The effects of communication options on outcomes for children with hearing loss

Dr Julia Sarant, The University of Melbourne, July 2016
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Why did we do this? Parents asked us to provide them with clear information, based on research, about communication options (spoken and signed languages) and how choices influence the results of children with hearing loss.

What did we do? We asked Dr Julia Sarant, an Australian expert, to do a critical review of the research for us. Julia is a Senior Research Fellow in the Department of Audiology and Speech Pathology at The University of Melbourne. She has been doing clinical research and working with children and adults with hearing loss for more than 25 years. She has published many papers in the top journals in this area, and is regularly invited to speak at international conferences.

Thirty-nine peer-reviewed journal articles were reviewed. Commonly used criteria was applied to grade the value of the evidence. The evidence was then critically evaluated to determine the impact of oral communication alone, and oral plus signed communication, on a range of outcomes for children with hearing loss.

What were the conclusions? Although many studies weren't of particularly high quality, it was possible to draw some useful conclusions. Note that most of the studies (34/39) included only children with the most severe hearing losses (severe-profound in the better ear).

How children learn: Children can learn language through both what they see and what they hear. The brain's processing of signs and words is very similar. Delays in learning language usually lead to delays in later language, reading, writing, literacy and social development.

Parents: Learning sign language as an adult is not easy, and there often are few opportunities to practice. As a result, most parents don't become fluent signers. This means their children don't develop fluent sign language.

How do choices influence outcomes?

Language learning

Children can learn language through both what they see and what they hear. The brain processes spoken words and visual signs in a similar way.

When children don't have access to either spoken or signed language early in life, there are usually delays in language and literacy development that may persist for years.

Parents with normal hearing find learning sign language difficult, and don't usually become fluent signers. This means their children don't develop fluent sign language either.

Most children who learn sign after diagnosis but then develop spoken language drop the use of sign.

Spoken language plus sign language

Learning sign language isn't likely to slow children's spoken language, as long as the use of audition and spoken language is emphasised.

There is little evidence that the use of early sign language helps with the development of spoken language.

There is no evidence to show that children educated using spoken plus sign language do any better than children using only spoken language.

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Use of early sign language

It is hard to predict which children will successfully develop spoken language through their hearing and which will not. Usually, unless children have additional disabilities (which are often difficult to diagnose at a young age), most children develop spoken language through their hearing.

Learning sign language before cochlear implantation gives a method of communication for parents and babies, and could give 'insurance' in cases where spoken language does not develop quickly or at all. However:

a) The group of children who do not develop spoken language is quite small.

b) Some children cannot sign due to motor difficulties (e.g. Cerebral Palsy).

c) Some children who use their hearing well and understand spoken language may not speak owing to motor difficulties. In order to be a part of the larger hearing world these children need to use other devices for communication rather than sign (e.g. augmentative communication).

Spoken language only

School children who use spoken language only, develop significantly better language than school children who use spoken and sign language together.

Children using spoken language only, do significantly better with hearing speech sounds and producing speech than those who use spoken plus signed communication.

Children with early cochlear implants who use spoken language can do as well with their language, social and academic development as children with normal hearing.

What happens when more evidence appears?

We will revise this document periodically so that parents have the most up to date information on this topic. However, we do not expect there will be much new evidence in the near future.

If you would like to read the full review article, visit www.hearinghouse.co.nz/research/