



HEARING AIDS – BEWARE AND BE WISE!



Northern Virginia Resource Center for Deaf and Hard of Hearing Persons

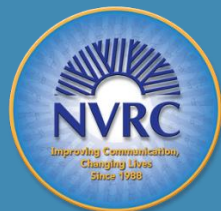
3951 Pender Drive, Suite 130

Fairfax, VA 22030

703-352-9055 (V) 9056 (TTY) 9058 (Fax) 571-350-8656 (VP)

ABOUT NVRC

www.nvrc.org



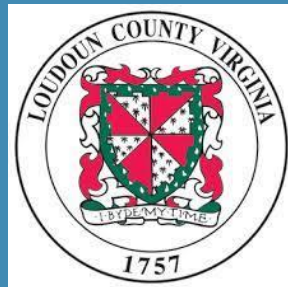
- **Mission:** To empower deaf and hard of hearing individuals and their families through education, advocacy and community involvement.



- **Services:** Information and referral, outreach, education, weekly e-mail news, hearing screenings, ASL interpreting program, mentoring and advocacy for deaf, hard of hearing, late-deafened, and DeafBlind residents in Northern Virginia.
- Visit www.nvrc.org to learn more about us.

SERVING THE COMMUNITY
FOR 34 YEARS

Non-profit, grant-funded



DEVICE DEMONSTRATION ROOM



People who are deaf, hard of hearing, late-deafened or DeafBlind can come in and try equipment before deciding to purchase.

**You must have
an appointment!**

NVRC does not sell equipment.
We provide vendor information
only.

VIRGINIA DEPT. FOR THE
DEAF
AND HARD OF HEARING
(VDDHH)

Would you like a program about VDDHH
and TAP?

Contact Debbie Jones at djones@nvrc.org



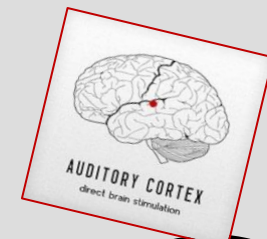
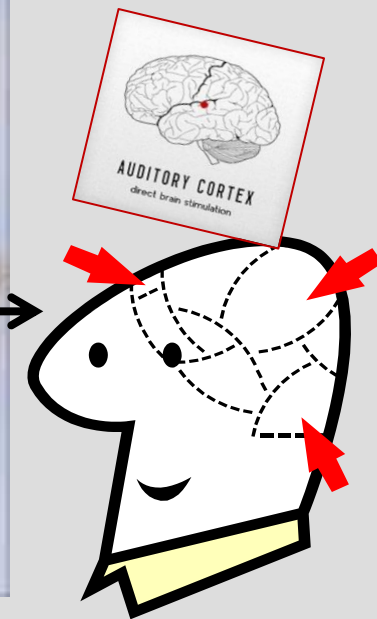
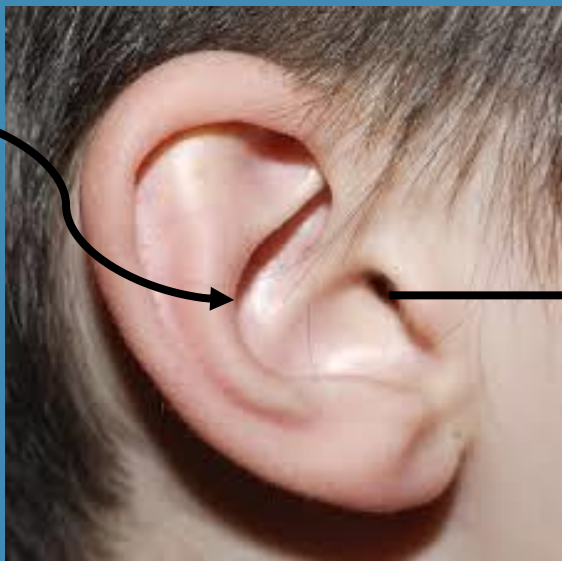
- *Technology Assistance Program (TAP)*
 - Telephones and alerting devices
 - Borrow for 30 days
 - Keep it at no charge if you meet financial eligibility guidelines
 - If you don't meet financial eligibility guidelines, you might qualify for a discount through the state.



HEARING LOSS

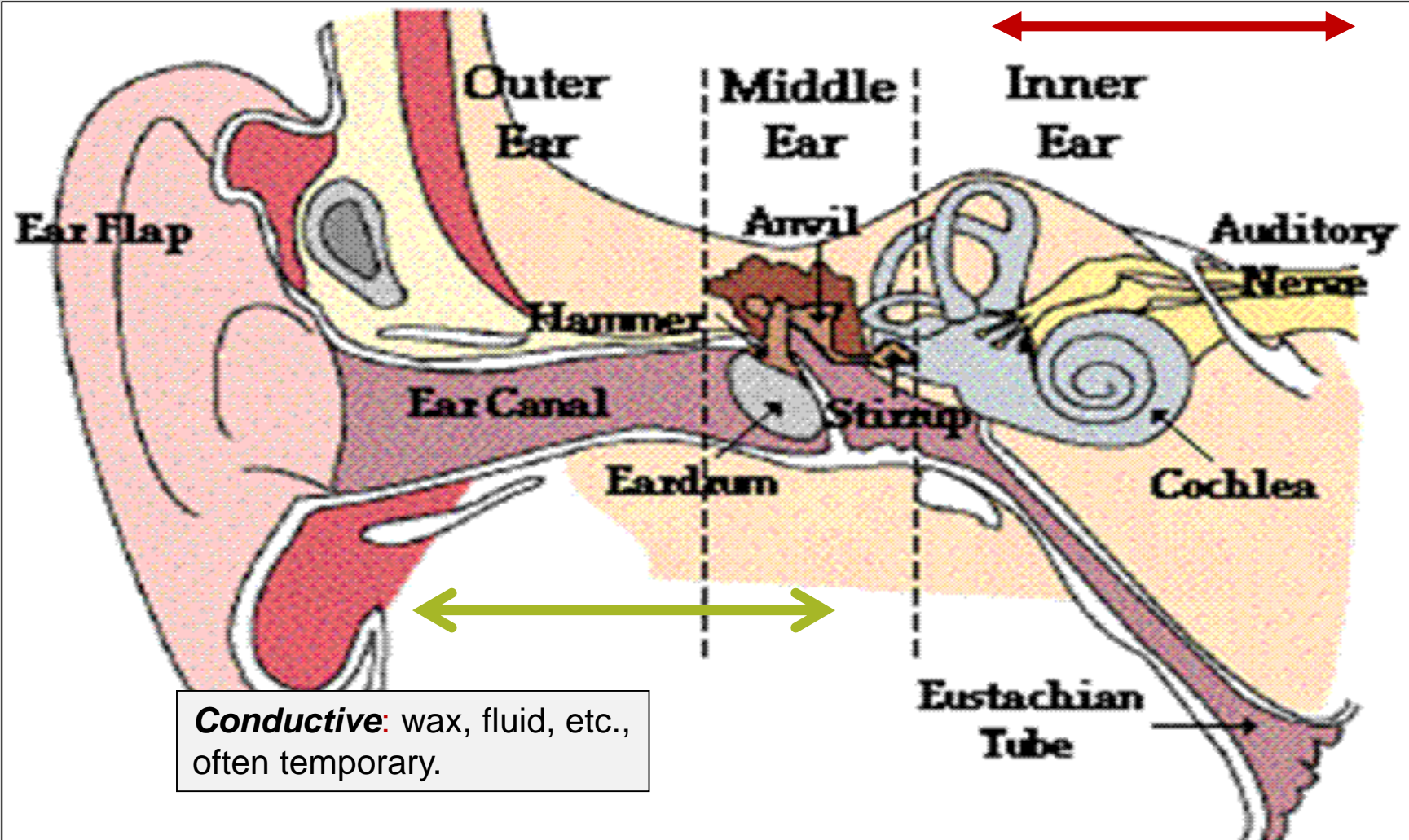
HOW DO WE HEAR?

Our ears transport the sounds to the brain where they are interpreted as speech, music, traffic, laughter, rain, etc.



Sensorineural: hair cell loss, nerve damage. Permanent.

TYPES OF HEARING LOSS



Conductive: wax, fluid, etc., often temporary.

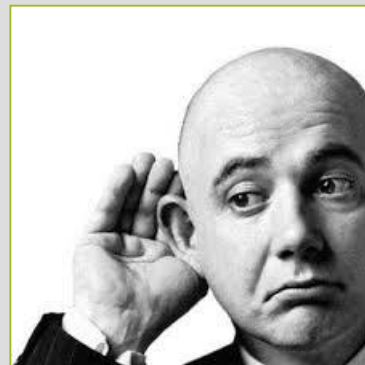
Combination conductive and sensorineural.



HEARING LOSS IN OLDER ADULTS

Some statistics

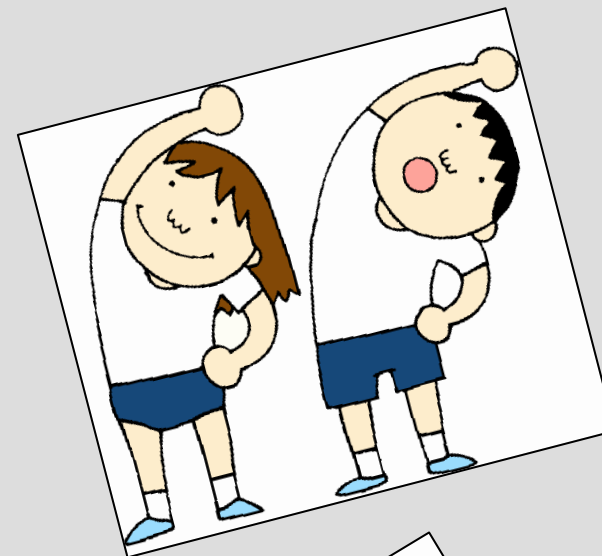
- One out of three over the age of 65
- Two out of three over the age of 75
- Hearing loss is the third most prevalent and treatable condition in seniors after arthritis and hypertension
- *Left untreated, it can contribute to increased risk of balance problems, falling, depression, and dementia*



Recognizing hearing loss



THE HEARING EVALUATION: #1 - A CONSULTATION



#2. A LOOK THROUGH AN OTOSCOPE



Any wax? Fluid behind the eardrum?
Infection?



#3. LISTENING IN SOUNDPROOF BOOTH



- Pure tones
- Words
- Measures how you hear

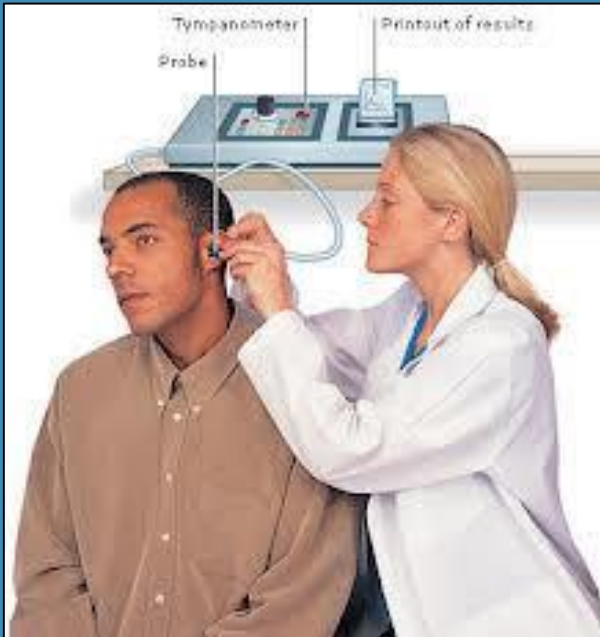


#4. BONE CONDUCTION TEST



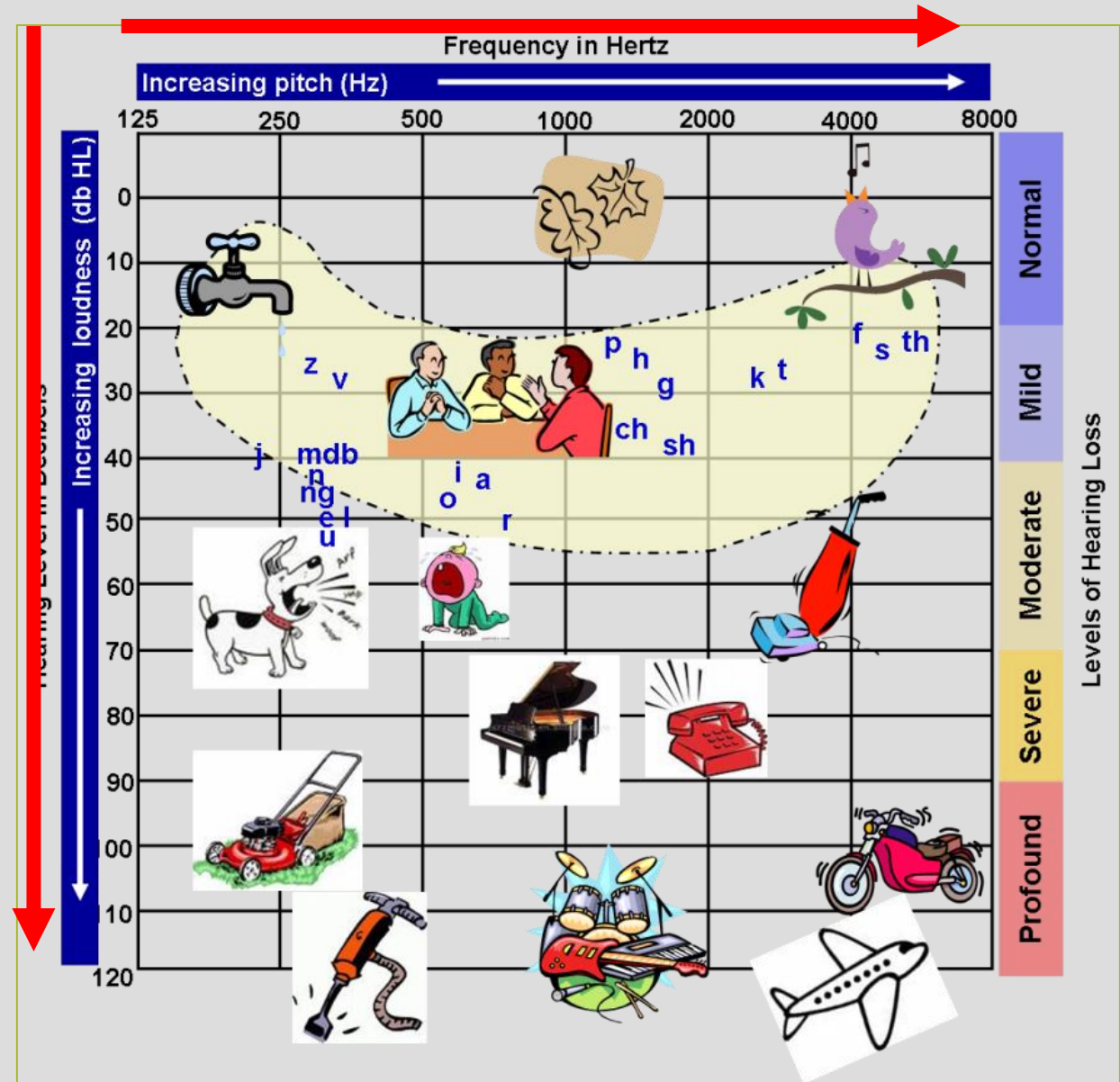
- Headset over mastoid bone
- Conductive or sensorineural?

#5. TYMPANOMETRY



- Measures flexibility of the eardrum
- How eardrum respond to different air pressures
 - Think about going up or down in an elevator or airplane

INTERPRETING THE AUDIOGRAM



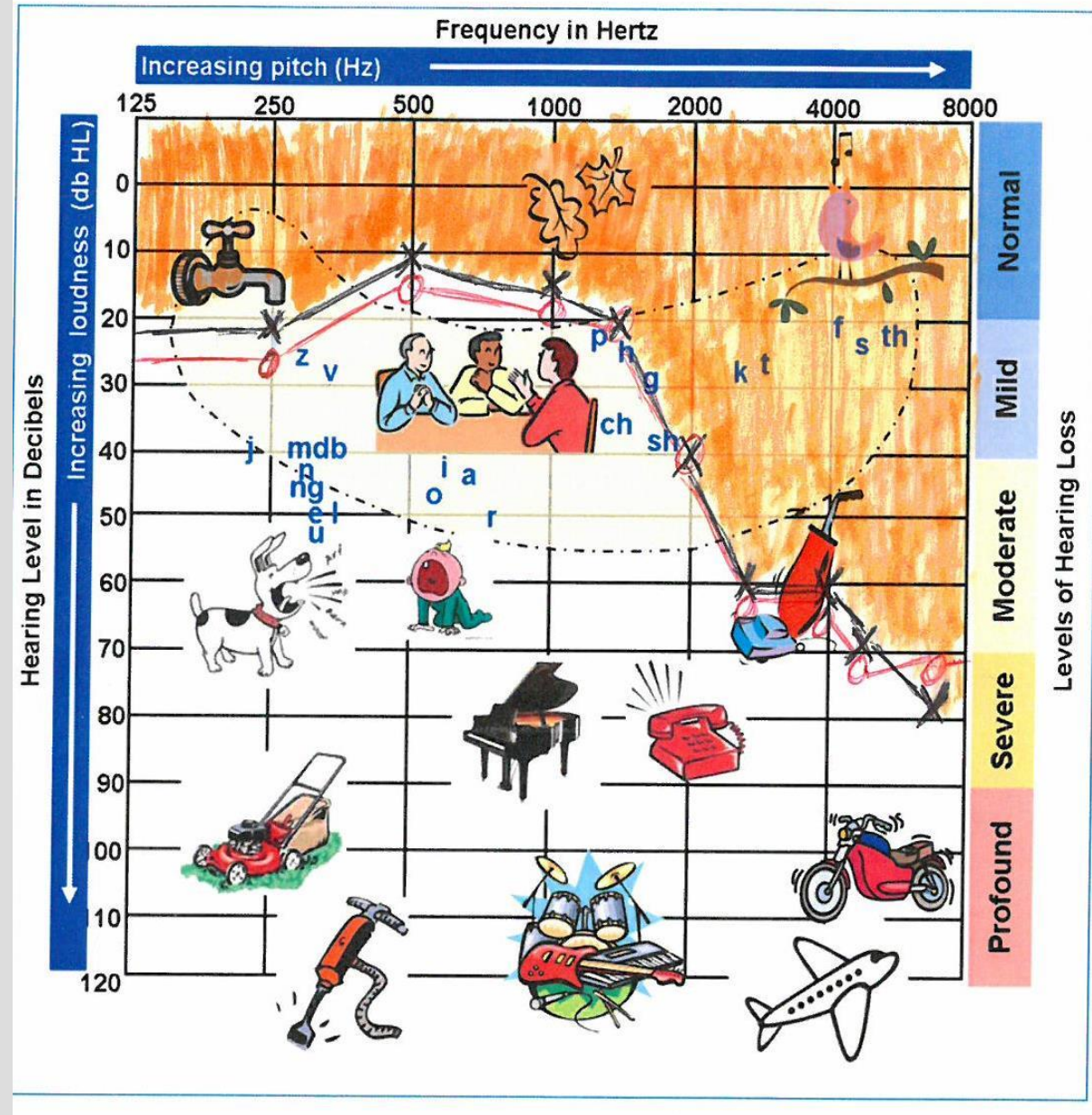
AUDIOGRAM – ANOTHER LOOK

MILD LOSS – difficulty with normal speech, listens with extra effort

MODERATE LOSS – difficulty understanding loud speech, will need line of sight, will speechread

SEVERE LOSS - can only understand amplified speech, might write notes, will need to speechread, might learn sign language

PROFOUND LOSS - difficulty understanding amplified speech, will need to speechread, possibly learn sign language and need aural rehabilitation-



WHERE HAVE THOSE
CONSONANTS GONE?

S T K
C F th

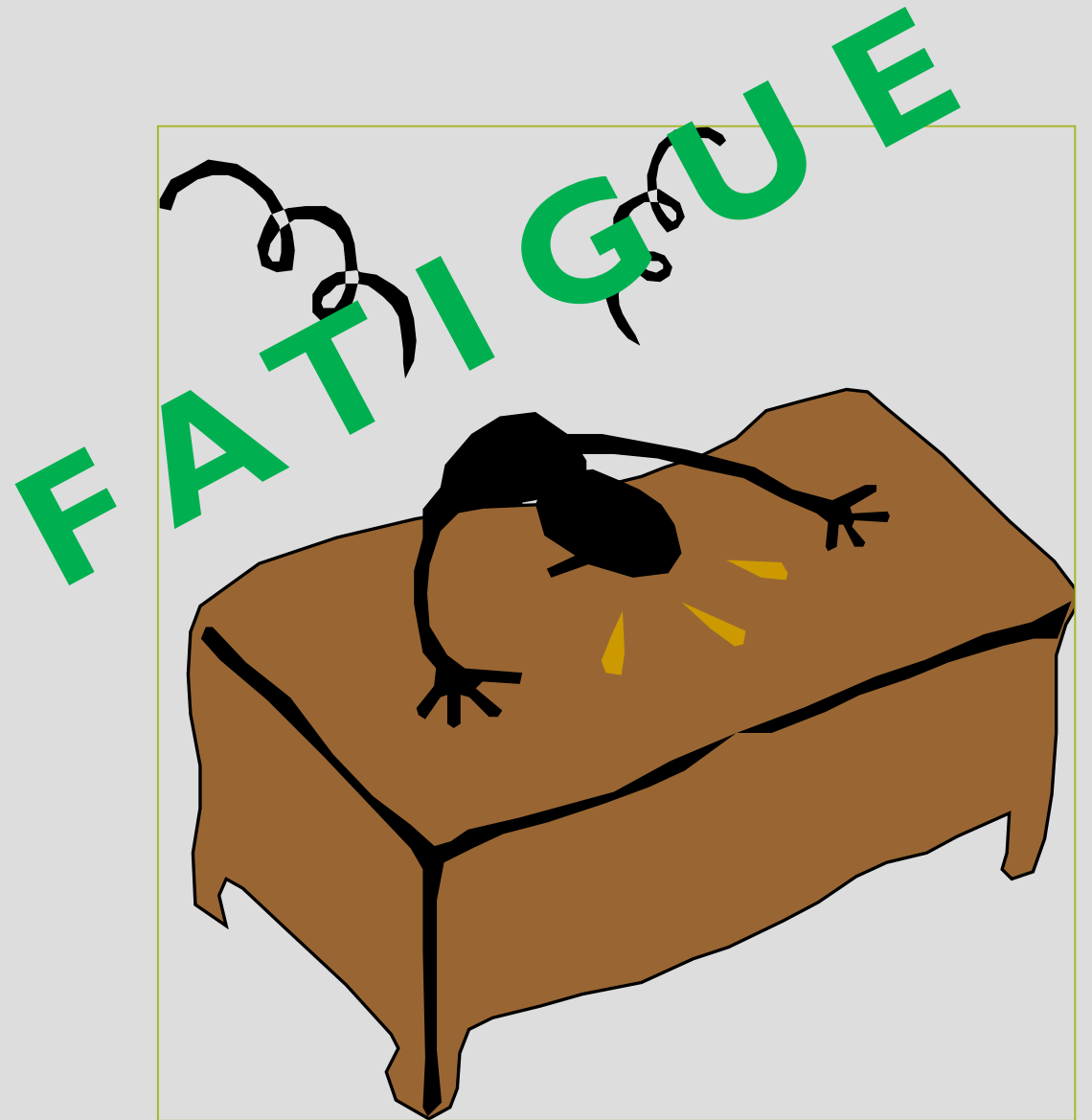
"It's windy
here."

"No, it's
Thursday."

"I'm thirsty
too, let's
make tea."



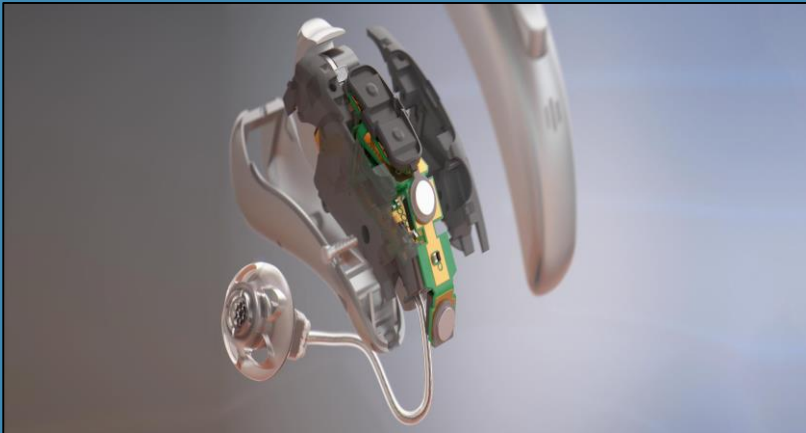
IMPACT ON US
(AND EVERYONE ELSE!)



HEARING AIDS

The Imperfect Solution

WHAT'S IN A HEARING AID -- HOW DO THEY WORK?



- **Microphone** picks up sounds, converts to electrical/digital signal
- **Amplifier** increases strength of the signal which is manipulated through advanced processing
- **Receiver/speaker** converts signal back to sound and sends it to the inner ear
- **Batteries** supply the power
- *Think of it as a **mini PA system** in your ear.*

STYLE: BEHIND THE EAR (BTE)



STYLE: BEHIND THE EAR – OPEN FIT



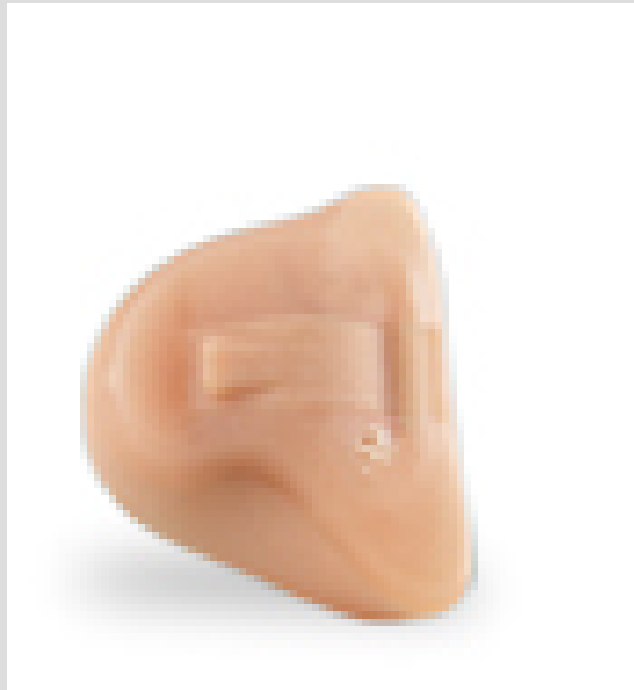
STYLE: RECEIVER IN THE CANAL



STYLE: IN THE EAR (ITE)



STYLE: IN THE CANAL (ITC)



STYLE: COMPLETELY IN THE CANAL (CIC)



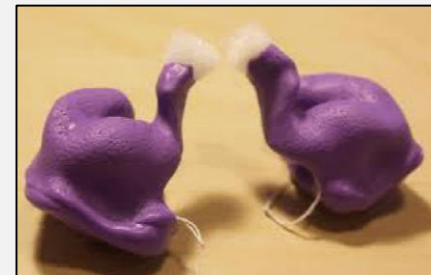
- ITD -

In The Drawer!



FITTING THE EARMOLD

- Unless you are getting a BTE Open Fit, an impression will need to be made of your ear so that the mold or the hearing aid shell ***will fit, be comfortable, and not whistle or feed back.***
- Silicone is injected into the ear with a cookie-press type of device, and the impression is sent to the lab.



BATTERIES



The larger
the battery,
the longer
the shelf life

BATTERY FRUSTRATIONS?

Problems with vision?
Manual dexterity issues?

- Rechargeable hearing aids



Phonak



Signia
(formerly
Siemens)

SINGLE-SIDED HEARING LOSS?



- CROS hearing aid (Contralateral Routing of Signal)
- Amp and receiver in the aid for the deaf ear
- Microphone in the other aid
- Good ear delivers sounds to the bad ear

TYPES OF HEARING AIDS

**What they do, not
what they look like.**

- **Conventional analog:** amplifies sounds as you hear them, making them louder but not necessarily clearer
 - \$700 - \$1,000 per aid
- **Programmable analog:** sounds are amplified through an analog circuit but can be adjusted via digital manipulation
 - \$1,000 - \$2,000 per aid
- **Digital:** computer chip inside hearing aid resulting in clearer sounds. Greatest control over listening environment with a variety of settings to choose from: every day, noisy room, telecoil, echo, music, Bluetooth, etc.
 - \$1,500 - \$3,500 per aid

MAJOR MANUFACTURERS

(Alphabetically)

- Bernafon
- Oticon
- Phonak
- ReSound
- Rexton
- Signia (formerly Siemens)
- Starkey
- Unitron
- Widex

WHAT ABOUT COSTCO?

Most frequently
asked question!

- Starting to carry other brands besides Kirkland
- Fairfax and Arlington Costco get good marks from individuals who have shared their experiences with NVRC
- Audiologist oversees department
- Be mindful: if you return for service/problem/tweaking, you might not see the same person

#1 MYTH

“Hearing aids are like glasses for the ears!”

- Common vision issues?
 - Optics can give you 20/20 or better
 - Wearing glasses provides excellent results – we can see ‘normally’
 - People don’t hesitate to wear glasses
- Science of sound and hearing more complex
 - Hearing is improved, sometimes by a great deal
 - But hearing is not restored to ‘normal’
 - An imperfect solution

AREN'T ALL HEARING AIDS
THE SAME?

NO!

- Each manufacturer has its own 'programming strategies'
- Audiologists need to have fluency in the various programs in order to provide the maximum benefit to the patient
- Some elements of the software might not be able to be manipulated into a pleasing and acceptable result for the patient

AS AN EXAMPLE...

(A Widex model)

- Voice of patient too loud, voice of person speaking to patient too soft.
- Widex designed the software so this feature could not be overridden by the audiologist.
- Some patients love it, others find it unacceptable.

HEARING AID PROGRAMS/SETTINGS

**Not all hearing aids have
all the settings.**

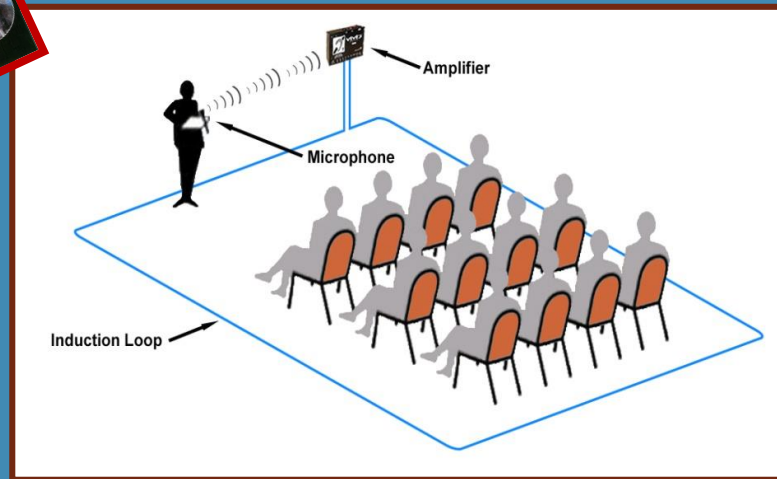
- Automatic
- Noisy environment
- Telecoil (for telephone and induction loops)
- Bluetooth
- Omni-directional microphone
- Speech-in-noise
- Music
- Comfort in echo
- Smartphone apps

WHAT IS A TELECOIL?



- A telecoil is a small coil inside the hearing aid
- It works as a small receiver, picking up signals from a loop system that acts as an electromagnetic field
- A telecoil converts this electromagnetic field into a sound signal
- Large venues can provide loop systems to serve many listeners simultaneously
- Portable neckloops can pair with tablets, phones, personal amplifiers, etc.
- No extra strain on batteries

LOOP SYSTEMS



- NVRC's meeting room is equipped with induction loop for listeners who have telecoils in their hearing aids and cochlear implants
- Loop systems are becoming popular in public venues such as museums and churches. Widely used in Europe.

NECKLOOPS



BLUETOOTH CONNECTIVITY



- Some limitations:
 - Need a remote device such as streamer, additional cost
 - Pairs with one device and listener at a time
 - Limited range of proximity to source
 - Puts extra strain on batteries

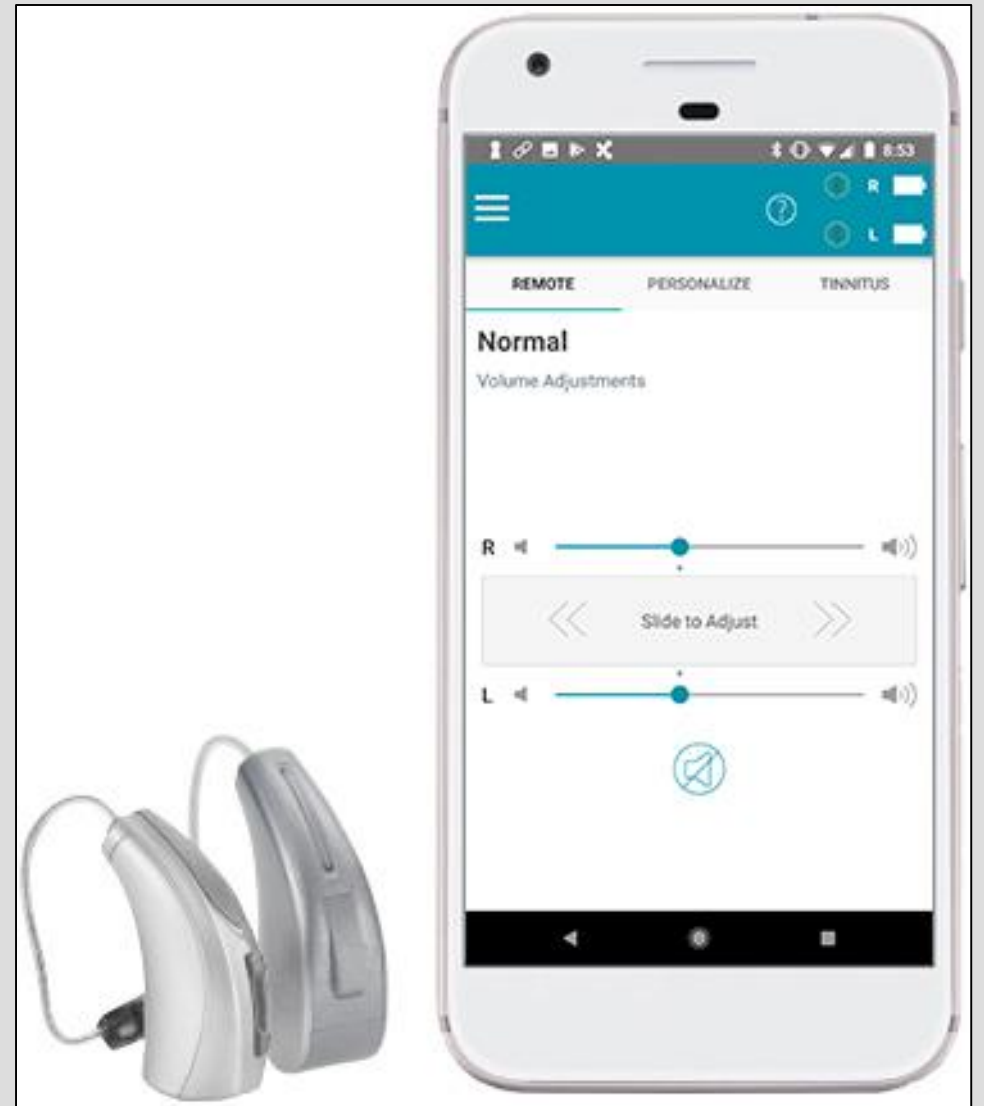


SMARTPHONE APPS

Personalized sound settings: coffee shop, restaurant, etc.

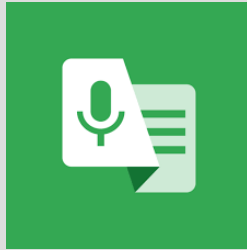
Adjusts automatically in the car

Controls volume and memory settings with the touch of your phone



CAPTIONING APPS

- Google Live Transcribe for Android



- Otter for iPhone and Android



Captioning for meetings, conversations, etc.

- Innocaption for iPhone and Android



Mobile phone captioning

CAPTIONING LINKS

- www.otter.ai.com
- [Play.google.com](https://play.google.com) (live Transcribe)
- www.innocaption.com

WHAT ARE HEARABLES?

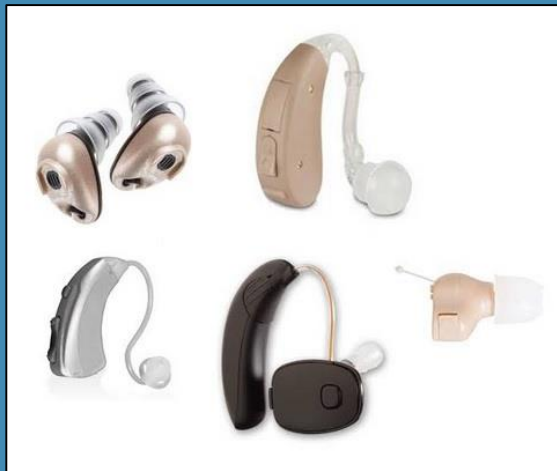


- Considered ‘smart headphones’
 - Wireless in-ear computers
 - Connect to apps
 - Support a listening experience



WHAT'S A PSAP?

Personal Sound Amplification Product



- Not FDA-regulated
- Cannot be marketed as device to improve hearing loss
- Does not compensate for hearing loss

OVER THE COUNTER (OTC) HEARING AIDS

Some pros

- FDA-regulated
- Easily available
- Many choices
- Much less expensive
- Style options

OTC HEARING AIDS: SOME CONS

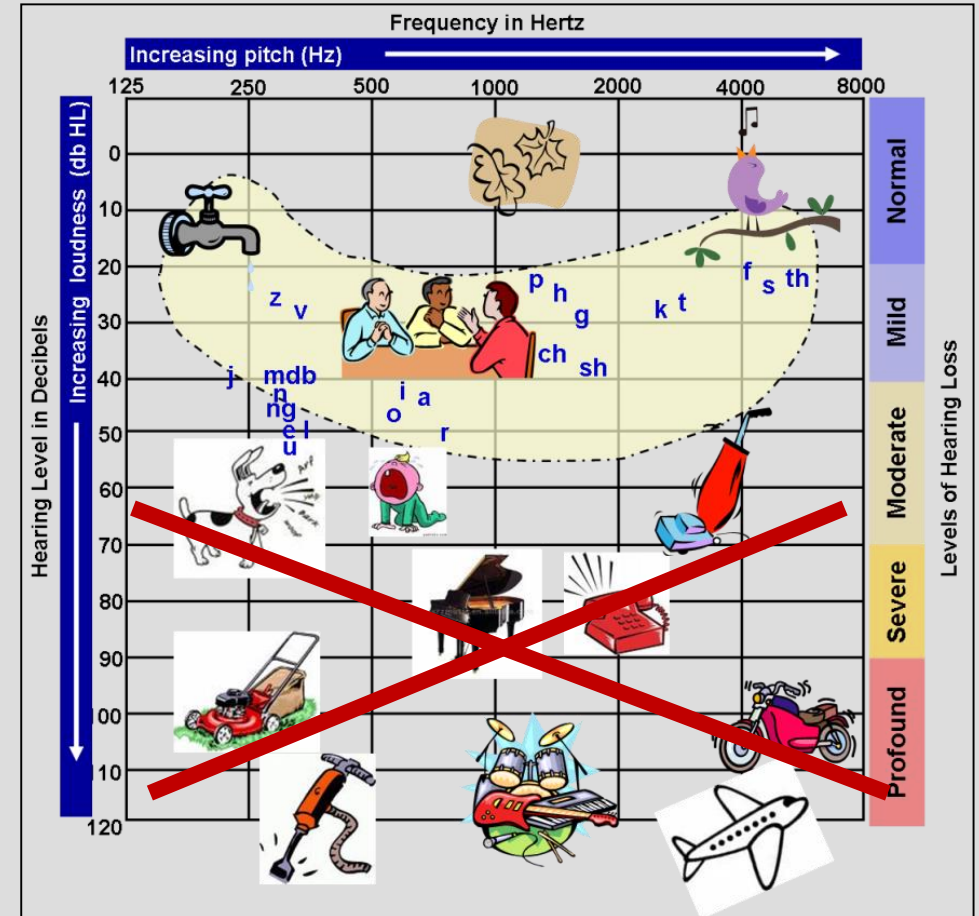
No one to provide adjustments,
instructions or care

No one to check your medical
history first

Won't be made for your specific
loss or the shape of your ear canal

Cost. vs. value

- Will be marketed as devices to treat **mild to moderate loss**



WHAT IS MILD TO MODERATE LOSS?

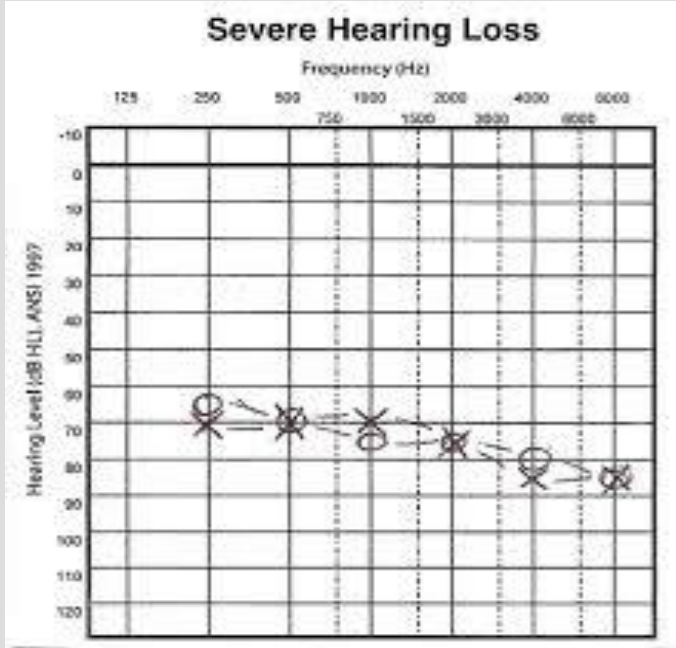
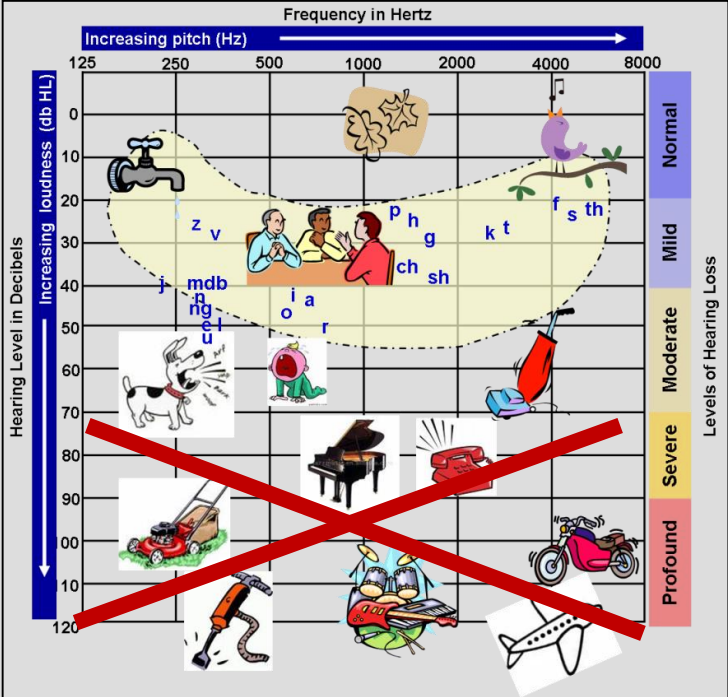
Your hearing loss might be in the mild to moderate range if.....

- ...You have trouble understanding some of the conversation on the phone
- ...You have trouble understanding people speaking in groups, with background noise, or when you cannot see who is speaking
- ...You need to turn up the volume of the television or radio (and people complain!)
- ...You often need people to repeat what they say, and family/friends begin to notice that you aren't understanding them

OTC HEARING AIDS MIGHT NOT HELP IF...

You have trouble hearing and understanding conversations in a quiet environment

You have trouble hearing louder sounds like the vacuum cleaner, certain alarms, motor vehicles, etc.



WHAT SHOULD I KNOW ABOUT OTC HEARING AIDS?

Some questions to ask.
Be sure to check warnings on the packaging.

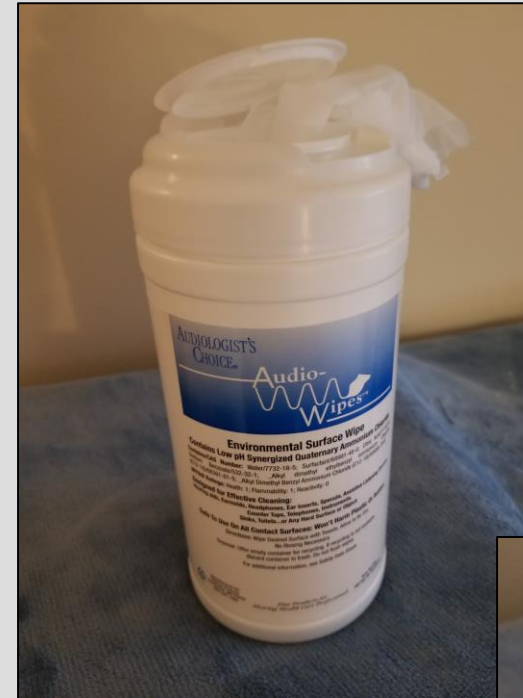
- Is there a free trial period?
- Is there a money-back return policy?
- Can I use it with my smartphone?
- Do I NEED a smartphone, app, or computer to install and customize for my hearing loss?
- Can I connect via Bluetooth or a loop system to a smartphone, computer or listening system?
- Can I adjust the volume and control feedback?
- Can I cut out background noise?
- Can I recharge the battery? What is the battery life?

KEEP UP WITH LATEST ON
HEARING AIDS

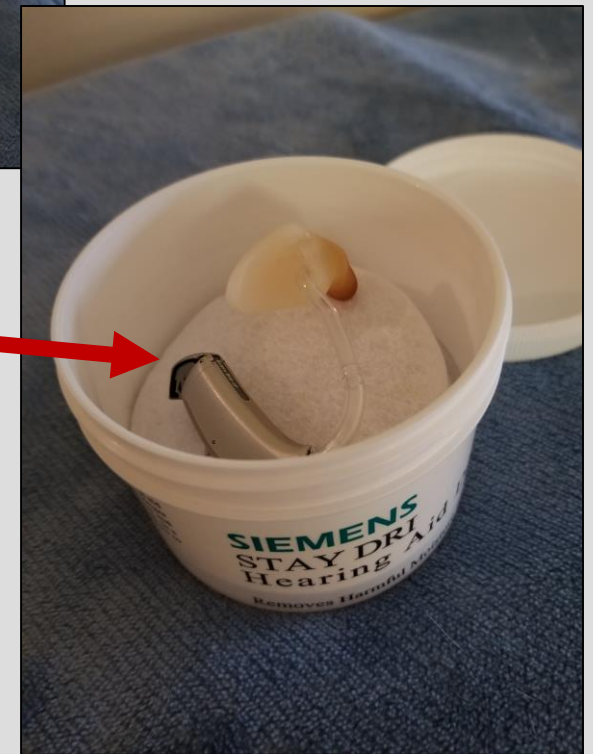
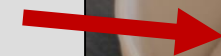
- www.hearingtracker.com

HOW DO I
KEEP THEM CLEAN?

Where should I
store them?



Remove battery



INSURANCE COVERAGE

- Medicare might cover hearing evaluation if referred by primary care, but they do not cover hearing aids
- Medicaid does not
- Tricare, Blue Cross Blue Shield, Aetna and some others have plans that cover hearing aids either in whole or in part
- Check with your insurance company

BEWARE AND BE WISE
WHEN YOU BUY

- In Virginia, you have **30 days** to try them and return them if you are not satisfied
 - Some professionals give 60 days, you have to ask
- **What are the fees** if you return them?
 - Every business is different – some will charge a flat fee, such as \$100 per aid, others might charge a percentage of the cost
 - Ask if the professional will try another model or manufacturer for you if you are not satisfied with the first one you try
- You might **return for tweaks** during the trial period so that hearing aids can be adjusted

CAN EVERYONE WEAR
HEARING AIDS?

Not always!

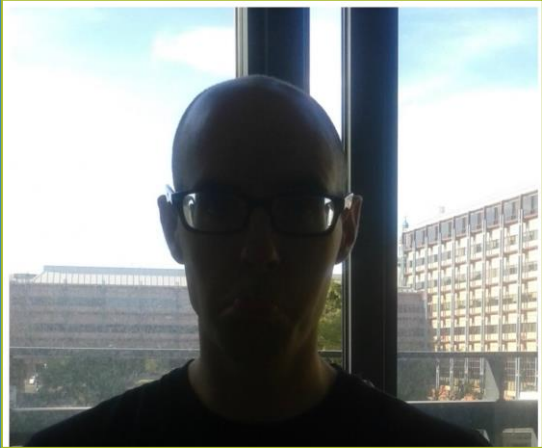
- Ear canals too small and/or twisty
- Deformities in the canal or on the pinna
- Itchy, watery, waxy ears – hearing aids can make that worse
- Skin reactions to materials used
- Claustrophobic
- Hyperacusis

REMEMBER –
IT'S NOT JUST YOUR HEARING AID
OR YOUR HEARING LOSS!

THERE ARE OTHER
LIMITATIONS

- Speaker
- Listener
- Environment
- Message

SPEAKER CHALLENGES



Has an accent

Speaks softly

Speaks too fast

Puts hand over mouth while speaking

Stands/sits in front of a light source

LISTENER CHALLENGES

**Listener = person with
the hearing loss**

- Happy and energetic?
- Tired or unwell?

ENVIRONMENTAL CHALLENGES

Where is the
communication taking
place?

- Noisy or quiet?
- Lots of echo?
- Dimly lit or too hot/cold?
- TV or music on in the background?

- **Golden rule: If you can't change the environment you are in, change environments.**



MESSAGE CHALLENGES

**What are we
talking about?**

- Knowing the topic increases speechreading success by 50%
- Brain searches for vocabulary relevant to the topic
 - Grandchildren
 - Cruising
- *Only 30% of English is discernible on the lips*
- Words look and sound the same
 - Coat/goat
 - Time/dime

GETTING OVER THE HURDLE

Resources help

- Connecting with others who have a hearing loss:
 - www.nvrc.org
 - www.hearingloss.org
 - www.alda.org

QUESTIONS? COMMENTS?
A COPY OF THE
POWERPOINT?

PLEASE EMAIL ME AT
BOLEARY@NVRC.ORG

Thank you!

