Low-Gain Hearing Aids: A Clinical Approach to Managing Functional Hearing Difficulties

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Disclosures

Relevant Financial/Non-Financial Relationships

1. Employed by Ohio State University
2. Editor for the American Journal of Audiology
3. Co-Chair, American Academy of Audiology Guidelines Committee for the Management of Adult Hearing Loss

Outline

- Introduction: Why Low-Gain Hearing Aids?
- What does the research tell us?
- What are audiologists doing?
- Suggested Fitting Protocol
- Case Examples

Treatment Options for Adults with FHD

No Treatment	Negative consequences including • reduced quality of life, • menthal health issues (e.g., depression, emotional distress)
Improve the quality of the speech signal	Environmental management Technology (FM/DM remote microphones) **Low-gain hearing aids**
Auditory training	Lace AI Pro – Neurotone AI
Language and cognitive training	Work with an SLP

Low-Gain Hearing Aids in the Press

Healthy Hearing

FIND A CLINIC HEARING LOSS HELP HEARING AIDS HELP

Home / Report / Should you try low-gain hearing aids?

Should you try low-gain hearing aids?

While they only amplify sound a little, they can make a big impact

Contributed by Madeleine Burry

November 6, 2023

https://www.healthyhearing.com/report/53510-What-are-low-gain-hearing-aids

Local News

Low-gain hearing aids can be life-changing for people with auditory processing disorder

WXXI News | By Beth Adams

Published January 16, 2026 at 5:00 AM EST

https://www.wxxinews.org/local-news/2026-01-16/low-gain-hearing-aids-can-be-life-changing-for-people-with-auditory-processing-disorder

Rationale for Low-Gain Hearing Aids

"…every person with a nonremedial hearing loss complaining of a communication problem should be considered for hearing aid selection, regardless of the extent of the hearing loss."
(Winchester, 1967, pg.45)

Rational for Low-Gain Hearing Aids

1. **Provision of minimal gain (5-10 dB)**
   - For soft to conversational imputs in the mid- to high-frequencies
     - *(Kuk et al., 2008; Roup et al., 2018)*
   - To enhance soft consonants (e.g., /f/, /th/, /s/) – often masked by background noise

2. **Improvement in SNR through signal processing**
   - Adaptive directionality
   - Multiband noise reduction

Environment	Typical SNR
Classroom (typical, occupied)	0 to +5 dB
Busy office / open-plan	0 to +5 dB
Car at highway speed	0 to +5 dB

Environment	Typical SNR
Restaurant / café (busy)	−5 to 0 dB
Bar or party	−5 to −10 dB
Street traffic / crowd	−5 to −10 dB

Rationale for Low-Gain Hearing Aids

3. **Reduced listening effort and fatigue**
    - Less mental strain
    - Easier conversations
    - Reduced end-of-day exhaustion

4. **Provide support for suprathreshold deficits**
    - Improved speech perception-in-noise

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Research Evidence: For LGHAs in Adults with FHD and Tthresholds WNL

Prospective Trials

1. [Kuk et al. (2008) – in children with APD]
2. Roup et al. (2018)
3. Singh & Doherty (2020)
4. Mealings et al. (2023)

Retrospective Studies

1. Papesh et al. (2023)
2. Davidson et al. (2024)
3. Baxter & Roup (2026) *upcoming presentation at AAA in San Antonio*

Case Studies

1. Smart et al. (2007)
2. Roup et al. (2020)
3. Chung et al. (2025)
4. Davidson et al. (2026)

Evidence for Low-Gain HAs

Mild-Gain Hearing Aids as a Treatment for Adults with Self-Reported Hearing Difficulties

DOI: 10.3766/jaaa.16111

Christina M. Roup*
Emily Post*
Jessica Lewis*

Pilot Project

- AuD Student Capstone Project

Non-Randomized Clinical Trial

- **Purpose:** to investigate the benefit of LGHAs for adults with FHD
- 4-week trial

Hypothesis

- Adults with FHD fit with LGHAs would exhibit:

1. Reduced functional hearing difficulties
2. Improved speech-in-noise performance

Evidence for Low-Gain HAs: Roup et al. Trial

Participant Groups

- Control (n=20)
  - 19-27 years
- FHD (n=19)
  - 18-58 years

Inclusion Criteria

- Thresholds ≤25 dB HL 250-8000 Hz
- Control: HHIA ≤18
- FHD: HHIA ≥20

Auditory Processing Test Battery

- SCAN-3:A[1]
- 500-Hz MLD[2]
- Gaps-in-Noise[3]
- Dichotic Digits[4]
- R-SPIN[5]

(1) Keith (2009); (2) Wilson et al. (2003); (3) Musiek et al. (2005); (4) Strouse & Wilson (1999); (5) Bilger (1984)

Evidence for Low-Gain HAs: Roup et al. Trial

HA Fitting

Hearing Aid Features:

- WDRC RICs
- Open domes
- Adaptive directionality
- Multiband noise reduction

Gain Verification

- 5-10 dB insertion gain
- 1000-4000 Hz for soft/conversational levels

Average Insertion Gain

Table 1. Mean insertion Gain (and Standard Deviations [SD]) for 1000–4000 Hz for Right and Left Ears

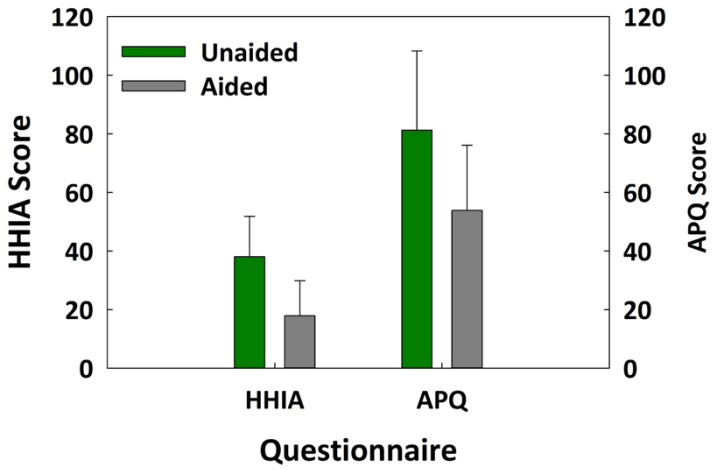
	Frequency in Hz			
	1000	2000	3000	4000
Mean (SD)				
Right ear	3.6 (1.4)	9.4 (2.6)	11.1 (2.8)	7.2 (3.1)
Left ear	3.6 (1.9)	10.2 (2.4)	11.5 (2.5)	7.6 (3.1)

Evidence for LGHAs: Roup et al. Trial Outcomes

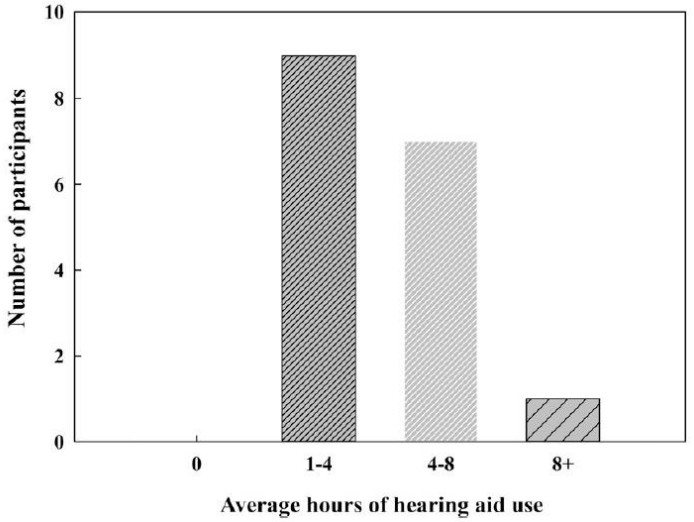
Trial Outcomes

- 17/19 completed the trial
- 2 withdrew
- HA's helped 'a lot' or 'a little':
  - 67% in quiet
  - 71% in noise
- 1 participant reported no help or made listening worse
  - Increased HHIA score

Benefit to Self-Perceived FHD



Hearing Aid Use



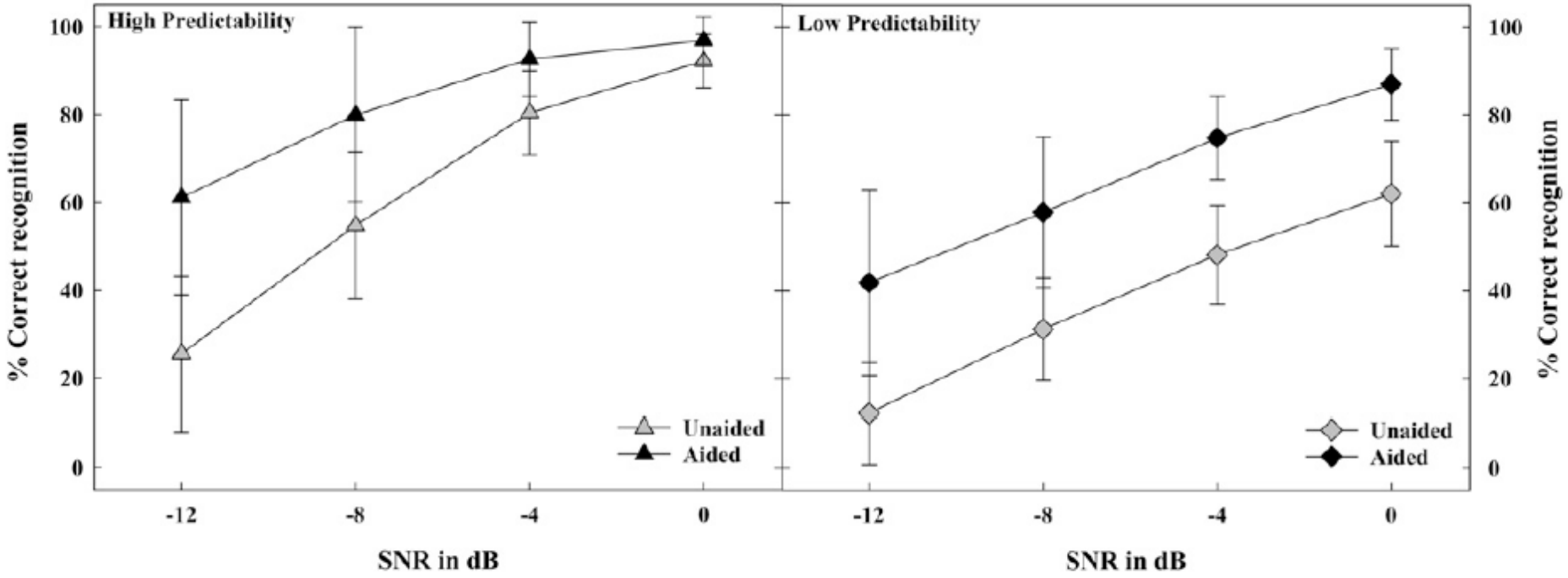


Figure 2. Mean R-SPIN recognition performance (in % correct) for the HD group as a function of hearing aid condition (unaided versus aided) and SNR in dB. Recognition performance for high-predictability sentences are presented in the left panel (triangle symbols) and for low-predictability sentences in the right panel (diamond symbols). Error bars represent one standard deviation.

Evidence for Low-Gain HAs: Roup et al. Trial Outcomes

FHD: Average SIN Benefit from Amplification

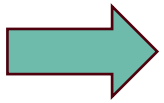
Evidence for LGHAs: Roup et al. Trial Outcomes

Post-Trial Decisions

Post-Trial Hearing Aid Purchase:

- 18% (3/17) participants purchased their HA's ☺

- Reasons for non-purchase:
  - Cost
  - Not enough perceived benefit



- Highest unaided HHIA scores
- 2 abnormal auditory processing test results

Evidence for Low-Gain HAs

Use of a Mild-Gain Hearing Aid by Middle-Age Normal-Hearing Adults Who Do and Do Not Self-Report Trouble Hearing in Background Noise

Jasleen Singh[a] and Karen A. Doherty[a]

Non-Randomized Clinical Trial

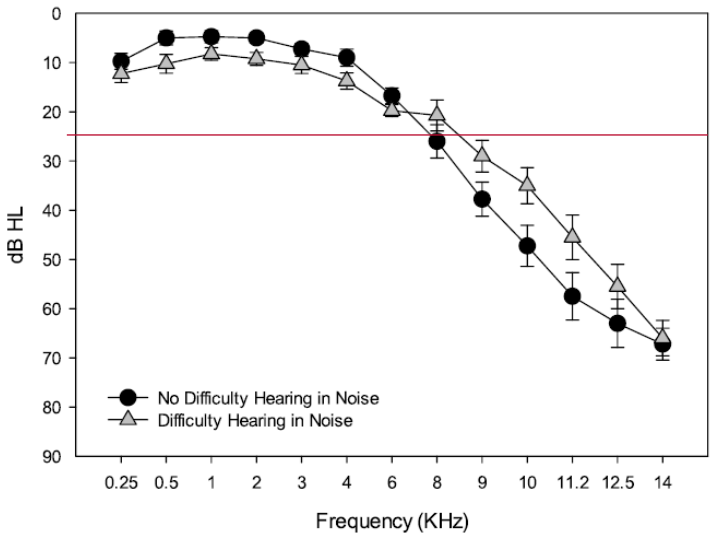
- **Purpose:** Assess the effect of LGHAs on hearing handicap, motivation, and attitudes toward hearing aids

Participants

- 2 groups of middle-aged adults (45-60 years)
  - 10 with FHD
  - 10 without FHD

Inclusion Criteria

Thresholds ≤25 dB HL
250-4000 Hz



Evidence for Low-Gain HAs: Singh & Doherty Trial

Measures

- Hearing Handicap Questionnaire
- URICA
  - (University of Rhode Island Change Assessment)
  - Assesses motivation
- HARQ
  - (Hearing Attitudes in Rehabilitation Questionnaire)
- 2-week HA Trial

Hearing Aids

- RICs
- Open domes
- Adaptive directionality
- Noise reduction

Hearing Aid Verification

- Programed using DSL v5-Adult and participant thresholds
- Adjusted to provide **5-dB** of gain at 2000-4000 Hz at 65 dB SPL

Evidence for Low-Gain HAs: Singh & Doherty Trial

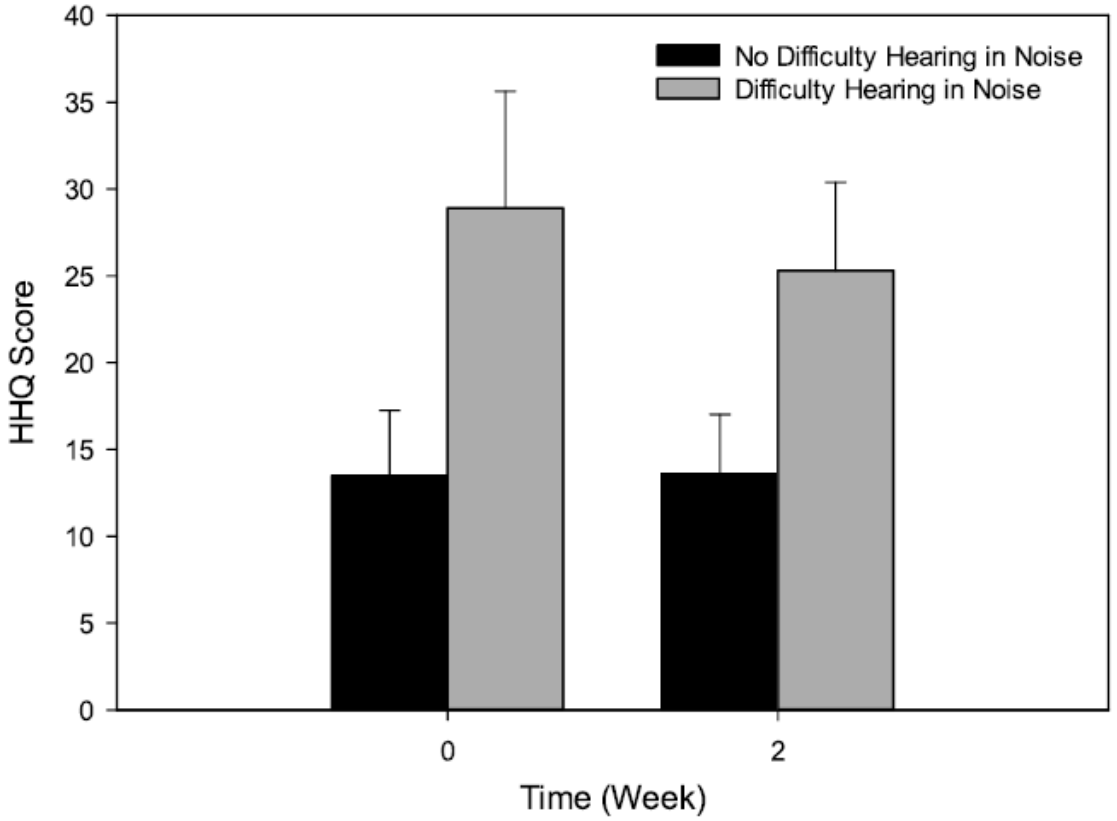
Average Hearing Aid Gain

Table 2. Mean gain values for 0.5–4 kHz.

	0.5 kHz	1.0 kHz	2.0 kHz	3.0 kHz	4.0 kHz
M (*SD*)	0.82 (0.69)	0.61 (0.92)	5.79 (1.73)	7.73 (2.34)	5.32 (1.45)

Note. Standard deviations are reported in parentheses.

Pre vs. Post Trial Hearing Handicap



Evidence for Low-Gain HAs: Singh & Doherty Trial

Post-Trial Outcomes

1. Low-gain amplification reduced hearing handicap for FHD participants = **BENEFIT!** ☺
2. FHD participants reported: (compared to control)
   - Greater personal distress due to hearing problems
   - Greater motivation to address hearing problems

   - However, only 20% (2/10) considered purchasing a hearing aid post-trial ☹

Evidence for Low-Gain HAs

Hearing Aids Reduce Self-Perceived Difficulties in Noise for Listeners With Normal Audiograms

Kiri Mealings,[1,2,6] Joaquin T. Valderrama,[1–4,6] Jorge Mejia,[2,5] Ingrid Yeend,[1,2] Elizabeth F. Beach,[2] and Brent Edwards[1,2]

Double-Blind Case-Control Clinical Trial

- **Purpose:** Assess LGHA "benefits for adults with normal audiogram but hearing-in-noise problems"

Participants

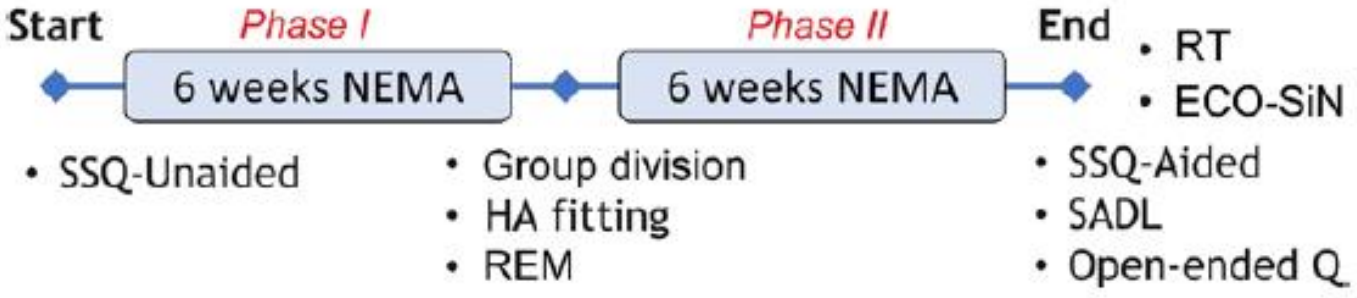
- 27 adults randomly assigned to:
  - Experimental group
    - (n=13, 31-68 years)
    - Gain + directionality
  - Control group
    - (n=9, 19-63 years)
    - No gain or directionality (i.e., transparent)

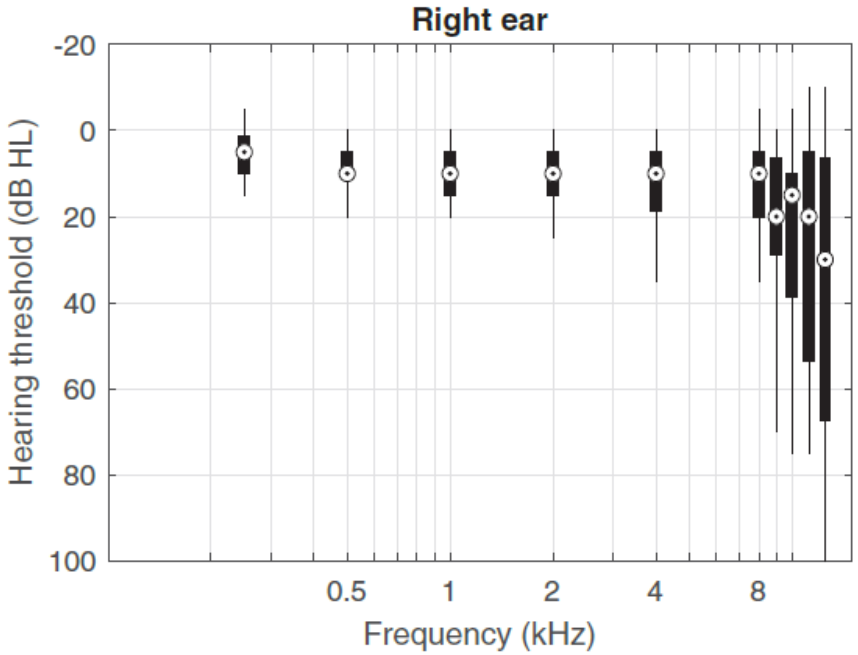
Inclusion Criteria

- 18-70 years
- Proficient in English
- Report of speech-in-noise problems
- Pure-tones WNL
  - PTA4 ≤25 dB HL

Evidence for Low-Gain HAs: Mealings et al. NAL Trial

Study Design





*EMA = Ecological Momentary Assessment

Evidence for Low-Gain HAs: Mealings et al. NAL Trial

Hearing Aid Fitting

- RICs
- Open domes
- Experimental Group:
  - RIEG of 6 dB
  - Directionality
  - Noise reduction
- Control Group: no gain or features

Average REIG

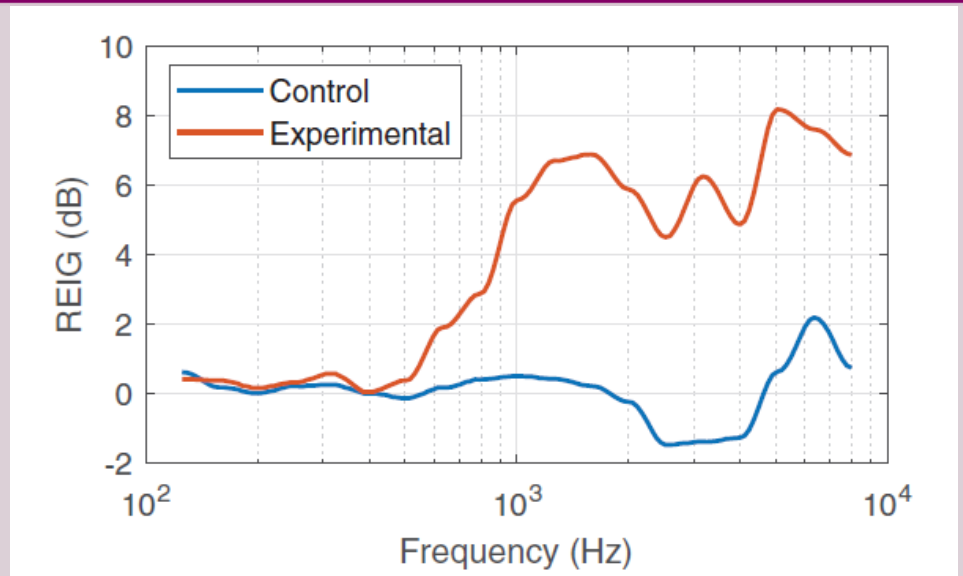


Fig. 3. Averaged REIG across participants for the control and experimental groups. REIG, real ear insertion gain.

Evidence for Low-Gain HAs: Mealings et al. NAL Trial

Post-Trial Outcomes

1. Low-gain amplification reduced self-report of speech-in-noise problems for the experimental group (91%) = **BENEFIT!** ☺
2. No group differences on speech-in-noise measure = NO BENEFIT ☹
3. Post-Trial Question: *"Would you purchase a pair of hearing aids considering the cost is AUD 5000?"*

- 0 participants would purchase HA's for $5,000 ☹

Summary: Low-Gain Hearing Aids Trials for FHD

Prospective trials

Other trials are currently being conducted

3 published prospective trials to date

Varied in length (2-, 4, - and 6-weeks)

Hearing Aid Fitting Strategy

- Varied in gain: 5-10 vs. 5 vs. 6 dB
- Other features were consistent

Post-Trial Outcomes

- LGHAs reduced self-perceived hearing difficulty
- Only Roup et al. reported:
  - Better aided SIN performance
  - 18% purchase of hearing aids post-trial
- Cost remains a barrier to uptake

FHD: Low-Gain Hearing Aid Use in Bilingual Adults

THE BENEFIT OF NOISE REDUCTION TECHNOLOGY AND MILD-GAIN AMPLIFICATION IN BILINGUAL LISTENERS WITH NORMAL HEARING SENSITIVITY

LUCAS KADRI-RODRÍGUEZ

Bilingual adults had poorer SIN performance compared to monolinguals

Use of low-gain hearing aids resulted in significant improvement in SIN for the bilinguals

Outline

- ✓ Introduction: Why Low-Gain Hearing Aids?
- ✓ What does the research tell us?
- What are audiologists doing?
- Suggested Fitting Protocol
- Case Examples

Ok . . . So there is some emerging data from clinical trials to support the use of low-gain hearing aids.

But are clinicians really fitting them? Are patients really wearing them?

FHD: Prevalence of Hear Aid Use

Hearing Aid Usage and Reported Hearing Difficulty in Americans With Subclinical Hearing Loss

Jacqueline M. Dragon, Maeher R. Grewal, Alexandria L. Irace, and Justin S. Golub

Department of Otolaryngology–Head and Neck Surgery, Columbia University Vagelos College of Physicians and Surgeons, NewYork-Presbyterian/Columbia University Irving Medical Center, New York, New York

Analysis of NHANES survey data

- Individuals ≥12 years old
- Subclinical hearing loss = PTA4 ≤ 25 dB HL
- Reported:
  - Subjective hearing difficulty
  - Hearing aid use

806,705+

Prevalence of HA use among Americans with SCHL = 0.35%

FHD: Low-Gain Hearing Aid Use in the Military & Veteran Populations

Functional Hearing Difficulties in Veterans: Retrospective Chart Review of Auditory Processing Assessments in the VA Health Care System

Melissa A. Papesh,[a,b] Lora Fowler,[c] Stephanie R. Pesa,[d] and Melissa T. Frederick[a]

Retrospective Chart Review of Veterans

- Random sample of 100 receiving an auditory processing evaluation
- **35 were fit with low-gain hearing aids** → 69% continued hearing aid use for at least 2-years

Examining the Use and Benefits of Low-/Mild-Gain Hearing Aids in Service Members with Normal Hearing Thresholds and Self-Reported Hearing Difficulties

Alyssa J. Davidson [1,*], Gregory M. Ellis [1,2], Kimberly Jenkins [1], Melissa Kokx-Ryan [3] and Douglas S. Brungart [1]

Retrospective Chart Review of Service Members

- 186 self-identified hearing aid users
- **Group of normal hearing + FHD** reported HA usage and benefit comparable to those with SNHL

Fitting LGHAs: What are Audiologists Doing?

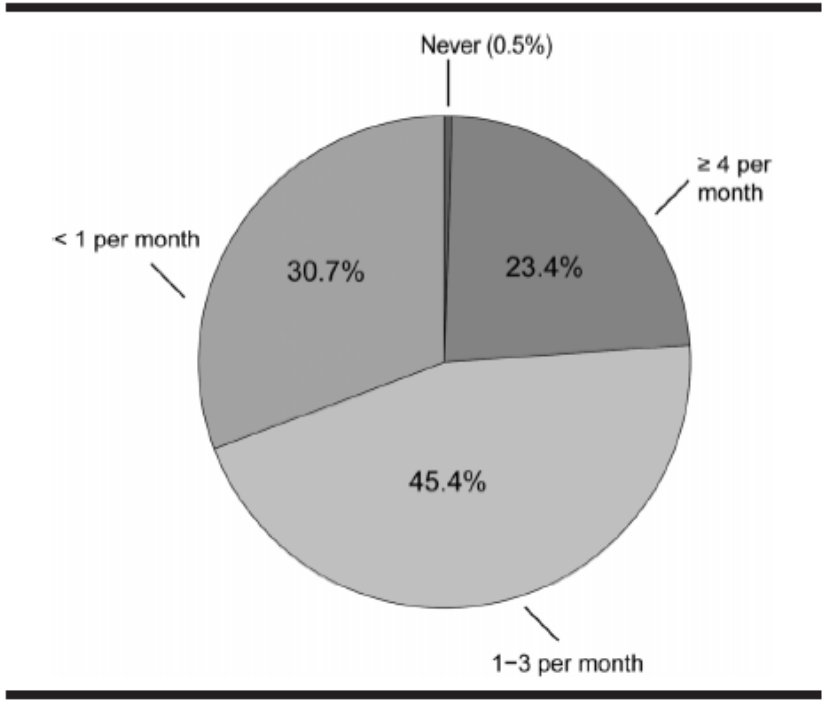
Survey Results:

- 209 responses
- Audiologists reported:
  - Seeing at least 1 FHD patient per month
  - Rehabilitation practices
    - #1 = Counseling
    - #2 = Low-gain hearing aids

A Questionnaire Survey of Current Rehabilitation Practices for Adults With Normal Hearing Sensitivity Who Experience Auditory Difficulties

Tess K. Koerner,[a] Melissa A. Papesh,[a,b] and Frederick J. Gallun[a,b]

Figure 1. Pie chart displaying the percentage of participant responses to Question 2: "How often do you encounter patients who have communication difficulties despite having normal or near normal pure-tone hearing thresholds?" (n = 205).



Koerner et al. (2020)

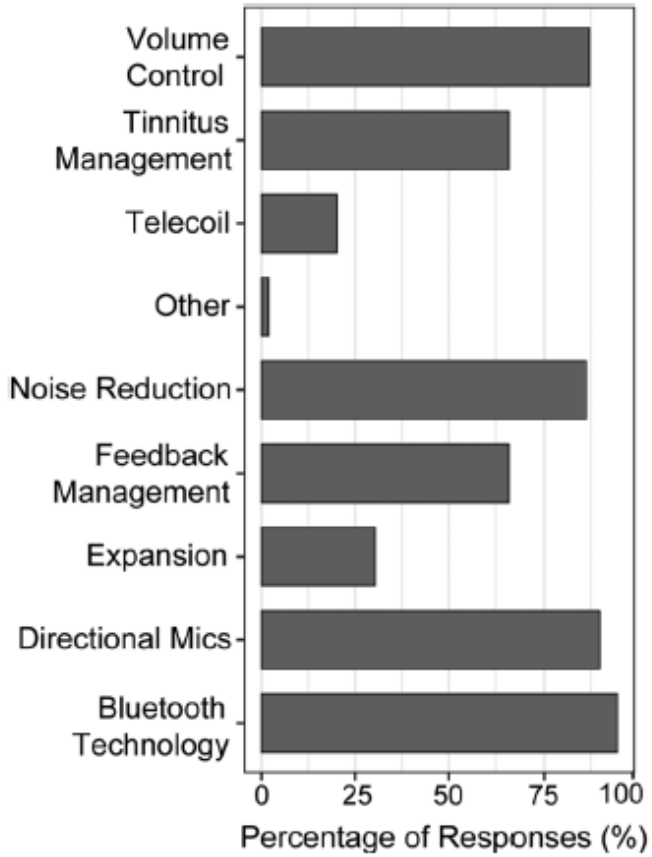
Fitting LGHAs: What are Audiologists Doing?

Hearing Aid Features

Top ProcessingFeatures?

- Tinnitus management
- **Noise reduction**
- **Directional mics**
- Bluetooth

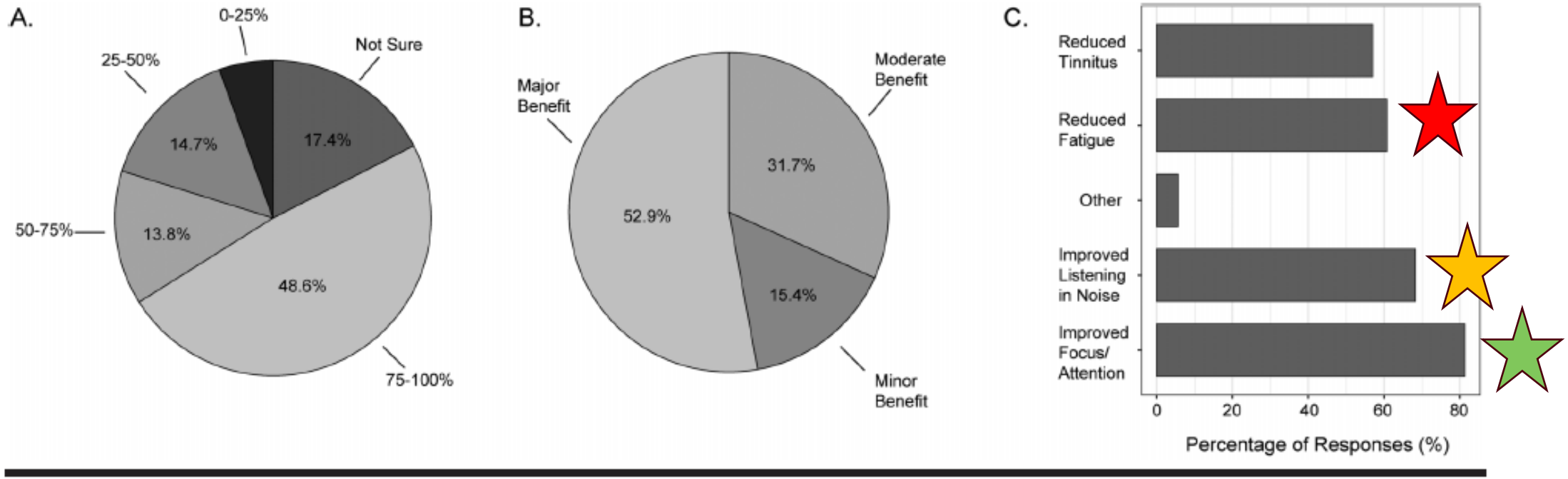
Figure 3. Percentage of participant responses to Question 19: "What hearing aid processing features have you activated/provided for these adults (select all that apply)?" (*n* = 109).



Koerner et al. (2020)

Fitting LGHAs:
What are Audiologists Doing?

Figure 4. Percentage of participant responses to (A) Question 21: "How many of these adults keep the hearing aids?" (*n* = 109), (B) Question 22: "Do you feel that these adults receive benefit from the hearing aids?" (*n* = 104), and (C) Question 23: "How do these adults with normal hearing thresholds say that they benefit from the hearing aids (select all that apply)?" (*n* = 107).



Koerner et al. (2020)

Fitting LGHAs: What are Audiologists Doing?

Audiologist's patient responses to LGHAs

Figure 5. Selection of quotations from participants that depict both positive and negative outcomes in reg fitting hearing aids on normal-hearing adults.

Positive Hearing Aid Outcomes	Negative Hearing Aid Outcomes
"Family reports significant improvement in personality and communication with the patient."	"Patients report that they do not notice any benefit in the situations where they have difficulty. They end up not wearing their hearing aids."
"…I have never, in almost 20 years, have had anyone return their devices, in fact they return stating that their lives are much improved…"	"…most don't feel like [the] cost of aids is worth it."
"I primarily fit Active Duty Servicemembers with [Auditory Processing Disorders]. They overwhelmingly have been happy with the results and report improvement with their overall quality of life."	"They don't return the [hearing aids] but they also don't tend to wear them either."
"…I get fabulous feedback that they love the hearing aids. I don't remember when someone returned the aids because "they didn't work for me…"	"The devices make listening better but not perfect all the time."
"Typically, patients have been happy with fittings because they finally have something that will help them instead of being told they just need to 'pay better attention'."	

Koerner et al. (2020)

Survey of Amplification Practices for Adults with Normal Pure-Tone Thresholds

Survey designed to address questions related to audiologists:

- Clinical practices,
- Decision-making processes,
- Experiences.

Alyssa Davidson, AuD/PhD

Sherri Smith, AuD/PhD

Gregory Ellis, PhD

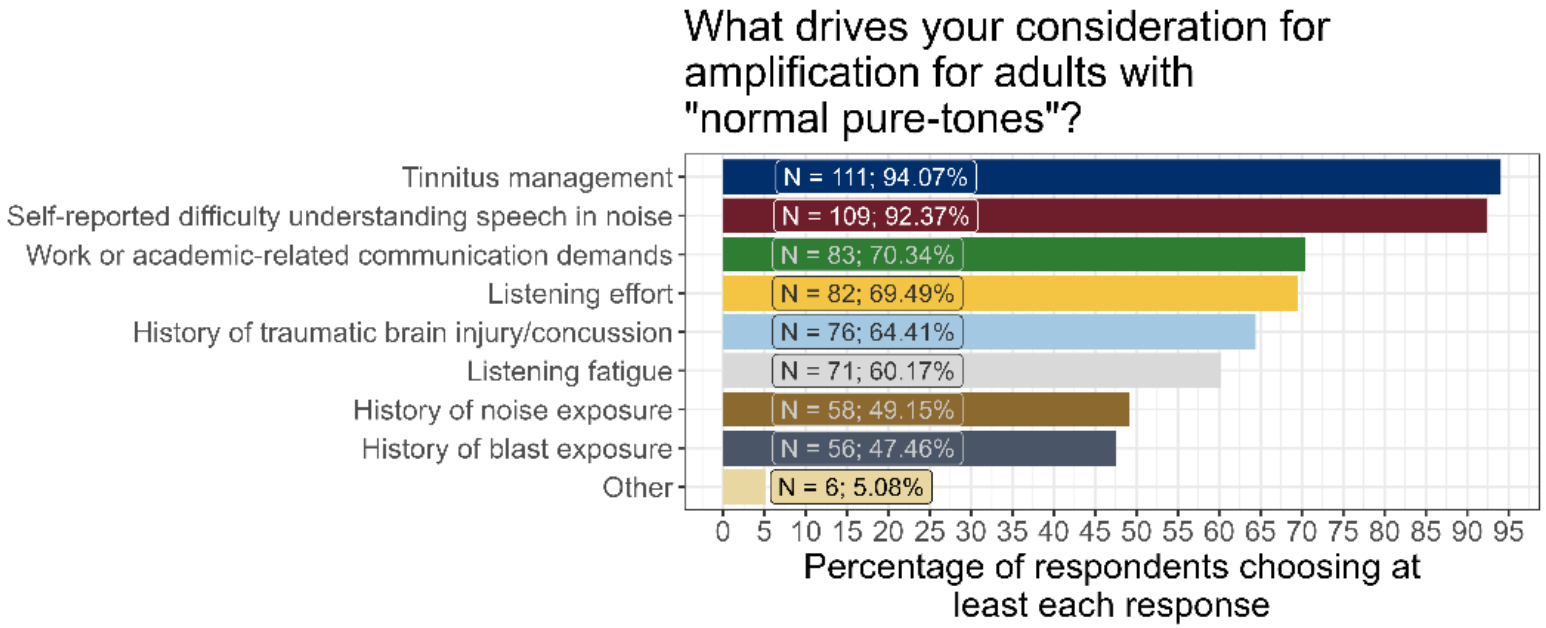
Duke University, Department of Head and Neck Surgery & Communication Sciences

Walter Reed National Military Medical Center

Survey Results

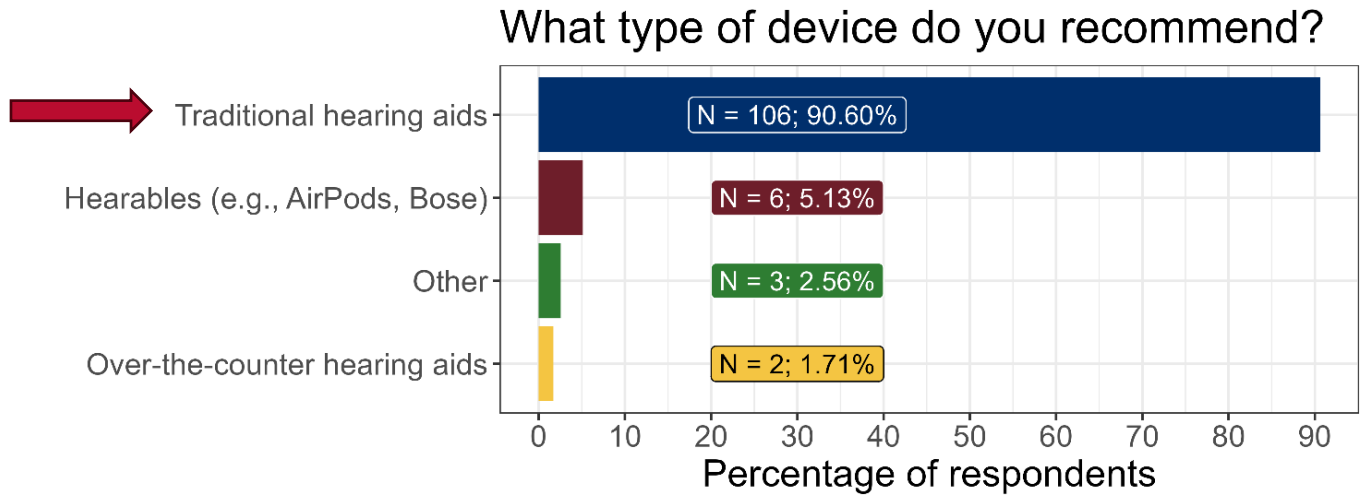
Primary Patient Complaints:

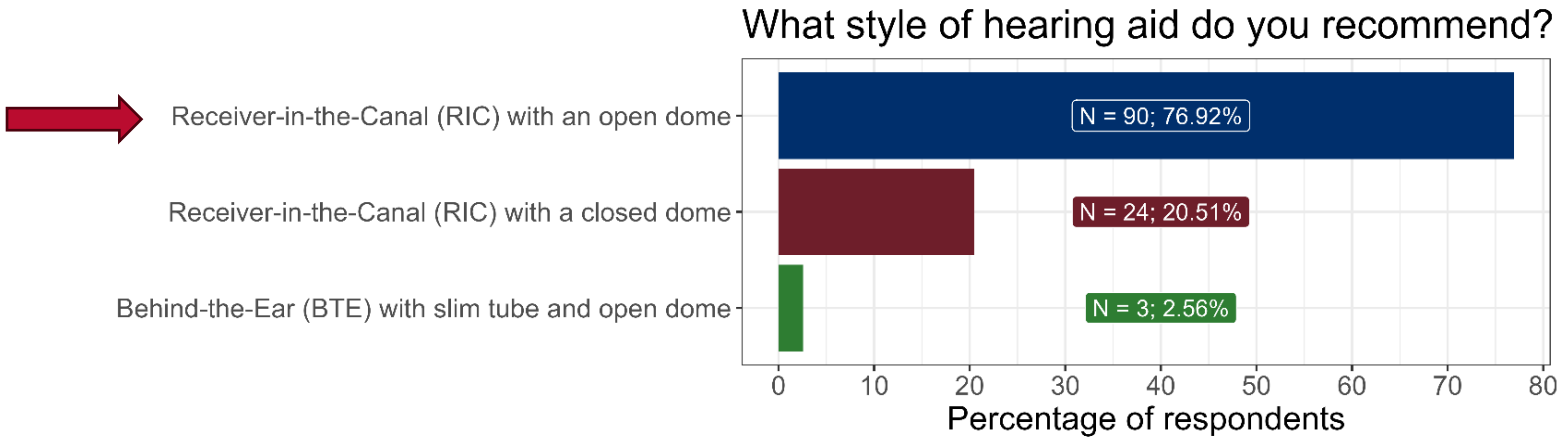
- Hearing and tinnitus difficulty
  - Hearing in noise, trouble understanding
  - Increased fatigue/effort
  - Following/hearing conversations in noise
- History of blast/noisy work environment



Survey Results

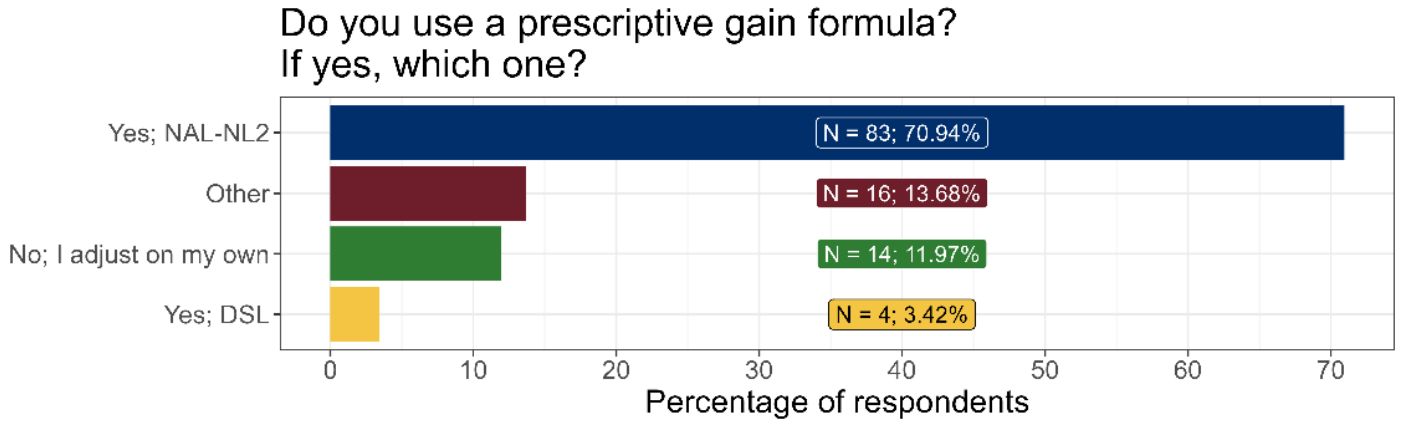
Device Recommendations

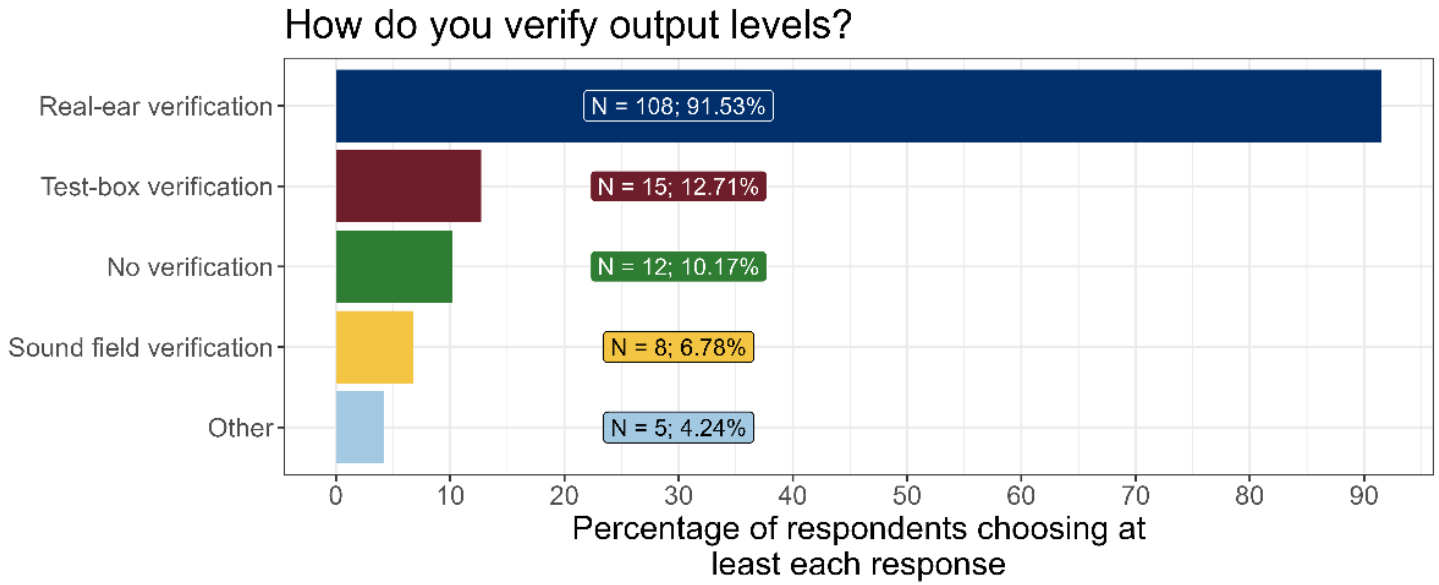




Survey Results

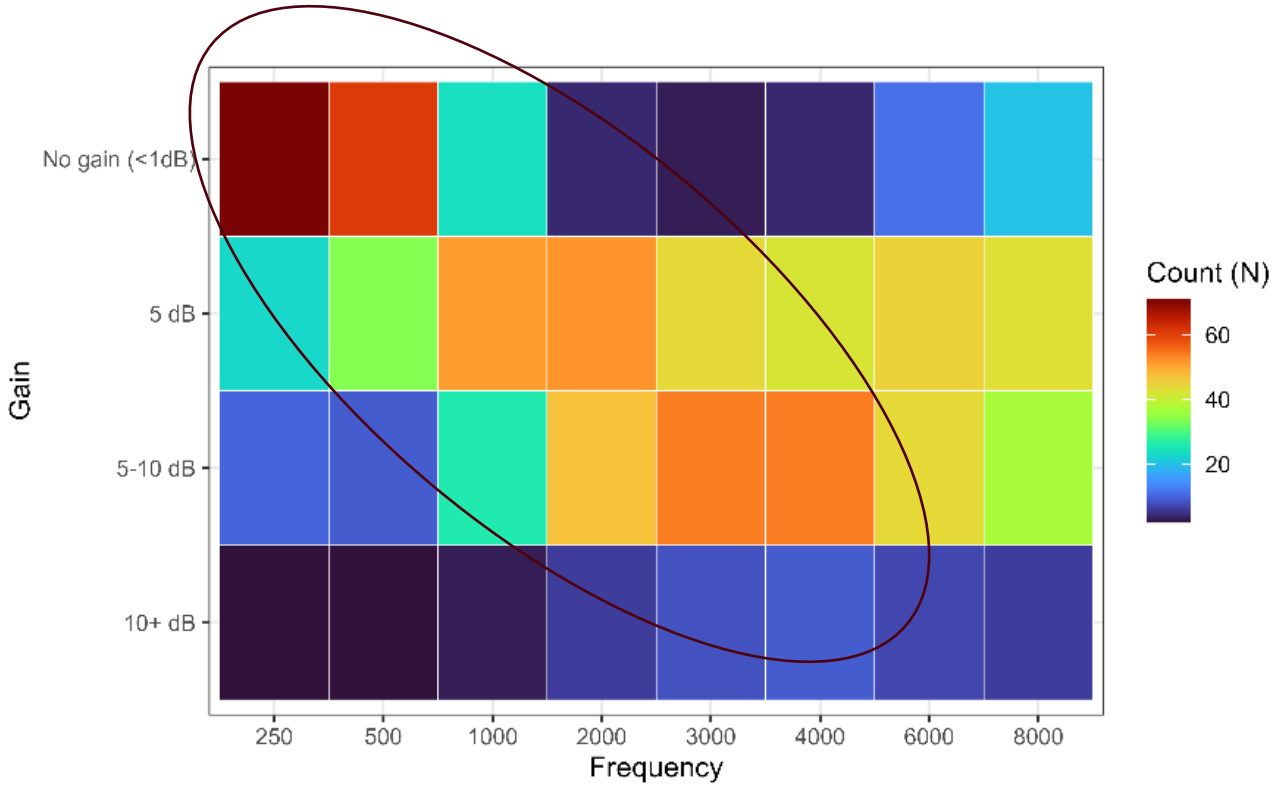
Fitting Procedures





Survey Results: Fitting Procedures

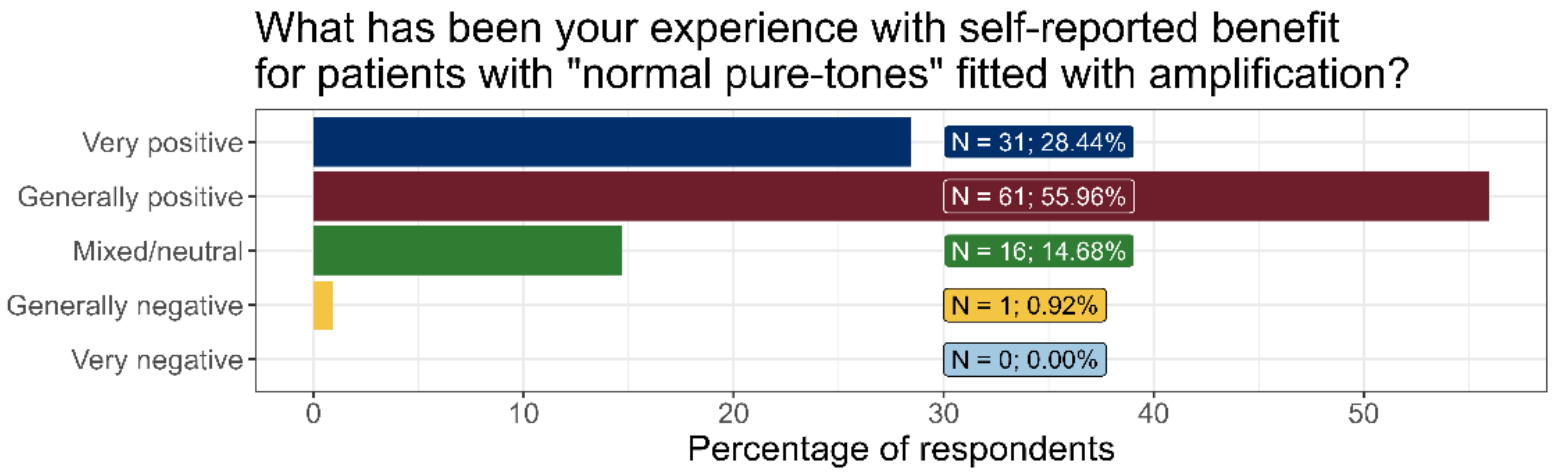
"How much gain do you typically fit for those with "normal pure-tones"?"



Majority fit:

- No gain at 250-500 Hz
- 5 dB at 1000-2000Hz
- 5-10 dB at 3000-4000Hz
- Between 5 and 5-10dB for 6000 and 8000 Hz

Survey Results: Audiologist Perspectives on Patient Benefit



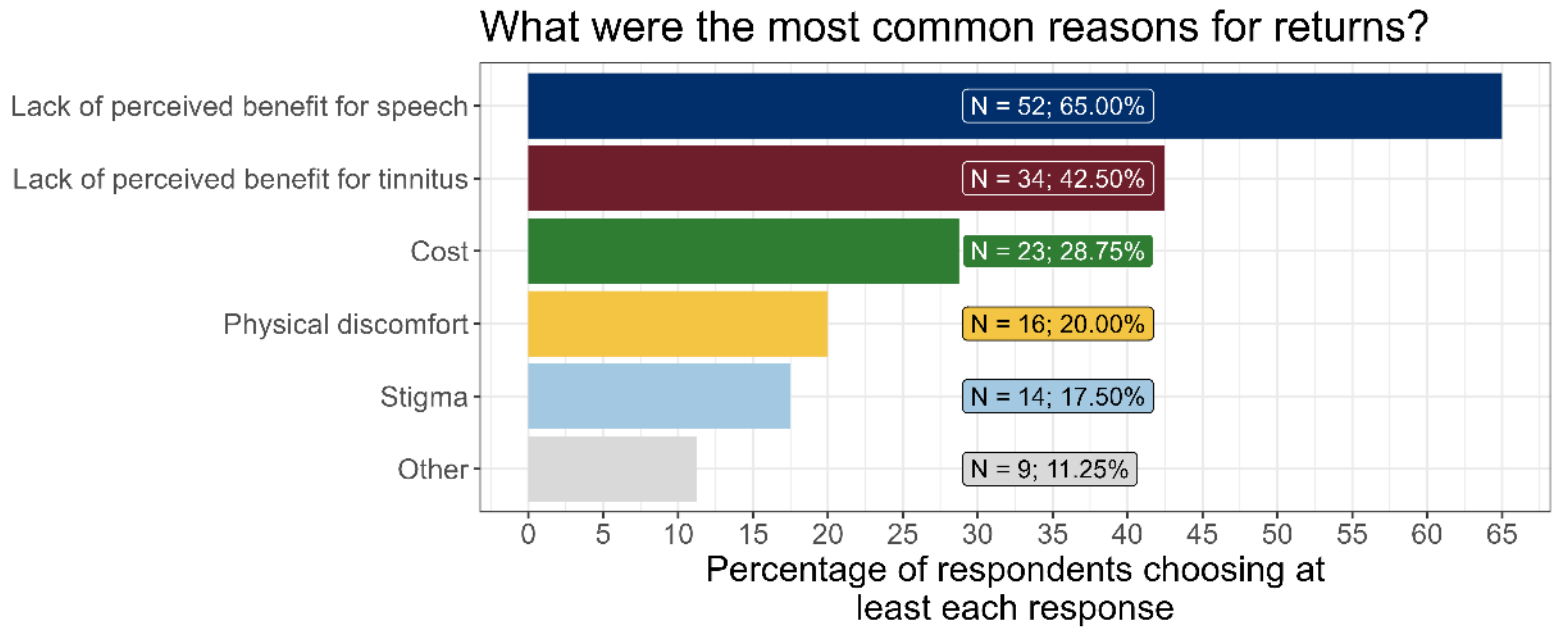
Common topics in free response:

- Patients listening relief
- Helps with tinnitus
- Hearing/listening benefit
- Helps work
- Motivated individuals gain benefit

Survey Results: Audiologist Perspectives on Lack of Patient Benefit

Common Reasons:

- Don’t notice benefit
- Too loud
- Still background noise
- Dome fit/size
- Sounds of voices



Return rate (average 13.5%)

Outline

- ✓ Introduction: Why Low-Gain Hearing Aids?
- ✓ What does the research tell us?
- ✓ What are audiologists doing?
- Suggested Fitting Protocol
- Case Examples

LGHA Fitting Protocol

1. Quantification of Patient Hearing Complaints
2. Hearing Aid Recommendation/Selection
3. Hearing Aid Fitting & Verification
4. Hearing Aid Validation

LGHA Fitting Protocol
Quantification of Patient's Hearing Difficulties

Standardized Questionnaires / PROMS

- Hearing Handicap Inventory
- Abbreviated Profile of Hearing Aid Benefit
- Client Oriented Scale of Improvement
- Adult Auditory Performance Scale

Consider adding:

- Vanderbilt Fatigue Scale

FREE DOWNLOADS

	Item	Yes (4 pts)	Sometimes (2 pts)	No (0 pts)
E	Does a hearing problem cause you to feel embarrassed when meeting new people?	_____	_____	_____
E	Does a hearing problem cause you to feel frustrated when talking to members of your family?	_____	_____	_____
S	Do you have difficulty hearing when someone speaks in a whisper?	_____	_____	_____
E	Do you feel handicapped by a hearing problem?	_____	_____	_____
S	Does a hearing problem cause you difficulty when visiting friends, relatives, or neighbors?	_____	_____	_____
S	Does a hearing problem cause you to attend religious services less often than you would like?	_____	_____	_____
E	Does a hearing problem cause you to have arguments with family members?	_____	_____	_____
S	Does a hearing problem cause you difficulty when listening to TV or radio?	_____	_____	_____
E	Do you feel that any difficulty with your hearing limits or hampers your personal or social life?	_____	_____	_____
S	Does a hearing problem cause you difficulty when in a restaurant with relatives or friends?	_____	_____	_____
	TOTAL SCORE = _____ (sum of the points assigned to each of the items)			

HHI Screening Version

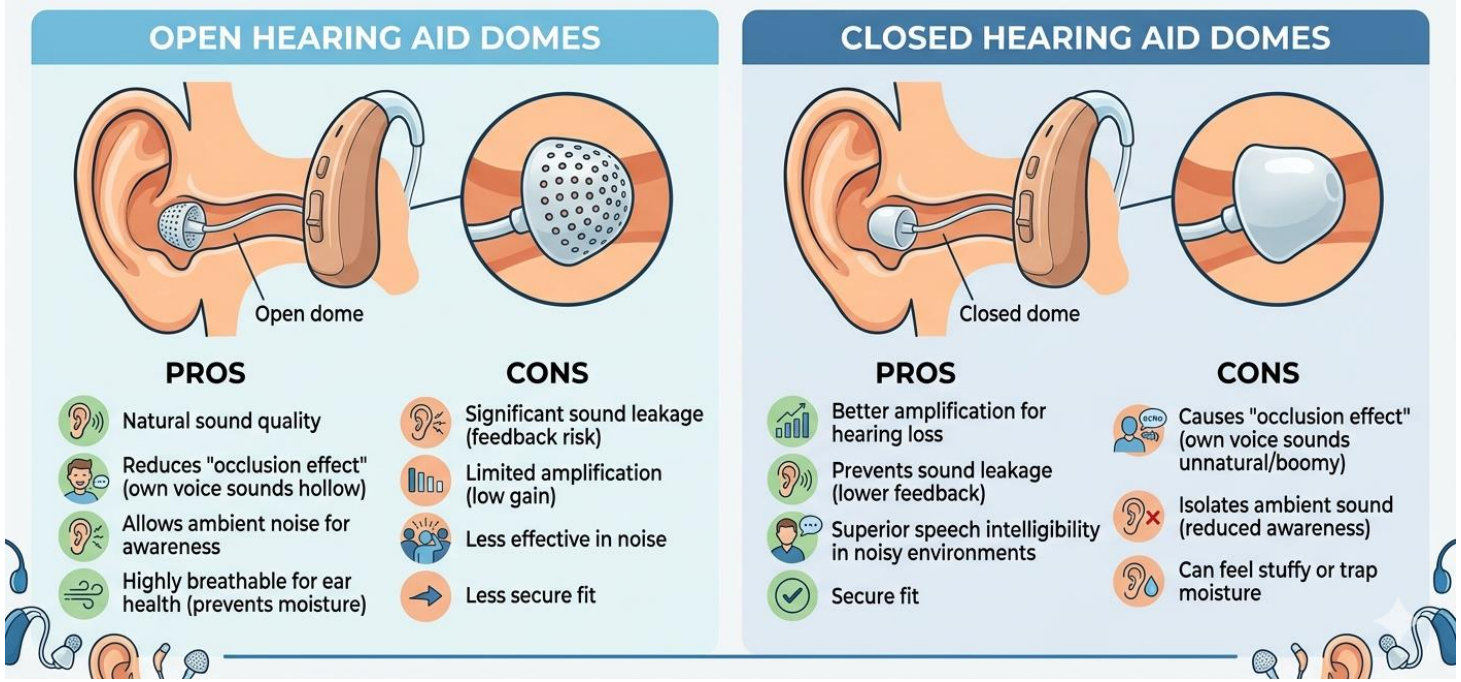
LGHA Fitting Protocol
Hearing Aid Selection

Receiver-in-the-Canal (RIC)

- Open vs. closed domes?

Maximize SNR improvement

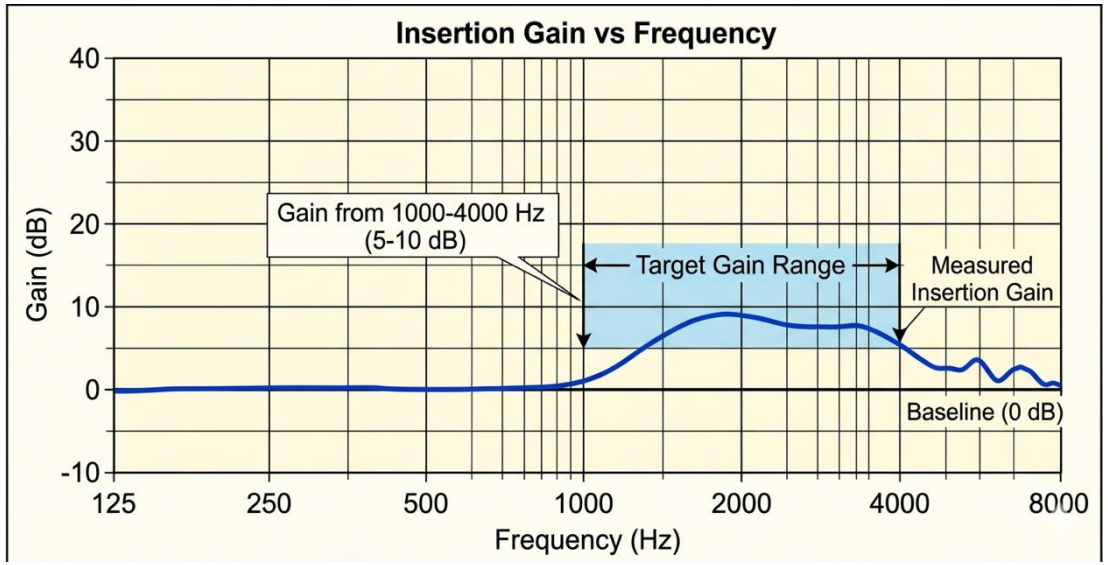
- Directionality
- Noise reduction



LGHA Fitting Protocol
Verification of Hearing Aid Gain

Verification of gain using real-ear measures:

- 5-10 dB of gain for soft and conversational speech (1000-4000 Hz)
- Minimal gain for high input sounds
- MPO not to exceed patient's LDL



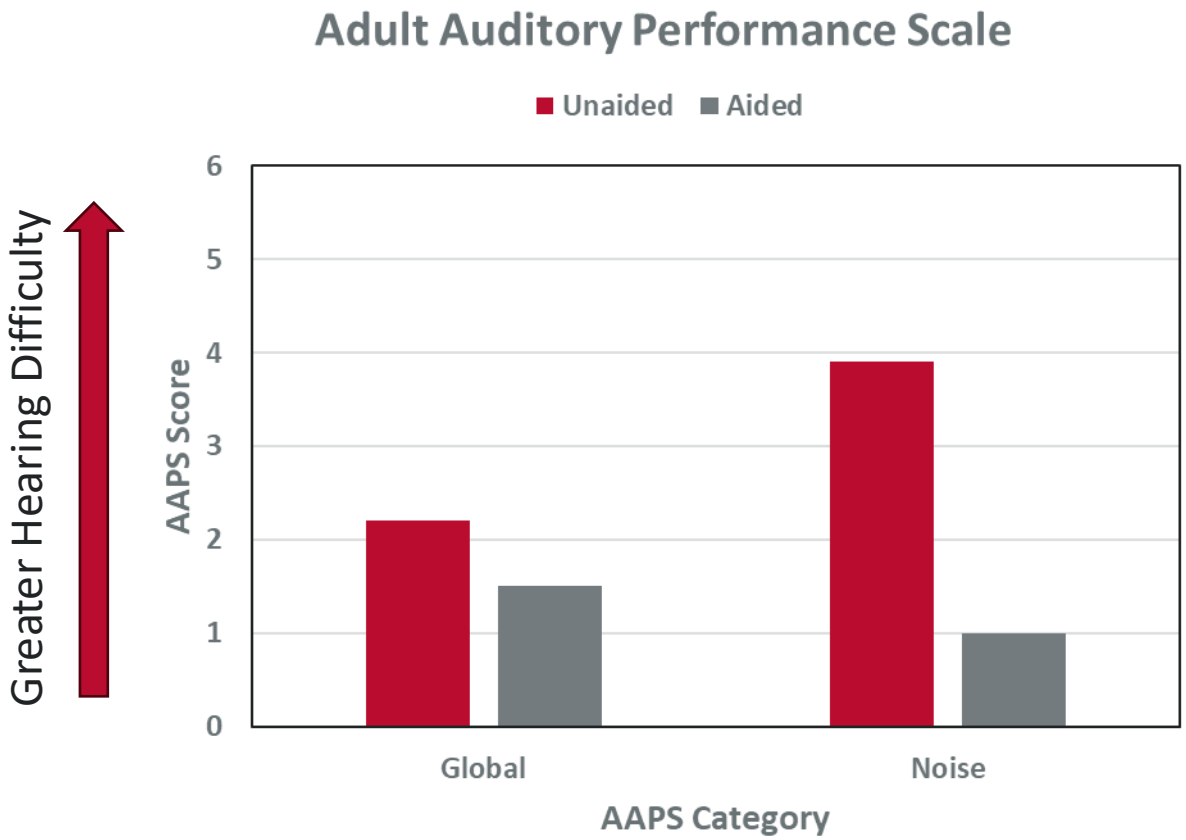
LGHA Fitting Protocol

Validation of Hearing Aid Benefit

Standardized Questionnaires / PROMS

- Comparison of unaided to aided responses

- Hearing Handicap Inventory
- Abbreviated Profile of Hearing Aid Benefit
- Client Oriented Scale of Improvement
- **Adult Auditory Performance Scale**



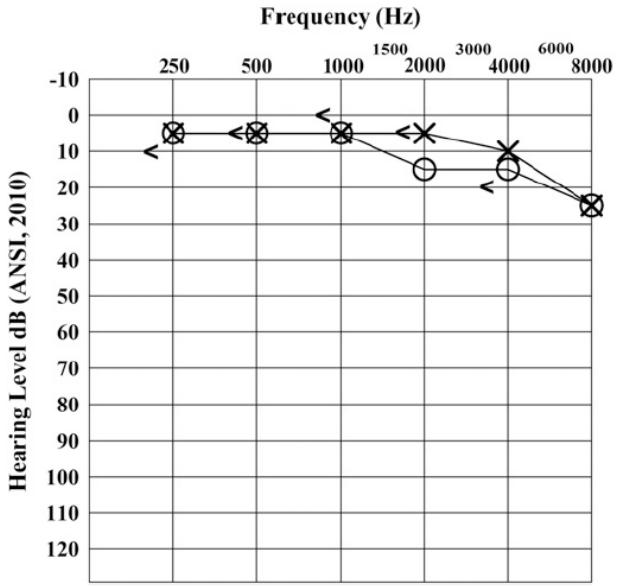
Outline

- ✓ Introduction: Why Low-Gain Hearing Aids?
- ✓ What does the research tell us?
- ✓ What are audiologists doing?
- ✓ Suggested Fitting Protocol
- Case Examples

Case 1: ‘SM’ FHD due to TBI

Let me tell you a little more about her treatment outcomes . . .

Audiogram



Word Recognition in Quiet at 50 dB HL

Right Ear	Left Ear
92%	100%

Subjective Hearing Complaints

Difficulty hearing in a restaurant

Difficulty hearing in groups

Inability to attend church & family events

Considerable emotional distress

HHIA Score = 96/100

Roup, Ross, & Whitelaw (2020).

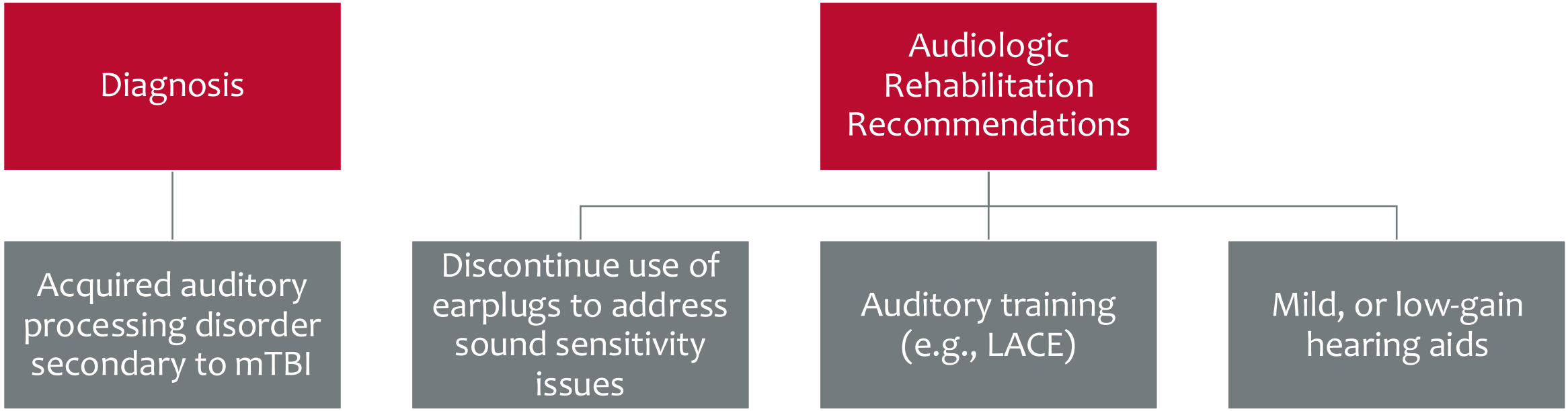
Case 1: Suprathreshold Auditory Processing Assessment

Speech-in-Noise	Temporal Processing	Binaural Competing Speech	SCAN-3:A

• QuickSIN = **6.5 dB SNR Loss**
• R-SPIN @ 0 dB SNR
  • HP = 100%
  • **LP = 64%**
	• 500-Hz MLD = 12 dB
	• GIN
	  • RE = 60%, 6 msec
	  • **LE = 50%, 8 msec**
		• 1-2 pair dichotic digits ~100%
		• 3-pair dichotic digits (FR / DR)
		  • RE = 83% / 100%
		  • **LE = 46% / 85%**
			• Normal for:
			  • Filtered words
			  • Speech-in-noise
			  • Competing S
			  • Time-compressed S
			• **Abnormal for:**
			  • **Competing words**

Roup, Ross, & Whitelaw (2020).

Case 1: ‘SM’ FHD due to TBI
Diagnosis and Treatment Recommendations



Roup, Ross, & Whitelaw (2020).

Case 1: Low-Gain Hearing Aid Fitting

Bilateral receiver-in-the-canal hearing aids

Open domes

Adaptive directional microphones

Multiband noise reduction enabled

Insertion gain verified with REM

- **5-10 dB of gain from 1000-4000 Hz**

Roup, Ross, & Whitelaw (2020).

Case 1: Hearing Aid Follow-Up

Week 1 Follow-Up

4-8 hours of hearing-aid use

Listening in quiet was worse

Listening in noise was better – *'following conversations was easier'*

Week 4 Follow-up

12-14 hours of hearing-aid use

Listening in quiet: hearing aids helped a lot

Listening in noise: understanding was good

Further reported:

- Attended multiple group meetings
- Soft and louds sounds were now tolerable
- No longer avoided noisy environments
- High satisfaction with hearing aids – *'hearing aids allowed her to participate in activities she previously enjoyed'*

Roup, Ross, & Whitelaw (2020).

Case 1: Patient-Reported Outcome Measures

Change in hearing handicap (HHIA)

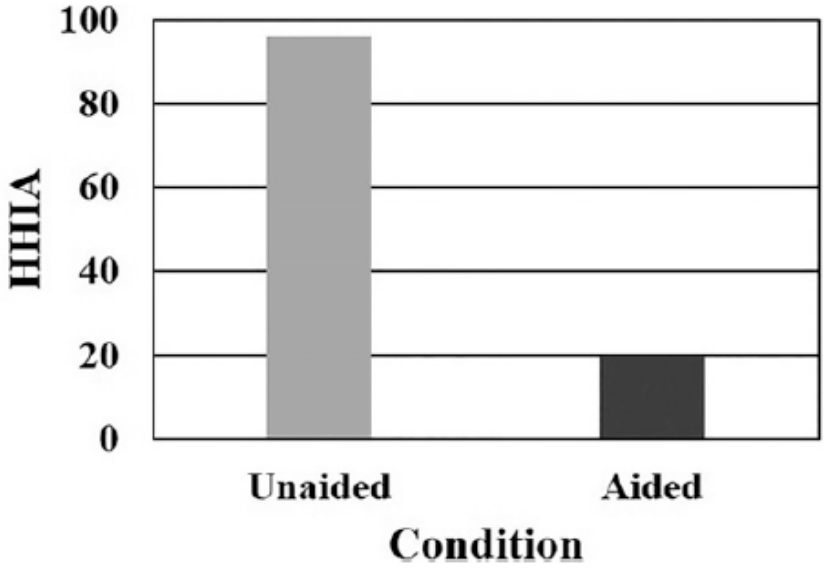


Figure 2. Scores for the Hearing Handicap Inventory for Adults are presented as a function of hearing aid condition: unaided (light gray bars) and aided one-month post–hearing aid fitting (dark gray bars).

Roup, Ross, & Whitelaw (2020).

Case 1:
Unaided vs. Aided Speech-in-Noise

Significant improvement in low-predictability R-SPIN performance

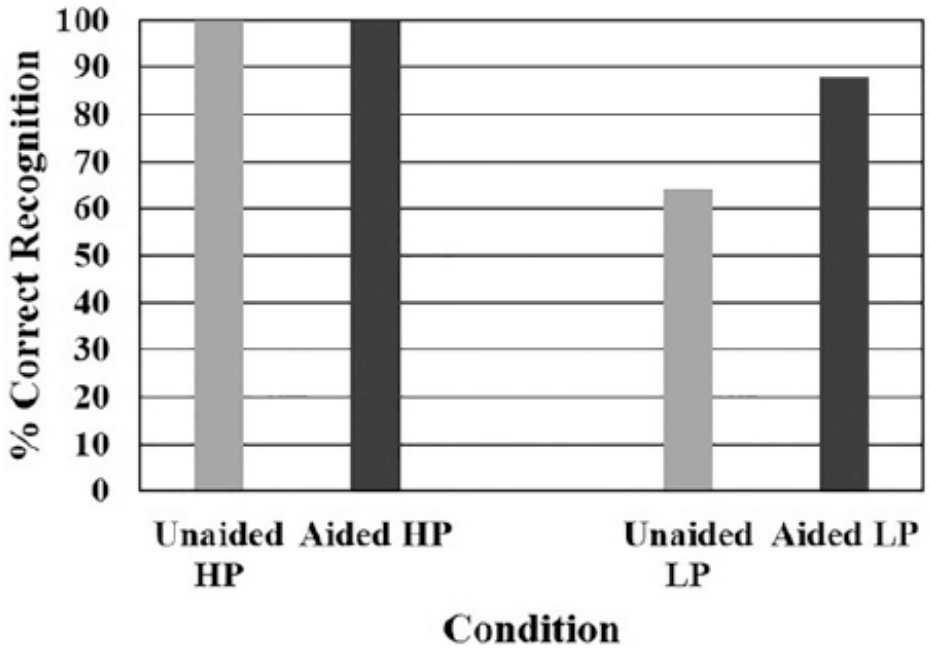


Figure 3. R-SPIN recognition performance (in % correct) for the patient as a function of hearing aid condition: unaided (light gray bars) and aided one-month post–hearing aid fitting (dark gray bars) are presented for high-predictability and low-predictability sentences at a 0-dB SNR.

Roup, Ross, & Whitelaw (2020).

Case Example 2: YAF with idiopathic FHD (34-year-old woman)

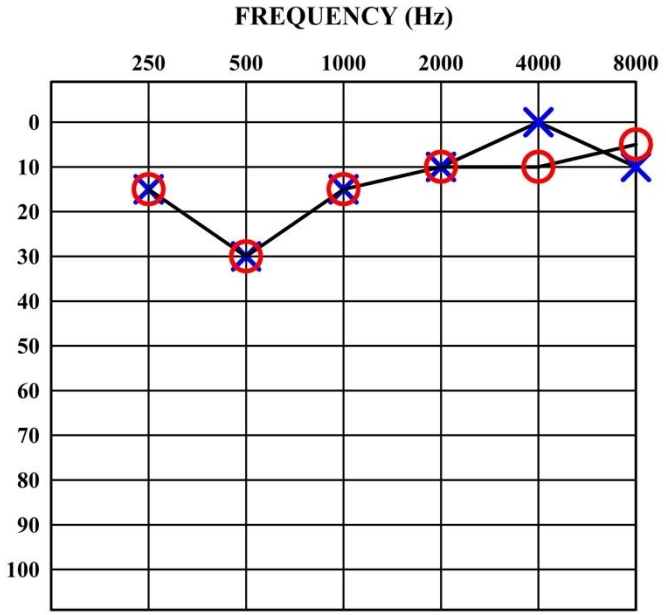
Case History

- Trouble hearing in background noise
- Present since her early 20's
- Situations of difficulty: teaching and parties
- HHIA score = 34/100

Evaluation

- Otoscopy unremarkable
- Tympanometry WNL
- Acoustic reflexes absent
- AC = BC (no air-bone gap)

Audiogram



Roup, Ross, & Whitelaw (2020).

Case Example 2: YAFAssessment Summary

Self-Perception

Mild hearing handicap re: HHIA

Abnormally high self-perceived listening difficulties in noise re: AAPS

Speech-in-Noise

Borderline performance on the SCAN auditory-figure ground (SIN)

Temporal Processing

Abnormally poor GIN performance

Binaural Processing

Abnormally low MLD S_0N_0 threshold

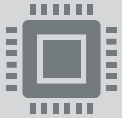
Case 2: Low-Gain Hearing Aid Fitting

Bilateral receiver-in-the-canal, WDRC hearing aids with open domes

Adaptive multiband directionality

Multiband noise reduction

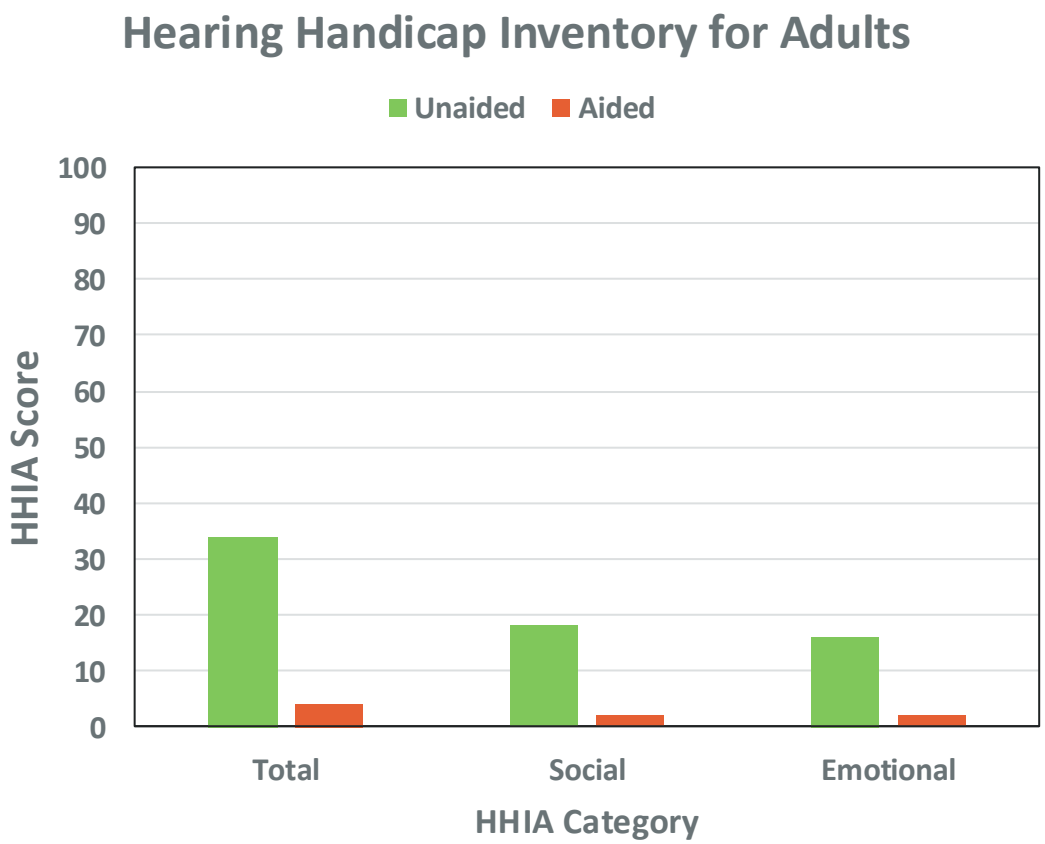
Speech enhancer

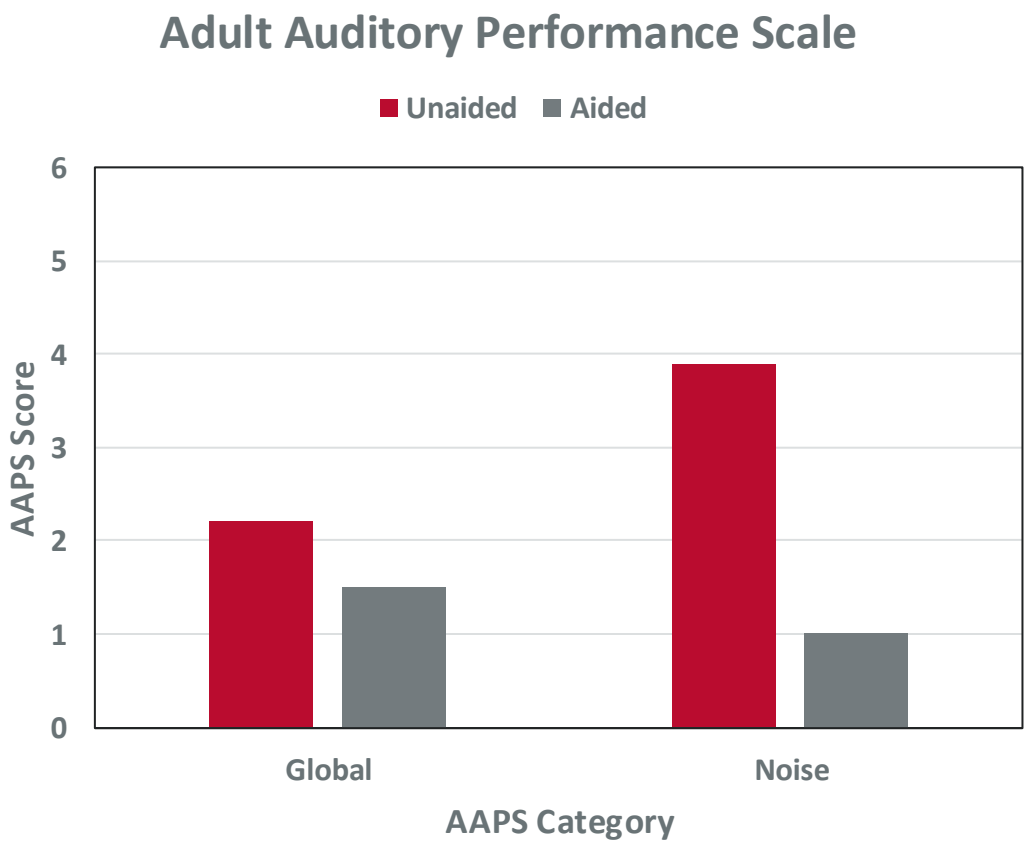


Programmed and verified with real-ear measures

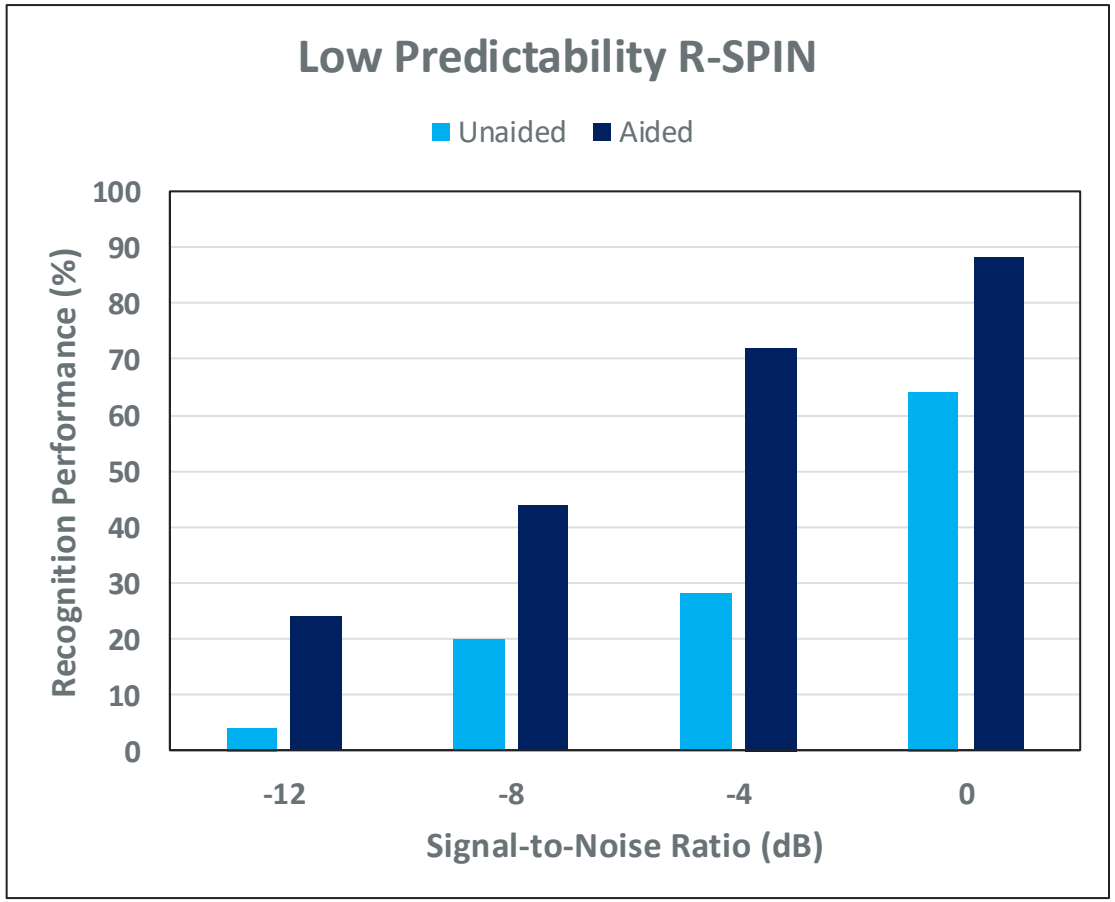
5-10 dB of insertion gain for 1000-4000 Hz for soft inputs

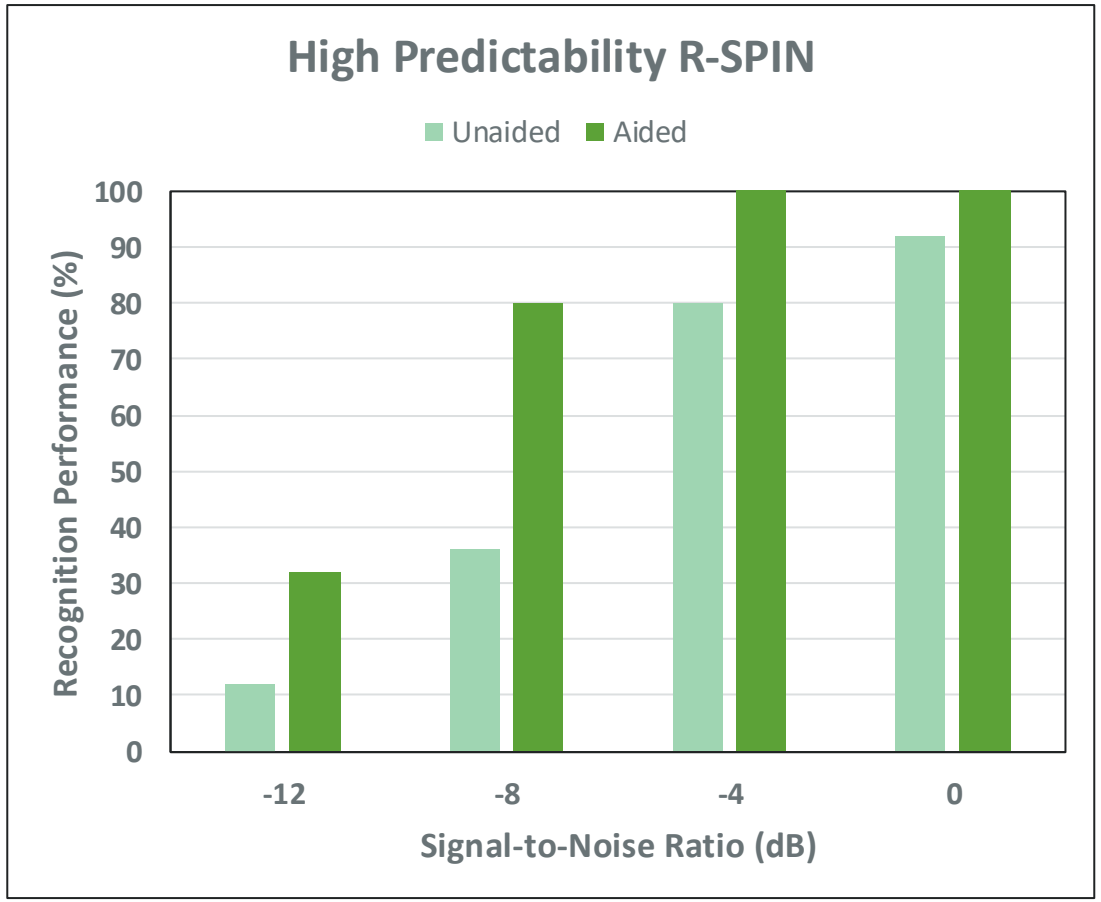
Case 2: Aided Benefit for Self-Perceived Hearing Difficulties





Case 2: Aided Benefit for Speech-in-Noise Performance





Frequently Asked Questions

FAQs: Using Low-Gain Hearing Aids to Treat FHD

What "tools" should I have in my audiologist toolbox?

How do you tease apart 'normal' from 'disordered'?

How can I feel comfortable recommending technology/hearing aids?

How do you program the hearing aids?

What about NAL-NL3?

How do you know you're not damaging the patient's hearing?

Why not an OTC hearing aid?

Who pays for the hearing aids?

What are your questions?

Summary & Conclusions

Rationale for Low-Gain Hearing Aids	Boost to low-energy, easily masked mid- to high-frequency speech sounds
	Improve speech-in-noise performance
	Ease listening effort and fatigue
Prospective LGHA Clinical Trials	Demonstrated benefit for LGHA
	Minimal hearing aid uptake from research participants
Current Audiologist Practices	Recommending and fitting LGHAs
	Reported successes for some and lack of benefit for others
	Return rate similar to rate for adults with SNHL

Thank you!

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