

Single Sided Deafness – What Parents Need to Know



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Acknowledgement of Country



- We recognise and acknowledge the traditional custodians – the Wadjuk people of the Noongar nation
- This is – and always will be – Aboriginal land and the spiritual connection of people to country is undiminished
- We thank the Elders, past and present, for trusting us and allowing us to work with the children we see
- We work with Aboriginal communities to the very best of our energy and ability to help children be well and families to flourish

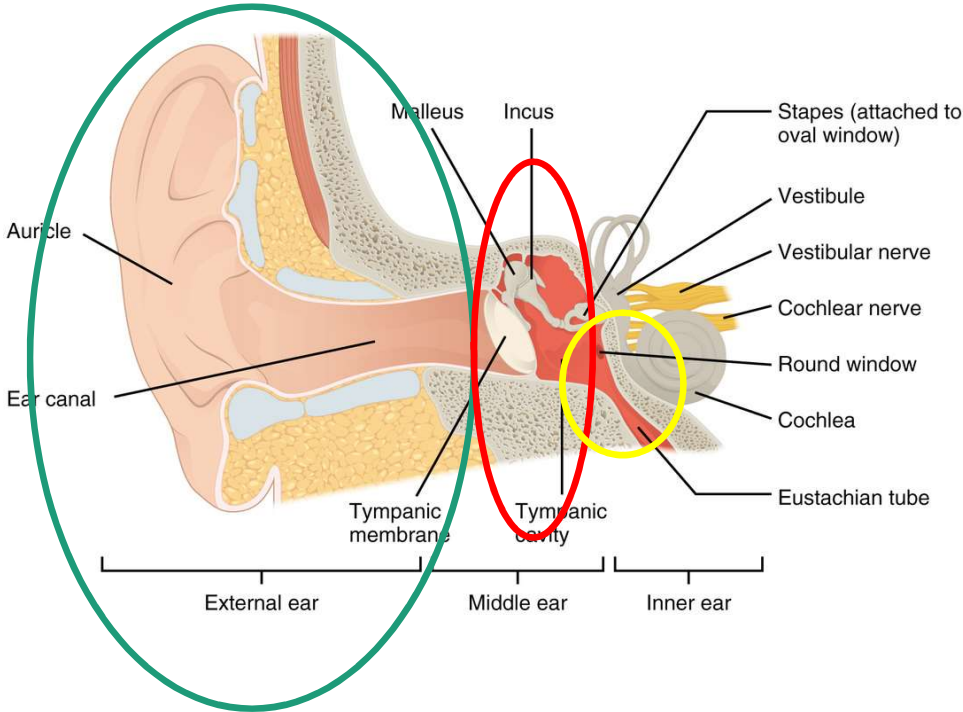
Who do you know?



Testing children of all ages



The ear



Unilateral Hearing Loss Facts

- 1 in 1000 newborns are identified with UHL at birth
- 3 in 100 children may develop UHL by school age
- Although 9 out of 10 deaf children are born to hearing parents, approximately 50% of hearing loss in children has a genetic cause
- Causes
 - Physical trauma, malformations of the outer, middle or inner ear
 - Exposure to loud noises or certain drugs
 - Genetic disorders (Syndrome) or inheritance
 - Infections, illnesses – Meningitis, Congenitally acquired diseases such as cytomegalovirus (CMV) or toxoplasmosis
 - Enlarged/large vestibular aqueduct syndrome (EVA/LVAS)
 - Maternal Diabetes
 - Premature birth
 - Unknown causes



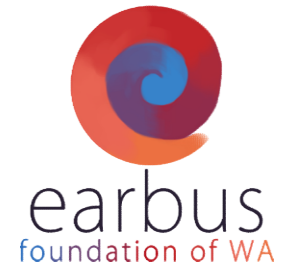
Early Diagnosis and Treatment

BUT.... Research has shown

- Parents appreciated early identification but experiences of the early process were mixed
- At times parents felt family, friends and professionals minimised importance of UHL
- Parents expressed concern about potential impact on there child's development
- Uncertainty about the need for hearing aids
- Parents want specific guidance for UHL



Unilateral Hearing Loss (UHL) Program



Supporting families who care for children with UHL

Since the newborn hearing screening program began increasing number of babies are being diagnosed with UHL

Parent Seminars

UHL Library / Resources – co-designed & development



Audiological Counselling

Hear Today – free service

- Informational counselling and personal adjustment counselling
 - Identifying and clarifying hearing loss, habilitation and rehabilitation needs, and providing information
 - Adjustment counselling involves understanding the concerns of the client and supporting them during the processing of emotions

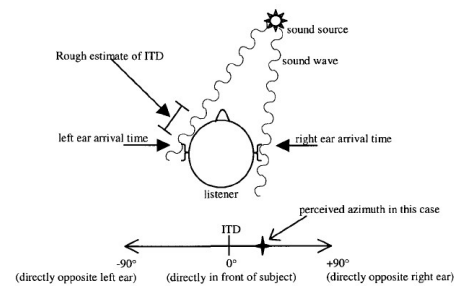


Binaural Hearing



Why do we have 2 ears? Localisation

- 2 ears are better than 1!
- We use the differences between what we hear on each side to pick up tiny clues as to what's going on



- Binaural processing
 - Interaural timing differences
 - Interaural intensity differences
 - Binaural masking effect
- Hearing aid → only improve localization

Why do we have 2 ears? Speech in Noise

- Bilateral benefits
 - Loudness summation effect
 - Binaural unmasking
 - Diotic redundancy
- UHL → softer speech sound
 - may hear speech but not understand what is said
 - More difficult to focus
 - Difficult to discriminate speech from background noise
 - Difficulty when a speaker is on the impaired side



Difficulties experienced

1. Understanding where the sound is coming from
 - Compromised physical safety
2. Difficulty hearing speech in noisy environments
3. Failure to hear someone speaking on the affected side
 - Psychosocial implications
4. Poor sound quality
5. Poor sound detection
6. Compromised balance and vestibular function
7. Poor hearing at a distance
8. Speech and language development
9. Social relationship interference
10. 5 times - need additional educational resources



Difficulties Cont'd

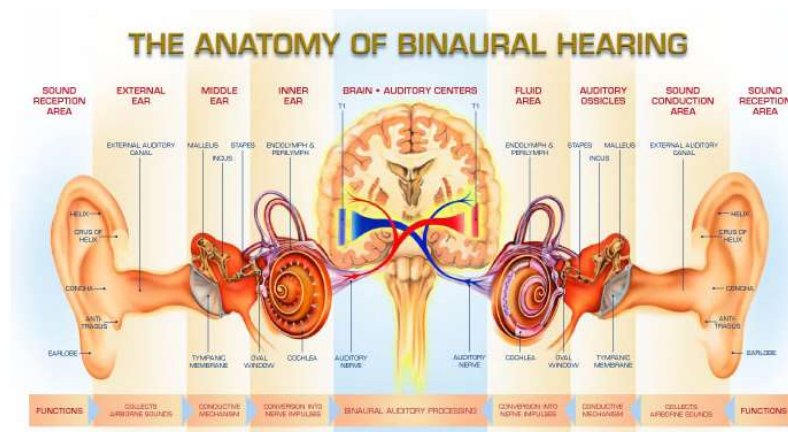
1. Exhaustion - by the end of the day
2. 10 times more likely to fail a grade in school or need special help to keep up in school
3. 1/3 to 1/2 of children with hearing loss who have not received help to hear better have problems learning in school!
4. And 1/5 of these children will develop behaviour or social issues due to deficiencies learning from subtle auditory and visual cues



When you have mild-moderate hearing loss, you aren't always aware of how much information you are missing in the classroom

USNHL Causes Language Delay

- Impaired binaural ability to understand speech in noise and localise sound
- Diminished ability to learn overheard conversation (incidental learning)
- Strong correlation between vocab age 3 and language test scores age 9 and 10 - vocabulary, listening, syntax and reading comprehension (Hart and Risley, 1995)
- 20,000 listening hours by age 5
- Variables:
 - Innate cognitive ability
 - Severity of SNHL
 - Socio-economic factors



Progression of Hearing Loss

- 1 in 5 children identified with permanent hearing loss initially present with UHL (Fitzpatrick et al, 2019)
- Child with mild-severe USNHL at risk of progression to other ear around 25% - some studies as high as 40% (Lieu et al, 2018)

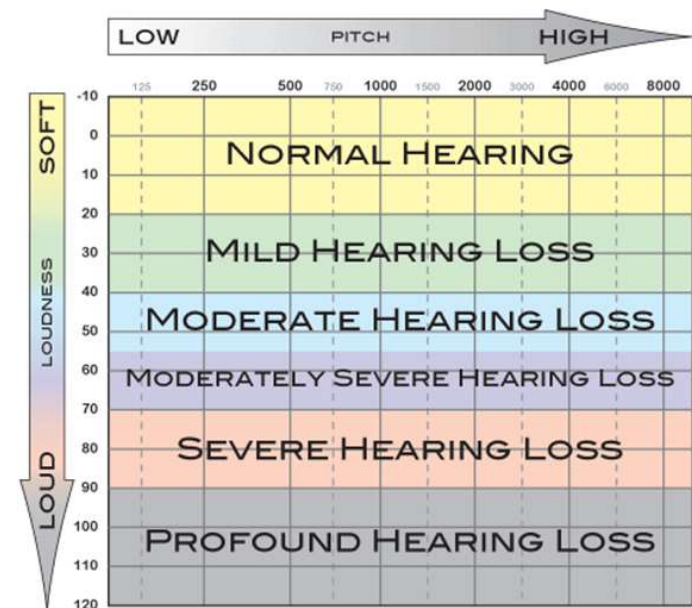


Annual Hearing Checks



Categorise Hearing loss

- Range of normal hearing
- Mild hearing loss
- Moderate hearing loss
- Severe hearing loss
- Profound hearing loss



Early Diagnosis and Treatment - Results

- Improved verbal-cognitive scores
- Improved linguistic and communication scores
- Improved socio-emotional development

(Rohlf, 2017)



Early Diagnosis and Treatment

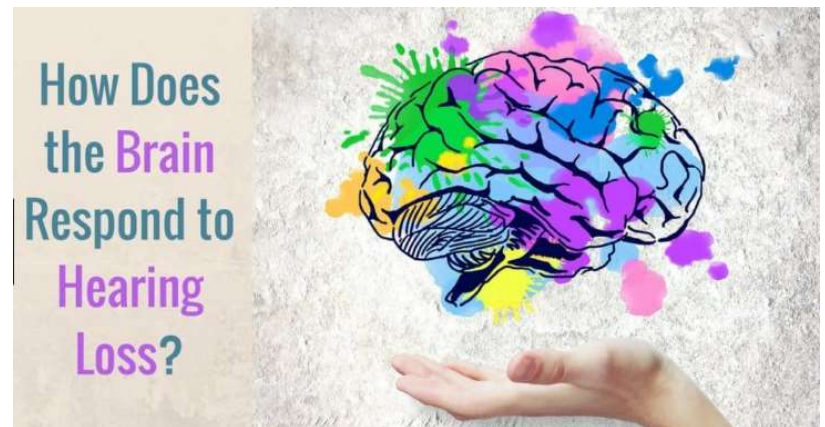
BUT.... Fitzpatrick et al (2019)

- Compared auditory and spoken language outcomes on children with UHL, mild bilateral HL and normal hearing over 4 years
- Identified early (between 3 and 4 m) with some receiving amplification
- **On most measures, children with UHL performed at lower levels than the normal hearing group AND the group with mild bilateral hearing loss**
- Including functional auditory listening, receptive and expressive language skills aged 4
- **AND....** Systematic review – children with UHL may have lower IQ scores as a result (Purcell et al, 2015)
 - Full-scale, performance, and verbal IQ scores



Behavioural Disorders?

- Brain network interconnection different in children with SNHL in areas of brain associated with auditory processing, executive function and memory function



Amplification of Sound

What do parents need to know?

- Are hearing tests accurate at this age?
- How much hearing loss does my child have?
- How will it affect my child?
- Will it get better?
- Will it get better?
- What are the options?
 - Benefits & Limitations of each
- What are the consequences of waiting or not aiding?
- What is involved if I do decide to aid?
 - For my child, our family
- Is it dangerous or painful?



Challenges of Amplification

- Uncertainty about outcomes
 - A range of hearing options available but with little evidence to indicate the best course of action



Rewards of Amplification

- Potentially better speech perception with soft inputs (3dB improvement)
- Greater comfort over a wide range of listening situations
- Improved safety
- Minimise effects of distance



Strategies at Home

Communication strategies

1. Clear vision of face/mouth (visual cues)
2. Congruent facial expressions/gestures
3. Clear voice
4. Concise messages
5. Maintain close distance, i.e. do not give your child instructions from another room
6. Minimise background noise + improve acoustics, i.e. use carpeting and cloth curtains. Replace buzzing fluorescent lights

CLEAR SPEECH - Articulate sounds precisely and accurately.
Speak more slowly.

Take clear **pauses** between phrases and thoughts. ...

Increase volume - but only slightly (avoid distorting your speech sounds and the way your lips are moving).



Strategies at Home

What works for you?



Strategies in the Classroom

1. Seat the pupil for optimal listening and visual cues within the classroom
2. Make sure teacher's lips are clearly visible. Face the class, not the blackboard, when speaking
3. Consider passing around a written copy of the day's and week's assignment for all pupils, or writing assignments on the board
4. Assistive hearing technology
 1. FM systems
 2. Sound field system
5. <https://www.aussiedeafkids.org.au/classroom-tips.html>



Strategies in the Classroom Cont'd

What works for
you?



NDIS



- NDIS is an insurance based system which is individually tailored for people with disability
- Under NDIS, the Hearing Services Program (HSP) provides various services to kids and adults with mild to profound hearing losses
- Hearing devices provided under HSP are subsidised
- Newly diagnosed – Early Childhood Early Intervention (ECEI) for children aged 0 to 6 years of age



NDIS – ECEI Eligibility

Eligibility Requirements:

- Children aged 0 – 6 years of age
- Resident of Australia either an Australian Citizen, a holder of permanent visa or a special category visa (SCV)
- Confirmed audiological result with auditory neuropathy or a permanent hearing loss in either ear (25decibels or more at 2 or more adjustment frequencies), likely to be permanent or long-term
- Child requires use of personal amplification



Newly Diagnosed Children 0 - 6 years

How to access NDIS

Western Australia



INFANT DIAGNOSTIC TEST (IDT)

The IDT confirms your baby has a hearing loss. Your audiologist will assist you to attend necessary appointments and refer you to Hearing Australia.

1

HEARING AUSTRALIA

On your first appointment with Hearing Australia, helps you apply access to NDIS.

OR

 1800 800 110

OR

NDIS ECEI

Visit your local NDIS Early Childhood Early Intervention, ECEI provider

2

Newly Diagnosed Children 0 - 6 years

How to access

NDIS

Western Australia



NDIS

- With your consent, Hearing Australia forwards your child's file to NDIS.
- Within few days you'll receive confirmation letter.
- A specialist planner from NDIS will contact you within 2 weeks and support you developing a reasonable and necessary plan for your child.

3

NDIS FUNDING

- Once your plan is approved, you get access to the NDIS fund allocated for your child.
- You can choose early intervention providers of your choice.

4

Newly Diagnosed Children 0 - 6 years

How to access

NDIS

Western Australia



EARLY CHILDHOOD EARLY INTERVENTION (ECEI)

- During your first appointment with Hearing Australia, you will also receive information about your local NDIS ECEI provider.
- Your ECEI provider will be your NDIS point of contact.

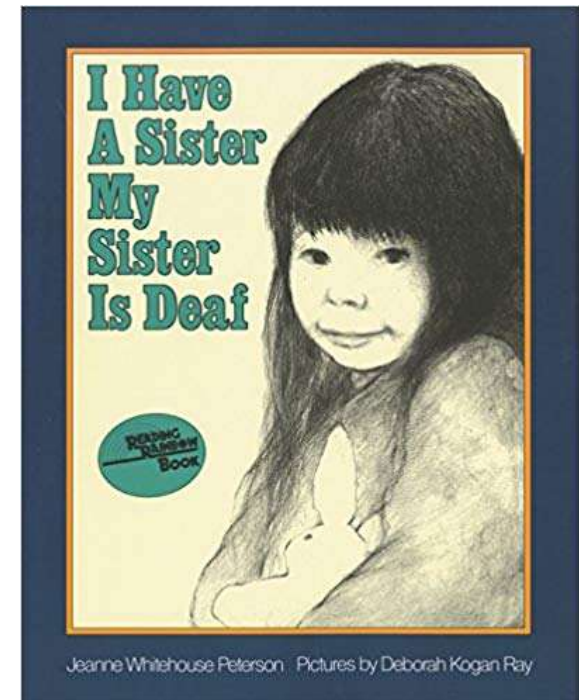
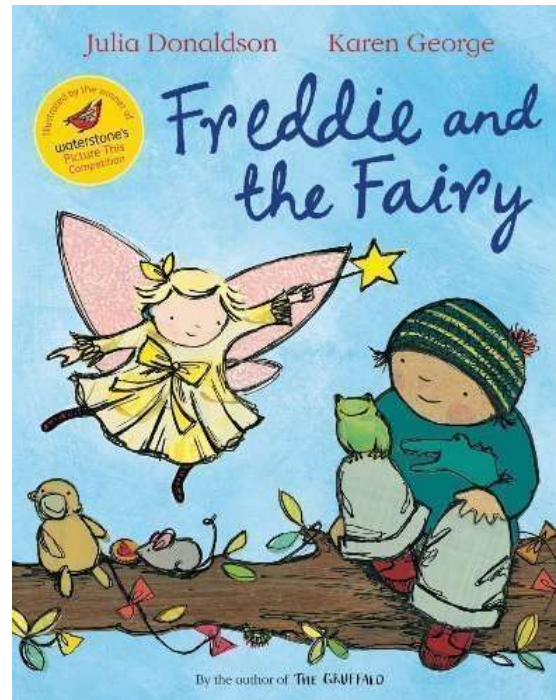
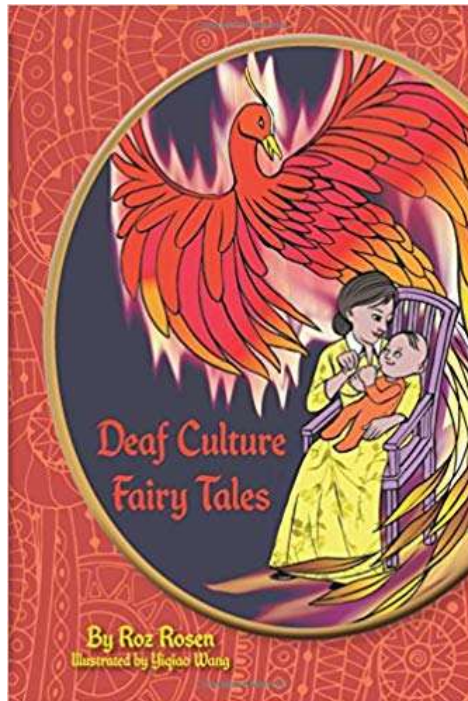
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ECEI PROVIDER IN WA

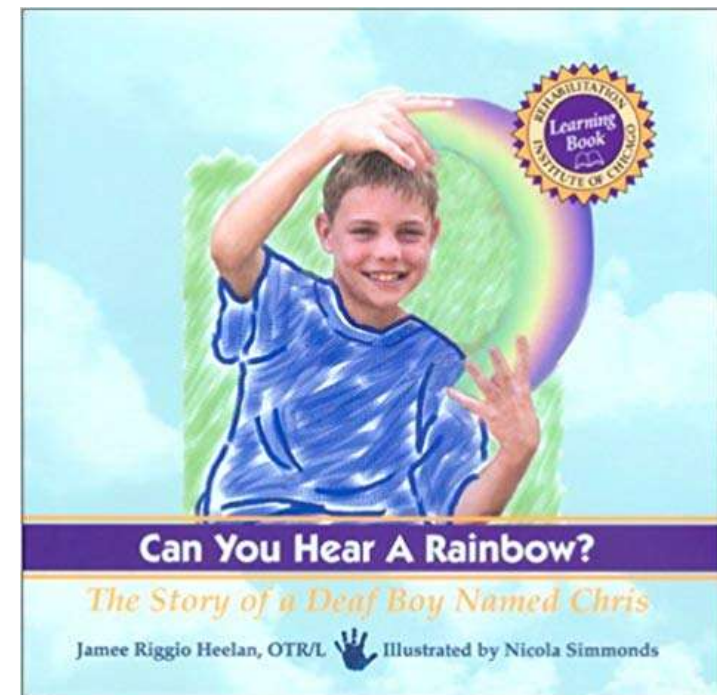
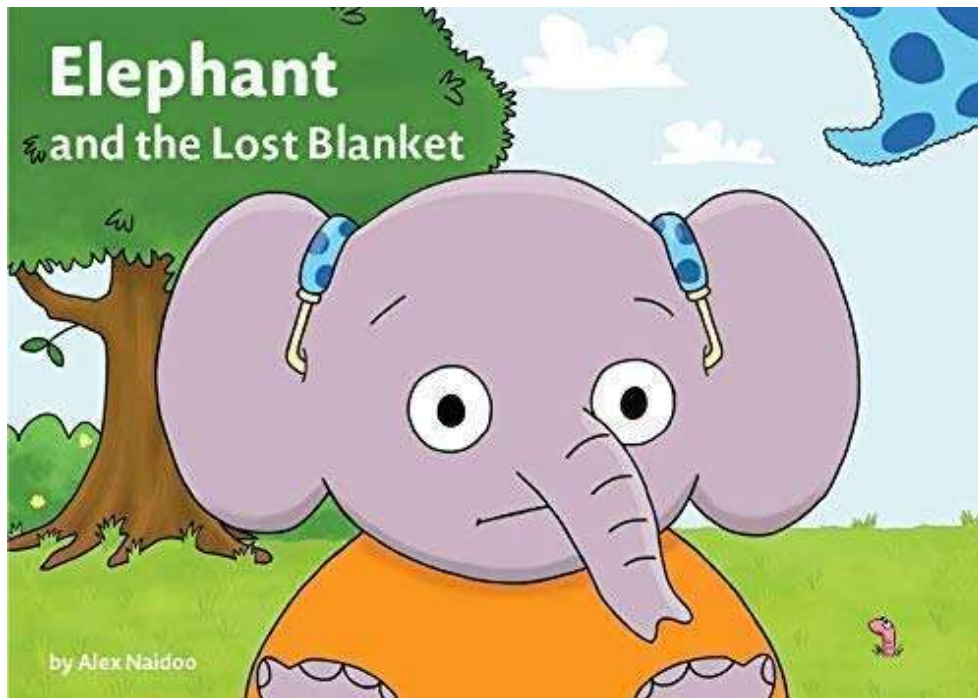
WANSLEA FAMILY SERVICES
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Scarborough WA 6019
📞 (08) 9245 2441

6

UHL Resource Library



UHL Resource Library Cont'd



Contact



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www.earbus.org.au