Otitis Media With Effusion

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Definitions 2013:

- **MEE = Middle Ear Effusion**
  - liquid in the middle ear without reference to etiology, pathogenesis, pathology, or duration

- **AOM = Acute Otitis Media**
  - The rapid onset of signs and symptoms of inflammation in the middle ear

- **OME = Otitis Media with Effusion**
  - Inflammation of the middle ear with liquid collected in the middle ear; the signs and symptoms of acute inflammation are absent.
Causes Of OME

- OME may occur spontaneously because of poor eustachian tube function or
- As an inflammatory response following AOM.
90% of children have OME at some time before school age,

Most often between ages 6 months and 4 years.

Many episodes resolve spontaneously within 3 months but

30-40% have recurrent OME and

5-10% of episodes last 1 year or more.
Symptoms of OME

- 40-50% of cases of OME have no complaints referable to the middle ear.
Associated Signs and Symptoms

- Mild, intermittent ear pain (popping)
- Infants not responding to sounds
- Hearing loss
- Recurrent AOM with OME in between
- Problems with school performance
- Balance, clumsiness, or motor problems
- Delayed speech or language development
Recommendation 3

- Clinicians should distinguish the child with OME who is at risk for speech, language, or learning problems from other children with OME and should evaluate hearing, speech, language, and need for intervention more promptly.
Risk Factors for Developmental Difficulties

- Permanent hearing loss independent of OME
- Suspected or diagnosed speech and language delay or disorder
- Autism spectrum or PDD
- Syndromes (Down) or craniofacial disorders that include cognitive, S&L delays
- Blindness or uncorrectable visual impairment
- Cleft palate with or without syndrome
- Developmental delay
What To Do If At Risk

(Available literature regarding management of OME mainly applies to otherwise healthy children.)

- Hearing testing
- S&L testing and therapy
- Hearing aids if also has SN hearing loss
- Tympanostomy tube insertion if indicated
- Hearing testing after OME resolves
Recommendation 4

Clinicians should manage the child with OME who is not at risk with watchful waiting for 3 months from the date of effusion onset (if known) or diagnosis (if onset is unknown).
Watchful Waiting For Children Not At Risk: Rationale

- Most OME is self-limited
  - 75-90% of OME following AOM resolves spontaneously by 3 months.
- Improvement may also be seen by change from Type B (flat) tympanogram curve.
- OME of $\geq$ 3 months duration resolves spontaneously in only $\sim$ 30%.
- Any intervention for OME carries risk of harm.
Watchful Waiting How To

- Inform caregiver about possible reduced hearing until OME resolves.
- 3 months may include interval visits:
  - Pneumatic otoscopy and/or tympanometry
- Factors determining appropriate intervals:
  - Clinical judgment, parental comfort level, access to health care system, child factors, hearing levels (if known)
- After resolution of OME, no follow-up necessary (in not-at-risk child).
Recommendation 6

- Hearing testing is recommended when OME persists for 3 months or longer or at any time that language delay, learning problems, or a significant hearing loss is suspected in a child with OME.

- Language testing should be conducted for children with hearing loss.
Hearing Testing Rationale

- Conductive hearing loss (CHL) frequent in OME.
- CHL may affect speech perception in noise and binaural processing.
- Hearing loss with OME ranges from 0-55dB.
  - 50th percentile of hearing loss is ~25dB
  - ~20% of ears with OME exceed 35 dB HL
- Children with greatest CHL for longest time at most risk for developmental and academic sequelae.
Screen Shows Hearing Loss

- Comprehensive audiologic evaluation recommended.
  - Air & bone conduction threshold for pure tones
  - Speech reception threshold
  - Specific testing method depends on age of child
- ABR & OAE not substitutes for above
Recommendation 7

- Children with persistent OME who are not at risk should be reexamined at 3- to 6-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.
Follow-up Rationale:

- If asymptomatic, OME may still resolve spontaneously.
- Children with chronic OME are at risk for structural damage of the TM.
- Hearing loss can cause delays as mentioned before.
Hearing Loss (HL) Action:

- HL of $\geq 40$dB: comprehensive audiological evaluation and surgery
- HL of 21 to 39dB: comprehensive audiological evaluation, individualize therapy, repeat hearing testing in 3 to 6 months if OME persists
- HL of $\leq 20$dB (normal hearing): repeat hearing test in 3 to 6 months if OME persists at follow-up evaluation