Pediatric Amplification

Program in Audiology and Communication Sciences
Pediatric Audiology Specialization

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Outline

• What is Amplification?
• What Types of Hearing Devices Might a Child Use?
  o Hearing Aids
  o Cochlear Implants
  o Bone Anchored Hearing Device
  o Frequency Modulated (FM) and Digital Modulated (DM) Systems
What is Amplification?

- **Amplification** makes sounds louder so that a child is better able to hear
- **Hearing devices** can be programmed to fit a child’s unique hearing loss
- A child may need hearing devices when his or her hearing loss impacts the ability to learn language or communicate
What Types of Hearing Devices Might a Child Use?

- Hearing Aids
- Cochlear Implants
- Bone Anchored Hearing Devices
- FM/DM Systems
Ear Anatomy

Hearing Aid

- Microphone
- Earmold
- Battery door
How Does a Hearing Aid Work?

The hearing aid:

1. Picks up sound near the child
2. Makes the sound louder
3. Sends the louder sound into the child’s ear
4. The ear sends the information to the brain
Cochlear Implant

Sound Processor

Transmitter

Battery

Microphone

Sara’s son
How Does a Cochlear Implant Work?

1. Sounds are picked up by the external part of the cochlear implant
2. The external part of the device sends these sounds to the internal piece of the device in the inner ear
3. The information from the internal part of the device is sent to the brain
What are Bimodal Devices?

• A child wearing a cochlear implant on one ear and a hearing aid on the other has bimodal devices
Bone Anchored Hearing Aid

Attachment for Soft Band Adaptor or Screw

Sound Processor

Soft Band with Sound Processor
How Does a Bone Anchored Hearing Aid Work?

1. Sounds are picked up by the device
2. The device uses vibrations to send the sounds to the child’s inner ear
3. The inner ear sends this information to the brain
FM/DM Systems

- FM/DM systems overcome distance between the talker and listener
- The purpose of FM/DM systems is to help the child better hear the desired message
- FM/DM systems are often used in classrooms
- Two types of FM/DM systems are personal and sound field

Transmitter ➔ Example of a Receiver
Personal vs. Soundfield FM/DM Systems

Personal FM/DM systems send the talker’s message to a device worn by the child.

Soundfield FM/DM systems send the talker’s message to a loudspeaker.
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http://webportal.audiology.org/Custom/FindAnAudiologist.aspx

http://www.asha.org/profind/