

## What is otitis media?

### Ear Infections: Facts for Parents about Otitis Media

Otitis media is an ear infection. Three out of four children experience otitis media by the time they are 3 years old. In fact, ear infections are the most common illnesses in babies and young children.

#### Are there different types of otitis media?

Yes. There are two main types. The first type is called **acute otitis media (AOM)**. This means that parts of the ear are infected and swollen. It also means that fluid and mucus are trapped inside the ear. AOM can be painful.

The second type is called **otitis media with effusion (fluid)**, or **OME**. This means fluid and mucus stay trapped in the ear after the infection is over. OME makes it harder for the ear to fight new infections. This fluid can also affect your child's hearing.

#### How does otitis media happen?

Otitis media usually happens when viruses and/or bacteria get inside the ear and cause an infection. It often happens as a result of another illness, such as a cold. If your child gets sick, it might affect his or her ears.

It is harder for children to fight illness than it is for adults, so children develop ear infections more often. Some researchers believe that other factors, such as being around cigarette smoke, can contribute to ear infections.

#### What's happening inside the ear when my child has an ear infection?

When the ears are infected the **Eustachian tubes** become inflamed and swollen. The **adenoids** can also become infected.

The eustachian tubes are inside the ear. They keep air pressure stable in the ear. These tubes also help supply the ears with fresh air.

The adenoids are located near the eustachian tubes. Adenoids are clumps of cells that fight infections.

Swollen and inflamed eustachian tubes often get clogged with fluid and mucus from a cold. If the fluids plug the openings of the eustachian tubes, air and fluid get trapped inside the ear. These tubes are smaller and straighter in children than they are in adults. This makes it harder for fluid to drain out of the ear and is one reason that children get more ear infections than adults. The infections are usually painful.

Adenoids are located in the throat, near the eustachian tubes. Adenoids can become infected and swollen. They can also block the openings of the eustachian tubes, trapping air and fluid. Just like the eustachian tubes, the adenoids are different in children than in adults. In children, the adenoids are larger, so they can more easily block the opening of the eustachian tube.

### **Can otitis media affect my child's hearing?**

Yes. An ear infection can cause temporary hearing problems. Temporary speech and language problems can happen, too. If left untreated, these problems can become more serious.

An ear infection affects important parts in the ear that help us hear. Sounds around us are collected by the **outer ear**. Then sound travels to the **middle ear**, which has three tiny bones and is filled with air. After that, sound moves on to the **inner ear**. The inner ear is where sounds are turned into electrical signals and sent to the brain. An ear infection affects the whole ear, but especially the middle and inner ear. Hearing is affected because sound cannot get through an ear that is filled with fluid.

### **How do I know if my child has otitis media?**

It is not always easy to know if your child has an ear infection. Sometimes you have to watch carefully. Your child may get an ear infection before he or she has learned how to talk. If your child is not old enough to say, "My ear hurts," you need to look for other signals that there is a problem.

Here are a few signs your child might show you if he or she has otitis media:

- Does she tug or pull at her ears?
- Does he cry more than usual?
- Do you see fluid draining out of her ears?
- Does he have trouble sleeping?
- Can she keep her balance?
- Does he have trouble hearing?
- Does she seem not to respond to quiet sounds?

A child with an ear infection may show you any of these signs. If you see any of them, call a doctor.

### **What will a doctor do?**

Your doctor will examine your child's ear. The doctor can tell you for sure if your child has an ear infection. The doctor may also give your child medicine. Medicines called **antibiotics** are sometimes given for ear infections. It is important to know how they work. Antibiotics only work against organisms called

**bacteria**, which can cause illness. Antibiotics are not effective against viruses, such as those associated with a cold. In order to be effective, antibiotics must be taken until they are finished. A few days after the medicine starts working, your child may stop pulling on his or her ear and appear to be feeling better. This does not mean the infection is gone. The medicine must still be taken. If not, the bacteria can come back. You need to follow the doctor's directions exactly.

Your doctor may also give your child pain relievers, such as acetaminophen. Medicines such as antihistamines and decongestants do not help in the prevention or treatment of otitis media.

### **How can I be sure I am giving the medicine correctly?**

If your doctor gives you a prescription for medicine for your child, make sure you understand the directions completely before you leave his or her office. Here are a few suggestions about giving medicine to your child.

**1. Read.** Make sure the pharmacy has given you printed information about the medicine and clear instructions about how to give it to your child. Read the information that comes with the medicine. If you have any problems understanding the information, ask the pharmacist, your doctor, or a nurse. You should know the answers to the following questions:

- Does the medicine need to be refrigerated?
- How many times a day will I be giving my child this medicine?
- How many days will my child take this medicine?
- Should it be given with food or without food?

**2. Plan.** Sometimes it is hard to remember when you have given your child a dose of medicine. Before you give the first dose, make a written plan or chart to cover all of the days of the medication. Some children may require 10 to 14 days of treatment.

Your chart might look like this if your child's prescription is for *3 times a day with food*:

**Maria's Medicine Chart**  
*Sample Only*

| <b>3 Times a Day<br/>With Food</b> | <b>Breakfast</b> | <b>Lunch</b> | <b>Dinner</b> |
|------------------------------------|------------------|--------------|---------------|
| Day 1                              |                  |              |               |
| Day 2                              |                  |              |               |
| Day 3                              |                  |              |               |
| Day 4                              |                  |              |               |
| Day 5                              |                  |              |               |
| Day 6                              |                  |              |               |
| Day 7                              |                  |              |               |
| Day 8                              |                  |              |               |
| Day 9                              |                  |              |               |
| Day 10                             |                  |              |               |

Put your chart on the refrigerator so you can check off the doses at every meal. Be sure to measure carefully. Use a measuring spoon or special medicine-measuring cup if one comes with the medicine. Do not use spoons that come with tableware sets because they are not always a standard size.

**3. Follow Through.** Be sure to give all of the medicine to your child. Make sure it is given at the right times. If your doctor asks you to bring your child back for a "recheck", do it on schedule. Your doctor wants to know if the ears are clear of fluid and if the infection has stopped. Write down and ask the doctor any questions you have before you leave his or her office.

**Will my child need surgery?**

Some children with otitis media need surgery. The most common surgical treatment involves having small tubes placed inside the ear. This surgery is called a **myringotomy**. It is recommended when fluids from an ear infection stay in the ear for several months. At that stage, fluid may cause hearing loss and speech problems. A doctor called an **otolaryngologist** (ear, nose, and throat surgeon) will help you through this process if your child needs an operation. The operation will require anesthesia.

In a myringotomy, a surgeon makes a small opening in the ear drum. Then a tube is placed in the opening. The tube works to relieve pressure in the clogged

ear so that the child can hear again. Fluid cannot build up in the ear if the tube is venting it with fresh air.

After a few months, the tubes will fall out on their own. In rare cases, a child may need to have a myringotomy more than once.

Another kind of surgery removes the adenoids. This is called an **adenoidectomy**. Removing the adenoids has been shown to help some children with otitis media who are between the ages of 4 and 8. We know less about whether this can help children under age 4.

### **What about children in daycare, pre-school, or school?**

Even before your child has an ear infection or needs to take medicine, ask the daycare program or school about their medication policy. Sometimes you will need a note from your doctor for the staff at the school. The note can tell the people at your child's school how and when to give your child medicine if it is needed during school hours. Some schools will not give children medicine. If this is the case at your child's school, ask your doctor how to schedule your child's medicine.

### **What else can I do for my child?**

Here are a few things you can do to lower your child's risk of getting otitis media. The best thing you can do is to **pay attention** to your child. Know the warning signs of ear infections, and be on the lookout if your child gets a cold. If you think your child has an ear infection, call the doctor.

**Do not smoke** around your child. Smoke is not good for the delicate parts inside your child's ear.

### **How can I get more information?**

You can get more information by contacting any of the following organizations.

#### **Agency for Healthcare Research and Quality (AHRQ)**

540 Gaither Road  
Rockville, MD, 20850  
Voice: (301) 427-1364, 8:30 a.m. - 5 p.m., Eastern time  
Toll-free Voice: (800) 358-9295  
Toll-free TTY: (888) 586-6340  
E-mail: [info@ahrq.gov](mailto:info@ahrq.gov)  
Internet: [www.ahrq.gov](http://www.ahrq.gov)

#### **American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS)**

One Prince Street  
Alexandria, VA, 22314-3357  
Voice: (703) 836-4444, 8:30 a.m. - 5 p.m., Eastern time

TTY: (703) 519-1585  
Fax: (703) 683-5100  
E-mail: [webmaster@entnet.org](mailto:webmaster@entnet.org)  
Internet: [www.entnet.org](http://www.entnet.org)

**American Speech-Language-Hearing Association (ASHA)**

10801 Rockville Pike  
Rockville, MD, 20852  
Voice: (301) 897-5700  
Toll-free Voice: (800) 638-8255, 8:30 a.m. - 5 p.m., Eastern time  
TTY: (301) 897-0157  
Fax: (301) 571-0457  
E-mail: [actioncenter@asha.org](mailto:actioncenter@asha.org)  
Internet: [www.asha.org](http://www.asha.org)

**American Academy of Pediatrics**

141 Northwest Point Boulevard  
Elk Grove Village, IL 60007-1098  
Voice: (847) 434-4000  
FAX: (847) 434-8000  
Internet: [www.aap.org](http://www.aap.org)

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