



## **CHILDREN'S RECURRENT EAR INFECTION, HEARING LOSS, GLUE EAR and EAR GROMMETS**

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One out of every three primary school aged children will have some form of middle ear condition, often with reduced hearing.

Recurrent infections of the middle ear cavity are the most common cause of illness requiring medical attention. This condition causes ear pain, fever, irritability, and temporary hearing loss. Young children who cannot describe their discomfort will often tug at the ear. Most ear infections either resolve on their own with painkillers (viral) or are effectively treated by antibiotics (bacterial). Recurrent infections can be prevented with the insertion of ventilating tubes (grommets) in the ear drum.

Fluid can often accumulate and persist in the middle ear space following an acute infection. This is known as otitis media with effusion or glue ear. Sometimes ear infections and/or fluid in the middle ear may become a chronic problem leading to hearing loss, behaviour and speech problems. In these cases, insertion of grommets by an ENT surgeon may be considered to drain the fluid and prevent it from recurring.

### **WHAT ARE EAR TUBES?**

Ear tubes are tiny cylinders placed through the ear drum (tympanic membrane) to allow air into the middle ear. They also may be called grommets, tympanostomy tubes, myringotomy tubes, ventilation tubes, or PE (pressure equalization) tubes.

These tubes can be made out of various materials and may have a coating intended to reduce the possibility of infection. There are two basic types of ear tubes: short-term and long-term. Short-term tubes are smaller and typically stay in place for six months to a year before falling out on their own. Long-term tubes are larger and have flanges that secure them in place for a longer period of time. Long-term tubes may fall out on their own, but removal by an ENT surgeon may be necessary.

### **WHO NEEDS EAR TUBES AND WHY?**

Ear tubes are often recommended when a person experiences repeated middle ear infection (acute otitis media) or has hearing loss caused by the persistent presence of middle ear fluid (otitis media with effusion). These conditions most commonly

occur in children, but can also be present in teens and adults and can lead to speech and balance problems, hearing loss, or changes in the structure of the ear drum. Other less common conditions that may warrant the placement of ear tubes are malformation of the ear drum or Eustachian tube, Down Syndrome, cleft palate, and barotrauma (injury to the middle ear caused by a reduction of air pressure, usually seen with altitude changes as in flying and scuba diving). It is the most common childhood surgery. The average age for ear tube insertion is one to three years old.

Inserting ear tubes may:

- Reduce the risk of future ear infection;
- Restore hearing loss caused by middle ear fluid;
- Improve speech problems and balance problems; and
- Improve behaviour and sleep problems caused by chronic ear infections.

### **HOW ARE EAR TUBES INSERTED IN THE EAR?**

Ear tubes are inserted through an outpatient surgical procedure called a myringotomy. A myringotomy refers to an incision (small hole) in the ear drum or tympanic membrane. This is most often done under a surgical microscope with a small scalpel. If an ear tube is not inserted, the hole will heal and close within a few days. To prevent this, an ear tube is placed in the hole to keep it open and allow air to reach the middle ear space (ventilation).

### **WHAT HAPPENS DURING SURGERY?**

A general anesthetic is administered, a myringotomy is performed and the fluid behind the ear drum (in the middle ear space) is suctioned out. The ear tube is then placed in the hole. Ear drops may be administered after the ear tube is placed and may be prescribed for a few days. The procedure usually lasts less than 15 minutes and patients awaken quickly.

Grommet surgery is often performed at the same time as other procedures such as adenotonsillectomy. Sometimes the ENT surgeon will recommend removal of the adenoid tissue (lymph tissue located in the upper airway behind the nose) when ear tubes are placed. This is often considered when a second or third tube insertion is necessary. Current research indicates that removing adenoid tissue concurrent with placement of ear tubes can reduce the risk of recurrent ear infections and the need for repeat surgery. Most patients recover within a few days of surgery and experience minimal pain.

### **WHAT HAPPENS AFTER SURGERY?**

After surgery, the patient is monitored in the recovery room and will usually go home within a few hours if no complications occur. Patients usually experience little or no postoperative pain, but grogginess, irritability, and/or nausea from the anesthesia can occur temporarily. Hearing loss caused by the presence of middle ear fluid is immediately resolved by surgery.

An audiogram is performed a few months after surgery, if hearing loss is present before the tubes are placed. This test will make sure that hearing has improved with

the surgery.

To avoid the possibility of bacteria entering the middle ear through the ventilation tube, the ears are kept dry by using ear plugs or other water-tight devices during bathing, swimming, and water activities.

### **POSSIBLE COMPLICATIONS**

Grommets are an extremely common and safe procedure with minimal complications. When complications do occur, they may include:

- Perforation - This can happen when a tube comes out or a long-term tube is removed and the hole in the tympanic membrane (ear drum) does not close. The hole can be patched through a surgical procedure called a tympanoplasty or myringoplasty.
- Scarring - Any irritation of the ear drum (recurrent ear infections), including repeated insertion of ear tubes, can cause scarring called tympanosclerosis or myringosclerosis. In most cases, this causes no problem with hearing.
- Infection - Ear infections can still occur in the middle ear or around the ear tube. However, these infections are usually less frequent, result in less hearing loss, and are easier to treat often only with ear drops. Sometimes an oral antibiotic is still needed.
- Ear tubes come out too early or stay in too long- if an ear tube expels from the ear drum too soon (which is unpredictable), fluid may return and repeat surgery may be needed. Ear tubes that remain too long may result in perforation or may require removal by an ENT surgeon.

Please let Dr. Chow know about any concerns you may have regarding grommet insertion.