Healthier Communities,
Outstanding Care

NHS
Sherwood Forest Hospitals
NHS Foundation Trust

Audiology Services

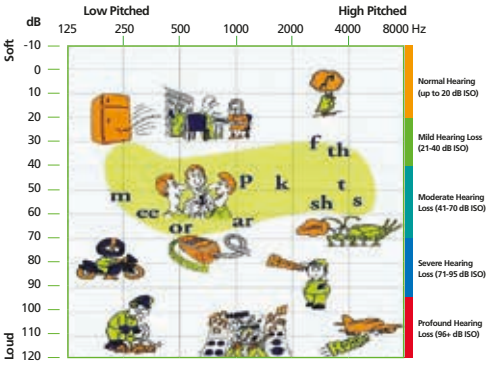
Paediatric Diagnostic Management Plan

Welcome to Audiology Services

Your child has been referred for a hearing assessment, which we have performed today.

The results of this are explained below, along with any problems this may be expected to cause.

The chart (right) is to give you a general view of where specific speech and environmental sounds lie. From the top to bottom, you can see sounds are getting louder, and from left to right the sounds are getting higher in pitch.



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Your child's audiogram classifies their hearing loss primarily as:

Mild

Your child may have difficulty following speech, especially in noisy situations. This degree of hearing loss can be difficult to pick up on as they may well sometimes respond well to speech or other noises. However, as they are unable to hear certain speech sounds as well as other children with normal hearing, speech development can be affected.

Moderate

Your child may often have difficulty following speech and other quiet noises, this may be worse in noisy situations. As they are unable to hear certain speech sounds as well as other children with normal hearing, speech development can be affected.

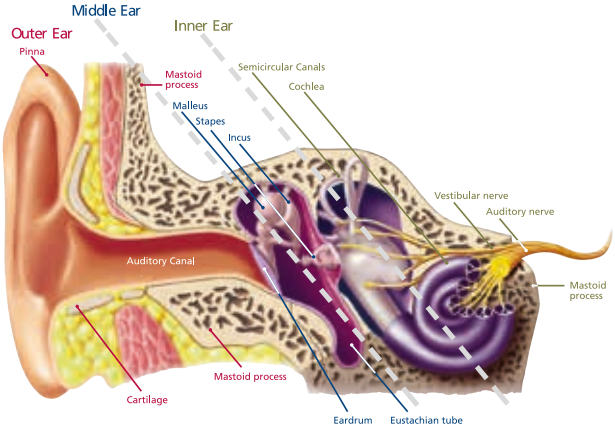
Severe

Your child is likely to struggle to hear speech even in quiet surroundings and may be unable to hear environmental noise such as traffic. Without amplification they will find it difficult to develop speech.

Profound

Your child is unlikely to be able to hear most sounds, unless very loud. They will be unaware of speech sounds, and so will not be able to develop speech without amplification. Some children find hearing aids aren't as effective as we would hope and so may need to consider cochlear implants.

Anatomy of the ear



Sound waves travel along the ear canal to the eardrum, and cause it to vibrate. The eardrum passes the vibrations through the middle ear bones and into the inner ear (cochlea). Inside the cochlea, there are thousands of tiny hair cells. The hair cells change the vibrations into electrical signals that are sent to the brain via the auditory nerve. The brain tells you that you are hearing a sound and what that sound is.

Causes of hearing loss

Hearing loss can be present at birth, known as congenital, or occur later, known as acquired. Hearing loss happens when one part of the ear - the outer, middle or inner ear is impaired, and cannot conduct sound signals to the brain normally.

Causes in the outer ear

This can include problems such as wax build up, infection in the ear canal and atresia (closure) of the ear canal.

Causes in the middle ear

Glue ear (fluid behind the ear drum), middle ear infection and perforation of the ear drum are all common causes of hearing loss in children.

Causes in the inner ear

This is a permanent type of hearing loss and can have a genetic cause or be caused by infection such as meningitis or Cytomegalovirus (CMV). Fine hair cells in the inner ear (cochlea) are malformed or become damaged and affect the transmission of signals to the auditory nerves. Usually, inner ear hearing loss cannot be addressed medically but can be corrected with hearing aids or cochlear implants in severe cases.

There are a number of simple ways in which you can help your child to hear better. Below are some tips to ease communication.

Manipulating the environment

It can be more difficult for hearing-impaired children to hear in noisy places such as a busy street or shop. Try to keep them close to you and get their attention before speaking.

There are ways you can reduce the effects of background noise at home. Turning the television down or shutting the door to sources of noise such as the washing machine will help when having a conversation.

School or nursery can also be a difficult environment as classrooms are often quite large and there is competing noise from other children. If your child is able to sit closer to the teacher then their voice will be easier to hear above any noise. It is also important that the teacher understands about your child's hearing and what they can do to help them hear in class as well as possible.

Tips for family and friends to help your child hear

- Ensure you have their attention before you start to speak. They will hear you more easily if you are in the same room.
- Don't speak too fast. Speech will be clearer if it isn't hurried and will be easier to understand.
- Face them so they are able to pick up visual clues and body language.
- Use familiar language.
- Don't shout as speech can become distorted and can be too loud. You may also appear aggressive.
- Don't turn away. Find a suitable place to talk with good lighting away from noise and distractions.
- Don't cover your mouth, speak clearly and use normal lip movements, natural facial expressions and gestures.

Sensitivity to loud sounds

Young children, commonly between the ages of 2-6 years, often dislike loud and sudden sounds. They may cover their ears, cry or want to run away. This is often an understandable and natural reaction. The world can be a noisy and scary place to a young child.

Some of the most common sounds that upset young children are:

- Hoover/hand drier
- Balloons popping
- Discos, loud music and parties
- Clapping/shouting
- Lorries/motorbikes
- Fireworks

What causes it?

Usually, the child's reaction is a result of their anxiety about a particular noise. It may have frightened them the first time they heard it. Now, they associate the noise with fear. Don't worry, this is very common and children nearly always grow out of it.

What you can do to help

It is important to know exactly what sounds trigger a negative reaction. The most helpful thing you can do is to warn your child when the noise is likely to occur. If your child becomes stressed at a certain sound, move them away from the sound (if possible). Then comfort and reassure them. Do not punish them. Once your child is settled, try to explain what made the sound and why. Understanding will help to reduce the anxiety. Often their anxiety can be reduced if they are gently allowed some control over the sound.

You can try recording the frightening sound. Then make a game with the recording. Start at a low volume and gradually increase it over time.

With time most children will lose their fear of a sound. Some situations like loud parties and discos may just be overwhelming, particularly if they are only a few years old. It may be best to avoid these situations until your child is a bit older.

The use of ear defenders/earplugs, for everyday situation is usually not advised as they need exposure to these sounds to enable them to get used to it. Also ear defenders will reduce all sounds and so the child will become used to the silence, making sounds seem louder when they are removed. They will also cut the child off from important auditory information, which can hinder development.

Date	Outcome of appointment	Plan for next appointment

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Further sources of information

NHS Choices: **www.nhs.uk/conditions**
Our website: **www.sfh-tr.nhs.uk**

Patient Experience Team (PET)

PET is available to help with any of your compliments, concerns or complaints, and will ensure a prompt and efficient service:

King's Mill Hospital: 01623 672222
Newark Hospital: 01636 685692
Email: sfh-tr.PET@nhs.net

C2Hear

Interactive multimedia videos on hearing aids and how to hear well:
Website: **www.c2hearonline.com**

Advanced Bionics - Rehab Portal

Website: **www.abrehabportal.com**

If you would like this letter or information in an alternative format, for example large print or easy read, or if you need help with communicating with us, for example because you use British Sign Language, please let us know. You can call the Patient Experience Team on 01623 672222 or email sfh-tr.PET@nhs.net

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