How Early is Too Early?

Cochlear Implantation in infants under 6 months, 7-9 months and 10-12 months old

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In the past 10 years the age of diagnosis, hearing fitting and implantation has been getting younger and the outcomes with cochlear implants have been steadily improving, thanks primarily to the implementation of Universal Newborn Hearing Screening in NSW.

With such early access to services the questions regularly posed by parents to our service relates more and more to the optimal age of implantation.

Why would we consider implanting under 12 months?

- Demonstrated benefits for providing access to sound for speech and language, including neural plasticity (Birn et al 2002; Shimizu & Dochan 2006; Shimizu et al 2002; Serentis et al 2006)
- Increased likelihood of seeing language develop like that of typical hearing children (Chen et al 2010; Chang et al 2011; Ogura et al 2012; Collett et al 2012; Collett et al 2011; Chang et al 2003; Sato et al 2007; Oshima et al 2007; Sato et al 2007)
- Keep the time with no auditory input short
- Make use of the extra time provided by UNHS
- Solid clinical history at TSC: CI<12 months for past
- Make use of the extra time provided by UNHS
- Earliest access to sound means Listening & Spoken Language therapy focusses on same developmental timeline
- Reduced clinical time: activation 1 week after surgery, simultaneous activation in single session
- Easier acceptance of new external devices at very young ages
- No increased instance of problems intra- or post-operatively
- Parents who have made this choice say that hearing with CIs becomes ‘natural part’ of the child

Benefits of early CI

- Early access to sound means Listening & Spoken Language therapy focuses on same developmental progression as hearing children—habitation rather than rehabilitation
- Parents who have made this choice say that hearing with CI becomes ‘natural part’ of the child
- No increased instance of problems intra- or post-operatively
- Easier acceptance of new external devices at very young ages
- Reduced clinical time: activation 1 week after surgery, simultaneous activation in single session

Conclusions

- Early access to sound means tapping into neural plasticity, ‘normalising’ CI for the child, learning language in step with hearing peers
- If a family is not ready, it’s too early. Key component of our role as clinicians to provide continued counselling & support for families to proceed at a time when they are ready, and to share information with them to assist them in their decision
- If hearing loss is confirmed, there is no functional benefit from HAs and the family are ready, why wait? We need to consider the impact of 12 months of auditory deprivation.