

Cochlear Implants for Children



According to the American Academy of Pediatrics, an estimated three in 1,000 infants are born in the U.S. each year with moderate, severe or profound hearing loss. Additionally, hearing loss is the most common congenital condition in the U.S.¹



Hearing loss' impact on a child's development

- Untreated moderate, severe or profound hearing loss in children can result in delayed development in language, learning and speech.¹
- Only 12% of children under the age of 18 with hearing loss use amplification; yet an estimated 1.5 million youth (including adult dependents) under the age of 21 have hearing loss that may be improved with amplification.²
- Untreated hearing loss impacts several areas of a child's life, including social skills, grades in school, emotional health, relationship with peers and family and self-esteem.²
- Providing a child access to sound when a hearing loss is first detected is very important. Early access to sound and proper treatment can allow a child's speech and language development to be on par with peers born hearing.^{3,4}
- Hearing early with both ears is important to a child's development. To improve speech understanding in noise, as well as localize where sounds are coming from, the brain needs input from both ears.⁵



Common signs of hearing loss in children

It may be difficult to identify hearing loss in a child, especially when they can't communicate yet. There are some signs that can help.

Infant or toddler:

- Does not react to loud sounds
- Does not seek out or detect where sound is coming from
- Has stopped babbling and experimenting with making sounds
- Still babbles but is not progressing to more understandable speech
- No reaction to voices, especially when being held

School-aged child:

- Does not follow simple commands, such as "get your shoes" or understand simple directions
- Easily frustrated or experiences communication breakdowns
- Falling behind with speech and communication skills
- Depends heavily on lip-reading
- Exhausted at the end of the school day due to constant concentration just to understand speech



Options for treating a child's hearing loss

- According to the National Institute on Deafness and Other Communication Disorders, more than 90% of children born deaf are born to hearing parents.⁶
- There are medical treatment options available to help a child hear, including hearing aids and implantable solutions.
- Research shows early diagnosis of hearing loss followed by early intervention with hearing aids or cochlear implants leads to better speech perception, language development, psychosocial and communication skills in children.⁷
- Cochlear implants are the established treatment for children as young as 9 months with bilateral profound sensorineural hearing loss.⁸
- Cochlear implants are available and widely recognized for children from 9 months to 24 months with bilateral profound sensorineural hearing loss, as is for children from 2 to 17 years of age with bilateral severe to profound sensorineural hearing loss.



Cochlear implants can enable a life of possibilities for your child

- Cochlear implants have been U.S. Food and Drug Administration approved for use in children since 1990.
- Research has shown that children with a severe to profound hearing loss who had cochlear implants achieved better speech recognition than children who had hearing aids.⁹
- Up to 80% of children who received cochlear implants younger than 12 months of age demonstrated receptive vocabulary knowledge within the normal range by school entry.³
- Cochlear implants are designed to help a child develop speech, and research shows those implanted early in life have speech performance scores closest to scores of normal hearing children.^{10,11}
- While many early intervention factors contribute to a child succeeding with a cochlear implant, research and three decades of experiences demonstrate cochlear implants provide improved:
 - Auditory awareness of sounds at levels within the normal range of hearing¹²
 - Speech understanding, sound clarity and language skills¹²
 - Hearing in noise¹³
 - Quality of life¹³
 - Educational outcomes¹⁴
- Research shows that 81% of children who receive cochlear implants early attend mainstream schools.¹⁵
- Cochlear implants are typically covered for children by Medicaid and most insurance plans.*

For more information on cochlear implants and the systems available for children, visit www.Cochlear.com/US.

1. Program to Enhance the Health & Development of Infants and Children (PEHDIC) [Internet]. American Academy of Pediatrics; c2020 [cited 10 Feb 2020]. Available from: <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/PEHDIC/Pages/Early-Hearing-Detection-and-Intervention.aspx>.
2. Kochkin S, Luxford W, Northern JL, Mason P, Tharpe AM. MarkeTrak VII: Are 1 million dependents with hearing loss in America being left behind? *Hearing Review*. 2007;14(10):10-37.
3. Dettman SJ, Dowell RC, Choo D, Arnott W, Abrahams Y, Davis A, Dorman D, Leigh J, Constantinescu G, Cowan R, Briggs RJ. Long-term communication outcomes for children receiving cochlear implants younger than 12 months: A multicenter study. *Otol Neurotol*. (2016 Feb); 37(2):e82–e95. doi: 10.1097/MAO.0000000000000915. Copyright 2016 Wolters Kluwer Health, Inc.
4. Geers AE and Nicholas JG. Enduring advantages of earlier cochlear implantation for spoken language development. *J Speech Lang Hear Res*. (2013 Apr); 56(2):643-55. doi:10.1044/1092-4388(2012/11-0347).
5. Sarant JZ, Harris DC, Bennet LA. Academic outcomes for school-aged children with severe-profound hearing loss and early unilateral and bilateral cochlear implants. *J Speech Lang Hear Res* (2015 Jun); 58(3):1017-32. doi: 10.1044/2015_JSLHR-H-14-0075.
6. Quick Statistics About Hearing [Internet]. National Institute on Deafness and Other Communication Disorders; c2016 [cited 10 Feb 2020]. Available from: <https://www.nidcd.nih.gov/health/statistics/quick-statistics-hearing>.
7. Ching TYC, Dillon H, Leigh G, Cupples L. Learning from the Longitudinal Outcomes of Children with Hearing Impairment (LOCHI) study: summary of 5-year findings and implications. *Int J Audiol*. (2018 May); 57(sup2):S105-S111. doi:10.1080/14992027.2017.1385865.
8. Dunn CC, Walker EA, Oleson J, Kenworthy M, Van Voorst T, Tomblin JB, Ji H, Kirk KI, McMurray B, Hanson M, Gantz BJ. Longitudinal speech perception and language performance in pediatric cochlear implant users: the effect of age at implantation. *Ear Hear*. 2014 Mar-Apr; 35(2):148-60.
9. Jaime R, Leigh, Shani J, Dettman & Richard C. Dowell The HEARING CRC, Melbourne, Australia, 2Cochlear Implant Clinic, Royal Victorian Eye and Ear Hospital, Melbourne, Australia, and 3The University of Melbourne, Melbourne, Australia: Evidence-based guidelines for recommending cochlear implantation for young children: Audiological criteria and optimizing age at implantation, 2016.
10. Hammes DM, Novak MA, Rotz LA, et al. Early identification and the cochlear implant: Critical factors for spoken language development. *Ann Otol Rhino Laryngol* 2002;111:74-78.
11. Tharpe AM, Gustafson S. Management of Children with Mild, Moderate, and Moderately Severe Sensorineural Hearing Loss. *Otolaryngol Clin North Am* 2015 Sep 30.
12. Novak MA, Firszt JB, Rotz LA, et al. Cochlear implants in infants and toddlers. *Ann Otol Rhino Laryngol Suppl* 2000;185:46-49.
13. Hirschfelder A, Gräbel S, Olze H. The impact of cochlear implantation on quality of life: The role of audiologic performance and variables. *Otolaryngol Head Neck Surg*. 2008 Mar;138(3): 357-362.
14. Wyatt JR, Niparko JK, Rothman M, deLissovoy G. Cost Utility of the Multichannel Cochlear Implant in 258 Profoundly Deaf Individuals. *Laryngoscope*.1996;106:816–821.
15. Semenov, YR, Yeh, ST, Seshamani, M, Wang, N-Y, Tobey, EA, Eisenberg, LS, Quittner, AL, Frick, KD, Niparko, JK, CDAI Investigative Team. Age-Dependent Cost-Utility of Pediatric Cochlear Implantation. *Ear Hear*. 2013;34(4):402-412.

* Contact your insurance company or local Hearing Implant Specialist to determine your eligibility for coverage.

Please seek advice from your health professional about treatments for hearing loss. Outcomes may vary, and your health professional will advise you about the factors which could affect your outcome. Always read the instructions for use. Not all products are available in all countries. Please contact your local Cochlear representative for product information.

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