

Hearing Aids are NOT “Glasses” for the Ears



It’s a common misconception that hearing aids “fix” hearing loss like glasses “fix” vision loss. While hearing aids are prescribed for those with hearing loss, hearing aids don’t **fix** hearing loss. Children with hearing loss haven’t yet developed auditory skills, therefore they will need to have direct instruction in auditory skill development, to understand what they are hearing. In order to provide auditory skill development instruction, teachers need to know how typically developing children develop auditory skills in order to determine the needs of a student with hearing loss.

Age	Auditory Milestones
by 4 months	<ul style="list-style-type: none">• shows preference for variable intonation (“motherese”) over monotone• able to discriminate between high and low frequency sounds in a quiet setting• demonstrates awareness of environmental sounds
by 7 months	<ul style="list-style-type: none">• reacts to changes in tone of voice• begins to localize with head turning• shows auditory memory for familiar voices• responds to own name and names of family members
by 12 months	<ul style="list-style-type: none">• follows verbal commands• understands the names of familiar objects
by 24 months	<ul style="list-style-type: none">• follows directions with two critical elements• independently seeks the source of a sound
by 36 months	<ul style="list-style-type: none">• verbally identifies a sound• sings complete songs from memory
by 4 years	<ul style="list-style-type: none">• developing sustained auditory attention over longer periods of time

**by 7
years**

- • learns from overhearing (uses words/phrases not directly taught)
- • higher level auditory skills are largely developed, including selective attention, understanding speech with a heavy accent and following conversations

Before beginning instruction in auditory skill development, **assessment is absolutely necessary**. Use an assessment that has been vetted as appropriate for children with hearing loss. Use assessments that will yield results that help determine where exactly instruction should begin. Check out this resource that will help to determine what assessments are appropriate. (<https://teachertoolstakeout.com/0649-teacher-info-assessment>). After assessment, teachers and therapists can target areas that will need to have direct instruction.

What do you do with the results of assessment? First, build your knowledge of typical auditory development.

After determining what skill area(s) the student is currently in need of developing, begin instruction with the areas of **skill deficits**. ¹Auditory skills are typically defined in 4 areas of concentration:

- **Detection**: Detection is the ability to respond to the presence or absence of sound. It is the essential first step in learning to listen.
- **Discrimination**: Discrimination is the ability to perceive similarities and differences between two or more speech stimuli. ☒ In discrimination activities, same-different tasks are often used. (Example: dog vs. dogs, “Do they sound the same or different?”)
- **Identification**: Identification is the ability to label by repeating, pointing to or writing the speech stimulus heard.
- **Comprehension**: Comprehension is the ability to understand the meaning of speech by answering questions, following directions, paraphrasing, or participating in a conversation.

While there is a hierarchy of auditory skill development these skills are not developed independently of one another. Auditory skills are developed in tandem, however instruction can be delivered specifically in each auditory skill development concentration. Consider these factors when evaluating and determining service delivery: **age on onset, age of amplification, access to consistent auditory training, and language rich environments should be considered when determining type and amount of services for children with hearing loss.**

Children need constant exposure to language. Developing language and auditory skills are critical for students who are learning to use amplification. Amplifying a student’s hearing levels doesn’t automatically develop their ability to identify, locate, discriminate, and comprehend

what they are hearing. In addition, according to the auditory scaffolding hypothesis, deafness may especially affect cognitive abilities related to learning, recalling, and producing sequential information. In addition, research indicates that auditory scaffolding affects cognition in children with hearing loss.

²Although it is common to consider deafness as affecting the sense of hearing alone, we argue that because sound is the primary gateway to understanding temporal and sequential events, auditory deprivation may result in significant disturbances on a wide range of other tasks (Conway, Karpicke, & Pisoni, 2007). For instance, Bavelier, Dye, and Hauser (2006) have argued that deafness results in a reorganization of cortical function. Therefore, losing the sense of audition early in development may set up a cascade of complex effects that alter a child's entire suite of perceptual and cognitive abilities, not just those directly related to hearing and the processing of acoustic signals.

According to the auditory scaffolding hypothesis, deafness may especially affect cognitive abilities related to learning, recalling, and producing sequential information. A delay or disorder in domain-general sequencing skills, triggered by lack of auditory stimulation at an early age, could provide a significant impediment to normal development. Indeed, previous work suggests that the profoundly deaf show disturbances in (non-auditory) functions related to time and serial order, including immediate serial recall (Marschark, 2006). ("The Importance of Sound for Cognitive Sequencing Abilities: The Auditory Scaffolding Hypothesis - PMC").

In conclusion, amplification providing access to sound, access to spoken language, and direct instruction in auditory skill development, will impact a student's ability for cognitive sequencing. Early amplification and targeted therapy enhances a student's probability for auditory-cognitive success.

Works Cited

¹Compiled by Denise Wray et. al., University of Akron, 2007 from: Erber, N. (1977) "Evaluating Speech Perception Ability in Hearing Impaired Children" [Bess, Fred H. (ed): Childhood deafness: Causation, Assessment, and Management.] New York, Grune & Stratton. Estabrooks, W. (2006). Auditory-Verbal Therapy and Practice. Washington, DC: A.G. Bell

²Conway, Christopher M et al. "The Importance of Sound for Cognitive Sequencing Abilities: The Auditory Scaffolding Hypothesis." Current directions in psychological science vol. 18,5 (2009) 275-279. Doi:10.1111/j. 1467-8721.2009.01651.x