

Joint Committee on Infant Hearing*

Position Statement 1982

Early detection of hearing impairment in the affected infants is important for medical treatment and subsequent educational intervention to assure development of communication skills.

In 1973, the Joint Committee on Infant Hearing Screening recommended identifying infants at risk for hearing impairment by means of five criteria, and suggested follow-up audiologic evaluation of these infants until accurate assessments of hearing could be made (*AAP Newsletter Supplement*, October 1973). Since the incidence of moderate to profound hearing loss in the at-risk infant group is 2.5% to 5.0%, audiologic testing of this group is warranted. Acoustic testing of all newborn infants has a high incidence of false-positive and false-negative results and is not universally recommended.

Recent research suggests the need for expansion and clarification of the 1973 criteria. This 1982 statement expands the risk criteria and makes recommendations for the evaluation and treatment of the hearing-impaired infant.

I. IDENTIFICATION

A. Risk criteria

Factors that identify those infants who are at risk for having hearing impairment include the following:

1. Family history of childhood hearing impairment
2. Congenital perinatal infection (eg, cytomegalovirus, rubella, herpes, toxoplasmosis, syphilis)
3. Anatomic malformations involving the head or neck (eg, dysmorphic appearance includ-

ing syndromal and nonsyndromal abnormalities, overt or submucous cleft palate, morphologic abnormalities of the pinna)

4. Birth weight < 1,500 gm
5. Hyperbilirubinemia at level exceeding indications for exchange transfusion
6. Bacterial meningitis, especially *Haemophilus influenzae*
7. Severe asphyxia which may include infants with Apgar scores of 0 to 3 or who fail to institute spontaneous respiration by ten minutes and those with hypotonia persisting to 2 hours of age

B. Screening procedure

The hearing of infants who manifest any item on the list of risk criteria should be screened, preferably under the supervision of an audiologist, optimally by 3 months of age but not later than 6 months of age. The initial screening should include the observation of behavioral or electrophysiologic response to sound. (The Committee has no recommendations at this time regarding any specific device.) If consistent electrophysiologic or behavioral responses are detected at appropriate sound levels, then the screening process will be considered complete except in those cases in which there is a probability of a progressive hearing loss; eg, family history of delayed onset or degenerative disease, or history of intrauterine infection. If results of an initial screening of an infant manifesting any risk criteria are equivocal, then the infant should be referred for diagnostic testing.

II. DIAGNOSIS FOR INFANTS FAILING SCREENING

A. Diagnostic evaluation of an infant 6 months of age should include:

1. General physical examination and history including:
 - a. Examination of the head and neck

* The Joint Committee consisted of representatives from the American Academy of Pediatrics, Academy of Otolaryngology-Head and Neck Surgery, American Nurses Association, and American Speech-Language-Hearing Association.

- b. Otoscopy and otomicroscopy
- c. Identification of relevant physical abnormalities
- d. Laboratory tests such as urinalysis and diagnostic tests for perinatal infections
- 2. Comprehensive audiologic evaluation:
 - a. Behavioral history
 - b. Behavioral observation audiometry
 - c. Testing of auditory evoked potentials, if indicated
- B. After the age of 6 months, the following are also recommended:
 - 1. Communication skills evaluation
 - 2. Acoustic immittance (impedance) measurements
 - 3. Selected tests of development

III. MANAGEMENT OF HEARING IMPAIRED INFANT

Habilitation of the hearing-impaired infant may begin while the diagnostic evaluation is in process. The Committee recommends, however, that whenever possible, the diagnostic process should be completed and habilitation begun by the age of 6 months. Services to the hearing-impaired infant <6 months of age include:

- A. Medical management
 - 1. Reevaluation
 - 2. Treatment
 - 3. Genetic evaluation and counseling when indicated
- B. Audiologic management
 - 1. Ongoing audiologic assessment
 - 2. Selection of hearing aid(s)
 - 3. Family counseling
- C. Psychoeducational management
 - 1. Formulation of individualized educational plan

2. Information about implications of hearing impairment

After the age of 6 months, the hearing-impaired infant becomes easier to manage in a habilitation plan but he/she will require the services listed above.

REFERENCES

Early Intervention

Ling D: Early speech development, in Mencher G, Gerber SE (eds): *Early Management of Hearing Loss*. New York, Grune & Stratton, 1981, pp 319-335

McFarland WH, Simmons BF: The importance of early intervention with severe childhood deafness. *Pediatr Ann* 9:13, 1980

Skinner M: The hearing of speech during language acquisition. *Otolaryngol Clin North Am* 11:631, 1978

Identification of Hearing Impairment in Infants

Bess FH: *Childhood Deafness: Causation, Assessment and Management*. New York, Grune & Stratton, 1977

Greenstein JM, Greenstein BB, McConville K, et al: *Mother-Infant Communication and Language Acquisition in Deaf Infants*. New York, Lexington School for Deaf, 1976

Northern J, Downs M: *Hearing in Children*. Baltimore, Williams & Wilkins, 1978

Diagnosis and Management

Gerber SE, Mencher GT: *Proceedings of Saskatchewan Conference on Early Diagnosis of Hearing Loss*, Saskatoon, Saskatchewan, May 7-9, 1978. New York, Grune & Stratton, 1978

Mencher GT, Gerber SE: *Early Management of Hearing Loss*. New York, Grune & Stratton, 1981

Simmons BF: Diagnosis and rehabilitation of deaf newborns: Part II. *ASHA* 22:475, 1980

Evoked Potential Audiometry

Despland PA, Galambos R: The auditory brainstem response (ABR) is a useful diagnostic tool in the intensive care nursery. *Pediatr Res* 14:154, 1980

Galambos C, Galambos R: Brainstem evoked response audiometry in newborn hearing screening. *Arch Otolaryngol* 105:86, 1979

Starr A, Amlie RN, Martin WH, et al: Development of auditory function in newborn infants revealed by auditory brainstem potentials. *Pediatrics* 60:831, 1977