

# On Beyond Hearing Aids: Adult Assessment and Hearing Assistance Technologies



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# Disclosures



## œ Financial:

- œ Associate Director of Audiology services at Boys Town National Research Hospital
- œ Financial compensation from CAA for this presentation
- œ Travel reimbursement from ASHA in her capacity as a Health Care Economics Committee member and as ASHA rep to American Medical Association RUC HCPAC

## œ Nonfinancial:

- œ Member of ASHA's Health Care Economics Committee
- œ ASHA representative on the American Medical Association's Health Care Professionals Advisory Committee for the Current Procedural Terminology Editorial Panel
- œ Co-Chair of the Insurance and Reimbursement Committee of the Nebraska Speech-Language-Hearing Association

# Wait a minute!



- ❧ I thought I was here to listen to a fabulous speaker, but I got Leisha instead!
- ❧ My qualifications:
  - ❧ HAT Guidelines for AAA
  - ❧ TPA Fellow
  - ❧ On-going efforts to develop intake and outcomes standards for all our patients



# Topics for Today



- ❧ Patient Centered Care for adults
- ❧ Evaluating Communication Needs
- ❧ Use of HAT options in addressing communication needs



# Patient Centered Care



- ❧ Addresses the Patient or Person's *Function*, not their *Disease* (ICF Framework)
- ❧ Approach is Positive, Collaborative and uses a Problem-Solving approach
- ❧ Ida Institute training
  - ❧ [Idainstitute.com](http://Idainstitute.com)
  - ❧ Motivation Tools; Communication Partners; Living Well with Hearing Loss; Tinnitus



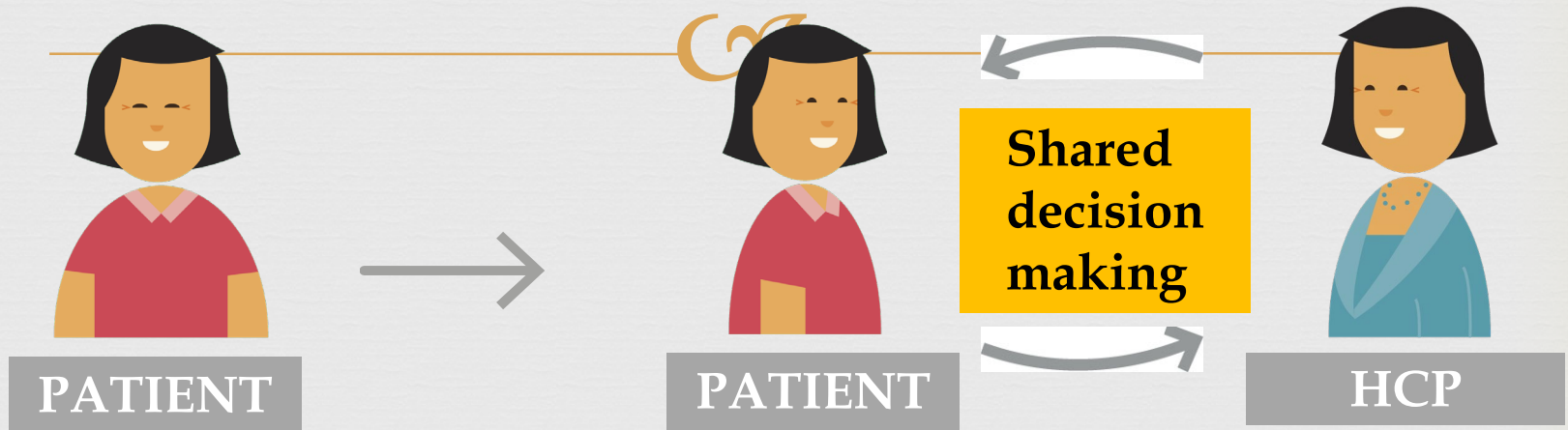
# Implications of the ICF for Audiology



- Focus on participation and activities rather than impairment
- Living well means different things to different people
- The person with hearing loss defines a successful outcome
- Clinicians must involve the person with hearing loss in defining the problem and solution



# Why is it Important to Know What Living Well Means to Your Client?



Living well by taking part in activities

Only person who can identify how they would like to take part

Expert in own hearing loss and goals

Expert in technological and communication strategies and AR process



# Value Based Care



- ❧ Patient or Client-Centered Care focuses on the value of your services, not just the volume of your work
- ❧ The Value of working at the top of the profession
  - ❧ Audiologist's skill and knowledge about hearing loss and hearing interventions
    - ❧ **Skill** that no one else has
    - ❧ **Services** that no one else can provide

# Incomes and Outcomes



- ❧ “If you don’t know where you are going, you will end up someplace else!” Yogi Berra
- ❧ Income/Intake Information helps you figure out where you are going and tracks if you get there
  - ❧ Ida Living Well
  - ❧ COSI
  - ❧ COAT
  - ❧ PACA
  - ❧ Others?



# Impairment / Handicap Scales

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- ❧ HHIA / HHIE
- ❧ Do they fit in with Positive / Patient Centered Approach?
- ❧ The words we use are important
  - ❧ Hearing Loss versus Hearing Concern / Problem
  - ❧ Impairment / Handicap versus Communication Challenge
  - ❧ Audiogram versus SpeechMap



# COSI



- ❧ Client Oriented Scale of Improvement
  - ❧ Important communication situations identified by patient/client
  - ❧ Ratings of ability in those situations are tracked as intake / outcome
- ❧ Patient motivation is not rated
- ❧ Dillon, et al, 1997

# COAT



- ❧ Characteristics of Amplification Tool
  - ❧ Assesses Top 3 Listening Situations identified by patient
  - ❧ Assesses person's motivation and hearing aid preferences
  - ❧ Provides overview of HA styles and costs
- ❧ Sandridge & Newman, 2006

# PACA



- ❧ Personal Assessment of Communication Abilities
  - ❧ 12 Item Self-Report Questionnaire
  - ❧ Patient's assessment of communication abilities in common listening situations
- ❧ Patient motivation is not evaluated
- ❧ Preliminary data available on young adults
  - ❧ Taylor, et al, 2016



# BOAT – The Hybrid!



- ❧ Benefits of Amplification Tool (BTNRH)
  - ❧ Brainchild of Kathryn Beauchaine @ BTNRH
- ❧ Incorporates ratings of patient's motivation to improve hearing & use devices
- ❧ Assesses areas of listening difficulty
- ❧ Reviews communication priorities
- ❧ Selection of desired features

0 ----- 5 ----- 10  
Not at all Somewhat Very important

0 5 10  
Not at all Somewhat Very interested

	<u>None</u>	<u>Slight</u>	<u>Moderate</u>	<u>Very Much</u>	<u>N/A</u>
One-on-one	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small groups (2-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Large groups (6-12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concerts/movies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Place of worship/meeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watching TV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In car	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telephone:					
Landline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mobile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restaurant/café	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ size of device ☐ cost

☐ rechargeable batteries ☐ tinnitus program

☐ moisture resistance

☐ streaming cell phone calls – phone make/model: \_\_\_\_\_

☐ streaming from other devices (e.g., TV, iPad, computer)

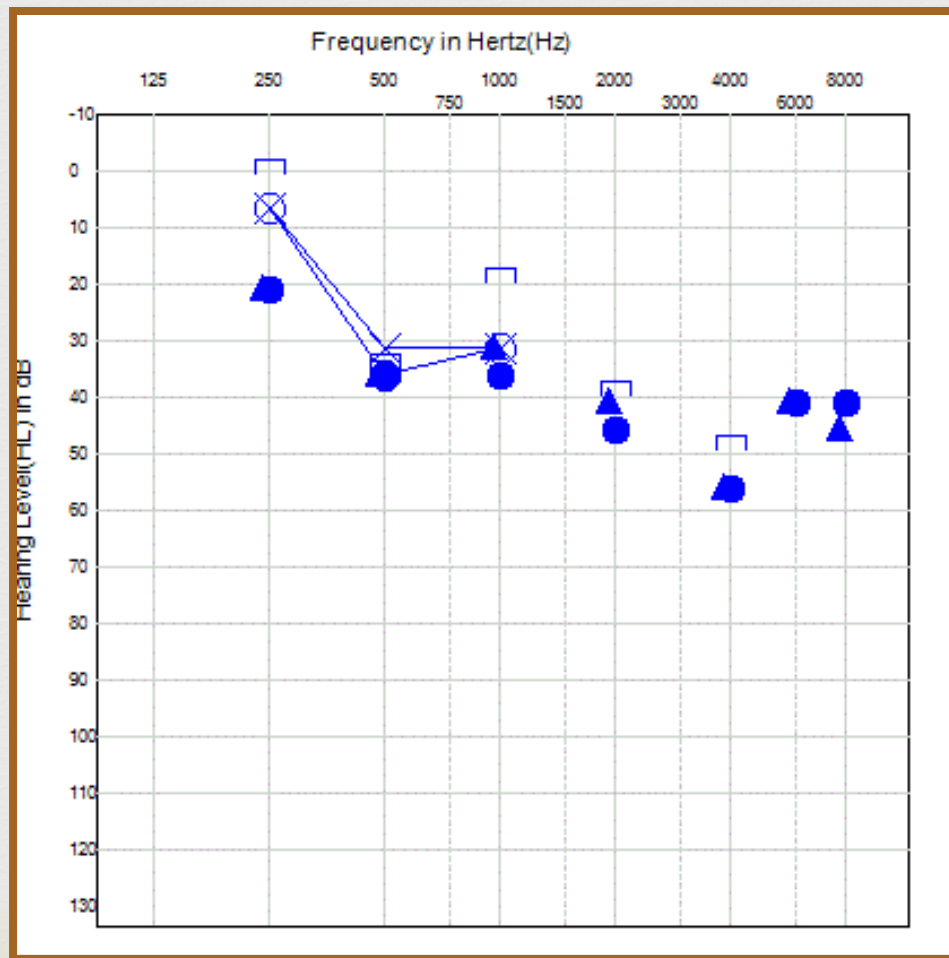
# Who Are Your “Tough Customers”?

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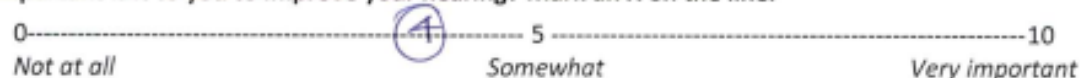
- ⌘ Younger / Working Adults with milder hearing loss
  - ⌘ “I’m not ready for hearing aids”
  - ⌘ “I’m getting along OK”
- ⌘ Elderly Adults with presbycusis changes
  - ⌘ “I’m home by myself a lot of the time”
  - ⌘ “I’m on a limited income, you know!”
  - ⌘ “I hear everything I want to hear”



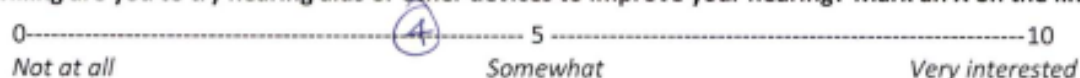
86 Year Old  
Wants to hear better conversing with family  
Limited hand dexterity



How important is it to you to improve your hearing? Mark an X on the line.



How willing are you to try hearing aids or other devices to improve your hearing? Mark an X on the line.



Below, check the amount of hearing difficulty you have in each situation:

	<u>None</u>	<u>Slight</u>	<u>Moderate</u>	<u>Very Much</u>	<u>N/A</u>
One-on-one <i>face to face</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small groups (2-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Large groups (6-12)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concerts/movies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Place of worship/meeting	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watching TV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In car	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
At work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Telephone:					
Landline	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mobile <i>emergency</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Talk Phone</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restaurant/café	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other <i>Probs from distance</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Next, circle your top 3 priorities in the above list. *Conversation w/ friends/family*

What hearing aid features are important to you? (select as many as like)

- ☐ size of device                      ☒ *cost*  
☒ rechargeable batteries                      ☐ tinnitus program  
☐ moisture resistance  
☐ streaming cell phone calls – phone make/model: *N/A – flip phone*  
☐ streaming from other devices (e.g., TV, iPad, computer)

# Share with your “Elbow Partners”

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- ⌘ 10 minutes
- ⌘ What **methods** do you use to share test results / info with your patients?
- ⌘ What **intake/income** methods are you currently using to assess patient motivation and/or patient communication concerns?
- ⌘ Who are your “tough customers”?



# Now What?



- ❧ Getting your head out of the audiogram
  - ❧ Do you have better ways to share audiogram info?
    - ❧ Speech Mapping / Speech Banana
    - ❧ SII / AI
    - ❧ Hearing Loss Simulation
  - ❧ Do you test more than best word perception performance?
    - ❧ Unaided Speech at Soft or Average Inputs (50-55 or 60-65 dB SPL)
    - ❧ Speech in Noise tests

# Now What?



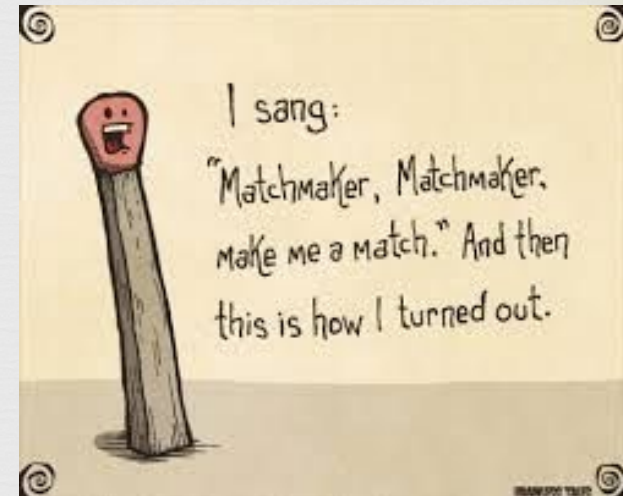
- ❧ What do we know about hearing loss and aging effects?
  - ❧ Hearing Loss and Social Isolation
  - ❧ Social Isolation and Cognitive Decline / Dementia / Alzheimers Disease
- ❧ Information from Gerontology
  - ❧ Old or Ill versus Old & Ill
  - ❧ How can we best incorporate this information when counseling?



# Incorporating HAT



- ❧ Support Communication
- ❧ Promote Independence
- ❧ Simple to Complex Technology range
  - ❧ Single purpose devices
  - ❧ Integrated systems
- ❧ Match technology to person's needs and abilities



# Common Problem Areas To Explore

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## Listening

- ❧ Conversation w/  
Family & Friends
- ❧ Groups & Parties
- ❧ Classes
- ❧ Restaurant
- ❧ Theater / Movies
- ❧ TV
- ❧ Phone

## Alerting/ Alarms

- ❧ Alarm Clock
- ❧ Smoke / Fire / CO2  
Alarms
- ❧ Doorbell / Phone



# What is HAT?



- ❧ Can be Primary Amplification without Hearing Aid
- ❧ Can be Hearing Aid Alone
- ❧ Can be a Supplement to Hearing Aid Amplification
- ❧ Alerting Devices
- ❧ Alarms

# HAT Options



## Auditory

- ❧ Hard-wired
- ❧ Infra-Red
- ❧ Radio Frequencies (FM/DM)
- ❧ Induction / Telecoil



- ❧ Phone lines
- ❧ Cell phones
- ❧ Streaming / Bluetooth

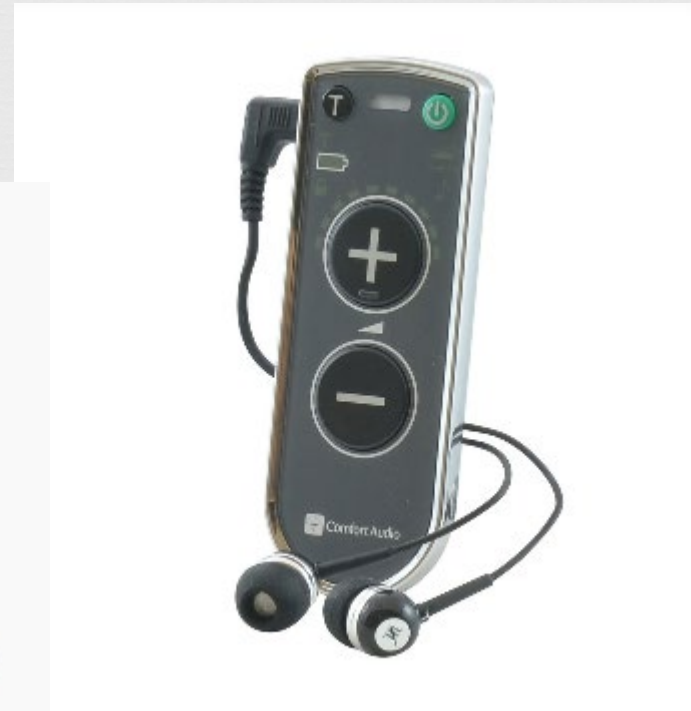
## Visual/Tactile

- ❧ Captioning
- ❧ Visual Alerting
- ❧ Vibration Alerting

# Personal Listening Systems

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- ❧ Hard-wired is common
- ❧ Headphones or earbuds



# Ear Level Amplifiers



The **BEAN**<sup>®</sup>  
Quiet Sound Amplifier<sup>®</sup>



Bronze



Platinum



Gold



T-Coil Platinum

**IQbuds**<sup>™</sup> BOOST

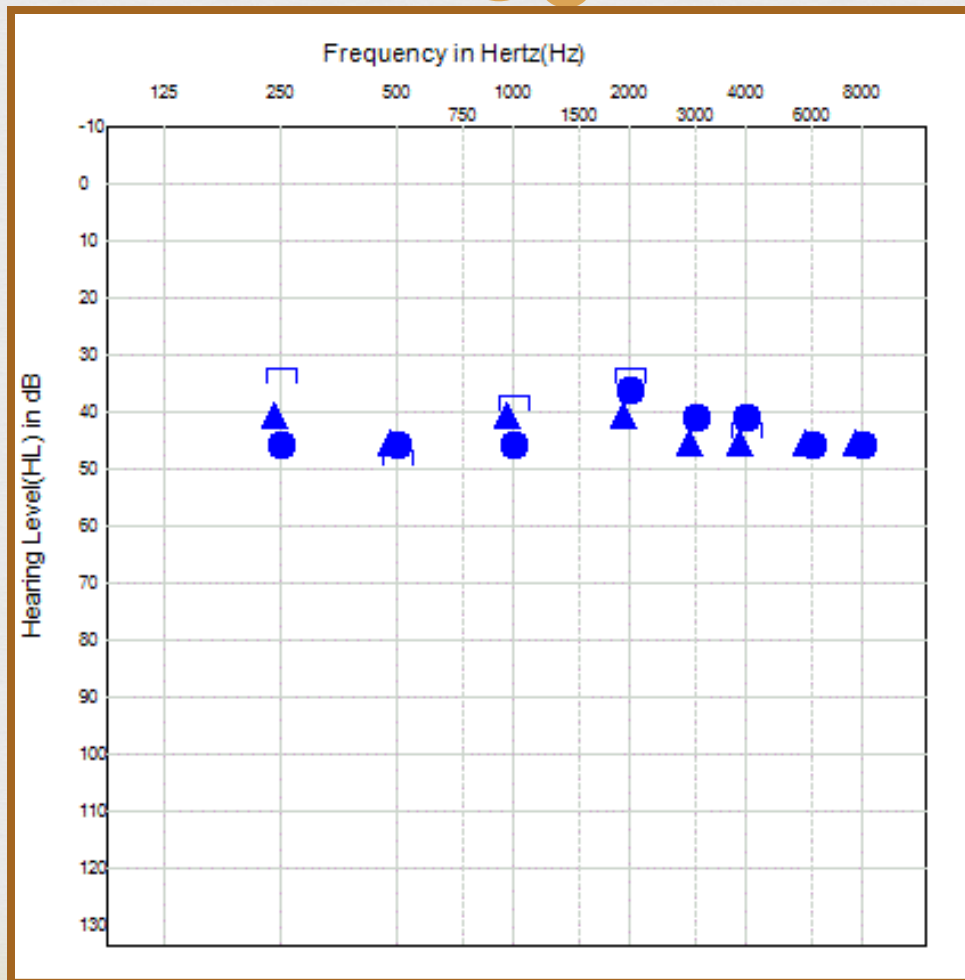


Sound World Solutions CS50+



61 Year Old

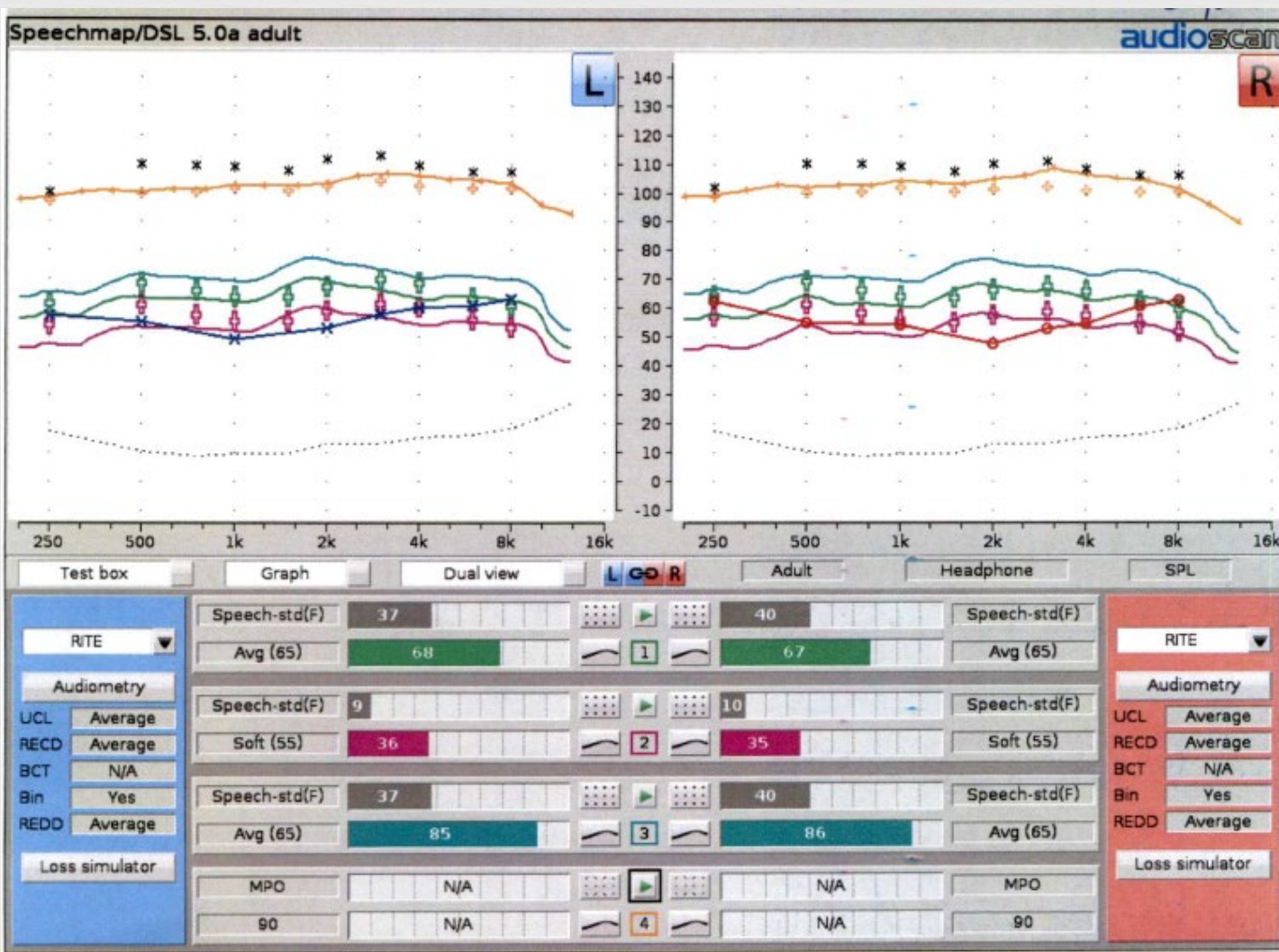
Wants to hear husband better & be able to  
hear/understand better at work



# Etymotic Bean

## Test 1-2 at regular volume

## Test 3 at high volume



# TV Listening The Gateway Amplifier!

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∞ TV Devices

∞ Infrared or RF



**TV·Ears Digital™**

Works with Digital & Analog TV's -  
Twice the Power



# TV Listening



- ❧ Bluetooth TV Devices
- ❧ ClearSounds Clear Blue™ Bluetooth
- ❧ Could transmit to portable speaker or earphones





# TV Listening



- ❧ Radio Frequency Transmission
- ❧ Sennheiser RS™ Wireless TV Listening System



# Amplified Phones



- ❧ Amplified Bluetooth Cordless Telephone
  - ❧ Amplification
  - ❧ Compatible with neckloop
  - ❧ Speaker option
  - ❧ Clarity Phone™



# Caption Phones



- ❧ Captions and Audio
- ❧ Amplified / Speaker
- ❧ Uses Voice Recognition and Communication Assistant to convert incoming speech to caption text
- ❧ High Speed Internet & Landline requirements
- ❧ WiFi and iPad options





# Vibration / Alarm Clocks



Wired or Wireless “Bed Shaker” / “Sonic Boom” Alarms with vibrator pod under pillow



# Safety

## (Fire & Smoke Alarms)

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Kidde Remote SmartLync  
Home Alarm Monitor



LifeTone Fire Alarm and Clock

# Doorbell Signalers



Strobe Visual Doorbell  
Ringer

# Supplement to Hearing Aids

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## ❧ Remote Microphone Technologies

- ❧ Designed to overcome:

  - ❧ Background Noise

  - ❧ Distance Listening

## ❧ Different Connection Options

- ❧ Telecoil Connections

- ❧ Streaming / Bluetooth Connections

- ❧ DAI Connections



# TeleCoil



- ❧ Neckloop or Silhouette Options
- ❧ Access Telecoil receiver in hearing aids
  - ❧ Direct plug-in
  - ❧ Area / Room Loops
  - ❧ Bluetooth

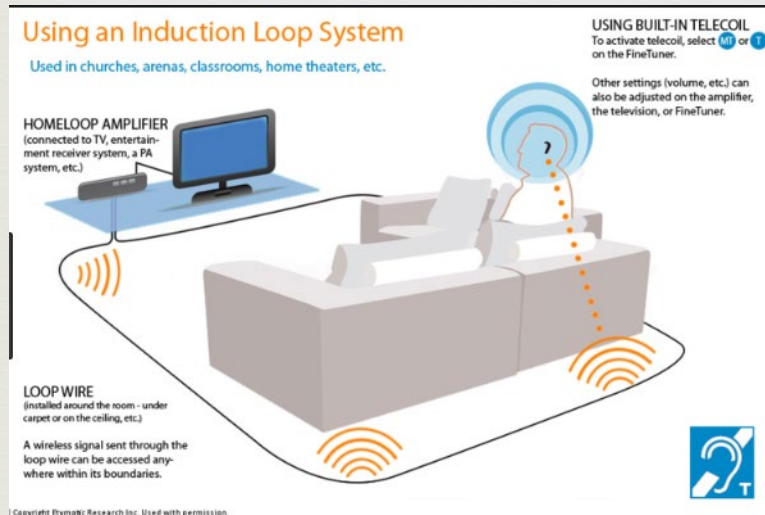


ClearSounds Quattro 4.0 Lite  
Bluetooth Listening System

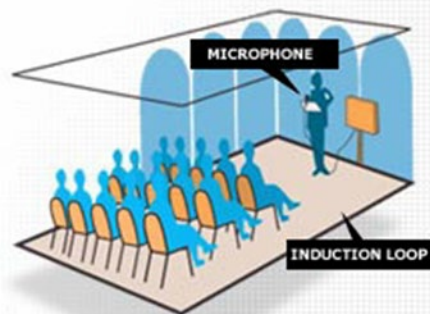




# Induction Loop



- Small or Large (Public) Area Looping
- Hearing Aid Telecoil can receive signal from Loop transmitter

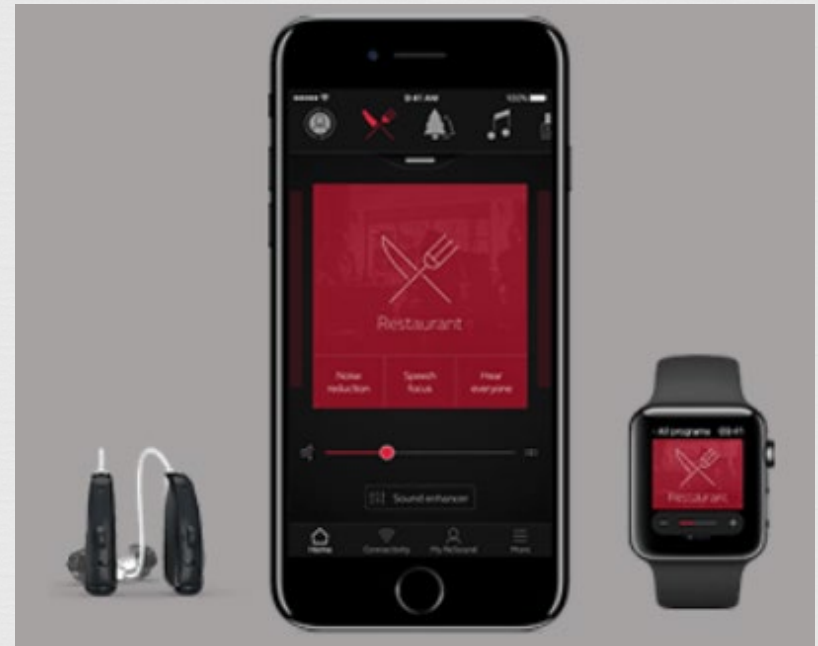


An induction loop system transmits magnetic energy to telecoil-equipped hearing aids through a wire that surrounds an audience.

# Bluetooth Streaming



- ❧ Uses Bluetooth cell phone transmission (2.4 GHz)
- ❧ Direct connection to iPhones/ iWatch and some Android systems
- ❧ Phone calls and music streaming directly into hearing aids



# Streaming HA Systems



- ❧ Remote Microphone connected to hearing aids
- ❧ Hands-free phone conversation
- ❧ Works with iPhone and Android phones



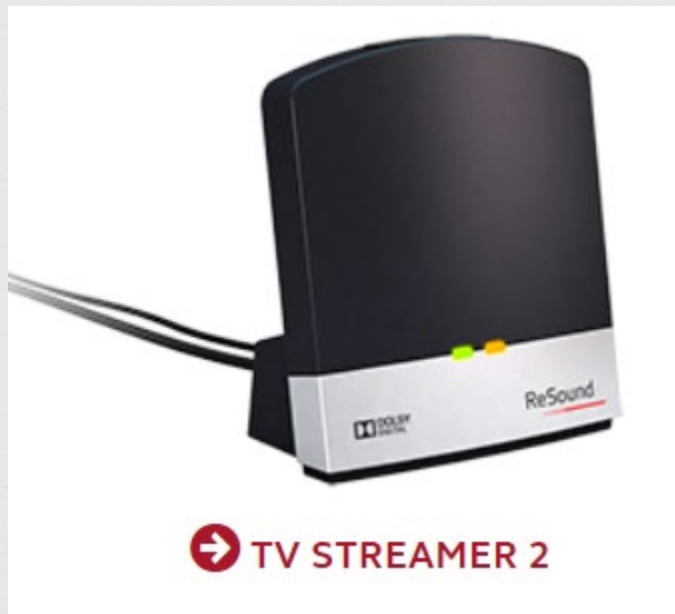
Resound Micro and Multi Mic



Signia Streamline  
Mic



# Streaming HA Systems



- ❧ TV Streamer allows direct connection from TV to hearing aids
- ❧ TV volume can be individually controlled



Signia Streamline TV



# An Audiologist Will Help!

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- ❧ Understand what you hear and what you want to hear better
- ❧ Discuss technology options that best match your needs
- ❧ Make a plan to address your needs

