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Understanding Ear Infections

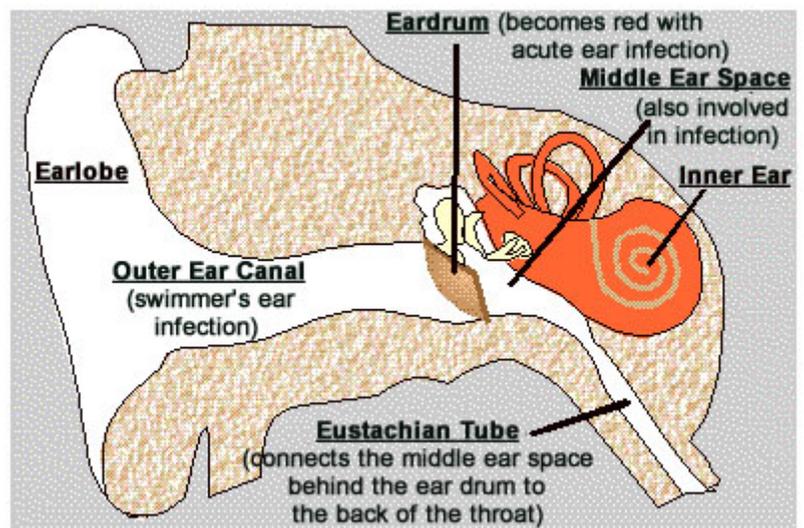
Many children get at least one ear infection during their early years, and some children get ear infections repeatedly. In fact, ear infections are responsible for more sick child visits to pediatricians than any other childhood illness. The following discussion will help you understand what happens during an ear infection, why these infections develop, and how they are treated.

What Is Otitis Media?

During an upper respiratory infection (cold), fluid may develop behind your child's eardrum.

When the fluid becomes infected, the condition is called acute otitis media. Acute otitis media (a typical ear infection) involves the eardrum and the middle ear space.

An uninfected, painless collection of fluid in the middle ear space is called otitis media with effusion.



Swimmer's ear infection occurs in the outer ear canal and does not involve the eardrum. If your child has extreme pain when the earlobe is gently pulled, this is probably a swimmer's ear. Swimmer's ear is usually treated with antibiotic ear drops. A swimmer's ear and an acute otitis media can occur at the same time, but the treatment is different (see below).

Are Ear Infections Contagious?

No. Your child cannot catch an ear infection from being exposed to another child who has an ear infection.

What Causes Ear Infections?

An ear infection is usually a complication of an upper respiratory infection (cold). During a cold, the eustachian tube becomes blocked, resulting in fluid collecting behind the eardrum. Children have shorter and more angled eustachian tubes than adults, making it easier for the eustachian tubes to become blocked. This fluid can then become infected with bacteria and viruses resulting in an ear

infection. As a child becomes older, the eustachian tubes become larger resulting in less ear infections.

Breastfeeding an infant lowers the risk of ear infections. The following situations increase the risk of ear infections:

- Exposure to frequent viral infections in day care
- Exposure to secondhand cigarette smoke
- A family history of frequent ear infections

How Do You Know When Your Child Has An Ear Infection?

The most common symptom of an ear infection is ear pain. While an older child can tell you that his ear hurts, a younger child may simply act irritable and cry more than usual. Lying down, feeding, and sucking cause painful pressure changes in the middle ear, so your child may eat less than the normal amount or have trouble sleeping.

Children may complain of difficulty hearing or loss of balance. If your child tugs at her ear, it may not be due to an ear infection. Ear pain or irritability can also be caused by a sore throat, teething, or swimmer's ear (pain when earlobe tugged gently).

Yellow or blood-tinged drainage from your child's ear is usually caused by an ear infection. With some ear infections, there is a pressure build-up behind the eardrum. To prevent damage to the eardrum, a small hole develops in the eardrum to allow this infection to drain and decrease the pressure. Within 24 hours of treatment, the eardrum usually heals without any permanent damage.

How Are Ear Infections Treated?

Ear infections are caused by bacteria and viruses. Ear infections caused by a virus may improve without treatment. Ear infections caused by bacteria require treatment with an antibiotic. When an ear infection is diagnosed in your child, it is not possible to differentiate by looking at the eardrum, whether the cause is a virus or bacteria. As a result, most ear infections are treated with antibiotics to help your child recover quicker.

The antibiotic most often prescribed is Amoxicillin. Amoxicillin has been used the longest in children and has the best safety record. Amoxicillin (lower dose) treats the most common bacterial causes of ear infections-bacteria called *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis*.

If your child has drainage with an ear infection, in addition to the oral antibiotic, it is necessary to use antibiotic ear drops. These drops are placed in the ear canal several times a day until the drainage has stopped (usually by 5 days). Children with ear tubes who develop drainage, also require the use of antibiotic ear drops.

There are some bacteria that are not killed by low dose Amoxicillin. These bacteria are said to be resistant bacteria and require one of the following changes in treatment:

- Increase the dose of Amoxicillin
- Continue Amoxicillin and add Augmentin
- Change to a different class of antibiotics

If your child is not better in 48 hours (continued ear pain, irritability or fever), this particular ear infection may be caused by one of these resistant bacteria and one of the above changes may be

necessary. Please call our office if you do not feel your child is better in 48 hours.

If your child improves when one of these above changes is made, this does not mean that your child is "immune" to Amoxicillin. Since most ear infections improve with Amoxicillin treatment, Amoxicillin is still the best antibiotic to try first if your child gets another ear infection in the future.

It is important that your child receive the antibiotic for the full time it is prescribed. If you have problems completing the full schedule (you run out of antibiotic, your child spills it, your child will not take it), call our office for a refill. Even though your child will be better in 48 hours, stopping treatment early may allow the ear infection to reoccur.

What Other Medicines Can I Give At The Same Time As An Antibiotic?

The following medicines can be given with an antibiotic:

- Acetaminophen (Tylenol)
- Ibuprofen (Advil, Motrin, or PediaCare Fever)
- Cold medicines (Pediapain, Dimetapp-DM, Triaminic)
- Wheezing medicines (Albuterol, Intal)

The ear pain caused by an ear infection usually decreases after 4-6 hours. Acetaminophen or ibuprofen will give your child the quickest relief until an antibiotic can be started. Warm compresses or a hot water bottle can be applied to the area around the ear to also relieve any discomfort. Be sure the compress or bottle is not too hot.

What Is Meant By "Fluid Behind The Eardrum"?

When a child has an upper respiratory infection, the eustachian tube behind your child's eardrum becomes blocked. The eustachian tube is normally an open channel that runs from the back of the throat to the back of the middle ear space behind the eardrum. This blocked eustachian tube results in fluid collecting behind the eardrum. This fluid is produced by cells in the middle ear space and will drain out after the eustachian tube opens. This can take up to 3 months.

It is common to have fluid behind the eardrum after an ear infection. However, not every child with fluid develops an ear infection. Fluid may be present in one or both ears.

Fluid in the middle ear does not cause your child any discomfort. It may cause a temporary decrease in hearing, which will return to normal once the fluid resolves. Persistent fluid may increase the risk of your child developing another ear infection after the antibiotic treatment is finished.

It is common for water to run into the outer ear canal when swimming, or taking a bath or a shower. The eardrum acts as a barrier and does not allow this water to pass into the middle ear space. Pulling the earlobe back to straighten the ear canal and gently shaking your child's head, will help clear this water from the ear canal. This water does not contribute to ear infections or fluid behind the eardrum.

Overuse Of Antibiotics

Antibiotics are only effective in treating bacterial infections. Common bacterial infections in children include: ear infections, sore throat (caused by Streptococcus), sinusitis, pneumonia, skin infections,

and urinary tract infections.

Most upper respiratory infections (URI's) in children are caused by a virus. Nasal congestion caused by a viral URI may last 2-3 weeks. A child's healthy immune system will effectively fight off a viral URI. Antibiotics will not cure or help a viral URI. Antibiotics should only be used if a child develops a bacterial infection as a complication of a viral URI.

The overuse of antibiotics can create problems. Antibiotics not only kill the bacteria responsible for an ear infection, but also the "healthy" bacteria in the digestive system resulting in diarrhea and more serious infections.

Antibiotic overuse has become a serious problem. Bacteria are capable of changing so they become resistant to treatment with certain antibiotics. Some bacteria have already become completely resistant to all currently available antibiotics.

If you are unhappy about your child not receiving an antibiotic when you feel one should be prescribed, please do not hesitate to discuss your concerns with our office. It is important for parents to understand not only why an antibiotic was prescribed but also why an antibiotic was not prescribed.

Is A Follow-Up Visit Recommended After Treatment For An Ear Infection?

It is common for fluid to be present behind your child's eardrum after treatment for an ear infection. Your child's ears should be checked 10 days to 4 weeks after an ear infection is diagnosed. If fluid is detected, it is important for your child's ears to be checked at least once a month until the fluid has cleared.

Some children who have fluid present after an ear infection, will continue to develop ear infections as long as there is fluid present. In these cases, Amoxicillin may be prescribed once a day to prevent another ear infection from developing. It will be given until the fluid begins to go away. This may require 3 months of treatment with daily Amoxicillin.

If the fluid does not show any improvement after being present 3 months, your child's hearing should be checked. In addition, a referral to an Ear, Nose, & Throat specialist may be necessary to determine if your child is a candidate for placement of ear tubes (tympanostomy tubes).

When Should You Call Our Office?

Your child should feel better 48 to 72 hours after starting to take an antibiotic. If such symptoms as fever, pain, and irritability are still present after two to three days of medication, call our office.

This information should not be used as substitute for the medical care and advice of your child's physician. Health related topics found on the Andorra Pediatrics web site should not be used for diagnosing purposes or be substituted for medical advice. As with any new or ongoing treatment, always consult your professional healthcare provider before making any changes in treatment or beginning any new treatment. If you have any questions or concerns, please call our office.