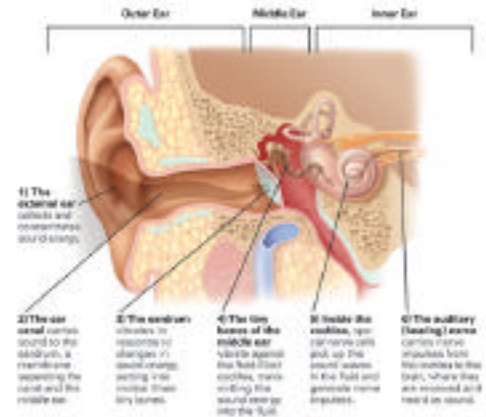


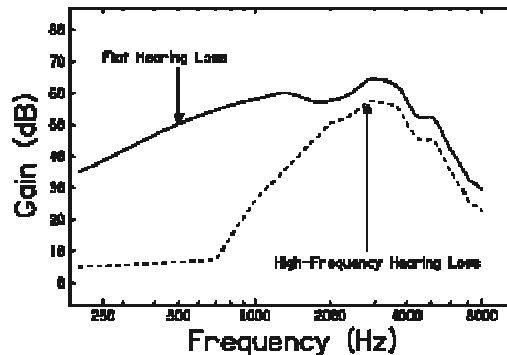
## Hearing Aids --- By Louis Chen

- How it works: Basically hearing aids have a microphone pickup, and amplifies the sound it picks up into the ear canal
- Old designs use to be a bulky unit that you clipped on somewhere, where the amplified signal goes into a headphone like device
- There are two main reasons why people lose hearing. *Conductive* or *Sensorineural*
- *Conductive*- A type of hearing loss that results from dysfunction of the outer or middle ear (such as a punctured eardrum or buildup of ear wax) that interferes with the efficient transfer of sound to the inner ear; characterized by a loss in sound intensity
- *Sensotineural*- Hearing loss caused by damage to the hair cells or nerve fibers of the inner ear



### Challenges include:

- First and for most, making sure someone can hear while using the aid- or at least improve their hearing abilities at a dramatic rate.
  - Having it be safe, something that can be resistant to everyday situations, like water, vibrations and shocks. It also must be reliable.
  - Size, Portability, sound reproducing accuracy, preventing feedback.
  - Newer features, creating modes to simulate directions (two microphone pickups)
  - Fitting, how will the piece fit into the exterior ear canal?
- Most hearing aids will have these functions.
    - On/Off Switch
    - Volume Control
    - Microphone
    - Battery Component
    - Amplifier
    - Ear Piece
    - Newer models can amplify specific frequencies



A List of Companies who make Hearing Aids

include: GNResound, Phonak, Widex, Starkey, Siemens, Sonic, and Oticon, Price ranging from about \$1,500 – \$2,699

### My Sources

- <http://www.hearingplanet.com/>
- <http://www.ftc.gov/bcp/online/pubs/health/hearing.htm>
- <http://www.jefferson.edu/hearing/images/anat.jpg>
- <http://science.education.nih.gov/supplements/nih3/hearing/other/glossary.htm>
- <http://www.babyhearing.org>