Hearing Aids: The Basic Information You Need to Know

FDA BASICS WEBINAR

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Outline

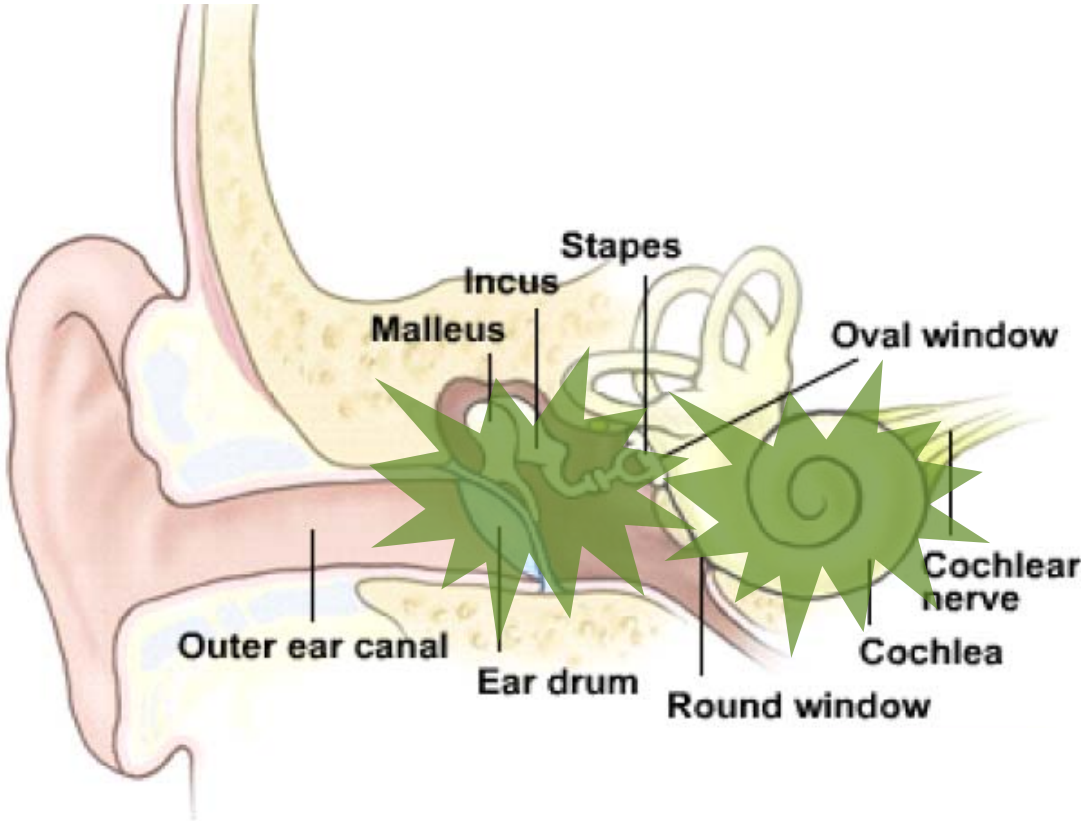
- **Hearing loss**
- **Basics about hearing aids**
  - What are hearing aids and who are they for?
  - How does a hearing aid work?
  - Styles and common features
- **Getting the most out of your hearing aids**
  - Hearing aid fitting & care
  - Hearing aid benefits & limitations
  - Learning to listen with hearing aids
- **Hearing Aids vs. Personal Sound Amplifying Products**
- **Questions & Answers**

Facts about Hearing Loss

- Individuals with hearing loss may be limited in daily oral communication.
- Some facts about hearing loss & hearing aids (NIDCD/NIH)
  - 36 million (or 17%) adult population in the US report some degree of hearing loss.
  - Less than 20% of those with hearing loss who might benefit from treatment actually seek help.
  - Most hearing aid users had lived with hearing loss for 10^{+} years, and waited until it progressed to moderate-to-severe levels before seeking professional help for hearing aid fitting.

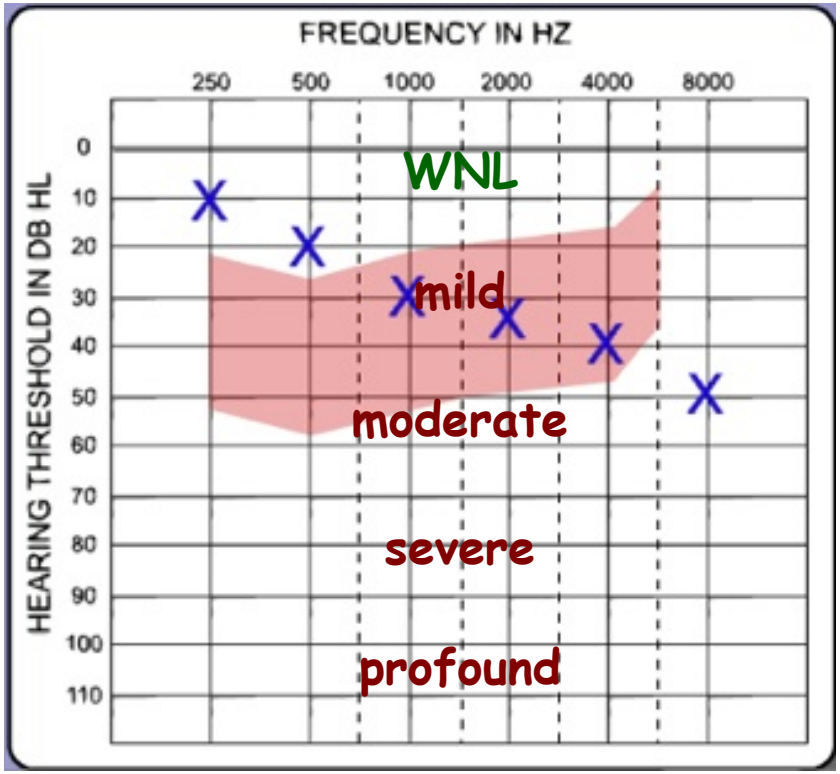
Types of Hearing Loss

- **Conductive**: Middle ear pathology
- **Sensorineural**: Damage at the inner ear (cochlea)
- **Mixed**: Both cochlear damage & outer/middle ear pathology



Degrees of Hearing Loss

- 0 - 20 dB HL: Within normal limits (WNL)
- 20-40 dB HL: Mild
- 40-70 dB HL: Moderate
- 70-90 dB HL: Severe
- > 90 dB HL: Profound



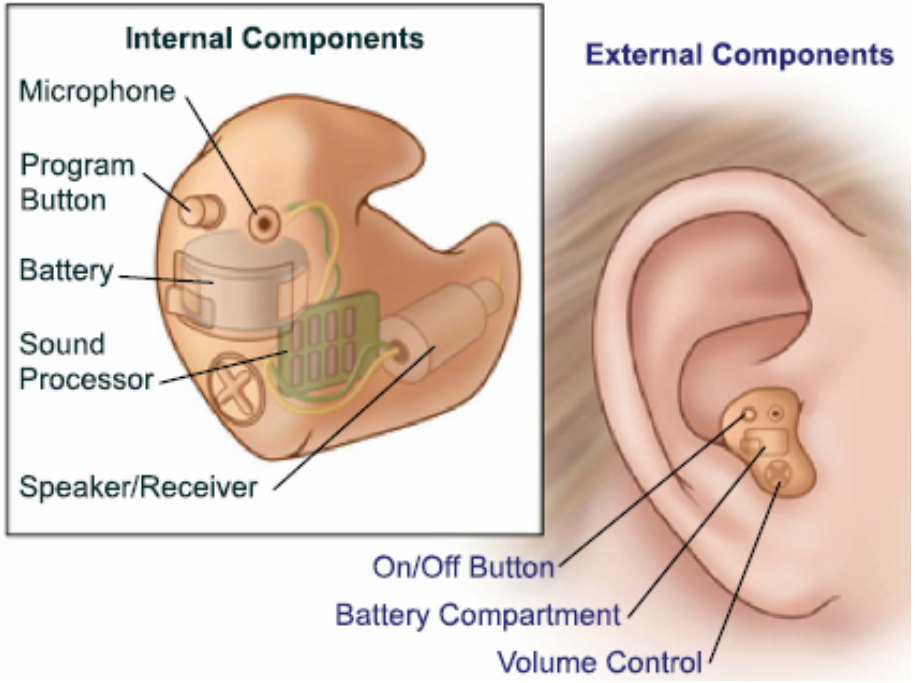
Who are Hearing Aids for?

- Sound-amplifying medical devices to aid individuals with hearing loss. Hearing aids may be useful for:
  - Hearing loss that may or may not be medically treatable.
  - Any type of hearing loss, as long as the individual needs compensation for the reduction in hearing.

- Selection of hearing aids should be based on the type and severity of hearing loss, listening needs, and lifestyle.

Hearing Aids: Basic Components & How They Work

- Electronic components:
  - Microphone
  - Amplifier circuitry
  - Miniature loudspeaker/receiver
  - Battery
- How does a hearing aid work?
  www.fda.gov/hearingaids



Hearing Aid Styles

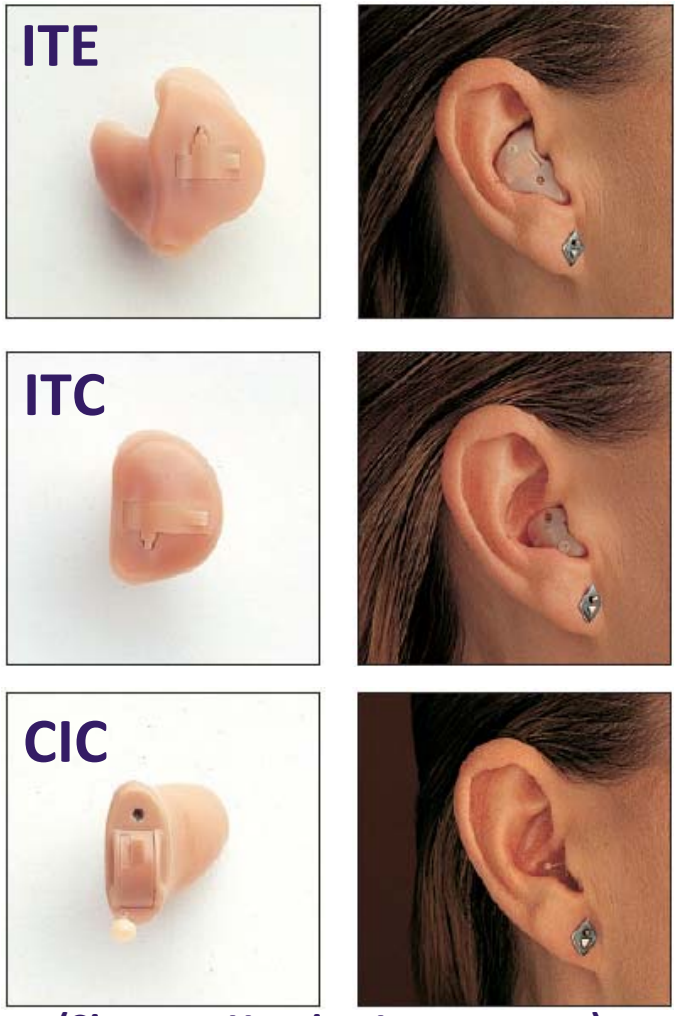
- **Behind-the-ear (BTE) aids:**
  - A plastic case containing most parts; resting behind the ear connected to an earmold
  - Easy to be cleaned and handled, relatively sturdy
- **"Mini" BTE (or "on-the-ear") aids:**
  - A very thin tube connects the aid to the ear canal
  - May have an open-fit ear tip or a regular earmold
  - With “open fit” – Reduced occlusion ("plugged up“) sensations, increased comfort, relatively less visible

(Siemens Hearing Instruments)

(NIDCD/NIH)

Hearing Aid Styles

- **In-the-ear (ITE) aids:**
  - All parts contained in a shell, which fills in the ear canal
  - Relatively easier to handle than smaller aids such as ITC & CIC
- **In-the-canal (ITC) aids & completely-in-the-canal (CIC) aids:**
  - All parts contained in tiny cases, which fits partly or completely in the ear canal
  - Smallest in size, which makes it difficult to handle and adjust for some users



(Siemens Hearing Instruments)

Hearing Aid Technology: Analog vs. Digital

- **Analog**
  - Converting physical sound waves into electrical waves
  - Making the continuous sound waves larger
- **Digital**
  - Converting sound waves to their binary format where the sound is represented by a series of 1's and 0's
  - Allowing manipulating sounds in relatively flexible ways to achieve more programming options.

Common Hearing Aid Features

- **Directional microphones**
  - Sound from a specific direction amplified to a greater level
  - May help listeners to understand speech in noisy environments
- **Feedback suppression**
  - Squeals suppressed when the hearing aid gets too close to the phone or has a loose-fitting earmold
- **T-coil (Telephone switch)**
  - Sound picked up from the telephone when switching to the "T-coil" setting
  - Help to reduce the chance of hearing aid "whistling"
  - Also works well in environments (e.g., theaters, auditoriums, etc.) where there is induction loop or FM installation

Hearing Aid Fitting

- Get a medical check up from a licensed physician to rule out any medical reasons for hearing loss.
  - In some cases, hearing loss is medically or surgically treatable.
  - Certain medical conditions may underlie the person's hearing loss.

- Seek hearing aid fitting from a licensed hearing healthcare professional.
  - Audiological exam, including hearing evaluation
  - Provide proper gain and setting: Too much amplification may cause discomfort & additional hearing loss.

Hearing Aid Fitting (cont'd)

Questions to consider:

- What styles and features would fit my daily needs?
- Cost:
  - What is the total cost of the hearing aids?
  - Do the benefits of newer technologies outweigh the higher costs?
- Trial/adjustment period:
  - Is there a trial or adjustment period for me to try out the hearing aids?
  - What fees are nonrefundable if I decide to return the hearing aids?
- Care & Warranty:
  - How should I care for my hearing aids?
  - What is covered during the period of warranty?
  - How long is the warranty? Can it be extended?

Hearing Aid Care & Maintenance

- Keep hearing aids away from any moisture and heat, which may cause damage to the internal electronics.
- Clean hearing aids as instructed.
- Power consumption & battery safety:
  - Turn off hearing aids when not in use.
  - Keep batteries and hearing aids away from children and pets.
- Visit the hearing healthcare professional on a regular basis to have hearing aids inspected.

Hearing Aid Benefits & Limitations

Benefits

- Ability to hear sounds that could not be heard previously, and help oral communication
- Ability to hear speech over the telephone

Limitations

- Do not restore normal hearing
- All sounds, including background noise and undesired sounds, are made louder.
- Sounds, including own voice, might seem too loud at first.
- May need to be replaced every several years

Learning to Listen with Hearing Aids

- Understand your hearing loss & set realistic expectations
- Allow yourself time to adjust and request fine-tuning
- Involve your family members to understand hearing loss and hearing aids
- Learn about communication strategies, including dealing with background noise & utilizing visual cues
- Join support groups
- Learn about Assistive Listening Devices (ALDs)

Hearing Aids vs. Personal Sound Amplification Products (PSAPs)

Hearing Aids

- Any wearable sound-amplifying medical device
- Aiding persons with, or compensating for impaired hearing

PSAPs

- NOT medical devices; wearable electronic consumer products
- Amplifying environmental sound for non-hearing impaired consumers for use in a variety of listening situations
- Not intended or labeled to compensate for hearing loss

Questions?

For more information about hearing aids, please refer to the FDA website on hearing aids at:
http://www.fda.gov/hearingaids