

**APPENDIX D**  
**PEDIATRIC AMPLIFICATION GUIDELINES**

# Pediatric Amplification Guidelines

The following should be completed by three months of age for infants with confirmed hearing loss.

1. Qualifications for Pediatric Hearing Aid Services.
  - A. A “Medical Clearance” must be obtained from an ENT/Otologist prior to hearing aid fitting.
  - B. An audiologist must complete a diagnostic audiologic assessment.
  - C. An audiologist is the professional singularly qualified, working with an otolaryngologist, to select and fit all forms of amplification for infants and children, including personal hearing aids, FM systems, cochlear implants and other assistive listening devices.
  - D. An audiologist must have the appropriate Alabama licensure in Audiology issued by the Alabama Board of Examiners for Speech-Language Pathology and Audiology in order to practice in the State of Alabama.
  - E. It is preferred that audiologists working with infants and children have experience in the management and fitting of amplification in infants and children with hearing loss. The audiologist should have the necessary equipment to complete the tests required for hearing aid selection and evaluation procedures.
2. Criteria for Determining the Candidacy for Amplification.

Infants should be fit to the “best estimate” audiogram based on the completion of the physiological assessment techniques outlined in the “Audiological Assessment Protocol” section of this document. Amplification decisions should be based on information obtained from on-going audiologic re-evaluation, performance of the infant in the home and/or educational environment, existence of other special needs, speech, language, and auditory developmental milestones, and the family’s preferences.

  - A. Permanent, bilateral hearing loss of >30dB or greater for behavioral testing or >30 dBnHL for click ABR threshold in the better ear. The degree of hearing loss may be determined by either:
    1. Estimates form electrophysiologic correlates of hearing sensitivity (i.e., click or frequency-specific results),

OR WHEN POSSIBLE.

2. Ear specific behavioral thresholds obtained by standard audiometric techniques appropriate to the child's developmental level (i.e., visual reinforcement audiometry, condition play audiometry, or standard behavioral audiometry).
  3. Bilateral mixed hearing loss greater than 30 dB HL. The degree and type of hearing loss should be determined by the factors listed above (see 1 and 2).
  4. Unilateral hearing loss greater than 30dB. The degree and type of hearing loss should be determined by the factors listed above (see 1 and 2).
3. Pre-selection: Physical Characteristics of Amplification
- A. Amplification options:
1. Behind-the-ear (BTE) aids are appropriate for most Infants and children. In-the-ear (ITE) hearing aids are not recommended for use with infants and young children due to the growth of the outer ear, problems with increased feedback and safety issues.
  2. A bone conduction hearing aid may be appropriate if the hearing loss is conductive and BTE hearing aids cannot be worn due to medical or physical contraindications.
  3. Body aids should only be used when BTE hearing aids cannot be fit due to medical or physical contraindications.
  4. A cochlear implant may be appropriate if the child has a bilateral profound/severe sensorineural hearing loss and has used appropriate, binaural hearing aids, has been enrolled in Alabama's Early Intervention System and exhibits minimal benefit from the hearing aids.
  5. An FM system coupled with the infant's personal hearing aids should be considered when the child becomes mobile and needs to listen to a caretaker/teacher at a greater distance.
  6. Hearing aids with digital processing, including an FM system and dual microphones, should be considered for their flexibility and their noise reduction algorithms.

7. Hearing aids with multiple channels should be considered when the audiometric configuration requires the shaping of gain or output in specific frequency regions.
  8. Directional microphones should be considered for children with mild to severe hearing losses to improve signal-to-noise ratio when FM technology, the system of choice to improve signal-to-noise ratio, is not being used.
- B. Amplification safety feature requirements:
1. Tamper resistant battery doors
  2. Volume control covers
- C. All amplification fittings should be binaural in children, unless contraindicated.
- D. It is recommended that families be provided with maintenance kit that includes:
1. Dry aid kit
  2. Battery tester
  3. Listening tube/stethoscope
  4. Extra batteries
4. Hearing Aid Selection and Verification:
- A. Prior to direct evaluation of the hearing aid on the child, the hearing aid should be preset and evaluated in a hearing aid test box to average age-related real-ear to coupler difference (RECD) values.
  - B. The preferred verification method is to use probe microphone measurements and the child's ear, ear mold, and amplification system. The procedure should be combined with a prescriptive technique, which estimates target responses appropriate for the characteristics of the amplification system.
5. Validation of Aided Auditory Function Should be On-Going and Should Include:
- A. Audiologic assessment directly measuring the child's performance

including aided soundfield responses to speech and frequency specific stimuli.

- B. Functional auditory skill assessment obtained by the audiologist and early interventionist.
  - C. Speech, communication, and language skill assessment obtained by the early interventionist and a speech/language pathologist.
  - D. Parent input as well as input from other professionals involved with the child.
6. Counseling and Follow-up:
- A. Information about all appropriate amplification options should be given to the parents prior to final purchase of amplification.
  - B. Parents and other family members or individuals that will assist in the insertion of and maintenance of the amplification system should receive orientation and on-going support.
7. Suggested Frequency of Audiologic Re-evaluation/Follow-up
- A. At least every three to six months during the first two years of amplification use.
  - B. Every three to six months after the first two years of amplification use.
8. The infant/child should be enrolled in Alabama's Early Intervention System.