

Enhancing communication with hearing impaired children and wearers of hearing aids

Children with hearing impairment often have some degree of speech and/or language delay. There are a number of different approaches to facilitate speech and language in these cases, and these depend on several factors:

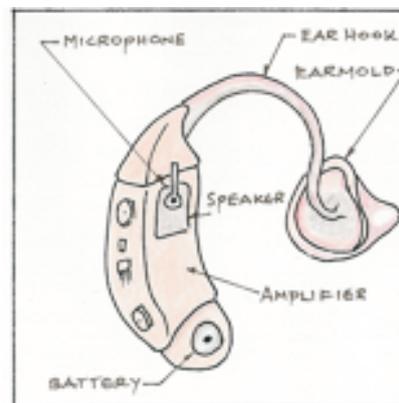
How hearing impaired is the child?

What are the wishes of the parents?

What is child's first language (sign or spoken)?

Does the child have hearing aids or a cochlear implant?

What type of school the child attends (deaf or hearing)?



If the child is part of the deaf community and/or his parents are also deaf, it is possible that he may not follow an “oral / aural” route of language development and will use sign language. Sign language is a recognised language encompassing a wide vocabulary, grammatical structure and also involving facial expression. Individual countries have their own sign languages and often areas within a single country will have some regional differences (like having a local dialect or accent).

Other children with hearing aids or cochlear implants may follow an oral / aural route and have auditory training and learn speech sounds. There are different approaches to help with speech and language development. An effective habilitation and treatment for many cochlear implant wearers is Auditory-Verbal Therapy (AVT) (see “Communication and habilitation for wearers of cochlear implants” at www.icommunicatetherapy.com). This approach focuses on listening and sound awareness, as this is the most natural and efficient way that children learn speech. With AVT every possible opportunity to listen and learn is used through the day, using the child's environment as a learning tool.

Children with mild to moderate hearing loss and conventional hearing aid users may require more conventional speech therapy, but will still benefit from sound awareness and discrimination work. Although signing is not encouraged with AVT, some children with severe hearing loss and conventional hearing aids, may also use sign language alongside their speech work.



Speech Therapy for conventional Hearing Aid Users

The success of speech therapy with conventional hearing aid users will depend on the extent of their hearing impairment, their motivation to communicate with speech, the dedication of the team around the child (including parents and care-givers), and whether they want to follow the signing or speaking (or both) route.

A lot of speech work will involve listening activities and getting the child to discriminate sounds. This may initially be just simple everyday sounds or words, accompanied by pictures.

Deaf children who learn language with sign acquire vocabulary at a similar rate to hearing, speaking children, but deaf children who are exposed to only oral language, will develop spoken language vocabulary more slowly. They also find it harder to develop grammatical skills.

Mother's of deaf babies often mis-gauge their child's language level, and pitch their level inappropriately, this makes the language environment less natural and can delay the development of the child's language skills. It is also very important to give the child feedback and acknowledgement when they attempt any form of communication, otherwise they may become frustrated and start to give up communicating.

Assessment and Management

Speech and Language Pathologist/Therapists need to have an holistic view of assessment and therapy and move away from the medical model (which looks at a child's impairments to explain their difficulties), and follow a more social model which aims to remove the obstacles that are causing the child difficulty. To remove the barriers rather look at the deficits, we need to keep the hearing impaired person, their team and the family at the centre of the process.

A thorough assessment means examining a range of skills and then developing a comprehensive program that focuses on all areas of communication throughout the day:

Pragmatics, Social skills and Conversational skills

Learning the use of language in context, turn taking, attention getting, initiating, responding, repairing, topic maintenance, shared knowledge and inference, facial expression, eye contact, proximity and touch. The important point here is, don't let the deaf child be a passive participant, we want them to learn to turn-take, respond and share their thoughts and feelings. Videoing the hearing impaired individual interacting is a good way to highlight certain skills to them and their parents.



Language Development

Hearing impaired children are often unable to learn language in a natural way and so have to be taught about grammar and syntax. Teaching these language skills can be very difficult, and we also have to be aware that auditory memory skills and comprehensive language may be delayed. The use of sign can develop language skills, but some programs (such as Auditory Verbal Therapy) tend to discourage signing and lipreading because they are trying to promote listening development, which will in turn facilitate speech and language.

Speech Development and Expressive Communication

Speech development can also be a difficult skill to cultivate with a hearing impaired child. Much of the success will depend on their level of residual hearing, how well they are aided and their motivation.

When considering speech development, we must be aware of a number of elements:

- Phonological awareness and letter sound knowledge
- Articulation of speech sounds.
- Prosody and intonation (sign language does not have this, but the use of facial expression adds emphasis to meaning)
- Voice quality is another aspect of speech that is sometimes an issue for hearing impaired children. Children with hearing impairment are often not able to monitor their own voices effectively and may speak too quietly or loudly. They may also have to be made aware of breath control when talking



Changing the communication environment at home and school

As well as helping the deaf child to communicate, everyone around the child must also have a heightened awareness of their own communication and the communication environment. As communicators with deaf children we must be aware of a number of our own behaviours, including facing the hearing impaired child when communicating, talking clearly so they can see our lip patterns, and when needed, using gesture, sign or visuals to help (with Auditory-Verbal Therapy, you may not follow some of these processes, as you are trying to teach the child to listen and discriminate). We must also pay attention to the physical environment and communicate in an area that is well lit and where there is less background noise.



Things to remember when communicating with a deaf child

- Always face, or be on the hearing aided side of the person when you talk to them
- Think about the environment - lighting, clothing, background noise etc
- Use facial expression and gesture to add meaning
- Repeat and rephrase your communication
- Request confirmation from the hearing impaired individual
- Don't over articulate, but don't mumble either
- Think about your own volume and rate when you speak
- Set the context to help the person understand
- Write things down or draw a picture if you cannot communicate your message with speech or sign
- Always respond
- Reward with a smile

Be aware that hearing children in the pre-verbal stage get feedback from an adult when they look at things, like a running commentary. This obviously is more difficult for a hearing impaired child as the child has to look at the adult and the object. It is important to let the hearing child explore and control their environment, but the adult can help by sitting with, or opposite the child, having a joint focus. As an adult with a hearing impaired baby, try and respond as often as possible and try to follow your babies focus. Remember, even young babies can be aided from an early age to make the most of their residual hearing during that critical period of speech and language development.

Auditory training is a great way to test and train the acuity of a child's hearing using their hearing aids. Auditory training also facilitates speech and language development. The type of auditory training will depend on the hearing ability and developmental level of the individual.



Auditory Training

There is a hierarchy of treatment with auditory training, and if you are starting at the beginning with a child that has only recently been aided or implanted, the initial auditory work will just be getting the child to discriminate between sound and no sound. When the child can react to the difference between sound and no sound we work through a number of steps:

- Discrimination between long and short sounds
- Discrimination between 2 different sounds. Discriminating vowel sounds can be difficult so we must use sounds that are not only different, but also have different formant frequencies
- Differentiating between one and two syllable words/nonsense words
- Discriminating between words containing different vowels (e.g pot and pet)
- Discriminating between words with different initial or final sounds (e.g. day/pay or hearse/herd)
- Discriminating words in closed set word lists and open set word lists. Closed set word lists may be a smaller set of words that are familiar to the listener and initially quite different in sound. Open set word lists introduce new words and might be more complicated because it introduces more words that are in the same category or sound similar

Examples of a Closed Set word list - *shoe, pyjamas, gloves* (this group of words has different initial sounds, different vowel sounds, and pyjamas has more syllables). A much harder closed set would be - *hat, mat, mouse, house, rat* (this group is more difficult as some initial and vowel sounds are the same, there is rhyme, and there are also words with close semantic links e.g. Mouse/rat).

An Open Set word list can have an endless list of choices and exposes the child to new words, these tasks are much more difficult.

Other speech discrimination tasks might require a child to listen to sets of words, but spot the differences between each set e.g. “are these 2 sets the same, or different?”

- pot pot pot pot pot pot pot pet
- tap tap tap tap tap tap tap tap

Asking the child to discriminate words in phrases and words with background noise will also facilitate their listening development. Finally, to promote their word knowledge, we offer choices with questions (e.g. “Which one do you write with”), so their auditory comprehension is developed further.



What to be aware of when carrying out auditory training:

- Are aids on and set up (volume correct) and working?
- Are you close enough to the child?
- Are you on the right side (the aided side) or facing the child?
- Check environment for noise and visual distractions
- Has the child got a cold/ear infection (this can impact on hearing ability)?
- Make sure the child is actually listening and not reading lips
- Be aware of the child's language level and developmental level
- Use visual prompts to cue and help the child understand
- Have you carried out a "Ling Sound Test" (see information sheet on Hearing Aids and Cochlear Implants at www.icommunicatetherapy.com)

Lip Reading

For some hearing impaired children, listening is not going to be their major source of receiving communication and they are going to rely on sign, gesture and lipreading. There is a difference between lipreading and speech-reading. Lip reading relies on lip movement and facial expression, whereas speech reading uses lips, facial expression, gesture and sound. Lip reading training involves becoming familiar with eye contact, facial expression, and lip shapes. Lip readers will then learn to match lips shapes to sounds, learn to identify words and common phrases, and as they become more proficient, short then long sentences.

Barrier games and story retell are good ways to teach both lip-readers and to develop auditory comprehension. Barrier games involve facing the hearing impaired listener, but have a barrier between you so they cannot see what is in front of you, or what you are writing or drawing. If you are testing auditory comprehension cover your lips so that the listener cannot get clues by lipreading. Try having a series of corresponding pictures in front of both of you. Name a picture, then see if the listener can listen, discriminate and understand what you have said, and name or point to their corresponding picture. You can do all sorts of games using the barrier such as map reading or picture drawing. Give the listener instructions to follow on a map and see if they end up at the same location. Draw a picture and describe it as you draw, and at the same time encourage the listener to draw the picture you are describing, then see if both pictures match at the end.

For more information on hearing impairment, hearing aids, and communication strategies and programmes, go to www.icommunicatetherapy.com



To learn more about hearing impairment, hearing aids and strategies to enhance communication, you can read about and purchase books on our website www.icommunicatetherapy.com. Click this link to see our online Resource Centre.

Suggested Reading

Suggested reading:

Hearing Impairment, Auditory Perception and Language Disability by John Bamford and Elaine Saunders

Children With Hearing Loss: A Family Guide by David Luterman

Auditory-Verbal Therapy for Parents and Professionals by Warren Estabrooks

A Journey into the Deaf-World by Harlan L. Lane, Robert Hoffmeister, and Ben Bahan

Inside Deaf Culture by Carol A. Padden and Tom L. Humphries

Rebuilt: My Journey Back to the Hearing World by Michael Chorost

Hearing AIDS by Harvey Dillon

Hearing Aid Handbook: 2008-2009 by Jeffrey J. DiGiovanni

The Hearing Aid Decision: Answers to Your Many Questions by Randall D. Smith, Jerome G. Alpiner, and Megan Mulvey

Digital Hearing Aids by Arthur Schaub

Advances in the Spoken-Language Development of Deaf and Hard-of-Hearing Children (Perspectives on Deafness) by Patricia Elizabeth Spencer and Marc Marschark

Helping Deaf and Hard of Hearing Students to Use Spoken Language: A Guide for Educators and Families by Susan Easterbrooks and Ellen L. Estes