Otitis media (glue ear or infection of the middle ear) is one of the most common childhood illnesses. Lack of treatment can affect the way a child's speech develops and cause them to fall behind at school. In a healthy ear, sound waves travel through the ear canal and make the eardrum move back and forth. This makes the three bones in the middle ear move. The movement of these bones sends sound waves across the middle ear to the inner ear. The inner ear sends the sound messages to the brain. However, if the middle ear has fluid in it, then the eardrum and the bones cannot move well. This could cause your child to have trouble hearing.

If your child has middle ear fluid, it means that a watery or mucus-like fluid has collected behind the eardrum. Many children get middle ear fluid during their early years.

Most health care providers and parents worry that a child who has middle ear fluid in one or both ears may have trouble hearing. Experts do not know how much middle ear fluid affects hearing. There is some evidence that hearing loss from middle ear fluid may cause delays in learning to talk, and sometimes later on, problems with school work. However, experts do not know for sure what the longterm effects of middle ear fluid are.

Acute Otitis Media (AOM)

An AOM episode (sometimes termed “suppurative OM”) is characterized by a sudden onset of ear pain that may be associated with fever, restlessness and some hearing loss. The ear infection will usually respond to medical treatment. In some unusual cases, AOM may result in a rupture or perforation of the tympanic membrane with drainage into the outer ear. If left untreated, ear infections may lead to more severe middle and inner ear conditions. More than 85% of all children experience at least one ear infection. Ear infections are second only to routine baby checks as the reason for office visits to the physician. Otitis media accounts for approximately 30 million office visits annually in the United States alone. Long, persistent otitis media with effusion (fluid in the middle ear space) may lead to permanent damage to the tympanic membrane or middle ear structures.

Otitis Media with Effusion (OME)

Otitis media with effusion (fluid) frequently follows an episode of AOM. In OME, fluid persists in the middle ear space, often for long periods of time. Fluid in the middle ear impedes the vibration of the tympanic membrane, as well as movement of the middle ear bones. This leads to various degrees of conductive hearing loss, depending on the thickness of the fluid. Usually the hearing loss associated with OME is mild to moderate. This may prevent the child from being able to hear all speech sounds. This is particularly harmful during the early years of language learning. To diagnose ear infections and middle ear effusion (fluid in the middle ear space), the physician can use a pneumatic otoscope to see the appearance of the eardrum and examine its ability to move (mobility) in response to small changes in air pressure.
Causes of Otitis Media

The most frequent cause of otitis media is dysfunction of the Eustachian tube. The adenoids, which lie behind the nose in the area where the opening of the Eustachian tube is located, may obstruct the Eustachian tube. More frequently, the adenoids may become infected and harbor bacteria that contribute to middle ear infections. Ear infections may also result from upper respiratory infections (URIs). Most middle ear problems occur during the winter months. Smoking in the home increases the risk of middle ear infections, and children with respiratory allergies have a greater incidence of otitis media. The child’s resistance to infection and his/her individual immune system status also play a role in the development of otitis media.

Treatment of Otitis Media

The treatment of acute otitis media usually includes antibiotics with or without other medications as prescribed by the physician. The treatment for otitis media with effusion is controversial. Often the condition subsides spontaneously or responds to medical treatment, usually without prolonged hearing loss or other complications. When OME does not resolve and hearing loss persists, ventilation or pressure equalizing (PE) tympanotomy tubes may be inserted in the eardrum. These tubes remain in the ear for several months or even a few years. Often when the tubes fall out, the Eustachian tube has further matured and has begun to function better. If this does not occur and middle ear fluid and hearing loss recur, a new set of tubes can be placed. While some children appear to suffer no negative consequences from OME, others may be at risk for delays in communication development and later academic problems. Most ear physicians (otologists or otolaryngologists), audiologists and other hearing specialists feel that children who have both OME and hearing loss persisting for three months should be considered for tube insertion. This is particularly true when the child is displaying speech, language, or academic problems. Tubes restore hearing to normal levels, prevent persistent middle ear fluid from recurring, diminish the frequency of acute ear infections, and prevent destructive changes to the bones as well as other, more serious ear complications. Some physicians also feel that frequent, repeated episodes of OME in early life, indicates the need for tube insertion. New clinical practice guidelines have recently been developed for the treatment of otitis media with effusion in young children. They suggest that the combination of unresolved OME and the presence of bilateral hearing loss indicate the need for tube insertion. Physicians and parents work together to individualize.

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