

**ARTICLE REFERENCE:** Niparko, J. K., Tobey, E. A., Thal, D. J., Eisenberg, L. S., Wang, N. Y., Quittner, A. L., ... & CDaCI Investigative Team. (2010). Spoken language development in children following cochlear implantation. *Jama*, 303(15), 1498-1506.

**KEYWORDS:** Cochlear Implants, Spoken Language, Early Implantation

**WHAT WAS STUDIED, HOW WAS IT STUDIED AND RESULTS:** Language development after cochlear implantation

- Testing was completed at baseline and 6, 12, 24, and 36 month intervals after implant activation
- Information was collected by parents completing questionnaires and children participating in audiological and speech/language testing.
- The larger study considered audiological, speech, and language, and parent-child interaction outcomes. This article presented information on spoken language development using the Reynell Development Language Scales.

**HOW THIS INFORMATION MAY BE USEFUL TO YOU AND YOUR CHILD:** It is helpful to know that children who received cochlear implants at younger ages had a steeper rate of increase in comprehension and expression. Children who had better pre-implant hearing and parents with higher SES were associated with better rates of improvement on comprehension and expression. Higher parent-child interaction scores were significantly associated with higher rates of comprehension.

**WHO WAS STUDIED:**

- Number of children: 188 children with cochlear implants; 97 children with normal hearing
- Age of children included – preference birth – 5 years
  - 5 years old and younger, children were broken into three groups depending on their age of implantation (n=72 implant prior to 18 mos, n=64 implant 18-36 mos, n=52 implant over 36 mos)
- Hearing Level: Children with significant (severe to profound) sensorineural hearing loss (those eligible for cochlear implantation); Cause and onset of hearing loss varied
- Number of participants in the study: Participants in the study varied by gender, race, ethnicity, parent age, parent education level, and parent income; Participants were recruited from across the country from 6 large cochlear implant centers
- Area Studied: Spoken language development and speech recognition after cochlear implantation

**WHAT STILL REMAINS TO BE ANSWERED:** We still do not know exactly how early children should receive cochlear implants to maximize their language gain but minimize risk related to surgery.

**WHERE CAN I FIND MORE INFORMATION:**

<https://www.nidcd.nih.gov/health/cochlear-implants>

Information on cochlear implants: <http://www.cochlear.com/wps/wcm/connect/us/home>;

<http://www.medel.com/us/>; <http://www.medel.com/us/>