Newborn Hearing Screening, Early Identification and Loss to Follow-Up

Program in Audiology and Communication Sciences
Pediatric Audiology Specialization

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Project Officer, Maryann McDermott
Outline

• Ear Anatomy
• Newborn Hearing Screening tests
• Reasons a baby might not pass
• Importance of Follow-Up
• Hearing Checklist Timeline
• Next Steps
Ear Anatomy

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What is Newborn Hearing Screening?

- A quick test of the baby’s hearing right after birth
  - It does not give specific information about hearing loss
- Tests used to screen your baby’s hearing
  - Otoacoustic Emissions (OAE)
  - Auditory Brainstem Response (ABR)
Otoacoustic Emissions (OAE)

A sound produced by the inner ear in response to a signal

• Soft earbud is placed at the opening of ear canal
• A signal is presented to the baby’s ear
• OAEs detect:
  o blockage in the ear canal
  o fluid or impairment in the middle ear
  o function of the inner ear
• Healthy ear responds to the signal by producing a sound
Auditory Brainstem Response (ABR)

Tests the hearing system from the ear to the brainstem

- Sounds are played through soft earbuds to the baby’s ears
- Sticker electrodes are placed on the baby’s head to measure responses
- Responses represent how sound travels from the outer, middle, and inner ear to the brainstem
Why Might a Baby Not Pass the Hearing Screening?

• If a baby does not pass the screening, he or she may:
  o have fluid in the ear
  o be moving or crying during the test
  o have hearing loss

Although most babies who do not pass the screening do not have hearing loss, it is important to follow-up with a pediatric audiologist for a complete hearing test.
Why is Follow-Up Important?

• Hearing loss is one of the most common conditions present at birth
  ○ 1-3/1,000 babies are born with hearing loss

• Follow-up is necessary because
  ○ Babies cannot tell us if they cannot hear
  ○ Early diagnosis and treatment of hearing loss is important for speech and language development

If a baby is diagnosed with hearing loss, there are many options available.

(Finitzø et al. 1998)
Hearing Checklist Timeline

- All babies should have their hearing screened by 1 month of age.
- Babies that do not pass the hearing screening should see an audiologist for follow-up testing by 3 months of age.
- Babies diagnosed with hearing loss should receive early intervention services by 6 months of age.
Types of Childhood Hearing Losses

• Delayed Onset Hearing Loss
  ○ Even if a baby passes the hearing screening, it is possible to develop hearing loss later in childhood

• Progressive Hearing Loss
  ○ Some hearing losses can get worse over time
  ○ It is important to pay attention to any changes in your baby’s reaction to sounds as they get older
Next Steps

- If the baby does not pass the hearing screening, contact a pediatric audiologist for a complete hearing test.
- Early Intervention should begin as soon as a hearing loss is diagnosed.
  - Intervention may include hearing aids, speech and language therapy, and other services.

The pediatric audiologist can guide you through this process and explain the many available options.

http://kidshearinghealth.wustl.edu