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Course Information

Limitations/Risks

- The applicability and accuracy of the course content may vary by the clinical, geographical, and cultural context; you should evaluate the course accordingly.
- As healthcare is rapidly evolving, new findings may change the validity of the information presented in this course. Providers should always consult the latest research and guidelines from professional associations.
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- The course may not cover all possible risk factors, diagnostic methods, or treatment options, and complex cases may require additional considerations.
- Healthcare providers should apply cultural competence and sensitivity to ensure effective and respectful care based on their patients' diverse needs.
- Providers should always evaluate the limitations of diagnostic and screening tools, considering their potential for false results as well as any ethical implications.
- It is the responsibility of course participants to critically evaluate the evidence from multiple sources to guide professional practice.

Sound Bites with Scott Murray

Bimodal Hearing with Starkey and Med-EI

Host: Dave Fabry, PhD, Chief Hearing Health Officer, Starkey

Guest: Scott Murray, Community Manager, Med-EI

Learning Objectives

After completing this course, participants will be able to:

- Describe the Starkey and Med-EI partnership and the bimodal wireless streaming solution (Dual Sync) it provides for users with a cochlear implant on one side and a hearing aid on the other.
- Identify key considerations for patients and hearing care professionals when transitioning from hearing aids to cochlear implants, including the role of peer mentorship and community support.
- Explain the technology advances in Omega AI hearing aids, including the incorporation of a directional microphone component in DNN training, and the potential of AuraCast for future accessibility.

Speaker Disclosures

Scott Murray

- Scott Murray is employed by Med-EI as Community Manager.
- Dave Fabry, PhD is employed by Starkey as Chief Hearing Health Officer.
- This webinar is a co-produced program between Starkey and Med-EI.
- Scott Murray is a bimodal hearing device user: Med-EI cochlear implant (left) and Starkey Omega AI hearing aid (right).

About the Starkey and Med-EI Partnership

Starkey and Med-EI have established an exclusive partnership focused on improving the experience of bimodal users — individuals who use a cochlear implant (CI) on one ear and a hearing aid on the other. The collaboration addresses a well-recognized need among patients and providers for seamless wireless streaming across both device types simultaneously.

What Is Bimodal Hearing?

Key Concepts

- Bimodal hearing = cochlear implant (CI) on one side + hearing aid on the other side

- Bimodal users benefit from electric stimulation (CI) and acoustic amplification (hearing aid) simultaneously
- The combination is often greater than the sum of its parts — users describe it as achieving trinormal hearing
- One plus one equals three: each device supports and augments the other in different listening environments

The Need for a Formal Partnership

Prior to Dual Sync, bimodal streaming required an accessory (a middleman device) or streaming to only one side at a time. Patients and providers communicated a clear need to Med-EI and Starkey leadership for a smoother, integrated bimodal streaming solution. This feedback directly led to the Starkey / Med-EI collaboration.

Dual Sync: Bimodal Wireless Streaming

Dual Sync is the wireless streaming technology resulting from the Starkey / Med-EI partnership. It enables simultaneous stereo streaming to both a Med-EI cochlear implant processor and a Starkey hearing aid, eliminating the need for an accessory device.

Setup and Connection

Feature	Details
Configuration	One-time setup — no need to reconfigure after initial pairing
Location	Configured through iPhone Accessibility Settings (Hearing Devices section)
Connection stability	Rock solid — devices are always present when Bluetooth is enabled
Streaming behavior	Seamless — begins automatically once paired devices are active

Q1

Quiz Hint

- Dual Sync is the specific technology enabling synchronized wireless streaming for bimodal users in the Starkey / Med-EI partnership
- Setup is done once in iPhone Accessibility Settings; the connection is persistent and automatic thereafter

Streaming Sound Quality

A common concern among bimodal users and clinicians is whether streaming to two fundamentally different device types — an electrical CI processor and an acoustic hearing aid — will produce an echo or muddled sound due to timing differences.

Engineering teams from both Starkey and Med-EI worked together specifically to address the synchronization challenge.

What Scott Murray reports about Dual Sync streaming quality:

- Sound is crisp and clear — no echo, no muddling
- The CI side processes electrically (faster) and the hearing aid processes acoustically; the partnership engineering work locked in the synchronization between them
- Within milliseconds of switching between sides, the brain fuses the two signals seamlessly
- Scott can stream podcasts, YouTube, Apple TV, music (Spotify), and more
- Pop music, including songs heard with normal hearing in youth, sounds as expected — the technology reproduces familiar music faithfully

Q2

Quiz Hint

- The primary advantage of streaming to both devices simultaneously is the stereo listening and streaming experience
- Streaming to one side only is possible but the user misses out on the full stereo experience
- Dual Sync enables true bimodal stereo streaming without an accessory device

Bimodal Streaming vs. One Side Only

Scott Murray tested streaming with only the CI (left ear) versus only the hearing aid (right ear) for comparison. His experience: perception of difference between the two sides is subtle, temporary, and largely resolved within a second or less as the brain fuses the input. In practice, most bimodal users — and Scott specifically — use both devices together the vast majority of the time.

Scott Murray's Hearing Journey

Scott Murray was born with normal hearing and had no indication of hearing loss until his teenage years. Understanding his journey provides meaningful context for hearing care professionals working with patients who are resistant to cochlear implantation.

Stage	Details
Normal hearing	Born with normal hearing; no family history of hearing loss
Onset	Began experiencing vertigo and hearing loss in teenage years
Progression	Gradual, predominantly left ear; vertigo eventually resolved; hearing loss continued bilaterally
Diagnostic journey	Saw nine different physicians; no definitive diagnosis — likely Meniere's disease or autoimmune, unconfirmed

Stage	Details
Hearing aids	Began with hearing aids; used a CROS version at one point; right ear remained the better ear
CI candidacy to decision	Qualified for a CI approximately a decade before accepting implantation; surgery at age 30
Current status	Successful bimodal user: Med-EI CI (left), Starkey Omega AI (right)

Acceptance and the Decision to Implant

Scott describes prolonged resistance to cochlear implantation — a pattern he notes is not unique to his experience. The decision required accepting that the CI is a lifetime, irreversible commitment. Unlike a hearing aid trial, the internal processor cannot be returned. Key factors in his eventual acceptance included:

- Reaching a point of recognizing that hearing aids alone were no longer providing sufficient benefit
- Shifting focus from finding a diagnosis to finding a solution
- Understanding that cochlear implant surgery is well-established, with successful recipients in their 80s and 90s

Omega AI Hearing Aid: Advances Over Edge AI

Both Edge AI and Omega AI use Deep Neural Network (DNN) processing. In the transition to Omega AI, Starkey incorporated a specific new component into the DNN training that distinguishes it from Edge AI.

Directional Microphone Component in DNN Training

What is new in Omega AI:

- Omega AI is the first hearing aid in the industry to incorporate a directional microphone component in DNN training
- This advances the DNN's ability to preserve spatial awareness and improve speech understanding in noise
- Edge AI did not include the directional microphone component in its DNN training
- Practical benefit: improved audibility, sound quality for speech, and localization of sound sources

Q3

Quiz Hint

- The directional microphone component was incorporated into the DNN training in the transition from Edge AI to Omega AI
- Starkey is the first in the industry to include this directional microphone component in DNN training

- This improvement supports spatial awareness and speech understanding in noise

Scott's Early Observations with Omega AI

With limited time on Omega AI at the time of recording, Scott noted a subtle but perceptible improvement in noisy environments — specifically, he was able to follow conversation in a busy open-area setting (the Starkey Center for Excellence) even when the speaker called out to him after he had already begun walking away. He attributes this to the directional and noise processing improvements in Omega AI.

Listening in the Real World: Microphone and Accessory Use

Everyday Listening Environments

In quiet and in noise, Scott reports that bimodal listening feels like one seamless auditory experience. As CI processing has matured and technology has improved, performance in difficult listening environments (busy restaurants, complex acoustic settings) has improved substantially, though it remains challenging — as it does for all hearing device users.

Key listening observations:

- Bimodal listening merges into a single, cohesive experience — there is no sense of two separate devices
- The hearing aid side provides acoustic support that helps the CI side in noisy or complex environments
- The devices are complementary — when one side struggles, the other side provides additional support
- Technology advances have progressively improved noise performance on the CI side

Accessories: Remote Mics and Streaming Devices

Scott has used a variety of accessories over the years, including remote microphones and streaming devices. His perspective reflects the broader philosophy shared by both Med-El and Starkey:

Accessory philosophy:

- Accessories are valuable options — not requirements — and should be available to patients who need them
- The goal is for the primary devices alone (CI + hearing aid) to provide excellent, natural sound in most situations
- Scott uses a remote mic occasionally (e.g., in a busy restaurant with his wife) but does not rely on accessories routinely

- Most end users prefer minimal intervention with their devices — occasional volume or balance adjustment, not constant accessory management
- Reducing friction = better adoption and a better user experience

AuraCast: The Future of Assistive Listening

AuraCast is a Bluetooth broadcast audio standard that enables devices to pick up live audio streams broadcast in public spaces — airports, theaters, places of worship, sports venues, restaurants — without requiring an accessory or a dedicated induction loop system.

AuraCast and Omega AI

Current status of AuraCast support:

- Omega AI hearing aids (and Edge AI with firmware update + latest app) can receive AuraCast broadcast streams
- Med-El AudioLink supports AuraCast on the CI side
- AuraCast is being positioned as a technologically advanced replacement for T-coil / telecoil systems
- Both Starkey and Med-El are committed to AuraCast integration as part of this partnership

Q5

Quiz Hint

- AuraCast is described as a technologically forward and more advanced version of a T-coil
- It enables hearing devices to pick up broadcast audio streams in public spaces (airports, theaters, restaurants, etc.)
- AuraCast removes the need for an accessory device for many assistive listening scenarios

Community Enthusiasm for AuraCast

Scott reports significant excitement in the CI and bimodal user community for AuraCast. Users see it as an opportunity to participate in the broader wireless audio ecosystem — the same experience that AirPods and wireless headphone users have — without needing a separate assistive listening device. However, widespread AuraCast infrastructure in public spaces is still developing, and the hearing device field is watching and preparing for that rollout.

Guidance for Patients Considering Cochlear Implantation

For hearing care professionals, recognizing and addressing patient fear around cochlear implantation is a critical part of the counseling process. Scott's personal journey and professional role offer practical insights.

Common Patient Fears

Fears Scott hears most frequently:

- Fear of surgery and the implantation process
- Fear that sound will be unnatural ("everyone sounds like Donald Duck")
- Fear of committing to a device that is permanent and cannot be returned
- Uncertainty about the timeline to hearing success post-activation
- Concern about losing the relationship with their current hearing care provider

Scott's Recommended First Step: Talk to a Peer Mentor

Scott's top recommendation for a patient who is fearful or hesitant about cochlear implantation is to connect with a peer mentor — someone who has already been through the process and can speak honestly to the experience.

Med-EI Mentor Program:

- Med-EI offers a structured peer mentor program for CI candidates and new users
- Mentors share their personal experience, address fears, and normalize the journey
- Talking to a peer who has succeeded with a CI is a significant confidence builder
- To connect: call Med-EI Customer Service at 1-888-MED-EL CI

Q4

Quiz Hint

- Scott Murray's first recommendation for a fearful hearing aid user considering CI is to talk to a peer mentor
- Med-EI has a formal mentor program connecting CI candidates with experienced users
- Peer mentorship normalizes the journey and builds confidence before making the decision

Reassurances for Patients

Key messages to share with hesitant patients:

- Cochlear implantation is not new technology — Med-EI has over 30 years of experience
- Surgeons are highly experienced; recipients of all ages, including those in their 80s and 90s, have been successful
- Bimodal use is not a conflicting systems situation — a hearing aid and a CI can work together very effectively

- Technology success makes it easier to accept the unknown (e.g., no definitive diagnosis) — being able to hear is the most important outcome
- The journey requires patience: CI performance improves over time, not overnight

Continuity of Care: Bridging the Hearing Aid to CI Transition

A concern often expressed by hearing care professionals is the fear of "losing" a patient when they transition to a cochlear implant. The bimodal model — retaining a hearing aid on the better ear — offers a natural bridge: the audiologist or dispenser remains involved on the hearing aid side, and the partnership between providers is essential. There should not be a divide between a 'CI audiologist' and a 'hearing aid audiologist' — the bimodal user needs both.

Key Takeaways

Summary of Core Points

- Dual Sync (Starkey / Med-El partnership) enables seamless, stereo bimodal wireless streaming to both a CI and a hearing aid simultaneously — no accessory required
- Sound quality with Dual Sync is crisp, clear, and synchronized; the brain fuses the signals within milliseconds
- Omega AI advances DNN processing by incorporating a directional microphone component — the first in the industry — improving spatial awareness and speech understanding in noise
- AuraCast positions Omega AI (and Med-El devices) for next-generation assistive listening in public spaces, replacing the need for T-coil systems
- Peer mentorship (Med-El Mentor Program) is the recommended first step for hearing aid users who are fearful about cochlear implantation
- The bimodal model keeps hearing care professionals involved on both sides of care — there should be no divide between CI and hearing aid providers
- When hearing aids alone are no longer sufficient, the combination of a CI and a hearing aid produces a result that is greater than the sum of its parts

Notes

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