

**SOP**  
**EAR EXAMINATION**  
**IN**  
**PAEDIATRIC PATIENTS**

**Department of Paediatrics**  
**Faculty of Medicine**  
**UWUSL**

# **Standard operating procedure (SOP) for the ear examination in paediatric patients**

## **Issued by**

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## **(1) Purpose**

To establish a standardized, safe, and effective procedure for ear examination in children to ensure accurate assessment of the external ear, ear canal, and tympanic membrane while maintaining patient safety, comfort, infection prevention, and quality of care.

## **(2) Scope**

This SOP applies to:

- Medical students
- Medical officers
- Nursing officers and trained healthcare providers involved in paediatric clinical care.

## **(3) Ethical and Academic Considerations**

- Maintain patient confidentiality
- Obtain informed consent from parent/guardian
- Ensure privacy during examination
- Use clean or sterile equipment as appropriate
- Follow infection prevention and control protocols
- Handle children gently and minimize distress

## **(4) Prerequisites**

- Confirm patient identity
- Adequate history obtained
- Parent/guardian informed about procedure
- Functional otoscope available
- Appropriate speculum sizes available
- Adequate lighting
- Hand hygiene facilities available

## **(5) Procedure**

<https://youtu.be/FE0sot4OoAE?si=Ugeo-erazQxMzRUq>

### (5.1)Pre-Procedure Preparation

- Introduce yourself to child and parent/guardian
- Explain procedure in age-appropriate language
- Address concerns and reassure child
- Obtain consent from parent/guardian
- Ensure child comfort and cooperation
- Wash hands thoroughly



Wet hands with water.



Apply soap.



Rub hands palms to palms .



Rub the back of each hands with fingers interlaced.



Rub palms together with fingers interlaced.



Rub with back of fingers to the opposing palms.



Rub each thumb clasped in opposite hands.



Rub the tips of fingers.



Rub each wrist with different hands



Rinse with water.



Dry thoroughly your hands.



Your hands are now clean.

- Wear gloves if discharge or infection is suspected
- Ensure otoscope is functioning properly

### (5.2)Positioning

When examining a child, both the head and body need to be gently immobilised to facilitate a safe and thorough otoscopic examination. This is best achieved by examining the child while seated on their parent's lap with the parent restraining the child with one hand placed firmly on the forehead, holding the side of the child's head against their chest and the other arm around the child's arms and body.



### **(5.3) Examining the ear**

Both ears must always be examined, and if disease is unilateral, it is advisable to examine the normal ear first. This allows variation in normal anatomy to be appreciated for that particular patient, and in the case of the discharging ear, avoids the possibility of cross infection.

#### **(5.3.1) General Observation**

Inspect for:

- Irritability or pain
- Fever
- Hearing difficulty
- Ear discharge
- Swelling around ear
- Facial asymmetry

Observe child's response to sound if hearing concern exists.

#### **(5.3.2) External Ear Examination**

Inspect both ears for:

- Symmetry
- Position
- Deformities
- Skin lesions
- Swelling
- Redness
- Discharge
- Trauma
- Preauricular pits or tags

Palpate:

- Pinna
- Tragus
- Mastoid area

Assess for tenderness or swelling.

### **(5.3.3) Preparation of Instruments**

Arrange equipment:

- Otoscope
- Appropriate ear speculum
- Tongue depressor if needed
- Gloves
- Gauze/swabs

Ensure:

- Adequate lighting
- Clean/disinfected equipment
- Appropriate speculum size selected
- Maintain infection prevention practices.

### **(5.3.4) Otosopic Examination**

#### **Choosing an otoscope**

A suitable otoscope with a pneumatic attachment is essential for reliable and accurate otological examination. It is essential that the otoscope is fully charged before each examination. An undercharged otoscope will produce poor light and impart an artificial yellow tinge onto the tympanic membrane. This may potentially lead to the misdiagnosis of straw-coloured middle ear fluid. For this reason, an otoscope with a direct power source or recharging facility is ideal in the examination room setting.

Optical Quality  
3X Magnification  
Lens

Ear Specula

Insufflator Port for  
Pneumatic Otoscopy  
(Insufflator Blub NOT  
Included)

ON/OFF  
Switch

Ergonomic  
Handle

2X AA Size  
Batteries  
Compartment  
(Batteries NOT  
Included)



### Select appropriate speculum size.

The largest speculum that comfortably fits within the external auditory canal should be chosen when examining the ear. This permits optimal visualisation and illumination.

Children have narrower canals and hence a speculum with an inner diameter of 4 mm is generally suitable. For otoscopy in babies, speculums of 2.5–3.0 mm inner diameter are required.



### Technique

The otoscope is always held by the physician in the hand that correlates with the side of the ear to be examined, the patient's right ear is examined with the otoscope in the examiner's right hand; the left ear is examined with the otoscope in the examiner's left hand. The otoscope is held using one of two techniques:

#### 1) Pencil grip technique

the otoscope is held like a pencil between the thumb and index finger, with the ring and little fingers resting against the patient's temple



## 2)Pistol grip technique:

The otoscope is gripped in the palm of the hand and the dorsal aspect of the index finger rests against the patient's cheek



Before inserting the speculum, the tortuous external ear canal must first be straightened  
In children, the canal is straightened by pulling the pinna

- Down and back in infants and young children
- Up and back in older children

Insert the speculum gently into the external auditory canal.  
Avoid forceful insertion.

### (5.3.5) Examination of External Auditory Canal

Inspect for:

- Cerumen
- Foreign body
- Discharge
- Redness
- Swelling
- Trauma
- Fungal debris

Assess canal patency.

### (5.3.6) Examination of Tympanic Membrane

Assess tympanic membrane for:

- Color
- Position
- Integrity
- Transparency
- Mobility if pneumatic otoscopy available
- Light reflex
- Presence of perforation
- Fluid level or air bubbles

Identify abnormalities such as:

- Acute otitis media
- Otitis media with effusion
- Tympanic membrane perforation.
- Retraction
- Cholesteatoma
- Compare findings in both ears.

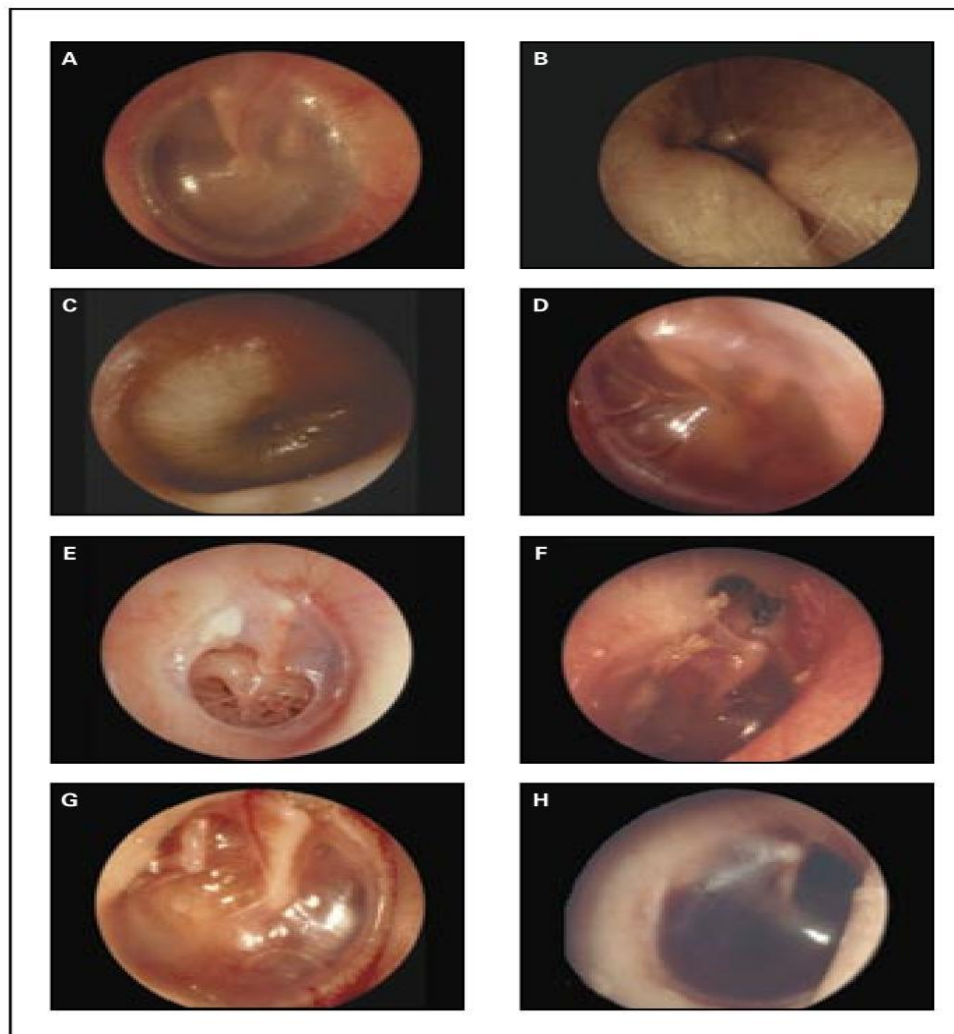
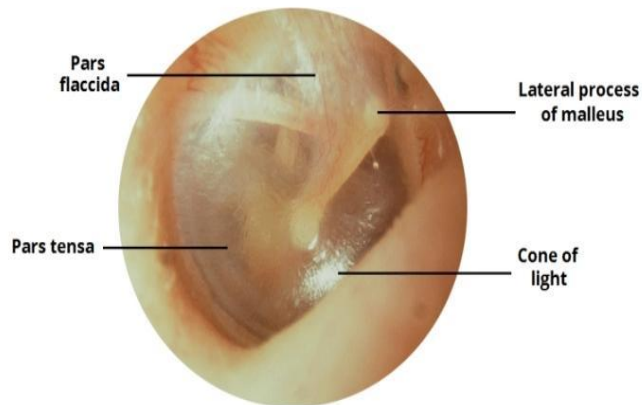


Figure 4. Common otoscopic appearances

A. Normal tympanic membrane  
B. Occluding exostoses  
C. Acute otitis media  
D. Serous middle ear fluid

E. Tympanic membrane perforation  
F. Attic cholesteatoma  
G. Retracted tympanic membrane  
H. Blood stained middle ear fluid due to barotrauma



**Figure 2**

A normal right tympanic membrane

#### **(5.4) Final Steps**

- Remove otoscope gently
- Reassure and comfort child
- Explain findings to parent/guardian
- Provide advice regarding management or follow-up
- Dispose of single-use materials appropriately
- Clean reusable equipment
- Perform hand hygiene after examination

#### **(6) Post-Procedure Observation**

Observe child briefly for:

- Discomfort
- Dizziness
- Bleeding
- Distress

Provide appropriate reassurance.

### **(7) Post-Examination Instructions**

Advise parent/guardian regarding:

- Medication use if prescribed
- Ear hygiene
- Avoid inserting objects into ear
- Water precautions if required

Advise immediate medical review if:

- Fever develops
- Ear pain worsens
- Persistent discharge occurs
- Hearing difficulty increases
- Swelling behind ear develops

### **(8) Records and Documentation**

Document:

- Date and time of examination
- Presenting complaint
- Findings in each ear
- Tympanic membrane appearance
- Presence of discharge/infection
- Hearing assessment findings if performed
- Diagnosis/impression
- Management plan
- Examiner name and designation

Update clinical records appropriately.

### **(9) Infection Prevention**

- Perform hand hygiene before and after examination
- Use gloves when appropriate
- Clean and disinfect otoscope after each patient
- Dispose of contaminated waste properly
- Follow institutional infection control protocols

## **(10) Follow-Up**

- Follow-up depending on diagnosis and severity
- Refer to ENT specialist if indicated
- Arrange audiology assessment when necessary
- Encourage parent/guardian to return if symptoms worsen

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