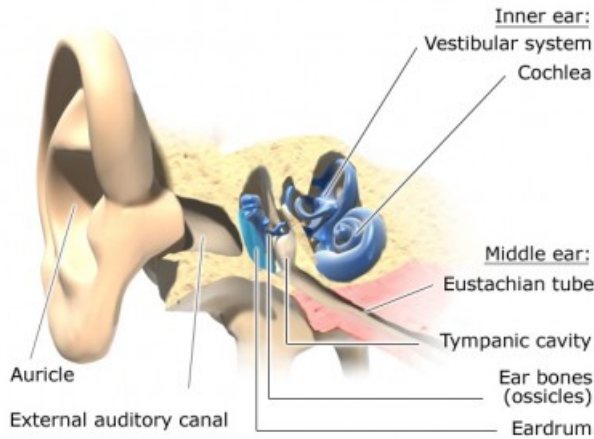


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INDEPENDENT, OBJECTIVE AND EVIDENCE-BASED

How does the ear work?

The ear picks up sound waves and transforms them into electrical signals which travel along nerves to the brain. The signals are "decoded" and interpreted by the brain. The sound may then be perceived as loud, quiet, speech, music or a message such as "the phone is ringing".



The ear has three parts:

- the outer ear (visible part, called "auricle" or "pinna", and external auditory canal)
- the middle ear (the eardrum or "tympanic membrane" and the tympanic cavity containing tiny ear bones. These are called the hammer, anvil and stirrup, or "ossicles")
- the inner ear (cochlea and the organ of balance, called the "vestibular system")

More about acute middle ear infection in babies and children in this video (URL: <http://www.informedhealthonline.org/index.781.en.html>).

You can learn about how the ear works in a second video (URL:

<http://www.informedhealthonline.org/index.780.en.html>)

.Sound waves reaching the outer ear cause the eardrum to vibrate. The vibrations are passed on from the middle ear to the inner ear. This is where the actual organ of hearing, the cochlea, is found. Fine hair cells in the cochlea play an important role in converting the sound waves into electrical signals. The organ of balance is also found in the inner ear.

Glossary

infection

In medicine, we speak of an infection when a person has caught a germ (an infectious agent). This germ can be a bacterium, a virus, a fungus or a worm. The germ multiplies and then either spreads throughout the body or only attacks one particular organ. As long as there are no signs of a disease, this is called an asymptomatic infection. When the body shows a reaction to the germ in the form of symptoms, this is called a symptomatic infection (an infectious disease). The period between the moment the germs enter the body and the moment the first symptoms of the disease appear, is called the incubation period. It may last a few hours or days, or even many years. An infection does not necessarily have to lead to the onset of a disease.

Sources

The German Institute for Quality and Efficiency in Health Care (IQWiG)

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

Evidence basis of our health information

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at **www.informedhealthonline.org**

Disclaimer

This information was prepared and published by the German Institute for Quality and Efficiency in Health Care (IQWiG). It is based on the evidence and other scientific literature available at the time of publication. The information is intended for the use of patients in Germany. It is not intended to for use to diagnose illnesses and the information is not intended to substitute for medical advice.