The increasing effect of complexity in children with cochlear implants: Consonant cluster development

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Research has shown that children with cochlear implants (CI) use the same phonological processes as normally hearing (NH) peers with respect to consonant cluster development. However, the incidence of those phonological processes has not been examined in the literature thus far. Furthermore, a quantified comparison between both groups of children is missing in the literature, as well as studies on the spontaneous speech of Dutch-speaking children with CI.

The present study has taken up from these observations and examines the frequency of each phonological process in consonant cluster production and compares it in both groups of children. Nine children with CI and 84 NH children were followed longitudinally: monthly from the onset of word production up to 24 months of age and yearly between three and seven years of age. Word onset two-element consonant clusters are analysed using multilevel models.

Results show that children with CI produce consonant clusters less frequently and less accurately than their NH peers. In addition, children with CI reduce consonant clusters for a longer period than their NH peers. However, the effect of sonority (sonority hypothesis, Ohala 1999) on these cluster reductions is similar in both groups of children. The differences between both groups of children disappear by age five. Thus, children with CI show a delay in consonant cluster production, but seem to catch up on their normally hearing peers by age five.