

JAAA CEU Program

Volume 31, Number 3 (March 2020)

Questions refer to Bennett and Litovsky, “Sound Localization in Toddlers with Normal Hearing and with Bilateral Cochlear Implants Revealed Through a Novel ‘Reaching for Sound’ Task,” 195–208.

Learner Outcomes:

Readers of this article should be able to:

- Understand spatial-hearing abilities of young children with bilateral cochlear implants and children with normal hearing.
- Consider factors that play a role in the development of spatial-hearing abilities in young children.

CEU Questions:

1. Why are spatial-hearing abilities, such as sound localization, important in young children?
 - a. Spatial-hearing abilities allow children to hear the TV in quiet.
 - b. Spatial-hearing abilities allow children to communicate in complex environments, such as a classroom.
 - c. Spatial-hearing abilities assist children with the ability to detect sounds in quiet.
2. What is one way to test spatial-hearing abilities?
 - a. Sound localization
 - b. Speech perception
 - c. Threshold detection in the sound booth
3. What is minimum audible angle (MAA)?
 - a. The largest angle a listener can discriminate between two sound-source locations.
 - b. The smallest change in two sound-source locations that a listener can detect.
 - c. The softest sound a patient can detect at an angle of $\pm 15^\circ$.
4. The Reaching for Sound Method is:
 - a. A task where children are trained to reach toward an object in the dark.
 - b. The same as visual-reinforcement audiometry.
 - c. A task where children are trained to reach for sounding objects hidden behind a curtain and are rewarded for identifying the correct location of the sound.
5. When listening with two implants, children with bilateral cochlear implants (BiCIs) were able to discriminate between sound locations at angles as small as:
 - a. $\pm 30^\circ$
 - b. $\pm 60^\circ$
 - c. $\pm 15^\circ$
6. Sound-localization abilities were assessed by computing root-mean-square (RMS) error and percent correct. Which statement below is true?
 - a. Children with normal hearing (NH) demonstrated lower RMS errors and higher percent-correct scores on the sound-localization task when compared to children with BiCIs.
 - b. Children with BiCIs had RMS errors and percent-correct scores equivalent to the NH group.
 - c. Children with BiCIs had low RMS errors and low percent-correct scores on the sound-localization task.
7. BiCI children demonstrated a larger number of invalid trials and required a larger number of trials to reach criterion, which may suggest?
 - a. A lack of interest in the task
 - b. A poorly designed measure to test this population
 - c. Difficulty with the task and slower processing time for sound-localization tasks
8. Why might children with BiCIs perform more poorly than their NH peers on sound-localization tasks?
 - a. A lack of synchronization between bilateral devices and degraded binaural information
 - b. Their implants were not programmed properly
 - c. They were not engaged in the task
9. Children with a shorter inter-implant delay (<1.5 months) are more likely to demonstrate _____ compared to children with longer inter-implant delays.
 - a. Better programming abilities
 - b. Better sensitivity to binaural cues
 - c. The ability to focus on the task for longer periods of time
10. Results from this article suggest that sound-localization skills in toddlers with BiCIs:
 - a. Will never develop
 - b. Are the same as NH children
 - c. Are an emerging skill



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