

## Ear Tubes in Pediatric Patients: Get the Facts

- Insertion of ear tubes (tympanostomy tubes) is the most common ambulatory surgery performed on children in the United States
  - Each year, 667,000 children younger than 15 years receive ear tubes,
  - By the age of 3 years, nearly 1 of every 15 children (6.8%) will have ear tubes
- The most common reason for ear tubes insertion is the presence of persistent middle ear fluid, frequent ear infections, or ear infections that persist following antibiotic therapy (all of these conditions are encompassed by the term otitis media)
- Children younger than 7 years old are at increased risk of otitis media due to their immature immune systems and poor function of the eustachian tube (slender connection between the middle ear and back of the nose that normally ventilates the middle ear space and equalizes pressure with the external environment)
- Ear tubes help prevent recurrent ear infections and middle ear fluid accumulation, as well as the associated hearing problems
- Ear tubes are approximately 1/20<sup>th</sup> of an inch in width, and are placed in the child's eardrum (tympanic membrane) to ventilate the middle ear space
- The longevity of ear tubes varies depending on the type of tube used
  - Goal: for tubes to remain in place long enough for the child to outgrow the middle ear disease
  - Most tubes remain in place from 6 to 18 months, allowing children to outgrow their ear problems
  - There is no definite way to predict the duration of tubes' function
  - Usually tubes fall out spontaneously
- Children with ear tubes can usually swim or bathe without specific precautions such as earplugs or headbands. These devices may be necessary in the following situations
  - Pain or discomfort when water enters the ear canal
  - Discharge or drainage observed coming out of the ear canal
  - Frequent or prolonged episodes of ear discharge
  - Swimming more than 6 feet under water
  - Swimming in lakes or non-chlorinated pools
  - Dunking head in the bathtub

A variety of soft, fitted earplugs and special neoprene headbands are available

- Complications associated with ear tubes are usually minor
  - Some children develop a white mark or patch on the eardrum (sclerosis) or a small depression in the eardrum at the tube site after it falls out. These events do not affect hearing or future chance of ear infections
  - About 1 or 2 out of every 100 children will develop a small hole (perforation) of the eardrum after the tubes fall out, that often close on its own over time; if it does not, it can be patched in the operating room

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- Routine follow-up with clinician every 4 or 6 months is important to ensure that the tubes are in place and to check out for any possible complications
  - All children need follow-up, regardless of how well they are doing
- Once the tubes fall out, the child should return for a final re-check after 6-12 months so that clinician can examine the ears and ensure that fluid has not built up again
- Children with ear tubes may get ear infections (acute otitis media)
  - If an infection occurs, drainage or a bad smell from the ear canal is usually noticeable
    - Do not worry: drainage indicates that the tube is working to drain infection from the middle ear space
    - Most children do not experience pain or fever with an infection when tubes are in place and working
    - Ear drainage can be clear, cloudy, or even bloody
    - There is no danger to hearing
    - The best treatment is antibiotic ear drops alone
    - Ear drainage may build up or dry at the opening of the ear canal. If this happens, remove drainage with a cotton-tip swab dipped in hydrogen peroxide or warm water, a cotton ball to absorb drainage, or gently suction with an infant nasal aspirator
    - Prevent water entry into ear canal during bathing or hair washing by using a piece of cotton saturated with Vaseline to cover the opening; do not allow swimming until the drainage stops
    - To avoid yeast infections of the ear canal, do not use antibiotic eardrops frequently or more than 10 days at a time
    - Oral antibiotics are unnecessary for most ear infections with tubes unless the child is very ill, has another reason to be on an antibiotic, or the infection persists after using eardrops
  - If the child gets an ear infection without visible drainage of the ear canal
    - Ask primary doctor if the tube is open (functioning); if it is, the infection should resolve without the need for oral antibiotics or antibiotic ear drops
    - If the tube is not open, the ear infection should be treated as if the tube does was not there; the blocked tube does not do any harm and will not cause a problem, but it also does not do any good
- Call the ear doctor (otorhinolaryngologist) any of the following occur
  - The child's regular doctor cannot see the tube in the ear
  - The child has hear loss, continued ear infections or continued ear pain/discomfort
  - Drainage from the ear occurs frequently
  - There is excessive wax build up in the ear canal