



# Choices

## Hearing Australia

## Acknowledgements

The content of Choices has been collated over many years with the valued input of many professional colleagues, researchers and parents. We would particularly like to acknowledge Aussie Deaf Kids, Deaf Society and Deaf Services Ltd (NSW), Parents of Deaf Children (NSW) and UsherKids for their input to the current edition. Our heartfelt thanks go out to the parents and young people who were willing to share their personal stories in this edition.

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### Disclaimer

"Choices" contains the opinions of our valuable stakeholders. This does not necessarily imply that Hearing Australia supports these views.



# Meet Ryan

Ryan says "I love my life and there's nothing I can't do".

Ryan is a busy young man. He loves drama, public speaking, and a load of sports including swimming, water polo, soccer, cricket and sailing, as well as scouts. He's also travelled interstate for a Scout Jamboree.

Ryan's parents found out he had a significant hearing loss when he was born. He's a Hearing Australia client who got his first set of hearing aids when he was 4 months old.

"He's not afraid of going away and being independent", said his mum Catherine, "he looks after his hearing devices and just carries on doing all the things he likes".

Ryan now wears a cochlear implant and a hearing aid. He also uses a remote microphone system to help him hear better at school, where there is often background noise, or the teacher is at a distance.

Ryan has had many challenges, being born premature, and having a hearing loss but he is stronger for it.

For his 12th birthday he wanted to learn to scuba dive, and now Ryan can add 'Qualified Scuba Diver' to his list of achievements.



# Welcome to Hearing Australia

We're privileged to be beside you on your child's hearing journey and assure you that, while this may feel like a challenging and confusing time, there's plenty of expert support available to you. With the right help, you'll discover the best pathway for your family, and your child's hearing needs will become a manageable part of life.

We called this book '**Choices**' because its goal is to help equip you to confidently make the right choices for you and your child throughout their hearing journey. Remember, though, decisions you make now don't need to be permanent. Each family is unique and each child's needs change over time, so it pays to be flexible and open-minded.

Through Choices, we unravel hearing loss. As well as helping you understand some of the science behind it and how hearing technology works, we explore communication and educational programs, hear from other families about their journeys and learn the roles of some of the professionals you may meet on yours. There are also handy checklists, resources and top tips from people who've been in similar positions to you.

Choices is designed as a comprehensive information resource but your audiologist is your go-to-person for individualised, expert support so never hesitate to ask them anything. We have worked with tens of thousands of families like yours and we're dedicated to making your child's hearing journey as smooth and enjoyable as possible.

**Hearing Australia is here for you, all the way.**





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### Terminology

Different terms are used by different people to describe varying degrees of hearing loss. The term "hearing-impaired" is used to describe people with any degree of hearing loss. "Hard of hearing" is used to describe those who have a hearing loss and communicate predominantly orally, while "deaf" is a medical term describing significant hearing loss. Some people who are deaf view themselves as part of the Deaf community and are described as Deaf with capitalisation.

In this publication we will use the term "Deaf or Hard of Hearing" (D/HH), as recommended by the World Federation of the Deaf<sup>1</sup> and the International Federation of Hard of Hearing People<sup>2</sup>.

# About Hearing Australia

## Our history

Our work with children who are deaf and hard of hearing began over 70 years ago when we were established by the Federal Government to assist two groups; World War II veterans and children impacted by the rubella epidemic of the late 1940s.

Today, Hearing Australia's clients include children, young adults up to age 26, eligible Aboriginal and Torres Strait Islander people, pensioners and veterans.

With over 160 hearing centres and a number of visiting sites across Australia, we offer world-leading hearing solutions to make a real difference to our clients, their families and the communities we serve.

Children who are eligible for the Australian Hearing Services Program can receive services from Hearing Australia at no cost and, if they need hearing aids, they are provided and fitted at no cost.

## Our Children's Services

Hearing Australia's Children's Services are provided by our friendly team of highly-qualified audiologists.

**Audiologists are university graduates with an undergraduate degree and a two-year master's degree in Audiology. Our Paediatric audiologists have also had extensive specialist training in the management of children's hearing loss and hearing devices.**

Your child's audiologist is a key figure in their hearing journey, and will take care of hearing assessments, any hearing aid prescriptions, fitting and management, as well as rehabilitation and evaluation of any more complex hearing concerns.

Your audiologist is dedicated to helping your child hear the best they can, to helping their speech, education and communication to be the best it can be - and to making the whole experience a pleasant one for you and your child.






















Hearing Australia is funded by the Australian Government Hearing Services Program to provide hearing services and devices to Australian citizens or permanent residents under 26 years of age who have a permanent or long-term hearing loss.

Our Paediatric program includes:

-  Full hearing assessments
-  Individual assessments of the child's and family's needs
-  Fitting hearing aids that use the latest technology
-  Fitting Remote Microphone Systems
-  Helping families to use devices and strategies to enhance communication
-  Regular checks of hearing aid fit and benefit
-  Replacement and updates to devices
-  Visits to early intervention programs and educational facilities
-  Support for teachers
-  Information sessions for families, educators and community groups
-  Hearing health care training for health workers in Aboriginal and Torres Strait Islander communities
-  Referral to other agencies
-  Repairs and batteries for hearing aids and Remote Microphone Systems
-  Batteries, replacement parts, repairs, replacement and upgrade sound processors for cochlear implants
-  Postal service for batteries and technical repairs



# Your journey with Hearing Australia

## Your program pathway with us

### **The first appointment:**

Your first appointment will take around 1–1.5 hours. You'll get to know your audiologist and they'll explain the results of your child's hearing assessment. They may also do some tests that are similar to those already done at your child's diagnostic audiology appointment. Then you'll chat about any impacts hearing impairment may have on your child, and develop an action plan together that considers the needs of the whole family.

If your audiologist recommends hearing aids, they'll be able to show you the range of options and make recommendations as to which might suit your child best. They may also take an impression of your child's ear using soft putty to make an ear mould.

### **Fitting appointment:**

If your audiologist has recommended hearing aids, you'll come in for a fitting appointment 2 weeks after they take the ear mould impression. This appointment usually takes about an hour. Your audiologist will adjust the hearing aids to suit your child and teach you both how and when to use them.

### **Follow up appointment:**

2 weeks after your fitting appointment, you'll come in for a follow up to talk about how it's all going. Your audiologist can solve any problems you may have and make adjustments to the hearing aids. They may also test how well your child hears with them.



### On-going Care:

What happens next depends on your child. Babies and toddlers may need a number of appointments to:

- Check their hearing abilities with their hearing aids
- Fine-tune the hearing aids
- Work through any issues
- Help you and your child get used to hearing aids
- Create new ear moulds

### Feelings and emotions

Every parent's adjustment to their child's hearing loss is different. For some, a diagnosis may come as a great shock, while others may feel relieved to have answers to concerns around their child's behaviour or development. There is no right or wrong way to feel. It is, however, important to acknowledge that while some of the negative thoughts are valid, you won't feel like this forever.

Common negative emotions that families feel, particularly during the adjustment period, include sadness, guilt, anger, denial and concern about the future. These are all natural reactions of a loving parent, and if you're experiencing these feelings you're certainly not alone.

Understand, though, that with the right tools hearing loss is manageable. Hearing Australia is here to help you and over time, you'll build a strong support network of professionals and friends. With this support, you'll gain more confidence in understanding your child's hearing loss and making the best choices for them.

Soon, managing your child's hearing loss will become just a part of everyday life, like teaching them to ride a bike or getting ready for school.

## EMMA'S STORY

*"If I could go back in time and give myself some advice about the road ahead, I'd definitely tell myself to not worry so much. I remember being so concerned that my son wouldn't be able to achieve like other kids his age, or that he'd be behind or different. He is 12 now and far from behind or different!"*

*I remember feeling weary about going out with my baby wearing hearing aids. I tried to cover them up with hats and I hated strangers asking me about them, or kids staring at them. I also felt tired of talking about it all the time and just wanted an escape.*

*Looking back, I think counselling would have helped me in those early days. I did eventually seek therapy, which definitely helped, but if I'd had it earlier it might have made things easier for me.*

*Talking with other mums and reading other families' stories online was a great support. I especially liked Aussie Deaf Kids. I think I needed someone to reassure me that 'yeah, you'll need to put in the time with speech therapy and everything for a few years, but he will be able to achieve and do anything any other child can'. I know that now, but I wish I'd known that then."*

In 2019, the Childhood Hearing Australasian Medical Professionals network published guidelines about the types of investigations that should be provided for children who have a permanent hearing loss, as a guide for specialists across the country.<sup>3</sup>

## Understanding the reason behind your child's hearing loss

Many parents of children who have recently been diagnosed with hearing loss have questions about what caused it. Sometimes, professionals are able to answer these questions but in some cases the reason may remain a mystery.

Your audiologist will speak to you about getting a medical opinion on your child's hearing loss from an Ear, Nose and Throat (ENT) specialist doctor. Your ENT may suggest medical investigations such as blood tests or scans.

Medical investigations can be helpful as they may tell us:

- if there are other health issues that need to be monitored or treated
- if the hearing loss is likely to change, so we can plan for the future
- any conditions that can be ruled out, which can be reassuring and reduces the need for more tests
- information that can help with planning for future siblings

### Congenital hearing loss

When a baby is born with hearing loss, it's called 'congenital hearing loss'. Congenital hearing loss can be caused by:

- genetics
- the structures of the ear not forming properly
- pregnancy issues such as infections, drugs or alcohol

### Acquired hearing loss

Hearing loss that happens after birth is called 'acquired hearing loss' and can:

- happen at the time of birth (perinatal) for example due to prematurity, lack of oxygen or infections
- happen after birth (post-natal), usually because of illness, injury or infection

### Multidisciplinary hearing loss investigation units

Some capital city hospitals have units where a team of professionals such as ENTs, paediatricians, genetic counsellors and audiologists all work together to look after children with hearing loss in the one place.

A full list of these units is included at the back of this book. For more information speak to your doctor, audiologist or contact the hospital directly.



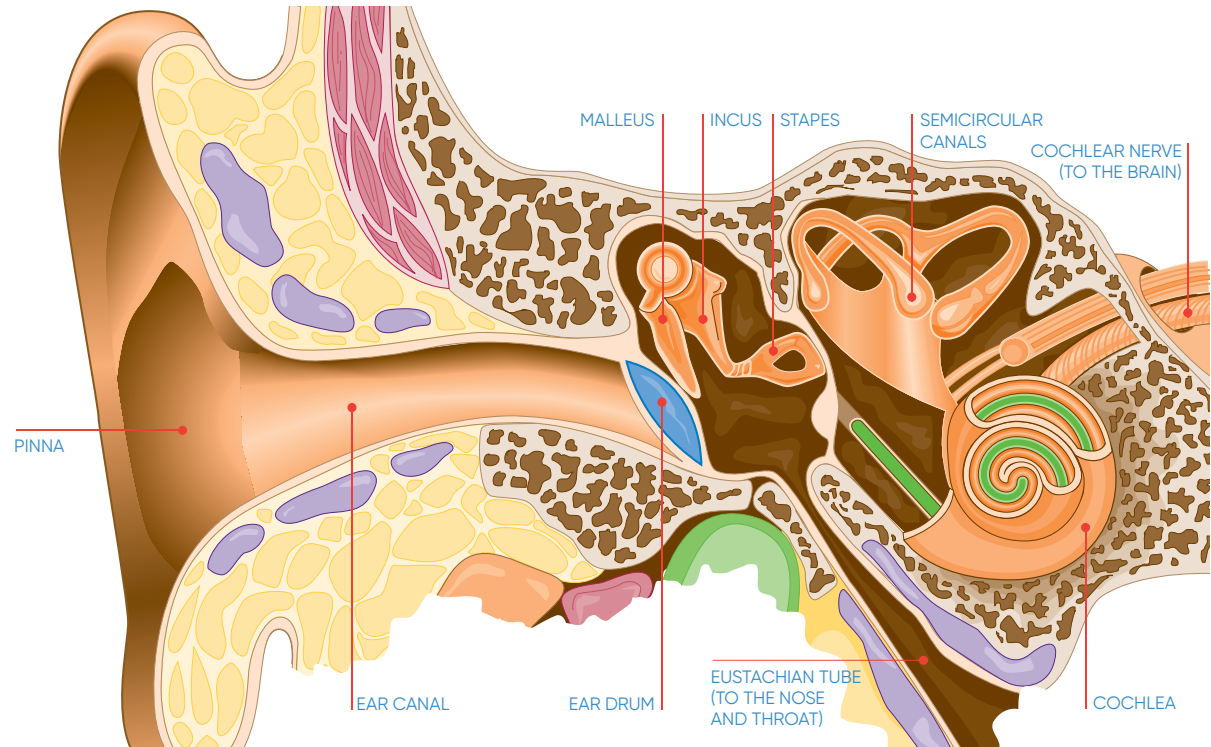


# Hearing and testing

## How hearing works

If this is your first experience of hearing loss, you may not have given how we hear much thought until now. In this section, we explain how ears work, how we measure hearing using different testing and what it all means in real life.

As you can see, the ear is a clever, but intricate, system for hearing. Problems in any part of the ear (outer, middle or inner) or in the hearing nerve that sends the signals to the brain, can cause hearing loss. Balance can also be affected by inner ear problems.



Your ears have three main parts. These work together to collect sounds and send them to your brain.

### 1. Outer ear

Made up of the skin and cartilage on the outside, and the ear canal. This part of your ear collects sounds and funnels them into your ear canal.

### 2. Middle ear

Starting at the eardrum, the middle ear passes sound vibrations along three tiny bones to the area where hearing really begins.

### 3. Inner ear

This is where the vibrations are changed into nerve signals (by your cochlea). These are then carried to your brain, where you experience them as sound. This part of the ear also controls your balance.

## How we test hearing

We test hearing in different ways, depending on the child's age and the information we need. Hearing tests fall into two categories – physiological and behavioural – and we use a combination of tests to get a picture of the type and degree of hearing loss.

### Physiological tests

Physiological tests can show us which part of the ear is involved in your child's hearing loss. They measure physical responses that happen within the ear so your child doesn't need to consciously do anything for us to get results.

**Oto-Acoustic Emission testing (OAE)** tells us how the hair cells within the cochlea are working. The cells respond to sound by producing a very soft sound of their own called oto-acoustic emissions, and we can use this as a measure of inner ear function.

**Tympanometry and Acoustic Reflex tests** tell us how the middle ear is working. A tympanogram shows if the eardrum is moving normally. If the tympanogram is normal, we can also test for a muscle reflex (the acoustic reflex) in the middle ear using different sounds.

Physiological tests can also be used to estimate a child's hearing levels. These tests are generally used when a child is too young to respond accurately to sound or where a child can't show us when they hear a sound (because of a physical or cognitive disability, for example).

In these tests, three small sensors (electrodes) are gently attached to the surface of your child's head using surgical tape and gel. The sensors record tiny electrical signals that are caused by the hearing pathways in the brain.

**Auditory Brainstem Response (ABR)** measures the hearing nerve's response to sound and lets us estimate hearing thresholds (the softest sound your baby can hear). This test is usually done while the baby is sleeping naturally. The Newborn Hearing Screening Test that most babies have soon after they are born uses this technique.







***Auditory Steady State Response (ASSR)*** measures activity in the hearing pathways. The ASSR test is also usually done when the baby is sleeping naturally and can be used to estimate hearing thresholds.

***Cortical Auditory Evoked Potential (CAEP)*** tests what babies or young children can hear with or without their hearing aids by measuring activity in the brain. Your child will sit or lie facing a speaker that plays specially adapted speech sounds. This test is done while the baby is awake and calm.

***Electro-cochleography (eCochG or ECOG)*** measures tiny electrical signals from the cochlea, giving us information about how the cochlea and the start of the nerve pathway to the brain are working. This test is done in hospital under anaesthetic.

#### **Behavioural tests**

***Behavioural Observation Audiometry (BOA)*** is used for babies under 7 months old and for older children who can't show us when they hear a sound. We play high, mid and low frequency noises and note how the child responds (they may startle, stir or wake from sleep, for example).

***Visual Reinforcement Orientation Audiometry (VROA)*** is used for children aged 7 months to 3 years. The child is taught to turn towards a puppet or video reward when they hear a sound. We play sounds of different frequencies and note when the child turns.

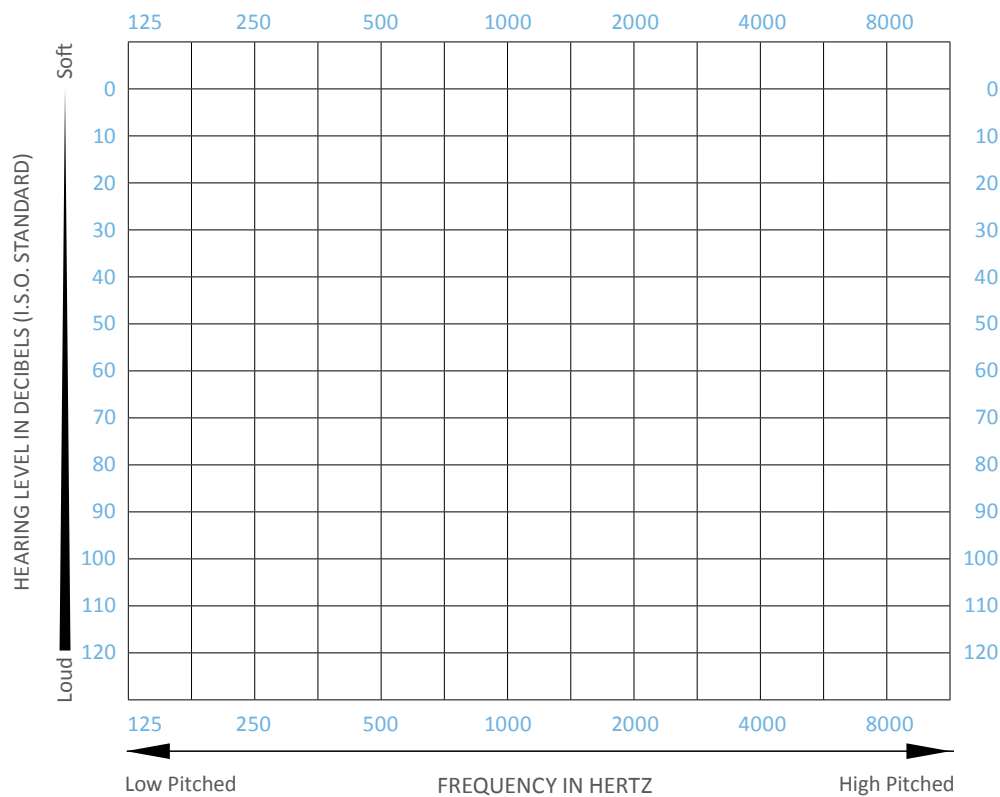
***Play Audiometry*** is used in children from around 3 years of age. We teach the child to do an action when they hear a tone, for example putting a marble into a marble run or a piece into a puzzle.

***Pure Tone Audiometry (PTA)*** is used from early primary school age upwards. The child simply presses a button when they hear a tone. This is also how we test hearing in adults.

Your child's audiogram

An audiogram is a graph with some results of our testing. It shows us the softest sound a person can hear at each frequency.

Your child's audiogram will look something like this:



**Frequency** The numbers across the top of the graph show the frequency, or pitch, of the sound being measured. The numbers range from 125Hz (low pitched) to 8000Hz (high pitched). We measure these pitches as they're the most important for hearing speech.

**Intensity** The numbers down the side of the graph show the intensity, or loudness of sound. This is measured in decibels (dB) and starts from very soft at the top of the audiogram to very loud at the bottom.

SYMBOLS	LEFT	RIGHT
Air	×	○
Masked air	⌵	●
Bone	>	<
Masked bone	⌞	⌟
Sound field binaural dB SPL		□

These symbols on the audiogram show what is being measured.

**Air conduction** measures the softest sound your child can hear using whole ear (for example using headphones).

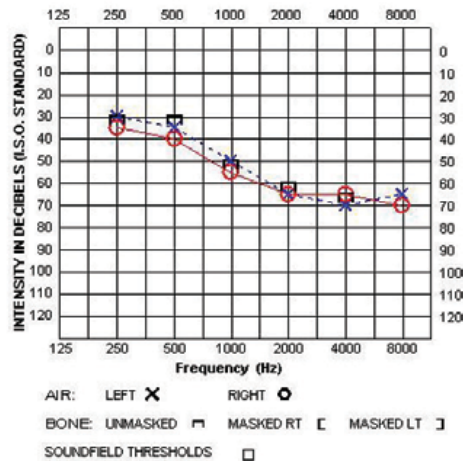
**Bone conduction** measures the softest sound your child's cochlea can hear directly. This test uses a small vibrating headset, placed on the bone behind the ear.

**Sound field** testing uses a loudspeaker. It's assumed that the ear that hears better will hear the sound rather than the ear closest to the speaker.

**Masking** is a technique we use if the hearing in each ear is different or there is a possibility that sound is crossing over from the test ear to the other ear. To mask this, we play a special noise into one ear while testing the other.

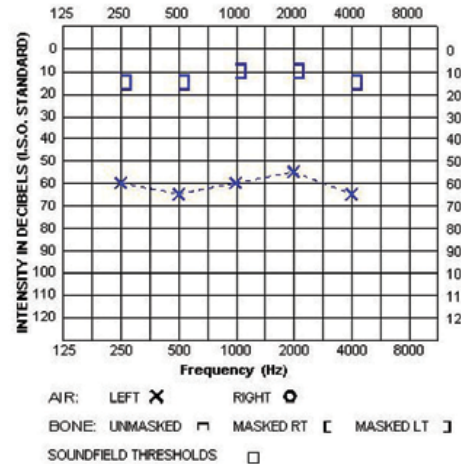
## Types of hearing loss

To understand your child's hearing loss, we find out which part of the ear is causing the hearing loss.



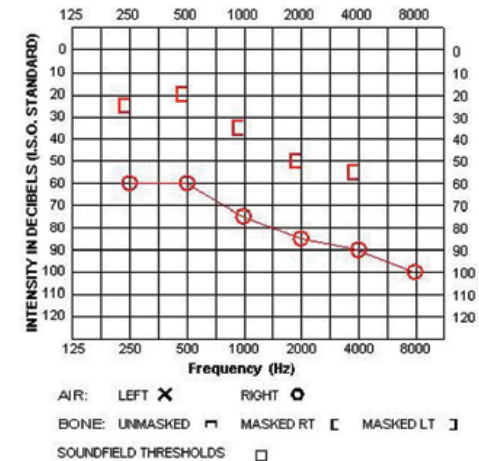
### Sensorineural hearing loss

This hearing loss comes from the cochlea. On an audiogram, the bone conduction results will be roughly the same as the air conduction results. Sensorineural hearing loss is permanent.



### Conductive hearing loss

This hearing loss comes from the outer or middle ear. The bone conduction results will be in the normal range, but the air conduction results will show a hearing loss. Conductive hearing loss is often temporary and may resolve with medical or surgical treatment.



### Mixed hearing loss

This hearing loss comes from both the cochlea and the outer or middle ear. The bone conduction results will be out of the normal ranges and the air conduction results will be further down the graph than the bone conduction results.

### Auditory Neuropathy Spectrum Disorder (ANSD)

ANSD describes a type of hearing problem where the sound travels well into the cochlea but there is a problem with the way the hearing nerve transmits the sound to the brain. This type of hearing loss will show up on the audiogram from behavioural testing as any degree of sensorineural loss (or even as normal hearing) but more specialised tests will show that it is a different type of hearing loss. With ANSD, we can't predict a baby's hearing levels from ABR or ASSR tests so your audiologist will rely on behavioural tests, CAEPs and questionnaires.



## Degrees of hearing loss

To describe how much your child can or cannot hear on their own we use the terms mild, moderate, severe and profound.

### *Mild hearing loss*

A child with mild hearing loss may miss some sounds from speech, making it slightly less clear to them. They may find it hard to hear softly-spoken people and some of the softer sounds around them (environmental sounds). Background noise will make listening more difficult for them.

### *Moderate hearing loss*

A child with moderate hearing loss may miss many sounds from speech, and it will sound softer and unclear to them. They will also find it hard to hear soft to moderate environmental sounds.

### *Severe hearing loss*

A child with severe hearing loss will not hear speech unless someone with a very loud voice is very close to them, and even then it will be unclear. They will not hear many environmental sounds.

### *Profound hearing loss*

Children with profound hearing loss will not hear any speech and will only hear the loudest of environmental sounds.

### **One ear or both?**

Hearing loss can happen in both ears or just one.

Unilateral – one ear

Bilateral – both ears

If both ears have a hearing loss, the degree and type may be the same in both ears or may be different.

Single Sided Deafness (SSD) is a term that is sometimes used to describe a profound unilateral hearing loss.





### **'Audiogram configuration' - is hearing the same for all frequencies?**

Your child may find it easier to hear some frequencies than others. Audiologists call this 'audiogram configuration'.

For example, an audiogram may be described as 'sloping from mild in the low frequencies to severe in the high frequencies', meaning the child hears lower pitched sounds more easily than high pitched sounds.

### **Learning how your child makes sense of sound**

As well as understanding what hearing loss your child has, we also need to understand how they use their hearing to make sense of speech and to function in life. To do this, we may use:

#### *Functional questionnaires*

Parents, carers, teachers or the child themselves give information on how the child responds to sounds in everyday life. Some functional questionnaires, such as the Parent's Evaluation of Auditory-Oral Performance of Children (PEACH), compare the child's abilities with typically hearing children of the same age.

#### *Speech perception tests*

Depending on the individual situation, these may be done with or without amplification, in quiet, in noise and with or without visual clues. These tests measure how clearly a child can hear words and sentences.

### **Will my child's hearing change over time?**

Your child's hearing loss may change over time and if it does, we will adjust their equipment and services to suit. Some changes may be temporary, because of ear infections for example, while some may become permanent.

If you notice anything different about your child's hearing, contact your audiologist as soon as possible so they can review the situation and talk to you about the next steps.





# Hearing technology

## Hearing aids

### What hearing aids do

Hearing aids are crucial in helping children with ongoing hearing loss make the best use of the hearing they have. They don't change the child's hearing, but they make speech louder and clearer so it's easier to hear.

Research shows that children with hearing loss who use amplification devices, like hearing aids, consistently from an early age, have the best spoken language outcomes. Children who are born with a moderate or greater degree of hearing loss have the best outcomes when hearing aid use starts before 6 months of age.<sup>4,5</sup>

### Hearing aids make only some sounds louder

Children with hearing loss may find it difficult to hear softer sounds, like consonants or high frequency speech, but if hearing aids also amplified loud sounds they'd become uncomfortably loud. So, the hearing aid amplifies only sounds from the frequencies where the child has a hearing loss.

### Hearing aids separate the speech sounds

Hearing aids have directional microphones and other features that help to separate speech sounds from background noise, making it easier to hear speech clearly, particularly in noisy situations.



## How hearing aids work

Hearing aids come in different styles but all have the same 3 basic components:

**THE MICROPHONE** – picks up sound and converts it to an electrical signal.

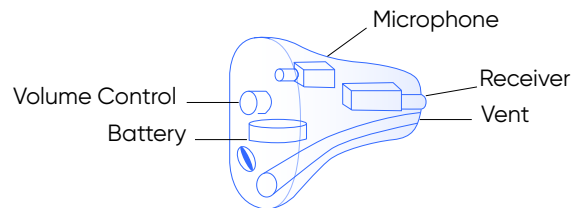
**THE AMPLIFIER** – increases the size of the electrical signal and provides additional processing (for example frequency adjustment, compression, noise reduction, speech enhancement, environmental classification, feedback management).

**THE RECEIVER** – converts the increased electrical signal back into sound.

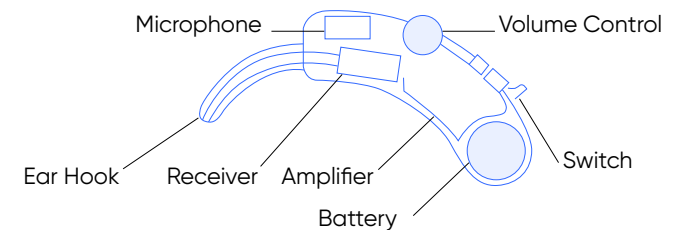
Other features may include on/off switch, telecoil, program buttons and volume control. Hearing aids are held in place by an ear mould which is custom made to fit your child's ear.



Typical In the Ear Aid (older children only)



Typical Behind the Ear Aid



## Choosing the right hearing aid for your child

Your audiologist is here to help you decide on the best hearing aid for your child and can explain the features, benefits and limitations of the various options.

There are many different styles of hearing aid, but most children are suited to either:

- Behind-the-ear (BTE) – often the best fit and quality for babies and children
- In-the-ear (ITE) – fits larger ears so this style is best suited to older children or young adults. This style can appear more discreet but the aid may have components removed to make it smaller, so your child could miss out on features with this style. Whistling may also be more common in this style of hearing aid.

### Things to consider

Hearing aids are small so it's important to think about safety, especially if your child is young. Safety features to look for include:

- A secure battery door
- Volume controls that can be locked or deactivated
- Secure ear hooks (these can be a choking hazard if removed)



**Your audiologist will provide you with specific safety information. Always keep batteries away from small children.**

The best hearing aid for you and your child will also depend on their:

- Age
- Type and degree of hearing loss
- Goals
- Everyday activities, such as day care and sport
- Ability to manage hearing aids themselves
- Willingness to use hearing aid controls

## Creating ear moulds

An ear mould is a piece of hard or soft plastic that is custom-made to fit your child's ear. It has 3 jobs:

- 1 Holding the hearing aid in place
- 2 Carrying sound to the eardrum effectively
- 3 Keeping amplified sound in the ear

To create an ear mould, your audiologist will take an impression of your child's ear using a soft putty. Some children may find this a little uncomfortable, but it's not painful. You may need to keep your child's hands amused during the procedure.

The audiologist will:

- 1 Use a light to check the ear and ear canal are clear
- 2 Place a cotton or foam block in the ear canal so the impression material (putty) doesn't go too far in
- 3 Squeeze the putty into the ear using a large syringe
- 4 Leave it for a few minutes until it firms up and can be removed, ready to send to the manufacturer. Done!

Your child will need new ear moulds as they grow, depending on their age and hearing loss, but roughly:

- Infants (under 12 months) – every 3-6 weeks
- Babies (over 12 months) – every 3-4 months
- Children over 3 years – once every 6-12 months
- Older children – once every 6-12 months

## Fitting your child's hearing aid

Once your child's hearing aids are ready, you'll come in for a hearing aid fitting with your audiologist. They'll fit and adjust the hearing aids to suit your child's hearing levels, using their hearing aid prescription.

They will then check the hearing aid is meeting the prescription by using either:

- A hearing aid test box
- Real-ear measurements

Real-ear measurements (REM) use a soft, thin tube to measure sound levels in the ear canal. We put a headset on the ears, gently place a soft thin tube in the ear canal and place the hearing aid on the ear. We then play a short sound over a loudspeaker and the results from inside the ear canal show on a screen. If we need to make any more adjustments to the hearing aid we can do this and measure the effect of those changes while your child wears the headset. For babies, we make further adjustments in the hearing aid test box.

Insertion Gain (IG): is a type of Real Ear Measure where the audiologist compares sound levels in the ear canal with and without the hearing aid to help them adjust the hearing aid.

Our audiologists understand that this first fitting is a big step and that, while it's a positive milestone in your child's hearing journey, you may feel anxious in the lead up. Remember, we're here for you so always talk to us about your concerns, however big or small.

The hearing aid prescription called NAL-NL2 is used worldwide and was developed by Hearing Australia's research division, National Acoustic Laboratories.

## Getting started

Once they've adjusted the hearing aids, your audiologist will show you (and your child if they're old enough) how to use them and get you to practice putting them in your child's ears. They'll also give you some tips on getting used to them.

Your early intervention service or Teacher of the Deaf will also be able to provide advice and support. More on this later.

## Helping your child get the most from their hearing aids

Adjusting to hearing aids can take time, and it's a journey we take together. There's plenty you can do to help your child get used to wearing their hearing aids and learn to love them.

### *Babies and hearing aids*

As your baby grows, aim to use their hearing aids whenever they're awake, except for bathing (hearing aids shouldn't get wet). If your child likes to touch their hearing aids, try playing with your child for a few minutes to distract them.

**For babies who only use their hearing aids for some part of the day:**

- Choose times when you're free to talk and sing with your baby
- Pick a quiet place with not much background noise
- Make sure there's nothing against your baby's ears to make the hearing aids whistle
- Make sure your baby can see your face and mouth as you speak

**As your baby gets older:**

- Spend time playing and talking with them
- Talk about the things you're doing
- Repeat sounds your baby makes and take turns having a 'conversation'
- Reward your baby with a clap or cuddle when they respond to sound
- Let your baby touch your mouth and tongue as you speak



### Whistling

If your baby is very young, you may sometimes hear a whistling sound from their hearing aid. This is called 'acoustic feedback' and is caused by amplified sound leaking from the ear and being re-amplified by the hearing aid. It happens because babies' ears are small and soft, plus they spend a lot of time with their ears pressed against a surface. Acoustic feedback usually gets better once babies' heads and necks strengthen. Meanwhile, your audiologist may recommend a lubricant to seal any gaps. It's also important to ensure the ear moulds are inserted fully and fit well.

If older children are experiencing acoustic feedback check their ear moulds fit properly. Wearing hats and headphones can also cause whistling.

### Checking your child's hearing aids

Make checking your child's hearing aids part of your daily routine. Your audiologist will give you a kit and show you (and your child if they're old enough) how to do it.

### How will I know my child's hearing aids are helping them?

You may wonder if your child's hearing aid is working correctly, especially if they're too young to tell you. We use testing to make sure your child is getting the benefit we'd expect from their hearing aid. The sort of test we use depends on the child's age, abilities and hearing levels but may include:

- Aided Cortical Auditory Evoked Potentials – checking that the amplified speech sounds from the hearing aid are detected by the brain.
- Speech Perception Testing – to see how clearly your child can hear sounds, words or sentences.
- Parent and teacher's opinion – either through formal questionnaires and diaries or informal discussion.
- Child's opinion – as well as giving us valuable information, this can also highlight any hearing aid management issues, such as learning to change programs in certain situations.
- Sound field evaluation (or aided thresholds) – your child wears their hearing aids and we measure their responses as we play sounds through a loudspeaker.

If the hearing aids aren't helping as expected, your audiologist will discuss any next steps with you.

### Can hearing aids damage hearing?

Hearing aids are designed not to overamplify loud sounds. However, in rare circumstances using hearing aids has been associated with hearing temporarily getting worse.

We monitor your child's hearing test results over time to check for changes and will adjust the hearing aids if needed.

Children who use their hearing aids during very noisy activities, like woodwork and metalwork at school, should use ear protection in the same way as others.



## Helping your child to love their hearing aids

As children get older, they sometimes feel self-conscious about wearing hearing aids. There are things you can do to help them wear them with pride.

### Give them control

- Make it personal! Hearing aids, ear moulds and cochlear implant covers come in a range of colours, patterns, sporting themes and cartoon characters. Letting your child choose one that suits their personality can be a real confidence booster.
- Get creative! Let your child decorate their hearing aids with stickers, diamante, nail foils or some of the purpose made hearing aid jewellery and charms on the market (consider any choking hazards for younger children).

### Focus on the positive

- Hearing loss affects people from all walks of life, so whatever your child enjoys, be it movies, music, art, sport or history, positive famous role models who have hearing loss are all around us.
- If your child likes reading, they may enjoy books about children with hearing loss. Reading about characters they relate to can open up conversations and make children feel understood.

### Meet others

- Meeting other children with hearing loss can make a big difference for children who feel they stand out. Your audiologist and others in your support network will be able to provide information about local events and support groups.

## ELLA'S STORY

*"Our daughter, Ella, is a happy young schoolgirl who loves reading and the spoken word. She has been using hearing aids since she was diagnosed with mild to moderate sensorineural hearing loss aged 12 months.*

*Ella and her twin sister, Amelia, were born prematurely by 8 weeks, both with low birth weight. Amelia has since had 2 heart operations, so coupled with Ella's hearing loss, it was difficult at times juggling the girls' numerous appointments. Thankfully we had great support from family and friends, along with our early intervention service.*

*As part of our program, we engaged with Ella by talking and reading 20 books every day. We tried to have her wearing hearing aids all waking hours but found the concept of speaking, reading and listening with and without hearing aids a step-by-step process that meant over a period of time she began to understand the benefits of wearing them.*

*Like all parents, we found the start of the education journey at kindergarten and primary school a huge decision-making process. We wanted an inclusive education where Ella would be supported to learn, contribute and participate in all aspects of school life. Our journey has generally been very positive. It's important to establish a good relationship with school staff and it's reassuring to know they understand hearing issues are continuing to receive professional development, particularly around technological improvements."*

## Cochlear Implants

Cochlear implants may be a good option for babies and children who have a severe or profound hearing loss.

A cochlear implant has 2 parts: an implant (inserted by surgery) that goes inside your child's inner ear and can't be seen, and a sound processor that's worn on the outside of the head.

Rather than amplify sounds, a cochlear implant does some of the work of the inner ear and turns sounds into electrical signals that it delivers directly to the nerve endings in the ear. The aim of a cochlear implant is to allow the child to hear as much speech as possible so they develop listening, speech and spoken language skills.

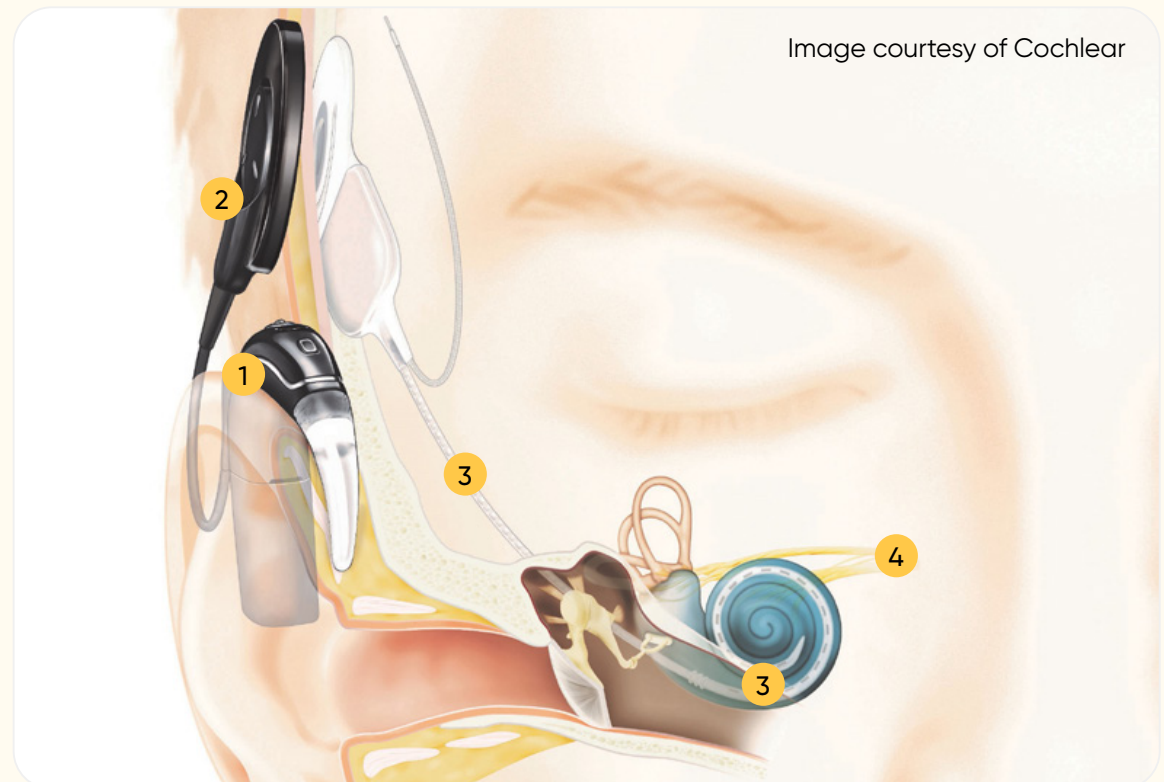
Research shows that children who are born with a bilateral profound hearing loss receive the best spoken language outcomes if they receive their cochlear implant before the age of 1.<sup>4,5</sup>

### How cochlear implants work

A cochlear implant is an electronic device that is surgically implanted. Unlike hearing aids which simply make sound louder, cochlear implants convert sound waves to electrical impulses in a way that mimics your natural hearing.

The cochlear implant system consists of both internal and external components:

- 1 The external sound processor captures sounds and converts them into digital signals.
- 2 These signals are sent to the internal implant, via the coil.
- 3 The implant converts the signals to electrical impulses and sends them along an electrode array in the cochlea.
- 4 The cochlea's hearing nerve is stimulated by the electrodes, and sends impulses to the brain where they are interpreted as sound.





### Which children benefit from a cochlear implant?

Your audiologist or early intervention service may speak to you about a cochlear implant if your child has:

- A severe or profound hearing loss
- Had limited progress with hearing aids

Every child who attends a cochlear implant clinic is carefully assessed and only those who are suitable are recommended for an implant. The evaluation occurs over a number of appointments. The team will explain the process, the potential benefits and chances of success, and answer any of the family's questions. Of course, it's the family's decision whether to proceed with the surgery.

It is important to continue using your child's hearing aids during the evaluation period, to keep their hearing pathways stimulated.

### The cochlear implant procedure

Inserting a cochlear implant is a routine procedure performed by a cochlear implant surgeon or ENT surgeon. It takes about 1 – 3 hours plus a few hours in recovery while the anaesthetic wears off. The surgeon will let you know how to care for your child at home after the surgery. <sup>6</sup>

Once the surgical site has healed, they'll be able to switch on (fit) the sound processor. The team at the implant clinic will tell you everything you need to know about your child's cochlear implant and the process moving forward. You'll attend regular appointments to program and fine tune the sound processor, as well as chat about how you're going.

### Bimodal hearing – a cochlear implant and a hearing aid

Some children hear best with a cochlear implant on one ear and a hearing aid on the other. This is called 'bimodal hearing'. Bimodal hearing can:

- Make the best of the hearing in the ear without the cochlear implant
- Make the best of hearing technology for situations with background noise



Image courtesy of Oticon Medical



## Other aids

### Bone conduction aids

When conventional hearing aids aren't suitable (for example, where a child's outer ear hasn't formed normally) or for children who can't wear ear moulds, a bone conduction aid is sometimes used. This type of hearing aid delivers sound directly to the inner ear, bypassing the whole of the middle ear. They can be worn on a hard or soft headband, or fitted in to a cap.

Bone conduction hearing aids amplify sound waves and send them to a bone conductor vibrator that is worn on the bone behind the ear. Vibrations from the conductor send the signals directly to the inner ear by vibrating the bones of the skull.

### Implantable bone conduction devices

For people who will need to use a bone conduction hearing aid on a permanent basis an implantable bone conduction aid may be recommended. This is a device that connects to a titanium screw or magnet that's implanted in the bone of the skull, just behind the ear. This, of course, requires surgery and medical assessment and is something you'd discuss with your audiologist and ENT surgeon. Generally, this type of technology isn't used for children under the age of 5.

### Middle ear implants

A middle ear implant can be used for children with mild to severe conductive hearing loss or mixed hearing loss, where the cochlea and hearing nerve are both working. This is, however, not a common procedure for children in Australia.

The middle ear implant is made of 2 parts: an external audio processor (hearing aid) connected by a magnet to an internal implant. The implant vibrates the bones in the middle ear or the membrane window of the cochlea, which sends the sound into the cochlea, up the hearing nerve to the brain. Medical assessment and surgery are required.

### More information on implants

These companies provide cochlear implants and other implantable hearing devices in Australia. Their websites are packed with valuable information.

**Advanced Bionics (cochlear implants):** [advancedbionics.com](http://advancedbionics.com)

**Cochlear (cochlear implants and bone conduction implants):** [cochlear.com/au](http://cochlear.com/au)

**MED-EL (cochlear implants, bone conduction implants and middle ear implants):** [medel.com](http://medel.com)

**Oticon Medical (cochlear implants and bone conduction implants):** [oticonmedical.com](http://oticonmedical.com)

## Other assistive technology

Hearing aids and cochlear implants help people hear better over distances of around 1-2 metres. Sometimes your child may need help to hear from further away though, and other assistive technology may be useful.

**Remote microphone systems** may help your child hear over a distance and in background noise. Lots of children use these in classrooms, but they can also be helpful in other noisy situations where they are further away from the person speaking, like in the car or for certain sports. This system has two parts – a transmitter microphone that is worn by the person speaking, or placed on a table, and a receiver that picks up the microphone signal. The receiver can be worn directly in the ear or connected to a hearing aid or cochlear implant sound processor.

**Sound Field Systems** are used in a classroom setting. A transmitter microphone sends the speaker's voice to one or more loud speakers, to spread the voice evenly across the classroom.

**Assistive listening devices** can help in situations like watching TV or streaming sound from a smart phone.

**Alerting devices** like smoke alarms and door bells that flash or vibrate can be helpful. Vibrating alarm clocks are great for shaking sleepy teenagers out of bed.

**Captions** can be useful for older children. You can switch to captions on more modern TVs. Some online platforms offer captioning for remote learning or meetings, plus several companies provide live captioning for events and meetings.

Your audiologist can advise you on any of these technologies and how they may be useful for your child.

# Supporting your child's development

## Early intervention

Early intervention helps children to reach their potential in all areas of development, including:

- Language and communication (a strong focus for children with hearing loss)
- Social
- Emotional
- Physical
- Cognitive

Research shows that the earlier these services begin, the better the outcomes for children with hearing loss, so early intervention will probably start when your child is first diagnosed<sup>5</sup>.

Hearing Australia works with many early intervention services and your audiologist will be able to refer you to local organisations that could help your child. Parents are able to choose the service they feel best suits their needs and they can switch services at any stage.

## PROUD OF OUR HAPPY LITTLE BOY

*The first thing our 2-and-a-half-year-old son asks for in the morning is his hearing aids, 'ears on now please'. He loves them!*

*We first found out about Noah's hearing loss very early on. Like most babies born in Australia, he had a newborn hearing screening, which in his case indicated we should have further testing. We went on to get an official diagnosis of hearing loss and visited Hearing Australia to arrange hearing aids.*

*We did feel overwhelmed, especially at first as we fumbled to put the hearing aids in his tiny ears. But we kept going, telling ourselves the more he wore them the better for him, and before we knew it, we were pros.*

*As a rule, we try to embrace the opportunity to educate people when they ask about our son's hearing. That's not to say we haven't shed a tear over some of the more confronting questions we've been asked, but generally we see it as a chance to help people understand hearing loss.*

*We have the most amazing Teacher of the Deaf who works with Noah's childcare centre so they know how to best support his hearing while he's there. As well as hearing aids, we also have the Roger transmitter which helps him listen and access speech sounds.*

*Other children are often curious about our son's hearing aids but it's easy to explain – the hearing aids help him hear, the same way as glasses help people see.*

*Noah made friends with other kids like him through his early intervention program. Meeting other families who've gone through similar diagnoses helped us all, particularly in the early days.*

*We've had ups and downs but it's amazing how resilient kids are. Our son is such a chatterbox now, and most importantly he's a happy little boy – something we are immensely proud of.*





While there are differences in the services between organisations, they typically follow the same aims:

- To help you make informed choices about your child's hearing journey
- To help you gain skills and understanding to support your child's communication and language skills development
- To deliver any developmental therapy support
- To give families of children with hearing loss opportunities to meet each other
- To give general support and information on your child's hearing loss

Early intervention services may have a family or child focus and programs take place in centres, homes or both.

For older children, there's a range of educational support services including specialist facilities or visits from a specially trained teacher. This depends on your child's type and degree of hearing loss.

Find out more from your audiologist, or visit [hearing.com.au](https://hearing.com.au)

### Family Centred Early Intervention (FCEI)

FCEI aims to support and empower families. It acknowledges the importance of providing services that are based on the best available research and guidance, delivered by specialist professionals, while respecting the important role that families play in their child's development.

FCEI understands that every family has unique needs and ways of doing things, and that the wellbeing of the child and family are important for helping children to achieve the best outcomes.

In 2012, an international panel developed a consensus statement that recommends 10 best practice principles for providing family centred care for children with hearing loss (see page 25). You may like to keep these in mind when choosing a service provider for your family.<sup>7</sup>



- 1 **Early, timely and equitable access to services.** Comprehensive services are offered and available regardless of the family's socioeconomic status, income, cultural background or where they live.
- 2 **Family/Provider Partnerships.** There is a balanced partnership between the family and the professionals supporting them.
- 3 **Informed Choice and Decision Making.** Service providers promote processes that help families to gain the information, expertise and experiences to make fully informed decisions. They understand that decisions may change over time.
- 4 **Family Social and Emotional Support.** Families are connected to social and emotional support systems so that they can effectively help their child.
- 5 **Family Infant Interaction.** Families and service providers work together to create optimal environments for language learning.
- 6 **Use of Assistive Technologies and Supporting Means of Communication.** Service providers are skilled in all the tools, technology and mechanisms that will best help the child's language and communication development.
- 7 **Qualified Providers.** Service providers are well trained and have specialised knowledge and skills to work with children who are deaf or hard of hearing and their families. This includes both the child's development and the well-being of the child and family.
- 8 **Collaborative Teamwork.** Early intervention is provided as part of a team, that contains a range of professionals who have the skills to meet the needs of the child and family.
- 9 **Progress Monitoring.** The service monitors the outcomes of both the child and the family.
- 10 **Program Monitoring.** The programs also monitor their own performance, to ensure that they are following best practice and providing a quality service.

Aussie Deaf Kids has a free online course to help families make informed decisions.



## Hearing loss and additional needs

Around 40% of children born with a permanent hearing loss have 1 or more additional needs<sup>8</sup> that may be diagnosed at birth or later on. These conditions can include:

- Cognitive disability
- Learning disability
- Cerebral palsy
- Autism Spectrum Disorder
- Behavioural-emotional disorder
- Vision impairment

If your child has additional needs, you'll probably be supported by a range of professionals, rather than only hearing professionals. Your Hearing Australia audiologist will work in collaboration with your team. We can also tailor appointments to suit your child (for example, testing over a number of shorter appointments or changing how the room looks). We understand too that, at times, you may prioritise their other needs over their hearing loss.

Remember, we want the best for your child so we'll do everything we can to ensure they have a pleasant and productive experience with us.

**Vision:** Children with hearing loss rely heavily on vision, so it's important to have their eyes checked regularly. This means any minor issues can be corrected. Sometimes doctors can pick up clues from examining eyes about the cause of hearing loss (for example, babies who were exposed to rubella during pregnancy have distinct markings on their retina). It's very rare for children to be born or become completely deaf and blind but varying degrees of both is not rare. Children who have significant vision and hearing loss may benefit from more specialised programs.<sup>9</sup>

A full list of service providers who support children who are Deaf or Hard of Hearing and their families is available on our website: [www.hearing.com.au](http://www.hearing.com.au)

Photo courtesy of Kate Disher-Quill.







## LIVING WITH USHER SYNDROME

***“As a mother of 2 children with hearing loss, if there’s anything I want to share with parents at the beginning of their child’s hearing journey, it is this – it’s going to be OK! Your child can lead a happy and full life and they will be able to look after themselves.*”**

*When our sons, who are now 7 and 5, were pronounced profoundly deaf at birth, it felt like the worst news ever. We later found out they have a rare genetic syndrome called Ushers which would also affect their eyesight, and when we heard this, we honestly felt we’d hit rock bottom.*

*At this stage, I found therapy tremendously useful. It helped me get closure and the motivation to move forward with positivity. From there, we built our support networks, did our research and got prepared for life with two children with Ushers. And that life is pretty good!*

*The boys are totally accepted in to society and happily attend a mainstream school where they’ve been embraced by staff and students alike since day one. They have fantastic Teachers of the Deaf on hand to help when they need it. We’ve encouraged the boys to be direct with their classmates about their hearing loss and how certain things make them feel, which we see as an important coping tool in life. We are equally upfront if people stare or ask questions. The boys have nothing to be ashamed of and taking control of situations in a friendly manner is empowering.*

*It’s important for parents to get prepared early on with the right information and support. For us, that came from our early intervention service, as well as specialised hearing and vision service providers. We also got great help from parent support group, UsherKids. Often the best guidance comes from other parents with similar experiences so I’d highly recommend getting out there and meeting other families in your situation.*

*We are so fortunate to be in Australia where children receive fantastic care from birth. Your child has every opportunity so enjoy the journey and marvel at how they grow and develop. Build yourself a strong, trusted network of support, create your tribe and you really can’t go wrong!”*





## Communication

However old your child, and whether they're speaking yet or not, you'll be communicating with them already. Facial expressions, tone of voice, gesture and touch all help your child to understand what's happening.

Early intervention will help you use your communication to develop your child's own language and communication skills. There's a range of different approaches, and the right one for your family depends on your situation.

Some families choose a combination of approaches, for example a child may use spoken language when they're wearing hearing aids, and switch to signing at swimming lessons or bath time when they can't.

### *Auditory-verbal/oral-aural*

These programs focus on using even small amounts of hearing to develop speech and process spoken language. This enables children with hearing loss to learn to listen, understand spoken language and communicate through speech using the hearing they have. In the oral-aural approach they also use lip-reading. The parent is usually the main teacher in this approach, with support, of course.

### *Sign language In Australia*

Auslan is a language of the Deaf community (more on the Deaf community later). There is also an 'International Sign' system that allows Deaf people from different countries to communicate.

Finger spelling uses 26 signs that represent the 26 letters of the alphabet. It can be used to spell out words that don't have a sign in Auslan or simply to support a child with hearing loss to communicate.

### Bilingual/bicultural

These programs focus on the child learning both Auslan and English, to foster language, communication and literacy skills. In such settings children who are deaf or hard of hearing may learn about the Deaf community, its history, language and culture as well as learning about the hearing community. Some staff in bilingual/bicultural programs also have lived experience as a bilingual deaf or hearing person. Auslan in the home programs are also available in most states to support families and complement early intervention services.

Visual aids, like signs in classrooms, are also useful communication tools.

### Total communication

These programs focus on using a range of communication methods including speech, lipreading, listening, signing and finger spelling, either on their own or in combinations. When speech and signing are used together, it's called 'simultaneous communication'.

Children with multiple disabilities may use:

### Augmentative and alternative communication (AAC)

These systems add to or replace a child's speech, for example the Makaton vocabulary language program, gestures, objects, pictures and symbols.

### Deaf-blind communication

These communication methods are tactile in nature to ensure that the deaf-blind person can access information for language development and communication.



**TOP TIP!** If your young child is constantly pulling their hearing aids off, take a break. Put the oven timer on for 30 minutes then try again

## THE BEST CALL I MADE

***"My daughter is a happy 11-year-old who enjoys a full, active life with many opportunities. Together, we're on an incredible journey."***

*When she was 2 months old, I found out she was profoundly deaf. I was alone at the appointment and broke down in tears. This is why I would always urge a parent of a child with hearing loss to take a support person to appointments, especially in the early days. A support person can help with practical things like driving and remembering information, as well as emotional support.*

*The best call I made was to the early intervention program. The director patiently listened to me and reassured me that everything would be OK, and it is. Early intervention, combined with a cochlear implant, guidelines from Hearing Australia and speech therapy all had a huge impact on my daughter's life.*

*Joining a play group for children with hearing loss also helped. Seeing how other parents handled everyday situations was a great way to pick up tips and tricks. We both made amazing friends who really understand hearing loss.*

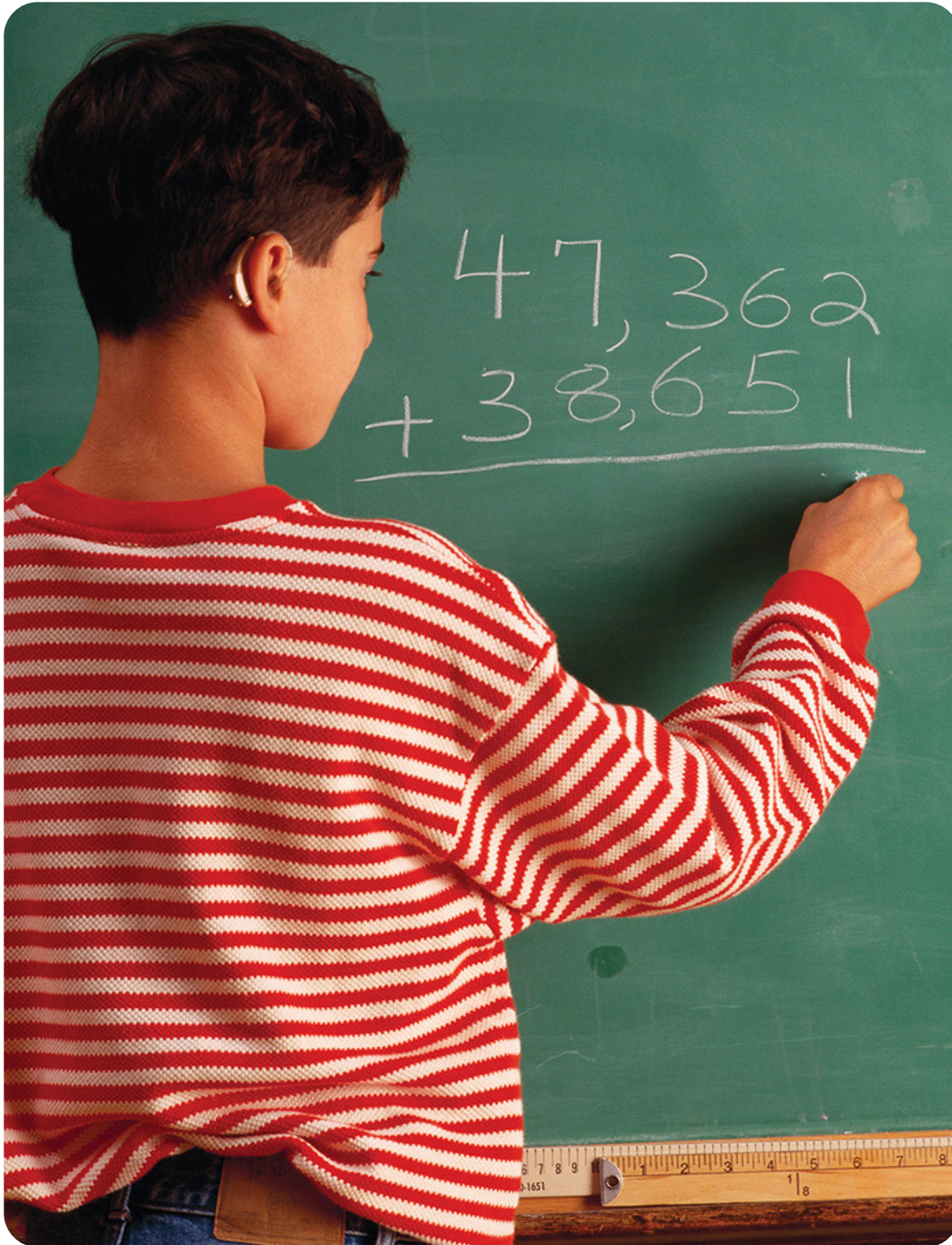
*We're learning sign language now, though I wish I'd done it earlier. Even though my daughter's a speaking child, sometimes she doesn't want to hear. Auslan is a beautiful language that's particularly useful in noisy environments. We know the basic emergency signs so far which are extremely helpful so I'm looking forward to learning more.*

*For all parents, it's important to make everyday things part of vocabulary learning, teaching your child during day to day activities like shopping or cooking and saying things out loud as you do them.*

*I did a lot of research into schools and found one that was well-established with sound-proofing in the classrooms and a sound field system that links into the children's hearing equipment. There are other families with children who have hearing loss at the school and the teachers are well equipped to help the students.*

*I believe our imperfections are what make us beautiful so we look for the light-hearted moments with our daughter. Instead of taking it seriously when she pronounces a word differently, we take it as an opportunity to share a giggle. Fun and laughter are important!"*





## School years

School offers exciting opportunities for your child and starting school is an important milestone in your child's life. While it can be a nerve-wracking time for kids and parents alike, there's plenty of support to ensure your child has a great experience, both in the classroom and with their friends.

**Education for educators** – our audiologists are here to offer expert support and advice to your child's teachers, educators, instructors, sporting coaches and health professionals.

Your audiologist can help you get in touch with services to help you decide which school option suits your family best, and to ensure a smooth transition for your child. School options may include:

- A mainstream school, with or without supports
- A hearing unit within a mainstream school
- A specialist school for children who are deaf or hard of hearing

### Department of Education

Your state's Department of Education provides supports for students with hearing loss in mainstream schools. Depending on the type and degree of your child's hearing loss, this could include:

- Itinerant support from a visiting specialised teacher
- Private support in the classroom
- Specialised hearing units and facilities (in some mainstream schools)
- Remote microphone technology in the classroom (for better sound)
- Adjustments to the classroom to reduce noise
- Specific seating arrangements to make hearing easier for your child



Meet with your child's school at the beginning of each year to create a support plan based on their needs. Your audiologist can also help.

#### Catholic and independent schools

Some catholic and independent schools offer specialised hearing units, or visiting teachers depending on the type and degree of your child's hearing loss.

**BE POSITIVE!** Your child will watch and learn from you. If you have a positive attitude towards their hearing loss it will help them feel comfortable and confident at school.

#### Outside of school

Encourage your child to get out there and explore some hobbies and passions. Group activities are important for building your child's support and confidence, and for making new friends. Your child may enjoy:

- Sports, debating, chess, drama or band
- Workshops, camps and other programs
- Support groups, particularly older children with hearing loss

If you're interested in activities and groups specifically related to hearing loss, speak to your audiologist.

**Parent support groups** - If you haven't already you may like to join a parent support group and meet other adults in similar situations to you. It's a great way to share experiences and learn from each other. In some areas, you can access more formal peer mentor programs as well. Your audiologist can help.

Photo courtesy of Kate Disher-Quill.



# The Deaf community

The Deaf community is a whole network of people who share their own culture, language and history. Becoming involved in this community may help you find support and friendship with others who have shared experiences.

For parents, particularly, meeting Deaf adults who can highlight their rich, fulfilling lives and help you make the most of your child's experiences growing up, can be valuable.

## Deaf culture and communication

Sign language is at the centre of Deaf culture. A respect for sign language is the most significant factor towards becoming part of the community. Simply being physically deaf does not automatically give someone 'membership'.

In Australia, the Deaf community's language is Auslan. Not all deaf people use Auslan and it's not only people who are severely or profoundly deaf who use Auslan. In fact, many members of the Deaf community are moderately deaf.

Auslan is officially accepted as a community language. It has a tradition of inventive storytelling, humour and drama that is now being enhanced with linguistic research.

The way Deaf people interact may be quite different from hearing people. Because their world is mostly visual, they often use complex and effective ways to gain attention, take turns in conversation, introduce strangers and the like. Years of experience trying to communicate with people who don't understand them makes many Deaf people flexible and imaginative when it comes to communication.

## Cultural values

While attitudes are changing, there's still often a sense among some hearing people that deaf children are disadvantaged or disabled. Many Deaf adults disagree and instead view themselves as being part of a rich culture and community that is enhanced by relatives, peers, friends and colleagues.

## Community events

There are various events for people in the Deaf community. The Australian Deaf Games and the Deaflympics are held every 4 years. There are also other national gatherings of deaf political and cultural organisations.







## GROWING UP IN THE DEAF COMMUNITY

*"When my son was born deaf, it wasn't a huge shock to me or my husband. Both of us are deaf and we both grew up surrounded by deaf people, immersed in Deaf culture and strongly connected to the Deaf community. I was born deaf to deaf parents, my husband is one of 8 siblings, and they are all deaf. We certainly don't see it as a negative, and have always been raised with a sense of Deaf Pride.*

*So, when the nurse was distressed about my newborn baby boy being deaf, it was quite upsetting. And when my daughter was later born with hearing, and the nurses were celebrating on our behalf, that hurt too.*

*We knew from our own experiences that there was no reason being deaf would hold our son back. Whether our child could hear or not, we'd be teaching them sign language. We used Auslan from birth and both our babies were communicating back to us from the age of 5 months.*

*I would definitely encourage any parent of a child with hearing loss to consider learning Auslan. There are so many benefits. Not least, it gives your child a communication method that isn't dependant on technology or external tools, they can just use their hands. It opens opportunity and helps them get to know other people like them, as well as explore that aspect of their identity. It's also great for brain development, emotional and social development. That said, there's a whole host of communication methods and every family has to do what works for them.*

*Finding out your child is deaf can be daunting, it even was for me at times! But one thing I'd say to parents is don't be scared. Fear is a common response but don't miss out on valuable time with your baby by worrying too much about the future. Take time to bond with your baby, play with your baby, use lots of eye contact, gestures and visual cues.*

*The Deaf community is very welcoming and can offer your family wonderful support and connection. My children are 7 and 6 now and both are doing well in mainstream school. They're extremely well-adjusted and participate in plenty of extra-curricular activities, including sports. They have a strong sense of identity and, importantly, they like who they are. And, so do I!"*

# Funding options

There is a range of government funding options to ensure all Australian children with hearing loss can access hearing technology.

## Hearing aids and remote microphone systems

**Fully-subsidised technology** – Hearing Australia provides a range of high-quality hearing aids and remote microphone systems at no cost to eligible children. They are fully funded by the Australian Government's Hearing Services Program. These devices are proven to meet the goals of most children with hearing loss.

**Partially-subsidised technology** – If you're interested in a device that has additional features that are appealing but not essential for hearing speech (or not yet proven to offer benefits) then you can contribute towards the cost.

**Repairs and maintenance (optional)** – Families pay a small annual maintenance contribution and all other costs are covered by the Hearing Services Program.

## Implantable bone conduction aids and middle ear implants

**Hospital stay, surgeon and anaesthetist costs** – may be covered by various forms of government funding, plus private health insurance if you have it. Your implant clinic will be able to give you all the relevant information.

**Sound processor** – Hearing Australia provides sound processors for children who meet clinical criteria, at no cost. For other children, families may need to arrange funding.

**Repairs and maintenance (optional)** – For all children who have been fitted with an implantable device, families pay a small maintenance contribution and all other costs are covered by the Hearing Services Program.

## Cochlear implants

**Hospital stay, surgeon and anaesthetist costs and initial sound processor provision** – may be covered by various forms of government funding, plus private health insurance if you have it.

Hearing Australia doesn't perform cochlear implant evaluation or surgery but we do have a close relationship with clinics around Australia and provide a number of support services, including:

**Repairs and replacement parts (optional)** – For all children who have been fitted with a cochlear implant, families pay a small maintenance contribution and all other costs are covered by the Hearing Services Program.

**Replacement sound processors** – Hearing Australia provides replacements for clients under 26 years of age if the processor is lost or damaged beyond repair

**Technology upgrades** – for those under 26 years of age who meet clinical criteria

**Other services** – including fitting hearing aids to the ear without the cochlear implant and providing Remote Microphone Systems where helpful.

Your audiologist can help with further information.



## Other funding supports

### *National Disability Insurance Scheme (NDIS)*

The NDIS provides funding to help people with disability achieve their goals. Goals may include things like greater independence, community involvement, employment and improved well-being.

If your child is eligible for the NDIS you may be able to receive funding for additional reasonable and necessary supports that are not available through Hearing Australia. For example, specialist early intervention services, Auslan services, programs that help young people to improve their participation in education, work or social activities and some assistive technology such as alerting systems. Your audiologist will be able to provide you with more information about the NDIS, and you can also visit the NDIS website.

The NDIS also covers the annual hearing aid maintenance fee for children.

Your audiologist will talk to you about the NDIS and how to complete the application if you would like to apply.

### *Centrelink*

Some parents and carers may be eligible for carers allowance through Centrelink, depending on the severity of the hearing loss. For more information please contact Centrelink.

### *Travel allowances*

If you live regionally, you may be eligible for a travel allowance to help you attend appointments. This will vary state to state so please ask your audiologist for more information if required.







# Top tips from other parents!

When your child has a hearing loss there's a lot to keep on top of. We've compiled a list of top tips from parents who've been there before you, to help you stay organised.

## Reports and appointments

- Store reference numbers, like your child's Hearing Australia client number, hospital registration number and health care card number, in your phone.
- Create a binder with separate sections for major categories like audiograms, Hearing Australia letters, doctors' reports and equipment information.
- Write down questions before appointments and bring the list with you so you don't forget to ask anything.
- If a family member can't make an appointment in person, ask if they can join by phone or video conference.
- When you get in from an appointment, scan all the paperwork and save as electronic copies so it's up to date for the next time.
- Write up summaries of dates, appointments and results in 'plain English' rather than medical jargon.

## Hearing aids

- Keep everything related to hearing aids in one safe place (hearing aid parts, listening devices, chargers, spare clips, instruction manuals, cleaners and spare batteries).
- Pop sealable containers in your hand bag and beach bag for storing and protecting hearing aids.
- Label your child's hearing aids with your phone number.
- Carry spare batteries in your wallet or handbag (but make sure they're safe from little hands).
- Set recurring appointments in your phone calendar for changing batteries, cleaning and testing.
- Save your most recent ear mould. Then if your child loses a hearing aid and needs a loan one, you can be up and running.

# Resources

## Professionals you may meet

There's a wealth of professional support for you and your child, and you'll probably come across some jobs you didn't know existed. Here's a quick-reference run down of what each person does.

### **Auditory-verbal therapists**

Auditory verbal therapists help children to use any hearing they have (whether they use a hearing aid or implant) to listen, process verbal language and speak. They support children with any degree of hearing loss, and aim for them to develop in typical learning and living environments. An auditory-verbal therapist is a Teacher of the Deaf, speech pathologist or audiologist who has passed the international qualifying exam and is licensed by Auditory-Verbal International.

### **Counsellors**

Counsellors have special skills in listening to people and assisting them with understanding problems and making choices. They work with families or individuals.

### **Clinical geneticists**

Clinical geneticists are doctors with special training in how medical conditions or characteristics are passed from one generation to the next. A geneticist may be able to advise you on the chances of hearing loss occurring if you have more children and the likelihood of your child passing on hearing loss to their own children.

### **Ear, nose and throat (ENT) specialists**

ENT specialists are surgeons who specialise in the managing disorders of the ears, nose and throat. An ENT specialist examines your child's ears before or soon after hearing devices are fitted to determine if there are any additional problems.

An ENT specialist may carry out surgical procedures (eg, the insertion of grommets) if required and is involved in the ongoing management of any ear infections or wax removal. An ENT specialist is also an integral part of the cochlear implant assessment team.

### **Early support services workers and family support facilitators**

Early support services workers and Family support facilitators are usually associated with Newborn Hearing Screening programs. They are professionals who are trained to help families through the early stages of their hearing journey by answering questions and helping them to set goals for their child.

### **Guidance officers**

Guidance officers work in educational settings and provide guidance and support counselling services to schools and their communities. They help with the educational, physical, social, emotional and intellectual development of children. They assist through activities such as assessment, intervention, counselling and addressing behaviour issues.

### **Interpreters**

An interpreter can help when there's a change in language between two people, for example, between Auslan (Australian Sign Language) and English. In school settings a similar process may be needed between spoken English and signed English. This process is called transliterating.

### **NDIA Early Childhood Partners**

The NDIA has engaged Early Childhood Partners (EC Partners) around Australia to deliver the early childhood approach. EC Partners are experienced in providing early childhood intervention. For children aged under 9 years they can connect you and your child with appropriate supports in your area, if appropriate provide some short-term early intervention support or help you to request NDIS access if your child requires longer term early childhood intervention supports. If your child becomes a NDIS participant they will also work with you to develop and implement your NDIS plan.

### **NDIA Partners**

Early Childhood Partners (EC Partners) and Local Area Coordinators (LACs) are Partners in the Community who are the main point of contact with the NDIS for children. EC Partners and LAC's help you to understand and access the NDIS, develop a plan and connect to supports and services in your community.



### NDIA Planners

The planner is employed by the NDIA and works with NDIS participants to help develop and approve NDIS plan to meet your individual child's goals.

### Occupational Therapists

Occupational therapists look at your child's developmental level of play, fine motor skills and daily living skills such as eating and dressing. They can show you ways your child can learn self-help skills and provide information about good positioning and seating for optimal hearing.

### Ophthalmologists

Ophthalmologists are doctors who specialise in managing disorders of the eye and visual system. It's important that children with a hearing loss also have their vision checked.

### Paediatricians

Paediatricians are doctors who specialise in managing the health and development of children.

### Parent mentors

Parent mentors are parents of children who are Deaf or Hard of Hearing, and have received training to provide unbiased support to families whose children have been diagnosed with hearing loss.

### Physiotherapists

Physiotherapists have specialised skills to assess and diagnose physical problems. They plan and administer treatment programs that aim to restore normal mobility and strength or minimise dysfunction resulting from a disability.

### Psychologists

Psychologists are trained to assess cognitive and behavioural functioning through a variety of assessment techniques, including specific tests, observations and interviews. They can develop a program to meet the psychological needs of an individual or family.

### Social workers

Social workers are skilled in working with individuals, families and groups on practical matters that impact your family's day-to-day life. They can provide short or long-term support, counselling and therapy. A social worker knows how to use community resources and can refer your family to services that best suit your needs. A social worker may also be called a family support worker.

### Speech pathologists

Speech pathologists assess, diagnose and treat all types of communication disorders related to speech, language, voice quality and fluency. They can be particularly helpful if your child's hearing loss is affecting their voice quality or pronunciation.

### Teachers of the Deaf

Teachers of the Deaf are teachers who have received specialised training in teaching children who are deaf or hard of hearing. The teacher will work with you to enable your child to reach maximum developmental potential in their speech, language, cognition, audition and social, emotional and motor skills.

#### Multidisciplinary hearing loss investigation units in Australia



##### NSW

John Hunter Hospital, Newcastle

The Children's Hospital at Westmead Deafness Centre

Sydney Children's Hospital Randwick Hearing Support Service



##### Victoria

Barwon Early Assessment of Child Hearing Clinic, University Hospital Geelong

Joan Kirner Women's and Children's Sunshine Hospital

Monash Children's Hospital Paediatric Hearing Loss Investigation Clinic

Sunshine Investigation of Newborns and Children with Hearing Impairment Clinic

The Royal Children's Hospital Caring for Hearing Impaired Children Clinic



##### Queensland

Queensland Children's Hospital Childhood Hearing Clinic



##### South Australia

Flinders Medical Centre (FMC)

The Women's and Children's Hospital (WCH)



##### Western Australia

Perth Children's Hospital



##### Tasmania

Royal Hobart Hospital Audiology Service (statewide)

## Guide to searching for information

The internet is a wonderful place to get information about hearing loss, but it's important to distinguish between opinions or beliefs and research-based facts.

When you're looking for information, online or otherwise, keep the following in mind:

- **Is it current?** Check the publication date or date of review
- **Is it peer reviewed?** Peer reviewed means other professionals have thoroughly checked the information before it is published. Peer review articles are most likely to be reliable sources.
- **What's the level of evidence?** The level of evidence provided in reports can be ranked into 4 levels. Systematic reviews of randomised controlled trials rank the highest, followed by individual randomised controlled trials, well-designed comparative and observational studies and finally case studies. DISCERN ([discern.org.uk](http://discern.org.uk)) has a brief questionnaire that can help you assess the quality of information.
- **Is the information biased?** Some reports contain weaknesses or leave out information, which makes for biased conclusions. Always check more than one source for information.
- **Does it acknowledge sponsors or who paid for research?** Check for conflicts of interest to learn about why the research was done in the first place.
- **Reading about others' experiences:** Remember that other people's experiences may not reflect what you will experience. Every child and family situation is unique.

Reliable sources of online information include:

- The Hearing Australia website (of course!)
- Websites hosted by government departments, hospital and universities
- Websites hosted by major peer-reviewed journals
- Websites recommended by your audiologist, teacher or doctor
- Websites that are endorsed by the Health on the Net Foundation Code of Conduct. Look for the blue and red honcode seal on a website or app.

Always combine your research with professional advice. Your audiologist can help you consider how it fits with your child's situation and help you to make educated choices.





## Online resources, apps, books and podcasts

Please consult our online children's service provider directory to find the latest information about Australian organisations that provide services, support and advice for individuals and families of children who are deaf or hard of hearing. These include: Early Intervention Services, Educational Services, Peak bodies and Peer support groups.

The websites of each of these organisations contains a range of information and resources for families, as well as a listing of services they provide.

The list below contains other websites that have information or tools that may be useful for families.

### [Alexander Graham Bell Association for the Deaf and Hard of Hearing](#)

Offers a great deal of information on educational and communication strategies for the parents of children with hearing loss.

### [Auslan Signbank](#)

Is a language resources site for Auslan (Australian Sign Language). Auslan is the language of the Deaf community in Australia.

### [Association for Children with a Disability](#)

Is a Victorian based association supporting children with disability and their families.

### [Beyond Blue](#)

Provides information and support to help everyone in Australia achieve their best possible mental health, no matter how old they are or where they're based. You or your child can reach out via phone, online chat, email or the community member forums, whether it's just to chat or get advice.

### [Blue Bear Gets Ready For School](#)

Blue Bear is the mascot of the VDEI Transition to School Program. He wears hearing aids and he is about to start school! Join Blue Bear as he experiences getting ready for school. Follow his antics as he rummages for his hearing aids, puts his school uniform on and then discovers he has the wrong shoes! This is a story that will endear readers to Blue Bear, particularly families with a child who is deaf or hard of hearing.

### [Boys Town National Research Hospital](#)

Is a US clinical and research hospital focusing on childhood deafness, visual impairment and related communication disorders.

### [Central Institute for the Deaf](#)

Is an American institution with parent and child programs and information.

### [Children and Young People with Disability Australia](#)

Is the national peak body that represents children and young people (aged 0-25) with disability.

### [Deafnav](#)

Is a neutral, centralised portal that helps you better understand, access and connect with the Deaf and hard of hearing community.

### [Deaf Sports Australia](#)

Is the national parent sporting body representing the deaf and hard of hearing community. The state branches of Deaf Sports play a role in putting deaf and hard of hearing in touch with various sporting clubs and keeping the community informed of events and opportunities for meeting new and like-minded people.

### [Headspace](#)

Is the National Youth Mental Health Foundation providing early intervention mental health services to 12-25-year-olds. The service is designed to make it easy as possible for a young person and their family to get the help they need for problems affecting their wellbeing. This covers four core areas: mental health, physical health, work and study support and alcohol and other drug services.

### [Hearing Like Me](#)

Is a US based news and lifestyle website, sponsored by Phonak, for people whose lives are affected by hearing loss.

### [Hearnet online](#)

Is a service managed by Department of Audiology and Speech Pathology, The University of Melbourne, which provides easy to understand information explaining Hearing, Hearing Loss, Hearing Technology and Support Services.

### [Kids Helpline](#)

Is a free, private and confidential telephone and online counselling service specifically for young people aged between five and 25.

### [The John Tracy Clinic](#)

Is an educational centre for preschool deaf children and their families, based in the USA. It offers distance education courses for parents of deaf and hard of hearing babies and preschoolers, as well as parents of young deaf-blind children.

### [LOCHI](#)

Longitudinal Outcomes of Children with Hearing Impairment.

This website is hosted by the National Acoustic Laboratories, the research division of Hearing Australia. It shares resources and results from the world-renowned LOCHI study that prospectively evaluates the development of a group of Australian children with hearing loss as they grow up.

### [Media Access Australia](#)

Is Australia's only independent not-for-profit charitable organisation dedicated to increasing web and digital accessibility for people with disability.

### [Mytime](#)

Is a peer social support group service supported by the Department of Social Services. Mytime groups are for all parents and family carers of children aged under 18 years who need a higher level of care than other children. This may be because of disability, developmental delay or chronic medical condition. Members support each other and build relationships, which can lead to an increased sense of belonging and wellbeing.

### [National Deaf Children's Society \(UK\)](#)

In conjunction with The University of Manchester, NDCS, produced a booklet to assist with making an informed choice – Helping you choose: making informed choices for you and your deaf child (Early Support) by Carr, G et al (2006). Department for Education and Skills, UK.

### [National Disability Insurance Agency \(NDIA\)](#)

Is an independent statutory agency which implements the National Disability Insurance Scheme (NDIS). The NDIS aims to support a better life for hundreds of thousands of Australians with a significant and permanent disability and their families and carers.

### [National Relay Service \(NRS\)](#)

Is an Australia-wide phone service for people who are deaf, have hearing impairment and/or speech impairment and people wanting to communicate with them.

### [Raising Children](#)

Is a website funded by the Australian Government, which provides reliable, up-to-date and independent information to help your family grow and thrive together.

### [Supporting success for children with hearing loss](#)

This US-based website provides resources and information for teachers of the deaf, many of which may also be of interest to families. It is run by a team that includes an educational audiologist and a teacher of the deaf, both of whom have over 30 years professional experience.

### [Victorian Deaf Education Institute \(VDEI\)](#)

Is part of the Inclusive Education Professional Practice Branch in the Department of Education and Training (DET), Victoria. It contributes to improvement in the educational outcomes for the 4,000 students in Victoria who are deaf or hard of hearing (DHH) through professional learning programs; enabling evidence-based classroom practice; and improving access to learning through the latest technology based solutions. VDEI has a number of resources to help prepare children for school, including a story about Blue Bear, who wears hearing aids and is about to start primary school.



Hearing Technology companies also provide resources aimed at helping children understand hearing loss and hearing technology.

### [Advanced Bionics](#)

- [The Listening Room](#)

Here you will find a host of free, fun activities and resources to support the development of speech, language, and listening skills in people of all ages with a hearing loss. The Listening Room features three sections with content created specifically for their respective age groups: Infants & Toddlers, Kids, and Teens & Adults.

- [Tools for Schools](#)

The Tools for Schools™ (TFS™) program is designed to help children with cochlear implants succeed in the classroom. On this page you will find uniquely designed resources to help parents and teachers support children with cochlear implants at school. TFS also includes a section called Tools for Toddlers, which provides free resources that help parents chronicle, support, and enhance their young child's journey to hearing. From early intervention logs to literacy strategies to exploring communication options, these downloadable tools can help facilitate early language development.

### [Cochlear](#)

- [Sound Foundation for Babies](#)

This comprehensive resource provides parents of children with hearing loss, guidance in developing their baby's spoken language through listening.

- [Sound Foundation for Toddlers](#)

Sound Foundation for Toddlers follows on from Sound Foundation for Babies, supporting parents through the second year after cochlear implantation.

- [Scales of Development](#)

A valuable tool for monitoring listening and language development.

### [GN Resound](#)

- [Resound Help and Support](#)

### [MED-EL](#)

- [Little Ears Diary Activities](#)

The littleears Diary Activities includes 28 activities with ideas to practice listening and language learning in the home environment.

- [Little Listeners](#)

A resource for supporting young children with communication development.

### [Phonak](#)

- [Leo's World](#)

Leo is a cuddly, approachable mascot welcomes your child into a world of fun.

- [Guides for Parents](#)

Phonak offers several useful guides to support and give you insights throughout your child's hearing journey.

### [Oticon](#)

- [Oticon Medical](#)

### [Signia](#)

- [Signia Blog](#)

A Blog by Signia Hearing Australia discussing Hearing, Hearing Aids, Apps and Accessories.

### [Widex](#)

- [Widex AU Support](#)









## Hearing apps and other resources

Ask your audiologist for recommendations which may suit you and your child. Here are a few to consider:

### Learning Apps

**Auslan Storytime** is aimed at children who sign or are learning to sign who enjoy having stories told to them in Auslan.

**Babybeats** early intervention resource produced by Phonak, is filled with motivating and fun musical activities for parents of babies and toddlers with hearing loss. It guides parents through activities that will build the foundation for later learning, listening and communication.

**Baby Karaoke** is produced by the Raising Children network and is an animated karaoke styled game that enables the user to sing along with their child to well known songs and nursery rhymes.

**Ling Test** is a quick and easy listening check that was developed by Dr. Daniel Ling.

**Listen and Learn.** This Australian based app focuses on sounds heard in Australia, such as animals and safety sounds but also includes objects known anywhere.

**Peekaboo.** An app to help your child learn the sounds of farm animals. The animals are hidden behind bales of hay, your child hears the noise, touches the screen and the animal is revealed. This is a fun activity to encourage children to listen and identify sounds. It reinforces their learning by showing them a cartoon of the animal they heard.

**RIDBC Auslan Tutor** is a portable video-based Australian Sign Language (Auslan) teaching resource developed specifically for mobile devices. RIDBC Hearing Resources ([ridbc.org.au/hearing-services/hearing-resources](http://ridbc.org.au/hearing-services/hearing-resources)) also lists further apps to encourage development of listening and language skills.

**Signs and Sounds** has been developed to assist those who are learning Auslan and serves as an additional resource to apps such as Auslan Tutor.

### Picture Books

**A Birthday for Ben** by Ms Kate T Gaynor (2009)

**Bessie Needs Hearing Aids** by Jenna Harmke (2020)

**Cosmo Gets an Ear** by Gary Clemente (1994)

**I'm The Boss of My Hearing Loss** by Amy Kroll (2004)

**Dinosaur Friends: Dachy's Deaf** by Jack Hughes (a book that aims to encourage children to wear their hearing aids).

**The Cochlear Kids: Liam the Superhero** by Heidi Dredge

### Books

**Nobody's Perfect** by Marlee Matlin

**Dad and Me in the Morning** by Patricia Lakin

**Moses Goes to a Concert** by Isaac Millman

**In Prudence Park and a Sign Friendship** by Christine Burk

**Can You Hear a Rainbow? The Story of a Deaf Boy Named Chris** by Jamie Riggio Heelan

**Amelia and Me - On Deafness, Autism and Parenting** by the Seat of my Pants by Melinda Hildebrandt

**Our Little Sister Lotte and Her Special Ears** by Kelsey Browning, Illustrator Aleksandra Szmids

## Dvds

### Signin' Time

This DVD is aimed at parents of children of all hearing abilities, including children with hearing loss. It can also be used by child educators to learn basic signing. The DVD uses an instructional and song format to teach baby signs. It is produced for Australian audiences by Fingers and Thumbs, an Australian not-for-profit organisation whose mission is to "get Auslan out into the community in a playful, fun and entertaining way."

### **Speaking From Experience**

Young People and Hearing Impairment is a series of videos (DVD and [portal.realtimehealth.com.au/conditions/hearing-impairment-young-people](http://portal.realtimehealth.com.au/conditions/hearing-impairment-young-people)) focusing on the experiences of young people with hearing loss. Produced in 2010 by RealTime Health in collaboration with Hearing Australia and Aboriginal Medical Service of Western Sydney, the young people discuss how hearing impairment has affected them, how they cope in their daily life and how family, teachers and friends can help them manage their hearing loss. The program also has educational resources for teachers.

## Podcasts

### **My Amazing Body: The Ear**

My Amazing Body is a podcast produced by Queensland Health where interesting, unknown and misunderstood parts of your body are explored with help from medical experts and stories from real Queenslanders.

This episode is all about your ears ([health.qld.gov.au/news-events/podcast/my-amazing-body-the-ear](http://health.qld.gov.au/news-events/podcast/my-amazing-body-the-ear)). From how the ears work: how they enable you to hear, how they help you make sense of the world around you, and the role they play in balance. An Author with acquired hearing loss discusses how her hearing loss affects her day-to-day life, and a Queensland man talks about his experience with labyrinthitis, a condition that affects the balance centres of the ears.

### **NCCD Podcast: Classroom Adjustments - Hearing Loss**

The NCCD (Nationally Consistent Collection of Data on School Students with Disability) Podcast is an Australian Government Initiative, that highlights adjustments that can be made in the classroom to enable students with disability to access and participate in education on the same basis as their peers.

In this episode ([nccd.edu.au/professional-learning/classroom-adjustments-hearing-loss](http://nccd.edu.au/professional-learning/classroom-adjustments-hearing-loss)), adjustments that teachers can make in the classroom to support students who are Deaf or Hard of Hearing are discussed.





# Glossary

<b>ABR (Auditory Brainstem Response)</b>	A physiological measure of the hearing nerve's response to sound).
<b>Acoustic Reflex</b>	A muscle reflex in the middle ear, that occurs in response to loud sound.
<b>Acquired Hearing Loss</b>	Hearing loss that develops after birth
<b>Aided thresholds</b>	The softest sound that can be heard through hearing aids, when tones are presented through a loud speaker.
<b>Air Conduction</b>	Sound is transmitted to the inner ear via the ear canal and middle ear. (i.e. the whole hearing pathway)
<b>Assistive Listening Device (ALD)</b>	Used with or without a hearing aid or sound processor, to help in situations like watching TV or listening to music.
<b>ASSR (Auditory Steady State Response)</b>	A physiological measure of the nerve activity in the hearing pathways.
<b>Auditory Neuropathy Spectrum Disorder (ANSD)</b>	Hearing loss that occurs when the sound travels well into the cochlea but there is a problem with the way the hearing nerve transmits the sound to the brain.
<b>Audiologist</b>	University trained professional who is an expert in hearing assessment and rehabilitation.
<b>Audiogram</b>	A graph shows the softest sounds that can be heard at a range of frequencies.
<b>Auditory Verbal Therapy</b>	Focuses on using hearing and listening to develop spoken language.
<b>Auslan</b>	Australian Sign Language
<b>Behavioural hearing test</b>	The child needs to give a response when a sound is heard.
<b>Bilateral</b>	Occurring in both ears.
<b>Bilingual-Bicultural</b>	An approach that uses both speech and Auslan to develop communication. May also involve learning about the Deaf Community and Deaf Culture.
<b>Bimodal</b>	A hearing aid is worn on one ear and a cochlear implant is used on the other ear.
<b>BTE (Behind the Ear hearing aid)</b>	A hearing aid that sits behind the ear, and sends sound into the ear via an ear mould or ear tip.
<b>BOA (Behavioural Observation Audiometry)</b>	The audiologist observes subtle changes in a baby's behaviour in response to sound – for example, eye widening or increased sucking.

<b>Bone conduction</b>	Sound is transmitted directly to the inner ear, by vibrating the bones of the skull.
<b>BC aid (Bone conduction hearing aid)</b>	A hearing aid that sends sound directly to the inner ear by vibrating the bones of the skull. The vibrator is worn on a hard or soft headband.
<b>CAEP</b>	Cortical Auditory Evoked Potential (a physiological measure of hearing in the brain)
<b>Cochlea</b>	The inner ear.
<b>Cochlear implant</b>	A cochlear implant has 2 parts: an implant (inserted by surgery) that goes inside the inner ear and can't be seen, and a sound processor that's worn on the outside of the head. Rather than amplify sounds, a cochlear implant turns sounds into electrical signals that it delivers directly to the nerve endings in the ear.
<b>Conductive hearing loss</b>	Hearing loss comes from the outer or middle ear.
<b>Congenital</b>	Present at birth
<b>Deaf</b>	When spelled with a lower case 'd', is a medical term describing significant hearing loss. When spelled with a capital "D" the term refers to people who view themselves as part of the Deaf community.
<b>Decibel (dB)</b>	A measure of the intensity (loudness) of a sound.
<b>Early Intervention</b>	Services that are designed to help a child to reach their potential in all areas of development.
<b>Ear Mould</b>	A customised ear piece that carries amplified sound from the hearing aid to the ear canal.
<b>ENT</b>	Ear, Nose and Throat specialist.
<b>FCEI (Family Centred Early Intervention)</b>	An approach to Early Intervention that aims to support and empower families, recognising that every family is unique. Qualified professionals and families work together to help the child to achieve their best outcomes.
<b>Feedback (acoustic feedback)</b>	A whistling noise that occurs when amplified sound leaks from the ear, is picked up by the hearing aid and reamplified.
<b>Frequency</b>	The pitch of a sound.
<b>Functional Questionnaire</b>	A questionnaire that asks parents, carers, teachers or the child themselves to give information on how the child responds to sounds in everyday life.
<b>Hard of hearing</b>	A term that may be used to describe those who have a hearing loss and communicate predominantly orally

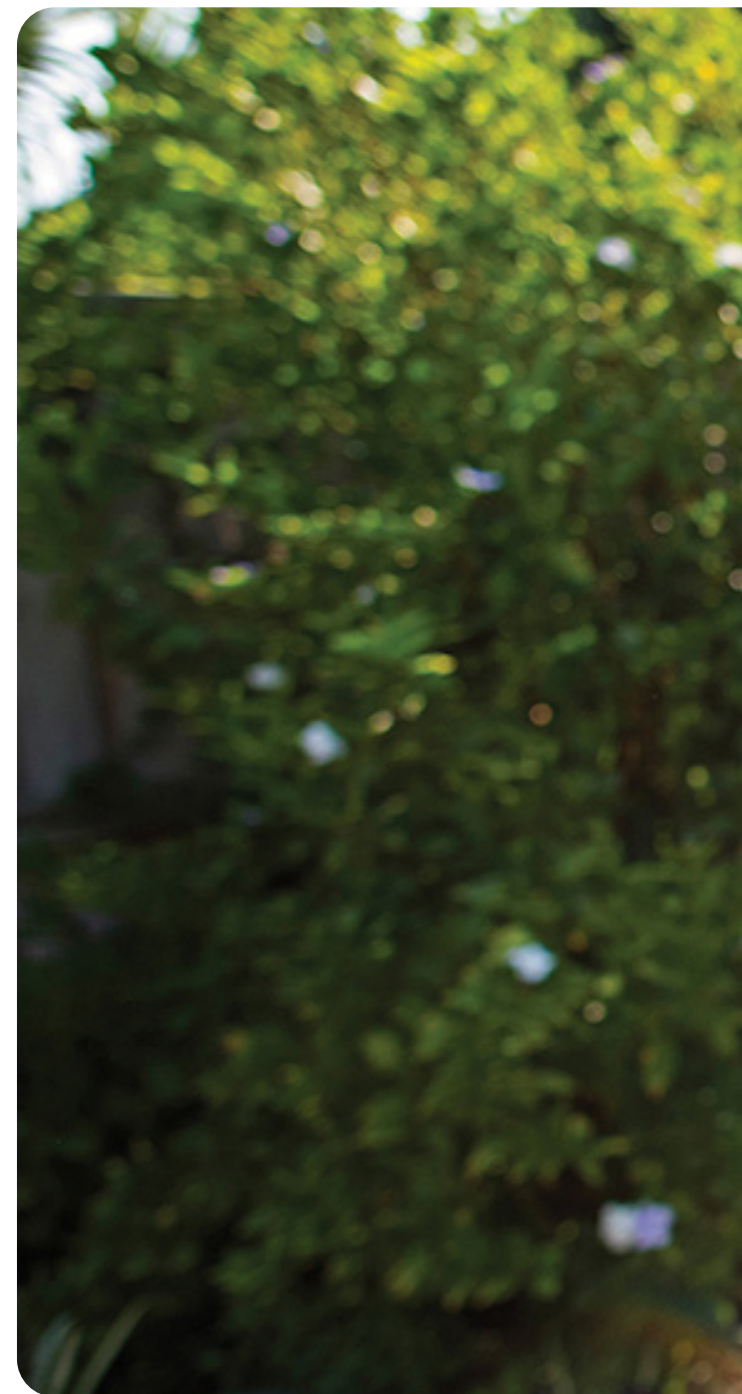
Hearing aid	A device that amplifies speech and other sounds. Sound can be delivered by air conduction or bone conduction.
Hearing-impaired	May be used to describe people with any degree of hearing loss
Hearing Services Program (HSP)	Government program that supports hearing aids, audiology services and support for cochlear implants for eligible persons, including young Australians who are under 26 years of age.
Implantable Bone Conduction Device	Connects to a titanium screw or magnet that's implanted in the bone of the skull, just behind the ear.
Insertion Gain (IG)	A type of Real Ear Measurement where the audiologist compares sound levels in the ear canal with and without the hearing aid to help them adjust the hearing aid
Intensity	The loudness of a sound
ITE (In-the-Ear) hearing aid	The hearing aid's electronic parts are housed in the hearing aid ear mould.
Masking	Technique used in hearing testing, when there is a possibility that sound is crossing from the ear being tested to the non-test ear.
Middle Ear	The ear drum and middle ear bones (ossicles).
Mixed hearing loss	Hearing loss that comes from both the cochlea and the outer or middle ear
Multi-disciplinary	Provided by a team of professionals, who work together to provide comprehensive care.
NDIA (National Disability Insurance Agency)	The NDIA is a government agency that is responsible for administering the National Disability Insurance Scheme (NDIS)
NDIS (National Disability Insurance Scheme)	The NDIS provides funding to help people with disability achieve their goals.
Objective test	A hearing test that does not require any response from the person being tested.
OAE (Otoacoustic emission)	An echo that happens when the hair cells of the inner ear respond to sound.
PEACH (Parent Evaluation of Auditory-Oral performance in Children)	A questionnaire that compares a child's listening ability with typically hearing children of the same age.

Perinatal	Happens at the time of birth
Physiological hearing test	A test that measures the performance of parts of the hearing pathway. These are also called Objective tests.
Play audiometry	A hearing test where the child does an action whenever they hear a sound, such as putting a peg into a peg board.
Post-natal	Happens after birth
PTA (Pure tone audiometry)	The child presses a button when they hear a sound.
Real-ear measurements	A soft, thin tube is used to measure sound levels in the ear canal. This information helps the audiologist to adjust the hearing aid to suit the child's hearing loss.
Remote Microphone System (RMS)	Used to help children hear a speaker over distance or in noisy listening situations. The RMS has two parts – a transmitter microphone and a receiver.
Sensorineural hearing loss	This hearing loss comes from the cochlea (inner ear).
Single Sided Deafness SSD	Another name for profound unilateral hearing loss.
Speech perception tests	Used to understand how clearly a child can hear sounds, words or sentences. May also be called speech discrimination tests.
Sound field evaluation	Hearing tests performed using a loud speaker.
Sound Field Amplification	A system used in the classroom. A transmitter microphone sends the speaker's voice to one or more loudspeakers to distribute it evenly through the classroom.
Speech discrimination tests	These tests measure how clearly a child can hear words and sentences.
Teacher of the Deaf	Qualified teachers who have received specialist training to work with children who are deaf or hard of hearing.
Tympanometry	A test that measures how well the eardrum and middle ear are working. The results of tympanometry are shown on a Tympanogram.
Unilateral	Occurring in one ear only.
VROA (Visual Reinforcement Orientation Audiometry)	A hearing test where we teach the child to turn towards a visual reward, whenever they hear a sound.



# References

1. <https://wfdeaf.org/>
2. <https://www.ifhoh.org/>
3. Sung, V, Downie, L, Paxton, GA, Liddle, K, Birman, CS, Chan, WW, Cottier C, Harris A, Hunter M, Peadon E, Peacock, K, Roddick L, Rose, E, Saunders K, Amor, DJ (2019) Childhood Hearing Australasian Medical Professionals network: Consensus guidelines on investigation and clinical management of childhood hearing loss. Paediatric. Child Health 2019 55 1013-1022
4. <https://www.outcomes.nal.gov.au/about>
5. Ching, T. Y., Dillon, H., Button, L., Seeto, M., Van Buynder, P., Marnane, V., Cupples, L & Leigh, G. (2017). Age at intervention for permanent hearing loss and 5-year language outcomes. Pediatrics, 140(3). [https://dspace.nal.gov.au/xmlui/bitstream/handle/123456789/718/Ching\\_PEDS\\_5YROutcomes\\_text%20and%20figs.pdf?sequence=3&isAllowed=y](https://dspace.nal.gov.au/xmlui/bitstream/handle/123456789/718/Ching_PEDS_5YROutcomes_text%20and%20figs.pdf?sequence=3&isAllowed=y) accessed 27 August, 2020
6. <https://www.cochlear.com/au/en/home/ongoing-care-and-support/supporting-your-child/your-childs-cochlear-implant-surgery>
7. Moeller MP, Carr G, Seaver L, Stredler-Brown A, Holzinger D (2013) Best Practices in Family-Centred Early Intervention for children who are Deaf or hard of Hearing: An international Consensus Statement. The Journal of Deaf Studies and Deaf Education, 18(4) 429-445. <https://academic.oup.com/jdsde/article/18/4/429/562489> accessed 27 August, 2020
8. Cupples, L, Ching TYC, Button L, Leigh G, Marnane, V, Whitfield J, Gunnourie, M, Martin, L (2018) Language and speech outcomes of children with hearing loss and additional disabilities: identifying the variables that influence performance at five years of age, International Journal of Audiology, 57:sup2, S93-S104,
9. <https://www.deafblind.org.au/deafblind-information/what-is-deafblindness/>







# Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.[illegible]





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