

Part 1: Delivering Comprehensive Care to an Aging Adult Population

Brian Taylor

Disclosure

- Consultant, Turtle Beach
- Consultant, Fuel Medical
- Adjunct Professor, A.T. Still University
- Editor, Audiology Practices
- Editor, Hearing News Section, HHTM
- Co-Author, *Fitting & Dispensing Hearing Aids*
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Agenda

We will focus on two underserved populations:

1.) Younger adults, often with milder hearing loss usually requiring earlier intervention outside the clinic

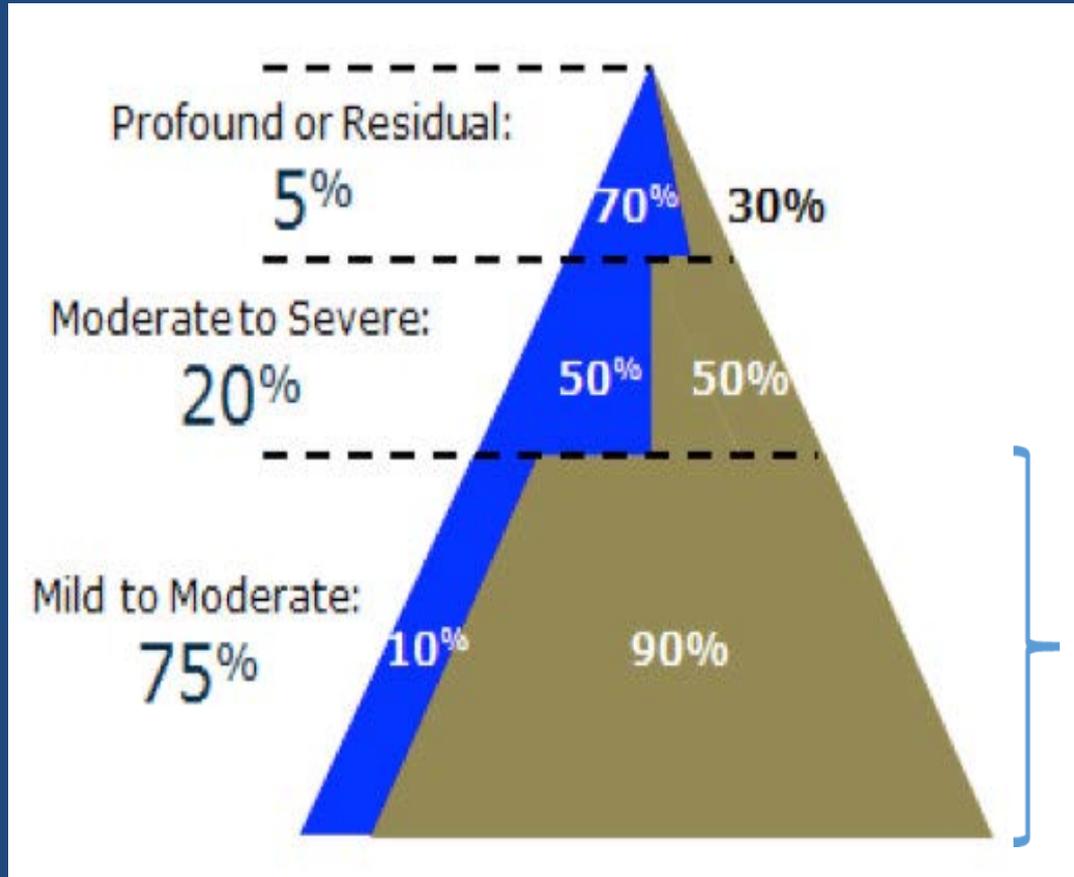
2.) Older adults, who often cope with other debilitating conditions that sometimes require alternative long term management approaches.

Goals

Leave with a handful of ideas and tools that you can implement into your practice:

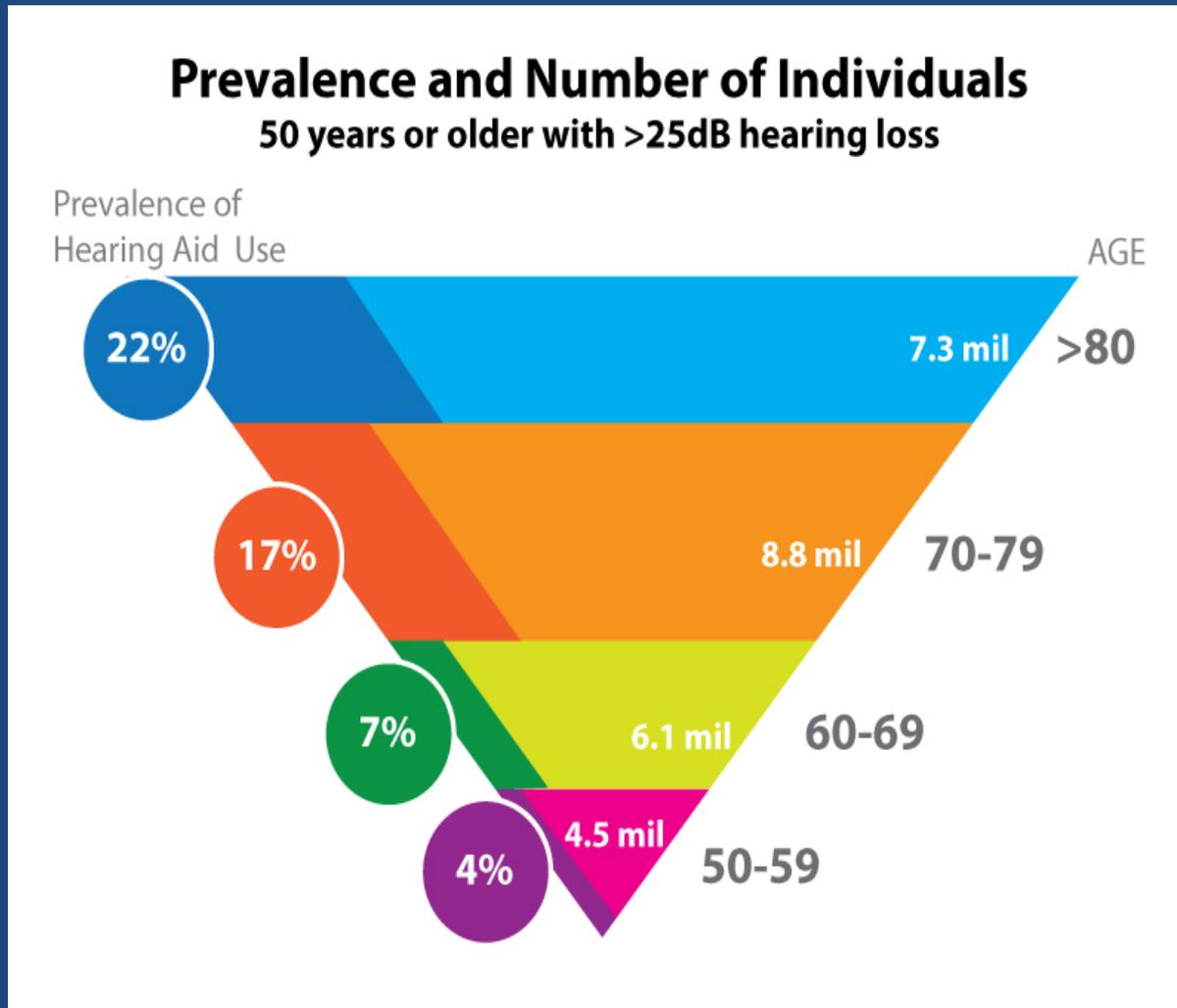
1. Improve patient satisfaction/benefit
2. Increase revenue/profit
3. Enhance your reputation for patient-centered care

The Unmet Need



Seeking a lifestyle enhancement through an anonymous transaction

Hearing Aid Use & Age



Current Binary Model

Hearing Aid Candidate:

Yes

No

Current Binary Model

If Yes –

Buy hearing aids (services bundled into \$)

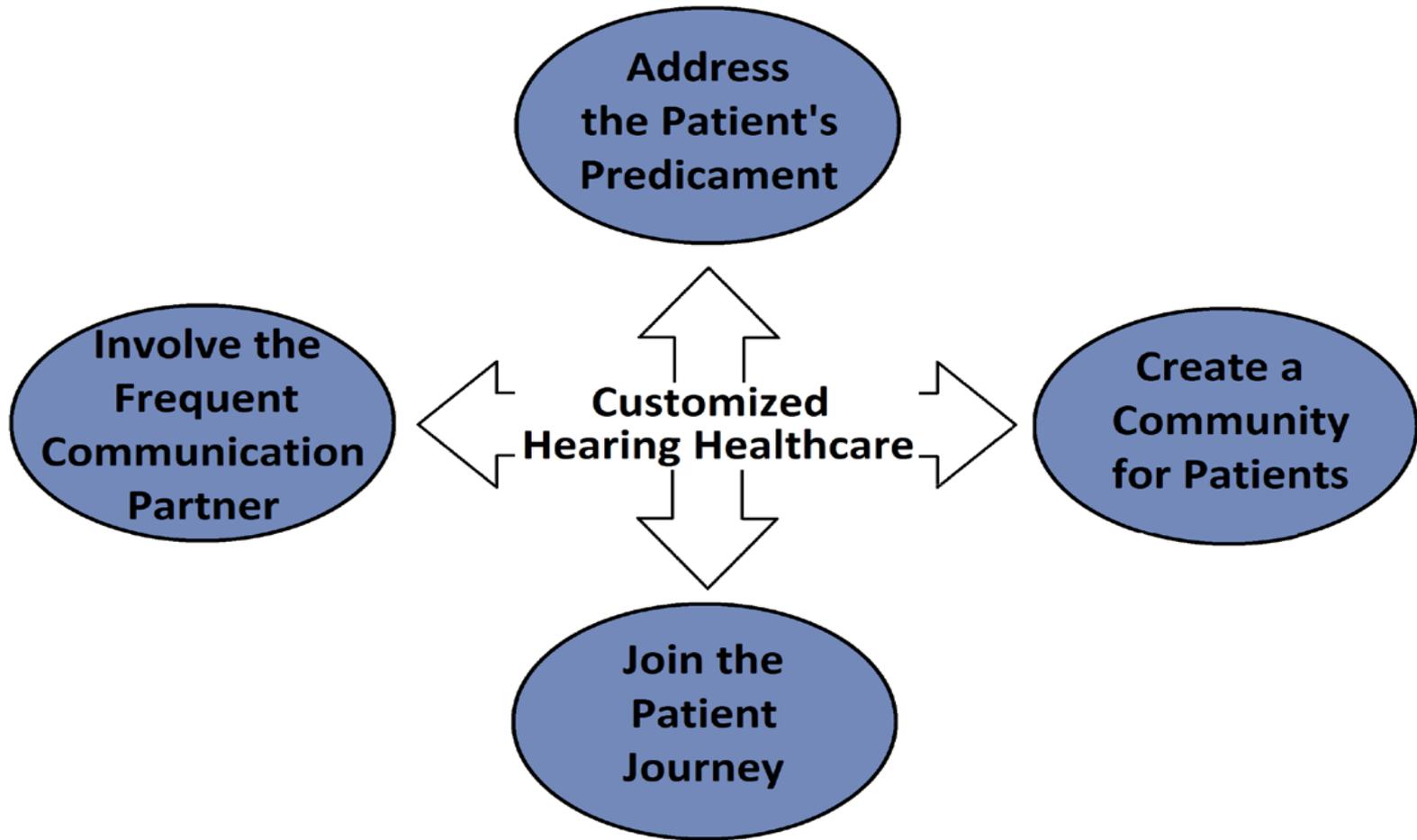
If no –

Keep grinding until they do

- More Sales & Marketing:
- Send them letters
- Offer to Re-test

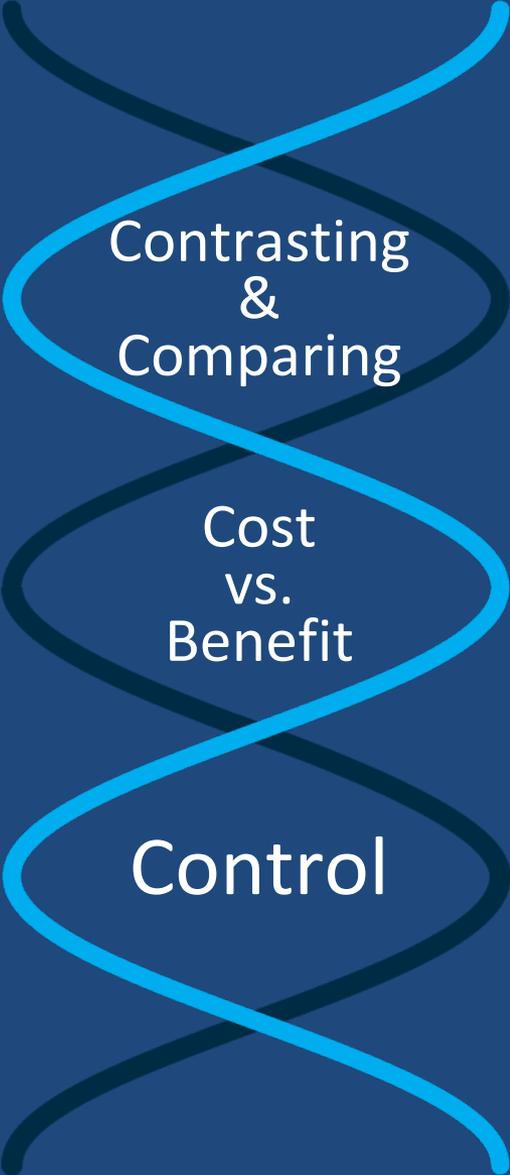
Is there a better way?

Customized Hearing Care



Inside the Head of a Person with Hearing Difficulties

Self-Assessment



Contrasting
&
Comparing

Cost
vs.
Benefit

Control

Arlene Carson, Audiology Professor at MacEwan University, Alberta & the University of Victoria, British Columbia

Comparing & Contrasting

- How does it look?
- How might you address it?

Cost vs. Benefit

- How does it look?
- How might you address it?

Control

- How does it look?
- How might you address it?

Key Point

- All three components probably need to be unpacked (discussed) by the patient and audiologist/HHP

Stages of Change

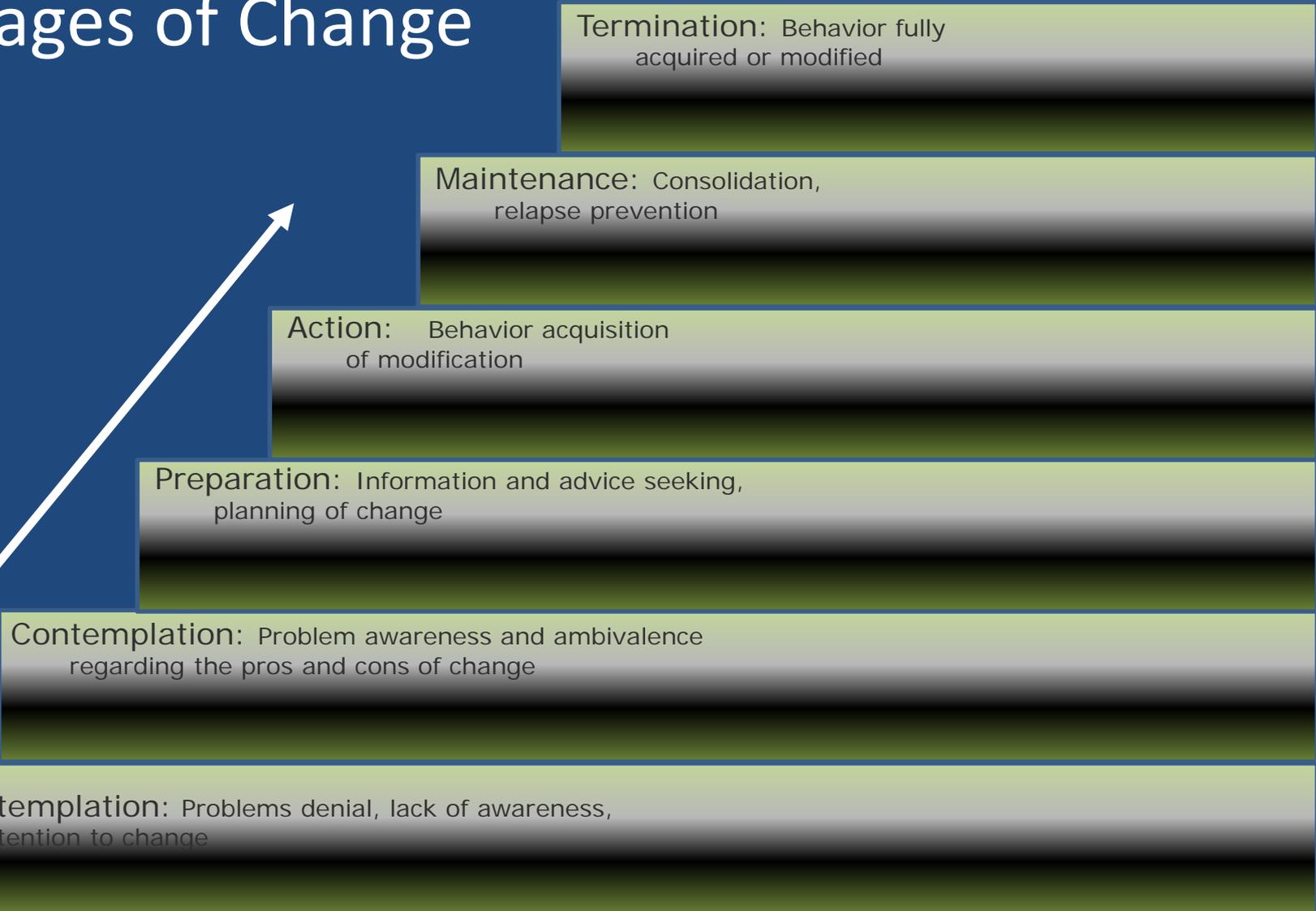


Figure 1. Stages of Changes of the Transtheoretical Model

Pre-contemplation vs. Other Stages

- 27% in pre-contemplation stage
 - 65% in contemplation stage
 - 8% in preparation stage
-

- 100% in pre-contemplation declined hearing aids
- 61% of others two stages committed to buying hearing aids

(Ekberg, et al 2016)

You Might be a Pre-contemplator if....

- During appointment the patient attributes hearing difficulties to environment and third parties
- Display low concern about hearing problems
- Minimize or deny hearing problems exist
- “On a scale of 1 to 10 (ten being ready today, how ready are you to get help....)”, patient answers less than 4

Clinical Tips for Pre-contemplators

- Don't discuss hearing aids
- Review pros and cons of getting help
- Discuss how communication misunderstandings impact the person and family
- Talk about consequences of untreated hearing loss – Education
- Pivot to an alternative “starter” or “gateway” product

The Four Types of Patients (chronic care model)

1. Positively motivated without complicating factors
2. Positively motivated with complicating factors
3. Want help, but reject a key component of your recommendation
4. Deny any problems with hearing or communication

Type 1: Positively motivated without complicating factors

- Will readily accept your recommendation for hearing aids and rapidly and effectively pass through the system
- 1 or 2 appointments
- “short term service package”

Type 2: Positively motivated with complicating factors

- Require more attention for using hearing aids or communication skills
- 2 + appointments over 3-6 months
- “long term service package”

Type 3: Want help, but reject a key component of your recommendation

- Require additional personal adjustment counseling and involvement of significant others
- 3+ appointments over 3-6 months
- “hearing therapy package”

Type 4: Deny any problems with hearing or communication

- No intervention can be started at this time, but significant others may require support and advice
- 1 fee for service visit, follow-up with patient and/or significant other

Benefits of 4-Types Approach

- All patients generate a fee for service, not just when they buy hearing aids
- Addresses the immediate needs of the patients, many are not yet ready to use hearing aids, but still need benefit from help
- Builds a relationship based on expertise and service, not products & technology

Challenges of 4-Type Approach

- Changing current model can be painful
- Requires new and improved counseling skills
- Cash flow issues – payments are incremental over time

How to sort into the 4 types?

Functional Communication Assessment (EASE)

- Evaluate communication status
- Assess related conditions
- Set goals
- Establish an intervention strategy

Evaluate communication status & Access Related Conditions

Audiological Factors

- Hearing Thresholds
- LDL
- SNR Loss
- Annoyance from Noise
- Listening Fatigue
- Perceived Hearing Handicap

Non-Audiological Factors

Non-Audiological Factors

- Physical Capability
- Cognitive Ability
- Motivation
- Listening Lifestyle Demands
- Budget/Finances
- Psychological State

Clinical Tools Needed

- COSI or TELEGRAM
- Quick SIN
- Acceptable Noise Level Test
- Questionnaires
- Effective Interviewing Skills

Moving from Product Centered to Patient Centric Care

A Basic Truth

Behaviors and attitudes associated with age-related hearing loss often require face-to-face intervention and guidance from a trusted professional

Think About “This Guy”



- Last patient you saw with moderate or severe loss who failed to accept your recommendation for hearing aids – even after a test drive.
- Did he come back to see you?

After this session, you can start...

- Spending more time understanding the **help seeking behaviors** of the patient
- Providing an environment where patient can make **autonomous decisions**
- Getting more **involvement from significant others**
- Conducting **functional communication assessments**, not hearing aid evaluations

Back to this guy



Considerations

- How much time do you have to you spend with him?
- Do you charge for your time or only when he buys hearing aids?

Considerations

- During the appointment how much time is spent talking about the patient and how much time is spent talking about products?

Why Patient-Centered Care?

- Patients perceive their appointment with HCP as a series of disconnected, isolated events (Laplante-Levesque, et al 2012)
- Little relationship building occurs, majority of dialogue is focused on technology, HCP interrupted customer after 21 seconds on average (Grenness, et al 2015)

Why Patient-Centered Care?

- Customers with hearing loss, seeking help from HCP often fail to obtain hearing aids:
- 216 patients – 42% (Ridgeway, et al 2016)
- 250 patients – 48% (Laplante-Levesque, et al 2012)
- 62 patients – 39% (Ekberg, et al 2016)

Why do so many individuals with significant hearing loss fail to follow our recommendation?

Traditional Approach

Biomedical Model: Centers on the audiogram
and the device

Hearing loss is a medical problem, mechanical
in nature with a specific cause-effect
relationship

Chronic Care Model:
Patient decides if
and when he wants help

Hearing loss is a chronic condition, which requires on-going management over time, including the easing and elimination of social barriers

Chronic Care Model

- Views hearing loss as a chronic condition, which requires on-going management over time
- Focuses on guiding patient through the process of behavior & attitude change
- Technology needed to ease and eliminate of social barriers, improve participation in daily activities

A deeper dive



The Communication Assessment

Basic Tenets of Solution-Focused Interviewing

Information Exchange and Reduce Resistance

Information Exchange:

1. Basic Rapport Building

Information Exchange:

2. Patient Sets Agenda

Agenda Setting

A. “You’re here to talk about your hearing...Is that right?”

B. “Take me through a typical day...”

C. “What options have you considered....”

3. Assess Confidence, Importance and Readiness to Take Action

Confidence

Mastering skills
necessary to achieve
change

Readiness

When does taking
action make sense to
you?

“How important is it to you to improve your hearing?”

“In which situations you mentioned to be challenging do you want to get help?”

“What would you like to see accomplished by the end of the appointment?”

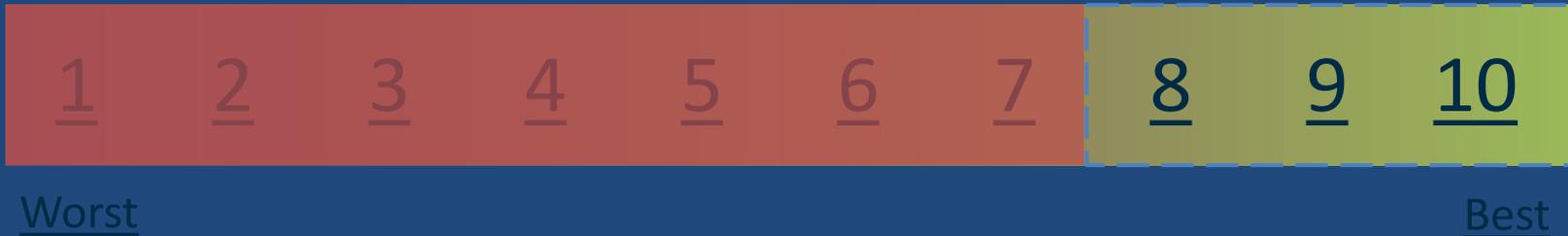
Scaling Questions

On a scale of 1 to 10 (1 being not ready at all) and 10 being ready now), how ready are you to take action to address your hearing loss?

On a scale of 1 to 10 , 1 being the worst and 10 being the best, how would you rate your overall hearing ability?

Bucket 1: 8-10 rating

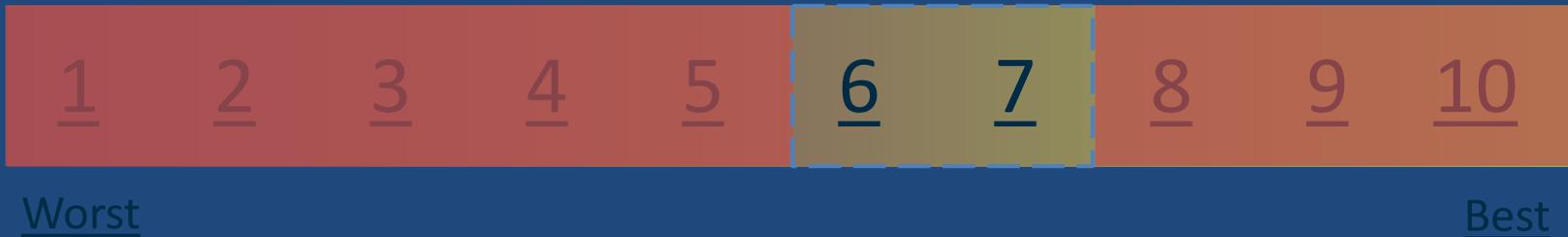
- This is 15 % of the patient population, and you should provide educational information



- Pre-contemplation/contemplation stage
- Focus on education and self-awareness
- May be open to situational help (e.g. TV)

Bucket 2: 6-7 rating

- Approx 33 % of the patient population.

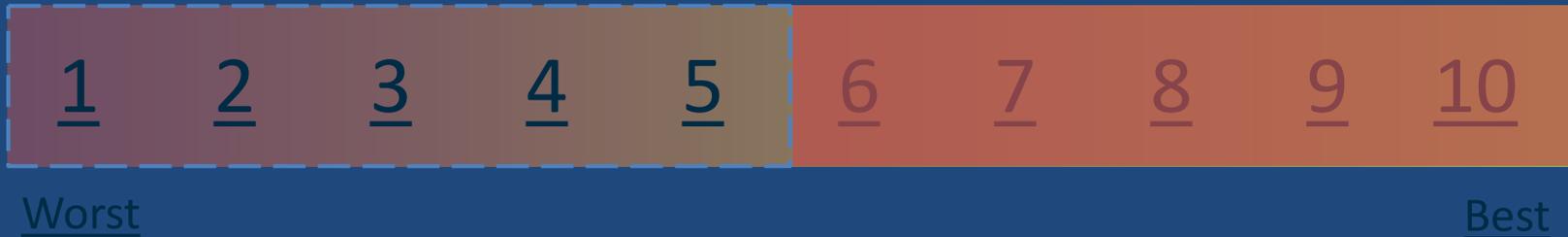


Need more information prior to making a decision:

- At-home demonstration
- Trial of specific solution

Bucket 3: 1-5 Rating

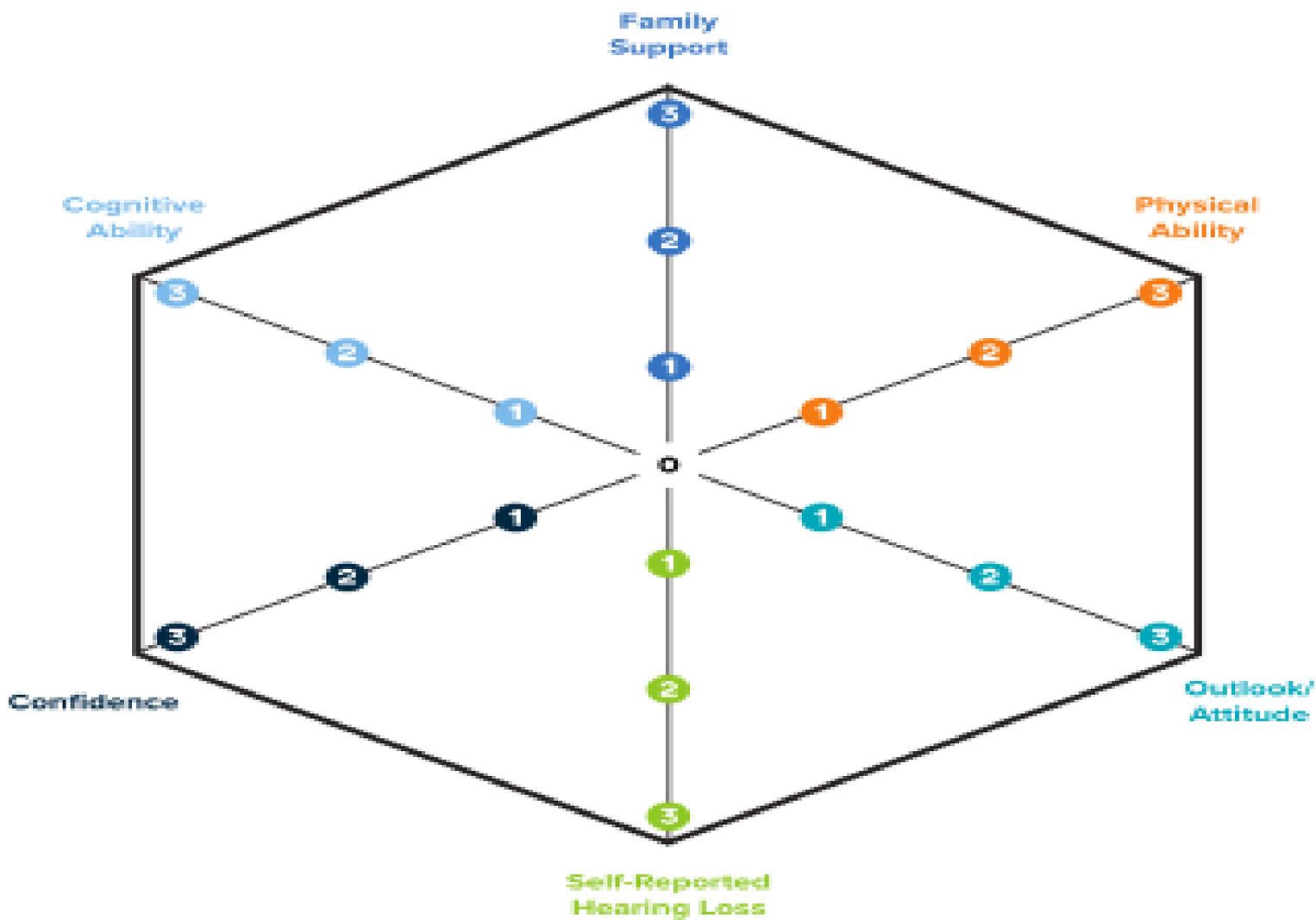
- This is 50 % of the patient population.



- Likely to be in action stage
- Move directly into generating possible solutions
- Gather more information about non-audiological variables

Non-Audiological Components of the Assessment

- Sort routine from complex cases
- Charge more for complex cases

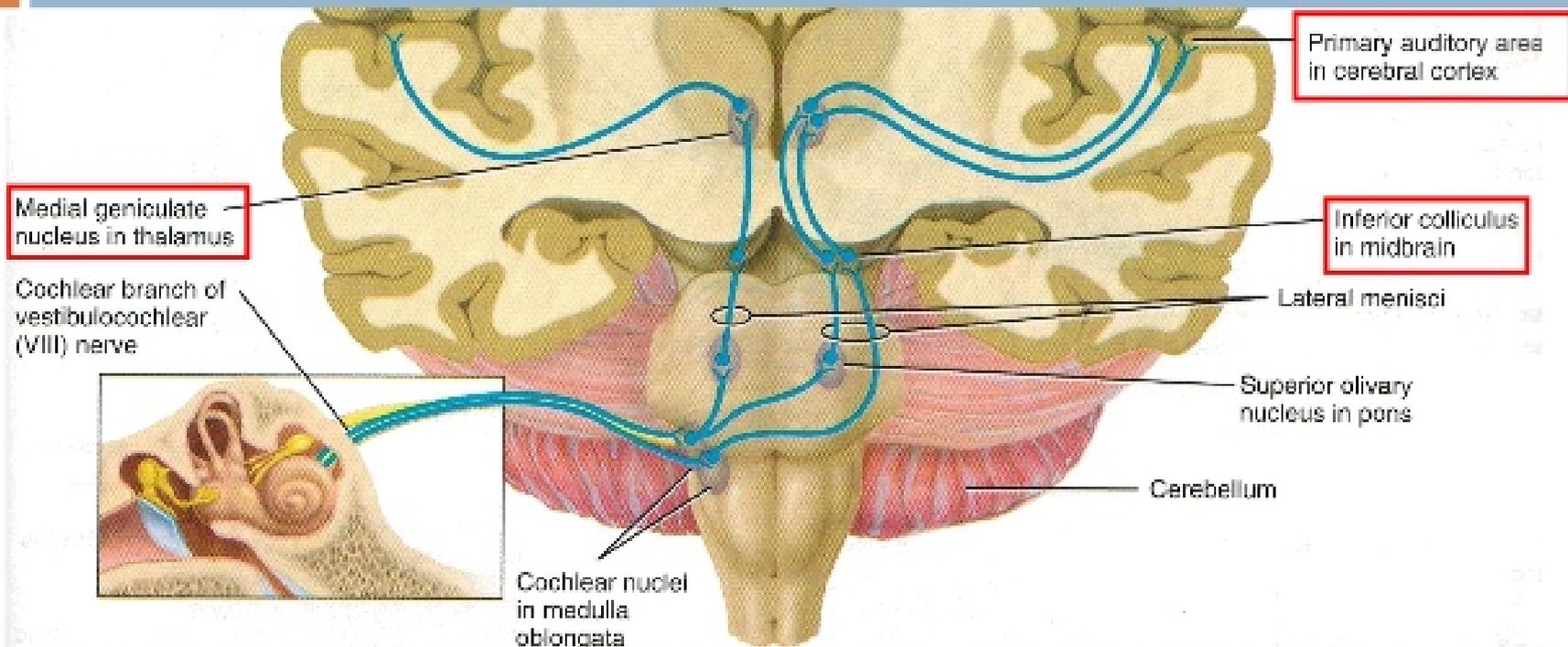


Audiological Components

Why do speech intelligibility testing?

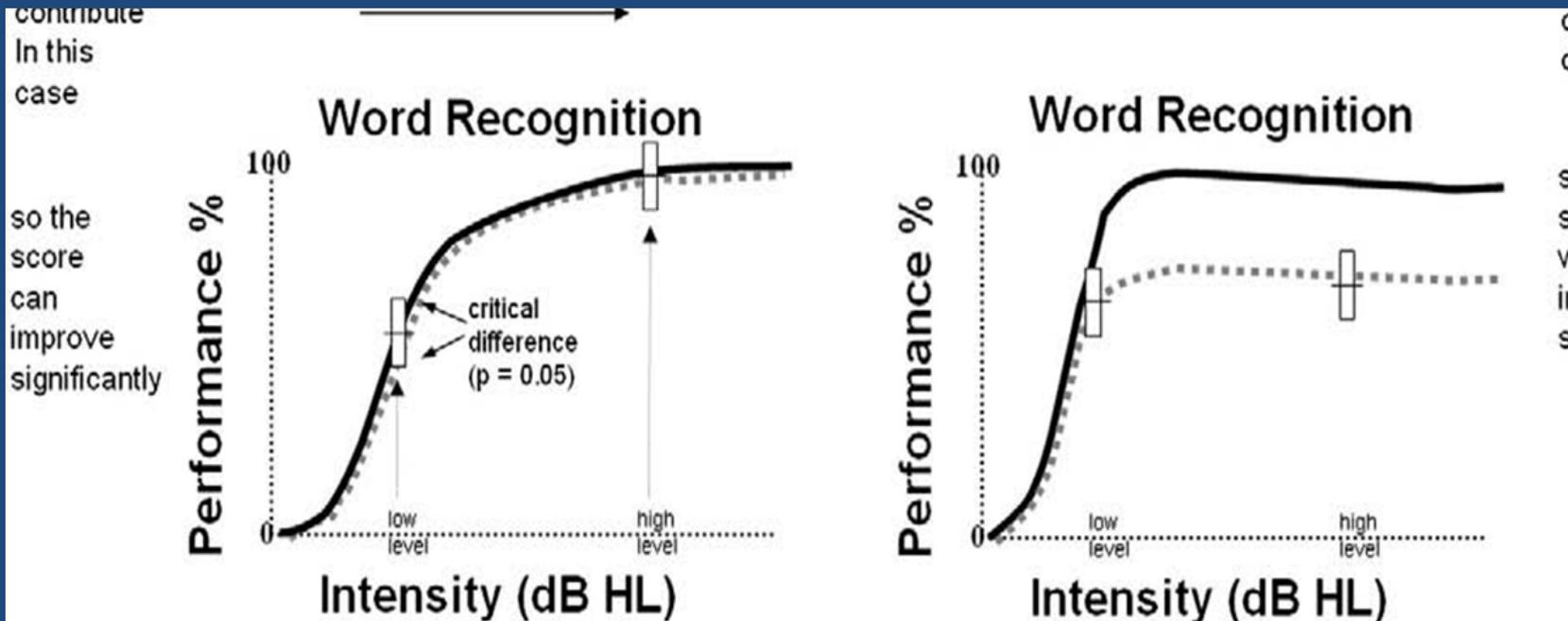
Auditory Pathways

13

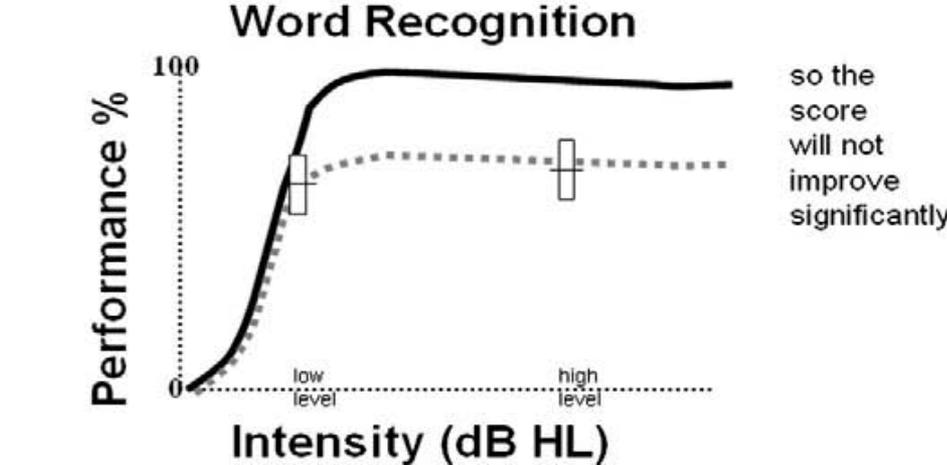
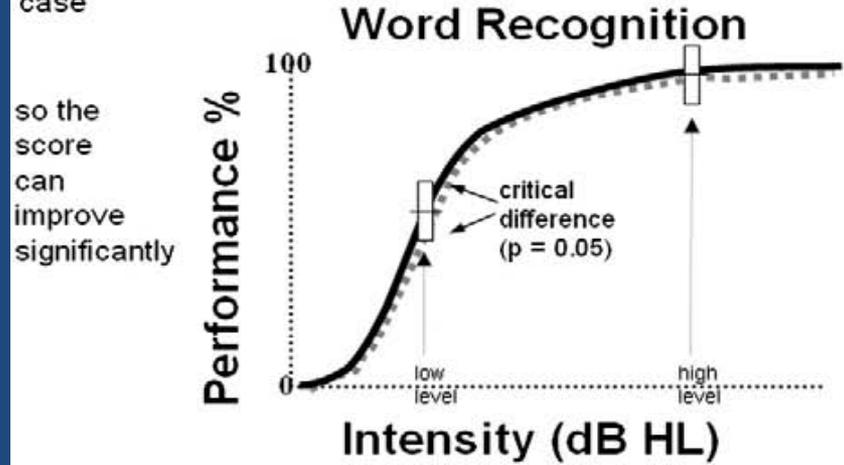
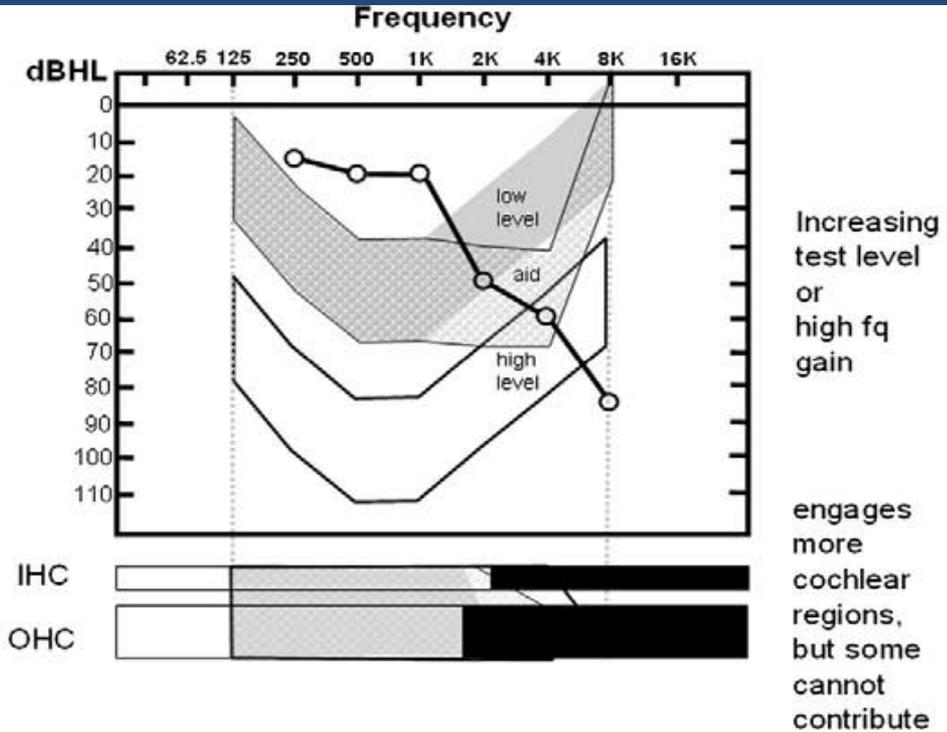
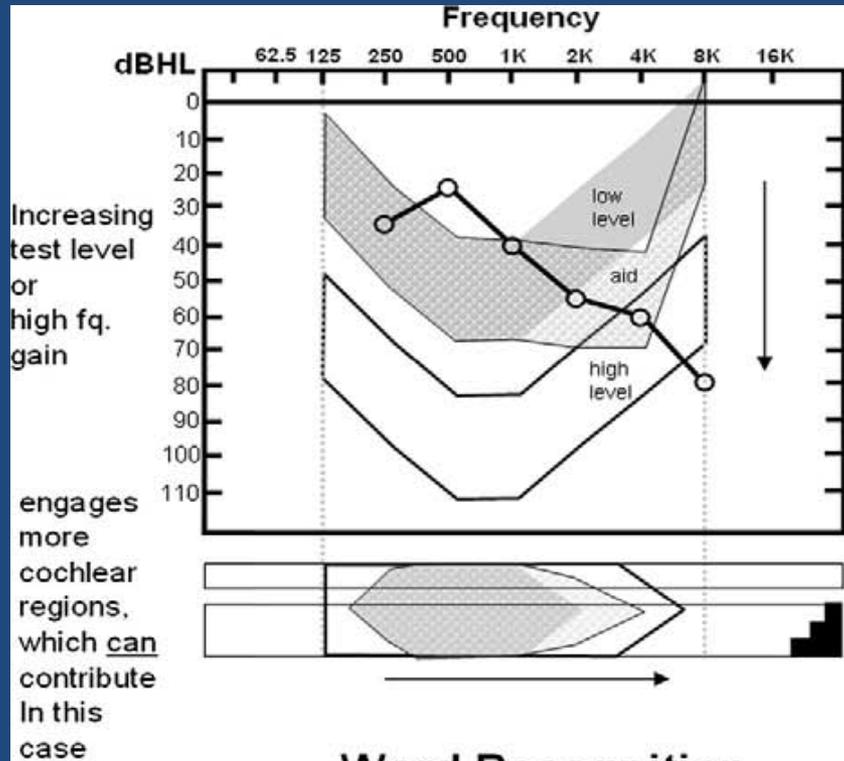


- Ascend via the lateral meniscus tract on ipsilateral side to the inferior colliculus in the midbrain
- Fourth order neurons travel to the medial geniculate nucleus (MGN) in the thalamus
- Terminate in the primary auditory cortex in the temporal lobe
- Tonotopic organization maintained from cochlear nuclei to auditory cortex

The Performance-Intensity Function



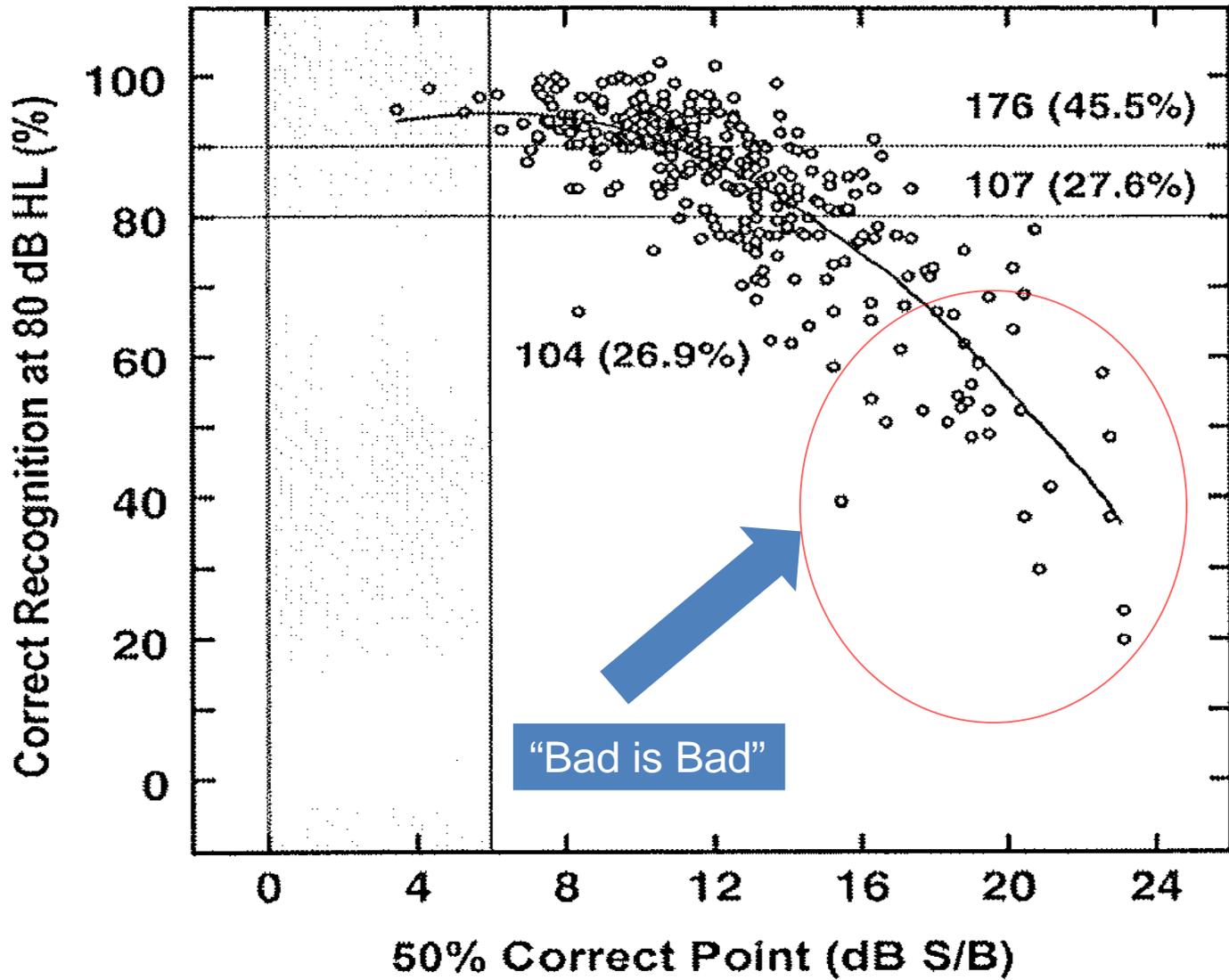
The Limitations of the Audiogram

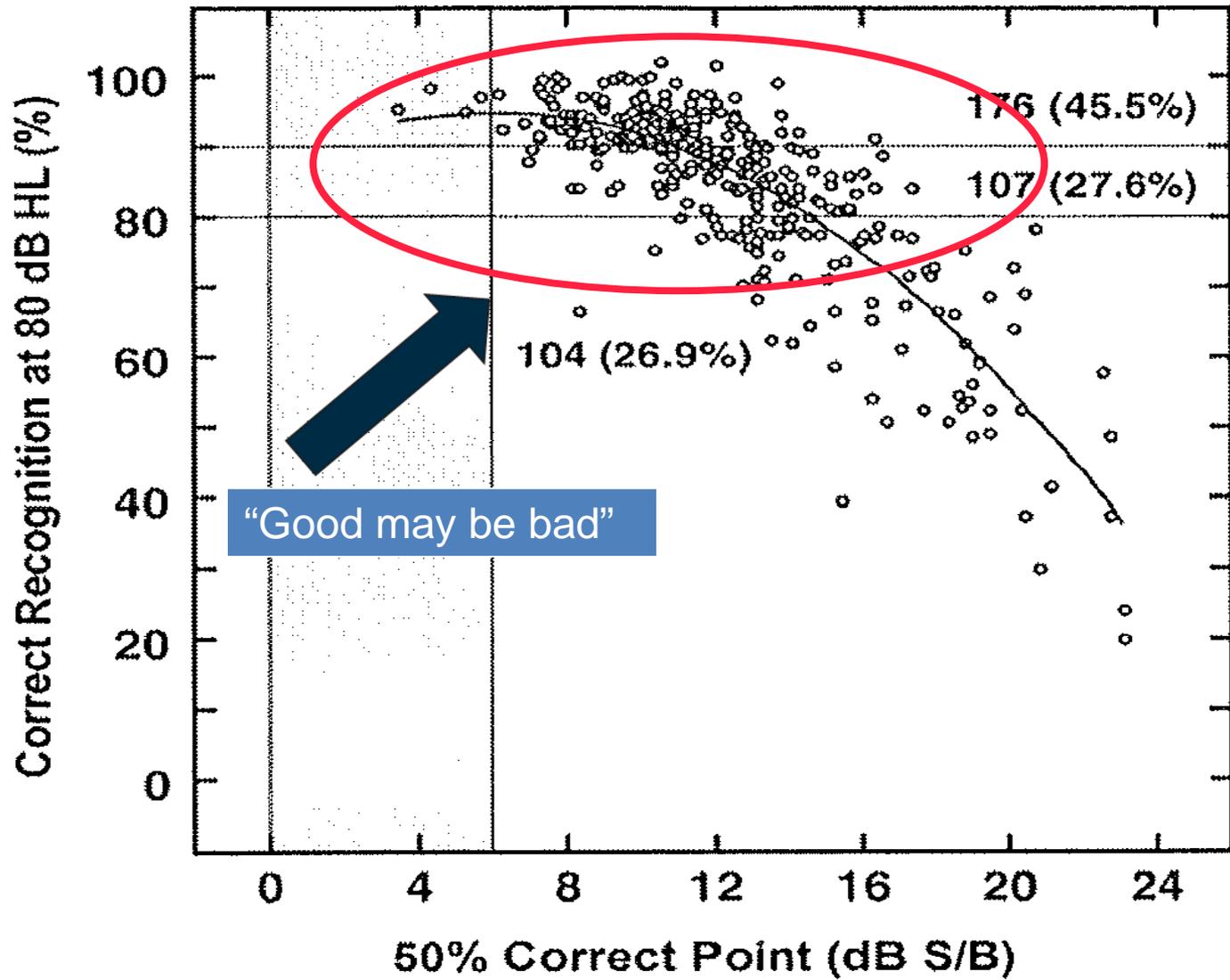


Speech intelligibility-in-noise tests

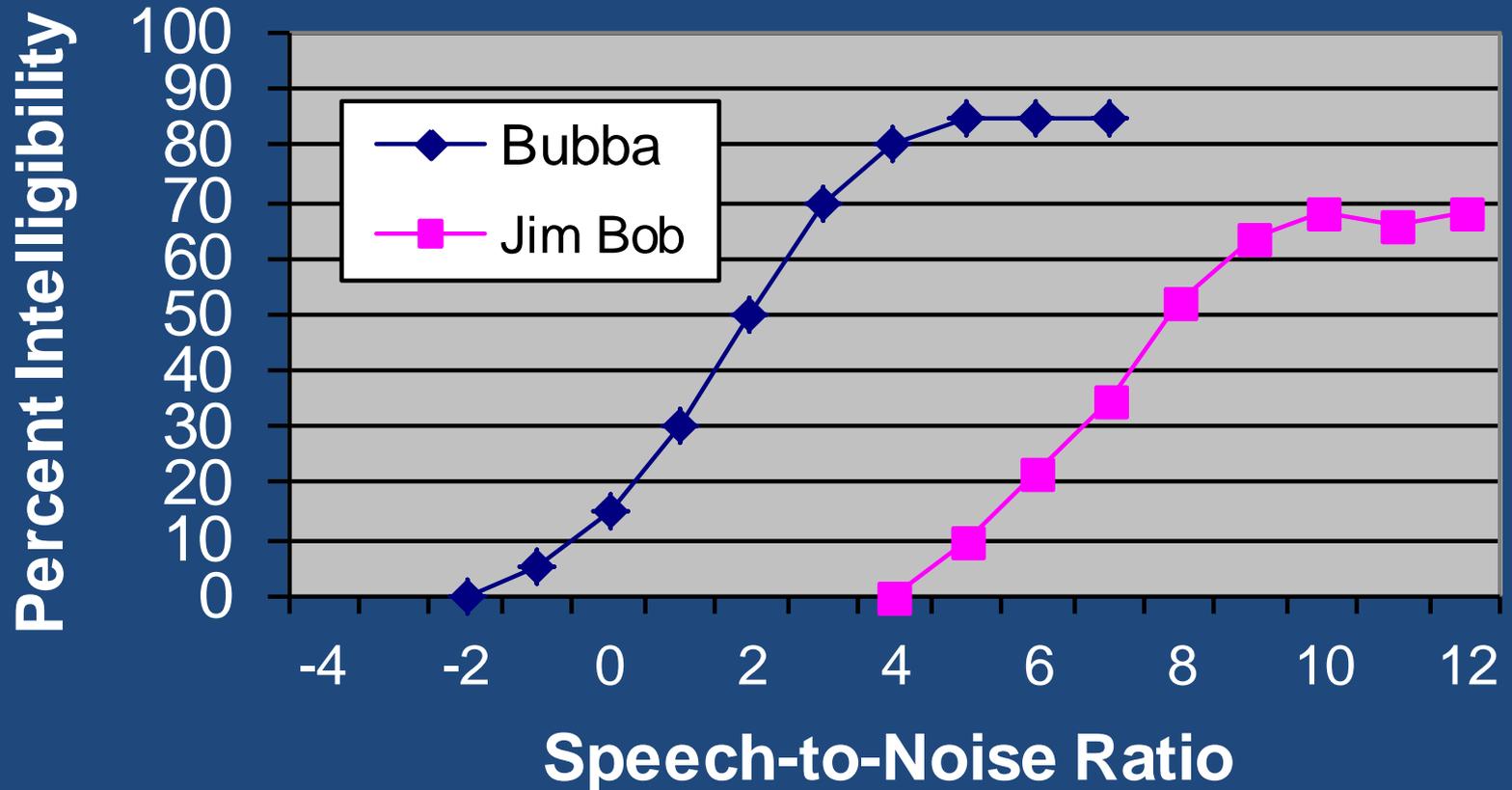
1. Addresses most common complaint
2. Provides insight into most appropriate amplification strategy
3. Used to counsel patient about realistic expectations
4. Monitor aided performance over time
5. To help patients make decisions

“I already do speech testing in quiet,
why take the time to do a speech in
noise test?”





The P-I Function Explains Much About Performance in Noise



Choices of speech intelligibility in noise tests

Fixed Tests:

- An entire word or sentence list is given at the same, fixed SNR level
- Advantage: easy to conduct, easy to score & talk about (% correct)
- Limitation: too easy or too hard
- Example: Connected Speech Test

Choices of speech intelligibility in noise tests

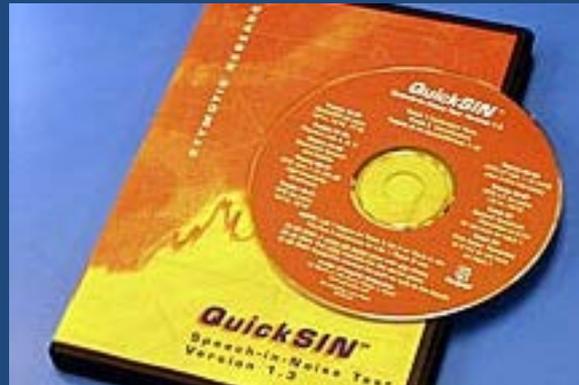
Variable Tests:

- The SNR varies within the test
- Advantage: Find the SNR level where communication breaks down (50% correct mark)
- Disadvantage: Not typically scored as a % correct
- Examples: WIN, HINT

Conducting the Quick SIN (Standard Unaided Approach)

- Under earphones
- Test each ear separately
- Loud MCL (70-75db HL)
- Don't use lists 4,4,13 and 16

The QuickSIN:
A sample scoring of a list
of six sentences



List 1

		Score
1. A <u>white silk jacket</u> goes with <u>any shoes</u> .	S/N 25	_____
2. The <u>child crawled into</u> the <u>dense grass</u> .	S/N 20	_____
3. <u>Footprints showed</u> the <u>path</u> he <u>took</u> up the <u>beach</u> .	S/N 15	_____
4. A <u>vent near</u> the <u>edge</u> brought in <u>fresh air</u> .	S/N 10	_____
5. It is a <u>band</u> of <u>steel three inches wide</u> .	S/N 5	_____
6. The <u>weight</u> of the <u>package</u> was <u>seen</u> on the <u>high scale</u> .	S/N 0	_____
25.5 - TOTAL = _____ SNR Loss	TOTAL	_____

Scoring

List 1		Score
1. A <u>white silk jacket</u> goes with <u>any shoes</u> .	S/N 25	<u>5</u>
2. The <u>child crawled into</u> the <u>dense grass</u> .	S/N 20	<u>5</u>
3. <u>Footprints showed</u> the X <u>path</u> he <u>took</u> up the <u>beach</u> .	S/N 15	<u>4</u>
4. A X <u>vent near</u> the <u>edge</u> brought in X <u>fresh air</u> .	S/N 10	<u>3</u>
5. It is a <u>band</u> of X <u>steel</u> X <u>three</u> X <u>inches</u> <u>wide</u> .	S/N 5	<u>2</u>
6. The X <u>weight</u> of the X <u>package</u> was X <u>seen</u> on the X <u>high</u> X <u>scale</u> .	S/N 0	<u>0</u>
25.5 - TOTAL = <u>6.5</u> SNR Loss	TOTAL	<u>19</u>

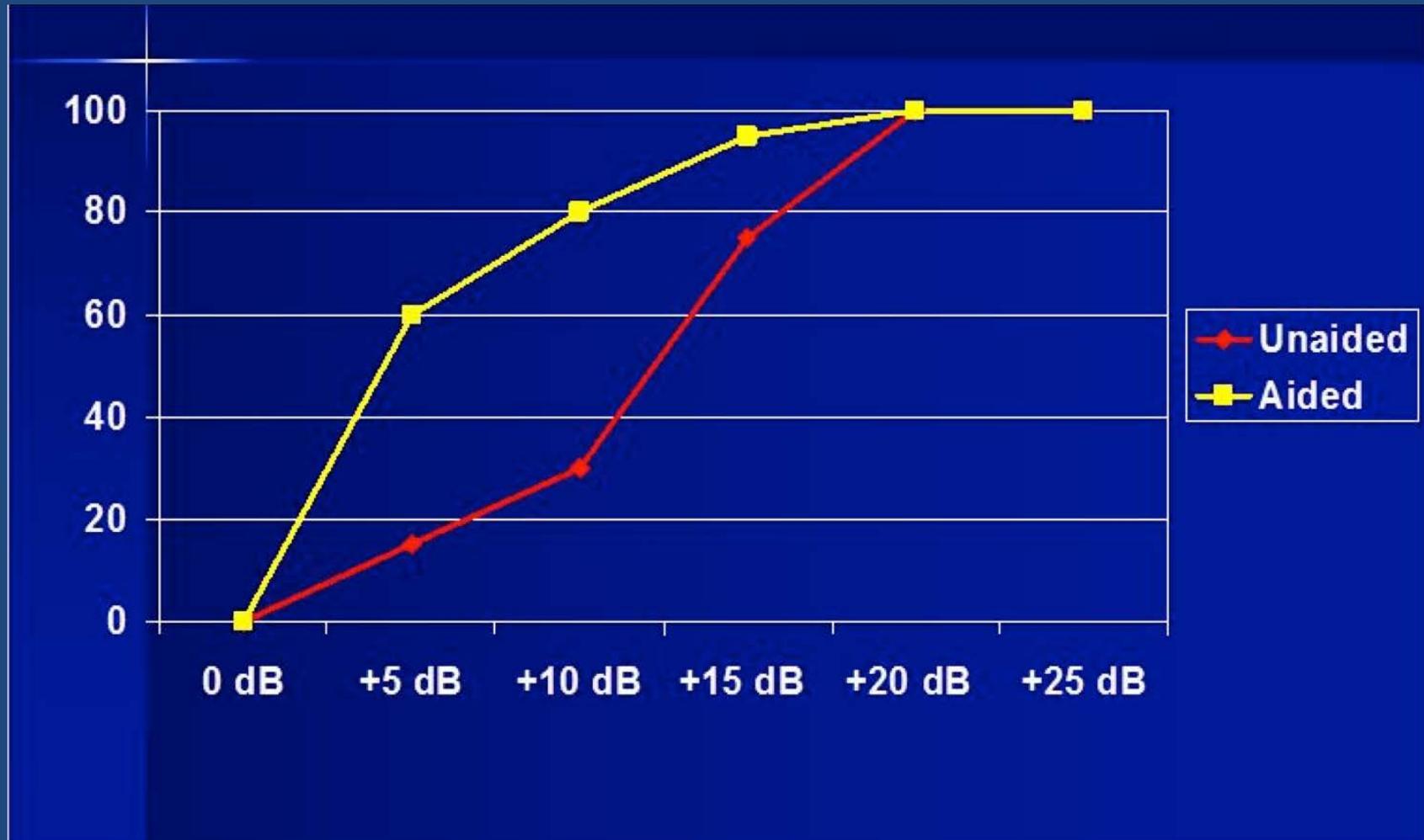
Using the SNR Loss Measure For Fitting Hearing Aids

SNR LOSS	DEGREE OF SNR LOSS	EXPECTED IMPROVEMENT WITH DIRECTIONAL MIC
0 - 2 dB	Normal/Near Normal	May hear better than normals in noise
3 – 7 dB	Mild SNR Loss	May hear almost as well as normals hear in noise
8 – 14 dB	Moderate SNR Loss	Directional Microphones help. Consider companion mic
> 15 dB	Severe SNR Loss	Maximum SNR improvement is needed. Strongly consider FM system or Companion Mic

Another Approach

- In the soundfield
- Step 1: Complete test in unaided condition at 50 or 55 dB HL
- Step 2: With hearing aids, repeat test at same level

Counseling Tool....



Drivers of Patient Centered Care



Shared Decision Making

A Spectrum Of Hearing Solutions

Assistive Solutions

Assistive Listening Devices (ALD)



Ear or Body Worn Devices (Hearables)



Prescriptive Amplifications

Directed Audio (HyperSound Clear™ 500P)



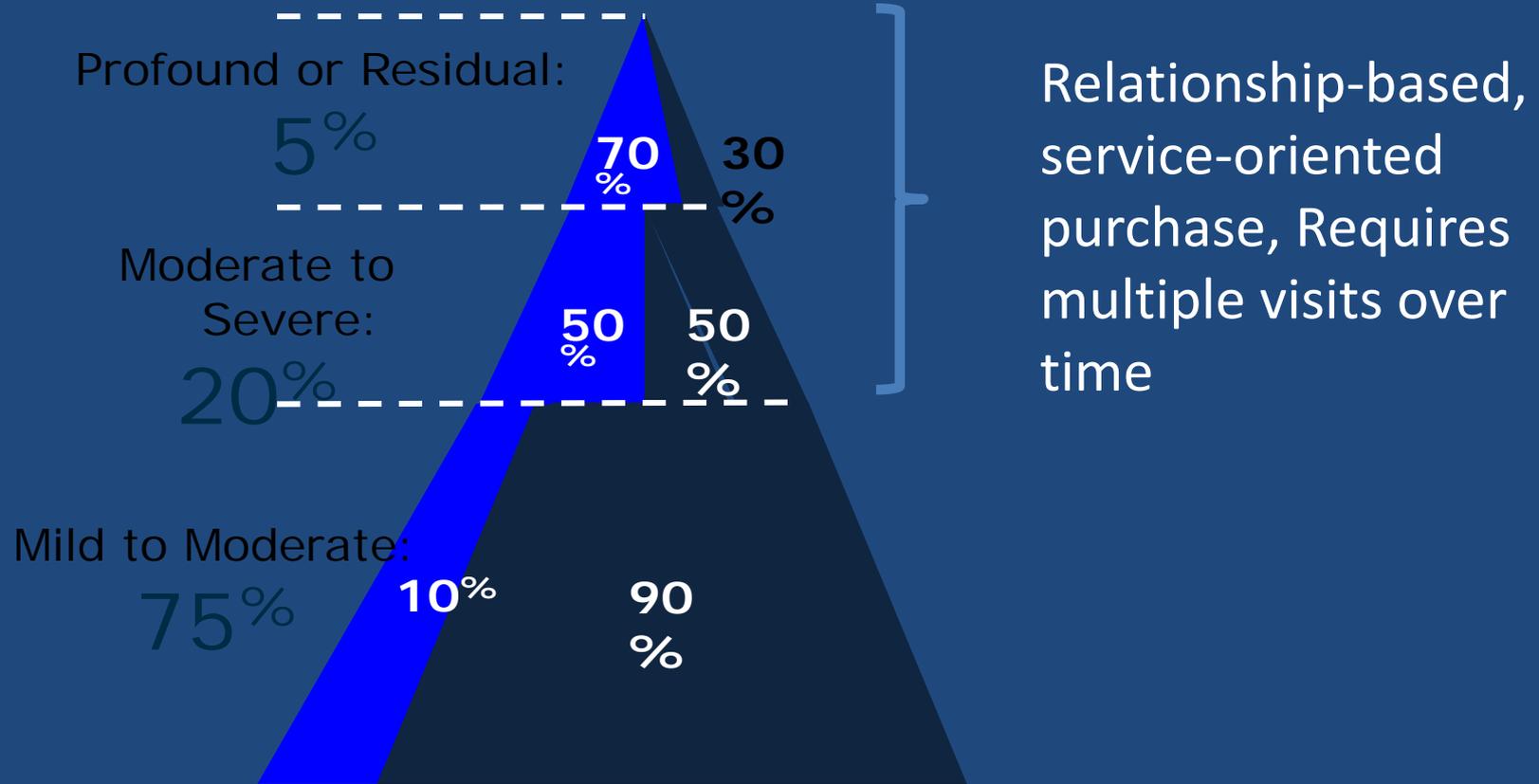
Daily, Extended & Implantable Devices



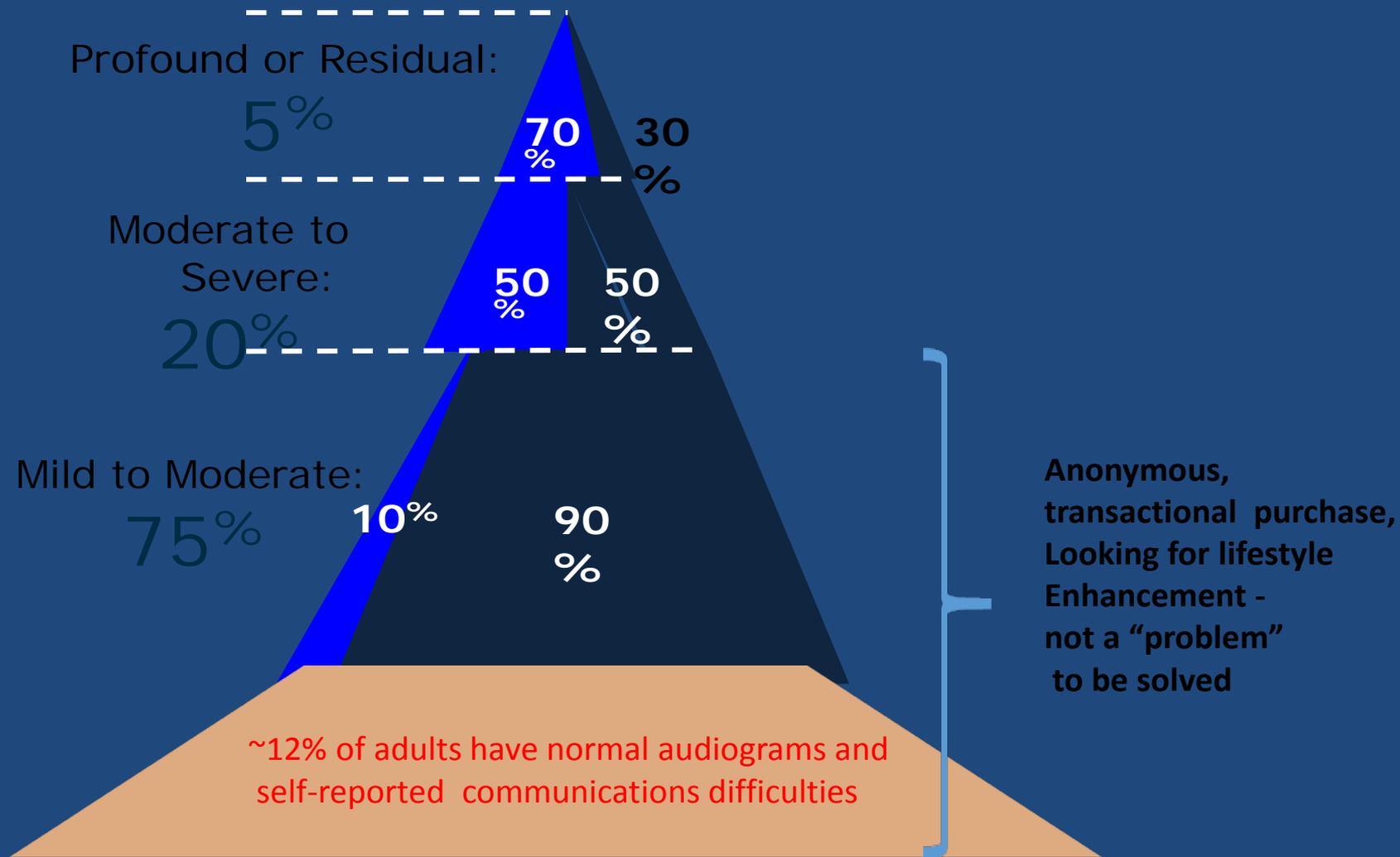
Part 2: Post-Intervention Care: Long-term Management & Outcomes Measures

A little review from earlier...

Hearing Aid Use & Degree of Loss



Multiple Sources: including, Beaver Dam study, Blue Mountain study

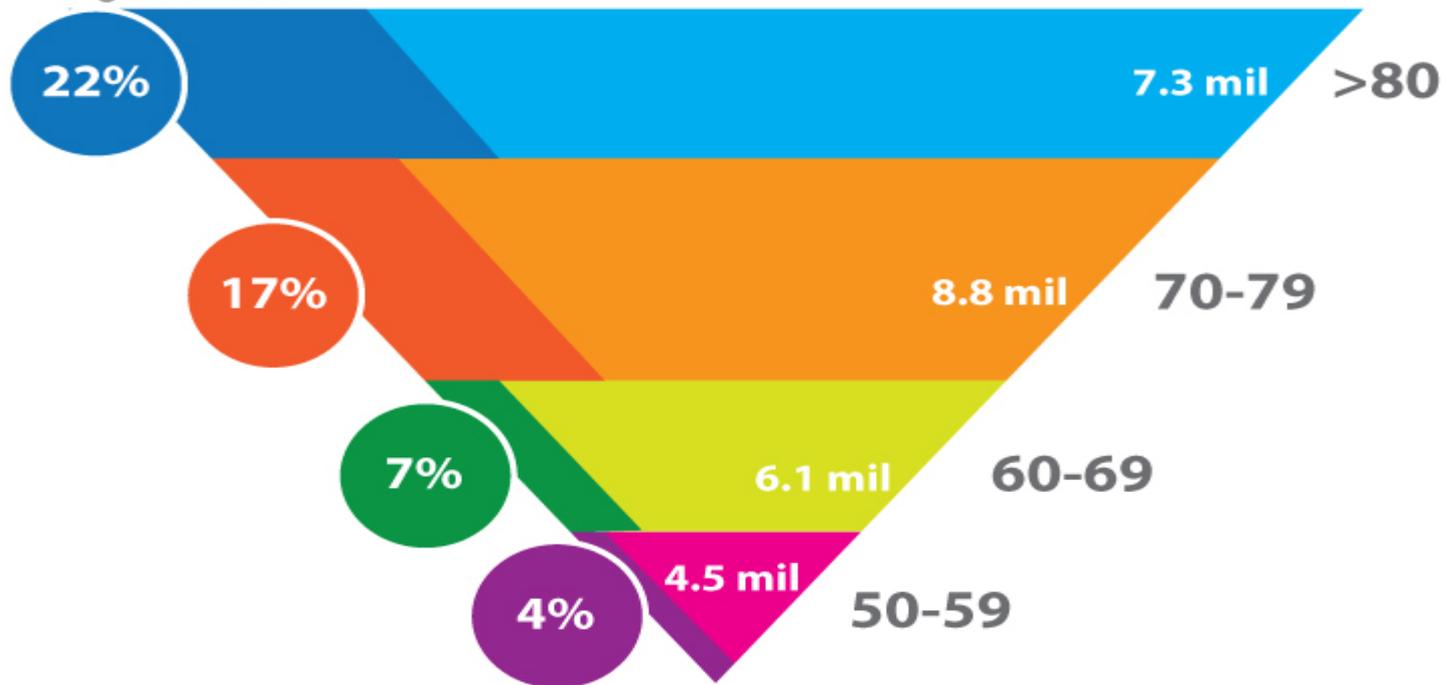


Hearing Aid Use & Age

Prevalence and Number of Individuals 50 years or older with >25dB hearing loss

Prevalence of
Hearing Aid Use

AGE

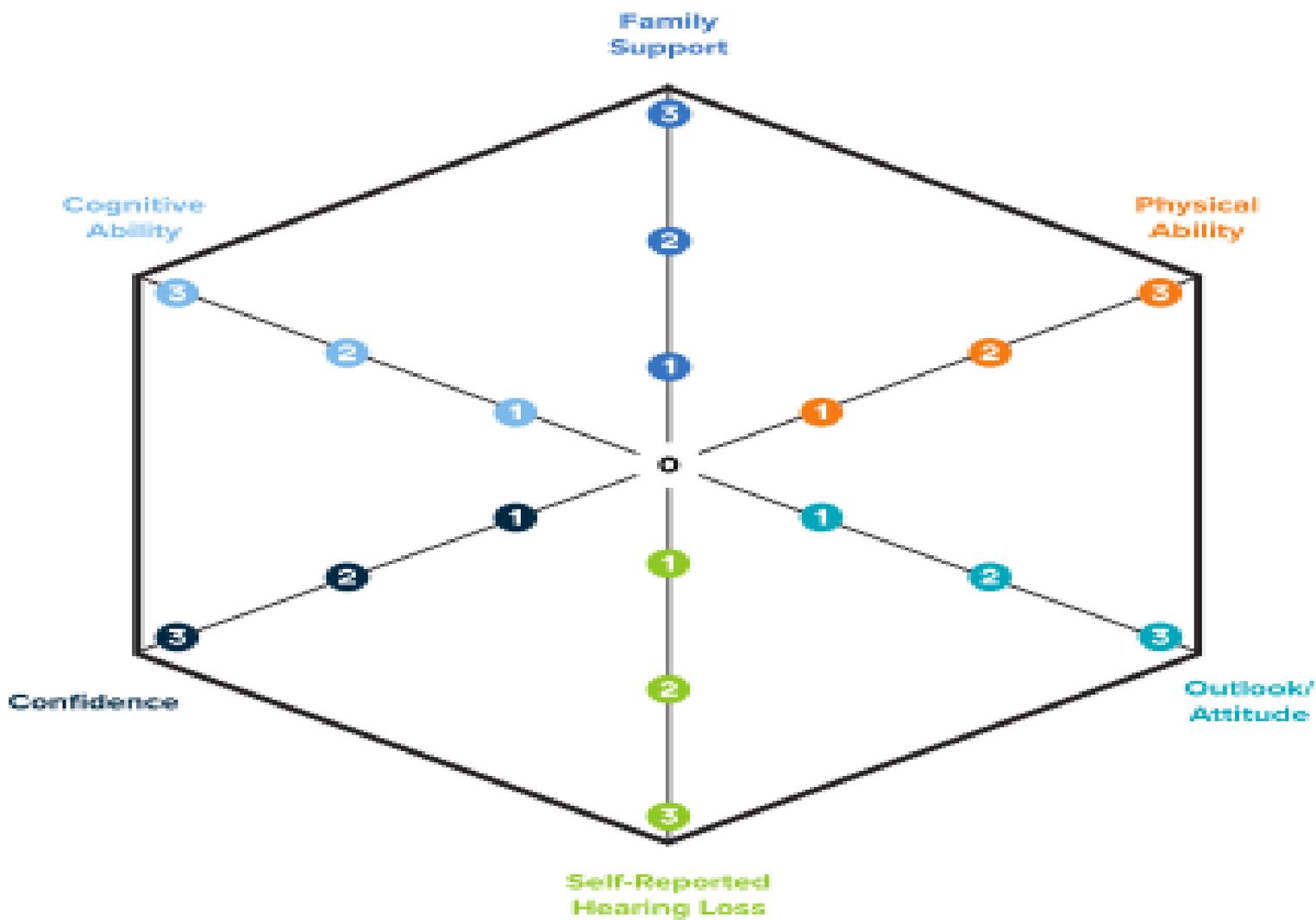


Missed Opportunities

- Milder loss, often younger patients who don't think they have a hearing problem that need situational help
- Older patients, often with cognitive or physical decline, who cannot successfully wear hearing aids

Hearing Care Triage

- Sorting routine from complex
- A judgement based on a constellation of factors:
 - Results of audiological assessment, primary speech audiometry results
 - Observations of non-audiological variables
 - Wishes/needs of the patient



Shared Decision Making

A Spectrum Of Hearing Solutions

Assistive Solutions

Assistive Listening Devices (ALD)



Ear or Body Worn Devices (Hearables)



Prescriptive Amplifications

Directed Audio (HyperSound Clear™ 500P)



Daily, Extended & Implantable Devices



Routine vs. Complex

Routine

- Optimize Audibility & Comfort, Improve SNR
- Instruct on Initial Use & Expectations
- Measure & Report Outcomes at end of initial use
- Need 1 or 2 appointments

Complex

- Components of Routine, plus:
- Substantially Lower SNR
- Personal adjustment counseling focusing on one of at least 6 components

The Routine Patient

- Once identified, could they benefit from OTC (self-fitted) products?

Self-programming & self-contained hearing aids

- Could older adults self-fit hearing aids following written instructions with help from spouse?
- Convery et al (2017) Evaluation of the self-fitting process with a commercially available hearing aid. *JAAA*.
- 40 adults (20 experienced & 20 inexperienced hearing aid users) aged 68 to 88 provided Sound World Solutions HD1000 device
- 73% able to successfully insert devices
- 55% able to complete entire 10-step process

Personal Sound Amplification Products



SoundHawk



ER QSR



ICOT



Sound World Solutions

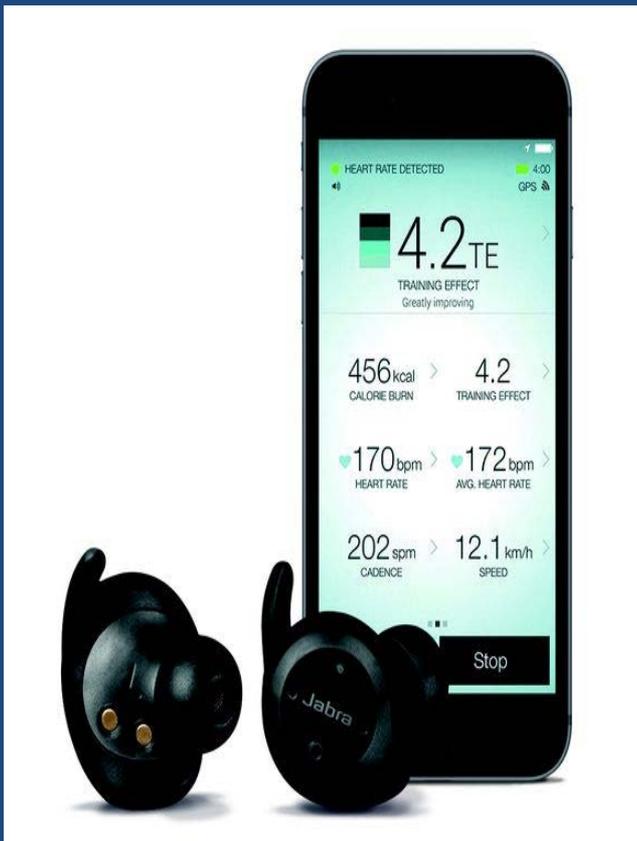


Exsilent Qleaf Lite

PSAPs

- De-featured hearing aids
- Some use app to adjust gain

Cordless Multi-taskers



Instructions & User Support

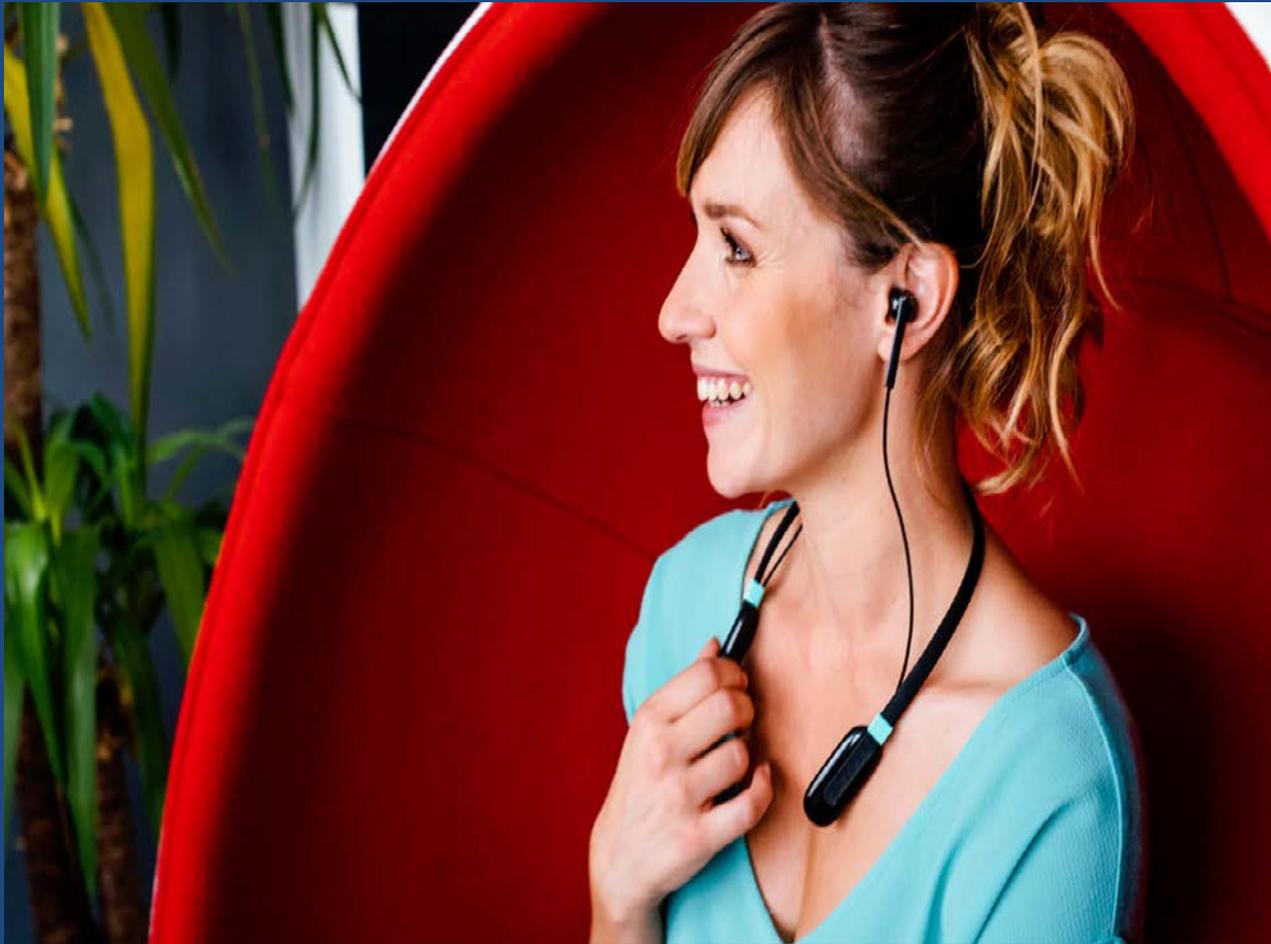
- Nuheara IQ – video and printed guides at website
- Bragi – written instructions on website + YouTube video
- Jabra – video instructions at website

Neck-band Multi-taskers



OnVocal

Neck-band Multi-taskers



Orosound

BeHear, Alango Technologies



inspEar



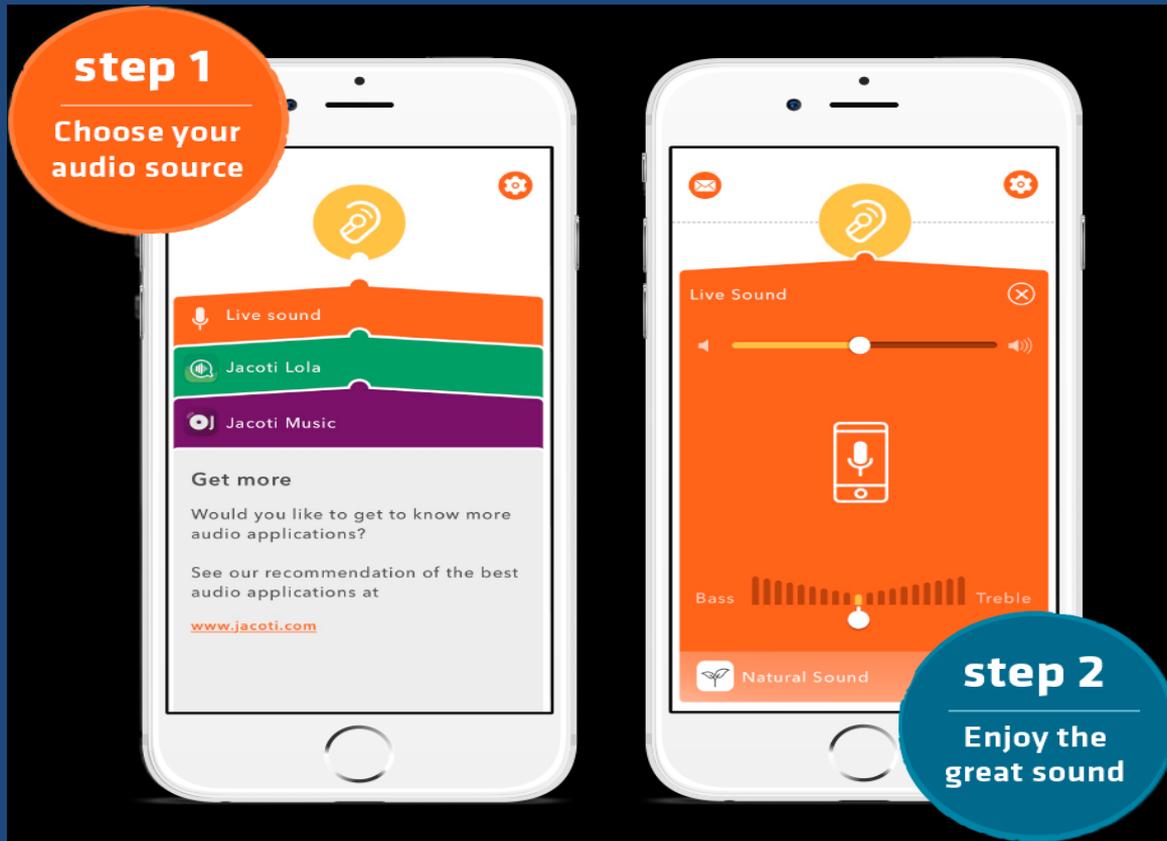
Neck-band Multi-taskers

- Rechargeable
- Fine tuning App
- Stream music
- Talk on Phone
- Amplification with multiple mics
- Language Translation
- Ear Protection
- Voice Computing (Amazon Alexa)
- Price Range from \$150 to \$500

Smartphone-based Amplification Apps



Jacoti Hearing Suite



“Over-the-Counter” Hearing Aids

Company	Product Style	Service Delivery	Device Cost	Misc.
Audicus	Mini-canal and 2 OC BTEs	Instructed to get hearing test first and email results, on-line chat support	\$499 to 699 per ear (3 price points)	“enhanced clarity” is \$40 per device option, remote is \$99 option
Eargo	Mini-canal	Out of the box devices are pre-set, Optional \$500 programming fee; Phone & on-line support	\$1999 per pair	Rechargeable, unlimited support via phone ?, not selling yet (pre-orders only)
General Hearing Instruments (GHI)	OC BTEs – 2 models	Doesn’t appear that you can buy directly from GHI website. Many instructional videos on website	\$719/ear at Sam’s Club and \$899/ear at Wal-mart	Sold on-line through Wal-mart and Sam’s Club, Spin station cleaning centrifuge is add-on item
iHear Medical	Max- OC BTE HD – mini Canal	Option A: Buy programming kit (\$129) Option B: Home hearing test (\$69) or send audiogram	\$349 per ear	Can purchase service upgrade for \$99, Offer pre-programming service for \$99
MDHearing	3 OC BTEs: Volt, Air, Pro 1 ITE: Fit	Audiogram can be emailed Live voice: 9-5 24 hour on-line chat capability	\$299 to \$699 per ear. Sold in pairs	Volt is Rechargeable

The Complex Patient

- Devise a Comprehensive Treatment Plan
- Share with family and physician(s)

Poor Speech Intelligibility Ability

- 10 dB or worse on QuickSIN

Family Support

Cognitive Ability

Physical Ability

Self-Confidence

Outlook, Attitude, Motivation

Rehab Tools

- Group Classes
- Auditory Training

Group Rehab

cLEAR: Nancy Tye Murray

The cLEAR Solution

Four Elements

Graphs
•
E-mails
•
Chat room
•
Audiologist

Talkers

- **Generic Talkers**
- **Select an FCP**

Training Games

- **Fun activities**
- **Outstanding compliance**
- **Proven results**

Training Goals

- **Common words**
- **Fine distinctions**
- **Cognitive skills**
- **Confidence**

cLEAR: Nancy Tye Murray



Outcome Measures

SSQ-6

1.	You are in a conversation with one person in a room where there are many other people talking. How well can you follow what the person you are talking to is saying?	
	Not at all	0 1 2 3 4 5 6 7 8 9 10
		Perfectly
2.	You are in a group and the conversation switches from one person to another. Can you easily follow the conversation without missing the start of what each new speaker is saying?	
	Not at all	0 1 2 3 4 5 6 7 8 9 10
		Perfectly
3.	Can you tell from the sound of their voice or footsteps which direction a person is moving, for example, from your left to your right or right to left?	
	Not at all	0 1 2 3 4 5 6 7 8 9 10
		Perfectly
4.	When walking outside, can you tell from the sound whether a bus or truck is coming towards you or going away?	
	Not at all	0 1 2 3 4 5 6 7 8 9 10
		Perfectly
5.	When you listen to music, does it sound clear and natural?	
	Not at all	0 1 2 3 4 5 6 7 8 9 10
		Perfectly
6.	Is your hearing effortless? Do you have to concentrate very much when listening to someone or something?	
	High concentration effort	0 1 2 3 4 5 6 7 8 9 10
		Effortless

ICF-4

ICF - 4		Never / Seldom	Sometimes	Most times
<u>Because of hearing difficulties</u> (check never, sometimes, most times):				
7.	Do you avoid routine community or social activities?	_____	_____	_____
		_____	_____	_____
8.	Do you avoid talking to family members or friends who are sitting in the same quiet room with you?	_____	_____	_____
		_____	_____	_____
9.	Do you feel anxious, frustrated, angry, sad or fatigued?	_____	_____	_____
		_____	_____	_____
10.	Do you move away from a background noise source, or move closer to a speaker to better hear or see them in conversation?	_____	_____	_____
		_____	_____	_____
	10a Do you do this more than most people in the same situation?	_____	_____	_____
		_____	_____	_____

Next Steps

- Next Week: Add a new wrinkle to your in-take process
- Next Month: Add a new outcome measure of product offering
- Next Quarter: Implement a new program for complex or routine cases

Questions

- brian.taylor.aud@gmail.com