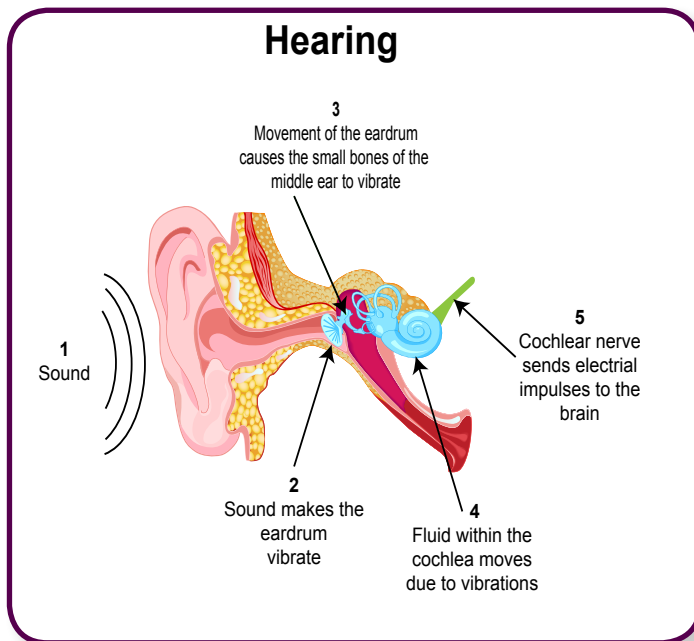


Your Child's Hearing Test Information for Parents and Carers

Soundfield Performance Audiometry

How Does Your Ear Work?



Sound occurs when a moving or vibrating object causes the air around it to move. Sound travels in invisible waves through the air.

When sound waves travel down the ear canal and hit the eardrum, the eardrum vibrates. Three bones in the middle ear link the vibrating eardrum to the cochlea in the inner ear.

The cochlea is filled with liquid that contains thousands of tiny hair cells. Movement of cochlear liquid causes the hair cells to bend and send electrical signals along the cochlear nerve to the brain. For normal hearing to occur, the brain has to receive the signals, then process and interpret them appropriately.

Soundfield Performance Audiometry

Background

Young children need to be able to hear speech sounds so that they can copy them and learn to talk. If a young child has a permanent hearing loss and cannot hear speech sounds in at least one ear, their speech development will not be normal.

The aim of Soundfield Performance testing is to find out if it is likely that a child can hear speech sounds, in at least one ear.

Soundfield hearing tests do not test each ear separately because a loudspeaker is used rather than headphones.

Conditioning Phase

To let the child know what they have to do, the tester may say “when you hear the noise, put the hoop on the stick” or “when you hear the noise, put the man in the boat”.

The action of putting the hoop on the stick or man in the boat will usually be demonstrated by the tester when the sound is initially presented. Initially sounds are presented at an intensity/loudness level (about 60dBHL) that can be heard comfortably by someone with normal hearing.

Successful conditioning will have occurred if a child waits for the sound, then puts the hoop on the stick or man in the boat when the sound is presented, at an intensity/loudness level that they can hear at.

The Assessment

Once a child has been conditioned, the hearing assessment can begin.

Testing is usually carried out for four different frequencies/pitches: 500Hz (similar to the “oo” sound in “boo”), 1kHz (similar to the “ah” sound in “bath”), 2kHz (similar to the “sh” sound in “shoe”) and 4kHz (similar to the “ss” sound in “hiss”).

Sounds are presented at different intensity/loudness levels and at irregular intervals, so that it is difficult for the child to anticipate when the sound is going to come on.

During the test some children may try to put the hoop on the stick or man in the boat before they hear the sound (“guessing behaviour”), despite successful conditioning.

The tester will ask the child to wait for the sound should this happens. If guessing behaviour continues, the conditioning phase may need to be repeated. Longer gaps may also be needed in between sounds being presented to make sure that true responses are being obtained.

The test will take longer when a child exhibits guessing behaviour, as more presentations are needed to establish a reliable result. A review appointment will be required when the Audiologist/s feel that a reliable result has not been achieved.

Other children lose interest in the play activity during the test and stop responding when sounds are presented, even though they are hearing them.

When this happens, the tester may change the play activity to try and make the test interesting again, so that testing can be completed.

The Results

When the assessment has been completed the following results are possible:

Satisfactory Result

If your child responded at a quiet level of 25dBHL for 500Hz, 1kHz, 2kHz and 4kHz with good reliability, this is considered to be a satisfactory result.

When a satisfactory result has been achieved, it is likely your child has sufficient hearing for the sounds of speech to be heard in at least one ear.

Satisfactory Result Not Achieved

1) Responses at a quiet level of 25dBHL, with good reliability, for one or two frequencies only
Reliability may be good for one or two frequencies, then poor subsequently. When testing for four frequencies has not been completed review will be needed. However, if 1kHz and 4kHz testing was completed, it is still likely that hearing is sufficient for the sounds of speech to be heard in at least one ear. If testing was completed for one frequency only, hearing is considered satisfactory for that frequency, in at least one ear.

2) Repeatable responses at a quiet level of 25dBHL but response reliability issues
If the tester/s felt that there was some uncertainty about response reliability, review will be required even when there were repeatable responses at 25dBHL for 500Hz, 1kHz, 2kHz and 4kHz.

A significant hearing loss in both ears is unlikely under these circumstances, but review is needed to make sure that your child meets the criteria for a satisfactory result.

3) Responses at elevated levels with response reliability issues

When responses are very variable it can be difficult to establish an accurate hearing test result. As previously described, some children exhibit frequent guessing behaviour and others lose interest in the play activity part of the way through the assessment. A review appointment will be required.

4) Responses at elevated levels with good reliability

A hearing loss is likely that may be temporary or permanent in nature.

The Audiologist/s should be able to give you an estimate of the degree of hearing loss that your child has in the better ear. Audiology will refer your child to an Ear, Nose and Throat (ENT) Consultant if they are not under the care of ENT already.

If you have any further queries about your appointment, please do not hesitate to contact us on
Tel:(01) 878 4577.

To arrange any further appointments, please contact the Audiology secretary on
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The information contained in this leaflet is correct at time of print