



# Outcomes for children who are deaf or hard of hearing

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## Key facts

- ❖ Although many children who are deaf or hard of hearing do well, on average the outcomes of children with hearing loss lag behind those of children without hearing loss.
- ❖ Factors associated with good speech, language, educational, and social outcomes include early identification of hearing loss and early intervention, high levels of parental involvement, and no additional disabilities.
- ❖ In recent years, advances in technology, including cochlear implants and sophisticated hearing aids, have led to better outcomes for many children. However, even with advanced technologies, children who are deaf or hard of hearing continue to need specialised educational supports.

The delays in language development associated with congenital or early onset hearing loss put children who are deaf or hard of hearing at risk of communication, academic, and social difficulties. In the past, the educational achievement of children with hearing loss has been considerably below the level of their peers without hearing loss. They have tended to lag behind particularly in the area of reading and writing. Recent studies indicate that academic outcomes have improved and many children who are deaf or hard of hearing are achieving at average or above average levels in reading, writing, and maths. Nevertheless, gaps remain, particularly in reading.<sup>1 2</sup>

## Factors influencing outcomes

Several factors have been consistently found to influence the speech, language, academic, and social outcomes of children who are deaf or hard of hearing.

### Early identification and intervention

Early identification of hearing loss, when it is followed with early intervention and amplification, is generally associated with better outcomes for children. Most studies report better speech and language outcomes for children whose hearing loss was identified early compared to children identified later. This occurs when early identification is accompanied by early fitting with hearing aids or cochlear implants and enrolment in an early intervention program.<sup>3 4</sup> Early identification and intervention also have long-term benefits in literacy. On average, early-identified students show better reading comprehension levels than late-identified students in both primary and high school.<sup>5</sup>

Identification and intervention is classified as early if it occurs by six to nine months of age. Universal Newborn Hearing Screening programs now operate in all Australian states and territories. This means that the majority of children with congenital deafness have their hearing loss confirmed by the age of three months, and are fitted with hearing aids and enrolled in an early intervention program by the age of six months.<sup>6 7</sup>

## No additional disabilities

Children who have disabilities additional to their hearing loss have, on average, poorer speech, language, and academic outcomes than children with no additional disabilities. However, much depends on the type and severity of the disability.<sup>8 9</sup>

## Communication modality

Communication modalities for deaf and hard of hearing children can emphasise spoken language, such as in auditory-oral and auditory-verbal approaches, or utilise sign, either Simultaneous Communication (spoken language and Signed English together) or a bilingual/bicultural approach with immersion in a natural sign language (Auslan). Although auditory-oral and auditory-verbal approaches are generally associated with better outcomes, there is no clear evidence that any particular communication modality leads to better outcomes for all children. Many researchers now suggest that other factors, such as early age of hearing aid fitting or cochlear implantation, and high levels of parental involvement, have more effect on outcomes than the communication modality used.<sup>10</sup>

## Parental involvement

Researchers have consistently found that children who are deaf or hard of hearing have better communication and academic outcomes when their parents are highly involved in their early intervention and education.<sup>1</sup> This has been reported both for children with hearing aids and for children with cochlear implants.<sup>10</sup>

## Level of hearing loss

Greater severity of hearing loss is generally associated with poorer outcomes.<sup>4 11</sup> However, many children with severe to profound hearing loss are now having cochlear implants and are likely to function more like children with moderate hearing loss.<sup>12</sup>

## Cochlear implants

Cochlear implants have brought many benefits in speech perception, speech production and intelligibility, literacy, and psychosocial adjustment to children with severe to profound deafness. Results are variable, however, and not all children do well with cochlear implants. Factors associated with good outcomes with cochlear implants include early age at implantation, no additional disabilities, and high parental involvement levels.<sup>13</sup>

In a large Australian study, parents and teachers of children with cochlear implants reported good communication, academic, and social outcomes for most children. They also reported that many children still had challenges in accessing full participation in mainstream classroom activities and in social interactions with peers. Parents felt that their children were “still deaf.” Some families valued the use of sign language, especially as a form of back-up communication when the children were not wearing their implant’s external equipment.<sup>14 15 16</sup>

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