



## Earaches

### Insight into otitis media and treatments

- What is otitis media?
- How does the ear work?
- What are the symptoms?
- and more...

Otitis media means inflammation of the middle ear as a result of a middle ear infection. It can occur in one or both ears. Otitis media is the most frequent diagnosis recorded for children who visit physicians for illness. It is also the most common cause of hearing loss in children.

Although otitis media is most common in young children, it occasionally affects adults and occurs most commonly during the winter and early spring.

### *Is it serious?*

Yes, because of the severe earache and hearing loss it can cause. Hearing loss, especially in children, may impair learning capacity and even delay speech development. However, if it is treated promptly and effectively, hearing can almost always be restored to normal.

Otitis media is also serious because the infection can spread to nearby structures in the head, especially the mastoid. Thus, it is very important to recognize the symptoms (see list) of otitis media and to get immediate attention from your doctor.

### *How does the ear work?*

The outer ear collects sounds. The middle ear is a pea sized, air-filled cavity separated from the outer ear by the paper-thin eardrum. Attached to the eardrum are three tiny ear bones. When sound waves strike the eardrum, it vibrates and sets the bones in motion that transmit to the inner ear. The inner ear converts vibrations to electrical signals and sends these signals to the brain. The middle ear also helps maintain balance.

A healthy middle ear has the same atmospheric pressure as air outside of the ear, allowing free vibration. Air enters the middle ear through the narrow eustachian tube that connects the back of the nose to the ear. When you yawn and hear a pop, your eustachian tube has just sent a tiny air bubble to your middle ear to equalize the air pressure.

### ***What causes otitis media?***

Blockage of the eustachian tube during a cold, allergy, or upper respiratory infection, and the presence of bacteria or viruses lead to the accumulation of fluid (a build-up of pus and mucus) behind the eardrum. This infection is called acute otitis media. The build-up of pressurized pus in the middle ear causes pain, swelling, and redness. Since the eardrum cannot vibrate properly, hearing problems may occur.

Sometimes the eardrum ruptures, and pus drains out of the ear. But more commonly, the pus and mucus remain in the middle ear due to the swollen and inflamed eustachian tube. This is called middle ear effusion or serous otitis media. Often after the acute infection has passed, the effusion remains and becomes chronic, lasting for weeks, months, or even years. This condition makes one subject to frequent recurrences of the acute infection and may cause difficulty in hearing.

### ***What will happen at the doctor's office?***

During an examination, the doctor will use an instrument called an otoscope to assess the ear's condition. With it, the doctor will perform an examination to check for redness in the ear and/or fluid behind the eardrum. With the gentle use of air pressure, the doctor can also see if the eardrum moves. If the eardrum doesn't move and/or is red, an ear infection is probably present.

Two other tests may also be performed:

- Audiogram—This tests if hearing loss has occurred by presenting tones at various pitches.
- Tympanogram—This measures the air pressure in the middle ear to see how well the eustachian tube is working and how well the eardrum can move.

### ***How should medication be taken?***

The doctor may prescribe one or more medications. It is important that all the medication be taken as directed and that any follow-up visits be kept. Often, antibiotics to fight the infection will make the earache go away rapidly, but the infection may need more time to clear up. So be sure that the medication is taken for the full time your doctor has indicated. Other medications that your doctor may prescribe include an antihistamine (for allergies), a decongestant (especially with a cold), or both.

Sometimes the doctor may recommend a medication to reduce fever and/or pain. Analgesic ear drops can ease the pain of an earache. Call your doctor if you have any questions about yours or your child's medication or if symptoms do not clear.

### ***What other treatment may be necessary?***

Most of the time, otitis media clears up with proper medication and home treatment. However, your physician may recommend myringotomy. It involves a small surgical incision (opening) into the eardrum to promote fluid drainage and relieve pain. The incision heals within a few days with practically no scarring or injury to the eardrum. In fact, the surgical opening can heal so fast



that it often closes before the infection and fluid are gone. A ventilation tube can be placed in the incision to prevent fluid accumulation and thus improve hearing.

The surgeon selects a ventilation tube for your child that will remain in place until the middle ear infection clears up and the eustachian tube returns to normal. This may require several weeks or months. During this time, you must keep water out of the ears because it could start an infection. You will probably notice a remarkable improvement in hearing and a decrease in the frequency of ear infections.

Otitis media may recur as a result of chronically infected adenoids and tonsils. If this becomes a problem, your doctor may recommend removal of one or both. This can be done at the same time as ventilation tubes are inserted.

*Otitis media is generally not serious if it is promptly and properly treated. With the help of your physician, you and/or your child can feel and hear better very soon.*

*Be sure to follow the treatment plan, and see your physician until he or she tells you that the condition is fully cured.*

### ***What are the symptoms?***

In infants and toddlers look for:

- pulling or scratching at the ear, especially if accompanied by other symptoms;
- hearing problems;
- crying, irritability;
- fever;
- vomiting; and/or
- ear drainage.

In young children, adolescents, and adults look for:

- earache;
- feeling of fullness or pressure;
- hearing problems;
- dizziness, loss of balance;
- nausea, vomiting;
- ear drainage; and/or
- fever.

Remember, without proper treatment, damage from an ear infection can cause chronic or permanent hearing loss.



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