

Acoustic cues to coda voicing contrasts in children with hearing loss
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Children with hearing loss (HL) often have difficulties contrasting simple words like “dog” and “dock” due to systematic voicing errors. Moreover, voicing difficulties seem to vary as a function of device type (hearing aids vs. cochlear implants). However, children may produce contrasts that adult listeners cannot perceive. Therefore, acoustic evidence is needed to determine the actual phonological knowledge of children with HL and evaluate the potential effect of device type.

Sixteen children with HL (8 hearing aided (HA) users; 8 cochlear implant (CI) users) and 20 children with normal hearing (NH) all aged 4–5 years took part in an elicited imitation task. They repeated CVC words contrasted for voicing in word-final position at three places of articulation (PoAs).

Children with HL used closure duration to distinguish voicing at all PoAs. Similar to NH children, they produced more frequent irregular pitch period (IPP) before voiceless stops and more voice bar (VB) before voiced stops. However, only children with HAs used vowel duration to distinguish both voicing categories and, their use of IPP and VB was more robust than their peers with CIs. Neither HA nor CI users used burst duration to mark voicing. Since vowel duration is the primary cue to coda voicing contrasts in English, this may help explain the reported tendency of children with HL to devoice final stops. The absence of contrastive use of burst duration for both HA and CI users may also help explain previous reports of coda omission. The clinical implications are discussed.