Cochlear implantation and cued speech internationally

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How can we ensure that implanted children reach their potential? Research and case studies from Europe and America suggest that the early and constant use of Cued Speech by family members and professionals can significantly improve the children's ability to benefit from the implant.

Cued Speech and Cochlear Implantation are frequently described as `perfect partners' because Cued Speech gives sound-by-sound access to spoken language by visual means, perfect for optimising language development prior to implantation and for supporting the child in the early years post implantation.

A French study (1) shows that children who had full and consistent exposure to Cued Speech prior to implantation performed considerably better in a number of tests than children brought up aurally or with French Sign Language. Tests showed that both three and five years after implantation Cued Speech children had significantly better:

- perception of words in open lists
- speech intelligibility (measured on the Nottingham scales).

In Spain Cued Speech is the norm in some cochlear implant centres with several specifically recommending its use. In addition, the Complemented Oral Model (Modelo Oral Complementada, MOC) project in southern Spain uses Cued Speech within an oral programme and many of the children in the programme are implanted (at present they have 20 children between 11 and 18 months). The aim is not just to provide first class support for the children but also to publish research. The programme has now been running for over twelve years and early results are outstanding, with some areas of linguistic development better than age appropriate.(2)

From America Jane Smith writes: `For nearly 20 years, I have been a communication specialist with deaf children who have cochlear implants (CIs). The vast majority of these deaf children use Cued Speech.

Although CIs have been an amazing breakthrough for the deaf, outcomes differ from child to child. I would not take the chance of denying a child a visual representation of spoken language until I was sure that they were learning everything through listening. Cued Speech helps clarify and verify what is heard; it actually accelerates the learning of language and listening.

Many deaf children who receive CIs perceive environmental sounds but progress in the perception of speech is much slower. Deaf children who use Cued Speech perceive speech more quickly.

Until recently, most of my students were receiving CIs after age three - after they had acquired language. I observed that children who used Cued Speech had a `phonological grid' already internalised when they began to listen with their CIs. They were able to learn auditorily what they had internalised visually already. Progress in learning to listen came quickly because they already had this internal grid of phonemes. Cued Speech helps children interpret the sounds they are hearing via electrical stimulation as the same sounds they are seeing through Cued Speech.

For children aged three and under who learn Cued Speech at the same time as they get their implant, Cued Speech is also a huge benefit. Cued Speech develops an internal phonological model of speech and language that facilitates reading later. The child not only hears but also sees syllables and stress patterns. A child can see morphological structures that are difficult to hear - plurals, possessives and tenses for example.

After a certain amount of time - which varies for all kids, Cued Speech children learn vocabulary and academic information through listening alone. Many parents drop the use of Cued Speech at home (except at bath time or at the pool) but continue to have their child use it in school in the mainstream via a Cued Speech transliterator. This is because Cochlear Implants have not conquered the obstacles of noise, distance and the speed and amount of information delivered in an academic classroom.

Most of my CI/Cued Speech kids have advanced language, vocabulary and listening abilities. Examples include: a second grader who received the highest score in her grade on a standardised state test in a high-performing elementary school last spring and a first grader who is the best reader in her class.

These examples are outstanding but unusual for deaf children (or any child for that matter). Their success can be attributed to their innate talent and possibly more importantly to the use of Cued Speech with their cochlear implant.'(3)

In England successful case studies include Alexandra who had very delayed language until her parents started to cue. Over the next two years she quickly caught up and prior to the implant her mother wrote that `professionals recognised that her receptive language with Cued Speech appeared to be age appropriate and questions were raised as to whether Alexandra might have become so dependent on this form of communication that she might experience difficulty in adjusting. In fact, the transition from cueing to fully oral communication happened completely smoothly. After as little as three months, the clarity of her speech improved significantly and other people started to understand her. Cued Speech continued to be valuable in language acquisition for some months to come, reinforcing the links between the language she knew visually and the new sounds she was hearing. Even now it is still invaluable in noisy situations, when the implant is not in use and in breaking down the sounds in words which hearing children also find difficult!

`It is now 4« years since we learned how to Cue and 2« years since Alexandra received her Cochlear Implant. Her progress has been everything we could have hoped for. Her reading age and vocabulary are both above her chronological age and her personality has become more settled. Deafness has ceased to be an insurmountable problem. The only regrets we have are that she didn't receive the benefits of Cued Speech and her Cochlear Implant much earlier.'

At Alexandra's 12 month post implant assessment her Teacher of the Deaf wrote: `In my 30 years experience of working with profoundly deaf children, I have never witnessed the remarkable progress that Alexandra and her parents have made throughout this year, following implant. In my opinion, Alexandra is a little girl who is now totally oral/aural, in her ability to develop speech and language and shows listening levels which one would not normally anticipate until at least two or three years of wearing her processor'.

Why is Cued Speech so successful? Hearing people use their knowledge of the sounds of English when they learn to cue. Deaf children brought up with Cued

Speech work in the opposite way. They acquire an internal model of sound-based English through Cued Speech - even if they can't hear it. Once the implant gives them access to speech sounds these can be plotted onto the model of sound-based English they have already internalised. Belgian research - and many case studies - demonstrates that children brought up with Cued Speech can think in sound-based language.(4)

It is this visual access to sound-based language that enables a deaf child to acquire an understanding of spoken language without delay pre-implant and also uniquely primes the child for the acquisition of spoken language when it becomes available post implant. As Jane Smith, with her 20 years experience, said: `Cued Speech helps clarify and verify what is heard; it actually accelerates the learning of language and listening'.

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References

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2. MOC website www.uma.es/moc or email Prof. Santiago Torres monreal@uma.es.
3. First published in the magazine of the National Cued Speech Association (USA)
4. Various research including:
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