easterseals Crossroads

Assistive Technology for Hearing Impairments

Hearing loss occurs when the hearing mechanism is damaged or obstructed in such a way that the sounds can't be perceived or understood. Individuals who are deaf or hard of hearing have hearing loss that impairs — mildly, moderately or profoundly — their understanding of sounds, including communication.

ASSISTIVE LISTENING SYSTEMS AND DEVICES

Assistive listening devices enable an individual who benefits from amplification to focus directly on the sound source, reducing distractions from background noises that can make it difficult to concentrate.

- **Personal Sound Amplifiers:** Small, hearing aid-like devices worn in just one ear or as a pair
- **FM Listening Systems:** Consist of a transmitter microphone used by the speaker and a receiver used by the listener; receiver transmits the sounds to your ears or directly to a hearing aid
- **Hearing Aids:** Digital, analog or Bluetooth-enabled, hearing aids usually need a prescription and require meeting with an audiologist. They are more customized to a person's unique hearing loss.
- **Cochlear Implants:** These surgically-implanted devices use a small speech processor and microphone to detect sounds and then send electrical signals to the receiver, which stimulates the brain.

AMPLIFIED PHONES AND CAPTIONING

- **Amplified Phones:** Provide adjustable volume for persons who are hard of hearing
- **Caption Phones:** Provide live transcriptions of the telephone conversation
- **Video Captioning:** Open captions can be seen by all viewers, regardless of their hearing impairment. Closed captions can be turned on and off.
- **Communication Access Realtime Translation (CART):** Provides almost instantaneous translations of speech into print using a live transcriptionist

BUILT-IN TECHNOLOGY FOR MOBILE DEVICES

Both iOS and Android systems offer different hearing aid supports. Some can connect directly to cochlear implants or sound processors; different model phones and operating systems support different devices.

- **Live Transcribe and Sound Notifications (Android)/Translate (iOS):** Uses automatic speech recognition and sound detection technology; provides real-time transcription of conversations; sends notifications of sounds
- **Sound Amplifier (Android)/Sound Recognition (iOS):** Helps people hear in noisy and challenging environments; filters, augments and amplifies sounds around an individual; uses microphone and wired headphones; reduces noise; allows for sound customization
- **Software RTT/TTY (Real-Time Text/Teletype):** Requires no additional devices or hardware; transmits text as you type and allows the recipient to read the message right away.

MOBILE APPS

- **Microsoft Translator, Otter AI:** Allows for transcription and two-way communication
- **Sorenson BuzzCards:** Simple, flashcard-like communication tools
- **Sorenson nTouch:** Video relay service (VRS) on the go on your mobile device
- **Petralex:** Phone-based hearing aid that automatically adjusts to specific features of your hearing
- **HeardThat:** Delivers clear speech in noisy environments using AI; separates noise and discards it

ALERT SYSTEMS

- Flashing or vibrating alert systems notify persons who are deaf or hard of hearing of what is going on in their environment.
- If a signaling device needs a lighted or vibrating alert installed, talk to the manufacturer and find out if this can be accommodated.
- **Nest or Ring camera systems** can detect sound and send alerts to an individual's cell phone. These are usually less expensive and can be more effective than changing a current device.