

Real World Solutions For Challenging Audiograms and Anatomy

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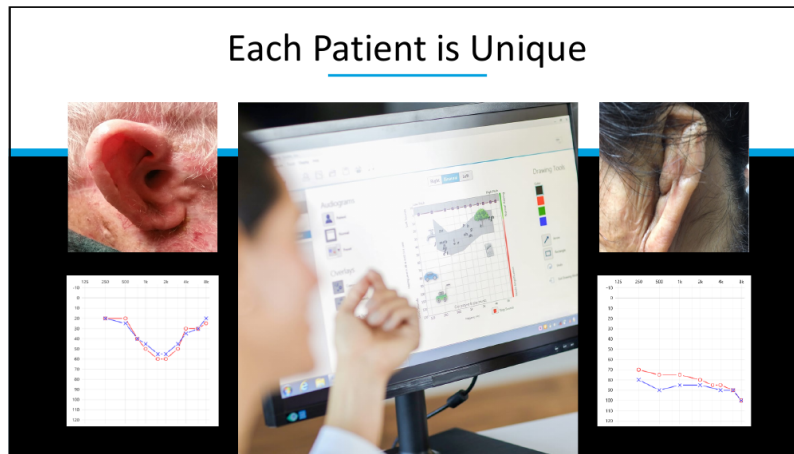
Key Takeaways

Key Takeaway	Clinical Implication
Meniere's Disease produces fluctuating, often unilateral sensorineural hearing loss with vertigo and tinnitus.	Fitting decisions must accommodate fluctuating hearing and address tinnitus and balance concerns alongside amplification.
Starkey's Omega AI RIC RT and RIC 312 devices support CROS/BiCROS fittings.	Clinicians can address single-sided deafness or an unaidable ear within the Omega AI portfolio without a separate product line.
Aural atresia is the absence of a fully developed ear canal, eardrum, middle ear space, and ossicles.	Alternative coupling and fitting strategies are required when the ear canal cannot accept a standard fitting.
Starkey offers visual-impairment-specific accessories, including stacked volume control, 2V Dimples, and specialized removal handles.	Physical product features can directly offset dexterity- and vision-related fitting barriers.
Severe-to-profound sensorineural loss (65–95 dB HL or worse in the better ear) often coexists with anatomical fitting challenges.	Feedback cancellation and maximized audibility become critical fitting priorities.
TeleHear offers Synchronous, Asynchronous, and TeleHear AI remote programming options.	Remote care pathways extend follow-up access for patients with mobility or travel barriers.

Learner Outcomes

- Identify profile characteristics of a hearing loss related to a Meniere's Disease diagnosis
- List Starkey products that are CROS/BiCROS compatible
- List 2 Starkey product feature solutions to assist a patient with visual impairment

Each Patient Is Unique



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Figure 1. Two patients' distinct ear anatomies and individualized audiograms illustrate the variability clinicians encounter between patients.

Assumptions of Typical Fittings

The following assumptions are commonly made about hearing loss and fittings, but do not hold true for every patient:

- Prescriptive targets are appropriate for all hearing losses
- Measurable hearing is usable hearing
- Bilateral hearing loss equals binaural fitting

Managing Unusual Audiograms or Ear Anatomy

- Proper discovery to help determine which solutions may be best for the patient
- Set appropriate expectations
- Try to think outside the box
- Robust follow up plan

Meniere's Disease

What Causes the Symptoms of Meniere's Disease?

Meniere's Disease is an inner ear disorder causing severe dizziness (vertigo), tinnitus, hearing loss, and a feeling of fullness in the ear. The causes of the disease itself are unclear, but the symptoms are often associated with fluid imbalance in the area of the inner ear known as the Labyrinth.

Meniere's Disease most often affects one ear, but both ears may be affected in up to 25% of people. It is most common in adults 40–60 years old.

Q1

Quiz Hint: Meniere's Disease does NOT typically present with conductive hearing loss in both ears — expect sensorineural hearing loss, tinnitus, and dizziness instead.

Case Study: Victor P — Meniere's Disease

Category	Details
Background	Retired federal attorney
Hearing Loss	Experienced fluctuating hearing loss that has stabilized over time
Vertigo	Episodic, stabilized but still experiences occasional vertigo, which concerns his wife
Tinnitus	Occasional, more noticeable when stressed or tired, less frequent after retirement
Lifestyle	Enjoys visiting with family, card games and coffee with his buddies; he and his wife are “snowbirds”

Needs Assessment

- Fitting flexibility with potential for hearing loss fluctuation
- Tinnitus adjustability
- Balance assistance
- Patient driven automatic adjustments
- TeleHealth options

Recommendation: Omega AI 24 RIC RT (Fit Binaurally)

- Pro Fit programming flexibility
- Multiflex Tinnitus Pro
- Edge Mode+
- TeleHear AI
- Fall Detection / Balance Assessment / Balance Builder

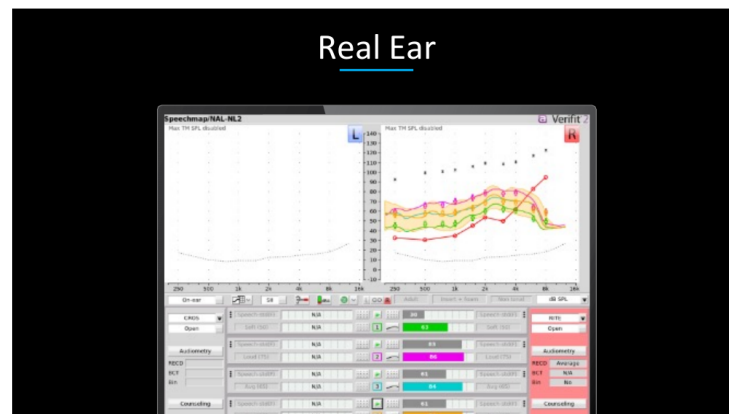
Follow-Up Course

First Follow-Up:

- Hearing well overall; wife feels he's hearing better than he has with past hearing aids
- Victor feels he struggles to hear his 7-year-old granddaughter on the phone when they talk daily
- Wonders if there is anything he can do if he needs help in situations like his weekly card games or in some restaurants

Second Follow-Up:

- Hearing well overall; experienced more social engagement
- Tried Edge Mode+ and felt it was helpful
- Wants to set up Fall Alert in case he has a vertigo episode
- Wants to explore options for tinnitus management
- Set up Remote Programming assistance



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Figure 4. Real ear measurement (Verifit 2 speechmap) verifying Victor P's aided fitting.

Balance and Fall Prevention Features

- Balance Assessment — gain awareness of balance and stability with a series of self-guided evaluations (4 standing and 2 chair exercises)
- Balance Builder — gain awareness of balance and stability with a series of self-guided exercises
- Fall Detection

Multiflex Tinnitus Pro

Multiflex Tinnitus Pro provides personalized sound therapy for tinnitus management with a range of personalized masking options, including White Noise, Ocean Noise, Blue Noise, Audiogram Shaped, Red Noise, Purple Noise, Custom, Pink Noise, and White Noise, Low Frequency, and High Frequency Weighted Options.

12 soothing sounds are available and may be customized and saved.

TeleHear

TeleHear is a web-based remote hearing aid programming solution.

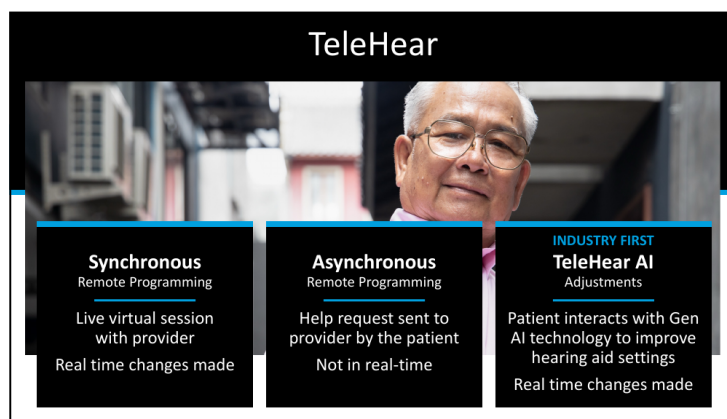


Figure 2. Comparison of TeleHear's Synchronous, Asynchronous, and TeleHear AI remote programming options.

Patient System Requirements:

- 2.4 GHz Omega AI hearing aids
- My Starkey App on a supported smart device (iOS and Android compatible)
- Internet connection — wifi or cellular

Professional System Requirements:

- Pro Fit with NOAH or PatientBase
- Internet connection
- Google Chrome or Microsoft Edge internet browser
- Webcam and Headset/Microphone/Speakers

Meeting Victor's Needs

- Fitting flexibility
- MultiFlex Tinnitus Pro
- Balance assistance
- Edge Mode+ automatic adjustments
- TeleHealth options

Atresia

Definitions

Term	Definition
Atresia	Absence or closure of a natural passage of the body; absence or disappearance of an anatomical part by degeneration
Aural Atresia	The lack of a fully developed ear canal, eardrum, middle ear space, and ossicles

Q4

Quiz Hint: Aural atresia is defined as the lack of a fully developed ear canal, eardrum, middle ear space, and ossicles.

Case Study: Amelia G — Atresia/BiCROS

Category	Details
Presentation	Single-sided deafness; wasn't aware of treatable hearing loss in the better ear; lifelong vision issues, worsened following emergency surgery
Etiology	Left-sided surgical aural atresia following removal of a large acoustic neuroma (vestibular schwannoma)
Likely Surgical Intervention	Removal of the acoustic neuroma via translabyrinthine approach, which results in intentional surgical atresia — the permanent sealing and closing of the ear canal. This technique is used for large tumor removal or when hearing preservation is not possible.

Amelia has Left sided surgical aural atresia following removal of a large acoustic neuroma (vestibular schwannoma)

Likely surgical intervention: removal of the acoustic neuroma via translabyrinthine approach which results in intentional surgical atresia-the permanent sealing and closing of the ear canal

This technique is used for large tumor removal or when hearing preservation is not possible



Figure 3. Surgical aural atresia resulting from translabyrinthine acoustic neuroma removal.

BiCROS

BiCROS is designed for those with one unaidable ear (transmitter) and one “better” ear (receiver) that is aidable. It provides awareness from the unaidable side, boosts speech understanding, reduces listener fatigue, and enhances safety with improved sound localization.

Needs Assessment

- Address single sided deafness
- Coupling solution for atretic ear
- Concerns about handling hearing aids with her vision loss

Product Selection & Considerations

BiCROS Options:

- Omega AI RIC RT — up to 29 hours on a single charge
- Omega AI RIC 312 — up to 4 days of battery life
- How will we couple the transmitter?

Q3

Quiz Hint: Starkey's CROS/BiCROS solutions within the Omega AI portfolio are available in RIC RT and RIC 312 form factors.

Recommendation: Omega AI 24 RIC RT (BiCROS)

- Custom craftsmanship
- Pro Fit programming flexibility
- Visual assistance options

Earmold Guide

Starkey's Earmold Guide makes selection easy and is available on [StarkeyPro.com](https://www.starkeypro.com). Many different styles of custom cased molds are available, including custom RIC molds.

Solutions for Specific Patient Needs

Visually Impaired Options:

- Stacked volume control
- 2V Dimples (AD)
- Removal handle

Dexterity Removal Options:

- High strength silicone removal handle
- Nubbin handle
- Slot handle

Cognitive Identification Options:

- Engraving
- Metal chain loops
- Color code
- Cloth or vinyl cords

Q2

Quiz Hint: Starkey offers multiple solutions for visually impaired patients — stacked volume control, 2V Dimples, and removal handles are all valid options.

Follow-Up Considerations

- Hearing well
- Are there other solutions we can provide for help with visual difficulties?

Enhanced Gen AI Smart Assistant

- Supports hearing aid mic pick-up
- Allows patients to get hands-free help using their voice
- Receive detailed answers to questions, switch programs, set reminders, and more

Senior-Friendly Smartphone Tips

Platform	Tips
Apple	Enable Assistive Access; optimize the display for visual acuity issues; keep the home screen simple
Android	Use senior-friendly Android launchers; increase keyboard key size and text; disable gesture navigation; enable Easy Mode

Meeting Amelia's Needs

- Custom craftsmanship
- Exceeding hearing expectations
- Visual assistance options

Severe-to-Profound Loss

Severe-to-Profound Sensorineural Loss

Severe-to-profound sensorineural hearing loss is a permanent impairment, making hearing and speech understanding very difficult without amplification. It occurs as a result of damage to hair cells in the cochlea or the auditory nerve, and may be congenital or acquired.

Causes Include:

- Infections or disease (e.g. Meniere's Disease, Meningitis)
- Head trauma
- Genetics
- Medications

Q5 **Quiz Hint:** A severe hearing loss is classified as thresholds of 65–95 dB HL in the better ear.

Case Study: Martha D — Severe-to-Profound Loss

Category	Details
The Challenge	Severe-to-profound sensorineural hearing loss; tight and inflexible pinna; misshapen concha bowl; primarily Spanish speaking

Product Selection & Considerations

- Can an over-the-ear product be worn comfortably?
- Can appropriate gain be delivered without feedback concerns?

Recommendation: Omega AI 16 CIC 312 (Gain Level: Ultra Power)

- Custom craftsmanship
- Pro Fit programming flexibility
- Feedback cancellation
- Maximize audibility

Follow-Up Considerations

- Patient finally able to participate in conversations
- Right aid sounding softer than the left

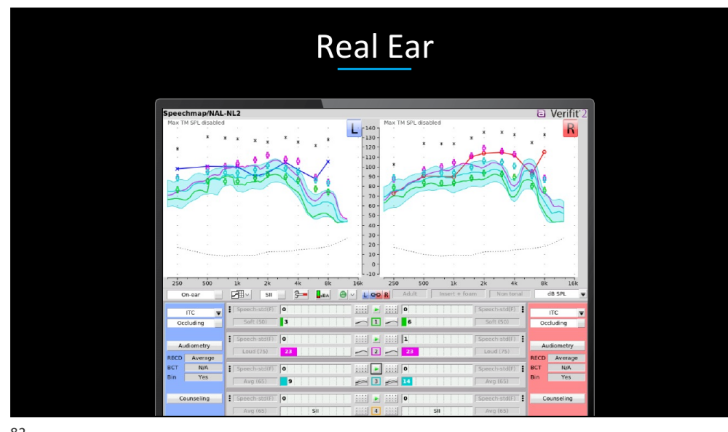


Figure 5. Real ear measurement (Verifit 2 speechmap) verifying Martha D's bilateral aided fitting.

Meeting Martha's Needs

- Custom craftsmanship
- Patient and family satisfied with results
- Accepts challenges associated with unique anatomy and severity of hearing loss

Conclusion

- “They say it can't be built, Starkey says yes it can!”
- Additional resources are available at StarkeyPro.com, including White Papers, Quick Tips, Videos, and Training Opportunities

Quiz Summary

The following quiz hints appeared throughout the course content. Use this section as a quick study reference.

Q1

Quiz Hint: Meniere's Disease does NOT typically present with conductive hearing loss in both ears — expect sensorineural hearing loss, tinnitus, and dizziness instead.

Q2

Quiz Hint: Starkey offers multiple solutions for visually impaired patients — stacked volume control, 2V Dimples, and removal handles are all valid options.

Q3

Quiz Hint: Starkey's CROS/BiCROS solutions within the Omega AI portfolio are available in RIC RT and RIC 312 form factors.

Q4

Quiz Hint: Aural atresia is defined as the lack of a fully developed ear canal, eardrum, middle ear space, and ossicles.

Q5

Quiz Hint: A severe hearing loss is classified as thresholds of 65–95 dB HL in the better ear.

Additional Information

Presenter Bio

Michele Hurley received a Master of Science in Audiology from North Texas State University and Au.D. from A.T. Still University.

Dr. Hurley has been practicing for 21 years in a variety of professional roles, spending the past 14 years in the area of education and technical services, and has spoken on numerous occasions on the topics of hearing aid technology and patient care.

Presenter Disclosure

Financial: Michele Hurley is employed by Starkey.

Non-financial: Michele Hurley has no relevant non-financial relationships to disclose.

Additional Information (continued)

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