bayerns

AOK  
Die Gesundheitskasse.

## CAUSE OF THE SYMPTOMS

**Ear pains can have many causes. They are often due to an (acute) infection of the middle ear, also called otitis media.**

Otitis media most often affects children and to a lesser degree adults. It usually occurs together with or subsequent to a common cold (influenzal infection).

**Further symptoms that can occur are:**

- fever,
- cough,
- vomiting (especially in children),
- general feeling of fatigue.

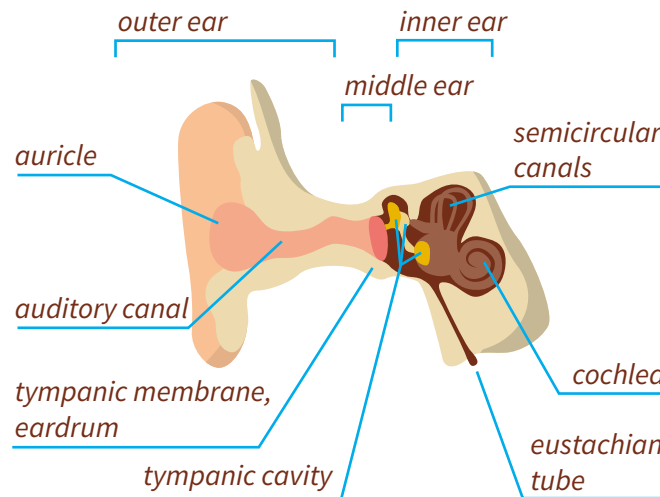
The inflammatory reaction in the mucous membranes of the respiratory tract caused by the cold results in an increased production of fluids and mucus. The swollen mucous membranes keep inflammatory fluids from draining properly through the tube connecting middle ear and pharynx; instead they collect behind the tympanic membrane (or eardrum). The pressure arising from this then causes ear pains. In the accumulating fluids, bacteria will often grow and cause a middle ear infection.

# Strong pain in the ear?

## LOCATION AND FUNCTION OF THE MIDDLE EAR

**The middle ear is located between the external ear and the inner ear.**

It consists of the tympanic membrane, the tympanic cavity (with auditory ossicles malleus (hammer), incus (anvil) and stapes (stirrup)) and the eustachian tube.



The main function of the middle ear is the transmission of sound. Sound waves striking the tympanic membrane are transmitted from middle ear to cochlea.

## WHAT YOU CAN DO YOURSELF

**About 80 % of (acute) middle ear infections heal spontaneously.**

A treatment with antibiotics is in most cases unnecessary, because the disease is usually caused by a virus. Antibiotics are ineffective against viruses!

You can use simple home remedies to reduce symptoms and pain:

### TIPS

- Rest.
- Stay hydrated.
- Take nasal decongestants (according to package insert).
- Apply warmth.
- With a fever: Apply leg wraps.
- If necessary and after consulting your doctor's office / pharmacy take a pain killer, e.g. ibuprofen or paracetamol.

## WHEN TO SEE A DOCTOR

Please see a doctor, if fever and pain persist for more than 48 hours!

**If symptoms occur in small children, please consult a doctor immediately.**