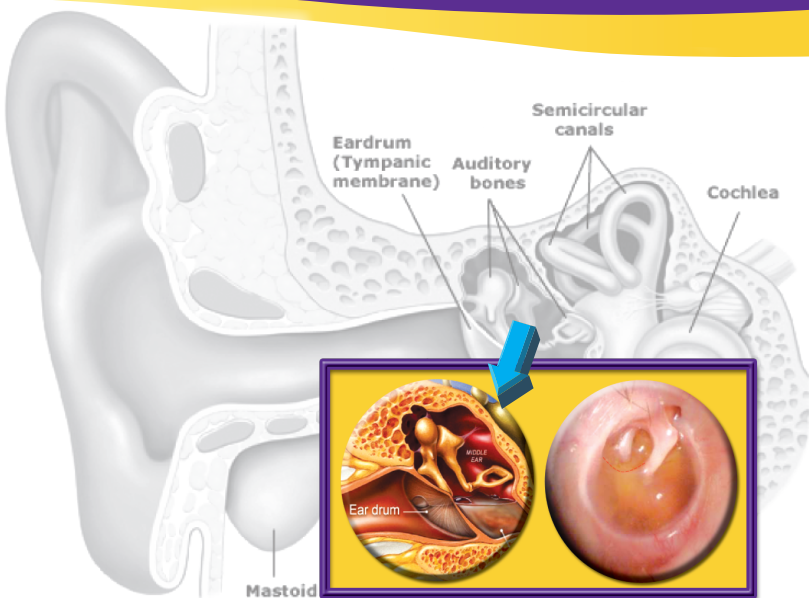


## QUICK REFERENCE

# Management of Otitis Media with Effusion in Children



Ministry of Health  
Malaysia



Malaysian Society of Otorhinolaryngologists  
Head & Neck Surgeons (MSO-HNS)



Academy of Medicine  
Malaysia

## KEY MESSAGES

1. Otitis Media with Effusion (OME) is a collection of fluid within the middle ear without signs of acute inflammation.
  - It is part of the middle ear disease spectrum which is different from acute and chronic suppurative otitis media (AOM and CSOM).
2. OME is a fluctuating condition with symptoms that vary with time and age, and may persist in some children. It is often underdiagnosed.
3. Untreated OME may lead to hearing impairment, speech and language developmental delay, and poor school performance. Long term complications include adhesive otitis media, ossicular chain disruption, retraction pockets and cholesteatoma.
4. Appropriate diagnostic tools to diagnose OME include pneumatic otoscopy, tympanometry and pure tone audiometry. Pneumatic otoscopy is the preferred choice in the primary care setting.
5. Active observation for 3 months is needed for newly-diagnosed OME prior to surgical intervention.
6. Short term (<6 weeks) intranasal steroid can be used for OME with concurrent allergic rhinitis and adenoid hypertrophy in children more than 2 years old.
7. Surgical intervention should be considered after 3 months of persistent OME with conductive hearing loss >25 dB and/or structural changes to the tympanic membrane or middle ear.
8. Special consideration has to be given to children with cleft palate and Down syndrome.





OME should be ruled out in a child with any of the following symptoms:-

- hearing impairment,
- speech or language developmental delay,
- associated presentation such as recurrent otalgia, upper respiratory tract infection or acute otitis media, poor school performance, lack of concentration or attention, and balance difficulties

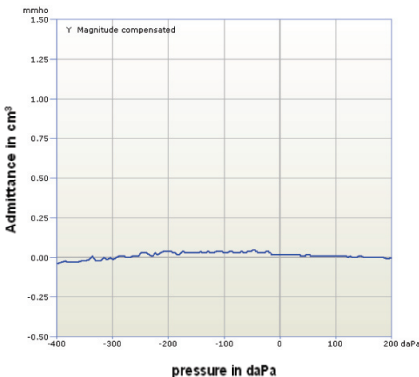
### Risk factors for developing OME:

- Non-medical risk factors:
  - young age (2 to 5 years old)
  - large family size
  - history of OME in sibling
  - short duration or no breast feeding
  - passive smoking
- Medical risk factors:
  - history of acute otitis media
  - nasal obstruction
  - history of acute tonsillitis
  - craniofacial anomalies such as cleft lip and palate, and Down syndrome

### CLINICAL FEATURES IN MIDDLE EAR DISEASES

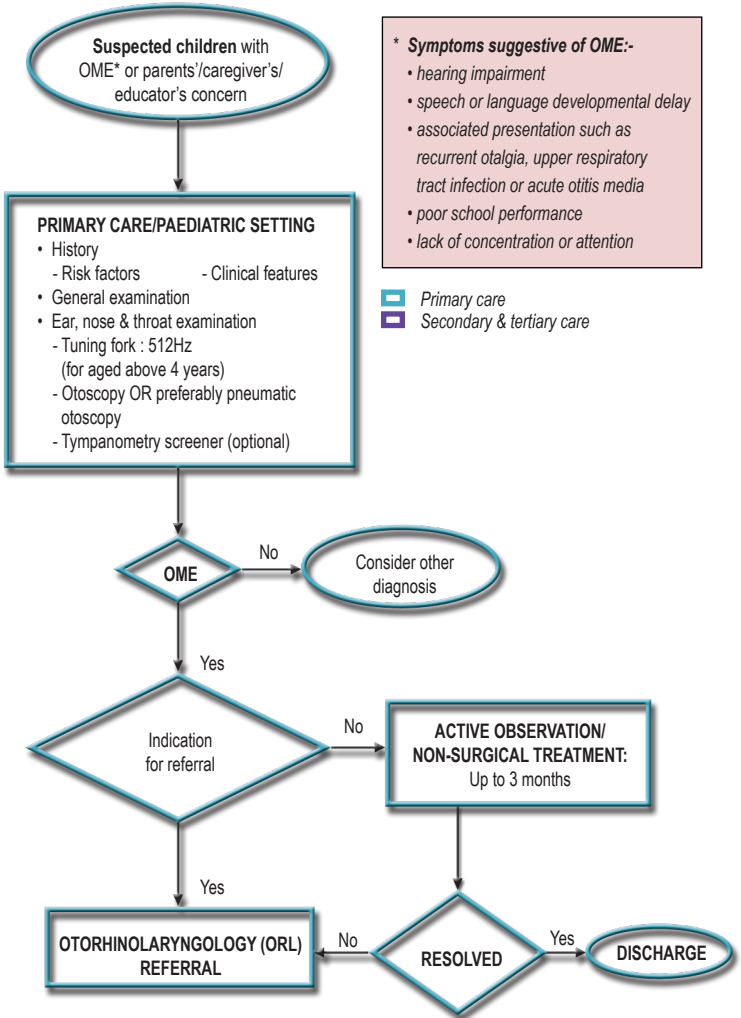
Clinical Features Disease	Pain	Fever	Otorrhoea	Otoscopic findings
<b>OME</b>	No (unless with secondary infection)	No	No	<ul style="list-style-type: none"> <li>dull tympanic membrane (TM)</li> <li>retraction of TM</li> <li>fluid level or air bubble</li> <li>TM colour change</li> <li>restricted TM mobility with pneumatic otoscopy</li> </ul> 
<b>Acute otitis media</b>	Yes	Yes	Yes	<ul style="list-style-type: none"> <li>bulging TM</li> <li>inflamed TM</li> </ul> 
<b>Chronic suppurative otitis media</b>	No	No	Yes	<ul style="list-style-type: none"> <li>perforated TM</li> <li>mucopurulent discharge</li> </ul> 
<b>Cholesteatoma (URGENT REFERRAL)</b>	No	No	Yes (scanty, foul smelling, persistent)	<ul style="list-style-type: none"> <li>attic or marginal perforation of tympanic membrane</li> <li>presence of keratin debris</li> </ul> 

### TYPE B TYMPANOGRAM

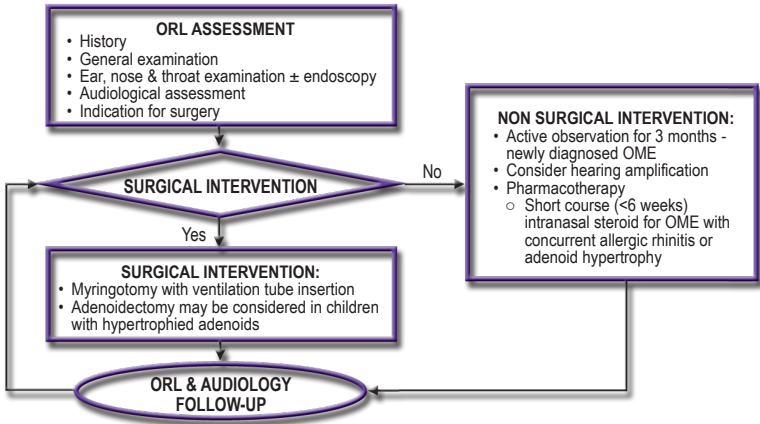


In type B tympanogram, there is no sharp peak (flat) with little or no variation in the impedance. This indicates presence of fluid in the middle ear (OME), tympanic membrane perforation or ear wax occluding the external ear canal. In OME, the ear canal volume is normal.

### ALGORITHM 1: MANAGEMENT OF OTITIS MEDIA WITH EFFUSION IN CHILDREN (PRIMARY CARE)



## ALGORITHM 2 : MANAGEMENT OF OTITIS MEDIA WITH EFFUSION IN CHILDREN (SECONDARY AND TERTIARY CARE)



### MANAGEMENT PLAN OF OME IN CHILDREN

The management of OME consists of active observation, non-surgical and surgical intervention.

#### A. ACTIVE OBSERVATION

**Active observation** is a period whereby patient is being observed for 3 months following diagnosis prior to surgical intervention.

**Advice on educational and behavioural strategies** to minimise impact of hearing loss during active observation:-

- Face the child when speaking
- Get the child’s attention before starting to talk
- Reduce background noise to the minimal
- Speak clearly with normal rhythm and volume; use visual cues (such as hands and pictures) in addition to speech
- Read to or with the child (explain pictures and ask questions)
- Repeat words, phrases, and questions when misunderstood
- In the classroom, the child should preferably be seated in the front row or near the teacher

- Children with newly diagnosed OME should undergo active observation as spontaneous resolution may occur. Specific advice\* to improve communication should be offered.
- Children with documented persistent OME (>3 months) and hearing loss should be considered for surgical intervention.

\*Refer to yellow box above.

**B. NON-SURGICAL INTERVENTION**

- There is no role of topical ear drops in treating OME.
- Short term (<6 weeks) intranasal steroid can be used for OME with concurrent allergic rhinitis and adenoid hypertrophy.
- In children with OME, the following treatment is not recommended:
  - oral steroid
  - prolonged intranasal steroid
  - antibiotic
  - antihistamine or decongestant
  - autoinflation
  - homeopathy and mucolytic
- Hearing aids may be considered in persistent bilateral OME and hearing loss where surgery is contraindicated or not acceptable.

**LIST OF MEDICATION DOSAGES AND SIDE EFFECTS  
IN CHILDREN WITH OME**

Drug Class	Drug	Recommended Dosages	Side Effects	Cautions and Contraindications	Comments
Steroids	Intranasal Mometasone Furoate	1 spray (50 mcg) in each nostril daily	Headache, cough, viral infection, epistaxis	May cause suppression of hypothalamic-pituitary-adrenal axis, particularly in younger children or in patients receiving high doses for prolonged periods	Not to be used in children below 2 years old
	Intranasal Beclomethasone Dipropionate	6 - 12 years of age: start with 1 spray (42 mcg) in each nostril twice daily; may increase to 2 inhalations in each nostril.	Epistaxis, localised Candida infection	May cause growth retardation in children	Not recommended for children below 6 years of age
	Intranasal Fluticasone Furoate	1 spray (27.5 mcg) in each nostril once daily (TDD = 55 mcg). Can increase to 2 sprays in each nostril once daily (TDD = 110 mcg)	Nasal ulceration, epistaxis, cough, nausea		Not recommended for children below 2 years of age

### C. SURGICAL INTERVENTION

- Surgical intervention should be considered after 3 months of persistent OME with:-
  - conductive hearing loss >25 dB **AND/OR**
  - structural changes to the tympanic membrane or middle ear
- Myringotomy with ventilation tube (VT) insertion is the treatment of choice for surgical treatment in OME.
- Myringotomy with VT insertion combined with adenoidectomy should be considered in children with persistent OME and hypertrophied adenoids abutting the torus tobaris.
- Recurrence of OME is part of the disease process which may occur at any point of time and not a complication of VT insertion.

- Advices to patients post-VT insertion:-
  - Keep ear dry.
  - Use ear plug when swimming or bathing (especially when washing hair using shampoo or soap).
  - Do not insert object into the ear.

### MANAGEMENT OF OME IN CHILDREN WITH CLEFT PALATE OR DOWN SYNDROME

- All children with cleft palate or Down syndrome (DS) should be managed by a multidisciplinary team.
- Hearing assessment should be performed early and 6-monthly in all children with cleft palate or cleft lip and palate (CLP) or DS.
- VT insertion:
  - o Should be performed early in cleft palate or CLP infants at the time of palatal repair.
  - o Should be considered in DS with OME after weighing its risks and benefits
- Hearing amplification:
  - o May be considered as an option in cases of mixed (conductive and sensorineural) and moderate hearing loss in children with cleft palate.
  - o Should be considered in children with DS who have OME as an alternative to VT where necessary.

## CRITERIA FOR REFERRAL

- Children with **any of the following features** should be referred to an otorhinolaryngologist for diagnosis and management of OME:-
  - hearing impairment or hearing loss due to uncertain causes
  - recurrent episodes of acute otitis media or otalgia
  - speech and language development not appropriate for age
  - impaired social or educational development and behavioural symptoms (lack of concentration or attention) associated with hearing impairment
  - underlying craniofacial anomalies, Down syndrome and cleft lip and/or palate
  - otoscopic findings such as colour changes, opacity or retraction of tympanic membrane and presence of fluid level or air bubble persisted after 3 months of active observation.
- Children with persistent OME after active observation for 3 months should also be referred to ORL.
- **URGENT REFERRAL** is required in the presence of **cholesteatoma**.

This Quick Reference provides key messages and a summary of the main recommendations in the Clinical Practice Guidelines (CPG) Management of Otitis Media with Effusion in Children (July 2012).

Details of the evidence supporting these recommendations can be found in the above CPG, available on the following websites:

Ministry of Health Malaysia: <http://www.moh.gov.my>

Academy of Medicine Malaysia: <http://www.acadmed.org.my>

Malaysian Society of Otorhinolaryngologists Head & Neck Surgeons (MSO-HNS): <http://www.msohns.com>

### CLINICAL PRACTICE GUIDELINES SECRETARIAT

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