

Deaf children with learning delays benefit from cochlear implants more than hearing aids

May 24 2022



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Up to three out of every 1,000 infants in the United States are born with profound hearing loss.

Typically, infants with hearing loss are first treated with hearing aids, and if these fail to help them develop early language and speech skills, they then become eligible for [cochlear implants](#) at 12 months or older. Cochlear implants—considered the gold standard of treatment—are small, electronic devices surgically placed under the skin that stimulate [nerve endings](#) in the ear to provide a sense of sound.

However, some [insurance companies](#) have traditionally denied coverage of cochlear implants to [deaf children](#) with severe developmental delays (such as low cognitive skills and low adaptive, or learned, behavior), under the belief that the implants will not help them learn to communicate.

Now, a new study from Keck Medicine of USC has found that infants with [hearing loss](#) and severe developmental delays are better served with cochlear implants than hearing aids.

"We demonstrated that cochlear implants improve the skills of deaf children with early developmental impairment across the board in every skill tested—cognitive, adaptive behavior, language and auditory," said John Oghalai, MD, an otolaryngologist with Keck Medicine, chair of the USC Caruso Department of Otolaryngology—Head and Neck Surgery and lead author of the study.

In 2010, researchers identified children with severe to [profound hearing loss](#) at two large pediatric cochlear implant centers in Texas and California.

Children were given a baseline assessment in cognition, adaptive behavior, language and auditory skills. (Auditory skills are the ability to notice, compare and distinguish sounds in words.) Some were identified as having learning delays.

All infants began the study wearing hearing aids. From the approximately 200 children enrolled in the study, researchers identified and compared the progress of children who continued to use hearing aids and those who received cochlear implants.

Researchers gave the children repeated evaluations over the next few years. By the time of the final assessment, those with cochlear implants—including children with learning delays—showed up to almost 25% more improvement in the tracked skills than those using [hearing aids](#).

"This study demonstrates that deaf children with developmental impairment should not be overlooked in getting cochlear implants," Oghalai said. "Cochlear implantation should be considered regardless of the presence of learning delays so all children can develop to their maximum potential."

Over the course of the study, more insurance providers began covering cochlear implants for deaf children, regardless of developmental impairments. However, according to Oghalai, some insurance providers, as well as some pediatricians and cochlear implant teams, are still unwilling or slow to provide implants to children with developmental delays.

The research was published in *Pediatrics*.

More information: John S. Oghalai et al, Cochlear Implants for Deaf Children With Early Developmental Impairment, *Pediatrics* (2022). [DOI: 10.1542/peds.2021-055459](https://doi.org/10.1542/peds.2021-055459)

Provided by University of Southern California

Citation: Deaf children with learning delays benefit from cochlear implants more than hearing aids (2022, May 24) retrieved 13 May 2024 from <https://medicalxpress.com/news/2022-05-deaf-children-benefit-cochlear-implants.html>

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