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Listening First: The Changing Face of Hearing Loss

Access to Listening and Spoken Language Should be the First Option for Children with Hearing Loss

Position Paper
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Hear and Say – Centre for Deaf Children Ltd ACN 058 430 069
Postal Address PO Box 930, Toowong QLD 4066
P +61 7 3870 2221|F +61 7 3870 3998|E mail@hearandsay.com.au|www.hearandsay.com.au ABN No 32 058 430 069

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Children with Hearing Loss Have the Potential to Listen and Speak

Hearing loss is the most common disability in newborns, affecting approximately 2 in 1,000 babies each year (Australian Hearing, 2013).

92% of children with permanent hearing loss are born to hearing parents (Mitchell & Karchmer, 2004).

This means that each year, babies will continue to be born with hearing loss, and often to families with no immediate family members with hearing loss themselves.

The remaining 8% of children with permanent hearing loss have one or both parents with a hearing loss, and who may also identify themselves as culturally Deaf.

Professional estimates suggest that more than 90% of children born with hearing loss have the physical structures of the ear present that would allow them to receive maximum listening benefit from modern hearing technologies such as digital hearing aids, middle ear implants or cochlear implants (Adunka et al., 2006; Rance, 2005).

Advances across the range of modern hearing technologies have meant that more children are now able to be optimally amplified. This, combined with changes in candidacy criteria for implantable devices, has meant that **the vast majority of children with hearing loss have the potential to learn to listen and speak if provided with the opportunity to do so**.

All babies are born with their brains pre-wired to learn listening and language from birth (Flexer, 1999).

There is a critical period for learning spoken language, and 85% of neural development happens within the first 3 years (Shonkoff & Phillips, 2000). The key to developing clear, natural spoken language is early access to the auditory brain.

Children with Hearing Loss are Born to Hear

Auditory-Verbal Therapy is Most Effective for Developing Listening and Spoken Language

To maximise listening and spoken language development, children with hearing loss require optimal amplification in combination with specialised listening and spoken language early intervention.

Amplification alone does not allow for optimal spoken language development (Wilkins & Ertmer, 2002).

In Auditory-Verbal Therapy, parents are valued members of the early intervention team. In partnership with the Auditory-Verbal Therapist, parents are guided and coached to facilitate their child's spoken language development through listening.

Auditory-Verbal Therapy successfully develops the listening and spoken language of children with hearing loss by stimulating auditory brain development, enabling children to make meaning of what they hear and laying down neural pathways for speech and language development (AG Bell Academy for Listening and Spoken Language 2013; Chermak et al. 2007; Cole & Flexer 2007).

Recent research is showing that learning through listening is the most effective way of developing spoken language, cognition and literacy skills (Cole & Flexer, 2007).

Auditory-Verbal Therapy, with its foundation in teaching through listening, has been proven to be most effective in developing the spoken language and educational outcomes of children with hearing loss.

Children with Hearing Loss are Born to Hear

What is Research Telling Us?

Our research shows that children with hearing loss in an Auditory-Verbal Therapy program:

- **Graduated with no gap between their chronological and language ages and developed spoken language in line with normally hearing peers** (Constantinescu, Waite, Dornan, Rushbrooke, Brown, Close & McGovern, submitted; Dornan, Hickson, Murdoch, & Houston, 2007, 2009; Dornan, Hickson, Murdoch, Houston, & Constantinescu, 2010; Fulcher, Purcell, Baker, & Munro, 2012; Hogan, Stokes, White, Tyszkiewicz, & Woolgar, 2008; Rhoades & Chisolm, 2000).

- **Made, on average, 12 months progress in 12 months for their spoken language development**, which is in line with expectations for children with normal hearing (Dornan, Hickson, Murdoch, & Houston, 2007, 2009; Dornan, Hickson, Murdoch, Houston, & Constantinescu, 2010; Rhoades & Chisolm, 2000).

- **Progressed at the same rate for listening, spoken language, self-esteem, reading and mathematics as a matched group of children with normal hearing** (Dornan, Hickson, Murdoch, Houston, & Constantinescu, 2010).

- **Achieved age appropriate spoken language as early as 6 months after amplification and around 12 months of age** - when identified at birth and fitted with optimal amplification and enrolled in Auditory-Verbal Therapy before 12 months of age (Constantinescu, Waite, Dornan, Rushbrooke, Brown, Close & McGovern, submitted).

- **Performed better for spoken language and listening than a matched group of children in an Auditory-Oral (listening and lip reading), or Bilingual-Bicultural program (AUSLAN and written English)** by 3 years of cochlear implant use (Dettman, Wall, Constantinescu, & Dowell, 2013).

Children with Hearing Loss are Born to Hear

The Australian Context and the Changing Face of Hearing Loss

350 children are born with hearing loss each year in Australia and every child counts (Ching, 2013).

In the 21st Century, early diagnosis via Universal Newborn Hearing Screening (UNHS), early access to optimal amplification (hearing aids and/or cochlear implants) and early intervention is now the norm in Australia.

There is now the evidence and opportunity to support and set listening and spoken language as the benchmark for all children with hearing loss in Australia and for progress and outcomes to be matched against objective evidence.

In Queensland, as a result of UNHS, babies identified with hearing loss at birth are now receiving amplification earlier and in the majority of cases, aided with hearing aids within 2 months of diagnosis, and cochlear implants (where applicable) under the age of 12 months.

Babies are also entering early intervention programs soon after birth, and this steady trend is estimated to continue long-term.

This is the changing face of hearing loss and these babies are in the best position to receive maximum benefit from listening and spoken language intervention within the critical period of neural development.

The Hear and Say Auditory-Verbal Therapy program in Queensland is currently supporting approximately 65% of Queensland young children diagnosed with hearing loss (Analysed from Queensland Healthy Hearing data).

Hear and Say has an established track record of spoken language outcomes for children with hearing loss, where 100% of graduates over the last few years have entered mainstream schooling. In 2012, the typically developing children with hearing loss who graduated from Hear and Say had spoken language skills in line with their hearing peers.

At Hear and Say, these outcomes are now the norm (Hear and Say, 2012).

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What Parents, Professionals and the Community Should be Asking their Early Intervention Provider

Hear and Say's strong focus on research outcomes has meant that research is guiding evidence-based practice; helping to set clinical benchmarks for spoken language expectations and progress for children with hearing loss; and ensuring that parents are best informed about the potential outcomes that are achievable for their children.

New research evidence, advances in hearing technology and changing candidacy criteria are now driving change in the expectation for maximum spoken language outcomes for children with hearing loss. Parents, professionals and the broader community should, and are entitled to, expect these optimal outcomes from early intervention service providers.

As a community, we should also expect all early intervention service providers to have answers, based on research evidence, to the following questions:

- What experience do you have working with children with hearing loss?
- What communication and educational philosophy does your program follow?
- What research evidence shows that your early intervention program is effective?
- How is your program different, more effective than other programs?
- What is the commitment of families to your program?
- How do you measure outcomes?
- What outcomes can be expected in your program and how do these outcomes compare for children with normal hearing?
- Do most children go on to mainstream schooling?
- Will children be able to interact with and contribute independently to the broader community?
- What are the risks in choosing this early intervention approach?
- What happens if your program doesn't work for a particular child and family?

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References

Adunka, O., Roush, P., Teagle, H., Brown, C., Zdanski, C., & Jewells, V, et al. (2006). Internal auditory canal morphology in children with cochlear nerve deficiency. *Otology & Neurotology, 27*(6), 793-801.

AG Bell Academy for Listening and Spoken Language. (2013). The AG Bell Academy for Listening and Spoken Language. See http://www.listeningandspokenlanguage.org/AGBellAcademy/ (last checked 1 Jan 2013).

Australian Hearing. (2013). Types of Hearing Loss. See http://www.hearing.com.au/types-of-hearing-loss (last checked 1 July 2013).

Canalis, R.F., & Lambert, P.R. (2000). *The ear: Comprehensive otology.* Philadelphia: Lippincott Williams & Wilkins Genetic hearing loss may be autosomal dominant, autosomal recessive, or X-linked (related to the sex chromosome).

Chermak, G., Bellis, T., & Musiek, F. (2007). Neurobiology, cognitive science and intervention. In G. Chermak & F. Musiek (Eds.), *Handbook of (central) auditory processing disorder: Vol. 2. Comprehensive intervention* (pp. 3-28). San Diego, CA: Plural Publishing.

Ching, T. (2013). Do children with hearing loss who receive early intervention catch up with their normal- hearing peers by elementary grades? *Australian Hearing Hub Inaugural Conference*, Sydney, April 2013.

Cole, E., & Flexer, C. (2007). *Children with hearing loss: Developing listening and talking birth to six*. San Diego, CA: Plural Publishing.

Constantinescu, G., Phillips, R., Davis, A., Dornan, D., & Hogan, A. (submitted). Benchmarking social inclusion for children with hearing loss in listening and spoken language early intervention.

Constantinescu, G., Waite, M., Dornan, D., Rushbrooke, E., Brown, J., Close, L., & McGovern, J. (submitted). Outcomes of an Auditory-Verbal Therapy program for young children with hearing loss.

Dettman, S., Wall, E., Constantinescu, G., & Dowell, R. (2013). Communication outcomes for groups of children using cochlear implants enrolled in Auditory-Verbal, Aural-Oral, and Bilingual-Bicultural early intervention programs. *Otology & Neurotology, 34*, 451-459.

Dornan, D., Hickson, L., Murdoch, B., & Houston, T. (2007). Outcomes of an Auditory-Verbal program for children with hearing loss: A comparative study with a matched group of children with typical hearing. *The Volta Review, 107*, 37-54.

Dornan, D., Hickson, L., Murdoch, B., & Houston, T. (2009). Longitudinal study of speech and language for children with hearing loss in Auditory-Verbal Therapy programs. *The Volta Review, 109*, 61-85.

Dornan, D., Hickson, L., Murdoch, B., Houston, T., & Constantinescu, G. (2010). Is Auditory-Verbal Therapy effective for children with hearing loss? *The Volta Review,110*, 361-387.

Flexer, C. (1999). *Facilitating hearing and listening in young children (2nd Ed.*). San Diego: Singular Publishing Group.

Fulcher, A., Purcell, A.A., Baker, E., & Munro, N. (2012). Listen up: Children with early identified hearing loss achieve age-appropriate speech/language outcomes by 3 years-of-age. *International Journal of Pediatric Otorhinolaryngology, 76,*1785-1794.

Hear and Say (2012). Annual Report 2011-2012.

Hogan, S., Stoke, J., White, C., Tyszkiewics, E., & Woolgar, A. (2008). An evaluation of AVT using rate of early language development as an outcome measure. *Deafness and Education International*, *10*(3), 143-167.

Mitchell, R. E., & Karchmer, M. A. (2004). Chasing the mythical ten percent: Parental hearing status of deaf and hard of hearing students in the United States. *Sign Language Studies, 4*(2), 138–163.

Rance, G. (2005). Auditory neuropathy/dys-synchrony and its perceptual consequences. *Trends in Amplification, 9*, 1-43.

Rhoades, E.A., & Chisolm, T.H. (2000). Global language progress with an Auditory-Verbal approach for children who are deaf and hard of hearing. *The Volta Review, 102*, 5-24.

Shonkoff, J. & Phillips, D. A. (Eds.). (2000). *From neurons to neighborhoods*. Washington, DC: Nat Academy of Science.

Wilkins, M., & Ertmer, D. (2002). Introducing young children who are deaf or hard of hearing to spoken language: Child's Voice, an Oral School. *Language, Speech, and Hearing Services in Schools, 33*(3), 198-204.

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Introducing Hear and Say

Hear and Say is one of the leading paediatric Auditory-Verbal Therapy (AVT) and Implantable Hearing Technologies (including cochlear implants) organisations in the world.

For 22 years this not-for-profit organisation has worked with parents to help teach children who are deaf to hear, listen and speak.

The main centre is in the inner Brisbane suburb of Auchenflower, with 5 regional centres in the Sunshine Coast, Gold Coast, North Queensland, Townsville and the Darling Downs.

Hear and Say also runs a dedicated telepractice program for rural and remote families using eAVT and eAudiology.

The Auditory-Verbal Therapy Program provides early intervention from diagnosis of hearing loss through to entry into Year 1 of school.

The Audiology Program provides diagnostic hearing services for all children with hearing loss; candidacy assessment for implantable hearing technologies (cochlear implants and middle ear implants) up to 17 years of age; and 'all of life' MAPping/programming of implantable hearing technologies.

Social Skills Programs are available for a range of ages from LEAP (babies and toddlers), LAUNCH PAD (kindergarten age) through to two programs for children in primary and early secondary school and a further program for adolescents.

A School Support Program for children in independent schools commenced in 2014.

Brisbane Centre & Registered Office
29 Nathan Avenue, Ashgrove QLD 4060
PO Box 930, Toowong QLD 4066

To find out more or to become involved
- (07) 3850 2111
- mail@hearandsay.com.au
- www.hearandsay.com.au
- ABN 32 058 430 069

Regional Centres:
- Sunshine Coast - Nambour
- Gold Coast - Robina
- Darling Downs - Toowoomba
- North Qld - Cairns & Townsville

Telepractice Program for rural and remote families using eAVT and eAudiology

Hear and Say Research and Innovation

Hear and Say WorldWide

Children with Hearing Loss are Born to Hear