



The Inclusion of Cued Speech in an Auditory-Verbal Environment

A Position Statement of the National Cued Speech Association

Auditory-Verbal Therapy is a method for teaching children who are deaf or hard of hearing to listen and speak using only their residual hearing with amplification devices. The NCSA believes that cued language (presented via the system of Cued Speech) is a powerful means of supporting the development of listening and spoken language skills in children who are deaf or hard of hearing.

With consistent and appropriate use of hearing aids, cochlear implants and/or other assistive amplification technologies, many individuals who are deaf/hard of hearing have greater access to auditory information than ever before. However, even with these advances, the degree to which an aided or implanted individual processes and comprehends auditory information can be affected at any given time by a variety of factors such as room size and acoustics, distance from the speaker, competing or background noise, device or battery malfunction, and fatigue or general health of the individual.

Early, accurate, and consistent use of cued language with individuals who are deaf or hard of hearing enables them to develop all the components of a traditionally spoken language, which is processed in the auditory cortex of the brain. Recent functional magnetic resonance imaging (fMRI) research has proven that cued users who are deaf also process cued language in the auditory cortex.¹ This finding is consistent with previous research showing that the visual and auditory cortices are interconnected in individuals with typical hearing.

Clear and accurate cueing provides complete visual access to phonemic and environmental auditory information. Cueing enables a child to *see* the pronunciation of words and clarifies sounds that are difficult to distinguish through vision (for example: /m, p, b/) and through hearing (for example: /b, d, g/). Cueing shows a word's target consonants and vowels and acts as a 'language map' as a child learns to detect and distinguish sounds, and later to articulate challenging sounds. Thus, cueing reinforces the auditory input the child receives. Such reinforcement supports the continuing development of auditory perception, discrimination, and comprehension as it clarifies ambiguous auditory information.²

With learners having early, appropriate amplification providing access to sounds in the speech range, educators of deaf/hard of hearing have experienced the following:

- Use of cued language prior to implantation or hearing aid fitting establishes immediate mapping of language phonemes upon the child's auditory cortex. This maintains viability of auditory pathways in preparation for the introduction of enhanced auditory input.
- The phonemic visual information provided through cued language supplements the auditory information of spoken language, making phonemic-level information available to both a child's auditory and visual systems. This allows children who are deaf or hard of hearing to develop spoken language to their fullest potential without taking away from their auditory skill development or functioning. In fact, after implementing cued



language into their educational program, some educators of deaf/hard of hearing have seen an increase in auditory functioning in children who were previously plateauing. Simultaneous use of cued language with spoken language at home, school, or elsewhere does not detract from the child's initial and continued reliance on listening, and in many cases enhances discrimination skills and the child's confidence in those skills.

- As children's language levels progress, phonemic discrimination complexities increase and communication environments expand to include acoustically challenging conditions, such as background noise. Use of simultaneous spoken and cued language prevents those factors from influencing the rate and efficacy of traditionally spoken language acquisition. As children progress through school, communication issues with noise, distance, and group size can be most efficiently addressed through a combination of technology (e.g., assistive listening devices, sound field systems, cochlear implants, hearing aids) and, for some, access to cued language.

In summary, Cued Speech

- visually clarifies the auditory information a child receives,
- should be introduced upon diagnosis to begin the process of establishing phonemic awareness and discrimination of language through vision to augment auditory input,
- is especially necessary when hearing aids or implant processors are removed or compromised (e.g., bedtime, bath time, at the pool or beach, in noisy environments, etc.), and
- assures full communication when technology is not sufficient to provide access to every sound or phoneme (e.g., during classroom discussion when speakers overlap).

When auditory information is missing or unclear, the language-learning process is significantly compromised. In such situations, children expend mental energy to detect what was said, leaving less working memory available for linguistic processing and internalization of content. Because cued language provides clear, complete, and unambiguous visual access to all the phonemic information of traditionally spoken languages, its consistent use can provide the deaf or hard of hearing child with an internal map of complete language. When input is subsequently obtained through audition only, it is recognized more readily and with more confidence because the map of complete language is in place.

¹Aparicio, M., Peigneux, P., Charlier, B., Balériaux, D., Kavec, M., & Leybaert, J. (2017). The neural basis of speech perception through lipreading and manual cues: evidence from deaf native users of cued speech. *Frontiers in Psychology*, 8, 426. doi: 10.3389/fpsyg.2017.00426

²Bayard, C., Machart, L. Strauß, A., Gerber, S., Aubanel, V., & Schwartz, J.-L. (2019). Cued speech enhances speech-in-noise perception. *Journal of Deaf Studies and Deaf Education*, 24(3), 223-233. doi: 10.1093/deafed/enz003

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