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## Ear infections: What every parent should know!

### Types of Ear Infections:

#### Otitis Externa

- aka Swimmer's Ear
- infection of the skin of the ear canal

#### Otitis Media

- more common type of ear infection
- infection of the space behind the ear drum known as the middle ear
- the focus of our discussion today

### What does your doctor see when they look at your ear drum?

- Normal ear exam – clear/translucent ear drum with air behind the TM
- Infected ear drum – thickened, red, pus-like fluid behind the ear drum

### Otitis Media Facts

- The most common treated childhood disease
- Ear infections account for 30 million annual physician visits
- 20% of children have at least one ear infection by age 2
- 33% of children have  $\geq 6$  Ear infections by age 7
- 90% of children have one episode of ear fluid by age 2
- Peak age of ear infections: 6 mo-18 mo, 4-5 years
- 80-90% of ear infections occur before age 6
- Children who have their first ear infection before age 1 are more likely to develop chronic ear infections
- Boys and girls are affected equally
- 42% of all antibiotics are prescribed to children

### How does an ear become infected?

- When the Eustachian tube (the tube which connects the middle ear with the back of the nose) fails to open normally, a vacuum is created inside of the middle ear. This vacuum may pull fluid from the surrounding tissues into the middle ear space. If bacteria from the back of the nose also get pulled in, the fluid may become infected resulting in an ear infection.
- The Eustachian tube can become blocked by swelling from

Why are ear infections more common in children?

- the immune system of a young child may not be fully developed/mature, preventing them from fighting infections easily
- the anatomy of the Eustachian tube when a child is first born is relatively flat, making it difficult to drain fluid from the middle ear into the back of the nose

What is the difference between an ear infection and ear fluid?

**Ear Infection:**

- infected fluid contains bacteria or viruses, is usually of sudden onset and generally resolves quickly
- Symptoms: fevers, irritability, decreased appetite, sleep disturbances
- Treatment: acute infection - Antibiotics vs watchful waiting; chronic – ear tubes

**Ear Fluid:**

- non-infected fluid is usually associated with more subtle symptoms. It can be of sudden onset or a slower onset and can resolve quickly or persist for a long time (6-8 weeks or longer).
- Symptoms: often asymptomatic, can have popping sensation, clogged feeling, difficulty hearing, balance disruption and milder pain than that seen with infected fluid.
- Treatment: initially, watchful waiting. If non-infected does not clear within 6-8 weeks, the likelihood of it clearing without intervention is significantly lower. If it persists beyond 3 months – surgical drainage +/- placement of ear tubes

Is there anything a parent can do to reduce ear infections in their children?

- Potentially modifiable factors:
  - o Breast feed for 3-6 months
  - o Avoid second hand smoke exposure
  - o Do not allow baby to lie flat with a bottle/sippy cup
  - o Daycare with 6 or more children in a setting increases risk of ear infections
- Non-modifiable factors:
  - o Genetics
  - o Allergies
  - o Gastro-esophageal reflux disease

Do you have to treat every ear infection?

- Whether to treat or watch to see if an ear infection clears spontaneously is controversial; a certain percentage of ear infections will clear (viral). It is often difficult to distinguish whether a bacteria or virus is responsible
- Antibiotics:
  - o Effective with bacterial infections
  - o Incomplete course of antibiotics can encourage bacterial resistance
  - o Newer studies show that antibiotics may be linked to permanent alterations in a child's metabolism with subsequent obesity
- Complications from not treating a bacterial infection:

- Perforated ear drum
- Spread of the infection to nearby structures (bone behind the ear, brain)

What are the consequences of untreated middle ear fluid?

- hearing loss (temporary)
- speech/language delays
- destruction of the hearing bones and weakening of the ear drum

What are ear tubes and how do they work?

- Ear tubes are a small tubular structure (about 1 mm in size) which allows air to enter into the middle ear space preventing the vacuum in the middle ear space which allows bacteria and fluid to enter the space. (See above question on how an ear becomes infected)
- Short acting tubes generally last for 6-18 months (on average 1 year), after which they typically fall out on their own and the ear drum closes. In most children, it is a temporary solution, buying a child time, to allow his/her Eustachian tube to mature and function properly.

When are ear tubes recommended?

- 6 or more ear infections in one year
- fluid which persists for 3 or more months, especially if associated with a hearing loss or speech/language delays
- complicated acute ear infection (sometimes even with the first infection)

What are the risks of placing ear tubes?

- general anesthesia
- prematurely blocked tube/tube stops working
- chronically draining ear tube (“runny ears” similar to runny nose)
- persistent perforation (1%) when the tube falls out
- failure to fall out

Please refer to our website for more detailed information:

**[napervillekidsENT.com](http://napervillekidsENT.com)**

There is an entire booklet on **middle ear disease/ear tube information** which can be found under the **Educational Resources** tab on our website.