

## AAO-HNS Releases Updated Guideline on Management of Otitis Media with Effusion

### Key Points for Practice

- Pneumatic otoscopy should be the primary method for diagnosing OME.
- Tympanometry can confirm pneumatic otoscopy findings or be used as an alternative to otoscopy if visualization of the membrane is limited.
- An observation period of three months is recommended for OME.
- Counsel parents of infants with failed newborn screening due to suspected OME to follow up for testing to reduce the chance of a missed or delayed diagnosis of sensorineural hearing loss.

From the *AFP* Editors

Coverage of guidelines from other organizations does not imply endorsement by *AFP* or the AAFP.

This series is coordinated by Sumi Sexton, MD, Associate Deputy Editor.

A collection of Practice Guidelines published in *AFP* is available at <http://www.aafp.org/afp/practguide>.

**CME** This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz Questions on page 689.

Author disclosure: No relevant financial affiliations.

Otitis media with effusion (OME) is defined as the presence of fluid in the middle ear in the absence of signs or symptoms of acute ear infection. More than 2 million cases of OME are diagnosed in the United States each year, and approximately 50% to 90% of children are affected by five years of age. OME is a common cause of hearing impairment in children living in developed countries, and is associated with speech and reading difficulties, limited vocabulary, and attention disturbances.

This practice guideline from the American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) provides recommendations to improve diagnostic accuracy, identify children most at risk of developmental sequelae from OME, and educate physicians and patients on the natural history of OME and the lack of clinical benefits of medical therapy. Additional recommendations target OME surveillance, hearing and language evaluation, and management of OME detected during newborn screening. The target population is children two months to 12 years of age.

### Updates from the Previous Guideline

This is an AAO-HNS update of a 2004 guideline, which was developed in collaboration with the American Academy of Pediatrics and the American Academy of Family Physicians. Some of the changes include new evidence

from clinical practice guidelines, systematic reviews, and randomized controlled trials; an emphasis on patient education and shared decision making; expanded action statement profiles; additional information on pneumatic otoscopy and tympanometry for diagnosing OME; expanded information on speech and language assessment; new recommendations for managing a failed hearing screening result in newborns, evaluating at-risk children, and educating and counseling parents; a new recommendation against the use of topical intranasal steroids; a new recommendation against adenoidectomy for a primary indication in children younger than four years unless there is a distinct indication; and a new recommendation for assessing OME outcomes.

### Key Action Statements

#### STRONGLY RECOMMENDED

**Pneumatic Otoscopy.** *Clinicians should document the presence of middle ear effusion with pneumatic otoscopy when diagnosing OME in a child; additionally, they should perform pneumatic otoscopy to assess for OME in a child with otalgia, hearing loss, or both.*

Pneumatic otoscopy should be the primary method for diagnosing OME because reduced tympanic membrane mobility correlates most closely with the presence of fluid in the middle ear. Use of otoscopy improves diagnostic accuracy by reducing false-negative findings (from effusions that do not have obvious air bubbles or an air-fluid level) and false-positive findings (from surface changes or abnormalities in the tympanic membrane without middle ear effusion). In a systematic review of nine methods for diagnosing OME, pneumatic otoscopy had the best balance of sensitivity (94%) and specificity (80%) compared with myringotomy as the diagnostic standard.

## Practice Guidelines

Additionally, pneumatic otoscopy is efficient and cost effective, and the equipment is readily available.

**Tympanometry.** *Clinicians should perform tympanometry in children with suspected OME for whom the diagnosis is uncertain after performing (or attempting) pneumatic otoscopy.*

Tympanometry can confirm pneumatic otoscopy findings or be used as an alternative to otoscopy if visualization of the membrane is limited. Tympanometry can also objectively assess membrane mobility in patients who are difficult to examine or who do not tolerate insufflation.

**Watchful Waiting.** *In children with OME who are not at risk, clinicians should practice watchful waiting for three months from the date of effusion onset (if known) or three months from the date of diagnosis (if onset is unknown).*

Most cases of OME are self-limited. To avoid unnecessary referral, evaluation, and surgery in children with a short duration of OME, an observation period of three months is recommended. There is little potential harm associated with a period of observation in children with OME who are not at risk of speech, language, or learning problems.

### RECOMMENDED

**Failed Newborn Hearing Screen.** *Clinicians should counsel parents of infants with OME who fail a newborn hearing screen about the importance of follow-up to ensure that hearing is normal when OME resolves and to exclude an underlying sensorineural hearing loss; counseling should be documented in the medical record.*

OME is a common transient cause of hearing loss in newborns. The goal of this action statement is to reduce the chance of a missed or delayed diagnosis of sensorineural hearing loss in a newborn with a failed hearing screen attributed to OME without further investigation. One cohort study of failed screenings found that 11% of patients had sensorineural hearing loss in addition to transient hearing loss from effusion. Clinicians should stress the importance of follow-up to parents and caregivers because intervention before six months of age can reduce the effects of hearing loss on speech and language development. In newborns with a failed hearing screen and persistent hearing loss, referral to an otolaryngologist is recommended. Tympanostomy tubes should be offered to infants six months or older with hearing loss and bilateral OME for three or more months.

**Identifying and Evaluating At-risk Children.** *Clinicians should determine if a child with OME is at increased risk of speech, language, or learning problems from middle ear effusion because of baseline sensory, physical, cognitive, or behavioral factors. Those at risk should be evaluated for OME at the time of diagnosis of an at-risk condition and at 12 to 18 months of age (if diagnosed as being at risk before this time).*

At-risk children are likely disproportionately affected by hearing problems from OME. This includes children with permanent hearing loss independent of OME; blindness or uncorrectable visual impairment; developmental, behavioral, and sensory disorders (e.g., autism spectrum disorder); Down syndrome; cleft palate; or eustachian tube dysfunction associated with other craniofacial syndromes and malformations involving the head and neck. Evaluating for OME in at-risk children is important because symptoms may be subtle or absent. Evaluation should occur at the time a child is identified as being at risk and again between 12 and 18 months of age, because this is a critical age for language, speech, balance, and coordination development. If OME is detected, tympanostomy tubes should be offered if spontaneous resolution is unlikely.

**Patient Education.** *Clinicians should educate families of children with OME about the natural history of OME, the need for follow-up, and the possible sequelae.*

Providing verbal and written information to patients' families and including them in the decision-making process is recommended to improve outcomes. Discussions should address risk factors for developing OME, the natural history of the disease, the risk of damage to the eardrum and hearing, and options to minimize the effect of OME.

**Hearing Test.** *Clinicians should obtain an age-appropriate hearing test if OME persists for three months or longer or for OME of any duration in at-risk children.*

Chronic OME is associated with significant hearing loss in at least 50% of children, yet hearing testing is infrequently performed in the primary care setting. On average, OME leads to a decrease in hearing levels of 10 to 15 decibels. Testing methods include conventional audiometry, comprehensive audiologic assessment, and frequency-specific auditory-evoked potentials.

**Speech and Language.** *Clinicians should counsel the families of children with bilateral OME and documented hearing loss about the potential impact on speech and language development.*

In preschool-aged children, clinicians should ask parents or caregivers whether there are any concerns about the child's communication development. Clinicians should also ask about the child's speech and language abilities compared with normal progress for his or her age. Questionnaires or formal screening tests can be used to judge development. If communication delays are identified, prompt intervention can facilitate speech and literacy development, and improve long-term prognosis.

**Surveillance of Chronic OME.** *Clinicians should reevaluate children with chronic OME at three- to six-month intervals until the effusion is no longer present, significant hearing loss is identified, or structural abnormalities of the eardrum or middle ear are suspected.*

Reevaluating patients every three to six months using otoscopy, audiologic testing, or both is recommended to help parents and caregivers participate in shared decision making for management of chronic OME. Children who are not considered at risk of long-term sequelae may be observed for six to 12 months; however, prolonged surveillance is not recommended in children at risk of developmental sequelae. Although OME often resolves spontaneously, regular follow-up can ensure integrity of the tympanic membrane. A longer duration of effusion increases the risk of structural damage to the membrane. During surveillance, clinicians and parents may use autoinflation of the eustachian tube (e.g., Politzer devices), which may offer clinical benefit. If hearing loss is identified, hearing enhancement should be considered using strategies to optimize the listening-learning environment, assistive listening devices, or hearing aids.

**Surgery.** *Clinicians should recommend tympanostomy tubes when surgery for OME is performed in a child younger than four years; adenoidectomy should not be performed unless there is a distinct indication (e.g., nasal obstruction, chronic adenoiditis) other than OME. Clinicians should recommend tympanostomy tubes, adenoidectomy, or both when surgery for OME is performed in a child four years or older.*

Surgery may be appropriate based on a child's hearing status, associated symptoms, developmental risk, and the likelihood of spontaneous resolution. Shared decision making with the primary care physician and otolaryngologist can help parents and caregivers select the appropriate procedure, if surgery is chosen.

In children younger than four years, tympanostomy tube insertion can lead to improved hearing, reduced prevalence of middle ear effusion, reduced incidence of acute otitis media, and improved patient and caregiver quality of life. Adenoidectomy is not recommended in this age group because the benefits are limited and of questionable clinical significance; it should not be used as repeat surgery after tympanostomy tube insertion until a child reaches four years of age. This reflects a change from the previous guideline, which recommended adenoidectomy for repeat surgery in children as young as two years. In children four years or older, surgical options include adenoidectomy, tympanostomy tube insertion, or both. Various studies have shown that adenoidectomy in this age group leads to reduced failure rates, fewer days with OME, and a reduced rate of future tympanostomy tube insertion.

**Outcome Assessment.** *When treating a child with OME, clinicians should document in the medical record resolution of OME, improved hearing, or improved quality of life.*

The goals of management include resolution of effusion, restored optimal hearing, and improved disease-specific quality of life. Resolution of effusion in children

with an intact tympanic membrane can be documented by showing normal membrane mobility with pneumatic otoscopy or by recording a sharp peak on tympanometry with normal middle ear pressure or negative pressure. In children with tympanostomy tubes, resolution can be documented by showing intact and patent tube with otoscopy or by recording a large ear canal volume with tympanometry. To document hearing improvement, clinicians can record results of age-appropriate comprehensive audiometry. Quality-of-life improvements can be measured using a valid disease-specific survey, such as the OM-6, which consists of six questions on physical symptoms, hearing loss, speech impairment, emotional distress, activity limitations, and caregiver concerns.

#### RECOMMENDED AGAINST

**Screening Healthy Children.** *Clinicians should not routinely screen for OME in children who are not at risk and who do not have symptoms that may be attributable to OME, such as hearing difficulties, balance (vestibular) problems, poor school performance, behavioral problems, or ear discomfort.*

This statement is directed at large-scale, population-based screening programs in which all children, regardless of symptoms, comorbidities, or other concerning factors, are screened for OME. Population-based screening can lead to unnecessary testing, parental or child anxiety, and expenditure for a highly prevalent, self-limited, often asymptomatic condition. Assessing for OME is appropriate during well-child visits or if ear-specific symptoms are present.

#### STRONGLY RECOMMENDED AGAINST

**Steroids, Antibiotics, and Antihistamines or Decongestants.** *Clinicians should recommend against using intranasal or systemic steroids, systemic antibiotics, antihistamines, or decongestants for treating OME.*

Evidence does not support the routine use of steroids, antibiotics, antihistamines, or decongestants for the treatment of OME in children. Additionally, there is insufficient evidence for the use of complementary and alternative medicine for treating OME.

**Guideline source:** American Academy of Otolaryngology–Head and Neck Surgery

**Evidence rating system used?** Yes

**Literature search described?** Yes

**Guideline developed by participants without relevant financial ties to industry?** No

**Published source:** *Otolaryngol Head Neck Surg.* February 2016;154 (suppl 1):S1-S41

**Available at:** [http://oto.sagepub.com/content/154/1\\_suppl/S1.full](http://oto.sagepub.com/content/154/1_suppl/S1.full)

MARA LAMBERT, AFP Senior Associate Editor ■