

## Ear Infection

### What is an ear infection?

There are 2 common types of ear infections: otitis media (middle ear infection) and otitis externa (swimmer's ear). Most ear infections of young children occur in the middle ear.

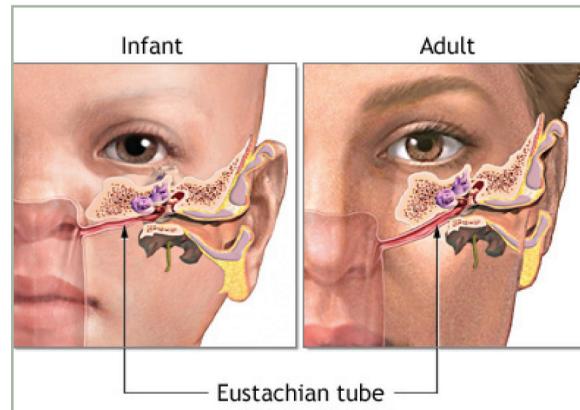
- **Otitis media:** The middle ear is the space behind the eardrum where tiny bones attached to the eardrum transmit sound across the air space of the middle ear to the inner ear. Otitis media occurs when mucus containing bacteria collects in the middle ear space, usually during or shortly after a viral upper respiratory infection (ie, a cold). Ear infections can be very painful. In older children, most ear infections resolve by themselves in a few days. However, in children younger than 24 months, ear infections can last longer. These younger children may benefit from antibiotics. Sometimes, pressure from the infection breaks the eardrum, and pus drains from the ear. There are several factors that increase the risk of middle ear infections.
  - Young age: Young children have an inexperienced immune system, get frequent viral respiratory infections, and have ineffective drainage of fluid and mucus from the middle ear to nose.
  - Children in group settings: Children who are exposed to large groups of other children have more frequent colds, increasing the odds of an ear infection.
  - Smoke exposure: Exposure to tobacco smoke or smoke from other sources, such as a wood-burning stove, increases the risk of middle ear infections.
- **Otitis externa (swimmer's ear):** Moisture and bacteria from water in a pool, lake, or stream promotes infection of the skin of the ear canal, producing painful swelling. Pus may collect in the ear canal.

### What are the signs or symptoms?

- Pain inside the ear or when moving the earlobe (mostly with infection of the ear canal)
- Fussing, irritability, crying, poor feeding, or ear pain
- May have fever
- Ear drainage

### What are the incubation and contagious periods?

- **Incubation period:** For middle ear infection, the incubation period is related to the type of virus or bacteria that is causing fluid buildup in the middle ear. For swimmer's ear, signs or symptoms usually appear within a day or so after swimming or getting water in the ear canal.
- **Contagious period:** Ear infections are not contagious.



Cross section of the ear. Children have a more horizontal eustachian tube, which predisposes them to getting and keeping fluids in the middle ear.



Child with ear infection

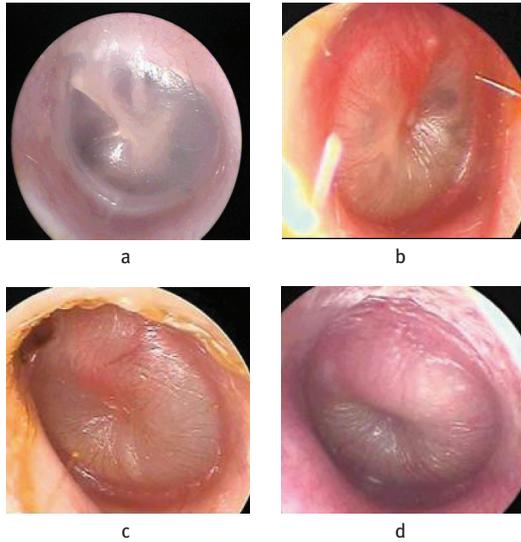
### How is it spread?

Middle ear infections are a complication of a respiratory infection. The virus or bacteria that led to the middle ear infection may be contagious but no more worrisome than other germs that cause the common cold. Swimmer's ear is a bacterial infection of the skin in the ear canal. Drainage from ear infections can contain bacteria and should be treated as wound drainage.

### How do you control it?

- For a middle ear infection
  - Prevention
    - ❖ Promote breastfeeding, which reduces the number of ear infections.

► *continued*



a, Normal tympanic membrane (TM); b, TM with mild bulging; c, TM with moderate bulging; d, TM with severe bulging

- ❖ Promote immunizations, which help reduce the number of ear infections caused by specific bacteria (eg, *Streptococcus pneumoniae*).
- ❖ Avoid exposure to cigarette smoke.
- Get treatment instructions from a pediatric health care provider. Sometimes, ear drops that numb the eardrum or an oral pain-reducing medication (ie, acetaminophen or ibuprofen) is all that is needed. Sometimes, the health care provider will prescribe antibiotics. Children younger than 24 months are more likely to need antibiotics than older children.
- For ear canal infections (swimmer's ear)
  - Prevent infection by rinsing out ear canals with warm, clean water or a solution of 1:1 vinegar and rubbing alcohol after swimming. Sometimes, health professionals will recommend a special ear wash after swimming if the child has a lot of trouble with ear canal infections.
  - Dry the ears by allowing the water to drain out onto a towel.
  - Get treatment instructions from a pediatric health care provider.

- For a child with ear drainage
  - Have the child evaluated by a pediatric health care provider. Drainage from the ear is a common occurrence if a child has ear tubes. Ear drainage does not require exclusion.

### What are the roles of the teacher/caregiver and the family?

Observe the child's signs or symptoms and arrange for family members to contact the child's health professional for management instructions.

### Exclude from group setting?

#### No, unless

- The child is unable to participate and staff members determine they cannot care for the child without compromising their ability to care for the health and safety of the other children in the group.
- The child meets other exclusion criteria (see Conditions Requiring Temporary Exclusion in Chapter 4).

### Readmit to group setting?

#### Yes, when all the following criteria are met:

When exclusion criteria are resolved, the child is able to participate, and staff members determine they can care for the child without compromising their ability to care for the health and safety of the other children in the group

### Comment

Some children in out-of-home child care get many ear infections each year. These children may receive surgically placed ear tubes to ventilate the middle ear and drain any fluid buildup from the middle ear into the ear canal. Parents/guardians should understand that the ear infections are a result of the child's age, smaller ear structures, and exposure to groups of other children and to cigarette smoke. Changing child care facilities is unlikely to reduce ear infections.