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2023 Industry Roundtable

Moderated by Catherine Palmer, PhD

Steve DeMari, MS
CaptionCall

Brian Taylor, AuD
Signia

Shannon Basham, AuD
Phonak

Randy Baldwin
CareCredit

Dave Fabry, PhD
Starkey

Laurel Christensen, PhD
ReSound

John Pumford, AuD
Audioscan

Catherine Richardson, MA
Cochlear

Catherine Palmer, PhD

Catherine Palmer is Professor in the Department of Communication Science and Disorders at the University of Pittsburgh and serves as the Director of Audiology and Hearing Aids at the University of Pittsburgh Medical Center including the UPMC Children's Hospital. Dr. Palmer conducts research in the areas of auditory learning post hearing aid fitting, the relationship between hearing, cognitive health and health outcomes, and matching technology to individual needs. She has published over 80 articles and book chapters in these topic areas as well as provided over 100 national and international presentations. Dr. Palmer teaches the graduate level amplification courses at the University of Pittsburgh and serves as Editor-in-Chief of Seminars in Hearing.

Brian Taylor, AuD

Brian Taylor, AuD is currently the senior director of audiology for Signia. He serves at editor-at-large for Hearing Health and Technology Matters, a leading professional blog, and editor of Audiology Practices, the quarterly publication of the Academy of Doctors of Audiology. He is also an adjunct instructor at the University of Wisconsin. Dr. Taylor has authored numerous peer reviewed articles and books on topics ranging from hearing aids to practice management.

Catherine Richardson, MA

After growing up with a hearing impairment, Catherine Richardson received her Masters degree in Audiology from Louisiana State University. To share her passion for great hearing solutions, Catherine has worked for leading hearing instrument manufacturers, business development groups and as a practice owner. Today, Catherine is the Director of Market Expansion and Integration for Cochlear Americas.

Dave Fabry, PhD

Dave Fabry is Chief Innovation Officer for Starkey, where he has worked since 2009. He is a Past Board Member and President of AAA, and served as Editor in Chief for Audiology Today for over a decade, and currently serves on the Board of Directors of the American Auditory Society. He is a licensed Audiologist in Minnesota, Florida, and Rwanda.

John Pumford, AuD

John Pumford, AuD is the Director of Audiology and Education at Audioscan. Previously, Dr. Pumford held senior audiology, clinical research, and management positions for some of the industry's leading hearing instrument companies. He has also held clinical audiology positions in hospital and private practice settings along with a research audiology role at the National Centre for Audiology at Western University where he investigated compression processing, directional microphones and contributed to the development of DSL v5. Dr. Pumford has presented extensively internationally on hearing instrument technology and best-practice verification procedures and has authored numerous articles, peer-reviewed papers and book chapters on these topics.

Laurel Christensen, PhD

Dr. Christensen leads Global Audiology for GN Hearing, based in Ballerup, Denmark. Global Audiology is responsible for GN Hearing's activities related to product development and launch, including trials, regulatory activities, audiology support to product marketing, and training and education subsidiaries worldwide. Dr. Christensen holds adjunct faculty appointments at Northwestern and Rush Universities in Chicago. She served as an Associate Editor for both Trends in Amplification and the Journal of Speech and Hearing Research. She has presented well over 250 talks worldwide, mainly on hearing aid signal processing, and has many publications, including book chapters on hearing aid technology.

Randy Baldwin

Randy Baldwin is the Vice President of Marketing for CareCredit's health and wellness industries. As a marketing and product management executive with over 25 years of experience, Randy currently oversees provider engagement with several specialized healthcare industries. He and his team are responsible for educating professionals on how to maximize the benefits of patient financing for both their patients and their practice.

Shannon Basham, AuD

Shannon M Basham, AuD has been in the field of audiology since receiving an AuD in 2003 from the University of Louisville in Louisville, KY. She practiced in private practice settings until she joined InSound Medical as a professional trainer in February 2008. She joined Sonova as the National Training Manager with the acquisition of InSound in July 2010. In her current role as the Senior Director of Audiology and Education, she is responsible for the design, content development, management, implementation, and education programs supporting Phonak and Unitron products, services, and thought leadership.

Steve DeMari, MS

Steve earned his MS in Audiology from Syracuse University and has been an Audiologist for over 35 years and has served in a variety of leadership roles. Most recently, he was Vice President of Sales and Account Management and Director of Audiology for United Healthcare Hearing. Previously, he was Director of Government Services and Business Development for Phonak, Starkey, and Sivantos as well as clinical audiologist and manager for a wide demographic of medical and private practice clinics in Los Angeles and Chicago.

Steve was instrumental in launching the state's first Universal Newborn Hearing Screening Program in Illinois. Steve is a member of the American Academy of Audiology, the American Speech-Language-Hearing Association, IHS and Illinois Academy of Audiology. He stays highly involved in the industry through continuing education seminars, conferences and social networks and professional blogs.

- **Presenter Disclosure**: Financial: Catherine Palmer is employed by the University of Pittsburgh and received an honorarium for moderating this presentation. Non-financial: Catherine Palmer has no relevant non-financial relationships to disclose. Financial: Brian Taylor is an employee of Signia, a division of WS Audiology. He also receives a stipend from ADA, Hearing Health and Technology Matters, and the University of Wisconsin. Non-financial: Brian Taylor has no relevant non-financial relationships to disclose. Financial: Catherine Richardson is an employee of Cochlear Americas. Non-financial: Catherine Richardson has no relevant non-financial relationships to disclose. Financial: Dave Fabry is an employee of Starkey. Non-financial: Dave Fabry has no relevant non-financial relationships to disclose. Financial: John Pumford an employee of Audioscan. Non-financial: John Pumford has no relevant non-financial relationships to disclose. Financial: Laurel Christensen is an employee and shareholder in GN Store Nord. Non-financial: Laurel Christensen has no relevant non-financial relationships to disclose. Financial: Randy Baldwin is an employee of CareCredit and Allegro Credit. Non-financial: Randy Baldwin has no relevant non-financial relationships to disclose. Financial: Shannon Basham is an employee of Phonak. Non-financial: Shannon Basham has no relevant non-financial relationships to disclose. Financial: Steve DeMari is an employee of CaptionCall. Non-financial: Steve DeMari has no relevant non-financial relationships to disclose.
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Learning Outcomes

After this course, participants will be able to:

- Explain why providing individualized patient care is important for patients and for the future of hearing care.
- Describe new products and technologies that support a hearing care provider's ability to provide individualized patient care.
- List ways to integrate new products, technologies, and/or concepts into clinical practice in order to enhance individualized patient care and support for caregivers/families.

Poll #1

Accessing industry partners to support my work with patients is…

A. Critical to me
B. Nice, but not critical
C. Not necessary, I can google the information I need
D. Important, but I'm still on hold

How does your product/technology/service support the audiologist's ability to provide individualized patient care?

Laurel Christensen, PhD – ReSound
Brian Taylor, AuD – Signia
John Pumford, AuD – Audioscan
Shannon Basham, AuD – Phonak

How does your product/technology/service support the audiologist's ability to provide individualized patient care?

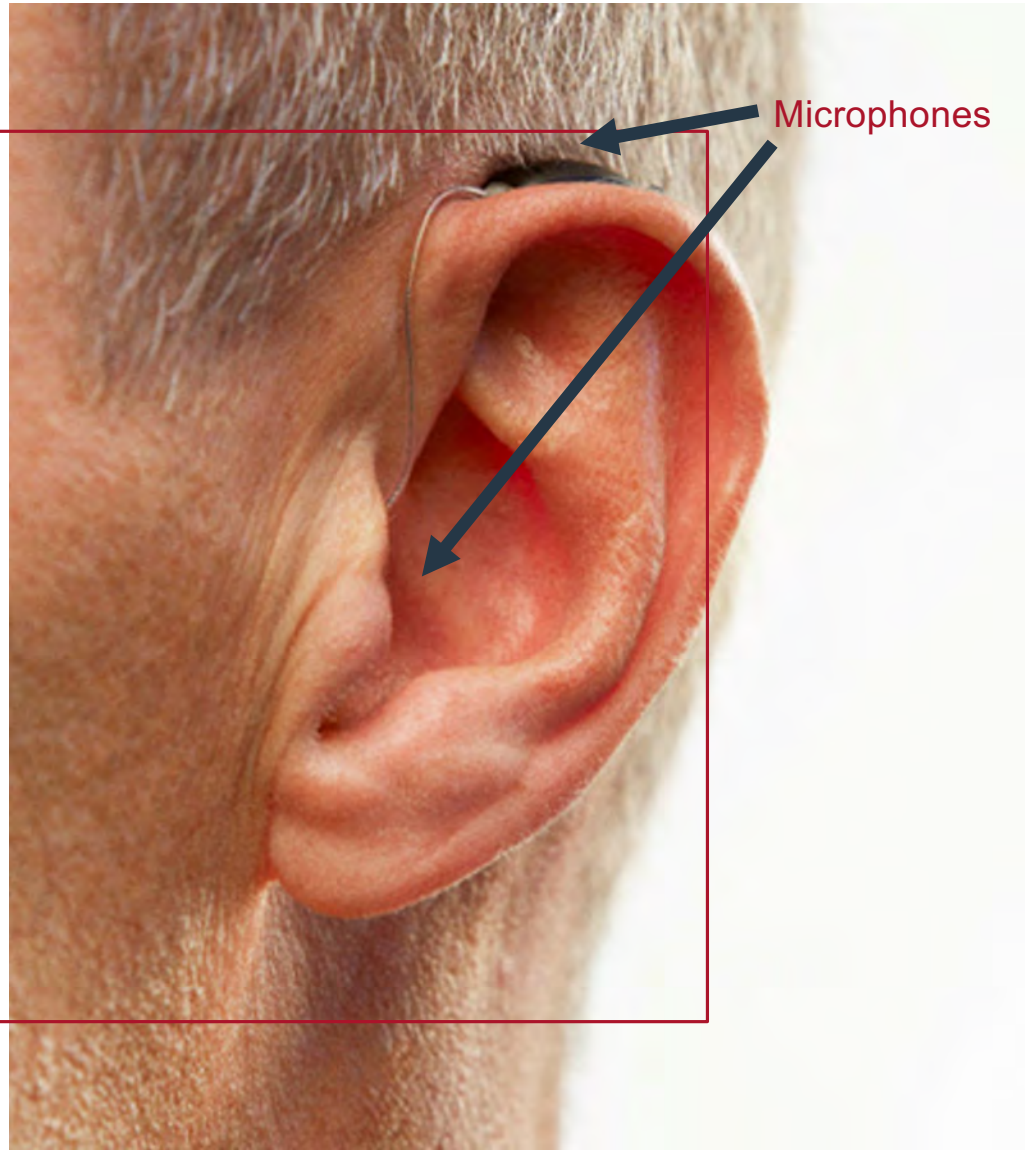
Laurel Christensen, Ph.D.
GN Hearing
Chief Audiology Officer

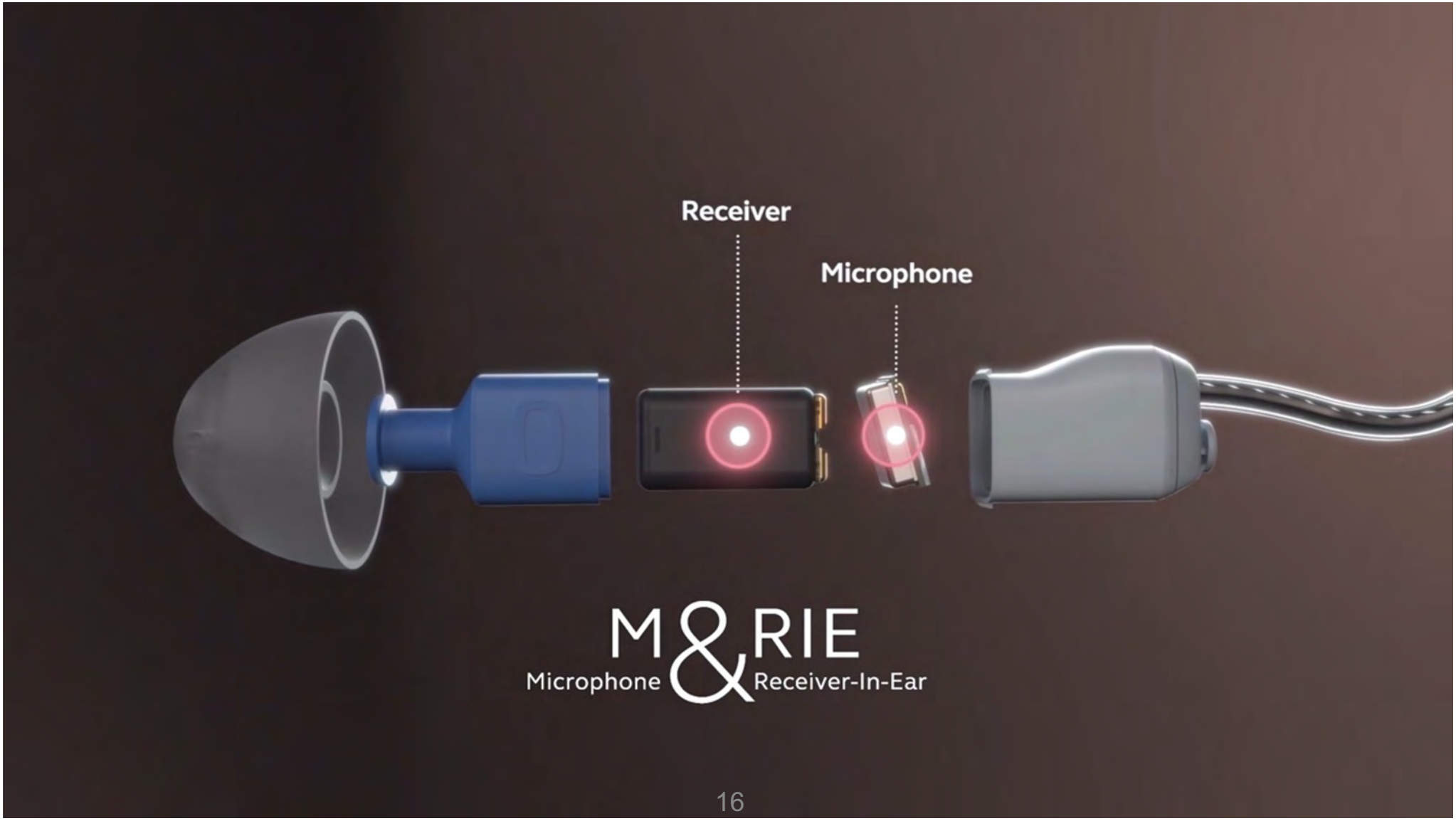
M&RIE

M&RIE MAKES SENSE

Our individual ear provides

- Our own unique acoustics
- Localization
- Spatialization



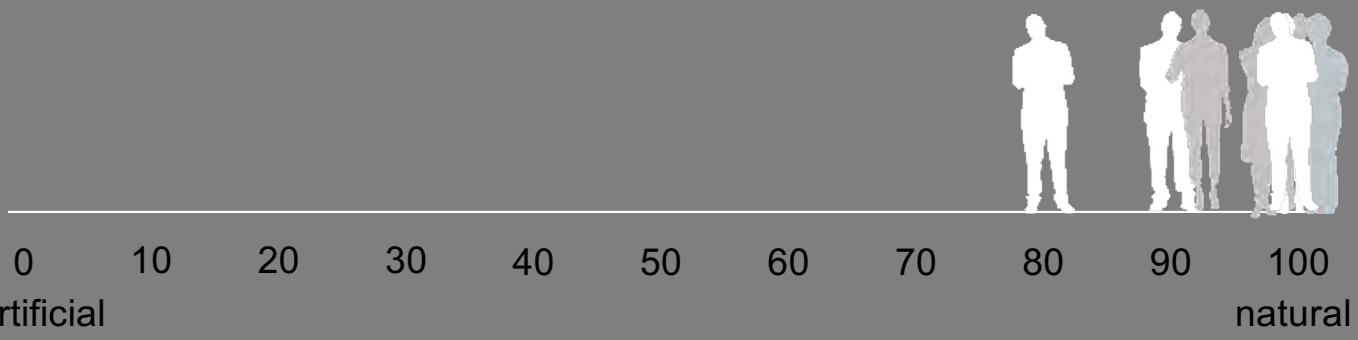

Receiver
Microphone
M&RIE
Microphone
Receiver-In-Ear

Sound Quality

Overall Sound Quality

Pinna compensation

M&RIE



Groth, 2020 – White paper: “An innovative RIE with microphone in the ear lets the users hear with their own ears”

ReSound GN

Q2

Sound Quality

Natural sound quality with depth & detail

90% Of listeners prefer M&RIE for natural sound quality[1]

"Best spatial perception, good speech intelligibility and sound quality"

Preference for M&RIE over omnidirectional mode and over Spatial Sense in various listening conditions[2]

Localization

Better localisation and spatial awareness

31% Immediate benefit of 31% better front-back localisation with M&RIE[3]

Better localisation and spatial awareness

57% Front-back localisation benefit, increasing to 57% after 4 months of wearing M&RIE[3]

Listening Effort

Less listening effort with M&RIE

2.6dB Average listening effort benefit[4]

Better speech understanding in noise

20% Percentage point increase in speech recognition in noise with M&RIE placement[4]

Easy, natural placement for calls

95% Report near effortless non-streamed phone calls with M&RIE[5]

Wind noise

Wind noise protection

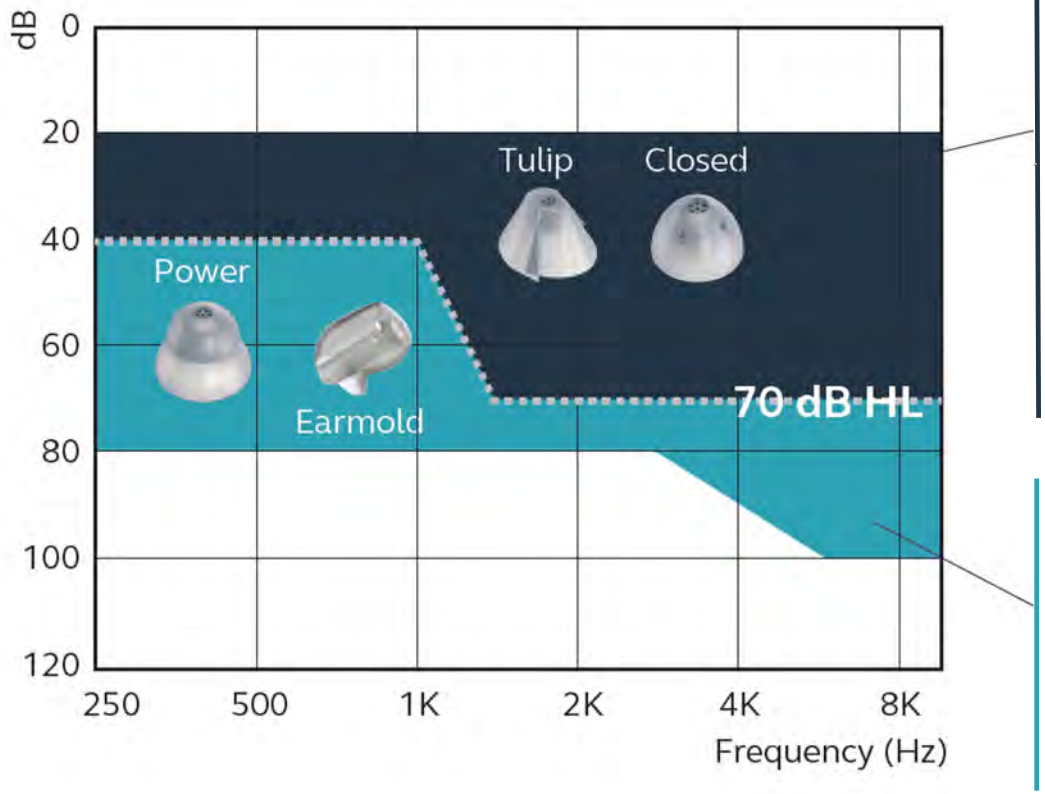
15dB Natural wind noise protection without reducing gain[1]

Wind noise benefit

33% Better sound quality rating in wind noise[2]

1. Groth J. An innovative RIE with microphone in the ear lets users "hear with their own ears". ReSound white paper, 2020.
2. Andersen P, Schindwolf I, Jespersen C. Less wind noise with M&RIE leads to better sound quality. ReSound white paper, 2021.
3. Jespersen C, Schindwolf I, Groth J. Benefits of M&RIE with long-term use. ReSound white paper, 2021. Write up in progress, title subject to change
4. Quilter M, Groth J, Krueger M. Reduced listening effort and improved speech intelligibility with M&RIE. ReSound white paper, 2021. Write up in progress, title subject to change
5. Quilter M, Hartenstein R, and Groth J. Percentage of users who report regular calls without effort or very little effort, 2021
6. Jespersen C, Kirkwood B, Schindwolf I. M&RIE receiver preferred for sound quality and localization. ReSound white paper, 2020.

Fitting Range of M&RIE



Best results are obtained with Closed or Tulip dome

Power domes and earmolds are recommended for users with hearing loss within this range

Closing Thoughts

How does your product/technology/service support the audiologist's ability to provide individualized patient care?

Laurel Christensen, Ph.D.
GN Hearing
Chief Audiology Officer

How does your technology support the audiologist's ability to provide individualized care?

Brian Taylor

The hearing aid follow-up process

Audiologist

- **Much neglected, yet essential part of best-practice care**
- **3 is the average number of post-fitting appointments over Year 1**
- **Each follow-up appointment is a minimum of 30 minutes**
- **Roughly 1/3 to 1/2 of time is spent fine-tuning devices**

Hearing Aid Wearer

Is there a better way? Can technology assist us?

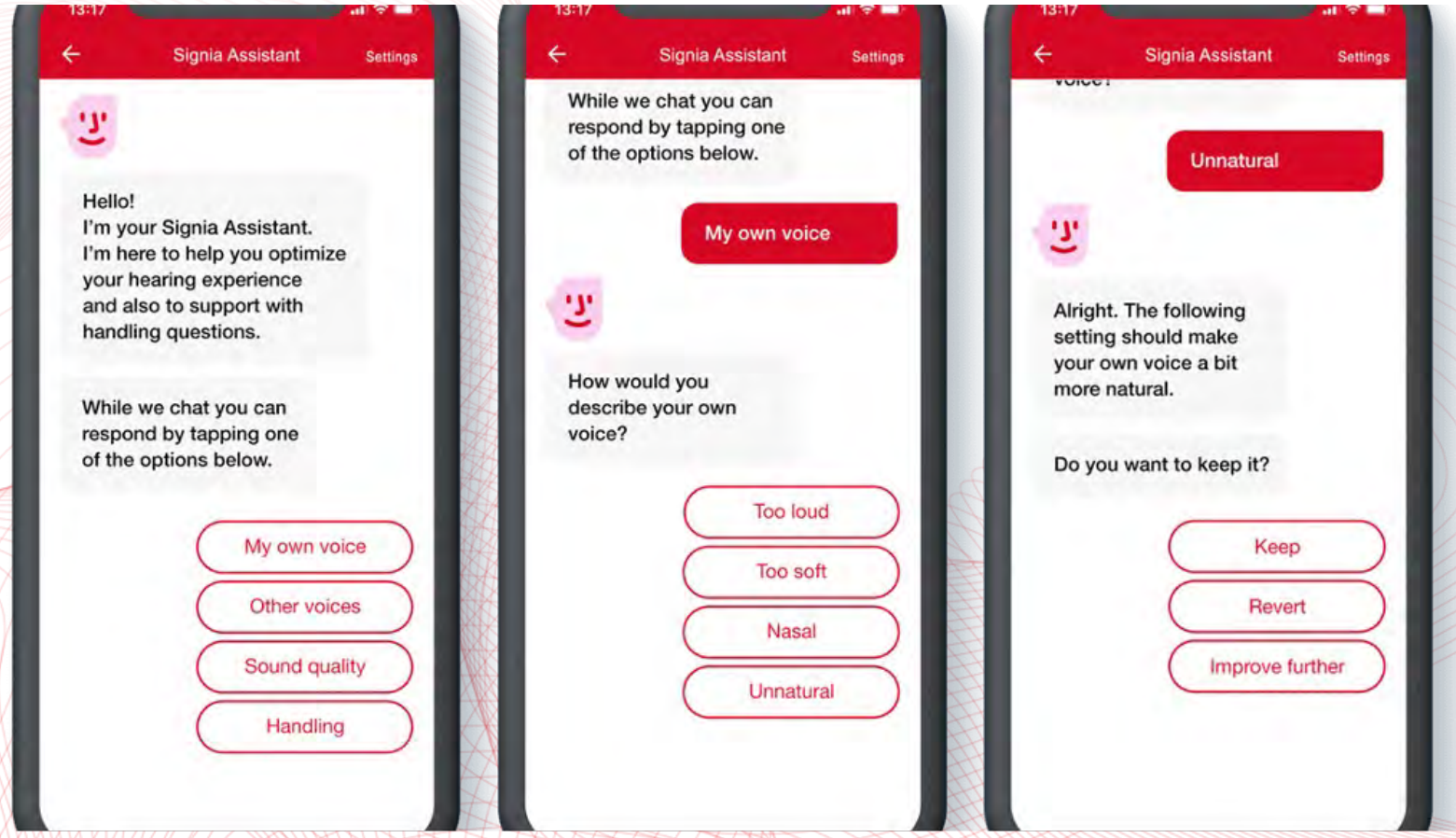
- **Use machine learning (DNN) to pool data from thousands of wearers**
- **Places most common fine-tuning adjustments in the hands of the wearer**
- **Empowers patient to make decisions in real time**
- **Frees up time to focus on coaching and counseling**

Audiologist

Signia Assistant

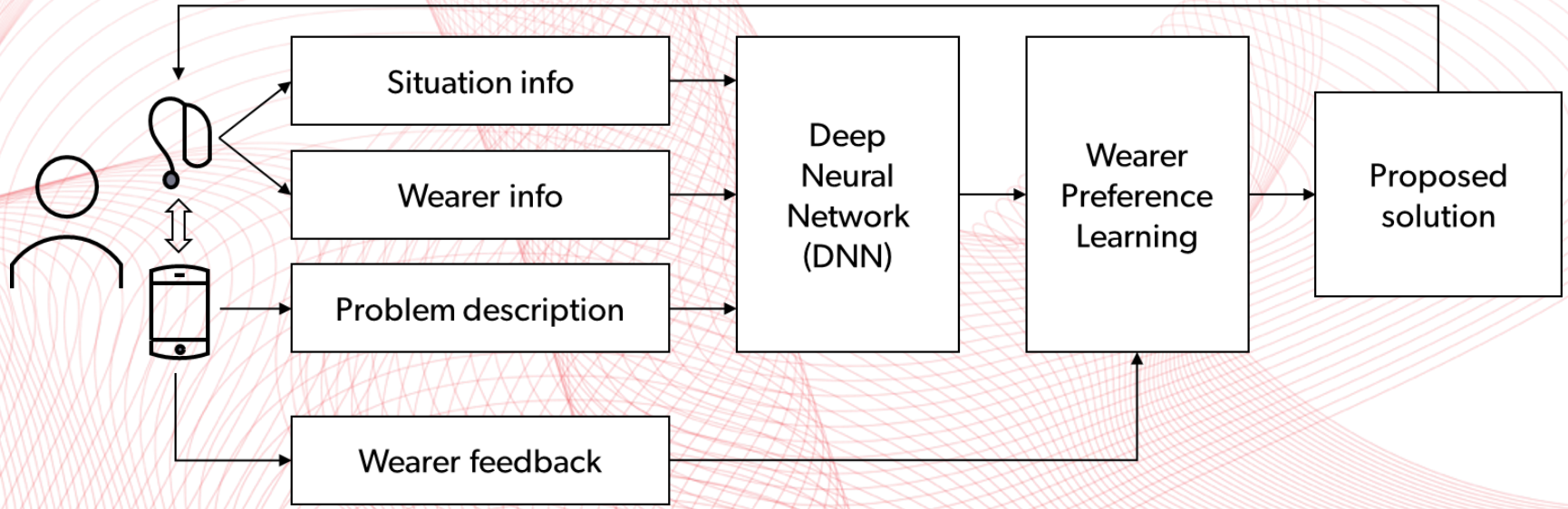
Hearing Aid Wearer

signia Audiology


Signia Assistant
Settings
Hello!
I'm your Signia Assistant.
I'm here to help you optimize your hearing experience and also to support with handling questions.
While we chat you can respond by tapping one of the options below.
My own voice
Other voices
Sound quality
Handling
Signia Assistant
Settings
While we chat you can respond by tapping one of the options below.
My own voice
How would you describe your own voice?
Too loud
Too soft
Nasal
Unnatural
Signia Assistant
Settings
Unnatural
Alright. The following setting should make your own voice a bit more natural.
Do you want to keep it?
Keep
Revert
Improve further

Q3

How Signia Assistant works?



Both parties win

- **Greater feelings of empowerment, leads to better outcomes**
- **Improved patient acceptance of sound quality, own voice, other voices, device handling**
- **Leads to a better individualized fit and support**
- **Frees up time for to do other things**

Audiologist

Signia Assistant

Hearing Aid Wearer

Closing Thoughts

How does your technology support the audiologist's ability to provide individualized care?

Brian Taylor

How does your product/technology/service support the audiologist's ability to provide individualized patient care?

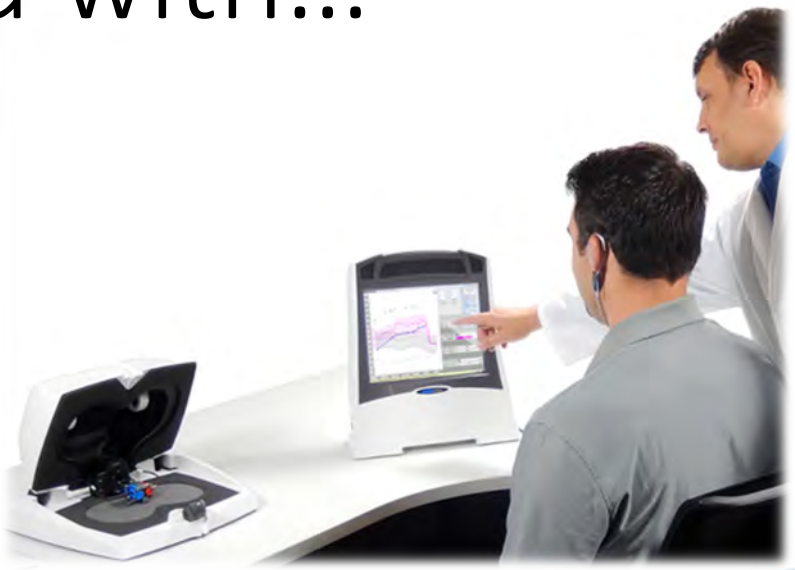
John Pumford

Real-ear Measurements and Individualized Care

- Ensure providing ‘appropriate’ amplified signal level in ear canal for each patient
- Account for variability in ear canal acoustics, device characteristics
- Evaluate features designed to address a particular need
- Inform counseling, establish expectations

REM associated with…

Q5



- Improved audibility
- Improved listening outcomes
- Improved patient satisfaction
- Improved patient loyalty
- Improved perceived quality of services
- Improved fitting efficiency (reduce fitting visits)

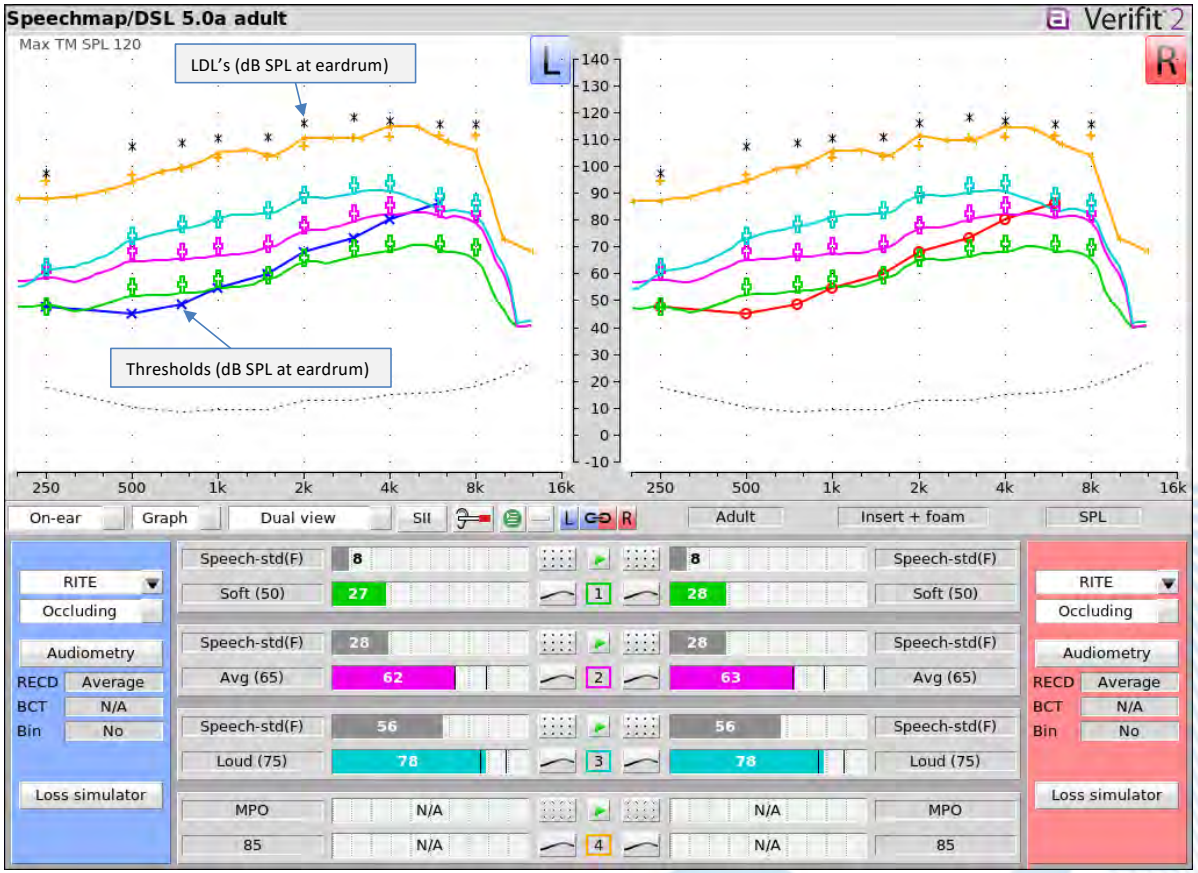
*See Valente et al. (2018); Abrams et al. (2012); Amlani, Pumford, Gessling (2016, 2017); Aazh & Moore (2007), etc.

Verifit 2
Advanced Verification

- Industry leading technology
  - Simultaneous Binaural REM and Test Box
  - Binaural Monitor Headphones
  - Wideband measurement
  - Advanced testing capabilities

Core Product Function – Speechmap®

- Speech presented to hearing aid and measured output displayed relative to patient's auditory area
- Individualize fitting to validated fitting formulas, patient's dynamic range
- Account for variability in ear canal acoustics, device performance
- Inform patient counseling



Fitting Evaluation Tools

- RMS Error from Target
- SII Target Ranges
- Comparison Curves
- Binaural Monitor Headphone
- …

Advanced Verification Tools

- Directional
- Noise Reduction
- CROS / BiCROS
- Skull Simulator
- …

Closing Thoughts

How does your product/technology/service support the audiologist's ability to provide individualized patient care?

John Pumford

How does your product/technology/service support the audiologist's ability to provide individualized patient care?

Shannon Basham

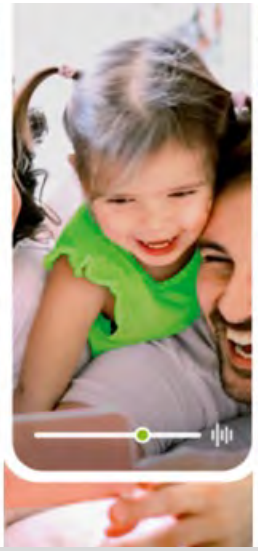
A solution for everyone

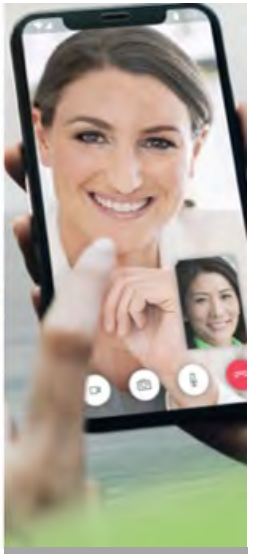
Q7

PHONAK life is on







Protection	Mild-moderate	Severe-profound / specific solutions	Digital ecosystem


Serenity Choice


Lyric Virto


Audéo


Roger


Naída


AB CI with Phonak technology


myPhonak Junior app

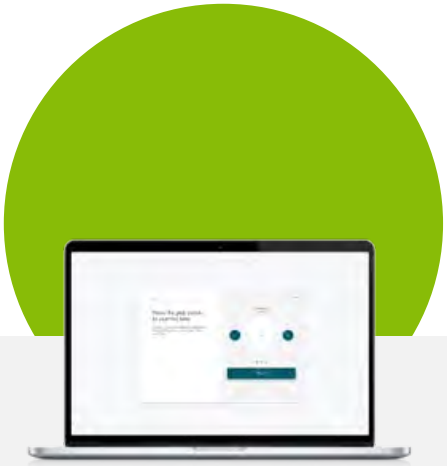

Sky


CROS


Personalized digital, e-Audiology solutions

Partner for success with an industry leader

Marketing support



Tailored learning and development

Expert business insights and best practice benchmarks

Closing Thoughts

How does your product/technology/service support the audiologist's ability to provide individualized patient care?

Shannon Basham

Poll #2

I'm most excited about…

A. Differentiating my practice by promoting individualized care and solutions
B. Unbundling devices and services in my fee structure
C. Continuing improvements in connectivity
D. Becoming a smart phone expert

Describe one or two takeaways that an audiologist can directly apply to patient care in the clinic related to your product/technology/service.

Randy Baldwin – CareCredit
Catherine Richardson, MA – Cochlear
Brian Taylor, AuD – Signia
Laurel Christensen, PhD – ReSound

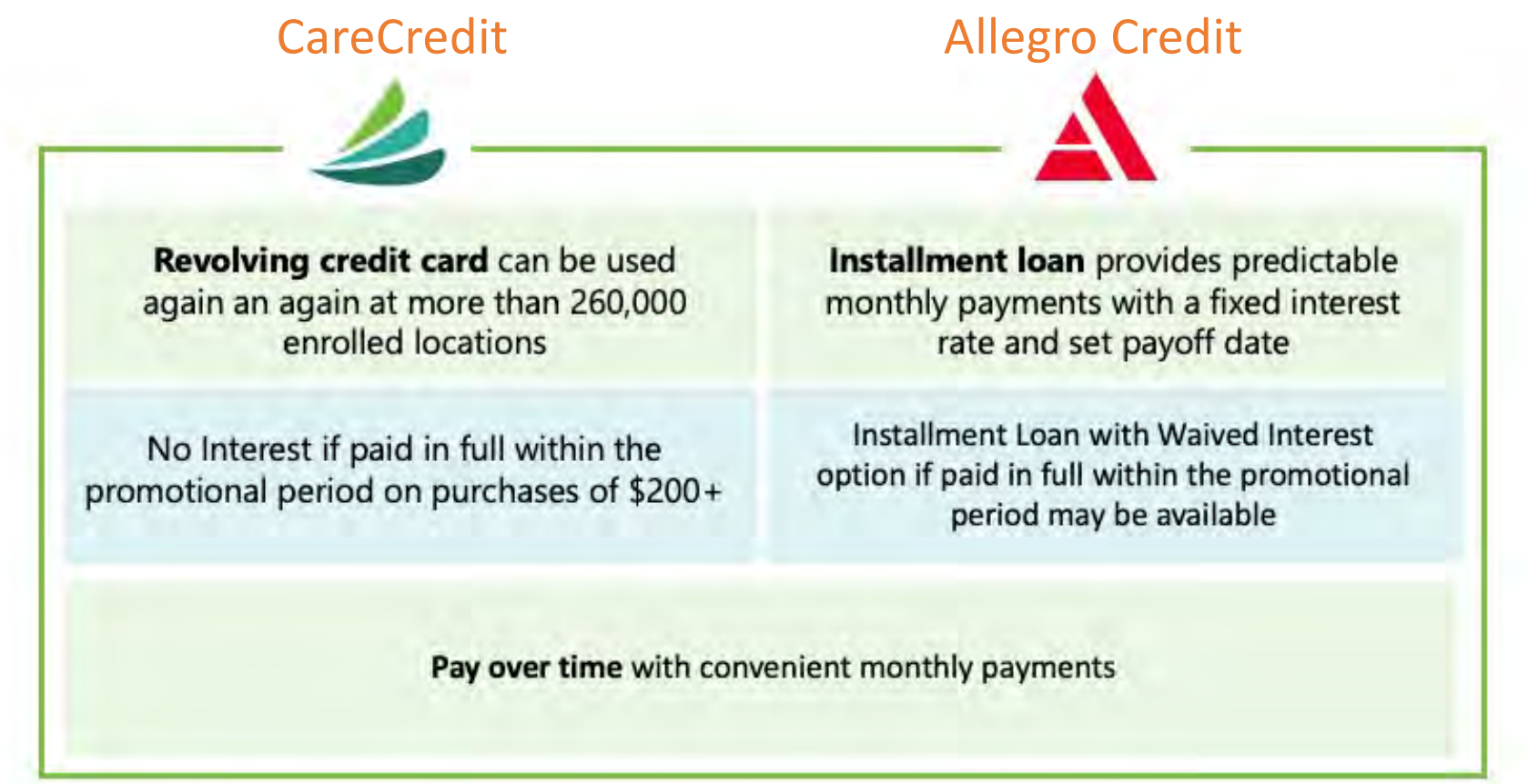
Describe one or two takeaways that an audiologist can directly apply to patient care in the clinic related to your product/technology/service.

Randy Baldwin

Offering Promotional Financing is Truly a Win-win Proposition

My Ah-ha! moment

Synchrony brand of products



Takeaways

Let all your patients know you accept the CareCredit credit card

You never know who may benefit from the promotional financing options available

It can help increase patient's buying power

Closing Thoughts

Describe one or two takeaways that an audiologist can directly apply to patient care in the clinic related to your product/technology/service.

Randy Baldwin

Hear now. And always

Cochlear®

Describe one or two take-aways that an audiologist can directly apply to patient care in the clinic related to Cochlear products, technologies and services

Catherine Richardson

Director, Market Expansion and Integration

Converging Trends

Increasing Awareness

Guidance, such as the 60/60 referral criteria[1], makes it easier for professionals to know who might be a candidate

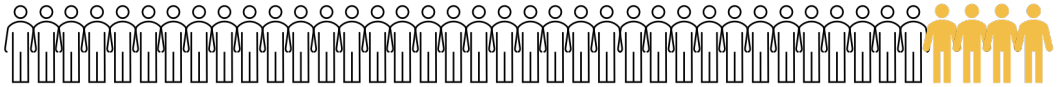
Aging Population

By 2030, 61 million people will be aged 66-84 and 9 million will be 85+[2]

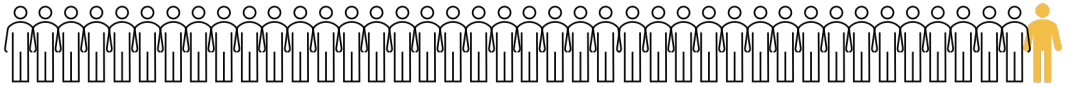
Expanding Indications

New indications for Single-Sided Deafness and expansion of criteria for Medicare means that more patients are potential candidates for cochlear implants

In 2015, CI utilization in the US was at 12.7% of patients who met audiological criteria[3]



Now, with expansion of indications and an aging population, that rate is 2.1%[3]



1) Zwolan TA, Schvartz-Leyzac KC, Pleasant T. (2020) Development of a 60/60 guideline for referring adults for a traditional cochlear implant candidacy evaluation. Otol Neurotol. 41(7):895-900.
2) Knickman JR, Snell EK. (2002) The 2030 Problem: Caring for Aging Baby Boomers. Health Serv Res. 37(4):849-884.
3) Nassiri AM, Sorkin DL, Carlson ML. (2022) Current estimates of cochlear implant utilization in the United States. Otol Neurotol, 43(5):e558-e562.

When to consider a cochlear implant evaluation (adults)

77%

Of recipients say if they could do it over again, **they would have gotten their cochlear implant sooner**[1]

96%

Of patients meeting the 60/60 criteria below are **cochlear implant candidates**[2]

≥ 60 dB Audibility

Pure tone average greater than or equal to 60 dB (500, 1000, 2000 Hz)[2]

≤ 60 % Speech Understanding

Unaided word recognition score less than or equal to 60% in the better ear[2]

Or if your patient experiences ANY of the following:

- Struggles to hear on the phone
- Has difficulty understanding others
- Withdraws from social events
- Often needs others to repeat themselves

1) Cochlear internal estimate, recipients data.
2) Zwolan TA, Schvartz-Leyzac KC, Pleasant T. Development of a 60/60 guideline for referring adults for a traditional cochlear implant candidacy evaluation. Otol Neurotol. 41:895-900.

Enhancing the Patient Pathway

Cochlear implant center

Cochlear Provider Network (CPN)

Referring Partner Pathway

Cochlear™ hearing implants – a history of innovation

Sound Processors

82	89	94	97	98	02	05	09	13	16	17	20	22
WSP	MSP	Spectra	SPrint™	ESPrit™	ESPrit™ 3G	Freedom®	Nucleus® 5	Nucleus® 6	Kanso®	Nucleus® 7	Kanso® 2	Nucleus® 8

Cochlear Implants

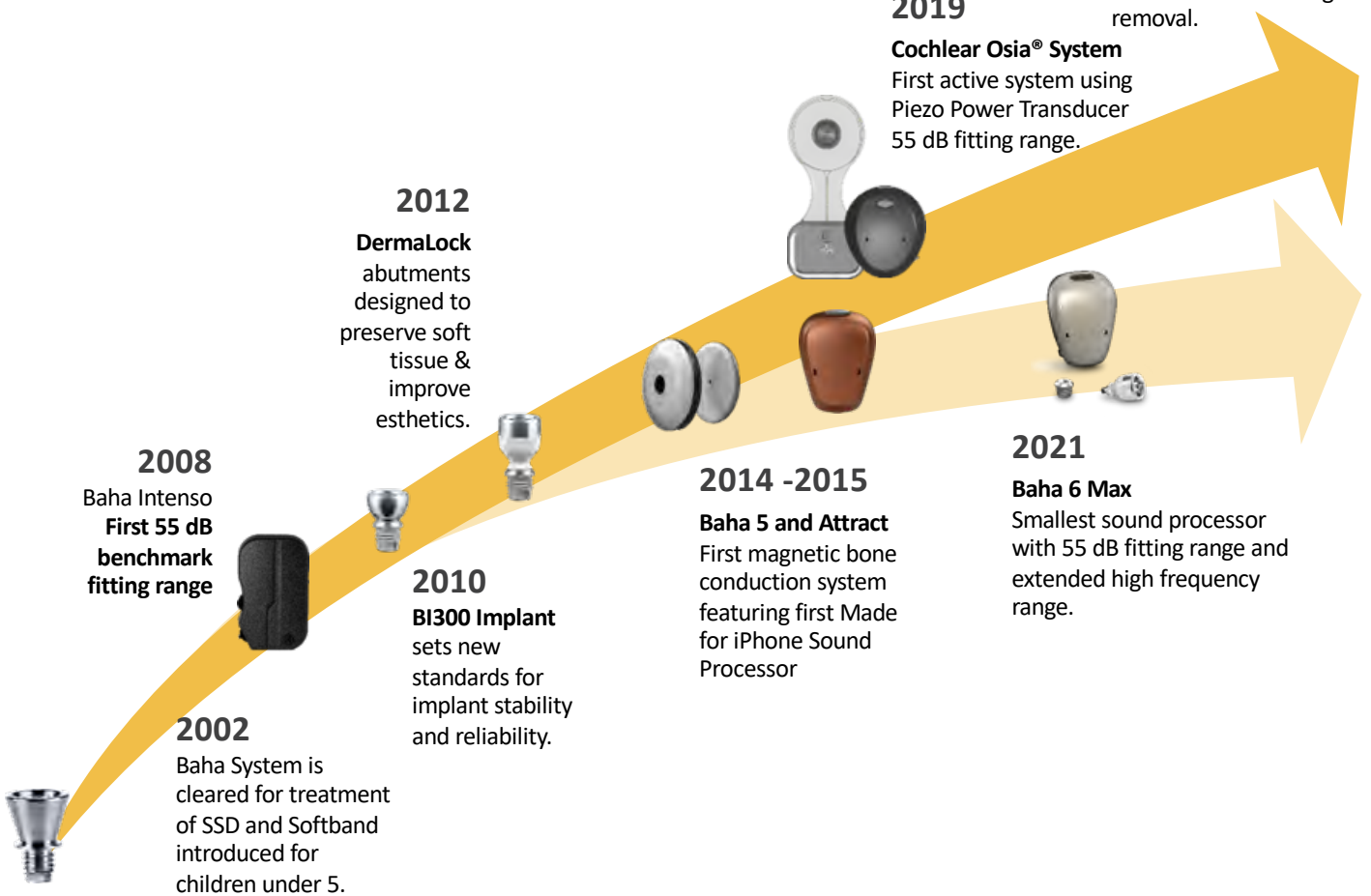
85	97	98	00	05	08	09	14	19
CI22M	CI24M	ABI	CI24R	CI24RE	Hybrid™ L24 (CI24REH)	CI500 Series	Profile® Series (CI500)	Profile® Plus Series (CI600)

Electrodes

85	98	00	00	02	08	11	16	19
Straight	ABI	Double Array	Contour®	Contour Advance®	Hybrid™ L24	Slim Straight	Slim Modiolar	Slim 20

Years refer to global product release dates from Cochlear Limited. Commercially available products shown.
Not all products are available in all countries. Please contact your local Cochlear representative for product information.

Revolution of Bone Conduction



Late 1970's
Tjellstrom develops surgical technique and performs **first Baha surgery**

1995 - 2001
Baha System Introduced

FDA Clearances for mixed and conductive loss, bilateral fittings pediatric ≥ 5 years old

2002
Baha System is cleared for treatment of SSD and Softband introduced for children under 5.

2008
Baha Intenso **First 55 dB benchmark fitting range**

2010
BI300 Implant sets new standards for implant stability and reliability.

2012
DermaLock abutments designed to preserve soft tissue & improve esthetics.

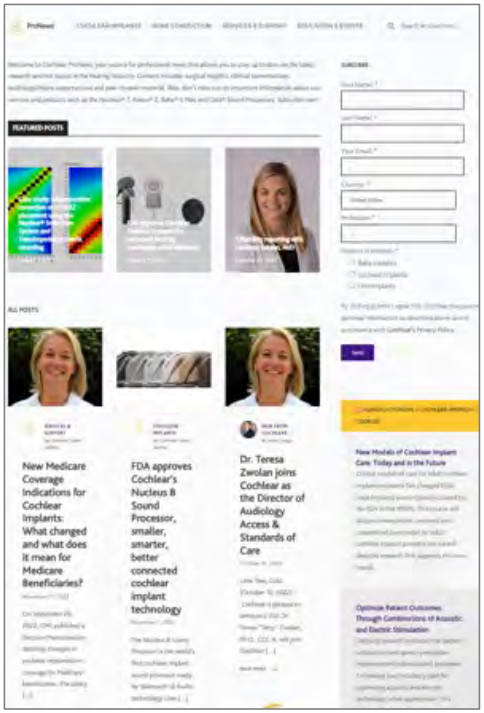
2014 -2015
Baha 5 and Attract
First magnetic bone conduction system featuring first Made for iPhone Sound Processor

2019
Cochlear Osia® System
First active system using Piezo Power Transducer
55 dB fitting range.

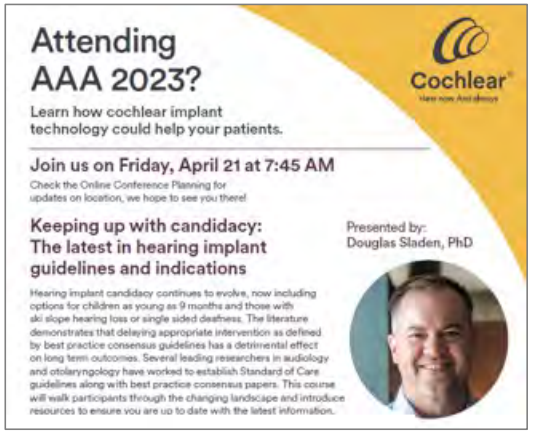
2021
Baha 6 Max
Smallest sound processor with 55 dB fitting range and extended high frequency range.

2022
Cochlear MRI Kit Access to 1.5T MRI without magnet removal.

More resources



pronews.cochlear.com



acialliance.org

Search: Cochlear Audiology Online
www.audiologyonline.com/partners/cochlear-americas/

Hear now. And always

Cochlear®

Closing Thoughts

Describe one or two take-aways that an audiologist can directly apply to patient care in the clinic related to Cochlear products, technologies and services

Catherine Richardson

Director, Market Expansion and Integration

Describe 1-2 takeaways that an audiologist can directly apply to patient care in the clinic related to your product

Brian Taylor

Use AI-driven technology to individualize fitting

- **Placing interactive and engaging technology into the hands of the patient improves motivation to use their devices**
- **More precise adjustments done in real time**
- **Self-tuning facilitated feelings of empowerment, led to increased confidence and greater levels of participation in daily activities**

Audiologist

Signia Assistant

Hearing Aid Wearer

signia Audiology

Closing Thoughts

Describe 1-2 takeaways that an audiologist can directly apply to patient care in the clinic related to your product

Brian Taylor

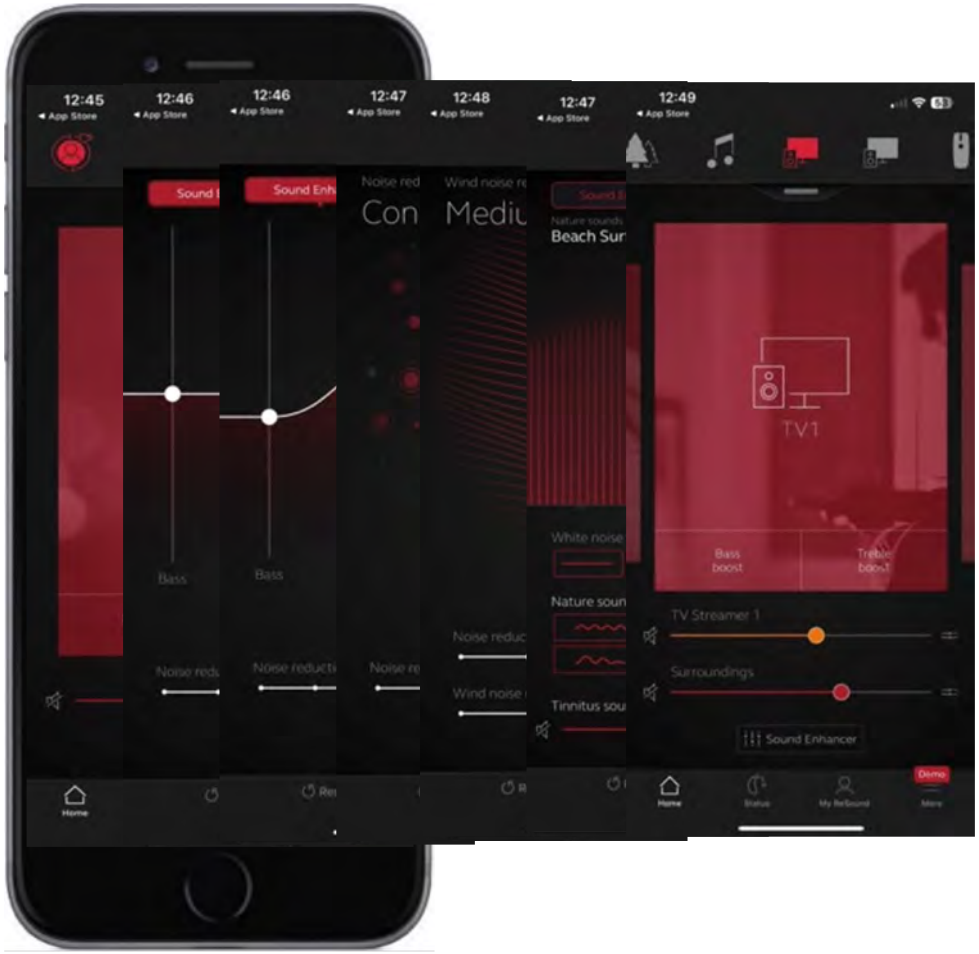
Describe one or two takeaways that an audiologist can directly apply to patient care in the clinic related to your product/technology/service?

Laurel Christensen, Ph.D.
GN Hearing
Chief Audiology Officer

End-user app portfolio

- Enhances the user experience of the hearing aids
- Empower users to take control and personalize their hearing experience
- Complete hearing aid portfolio connected to apps

App Personalization



Sound Enhancer

Noise Reduction

Wind Noise Reduction

Tinnitus Sound Generator

Accessories

Download on the App Store

ANDROID APP ON Google play

ReSound Smart App & Apple Watch

Fitting software with a better start

ReSound GN

The scientific basis for prescribing advanced feature settings

Erica Koehler, AuD; Jenn Schumacher, AuD, MWC

ABSTRACT

Survey data show that hearing care professionals seldom make adjustments to advanced feature settings, although default settings may not be optimum for an individual user. This paper describes a new advanced feature prescription in ReSound Smart Fit fitting software based on individual user factors and reviews the scientific literature that informed the development of this prescription.

INTRODUCTION

At the initial fitting of hearing aids, hearing care professionals (HCP) set the hearing aids according to a prescription of frequency dependent gain and output. This becomes the starting point for the fitting, and the settings may later be adjusted according to verification measurements and user report of their experiences with the hearing aids. HCPs excel at making these adjustments, and there is good agreement among HCPs regarding how to troubleshoot for user complaints.[1] Most HCPs would agree that the benefit hearing aid users get from amplification is enhanced by the advanced features in today's hearing aids, such as noise reduction and feedback control. Like gain and output characteristics, these features are adjustable by the HCP. This should allow them to suit user needs and preferences better than ever. However, unlike gain and output, advanced features are less generic in quality among different hearing aids.[2] This means that to make informed adjustments, the HCP must keep up on the specifics of these features across different brands, and even across products within the same brand. This is no easy task.

How do HCPs manage this? Current hearing aid fitting practices were investigated in a survey of nearly 250 US-based audiologists.[3] The findings support the importance of hearing aid features to HCPs, while also highlighting a wide variation in how they are set and fine-tuned. Some hearing aid features such as directional microphones, noise reduction and feedback control were shown to play a big role in the selection and fitting of hearing aids. Over 80% of respondents cited features like these were a "very important" factor in the selection process, while essentially all respondents (97-100%) reported activating directional microphones, noise reduction and feedback control during the initial fitting appointment. But there was much more variation in how the respondents adjusted these features. Most respondents relied on manufacturer defaults when setting directional microphones, noise reduction, compression time constants and feedback control and it was less common to change settings away from default than changing gain and output settings. HCPs who did change advanced feature settings primarily relied on user report at follow up visits or their own experience. Only 20-40% of the HCPs surveyed relied on external sources of information on feature settings, such as published evidence from peer-reviewed sources or manufacturers, conference proceedings or expertise from other colleagues.

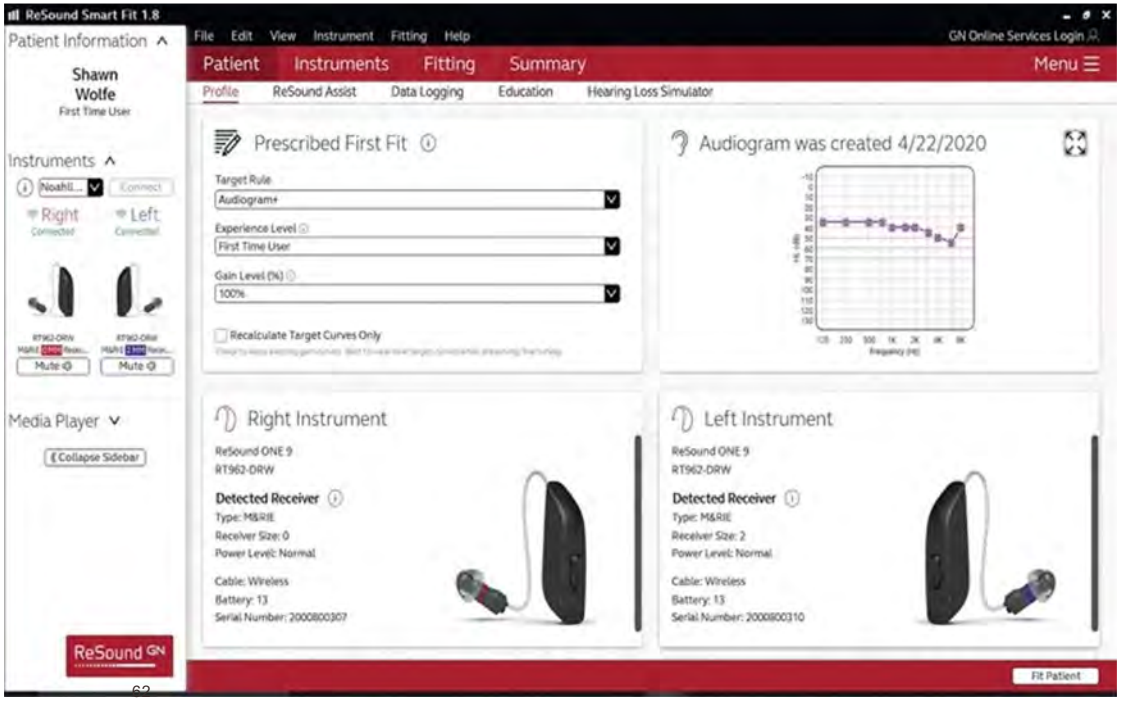
These results reflect the lack of consistent, universal guidelines for setting and adjusting hearing aid features.[3] Evidence-based guidelines for setting and verifying gain in hearing aid fittings are well established[4] and often used.[5] HCPs indicate a desire to follow evidence-based guidelines for setting and fine tuning features, but at this time, best-practice recommendations are still in early stages.[3,5] Many studies have been conducted on the impact advanced features have on performance or perception, but with such a wide variety of hearing aids, technology, methodologies and test participants used in the studies, it is not possible to make universal conclusions about feature settings at this time. Differences in hearing aid feature settings have been captured using subjective user questionnaires[6] but this reflects the user's overall listening experience and may not assist in adjusting single features. That said, HCPs can make some evidence-based decisions on feature activation or settings, particularly when considering individual user characteristics. One example is the link between wide dynamic range compression time constants and the cognitive functioning of the hearing aid user. Multiple studies have shown that performance on speech intelligibility tasks can be affected by a relationship between compression time constants and performance on tests of cognitive function.[7-10]

GN Making Life Sound Better

ReSound GN

Individualized First Fit

- Based on a patient's audiogram, the selected target rule, gain level (% to target), and experience level, the ReSound Smart Fit™ software will adjust the settings for Noise Tracker, Impulse Noise Reduction, and Expansion to better fit the individual patient.



Closing Thoughts

Describe one or two takeaways that an audiologist can directly apply to patient care in the clinic related to your product/technology/service?

Laurel Christensen, Ph.D.
GN Hearing
Chief Audiology Officer

Poll #3

MarkeTrak 2022 indicates that _____ of current hearing aid users are satisfied.

A. <50%
B. 63%
C. 74%
D. >80%

Describe something about your product/technology/service that supports the family of the individual with hearing loss. Educate us about how we integrate this into our services to support the family?

Steve DeMari, MS – CaptionCall
Dave Fabry, PhD – Starkey
John Pumford, AuD – Audioscan
Randy Baldwin – CareCredit

CaptionCall by Sorenson

Describe something about your product/technology/service that supports the family of the individual with hearing loss.

Steve DeMari

Describe something about your product/technology/service that supports the family of the individual with hearing loss. Educate us about how we integrate this into our services to support the family.

Q4

- Reduced Burden
- Builds Trust
- Reduce Phone-related complaints
- Increase phone use and ability
- Immediately improves their lives
- Consistent connection with family & friends
- Saved messages and conversations
- Look back at dates, times, directions, instructions
- Holiday and Emergency usage soars
- 911
- Creates confidence and independence
- Handsfree capability for ease of use
- Speakerphone & volume control for binaural listening
- Minimizes background noise interference
- BT connectivity to Hearing Aids
- No Cost

Describe something about your product/technology/service that supports the family of the individual with hearing loss. Educate us about how we integrate this into our services to support the family.

Customer Testimonials

"Thank you! My dad, Richard, loved this phone. It really helped me connect with him, especially during the pandemic."

"…calling all of her friends, friends she hasn't spoken to in years because she can finally communicate with them. Other than writing letters, she's had no other resource to communicate with them through."

"…she was once again able to speak to her school friends from 50+ years ago – and understand the conversation! It also got family members to call more often and check in on her. Such a godsend!

Closing Thoughts

Describe something about your product/technology/service that supports the family of the individual with hearing loss.

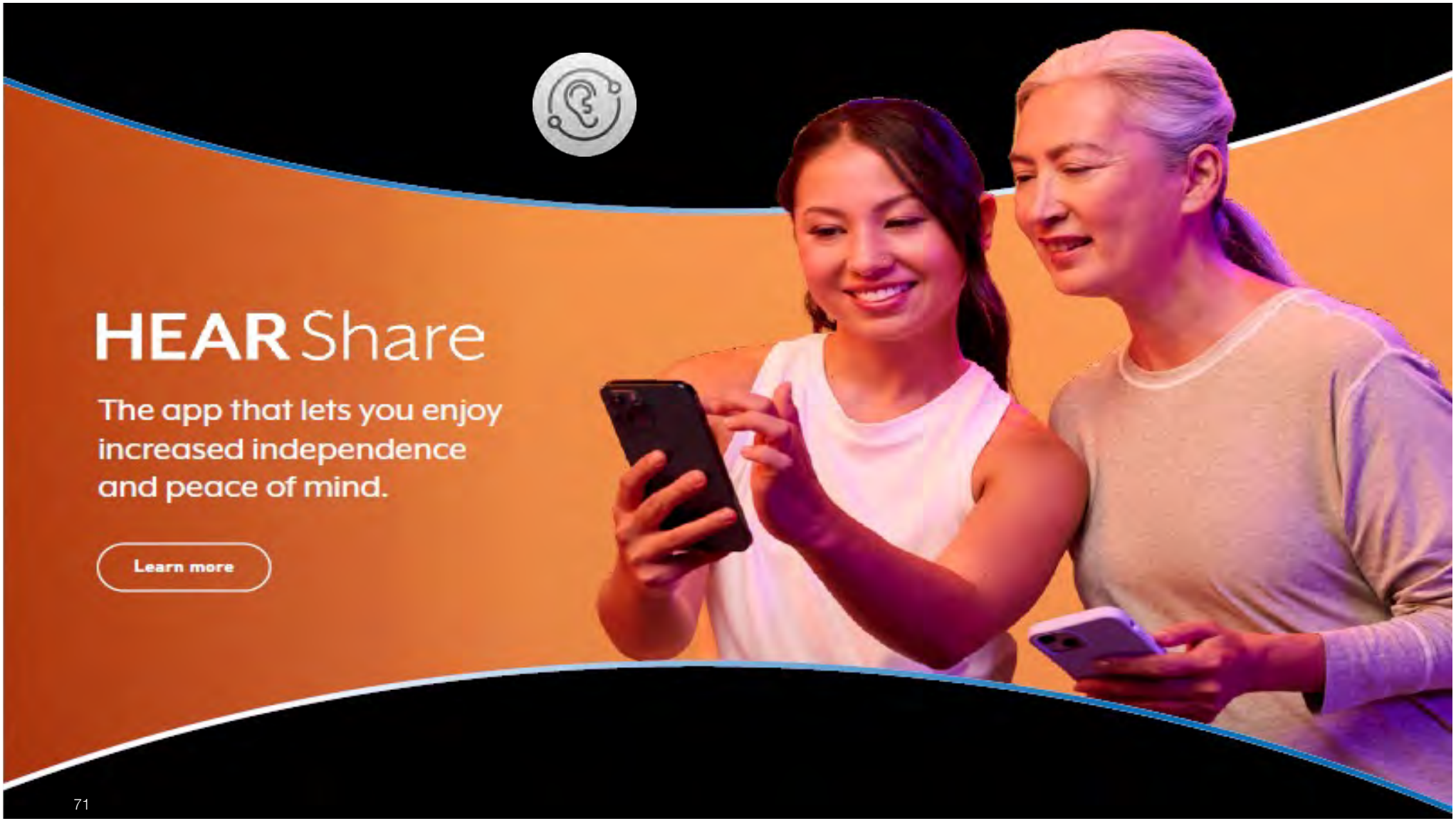
Steve DeMari

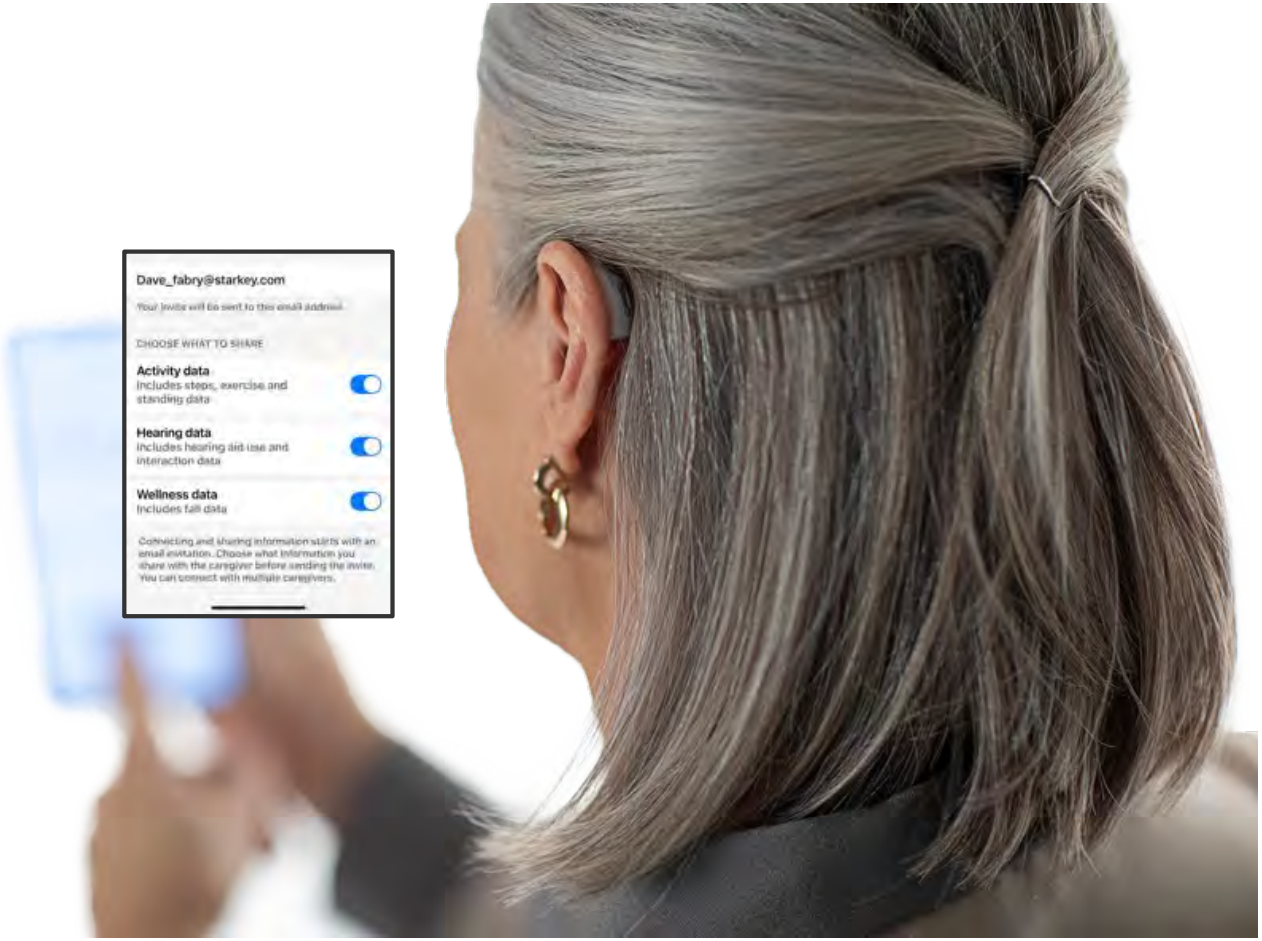
Describe Something About Your Product/Technology/Service that Supports the Family of the Individual with Hearing Loss

DAVE FABRY, Ph.D. Chief Innovation Officer

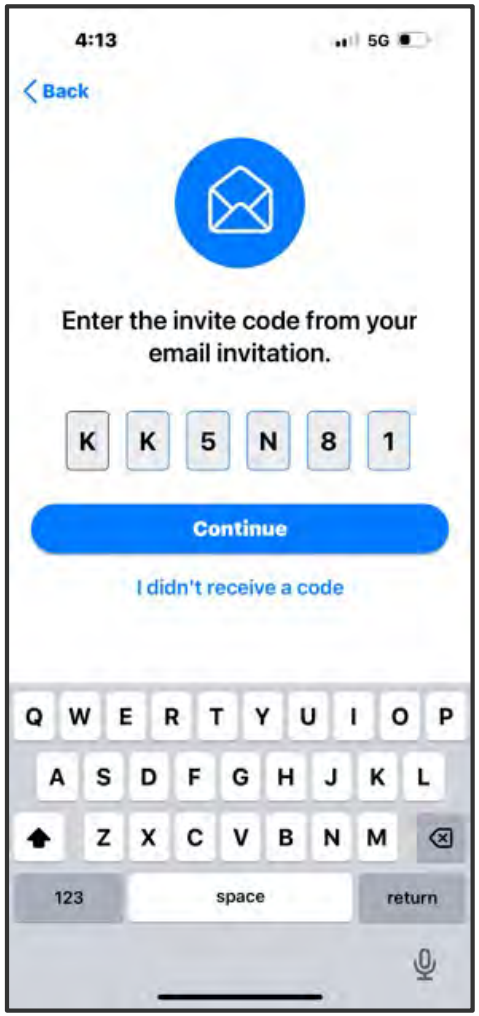
Starkey

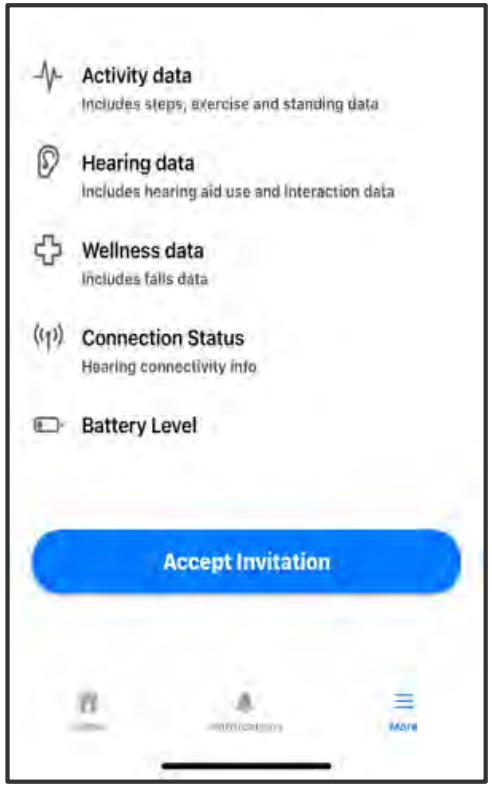
Hear better. Live better.


HEAR Share
The app that lets you enjoy increased independence and peace of mind.
Learn more


Dave_fabry@starkey.com
Your invite will be sent to this email address.
CHOOSE WHAT TO SHARE
Activity data
Includes steps, exercise and standing data
Hearing data
Includes hearing aid use and interaction data
Wellness data
Includes fall data
Connecting and sharing information starts with an email invitation. Choose what information you share with the caregiver before sending the invite. You can connect with multiple caregivers.


4:11
5G
[External Sender] DFab sent you a Hear Share Invite
HS
Hear Share
To You
4:10 PM
CAUTION: This email originated from outside of the Starkey systems.
DO NOT open attachments, DO NOT click on links, DO NOT enter your password UNLESS you recognize, and can verify the sender and know the content is safe.
Hi Dave Fabry, DFab invited you to connect via the Hear Share app. Hear Share lets people share information with select friends, family members or care providers using our latest hearing aids with built-in sensors.
You'll be able to view information about health, safety and more, anytime, anywhere.
Hear Share is designed to provide you peace of mind while helping your connection enjoy continued independence.
To accept this invite, just download the app and enter the code below.
Reply


4:13
5G
Back
Enter the invite code from your email invitation.
K K 5 N 8 1
Continue
I didn't receive a code
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
return

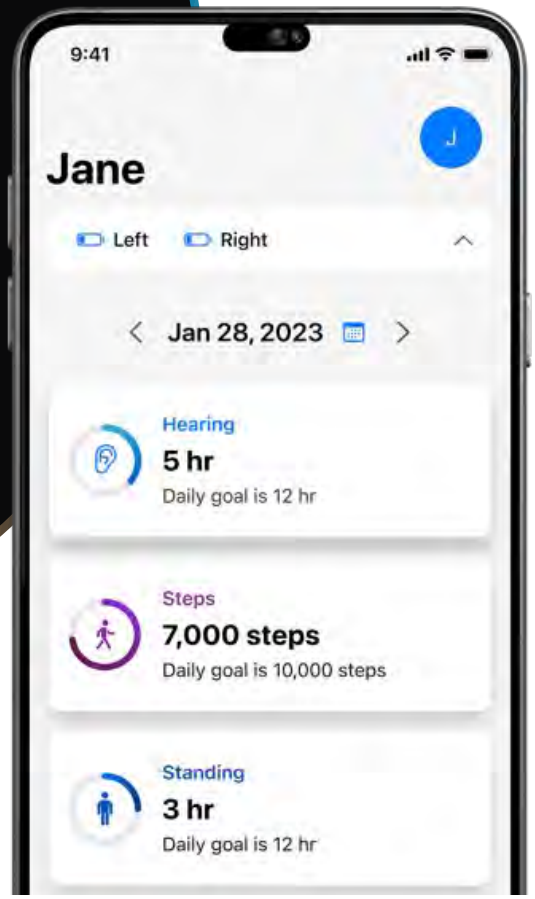

Activity data
Includes steps, exercise and standing data
Hearing data
Includes hearing aid use and interaction data
Wellness data
Includes falls data
Connection Status
Hearing connectivity info
Battery Level
Accept Invitation
More

Q6

HEAR Share

Caregiver App for use by families & caregivers

Supports all Evolv AI & Livio Edge AI technologies



HEAR Share

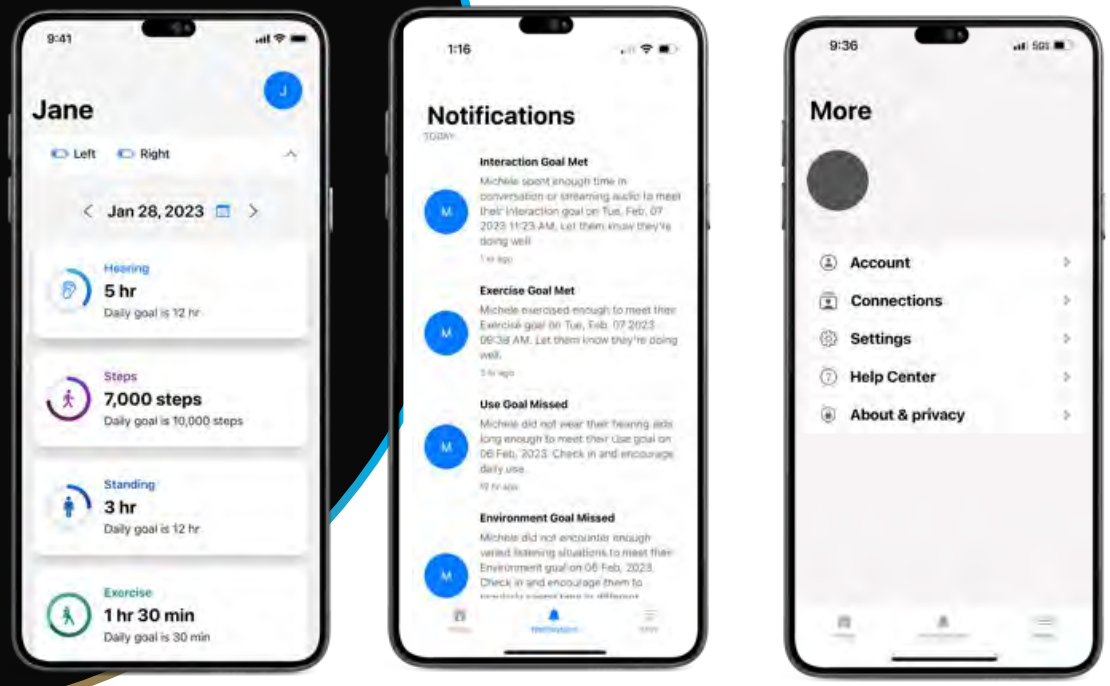
Navigation bar

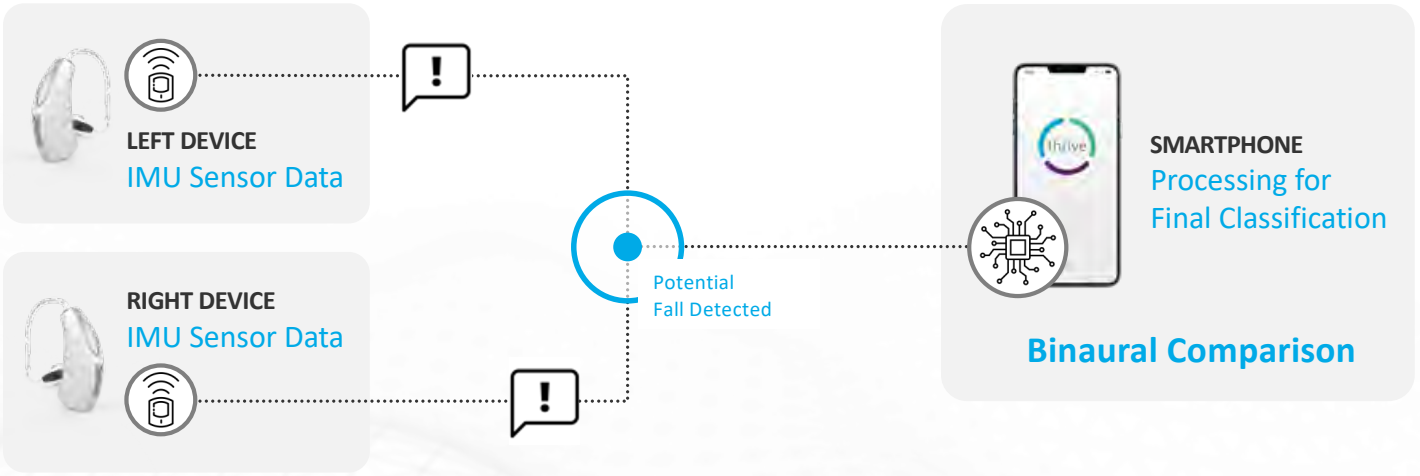
- Home
- Notifications
- More

HEAR Share

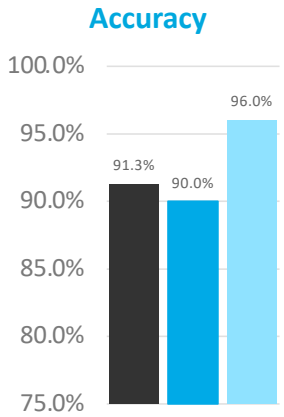
Navigation bar

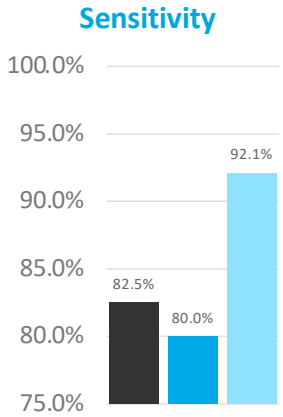
- Home
- Notifications
- More

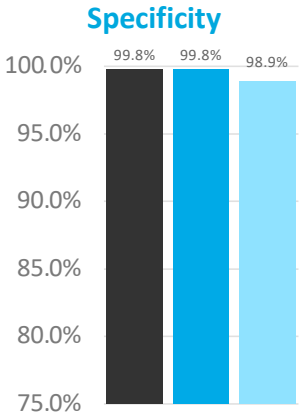




Burwinkel, J.R., Xu, B., Crukley, J. (2020). Preliminary examination of the accuracy of a fall-detection device embedded into hearing instruments. *Journal of the American Academy of Audiology*.







Device	Accuracy (%)	Sensitivity (%)	Specificity (%)
AutoAlert Pendant	91.3	82.5	99.8
Livio Edge AI *(Normal Sensitivity)*	90.0	80.0	99.8
Livio Edge AI *(High Sensitivity)*	96.0*	92.1*	98.9

Closing Thoughts

Describe Something About Your Product/Technology/Service that Supports the Family of the Individual with Hearing Loss

DAVE FABRY, Ph.D. Chief Innovation Officer

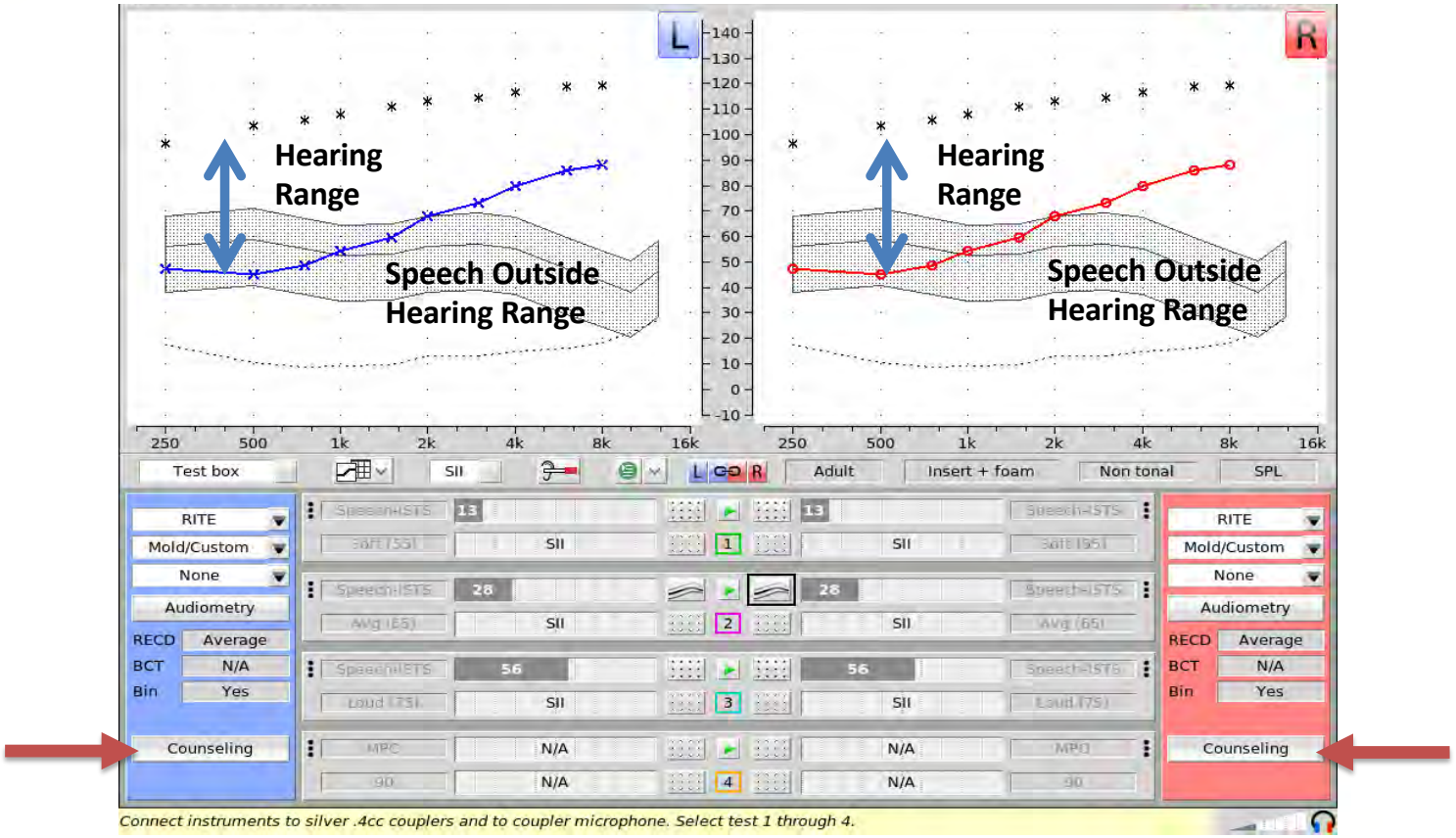
Starkey

Hear better. Live better.

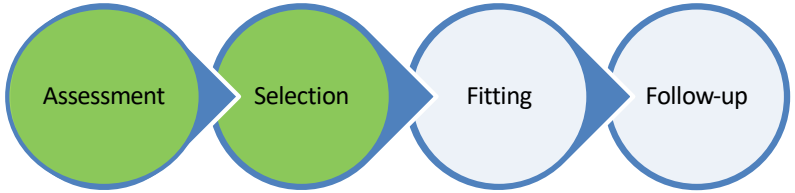
Describe something about your product/technology/service that supports the family of the individual with hearing loss. Educate us about how we integrate this into our services to support the family.

John Pumford

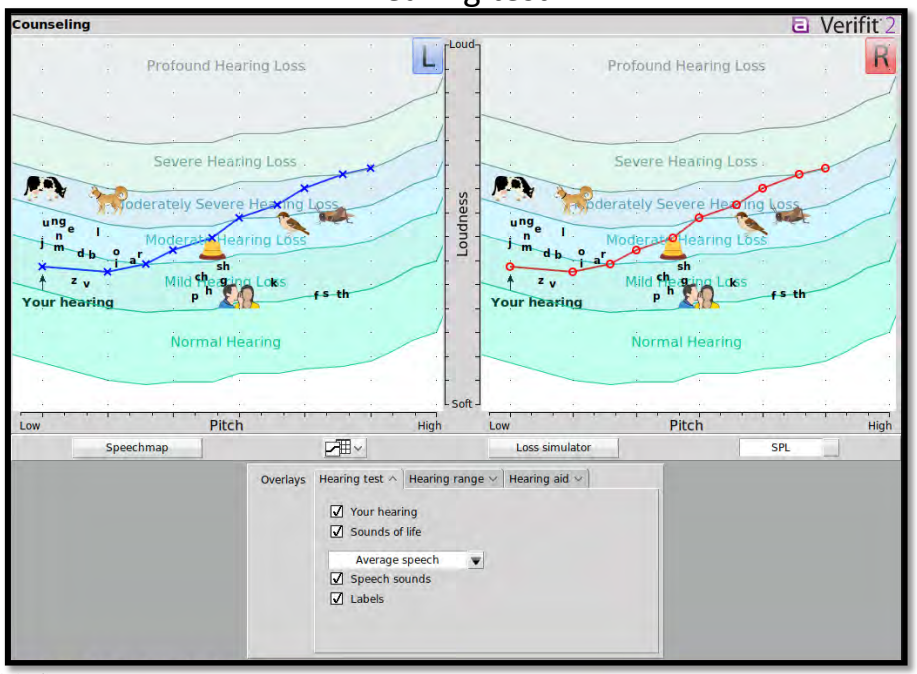
Speechmap as a counseling tool



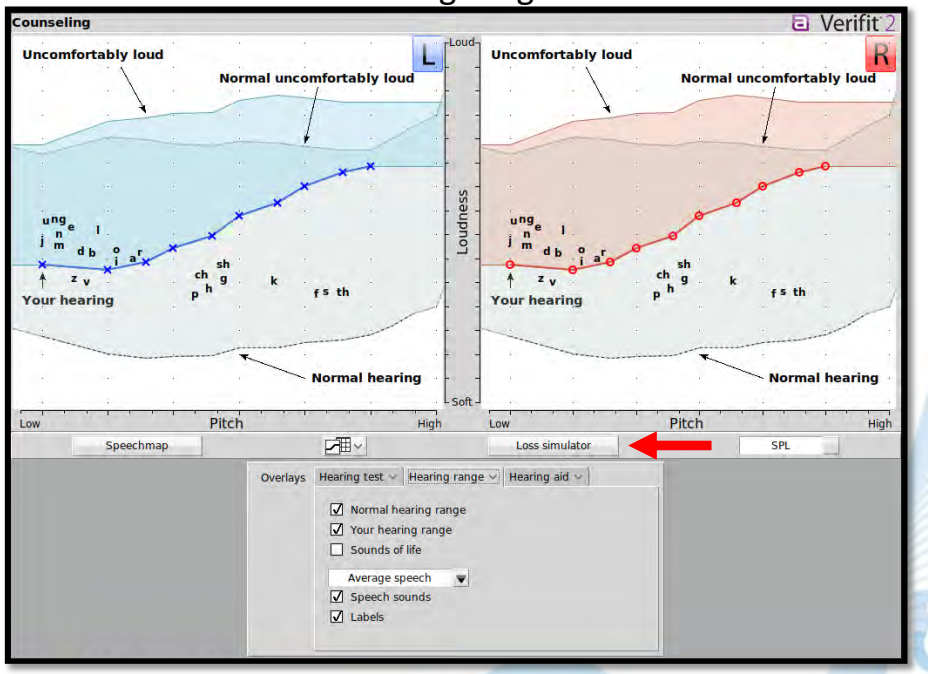
Counseling overlays



Hearing test

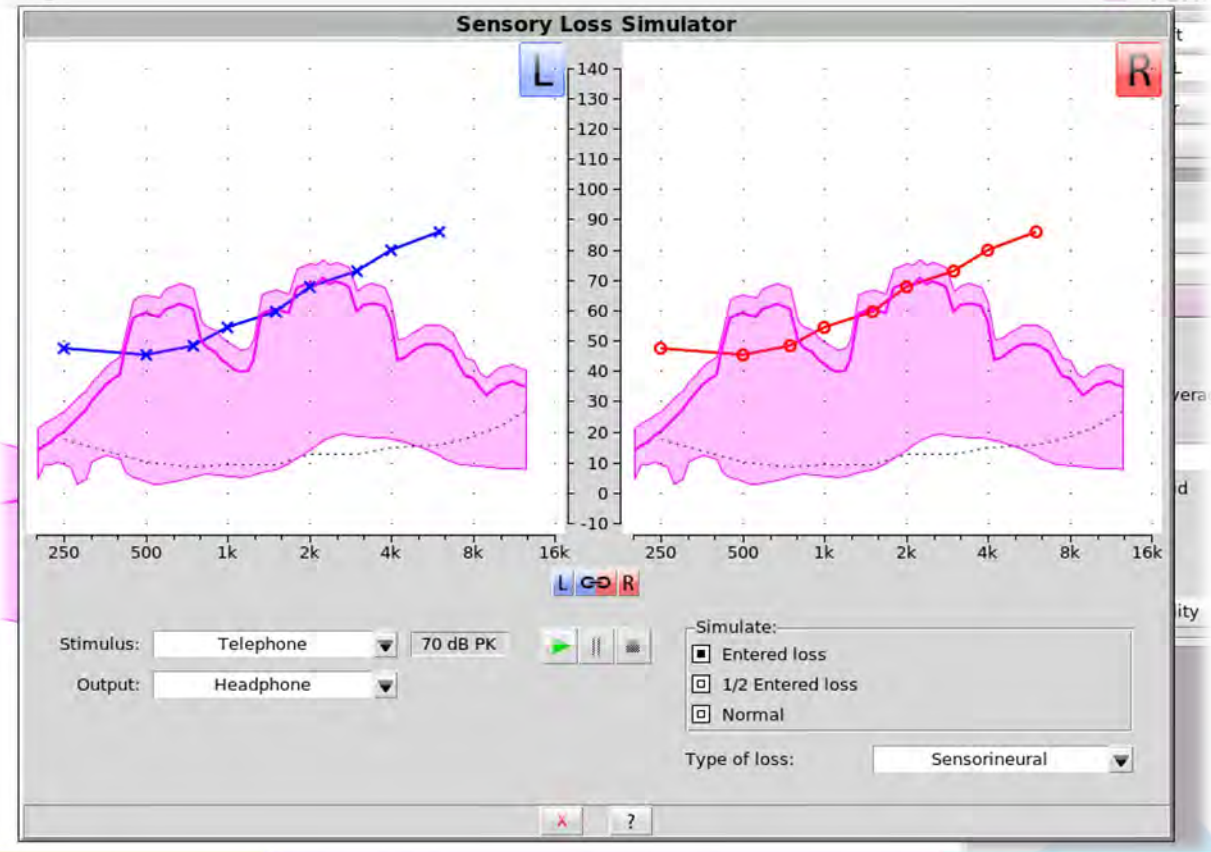


Hearing range

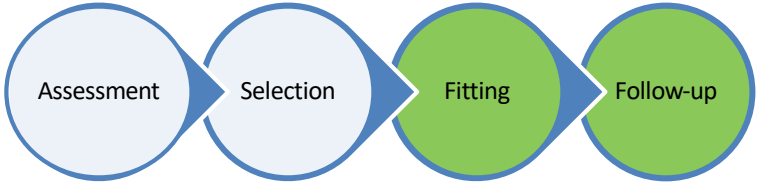


Sensory Loss Simulator

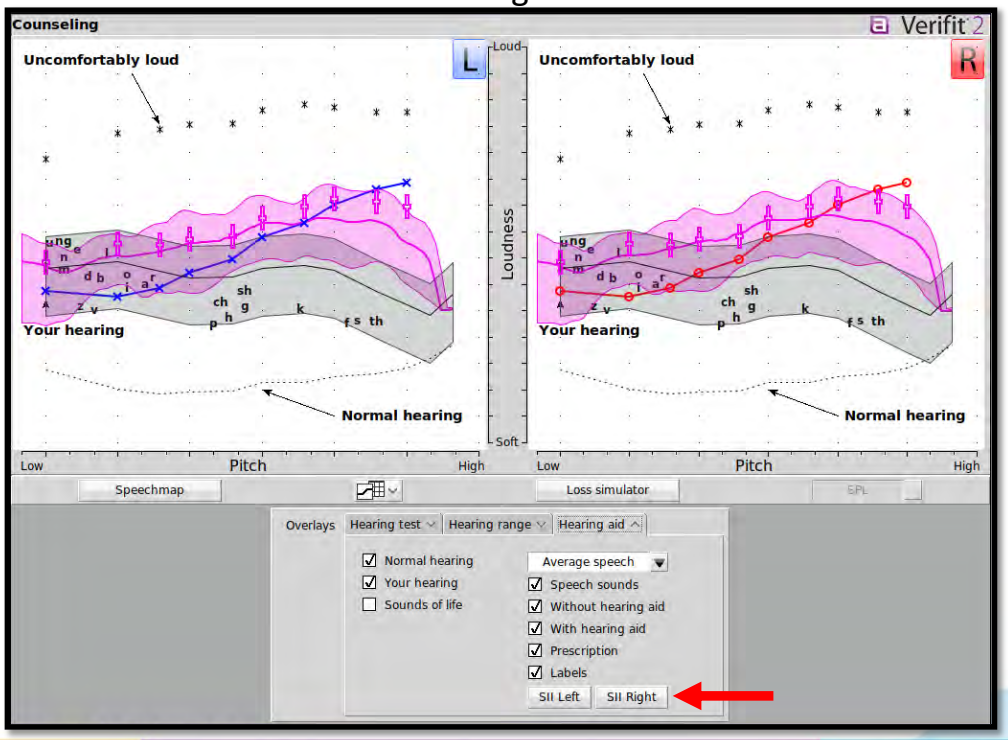
For Counseling Family Members



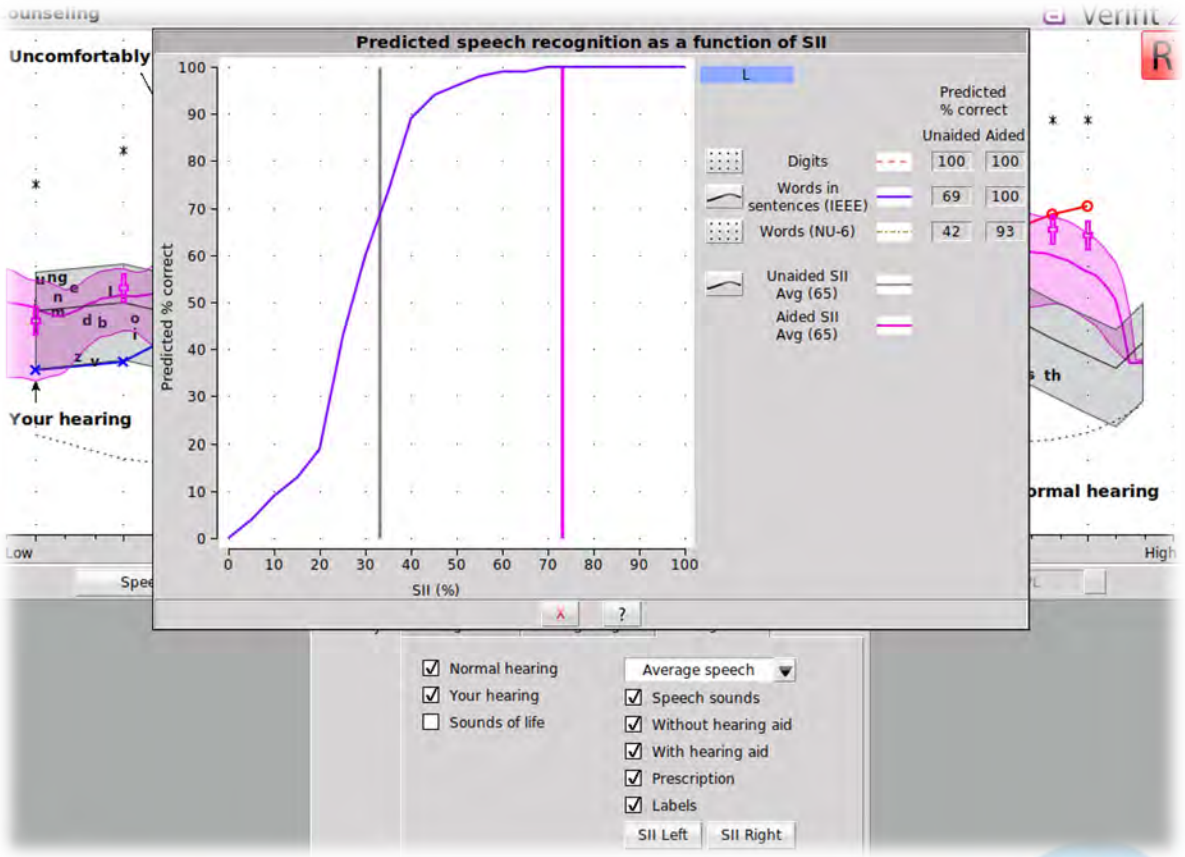
Counseling overlays



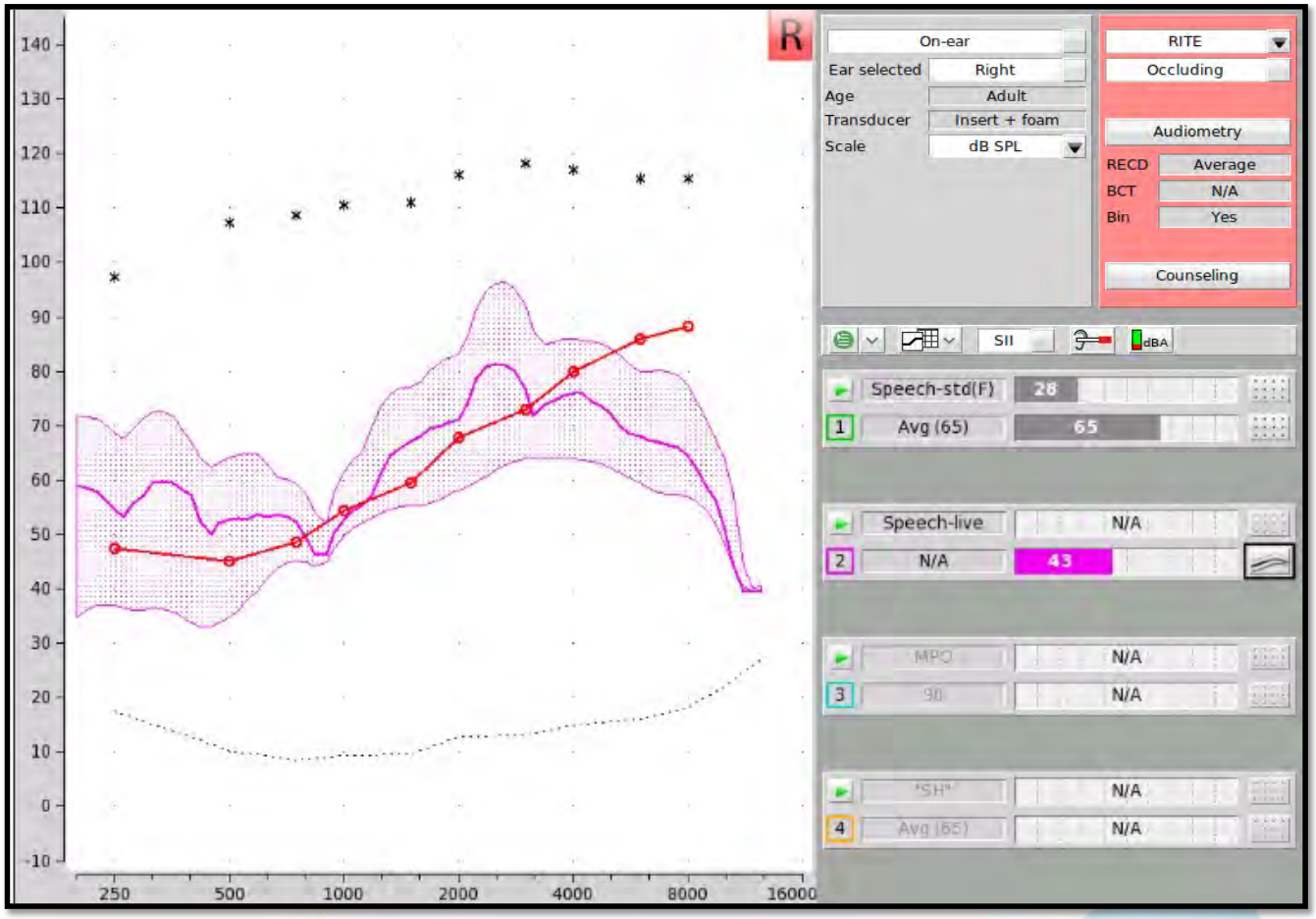
Hearing aid



Speech Intelligibility Index (SII) Graph



Speech-Live: Family Member's Voice



Closing Thoughts

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John Pumford

Describe something about your product that supports the family of the individual with hearing loss. Educate us about how we integrate this into our services to support the family.

Randy Baldwin

Hearing loss impacts the entire family

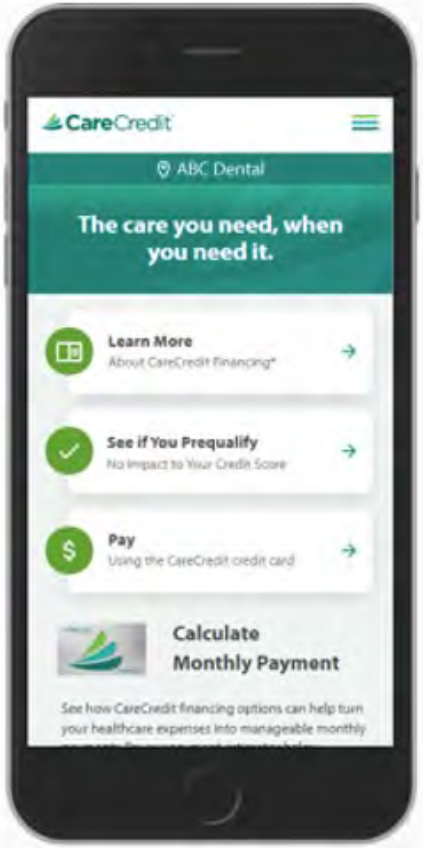
Financing Simplified

Q1

The Custom Link QR code enables patients to learn about, see if they prequalify, apply and pay using their smart device or home computer.

Prequalification enables patients to see if they prequalify for the CareCredit credit card privately with no impact to their credit bureau score.

Consumer self-service enables patients to access financing when and where it's most convenient for them.



More CareCredit Benefits

- Patients can use again and again for ongoing care
- Accepted at over 260K provider locations
- Patients can use at dentist, optometrist, audiologist, veterinary, cosmetic surgery, chiropractor, ophthalmologist and much more

Closing Thoughts

Describe something about your product that supports the family of the individual with hearing loss. Educate us about how we integrate this into our services to support the family.

Randy Baldwin

What are we going to see from your company in the next 1-5 years that will change how we provide individualized care?

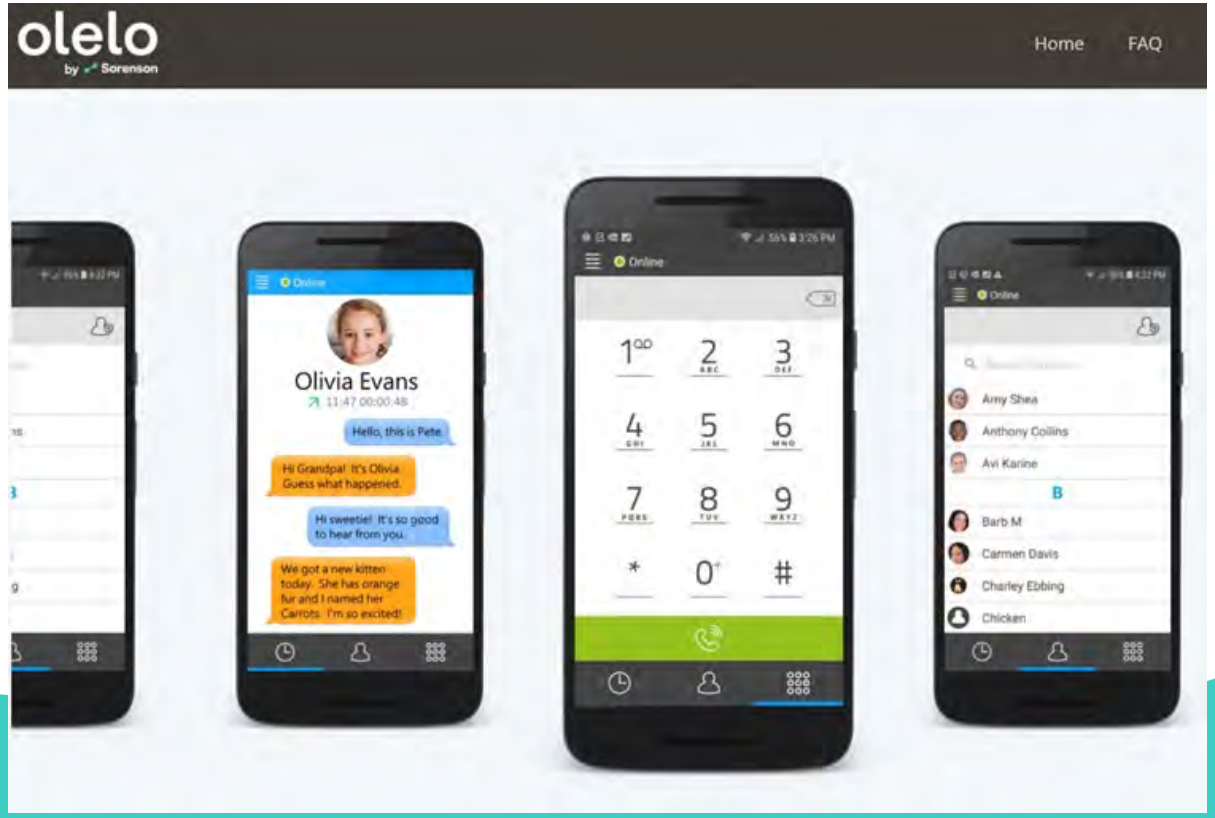
Steve DeMari, MS – CaptionCall
Dave Fabry, PhD – Starkey
Catherine Richardson, MA – Cochlear
Shannon Basham, AuD – Phonak

CaptionCall by Sorenson

What are we going to see from your company in the next 1-5 years that will change how we provide individualized patient care?

Steve DeMari

What are we going to see from your company in the next 1-5 years that will change how we provide individualized patient care?



What are we going to see from your company in the next 1-5 years that will change how we provide individualized patient care?

FAQ

Olelo is simple and capable, with all the phone features you already love, and nothing complicated that you don’t.

- Dial and answer calls just like with your ordinary phone
- Keep all the contacts you've already saved
- Voicemail transcribed by accurate speech recognition
- See entire call transcripts in your call history
- Emergency 911 calls captioned in real time
- Works on Android or iPhone anywhere you have Wi-Fi or mobile data

CaptionCall by Sorenson

Closing Thoughts

What are we going to see from your company in the next 1-5 years that will change how we provide individualized patient care?

Steve DeMari

What are We Going to See From Your Company in the Next 1-5 Years that will Change How we Provide Individualized Patient Care?

DAVE FABRY, Ph.D. Chief Innovation Officer

Hear better. Live better.

Fall Detection

Fall Risk Assessment

Balance Improvement

Fall Prevention

STEADI: Stopping Elderly Accidents, Deaths, & Injuries

Have you **fallen** in the past year?

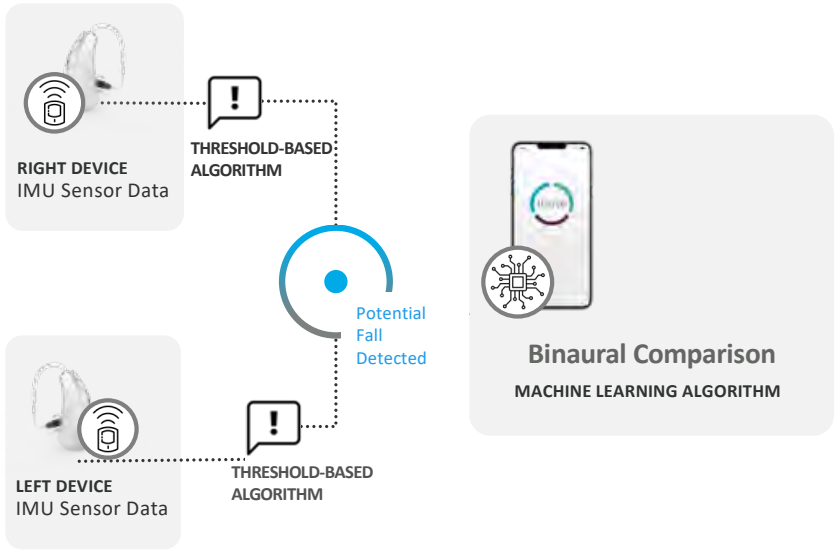
Do you **feel unsteady** when standing or walking?

Do you **worry** about falling?

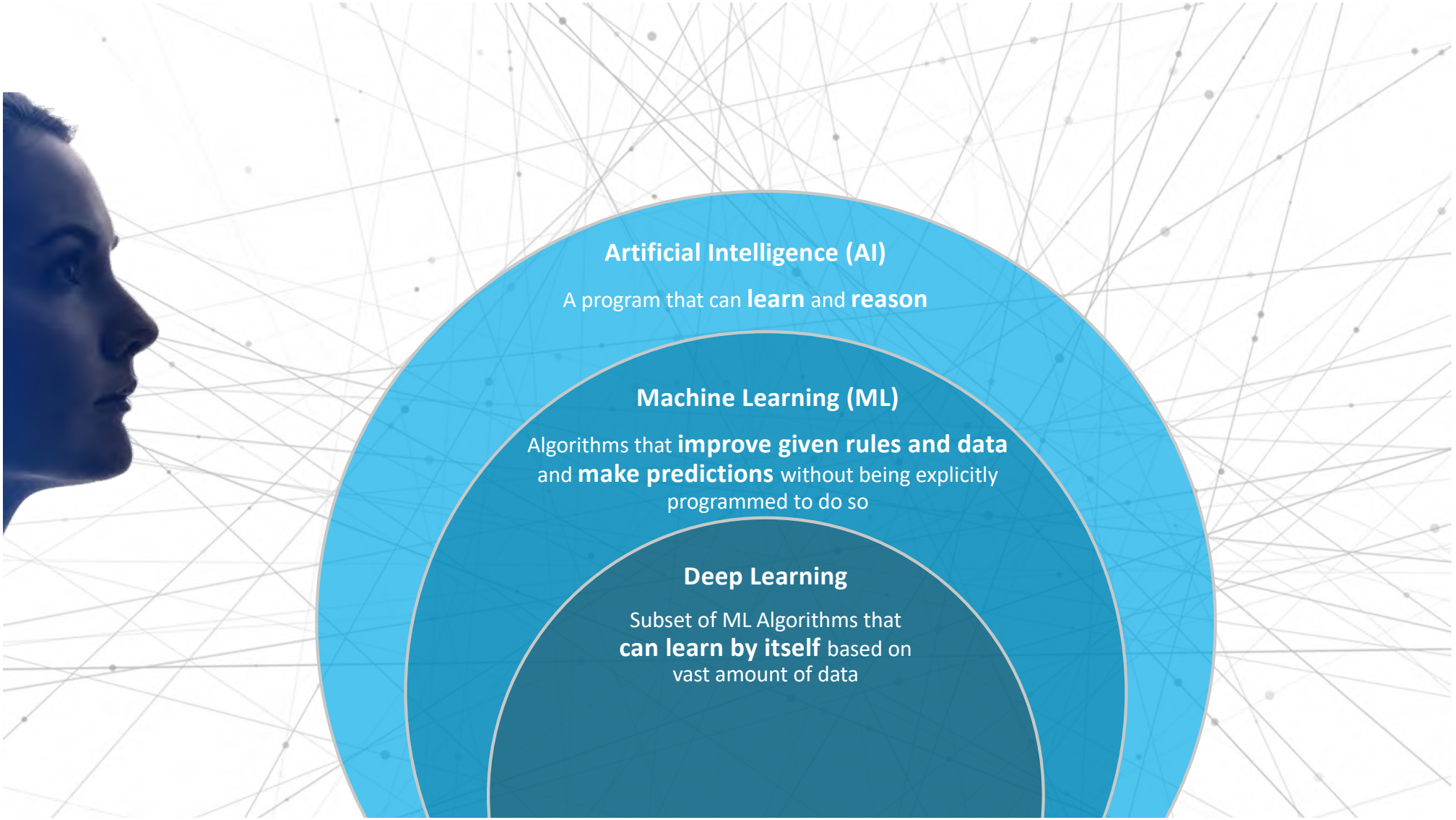
"Analysis showed that using only the three key questions **identified 95% of these high-risk patients**, potentially reducing the time needed to screen patients."

Eckstrom E, Parker EM, Lambert GH, Winkler G, Dowler D, Casey CM. Implementing STEADI in Academic Primary Care to Address Older Adult Fall Risk. *Innovation in Aging*, 2017;1(2),igx028.

Hearing Aid-based Functional Assessment Testing



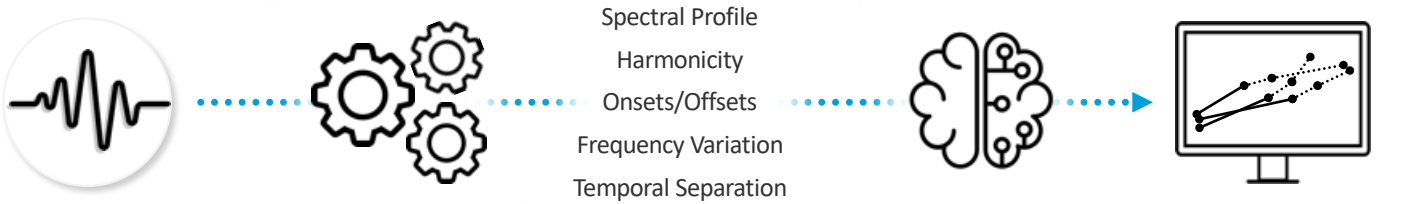
Timed Up and Go	**94.4%**	Screening Decision Accuracy (n=71)
30-Sec Chair Stand	**95.8%**	Screening Decision Accuracy (n=71)
4-Stage Balance	**82.7%**	Screening Decision Accuracy (n=71)


Artificial Intelligence (AI)
A program that can learn and reason
Machine Learning (ML)
Algorithms that improve given rules and data and make predictions without being explicitly programmed to do so
Deep Learning
Subset of ML Algorithms that can learn by itself based on vast amount of data

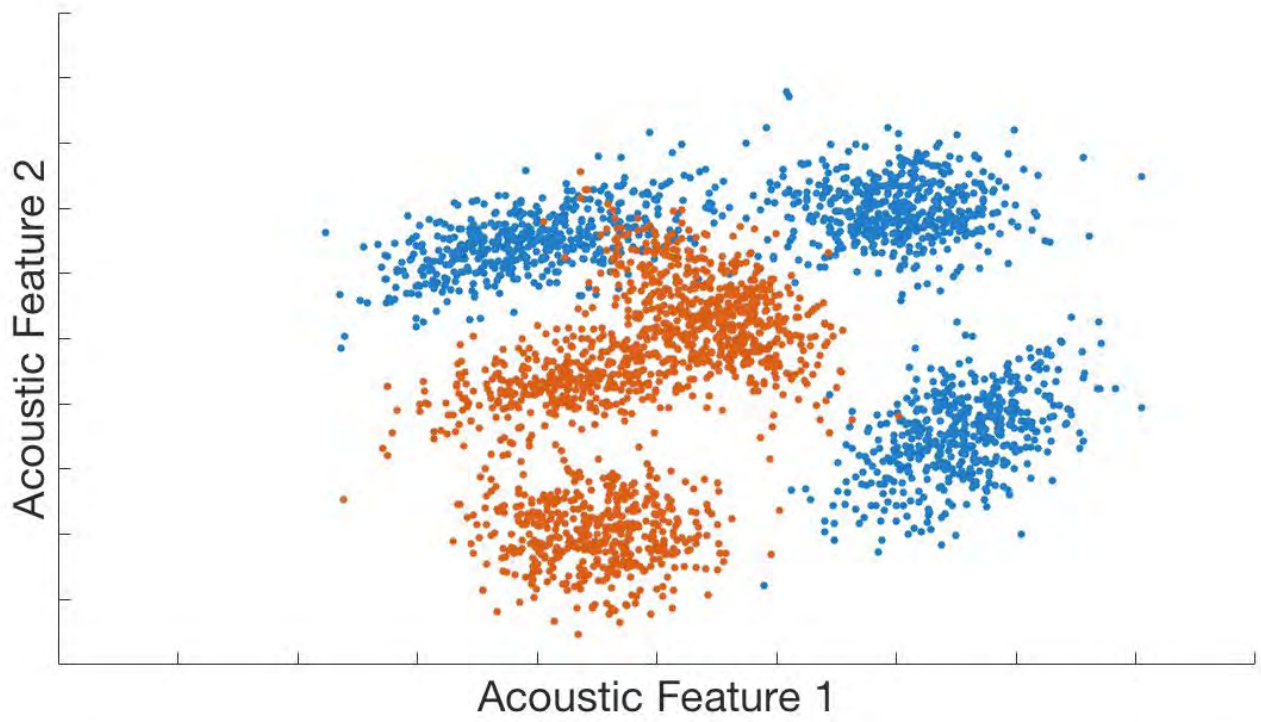

AI-based Sound
Classification

Machine Learning

Acoustic Environmental Classification System



SOUND INPUT | **FEATURE EXTRACTION** | **FEATURE/PATTERN CLASSIFICATION** | **POST PROCESSING** | **ENVIRONMENTAL SOUND CLASSIFICATION**


Acoustic Feature 2
Acoustic Feature 1


ONE WAY

Edge Mode

Instant Optimized Adjustments

Putting the power of artificial intelligence at your customer's fingertips for next-generation sound performance in the most challenging listening environments

Edge Mode Workflow

User Requests Assistance

User requests assistance by pushing button on the hearing aid or activating in the user application

Env Detected & Parameters Retrieved

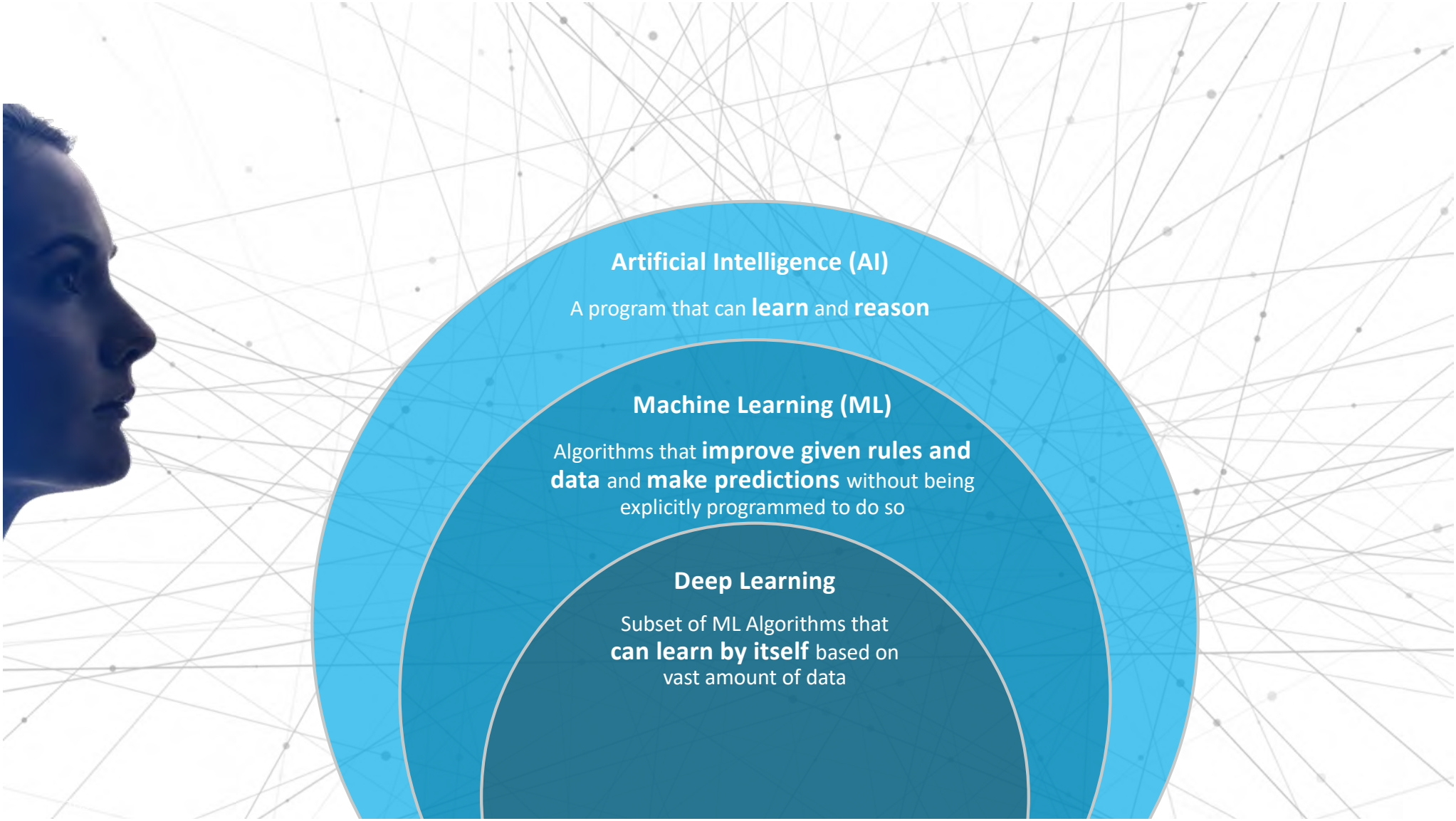
Environment is detected by analyzing hearing aid parameters and appropriate stored offsets are retrieved for listening

User Listens to New Parameters

User listens to the new setting in the problematic environment

User Accepts Or Rejects Parameters

User can continue to listen to the new settings (considered acceptance) or user can switch back to their prior setting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A program that can learn and reason
Machine Learning (ML)
Algorithms that improve given rules and data and make predictions without being explicitly programmed to do so
Deep Learning
Subset of ML Algorithms that can learn by itself based on vast amount of data

Closing Thoughts

What are We Going to See From Your Company in the Next 1-5 Years that will Change How we Provide Individualized Patient Care?

DAVE FABRY, Ph.D. Chief Innovation Officer

Starkey

Hear better. Live better.

Hear now. And always

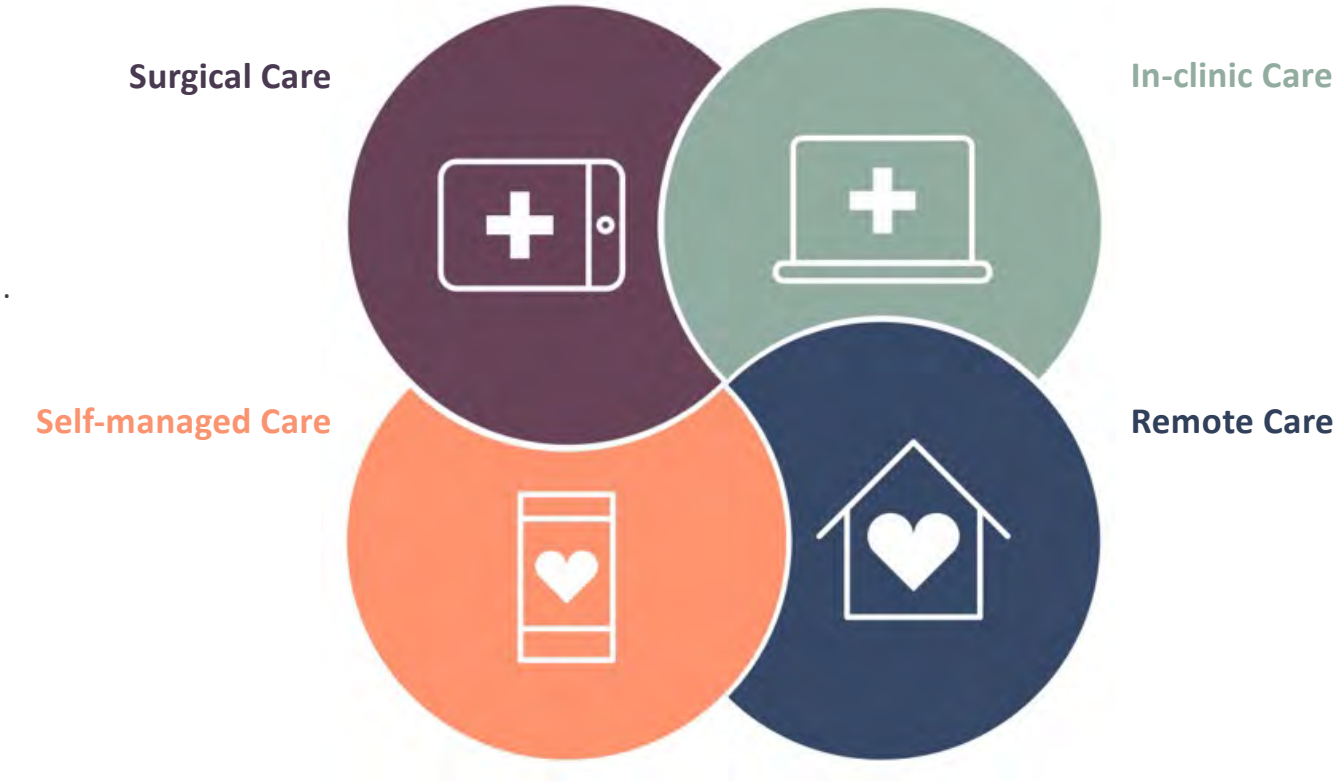
What are we going to see from Cochlear in the next 1-5 years that will change how we provide individualized care?

Catherine Richardson

Director, Market Expansion and Integration

Connected Care supports patients at every stage of their journey

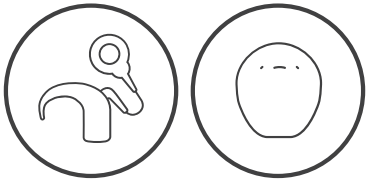
Q8



Cochlear's Remote Care portfolio

"It takes the stress away, if you like, of going all the way to the clinic."

Katie, User of Remote Care



For compatible* Cochlear™ Nucleus® Sound Processors.

Includes:

- Remote Check**
- Remote Assist

For Cochlear Baha® 6 Max Sound Processors.

Includes:

- Remote Assist†

*For sound processor and app compatibility information visit www.cochlear.com/compatibility

**Remote Check and Remote Assist for Nucleus sound processors are intended for ages 6 and older. Remote Check and Remote Assist features are only visible and accessible if they are enabled by a clinician. Clinicians should consider the suitability of the feature before enabling Remote Check and Remote Assist. Remote Check does not replace clinical care and does not involve remote programming of the sound processor. Only available at clinics that have enrolled in Remote Care.

† Remote Assist for Baha sound processors is intended for a follow-up adjustment or setup of a replacement or upgrade sound processor for suitable qualified patients based on clinical judgment. Only available at clinics that have enrolled in Remote Care.

Cochlear™ Remote Check

Cochlear's **award-winning*** hearing health tool with customizable tasks you can assign to the patient.

Implant site photos

Questionnaire part 1

Aided audiogram

Implant check

Speech in noise

Questionnaire part 2

*International Good Design Award 'Best in Class' for Digital Design, 2019. Available from: https://good-design.org/projects/remote-hearing-health-check/

Using Remote Assist

1

Counselling

- Device set-up or equipment demonstration
- To substitute or complement an in-clinic counselling session

2

Troubleshooting and triage

- Issue identification and resolution
- Patient-initiated support

3

Patient Monitoring

- Performance monitoring
- Check of sound processor adjustments or following a sound processor upgrade

4

Supporting New Patients

- MVBT adjustments on progressive MAPs
- Check of datalogging and audibility

Hear now. And always

Closing Thoughts

What are we going to see from Cochlear in the next 1-5 years that will change how we provide individualized care?

Catherine Richardson

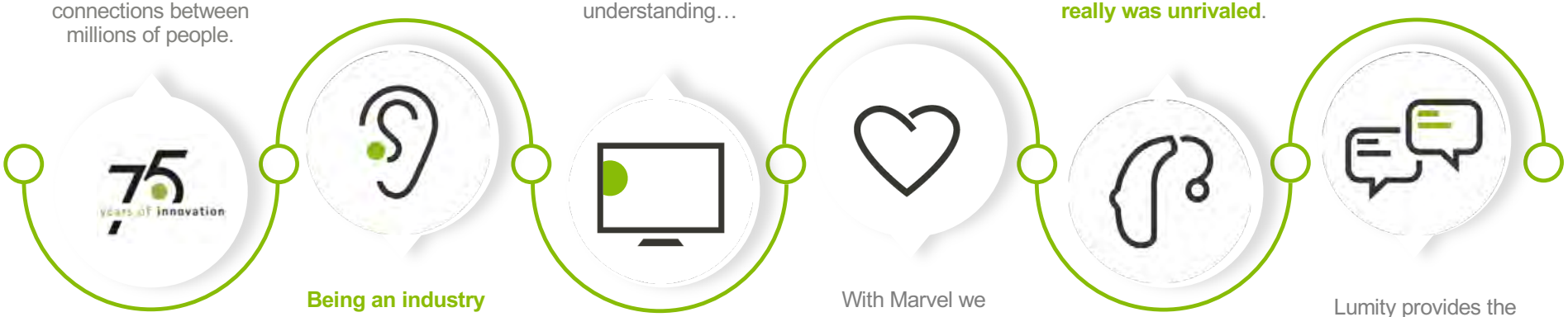
Director, Market Expansion and Integration

What are we going to see from your company in the next 1-5 years that will change how we provide individualized patient care?

Shannon Basham

75 years of innovation

For 75 years Phonak has been at the forefront of innovating hearing technology, dedicating decades to developing products that enable connections between millions of people.



Being an industry leader we never stay still, we continue to innovate; we continue to light up connections and look forward to the next 75 years.

With our new platform we continue to innovate to improve the No.1 consumer desire – Better speech understanding…

With Marvel we really generated **love at first sound** moving the needle on first fit success.

With Paradise we delivered on improving sound quality and HCPs… clients agreed that the sound **experience really was unrivaled**.

Lumity provides the sound quality you expect from an industry leader and focuses on **illuminating speech understanding**.

What does the future hold?

Closing Thoughts

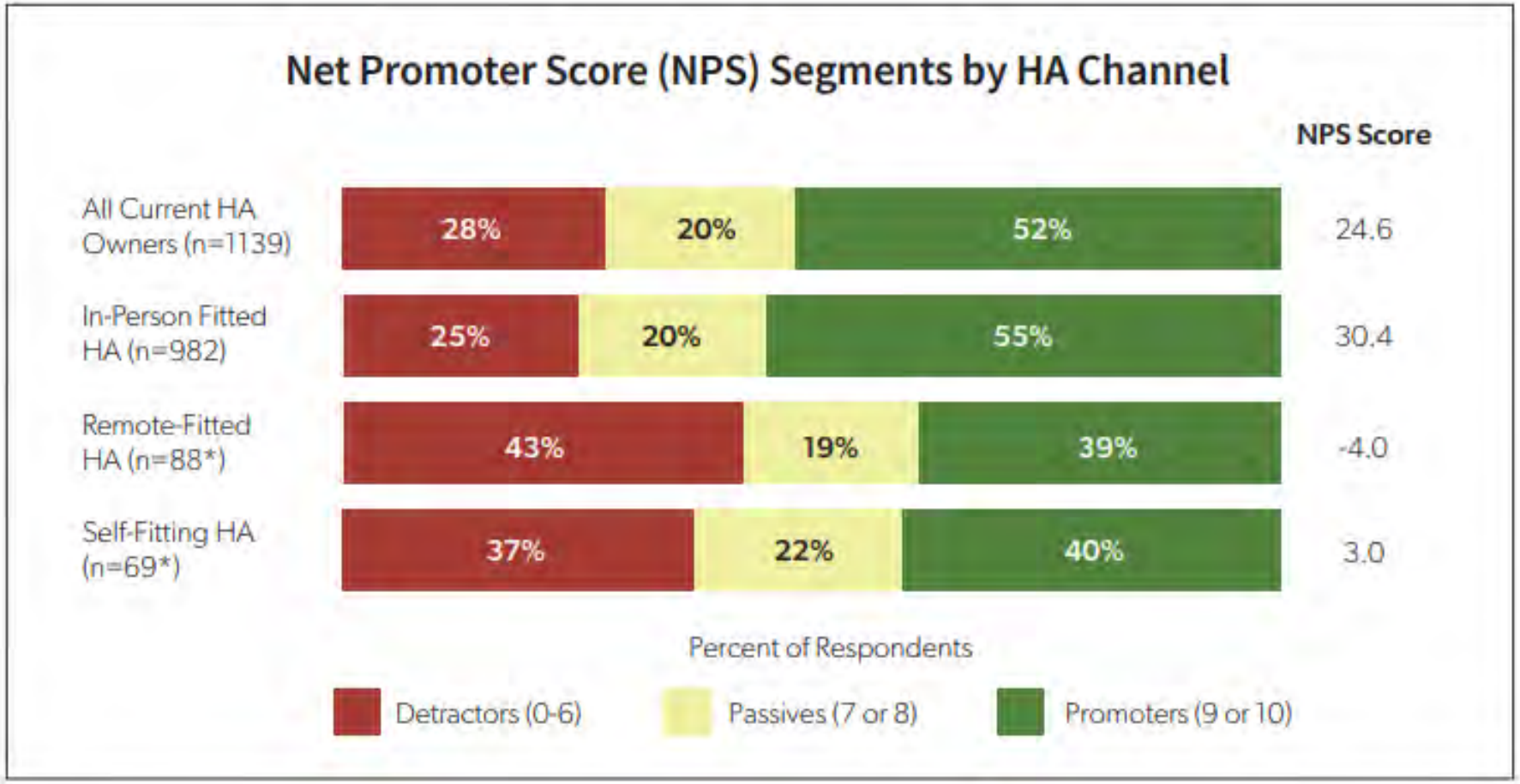
What are we going to see from your company in the next 1-5 years that will change how we provide individualized patient care?

Shannon Basham

Presenter's Choice of Question and Non-Work Activity!

According to MarkeTrak 2022, hearing aid satisfaction rates are ~ 80% regardless of purchasing channel (in-person, remote or self-fit), given this similarity how can I continue to make a difference?

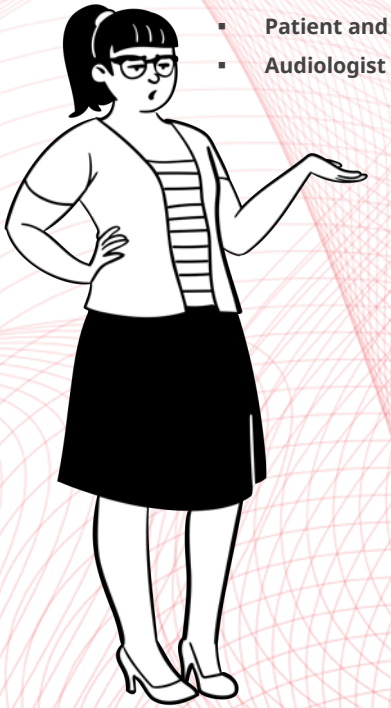
Brian Taylor, AuD - Signia



MT 2022 data. Picou (2022)

Human-machine system

- As DNN gather more information about wearer preferences it can make better predictions of individual solutions
- Audiologists can spend more time coaching on use of streaming, wellness apps, etc. (features that matter most to premium buyers)
- Patient and audiologist can spend more time collaborating on holistic quality of life goals
- Audiologist provides “The Human Touch”



Audiologist

Signia Assistant

Hearing Aid Wearer

What clinical tests can support individualized care and hearing aid recommendations?

Laurel Christensen, PhD - ReSound

HEARING IN NOISE TEST

- Examples
  - QUICK SPEECH IN NOISE TEST (Quick SIN)
  - HEARING IN NOISE TEST (HINT)

- What do they test?
  - How well you can understand speech in noise compared to someone with normal hearing.

- What is measured?
  - The required signal-to-noise ratio (SNR) to understand the speech above the noise.

- The result can be compared to those with normal hearing.

EXAMPLE

Example recording from **Quick SIN** test.

		Score the # Correct
+25	1. To have is better than to wait and hope.	5
+20	2. The screen before the fire kept in the sparks.	5
+15	3. Thick glasses helped him read the print.	4
+10	4. The chair looked strong but had no bottom.	4
+5	5. They told wild tales to frighten him.	2
0	6. A force equal to that would move the earth.	0
		Total 2
		0

25.5 – Total # Correct = SNR Loss

25.5 – 20 = 5.5 dB

Interpreting the Score

QUICK SIN SCORE SNR LOSS	DEGREE OF LOSS	HOW TO USE IN FITTING A HEARING AID
Up to 2 dB	Normal	Rare for a H.A. User to Have this SNR Loss
3-7 dB	Mild	H.A. User Should Have Directional Microphones
8-15 dB	Moderate	H.A. User Should Have Directional Microphones – 2 mic systems won't help much Look for 4-mic beamformers
> 15 dB	Severe	Companion Mics and 4-mic beamformers

In today's economy, how can CareCredit and Allegro Credit be used to help patients move forward with recommended hearing care?

Randy Baldwin - CareCredit

In today's economy, how can CareCredit and Allegro Credit be used to help patients move forward with recommended hearing care?

Can Telehealth & Video Conferencing tools offer ease of use and accessibility for the deaf and hard of hearing?

Steve DeMari, MS - CaptionCall

Can Telehealth & Video Conferencing tools offer ease of use and accessibility for the deaf and hard of hearing?

Can you tell us about how Phonak technology and the brand can help us to change the conversation from “hearing loss is a sensory problem” to “hearing care is a vital part of healthy living”?

Shannon Basham, AuD - Phonak

Phonak Well-Hearing is Well-Being™

Social-Emotional

Fosters easier engagement, stronger connections and a **more positive outlook**

Cognitive

Supports **cognitive fitness**[1]

Physical

Can enable people to **live a more active and healthy lifestyle**

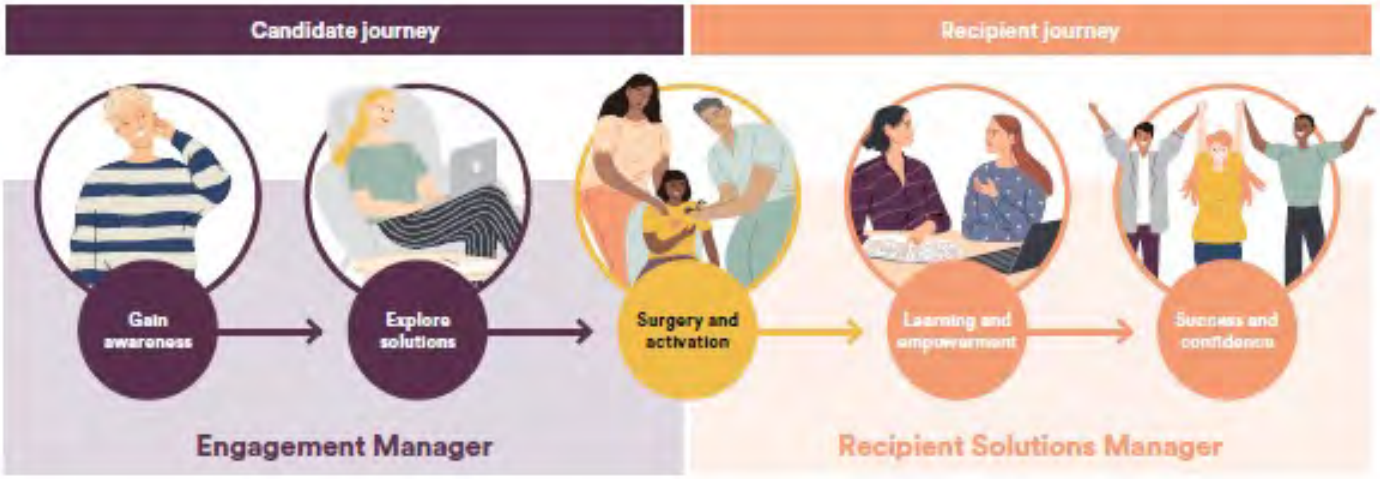
1. Karawani, H., Jenkins, K., & Anderson, S. (2018). Restoration of sensory input may improve cognitive and neural function. *Neuropsychologia*, *114*, 203–213.

How does Cochlear support Hearing Care Professionals with the growing challenge of improving clinic efficiency and economic viability?

Catherine Richardson, MA - Cochlear

Cochlear™
Recipient Solutions

Hearing journey

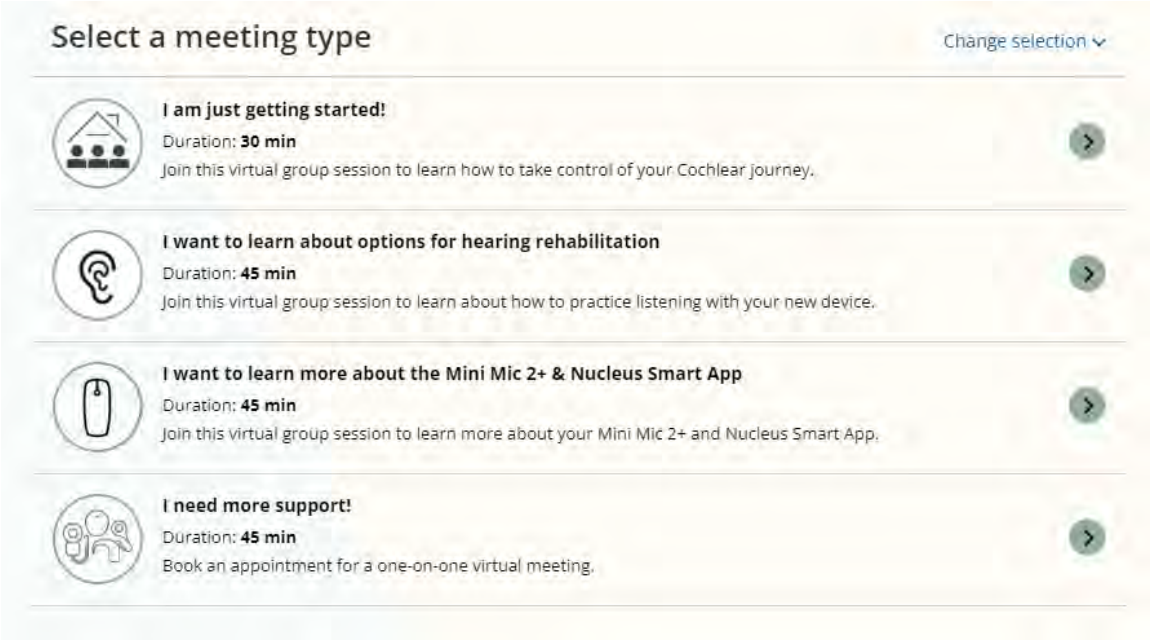


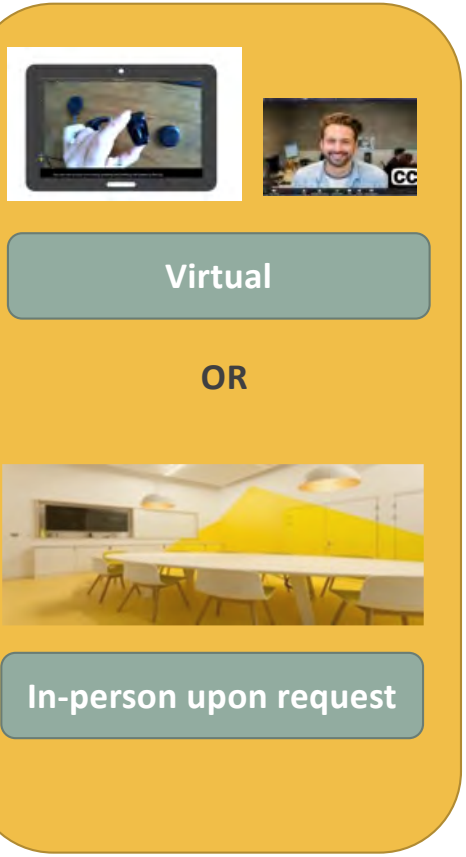
Goal: Increase recipient satisfaction* & confidence through personalized product education, counseling and resources to achieve recipient hearing goals while enabling clinicians to spend more time doing what they love.

* Satisfaction with Cochlear Service Experience, Cochlear Product & Accessories, and Hearing Outcomes

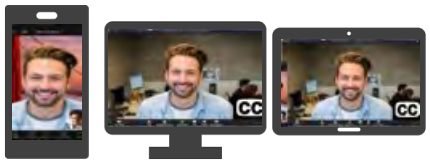
RSM Sessions

- Up to 5 recipients can attend
- Sessions are topic-driven
- Individuals can be booked through the *Additional Onboarding Education* option.
- **Pediatric sessions now offered!**





Upgrade experience with Customer Relationship Specialist (CRS)



Virtual or Phone Call

Appointment-based

"Is an upgrade right for you?"

Personalized & interactive

Reviewing out-of-pocket estimate and financing options

Measuring recipient satisfaction

Exit survey

Follow up

Upgrade resources, order and insurance support, connecting with RSM for onboarding

Common Topics

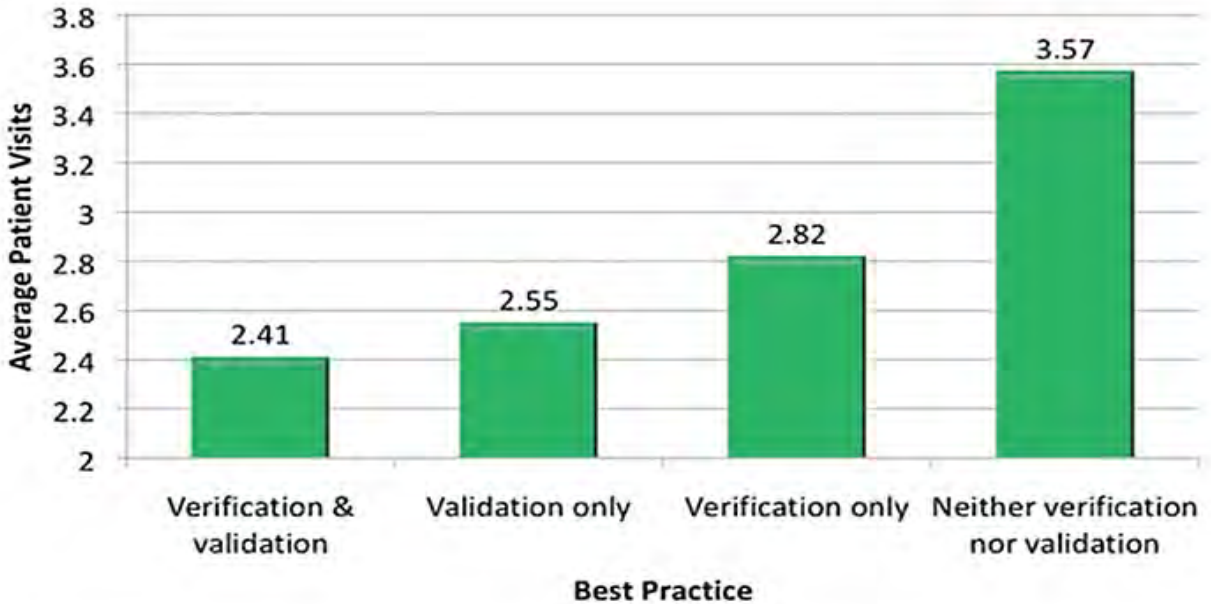
1. Understanding and navigating the upgrade process
2. Learning about new sound processor technology
3. Understanding payment options and insurance coverage


Cochlear®
Quality care, anywhere
Subscribe to the Cochlear Professionals Newsletter
Contact Cochlear directly
AMEM@cochlear.com
or
800-483-3123
139

Time is a challenge in busy clinical practice. How does your product / service address efficiency concerns and help overcome barriers to individualized care?

John Pumford, AuD - Audioscan

Best Practice and Patient Visits



- Fewer patient visits to a successful fitting as more best practice (e.g., REM Verification) is added to the hearing aid fitting process

Kochkin, S. (2011). MarkeTrak VIII: Reducing patient visits through verification and validation. Hearing Review, 18(6), 10-12.

Leverage Verification Efficiency Options

- Software-assisted Probe Tube Placement (Probe*GUIDE*)
- Pre-fitting devices via simulated REM (Test-Box)
- Automated Verification to Target (Verifit*LINK*)
- Simultaneous bilateral measurements
- Typical verified fitting < 10 mins

“Will ChatGPT eliminate the need for the professional to assist with individualizing/personalizing hearing aid fittings?”

Dave Fabry, PhD - Starkey

ChatGPT

Examples

"Explain quantum computing in simple terms" →

"Got any creative ideas for a 10 year old's birthday?" →

"How do I make an HTTP request in Javascript?" →

Capabilities

Remembers what user said earlier in the conversation

Allows user to provide follow-up corrections

Trained to decline inappropriate requests

Limitations

May occasionally generate incorrect information

May occasionally produce harmful instructions or biased content

Limited knowledge of world and events after 2021

Here are some significant music events that occurred on February 15 throughout history:

1. 1930 - American jazz pianist and composer Duke Ellington recorded the classic jazz tune "Mood Indigo" with his orchestra.
2. 1965 - The Beatles recorded "Ticket to Ride" at EMI Studios in London. The song went on to become a chart-topping hit in the UK and US.
3. 1972 - Led Zeppelin played a concert at the Memorial Auditorium in Dallas, Texas. The concert was recorded and later released as the live album "How The West Was Won".
4. 1999 - Pop superstar Cher started her "Do You Believe? Tour" in Phoenix, Arizona. The tour was in support of her hit single "Believe".
5. 2006 - Canadian indie rock band Arcade Fire won the Album of the Year award at the 48th Grammy Awards for their album "Funeral".
6. 2012 - American singer and songwriter Whitney Houston passed away at the age of 48. Houston was one of the most successful female musicians of all time, with hits like "I Will Always Love You" and "Greatest Love of All".

These are just a few examples of the many music events that have taken place on February 15 throughout history.

FA how will AI assist with individualizing hearing aid performance?

AI can assist with individualizing hearing aid performance by leveraging the power of machine learning algorithms to personalize hearing aids to an individual's unique hearing needs. Here are a few ways in which AI can help:

1. Customization of hearing aid settings: AI can analyze data from an individual's hearing tests, lifestyle habits, and feedback on sound quality to generate a personalized hearing profile. This profile can then be used to fine-tune the settings of the hearing aid to match the individual's specific hearing needs.
2. Real-time adjustments: AI can also enable hearing aids to automatically adjust their settings in real-time based on changes in the individual's environment. For example, the hearing aid can detect the presence of background noise and adjust its noise-cancellation feature accordingly to optimize sound quality.
3. Improved sound quality: AI algorithms can also enhance the sound quality of hearing aids by reducing background noise, improving speech clarity, and preserving the natural sound of the environment.
4. Predictive maintenance: AI algorithms can predict when a hearing aid may need maintenance or repair, allowing the user to address potential issues before they become more severe.

Overall, AI can help to create a more personalized, efficient, and effective hearing aid experience for individuals with hearing loss.

FA

what is the best hearing aid for me?

As an AI language model, I am not able to determine the best hearing aid for you as I do not have access to your personal hearing test results, medical history, lifestyle, and other individual factors that may influence the selection of a hearing aid.

The best way to determine the most appropriate hearing aid for your specific needs is to schedule a comprehensive hearing evaluation with a licensed audiologist or hearing healthcare professional. During this evaluation, the audiologist will perform a series of tests to determine the type and degree of your hearing loss, as well as any other factors that may impact the selection of a hearing aid. They will also take into consideration your lifestyle, communication needs, and personal preferences to recommend a hearing aid that is tailored to your individual needs.

Once the audiologist has recommended a hearing aid, they will also provide guidance on how to properly use and maintain the device to maximize its benefits. It is important to work closely with your audiologist to ensure that you receive the best hearing care possible.

Thank You!
2023 Industry Roundtable
Moderated by Catherine Palmer, PhD

Steve DeMari, MS
CaptionCall

Brian Taylor, AuD
Signia

Shannon Basham, AuD
Phonak

Randy Baldwin
CareCredit

Dave Fabry, PhD
Starkey

Laurel Christensen, PhD
ReSound

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