

MIDDLE EAR INFECTIONS AND EAR TUBES

What causes a middle ear infection?

A middle ear infection, also known as Acute Otitis Media (AOM), occurs when bacteria or viruses enter the middle ear through the nose and eustachian tube. Ear infections usually occur with an upper respiratory illness such as the common cold or flu. The eustachian tube connects the middle ear to the back of the nose and helps ventilate or drain the middle ear system. In children this tube is short and poorly functioning. As a child grows the tube lengthens and drainage improves. This makes it more difficult for bacteria or viruses to enter the middle ear.

What causes ear fluid (effusion)?

Fluid in the middle ear space is known as effusion. Effusion builds in the middle ear space because of infection and poor drainage. Antibiotics are supposed to kill the bacteria that cause the fluid to build up. The child still needs to drain the fluid, infected or otherwise. Adequate ventilation to the middle ear space allows for drainage of acute and chronic fluid.

What about hearing?

When the middle ear space is filled with infection or fluid it is common for hearing to be decreased (conductive hearing loss). Hearing can be tested in children of any age. An audiogram is a test used to determine hearing and the presence of fluid. This type of hearing loss is temporary and hearing is restored once the infection or fluid resolve. Chronic hearing loss can lead to speech and developmental problems.

What are ear tubes?

Ear or tympanostomy tubes are tiny cylinders placed in the ear drum (tympanic membrane) that allow ventilation and drainage into the middle ear from the outside ear canal. Ear tubes are also referred to as ventilation tubes, myringotomy tubes, or pressure equalization (PE) tubes. There are a variety of types of tubes. Tubes are temporary and may stay in place from six months to several years. Most are designed to fall out on their own. They can be made of either metal or plastic. We will select which type of tube is right for your child.

Who needs ear tubes?

There are several reasons to recommend placing ear tubes. The two most common reasons are recurrent middle ear infections or persistent middle ear effusion with hearing loss. Ear tube surgery is the most common pediatric surgery performed with general anesthesia. More than 500,000 tube surgeries are performed annually.

Placing tubes may reduce the risk of future ear infections; allow infection or effusion to drain; restore hearing loss caused by fluid; improve balance and speech problems; and improve behavior and sleep problems caused by chronic infections.

How are ear tubes placed?

For pediatric patients, tubes are placed in an operating room during a brief surgical procedure. This requires a general anesthetic. Usually, no IV or breathing tube is needed. A puncture incision is made in the ear drum and the tube is placed in the incision. Infection or effusion will be removed during the procedure. If the ear is infected, a sample of the fluid may be sent to the lab for culture to determine what type of bacteria is present. Antibiotic ear drops are placed in the ears and may be recommended for a period of time after surgery. The patient may resume normal activities including travel the day after the procedure.

What are possible complications associated with ear tubes?

Placing ear tubes is a safe and common procedure with minimal complications. If a problem does occur it may be one of the following:

Perforation- can occur when a tube comes out of the ear drum and the hole does not close. At some point it may be necessary to close the perforation, which may require a surgical procedure.

Scarring- any irritation of the ear drum including recurrent ear infections or insertion of ear tubes can cause scarring. In most cases, this type of scarring does not affect hearing.

Infection- ear infections can still occur in the middle ear or around the ear tube. These infections are usually less frequent and are easier to treat, often only with drops.

Tubes come out too early or stay in too long- if an ear tube expels from the ear drum too soon, fluid may return and repeat surgery may be needed. Ear tubes that remain in too long may need to be removed.

Tube replacement – some children require replacement of tubes. This occurs when repeated infection, fluid or hearing loss occurs after tube extrusion.