



Education Bureau

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The Government of the Hong Kong Special Administrative Region

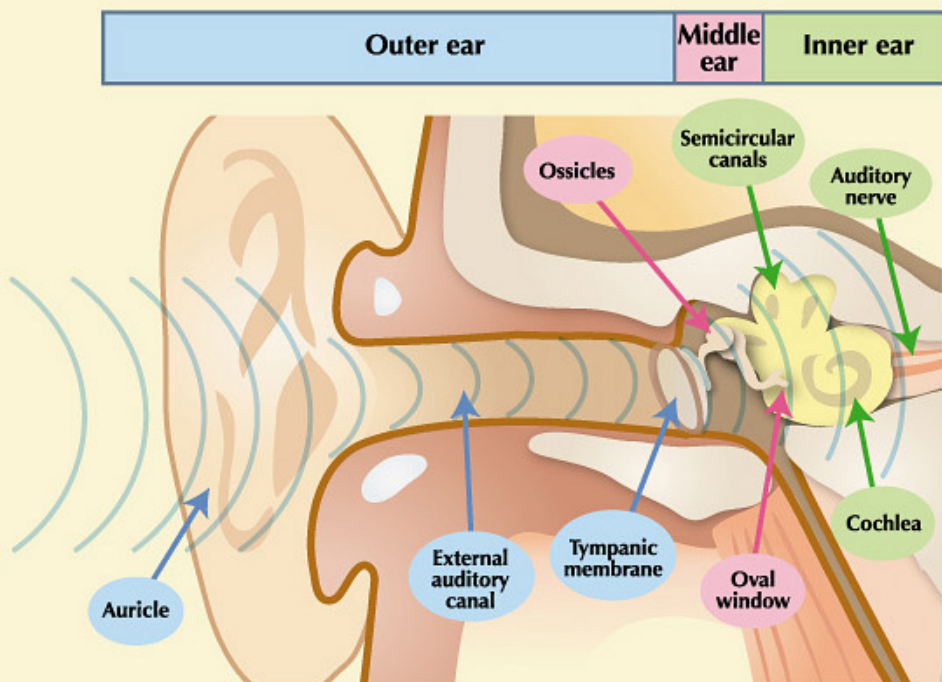
Early Identification of Hearing Problems of Children



Auditory System and Sound Transmission

A good hearing ability is essential for a child in his course of development to develop speech and communication skills, learn new ideas and respond to sudden warnings of danger. Any hearing impairment may affect the child's academic performance as well as speech, social and personal development. It is therefore useful to have some knowledge about sound and the auditory system for teachers and parents to find out whether their children have hearing problems.

To put it simple, sound is a wave which is created when air molecules vibrate. Sound waves are first collected, and their direction identified, by the auricle. They then travel down the auditory canal to the eardrum (tympanic membrane), causing the tympanic membrane and in turn the three chained ossicles to vibrate. Sound waves are thus transmitted from the outer ear, through the middle ear, to the inner ear. With the oval window and round window of the inner ear vibrating, the cochlear fluid starts to move, stimulating the hair cells to produce signals. These signals are transmitted via the auditory nerve to the brain where they are interpreted and made into meaningful sounds.



Observation Checklist

Hearing ability directly affects a child's development in many aspects, we must have identification as early as possible. As a first step to determine whether a child is suffering from hearing disorders, parents/teachers may, based on the following checklist, observe his behaviour and general response in daily life so as to collect more information. If the child is found to exhibit many of symptoms described in the checklist, parents/teachers should contact the Education Bureau as soon as possible to arrange comprehensive hearing assessment and appropriate intervention.

Speech Perception

- ☐ Difficult to detect sound source
- ☐ Often tilt his head to one side when listening
- ☐ Often move towards the speaker or stare at the face and lip movements of the speaker when listening
- ☐ Delayed response to soft noises
- ☐ Hard to understand others' words
- ☐ Always think people mumble or slur
- ☐ Have greater difficulty than others in understanding utterances in a noisy environment
- ☐ Always ask for repetition, e.g. "What did you say?" or "Please say it again."
- ☐ Often miss the point of a question or misinterpret instructions
- ☐ Often turn up the volume of the TV or radio
- ☐ Easily mix up words which are similar in pronunciation



Speech Expression

- ☐ Poor articulation
- ☐ Brief utterances
- ☐ Prone to grammatical mistakes
- ☐ Difficult to express ideas and feelings
- ☐ Delayed speech development



Others

- ☐ Not attentive in class
- ☐ Respond only after others have responded during class or activities
- ☐ Respond slowly to teachers' instructions during class or activities
- ☐ Encounter learning difficulties in subjects requiring much listening skills, e.g., Music (listening, singing and rhythmic movement etc.) and language subjects (dictation, listening, oral and story-telling etc.)
- ☐ Relatively passive and introvert, seldom talk with others
- ☐ Suffer from ear aches or tinnitus

Audiological Assessment

In receiving a general audiological assessment, the children only need to wear headphones and respond to sounds as instructed. Their hearing conditions can then be determined. With other tests, an audiologist can come up with suggestions on the appropriate rehabilitation programmes for individual cases.



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