

Cued Speech for American English

Visually providing the building blocks needed for communication, language development, and literacy.



/d, p, zh/



/ee, ur/



/k, TH, v, z/



/aw, e, ue/



/h, r, s/



/a, i, oo/



/b, n, wh/



consonant alone



/f, m, t/
vowel alone



1/2" - 3/4" down
/uh/



/l, sh, w/



1" forward
/ah, oe/



/g, j, th/



/ay, oi/



/ch, ng, y/



/ie, ou/

The widespread use of cochlear implants (CIs) with children who are deaf and hard-of-hearing is changing how we teach these children. Cochlear implants are not a cure for deafness. Nor are they guaranteed to work. As parents and educators embrace this new technology and strive to provide the maximum benefit possible to each child, Cued Speech can safeguard the language development of children who are deaf or hard-of-hearing.

- ❖ **What benefit do cochlear implants provide?** Cochlear Implants have changed the way children who are deaf receive auditory information. *An implant may provide...*
 - improved access to sounds.
 - more incidental learning.
 - more opportunity to learn through listening.
- ❖ **So why is an implant not enough?** Outcomes for children with cochlear implants vary widely. *Not all children benefit greatly from cochlear implants because...*
 - nearly 40% of children who are deaf or hard-of-hearing have secondary disabilities
 - cochlear implants have not solved the problems of distance and background noise.
 - hardware problems occur.
 - some implants are not successful.
 - the child cannot hear when the device is off or malfunctioning.
- ❖ **How CAN you ensure success with an implant?** Cue and speak to implant users. *Cued Speech can...*
 - give visual clarity to children with cochlear implants.
 - safeguard language development by giving specificity to what is heard.
 - override the problems with distance, noise and reverberation.
 - provide visual access to language when the CI is off or not working properly.
 - serve as a visual dimension for implanted children with secondary learning or processing issues.
- ❖ **What do professionals in the fields of education and speech observe in children with implants who cue?** *These children...*
 - develop an internal phonological model of speech, which helps establish literacy.

Author: Jane Smith

- interpret the sounds that they are hearing and verify them with cues.
- have a safeguard for language development and literacy.
- can keep up with the speed and amount of information in the mainstream that hearing peers are exposed to.

❖ **Where's the proof?** *Recent research shows that speech/phonological processing includes both visual and auditory processing.*

- Speech, for hearing people, is a bimodal percept when we see and hear the voice and lip movements of the speaker. The brain combines what it sees and hears to make the best guess of what is said. Children who get cochlear implants before 30 months of age are able to fuse the auditory and visual aspects of speech.
 - Wassenhove, Grant & Poeppel. (2005). Visual speech speeds up the neural processing of auditory speech. *PNAS*. 102, 1181-1186.
- While cochlear implant technology has improved, filtering out background noise is still problematic. Therefore, individuals who use implants may have a difficult time communicating in noisy environments.
 - Niparko, J.K., et al. (2000). *Cochlear implants: Principles & practices*. Philadelphia: Lippincott, Williams & Wilkins, 27-28.
 - Yost, W. (2000). *Fundamentals of hearing*. San Diego: Academic Press.
- Information delivered visually through Cued Speech may help to refine the speech perception received through the cochlear implant.
 - Leybaert, J. & Alegria, J. (2003). The role of Cued Speech in the language development of deaf children. In Marschark, M. & Spencer, P. (Eds.), *Oxford handbook of deaf studies, language, and education*. 261-274. Oxford: Oxford University Press.
- Cued Speech users use the same parts of their brain—the auditory cortex—to process phonological information as hearing peers.
 - Eden, G., Lansdale, M., Cappell, K., Crain, K., Zeffiro, T., & LaSasso, C. (Submitted for publication). Representation of the sound structure of language in deaf users of Cued Speech: A brain imaging study of reading. *Science*.
- Children with cochlear implants who used Cued Speech showed rhyme sensitivity equivalent to age-matched peers. Exposure to Cued Speech reinforces the cross-modal interaction between auditory and visual cortex.
 - LaSasso, C., Crain, K. & Leybaert, J. (2003). Rhyme generation in deaf students: The effect of exposure to Cued Speech. *Journal of Deaf Studies & Deaf Education*, 8(3), 250-270.