Otitis Media, Tympanostomy Tubes, and Clinical Practice Guidelines from 2013

David E. Tunkel, MD
Chair, AAO-HNS Pediatric Otolaryngology Committee
Director of Pediatric Otolaryngology, Johns Hopkins Medical Institutions

Stephanie L. Jones
Director, Research and Quality Improvement, AAO-HNSF

In 2013, both the American Academy of Pediatrics (AAP) and the American Academy of Otolaryngology—Head and Neck Surgery Foundation (AAO-HNSF) published clinical practice guidelines (CPGs) that address the management of recurrent acute otitis media (AOM) and otitis media with effusion (OME), including treatment with tympanostomy tubes. In the table below we compare and contrast the different CPGs so clinicians can better understand the recommendations made by these two organizations.

Condition	CPG	Key Action Statement	Discussion Points
RECURRENT ACUTE OTITIS MEDIA (AOM)	**AAP** Clinical Practice Guideline on Acute Otitis Media1	Clinicians MAY offer tympanostomy tubes for recurrent AOM (three episodes in six months or four episodes in one year with one episode in the preceding six months).	This is considered an "option" for treatment of recurrent AOM. Most AOM guidelines before 2013 did not contain statements about tympanostomy tubes for recurrent AOM.
	AAO-HNSF Clinical Practice Guideline on Tympanostomy Tubes in Children[2]	Clinicians SHOULD NOT perform tympanostomy tube insertion in children with a history of recurrent acute otitis media who do not have a middle ear effusion in at least one ear at the time of evaluation.	Children in the control groups of antibiotic prophylaxis trials for prevention of AOM did not have middle ear effusions at trial entry and did have a favorable natural history, with most children experiencing less than two infections during the study period. Children with a history of recurrent AOM and a normal examination at presentation perhaps are "over-diagnosed," given the known difficulties of diagnosis of AOM in young children.
		Clinicians SHOULD offer tympanostomy tube insertion in children with history of recurrent AOM who have middle ear effusion in one or both ears at the time of evaluation.	Trials that did not exclude children with middle ear effusion suggest a modest reduction in number of episodes of AOM after tympanostomy tubes. While reduction of episodes of AOM is the primary goal, tympanostomy tubes may reduce pain during episodes of acute otitis media and can allow treatment of otorrhea with ototopical antibiotics.
OTITIS MEDIA WITH EFFUSION (OME)	**AAO-HNSF** Clinical Practice Guideline on Tympanostomy Tubes in Children[2]	Clinicians SHOULD NOT perform tympanostomy tube insertion in children with a single episode of OME of less than three months' duration, from the date of onset (if known) or from the date of diagnosis (if onset is unknown).	Short-term effusions can occur after viral infection or AOM and often resolve without therapy.
		Clinicians SHOULD offer tympanostomy bilateral tube insertion to children with bilateral OME for three months or longer AND documented hearing difficulties.	Hearing difficulties may include abnormal audiometry and other functional assessments of hearing status.
		Clinicians MAY perform tympanostomy tube insertion in children with unilateral or bilateral OME for three months or longer (chronic OME) AND symptoms that are likely attributable to OME that include, but are not limited to, balance (vestibular) problems, poor school performance, behavioral problems, ear discomfort, or reduced quality of life.	Otitis media with effusion can be associated with symptoms and conditions such as dysequilibrium, behavioral problems, and otalgia. Placement of tympanostomy tubes has been shown to improve disease-specific quality of life measures.
		Clinicians MAY perform tympanostomy tube insertion in at-risk children with unilateral or bilateral OME that is unlikely to resolve quickly as reflected by a type B (flat) tympanogram or persistence of effusion for three months or longer.	Tubes are an option for "at risk" children with OME and type B tympanograms. Who are these "at risk" children? 1) Children who likely will have increased consequence of the hearing and other effects of otitis media, and those where otitis media is unlikely to resolve. 2) "At risk" group includes children with: underlying hearing loss not from OME, speech-language delays, autism and other pervasive developmental disorders, craniofacial syndromes that include cognitive and communication delays, visual impairment, cleft palate, other developmental delays. "At risk" children are rarely included in otitis media trials, yet they may have greater need for interventions such as tympanostomy tubes.
CARE ISSUES FOR CHILDREN WITH TYMPANOSTOMY TUBES	**AAO-HNSF** Clinical Practice Guideline on Tympanostomy Tubes in Children[2]	Clinicians SHOULD prescribe topical antibiotic eardrops only, without oral antibiotics, for children with uncomplicated acute tympanostomy tube otorrhea.	This strong recommendation is made as ototopical drops have increased efficacy, treat organisms such as Pseudomonas aeruginosa and Staphylococcus aureus, and have few side effects. Children with complicated otorrhea, cellulitis of the ear, other bacterial infection such as sinusitis or pharyngitis, and children with impaired immune status may require systemic antibiotics when otorrhea occurs after tympanostomy tubes.
		Routine, prophylactic water precautions SHOULD NOT be encouraged for children with tympanostomy tubes.	Evidence from clinical trials shows no benefit or trivial clinical benefit from routine water precautions. Some children with tubes may benefit from water precautions in specific situations (lake swimming, deep diving, history of recurrent otorrhea, head dunking during bathing, or otalgia with water entry into the ear canal).