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Hear now. And always

Cochlear®

Candidacy and Counseling for Cochlear™ Bone Conduction Solutions

Learning Objectives

- After this course, participants will be able to list the candidacy criteria for bone conduction solutions for both Single-Sided Deafness (SSD) and Mixed and Conductive Hearing Loss.
- After this course, participants will be able to outline considerations for selecting a treatment within the Bone Conduction Portfolio.
- After this course, participants will be able to identify important points for counseling a candidate and list resources that are available to support bone conduction candidates.

Our Mission

We help people hear and be heard.

We **empower** people to connect with others and live a full life.

We **transform** the way people understand and treat hearing loss.

We **innovate** and bring to market a range of implantable hearing solutions that deliver a lifetime of hearing outcomes.

Agenda

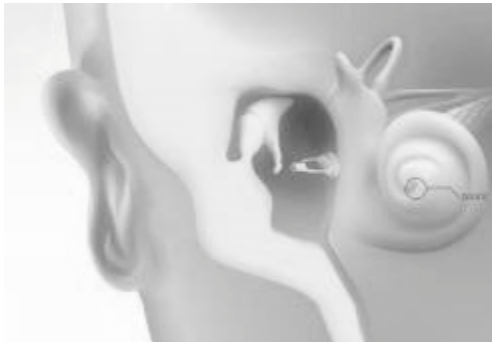
Why bone conduction

Who might benefit

How to demonstrate

What else should be considered?

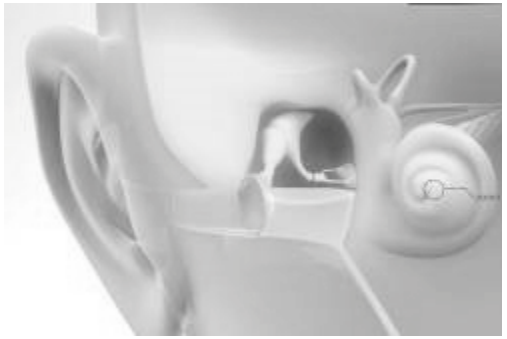
Common Etiologies for Bone Conduction



Atresia/microtia

- **Disease factors:**

  Impossible to use hearing aid, may still be challenging after reconstruction

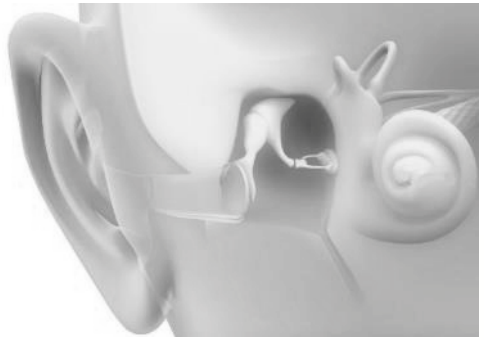


Chronic otitis media

- **Disease factors:**

  Severity of hearing loss varies depending on middle ear status[2,4].

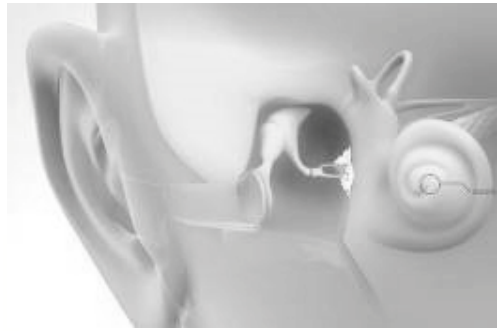
  Even after middle ear surgery to restore CHL 21% of pts will still need amplification[3].



Otitis externa

- **Disease factors**

Hearing aid may cause irritation and allergic reactions in the ear canal



Otosclerosis

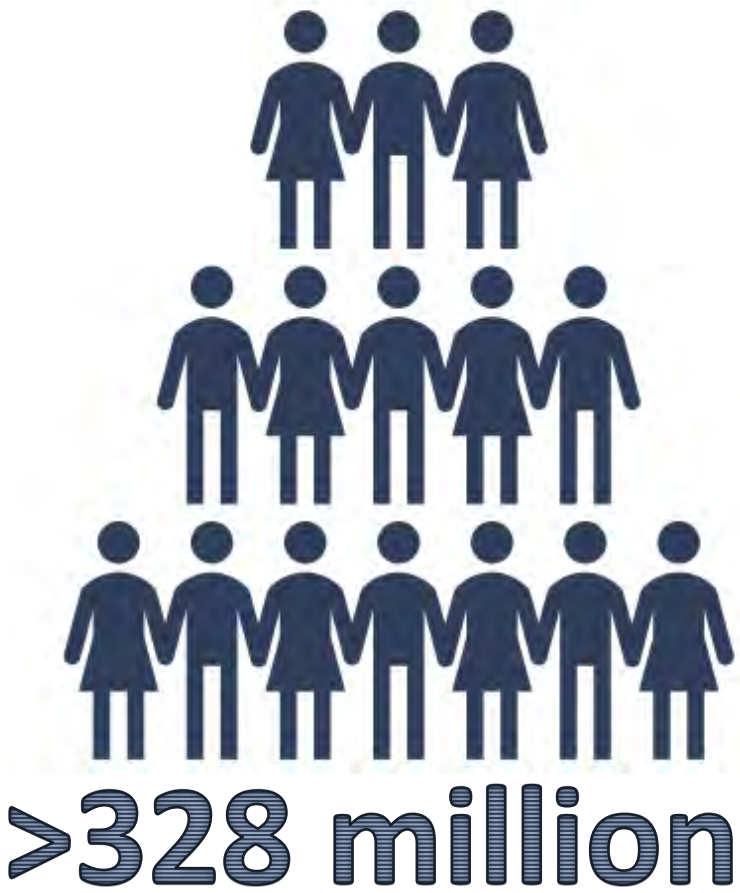
- **Disease factors**

  When stapedotomy has been tried and failed.[1]

  When other risk factors preclude middle ear surgery

1. Evans AK, Kazahaya K. Canal atresia: "Surgery or implantable hearing devices? The expert's question is revisited" Journal of Pediatric Otorhinolaryngology 2007; 71, 367-374
2. Islam M, Islam M, Bhujan M, Rashid M, & Datta P. Pattern and degree of hearing loss in chronic suppurative otitis media. Bangladesh J. Otorhinolaryngol. 2010;16(2):96-105.
3. Boron A, Skladzien J, Wiatr M. Pre- and Post-perative Speech Audiometry Evaluation in Patients with Chronic Otiitis Media. J Int Adv Otol. 2020 Aug;16(2):241-247
4. Watson GJ, Silva S, Lawless T, Harling JL, Sheehan PZ. Bone anchored hearing aids: a preliminary assessment of the impact on outpatients and cost when rehabilitating hearing in chronic suppurative otitis media. Clinical otolaryngology 2008

A global challenge



Chronic Otitis Media (COM) may contribute to **more than half** of the global burden of hearing impairment.[1]

According to the WHO, more than **328 million people** suffer from COM around the world, and **about half** of all adults with COM will develop an associated hearing loss. [1,2]

Many of these COM patients suffer **long-standing hearing problems[3]** before getting a solution, creating an additional health burden for the patient, clinic and healthcare system.

1 Acuin J and the Department of Child and Adolescent Health and Development, and the Team for Prevention of Blindness and Deafness of the World Health Organization. World Health Organization, Geneva; 2004.
2.Yehudai N, Most T, Luntz M. Risk factors for sensorineural hearing loss in pediatric chronic otitis media. International journal of pediatric otorhinolaryngology. 2015;79(1):26-30.
3. Macnamara M, Phillips D, Proops DW. The bone anchored hearing aid (BAHA) in chronic suppurative otitis media (CSOM). J Laryngol Otol Suppl. 1996;21:38-40. doi: 10.1017/s0022215100136254. PMID: 9015447.

COM-related hearing loss

- Most patients with COM experience a conductive (CHL) or mixed hearing loss (MHL[1]
- The severity of hearing loss varies depending on the status of the middle ear[1]
- Moderate hearing losses are most common, but many patients experience a moderately-severe hearing loss[1]

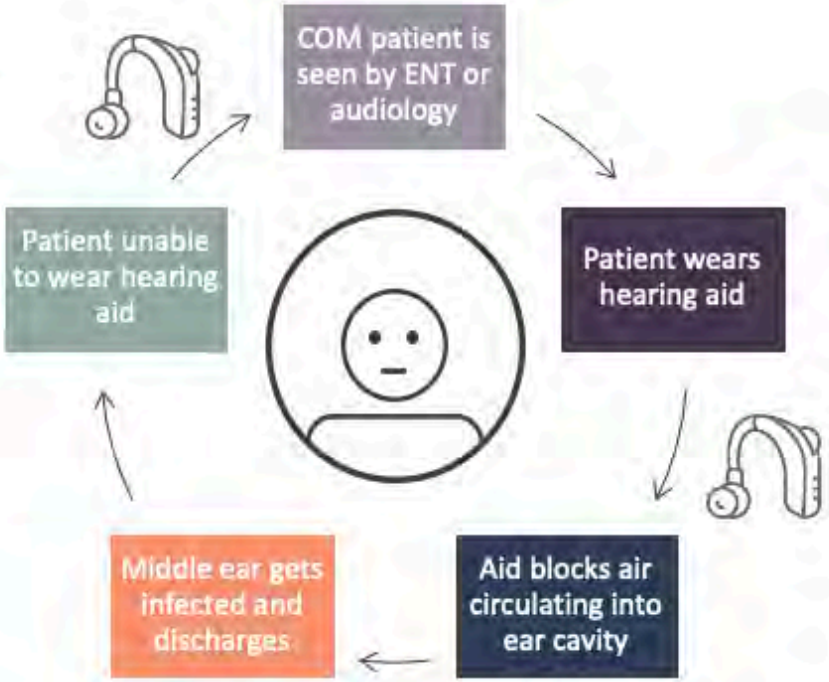
Even after middle ear surgery to restore conductive hearing loss,

21%

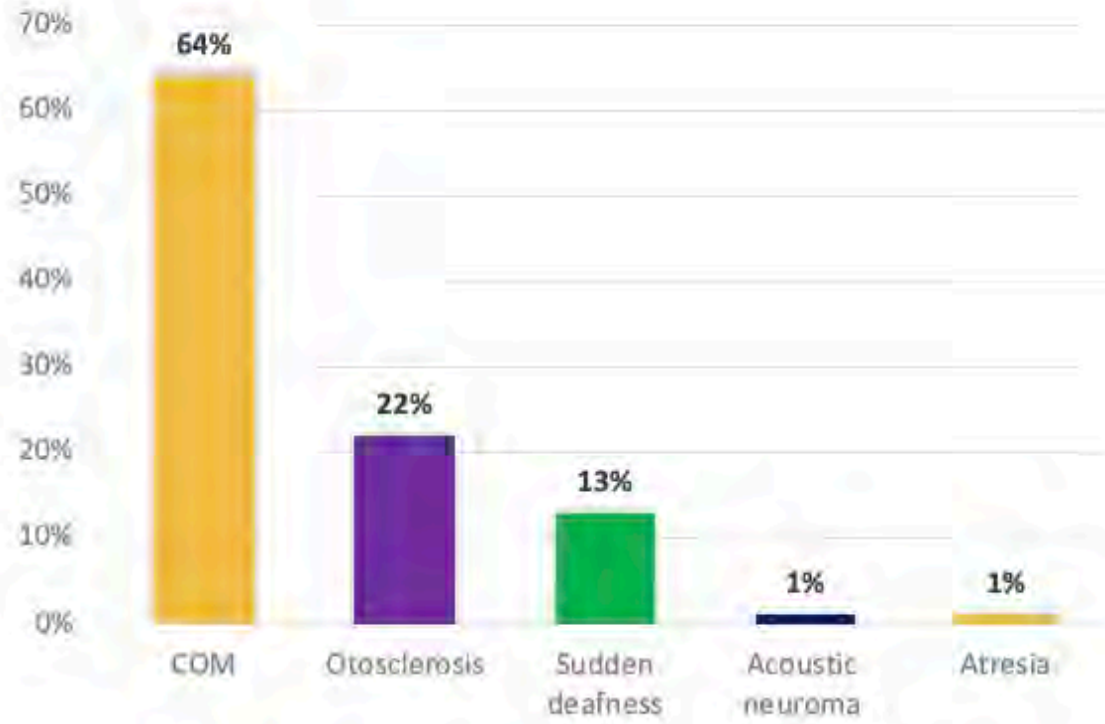
of patients will still need amplification.[2]

1. Islam M, Islam M, Bhuiyan M, Rashid M, & Datta P. Pattern and degree of hearing loss in chronic suppurative otitis media. Bangladesh J. Otorhinolaryngol. 2010;16(2):96-105.
2. Boron A, Skladzien J, Wiatr M. Pre- and Post-operative Speech Audiometry Evaluation in Patients with Chronic Otitis Media. J Int Adv Otol. 2020 Aug;16(2):241-247.

The need for the patient is significant



Cycle of discharge and infection impacts reliable hearing.[1]



Over 60% of Cochlear's Bone Conduction (BC) patients today suffer from CHL or MHL from COM, greater than any other cause.

1. Orji FT, O Onyero E, Agbo CE. The clinical implications of ear canal debris in hearing aid users. Pak J Med Sci. 2014;30(3):483–487.

Standard of care for COM-related hearing loss does not exist

Many patients suffer for years before they are introduced to bone conduction.[1] **Why?**

LACK OF RESEARCH FOCUS

Clinical evidence gaps:

- Comparisons between available treatments
- Clinical outcomes on defined patient groups

LACK OF STANDARDIZATION

Standards needed regarding:

- How to define severity
- Treatment categorization
- Reporting clinical outcomes

LACK OF AWARENESS

Healthcare professionals often unaware that bone conduction may be an appropriate and effective treatment.

1. Backous D, Choi BY, Jaramillo R, et al. Current State of Knowledge: Hearing Rehabilitation in Patients with Chronic Otitis Media -a Discussion of Current Status and Research Priorities. Ear Hearing. 2020; Submitted manuscript.

Clinical Benefits of Bone Conduction

Ear canal remains open

Predictable outcomes with surgical and clinical flexibility

Consistent hearing[1,2,3]

Predictable hearing outcomes[4]

Long term solution

1. Gillett D, Fairley JW, Chandrashaker TS, Bean A, Gonzalez J. Bone-anchored hearing aids: results of the first eight years of a programme in a district general hospital, assessed by the Glasgow benefit inventory. J Laryngol Otol. 2006;120(7):537-542.
2. Watson GJ, Silva S, Lawless T, Harling JL, Sheehan PZ. Bone anchored hearing aids: a preliminary assessment of the impact on outpatients and cost when rehabilitating hearing in chronic suppurative otitis media. Clin otolaryngol. 2008;33(4):338-342.
3. McLarnon CM, Davison T, Johnson IJ. Bone-anchored hearing aid: comparison of benefit by patient subgroups. The Laryngoscope. 2004;114(5):942-944.
4. Evans AK, Kazahaya K. Canal atresia: "Surgery or implantable hearing devices? The experts question is revisited" Journal of Pediatric Otorhinolaryngology 2007; 71, 367-374

Potential Patient Benefits of Bone Conduction

- Improved hearing performance, even in noisy situations [1,2,3]
- Improved subjective sound quality and speech understanding over traditional air conduction (e.g., Hearing Aids)[4]

1) Flynn MC, Sadeghi A, Halvarsson G. (2009) Baha solutions for patients with severe mixed hearing loss. Cochlear Implants International, 10 Suppl 1:43-7.
2) Hol MK et al (2005) Long-term results of bone anchored hearing aid recipients who had previously used air-conduction hearing aids. Arch Otolaryngol Head Neck Surg, 131(4):321-5.
3) Bruschini L, Canelli R, Morandi A, Cambi C, Fiacchini G, Berrettini S, Forli F. Bone anchored hearing aids for the treatment of asymmetric hearing loss, 2020 Dec; 16(3)313-317.
4) Haugaard DD. Boldsen SK, Jensen AM, Hansen S, Thomassen PC. A multicenter study on objective and subjective benefits with a transcutaneous bone-anchored hearing aid device: first Nordic results. Eur Arch Otolaryngol 2017; 274:3011-3019.

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Candidacy & the Recipient Pathway

Why Bone Conduction: Mixed and Conductive Hearing Loss (MCHL)

The greater the air-bone gap, the more a Baha® system will outperform hearing aids[1,2]

Hearing aid prescriptions for conductive and mixed hearing loss require more gain than for sensorineural hearing loss[3]

Hearing aid fitting can be difficult if there is drainage from the ear, ear pain or a mastoid cavity present after mastoidectomy[4]

1 - Snik AF et al. (2005) Consensus Statements on the BAHA System: Where Do We Stand at Present? Annals of ORL 114(12S). 195:1-12
2 – Mylanus EAM, van der Pouq K, Snik M (1998) Intraindividual comparison of the bone-anchored hearing aid and air-conduction hearing aids. Arch Otolaryngol Head Neck Surg, 124(3):271-276
3 - Johnson EE. (2013) Prescriptive amplification recommendations for hearing losses with a conductive component and their impact on the required maximum power output: An update with accompanying clinical explanation. J Am Acad Audiol, 24(6):452-60.
4 - Gluth MB, Friedman AB, Atcherson SR, Dornhoffer JL. (2013) Hearing aid tolerance after revision and obliteration of canal wall down mastoidectomy cavities. Otology & Neurotology, 34(4):711-4.

Why Bone Conduction: Single-Sided Deafness (SSD)

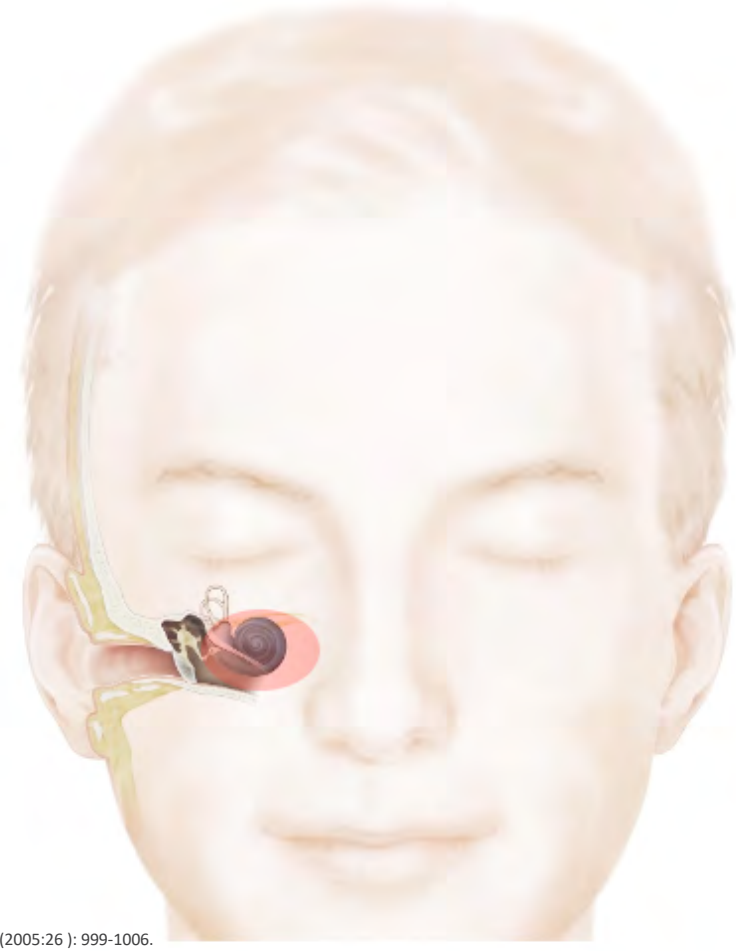
The Baha and Osia® Systems bypass outer and middle ear and sends clearer, more crisp sound directly to the better inner ear[1]

Improved speech understanding in noisy environments[1]

Helps to lift the head shadow effect[1-3]

Reduces the psychosocial consequences associated with hearing impairment[1,5-6]

Long-term patient satisfaction and hearing benefits[7]



1. Hol MKS, Bosman AJ, Snik AFM, Mylanus EAM, Cremers CWRJ. "Bone anchored hearing aids in unilateral inner ear deafness: an evaluation of audiometric and patient outcome measurements." Otol Neurotol (2005:26): 999-1006.
2. Lin LM, Bowditch S, Anderson MJ, May B, Cox KM, Niparko K. Amplification in the rehabilitation of unilateral deafness: speech in noise and directional hearing effects with bone-anchored hearing and contralateral routing of signal amplification. Otology and Neurology 2006;27(2):172-82.
3. Pai I, Kelleher C, Nunn T, Pathak N, Jindal M, Fitzgerald O'Connor A, Jiang D. Outcome of bone-anchored hearing aids for single-sided deafness: A prospective study. Acta Oto-Laryngologica, Early Online 1-5.
4. Newman CW, Sandridge DA, Wodzisz LM. "Longitudinal benefit from and satisfaction with the Baha System for patients with acquired unilateral sensorineural hearing loss. Otol Neurotol 2008; 29: 1123-1131.
5. Schroder SA, Ravn T, Bonding P. BAHA in single sided deafness: patient compliance and subjective benefit. Otol Neurotol. 2010; 31: 404-408.
6. Kompis M, Wilhem W, Caversaccio. Long term benefit of bone anchored hearing systems in single sided deafness. Acta Oto-Laryngologica. 2017; 13:398-402.
7. Maurizio B, Biagini M, Lazzarino AI, Monini S, Hearing and quality of life in a south European BAHA population. Acta Oto-Laryngologica. 2010 130: 1040-1047.

Candidates and hearing loss indications

Babies & toddlers

Younger children

Older children

Adults

Seniors

CONDUCTIVE HEARING LOSS

MIXED HEARING LOSS UP TO 65 dB SNHL

SINGLE-SIDED SENSORINEURAL DEAFNESS (SSD)

Cochlear bone conduction hearing solutions

The treatment pathway – babies & toddlers*

An example case may be a **baby born with aural atresia** causing conductive hearing loss.

When the child reaches an age where implantation is an option, an implanted solution should be considered.

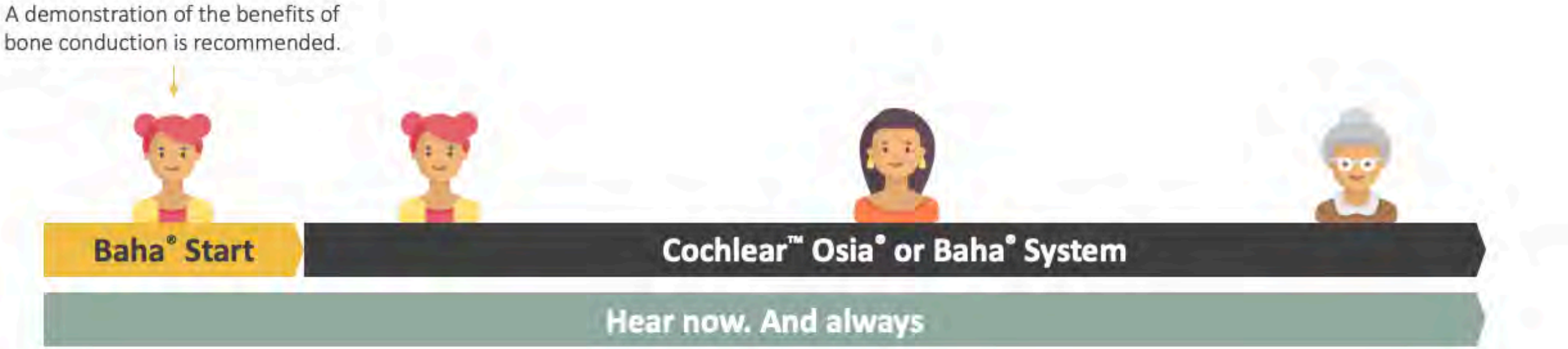
*In the United States and Canada, the placement of the Baha Implant System is contraindicated in children below the age of five. In the United States, the Osia 2 System is cleared for children ages twelve and older. In Canada, the Osia 2 System is approved for children ages five and older.

The treatment pathway – younger children

An example case may be a **young child with Down Syndrome**, whose conductive hearing loss developed early in life due to recurrent ear infections.

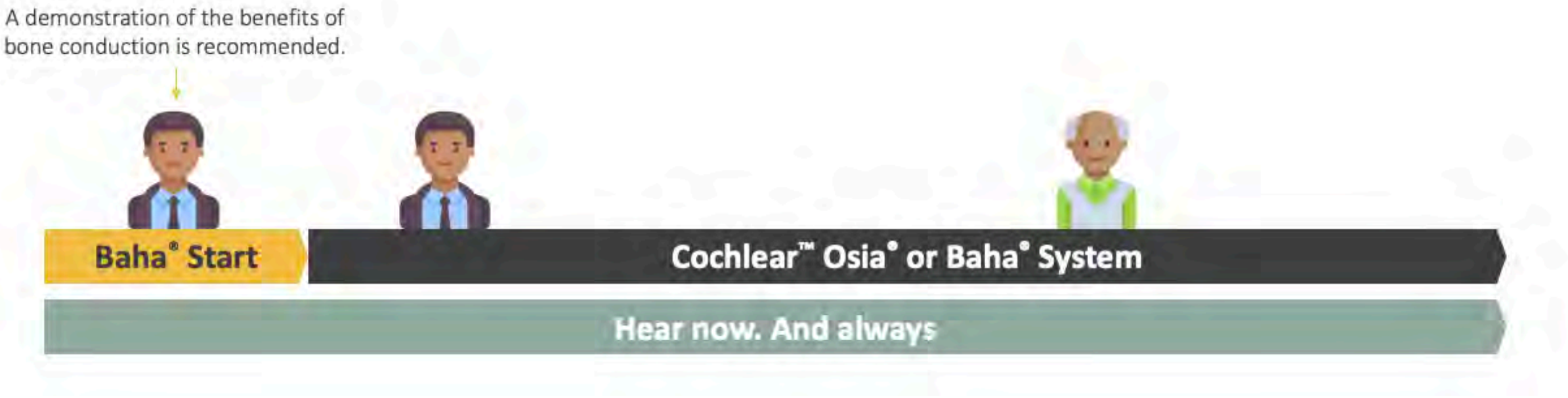
The treatment pathway – older children

An example case may be a **teenager who woke up one morning with sudden profound sensorineural hearing loss in one ear** (SSD).



The treatment pathway – adults & seniors

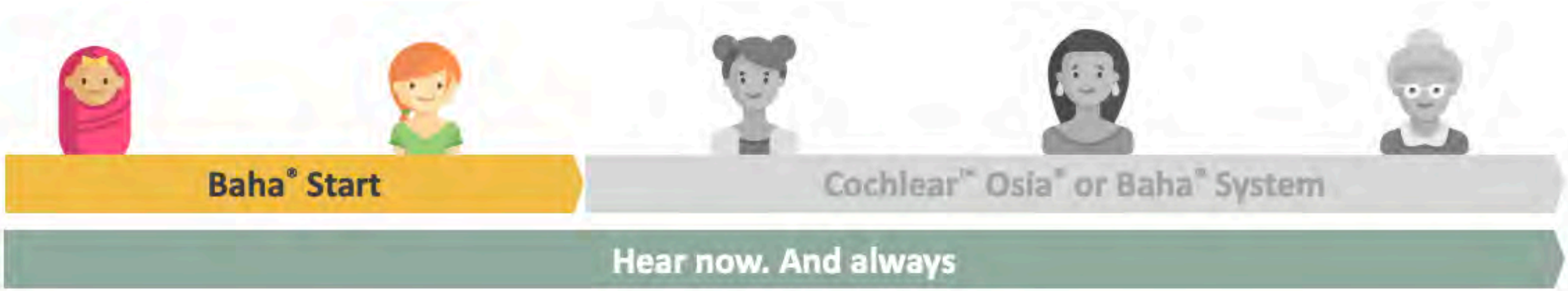
An example case may be an **adult with chronic otitis media (COM)** who underwent middle ear surgery to address the infection, but their mixed hearing loss remains.



System candidacy choices – Baha® Start

PATIENT CHECKLIST:

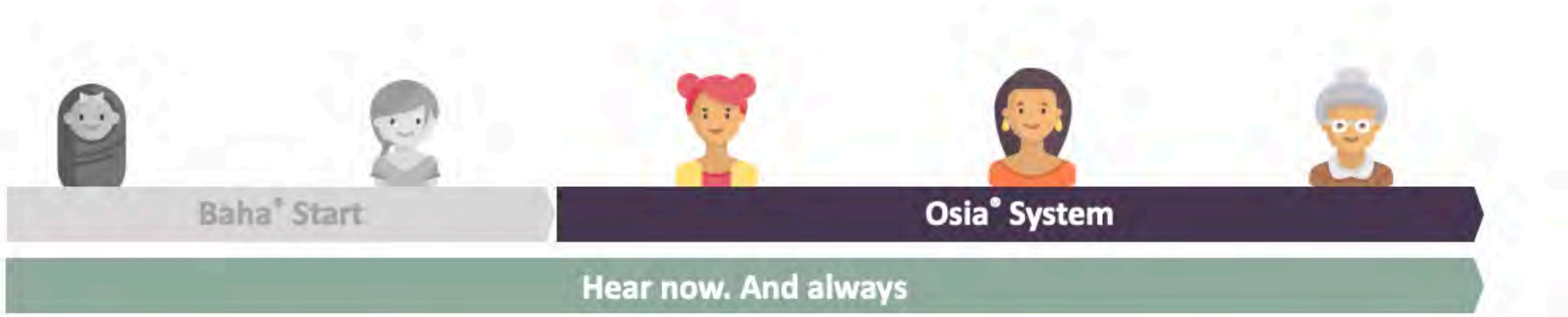
- ✓ Right candidate?
- ✓ Too young/not ready for an implant?
- ✓ SSD or CHL/MHL ≤ 65 dB SNHL?
- ✓ Coverage available?



System candidacy choices – Osia® System

PATIENT CHECKLIST:

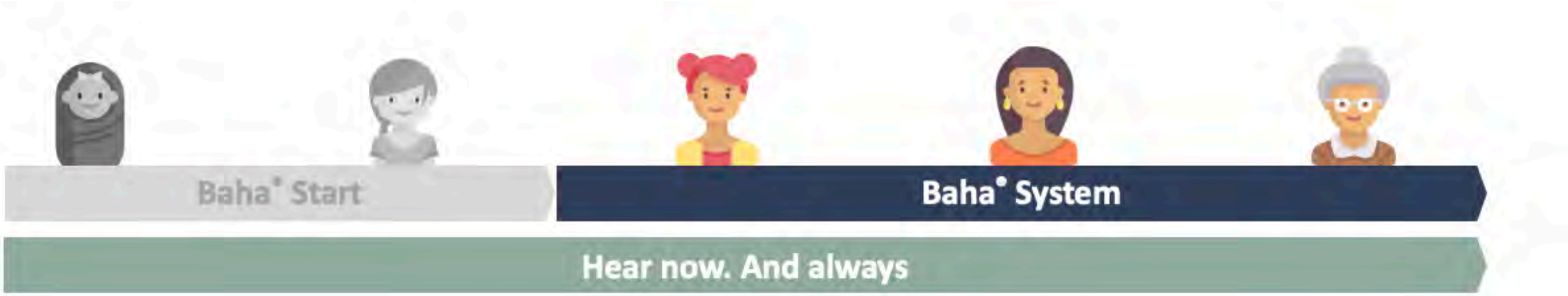
- ✓ Right candidate?
- ✓ SSD or CHL/MHL ≤ 55 dB SNHL?
- ✓ No special MRI considerations?
- ✓ Coverage available?



System candidacy choices – Baha® System

PATIENT CHECKLIST:

- ✓ BC candidate?
- ✓ Candidate age?*
- ✓ SSD or CHL/MHL ≤ 65 dB SNHL?
- ✓ MRI considerations?
- ✓ Insurance coverage?



* In the United States and Canada, the placement of the Baha Implant System is contraindicated in children below the age of five. In the United States, the Osia 2 System is cleared for children ages twelve and older. In Canada, the Osia 2 System is approved for children ages five and older.

The right solution for the right patient

- A three-year-old girl
- Born with aural atresia

- ✓ Right candidate
- ✓ Too young/not ready for implant
- ✓ Conductive hearing loss
- ✓ 60 dB air-bone gap
- ✓ Coverage available

Baha® Start

- Baha 6 Max Sound Processor
- Baha Softband
- Cochlear Wireless Mini Mic
- Baha Smart App*

- A 30-year-old man
- COM-related hearing loss

- ✓ Right candidate
- ✓ Conductive Hearing Loss
- ✓ Prefers low profile processor
- ✓ Coverage available

Osia® System

- Osia 2 Sound Processor
- Cochlear Wireless Mini Mic
- Osia Smart App †

- A 55-year-old woman
- SSD

- ✓ Right candidate
- ✓ Sudden AD SNHL
- ✓ Prefers low profile processor
- ✓ Coverage available

Osia® System

- Osia 2 Sound Processor
- Cochlear Wireless Mini Mic
- Osia Smart App†

- A 65-year-old man
- Otosclerosis and presbycusis

- ✓ Right candidate
- ✓ Requires an abutment solution
- ✓ Mixed hearing loss (BC PTA 55dBHL)
- ✓ Coverage available

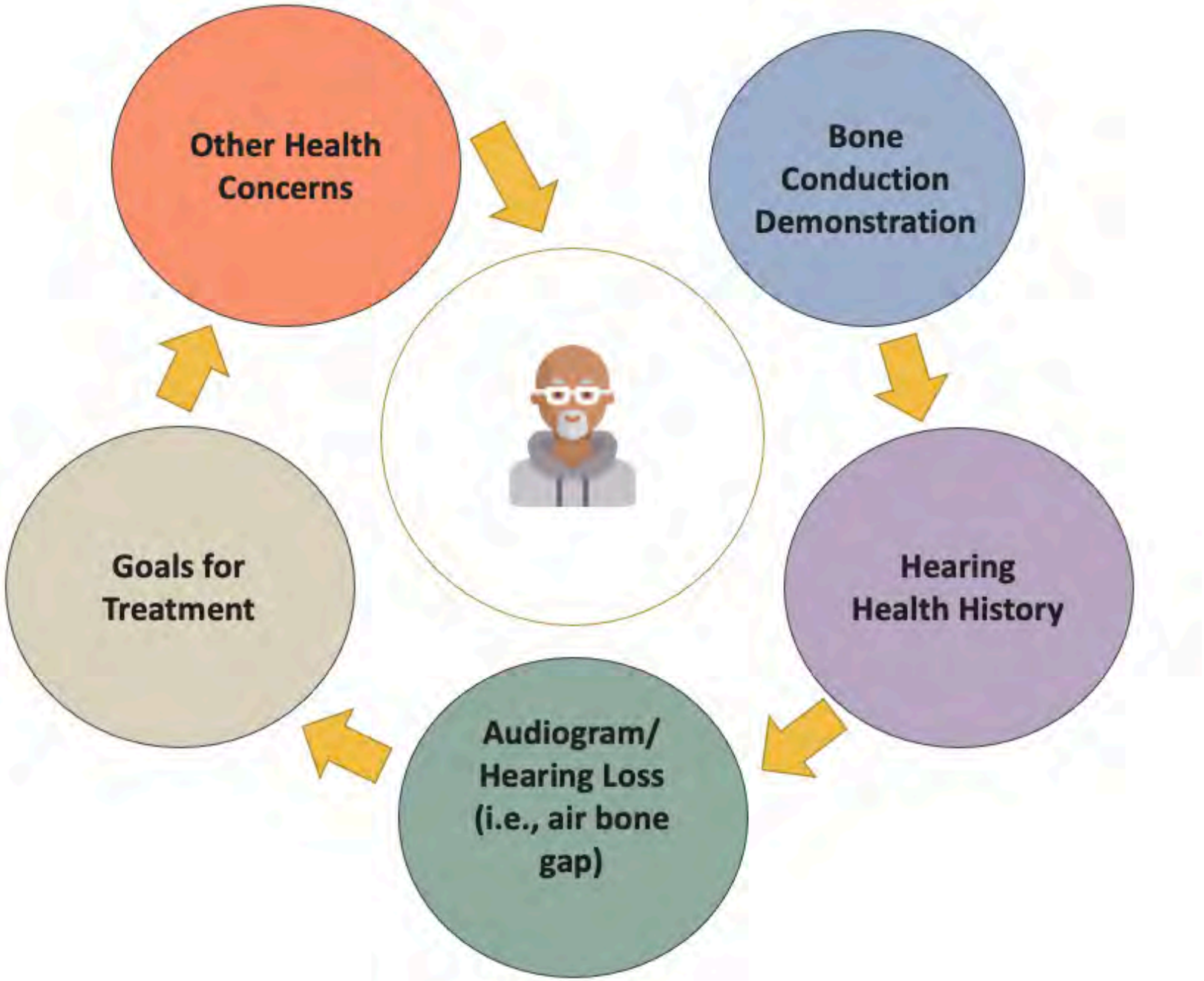
Baha® System

- Baha 6 Max Sound Processor
- Cochlear Wireless TV Streamer
- Baha Smart App+

**The Cochlear Baha 6 Max Sound Processor is compatible with Apple and Android devices. The Cochlear Baha Smart App is available on App Store and Google Play. For compatibility information visit www.cochlear.com/compatibility*

† The Cochlear Osia Sound Processor is compatible with Apple devices. The Cochlear Osia Smart App is available on the App Store and Google Play. For compatibility information visit www.cochlear.com/compatibility

Candidacy


Other Health Concerns
Bone Conduction Demonstration
Goals for Treatment
Hearing Health History
Audiogram/ Hearing Loss (i.e., air bone gap)

Cochlear®

Demonstrating Bone Conduction

Bone Conduction Counseling: Key Points

1. Demonstrate bone conduction early and throughout the counseling session
2. Consider and counsel on the optimal wearing option best suited for the patient (surgical or non-surgical)
3. Clarify the advantages a surgical option will have compared to the demo experience
4. Establish the importance of treating the hearing loss, regardless of the treatment chosen

Demonstrating Bone Conduction

Goals

- Allow patient to experience bone conduction before surgery
- Assist in counseling
- Provide some objective test opportunities, if desired

Potential pitfalls

- Expecting an exact prediction of post-surgical benefit
- Relying on it as the only way to determine candidacy

Step 1: Demonstration

Fit a Baha 6 Max Sound Processor on Softband, SoundArc™ or Test Rod

- Option 1: Use the Baha 6 Max sound processor on factory settings
- Option 2: Set up a demo program in Baha Fitting Software

Allow the patient to experience the sound of bone conduction

- Subjective benefit: “how does it sound?”, questionnaires
- Objective benefit: speech perception in noise (especially for SSD candidates), soundfield thresholds

Demonstration is a counseling tool that can give a candidate a sense of what bone conduction might sound like for them

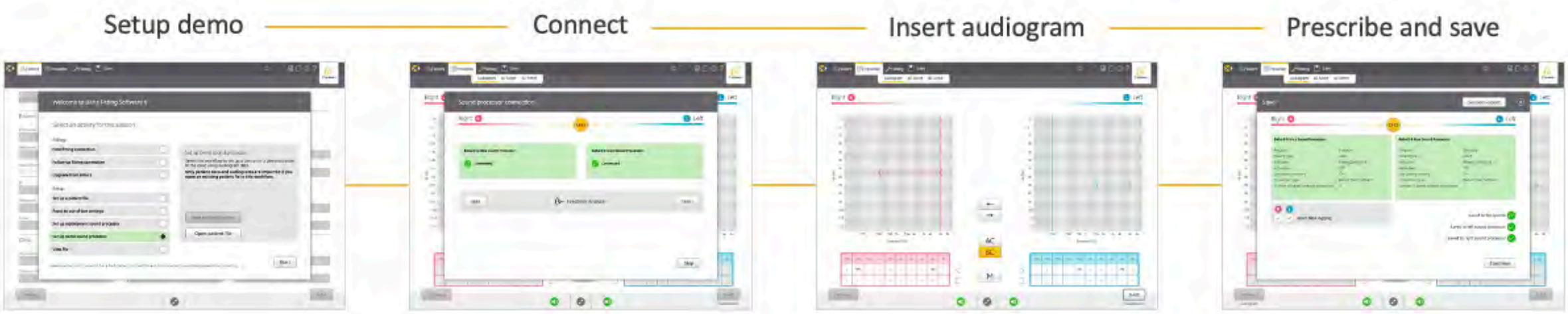
*See your Cochlear Representative for help in setting up a pre-programmed sound processor for demonstrations in your clinic

How to Setup Baha 6 Max for a Demo

Two ways to set up a Baha 6 Max for a demo:

- Using out of the box setting
- More individualized demo based the patients BC thresholds and fitted through the BFS using the **new demo device setup fitting flow in the software.**

Patient does not need to be present to setup a demo device



Demonstration Tips

- ✓ Fit the patient early and let them listen with the demo device throughout the appointment
- ✓ Choose a demonstration method that fits your clinic's protocol
- ✓ Use subjective methods to determine benefit (e.g., questionnaires, discussion), adding objective methods when needed (e.g., booth testing)
- ✓ Use the demo as a counseling tool to explain what bone conduction sounds like

Cochlear®

Counseling and Device Selection

Let me introduce you*…

Mia

Layla

Krish

*Not actual patients

Portfolio of Bone Conduction Solutions

Cochlear®

Hearing with Bone Conduction

Non-surgical

Surgical

Baha® Start

Osia® System

Baha® System

Non-surgical to surgical pathway

The Cochlear™ Osia® System

The Osia® System utilizes innovative technologies specifically chosen to work in and with the body, delivering excellent hearing performance in the noisy situations[1] where people tell us they struggle most.

Cochlear True Wireless™ Accessories

Osia Smart App**

Accessories and Retention Options

Human Design™

ta on file Windchill Document D1478473

)sia 2 Sound Processor with Aqua+ is water resistant to level IP68 of the International Standard IEC60529 when used with LR44 alkaline or nickel metal hydride disposable batteries. Refer to the ant User Guide for more information. The Osia 2 Aqua+ may not be available in all markets and is subject to regulatory approval and product availability.

...e Cochlear Osia Smart App is available on App Store and Google Play. For compatibility information visit www.cochlear.com/compatibility.

Understanding Osia System Indications

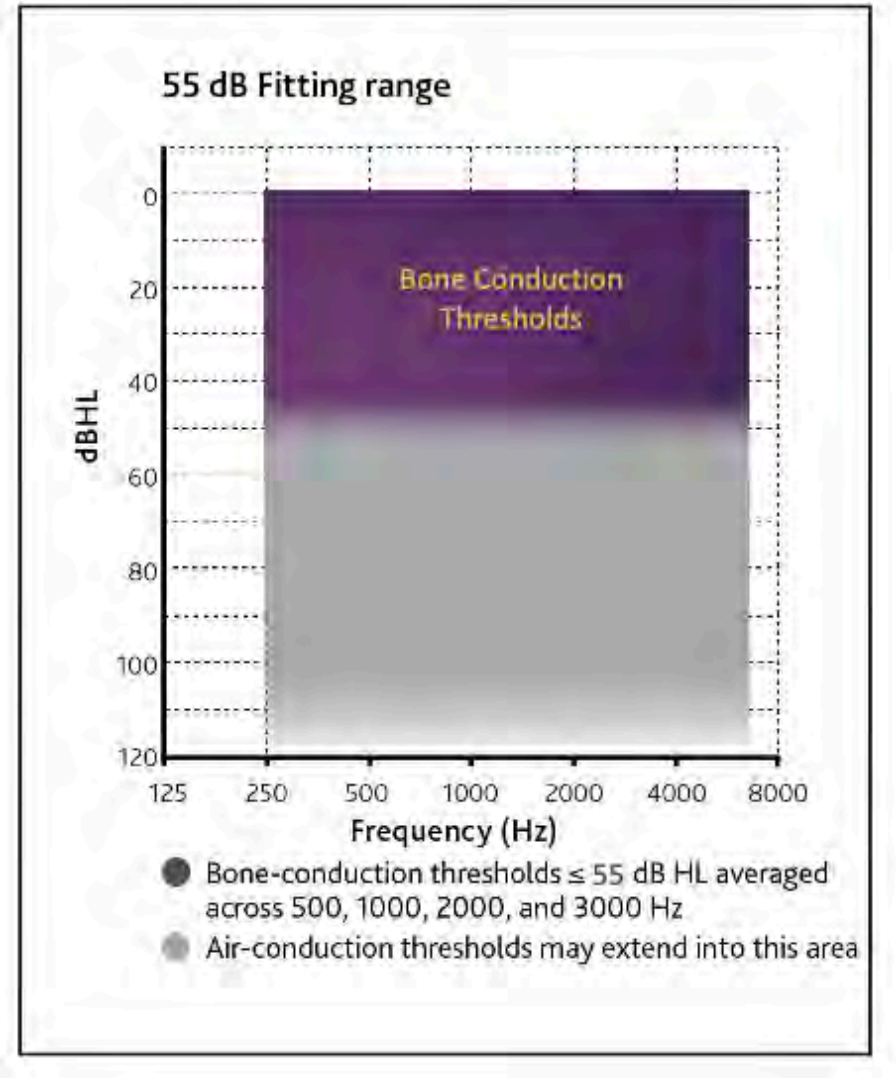
Patients 12 years* or older who have:

Single-Sided Deafness

- AC PTA (0.5, 1, 2 & 3 kHz) of better hearing ear ≤ 20 dB

Conductive or Mixed Hearing Loss

- BC PTA (0.5, 1, 2 & 3 kHz) is ≤ 55 dB
- Bilateral candidates should have symmetric bone conduction thresholds (< 10 dB difference between the ears on average (0.5, 1, 2 & 3 kHz) or < 15 dB difference at individual frequencies)



*Patients under 12 years old may consider a Baha Start solution.

Baha Start - the first step in bone conduction hearing

55 dB fitting range[1]

Baha 6 Max is designed for better hearing and sound quality in our smallest device

Baha 6 Max
Sound Processor

Durable design

Dust & water protected[2-3†] and packed with new pediatric features

Smarter connectivity[4]

Ready for next generation connectivity including direct Android™ & Apple® streaming[‡]

Low projection

Shorter coupling gives lower projection[*] for discreet wearing[**]

Comfortable wearing options

Delivering efficient transmission and suitable for BC demo and long-term use.

* When compared with the Baha 5 or Ponto 4 sound processors. Land J. Comparison tech data Baha 6 Max, legacy and competition. Cochlear Bone Anchored Solutions AB, Sweden. 2020; D1762475

** Outcomes may vary, and your health professional will advise you about the factors which could affect your outcome.
The Cochlear Baha 6 Max Sound Processor, with battery compartment excluded, is dust and water resistant to level IP68 of the International Standard IEC60529. Refer to the relevant user guide for information. Tested by the RISE Research Institutes of Sweden AB.

‡ Cochlear Baha 6 Max sound processor is compatible with iPhone, iPad, iPod touch and selected Android phones. For compatibility information visit www.cochlear.com/compatibility.

1. Hua H. Baha 6 Max fitting range. Cochlear Bone Anchored Solutions AB, Sweden. 2020; D1725632.
2. Andersson H. Baha 6 Max IPx8 Test Report. RISE Research Institutes of Sweden AB, Sweden. 2020; D1757477.
3. Andersson H. Baha 6 Max IP6x Test Report. RISE Research Institutes of Sweden AB, Sweden. 2020; D1757476.
4. Compared to Baha 5 Sound Processor. Cochlear Baha 6 sound processors are compatible with Apple and Android devices. For compatibility information, visit www.cochlear.com/compatibility.

Baha® Connect System

Baha® 6 Max Sound Processor

A **premium-power** sound processor in a small size

Stability and reliability of the Cochlear™ **BI300 Implant** is backed by more than 10 years of published clinical research and has a 98.4% cumulative implant survival rate. [1]

DermaLock™ Abutment clinical proven to integrate with soft tissue.[2]

1. Vanaelst B. Literature review and Evaluation: BI300 Implant years and survival rate. Cochlear Bone Anchored Solutions AB, Sweden 2019.
2. van Hoof M, Wigren S, Duimel H, Savelkoul PH, Flynn M, Stokroos RJ. Can the hydroxyapatite-coated skin-penetrating abutment for bone conduction hearing implants integrate with the surrounding skin? Front Surg. 2015 Sep 14;2:45.

Understanding Baha System Indications

Patients 5 years or older* who have:

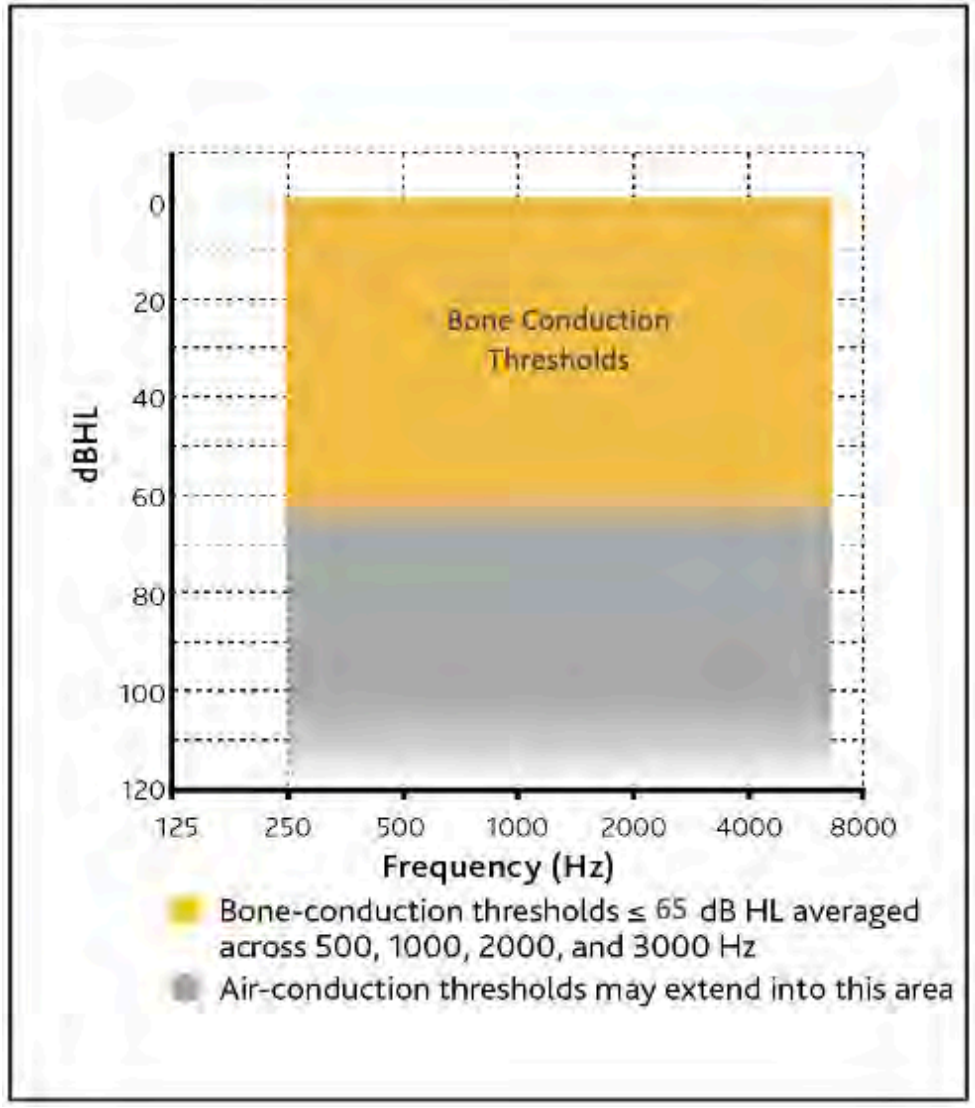
Single-Sided Deafness

- AC PTA (0.5, 1, 2 & 3 kHz) in better hearing ear ≤ 20 dB

Conductive or Mixed Hearing Loss

- BC PTA (0.5, 1, 2 & 3 kHz) is ≤ 55 dB for Baha 6 Max sound processor and ≤ 65 for Baha 5 Super Power sound processor

NOTE: Bilateral candidates should have symmetric bone conduction thresholds (< 10 dB difference between the ears on average (0.5, 1, 2 & 3 kHz) or < 15 dB difference at individual frequencies)



*Children under 5 years of age may be suitable for a non-surgical bone conduction solution such as Baha Softband

Wireless Considerations

Both Baha and Osia Systems are compatible with a wide range of wireless options

- Direct streaming from Apple and Android*
- Baha Smart App/Osia Smart App**
- Mini Microphone
- Phone Clip
- TV Streamer
- FM compatibility***

*The Cochlear Baha 6 Max and Osia Sound Processors are compatible with Apple and Android devices. For compatibility information visit www.cochlear.com/compatibility.

**The Cochlear Baha and Osia Smart Apps are available on App Store and Google Play. For compatibility information visit www.cochlear.com/compatibility.

***Using Mini Microphone 2+

Made for iPhone | iPad | iPod

android

Bluetooth

Bone Conduction Portfolio Selection Guide

Is the patient a candidate for a bone conduction solution?

- Conductive/Mixed HL with BC PTA *(.5, 1, 2 & 3 kHz)* ≤ 65 dBHL
- Single-Sided Deafness *(SSD)* with AC PTA in the good ear ≤ 20 dBHL

YES

Demonstrate bone conduction

- Use test rod or Softband*
- Allow the candidate to wear the device during counseling when possible

Is the patient

- 5 years of age or younger?
- Unable/unwilling to have any surgical procedure?

YES

Consider a Baha Start System

Is the patient a candidate for the Cochlear Osia® System?

- Conductive/Mixed HL with BC PTA *(.5, 1, 2 & 3 kHz)* ≤ 55 dBHL
- Single-Sided Deafness *(SSD)* with AC PTA (.5, 1, 2 & 3 kHz) in the good ear ≤ 20 dBHL
- Patient is 12 years of age or older
- counseling when possible

NO *(eg.* **Other Considerations***)*

Consider a Baha System

YES

Consider Osia® System

Other Considerations:

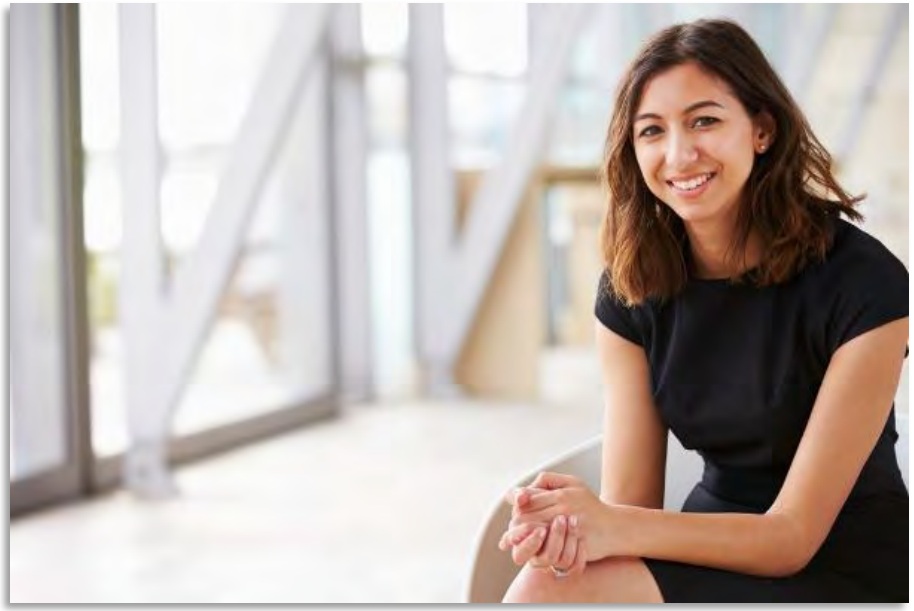
Medical considerations *(e.g. SSD after acoustic neuroma removal which requires serial imaging on the side of the implant)* may lead to Baha® System consideration.

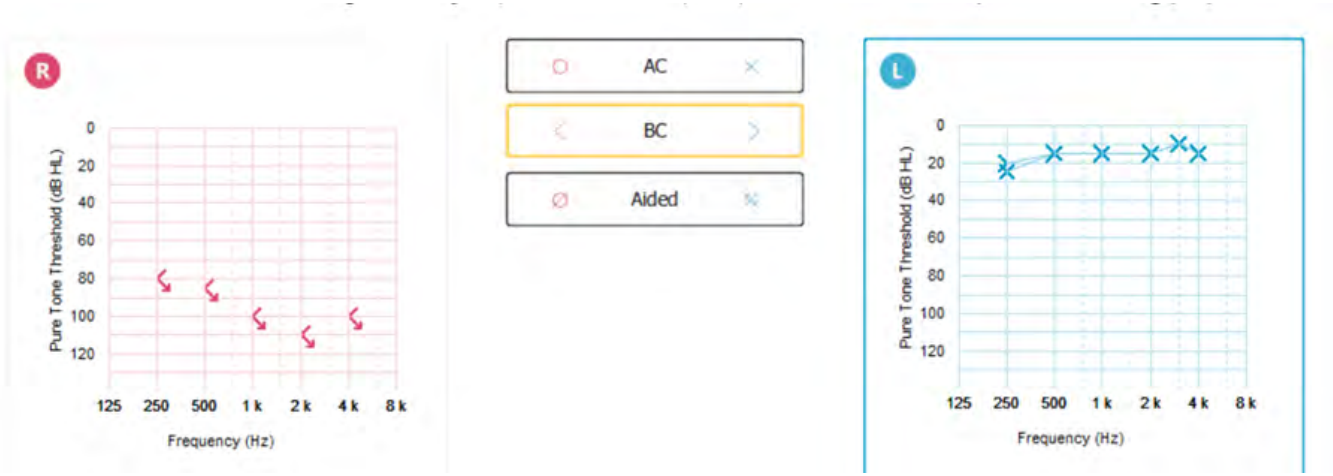
If funding/insurance coverage is not available for the Osia System even after appeal, but would be available for a Baha System, therefore consider a Baha System.

If the BC PTA is over 55dB they need to consider a Baha 5 SuperPower ONLY.

*SoundArc can be used if clinician prefers.

Case Example: Mia





- History of SSD (profound loss) in Right ear
- Air conduction threshold PTA of 13.75 dBHL in the good (Left) ear (Measured at 500, 1000, 2000, 3000 Hz)

- Sudden SNHL five years ago. Tried steroids but no improvement in hearing. Has been counseled about CROS aids but is uninterested in trying them.

Case Example: Mia (cont.)

- Mia was seen at Big U Medical Center for a “Bone Conduction Candidacy Appointment”
- Audiologist programmed a Baha 6 Max sound processor on SoundArc for her hearing loss for her to wear throughout her visit
- Mia’s goals included hearing better at work when she was on the phone and hearing better in noisy situations
- Testing in the soundfield was completed with noise to the good ear and signal to the poorer ear:
  - Unaided QuickSIN: 8 dB SNR (Moderate SNR Loss)
  - QuickSIN with Baha 6 Max demo: 0 dB SNR (Normal)
- Mia liked the sound of bone conduction with the demo and liked that the Osia System did not have anything visible through the skin

Case Example: Mia (cont.)

Mia is very interested in Osia and wants to move forward. She received some brochures from her clinic and decided to get on social media to learn more about bone conduction.

Case Example: Layla

- 2 years old
- History of bilateral atresia with conductive loss bilaterally
- Bone conduction threshold PTA (500, 1000, 2000, 3000 Hz)
- of 8.75 dBHL in Right ear and 11.25 dBHL in Left ear

Case Example: Layla (cont.)

Layla was seen at University Pediatrics for a hearing solutions appointment to discuss bone conduction options with her parents

Audiologist fit her with a pre-programmed Baha 6 Max sound processor on a Softband while she discussed options with parents

Layla's parents expressed concerns with her speech and language development

Layla is currently home with grandma during the day, but parents would like to enroll her in a preschool program when she is 3 years old

Case Example: Layla (cont.)

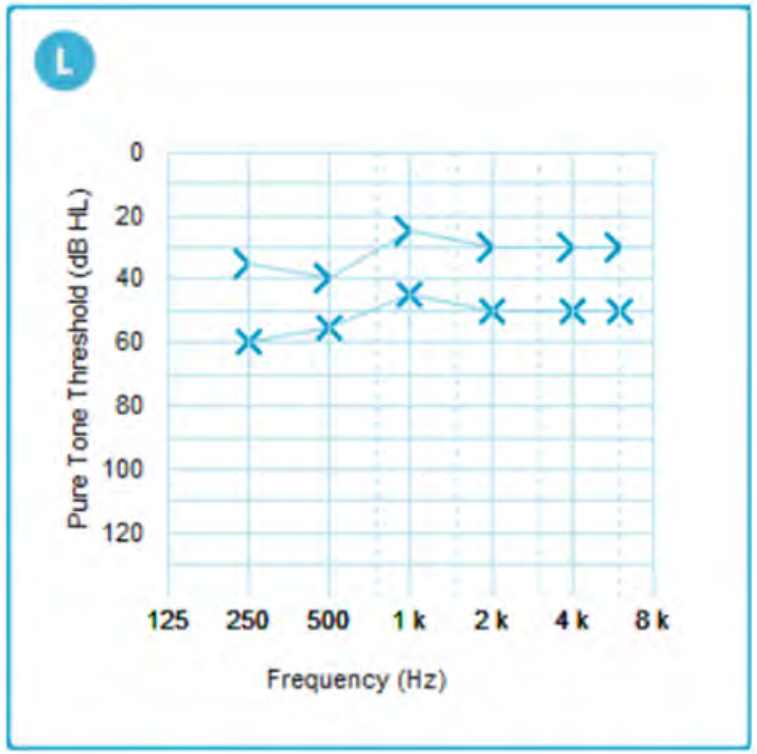
Parents received brochures from clinic and started exploring social media

Layla is covered under her state's Medicaid program and her family has some concerns about how long the approval process will take.

Cochlear™ Lend an Ear Program

- Fast access to sound with Baha Start
- Loan-to-Own concept
- Available for pediatric candidates 12 & under

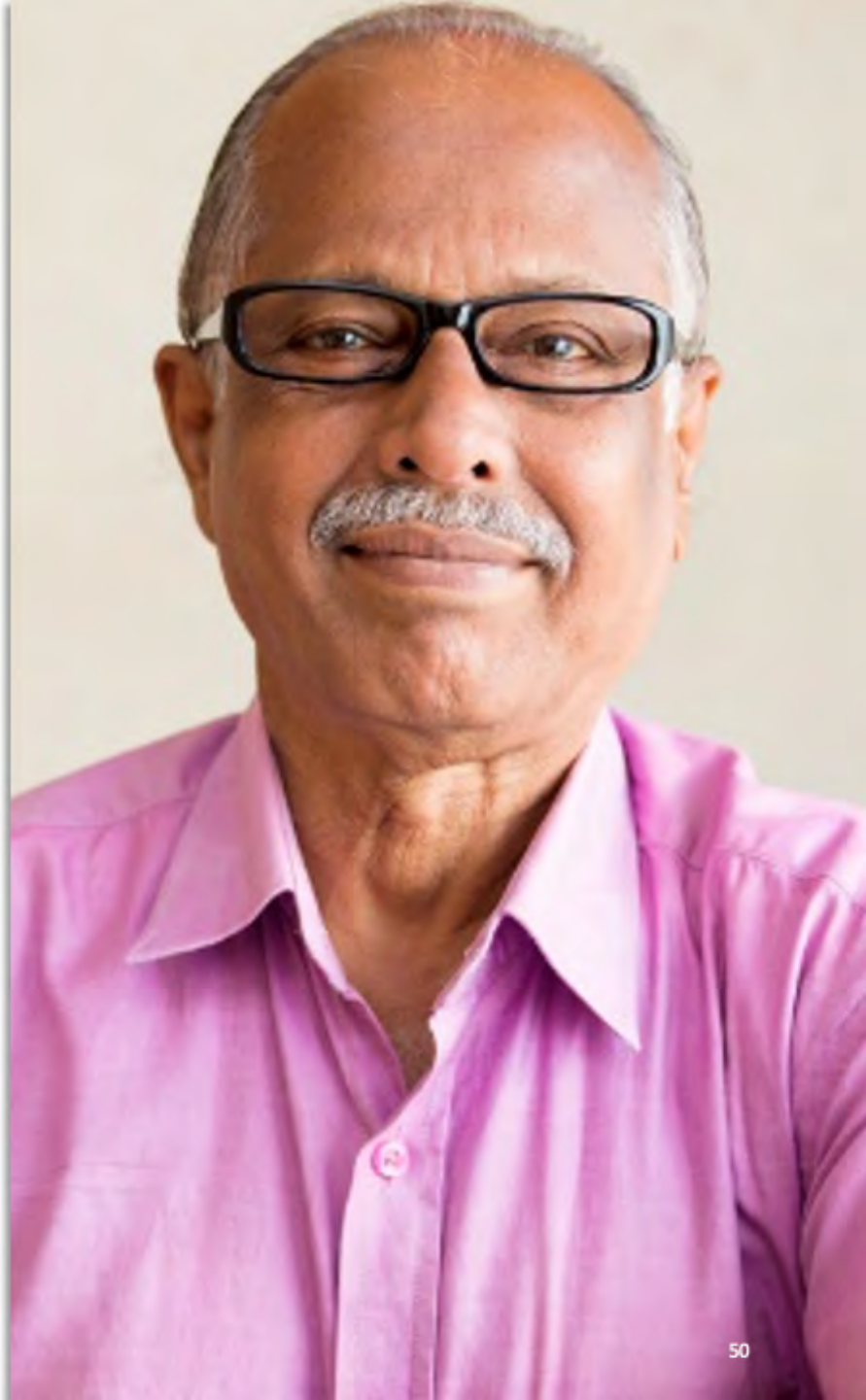
Case Example: Krish



- History of Mixed Hearing Loss in Left Ear
- Bone conduction threshold PTA of 31 dBHL (Measured at 500, 1000, 2000, 3000 Hz)
- Long history of chronic otitis media with several attempts at surgical reconstruction.

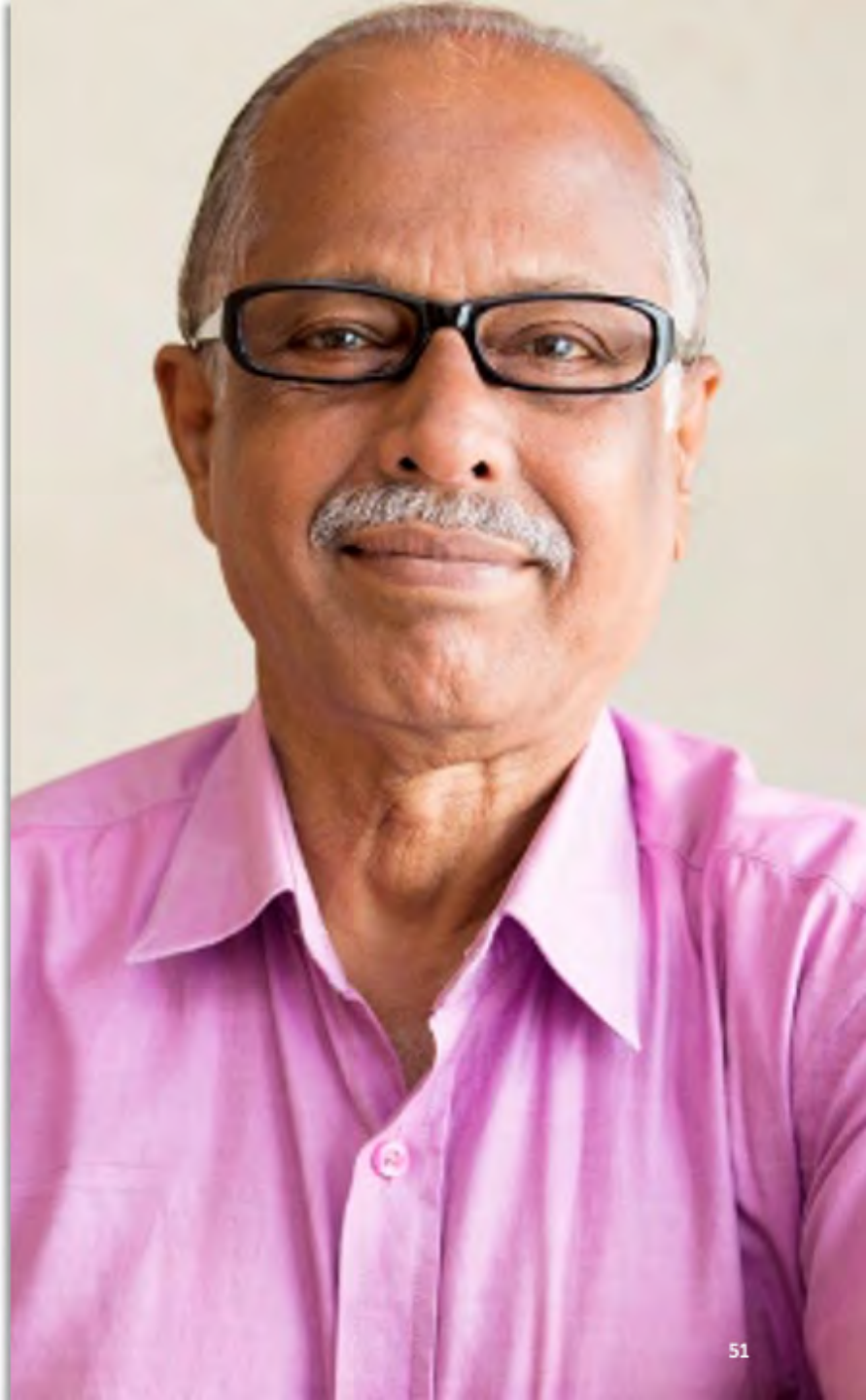
Case Example: Krish (cont.)

- Krish was seen at ABC ENT during a busy clinic day
- His Audiologist immediately thought of Bone Conduction for him and fit him with a pre-set Baha 6 Max on a Softband while discussing options with him
- Krish told her he most wants to converse with his grandchildren on the phone and communicate better while he and his wife are travelling



Case Example: Krish (cont.)

- He was sent home with several brochures and also contact information for his local Cochlear volunteer.
- Krish was scheduled to return to the clinic in two weeks to decide options



Cochlear®

Counseling

Counseling for Bone Conduction

Counseling should be goal-oriented – what does the patient want to achieve?

Should include basic information about bone conduction systems and how they are different from other treatment options

Evaluate patient lifestyle and what options/accessories might be helpful for them

Dillon & Ginis (1997) Client Oriented Scale of Improvement (COSI) and its relationship to several other measures of benefit and satisfaction provided by hearing aids. J Am Acad Audiol, 8(1):27-43.

Step 2: Surgical Counseling

Advise candidates about the differences between hearing with a demo and hearing after surgery

Baha:

Baha demonstrations can be used to predict outcomes with Bone Conduction devices after surgery[1,2]

Osia:

An exact demonstration of Osia does not exist. Differences exist in the output of Baha on a Softband or SoundArc vs an Osia system, especially in the high frequencies, where Osia is better[1]

1. Goycoolea M, Ribalta G, Tocornal F et al. Clinical performance of the Osia system, a new active osseointegrated implant system. Results from a prospective clinical investigation (2020); 140(3): 212-219.
2. Snapp HA, Fabry DA, Telischi FF, Arheart KL, Angeli SI. (2010) A clinical protocol for predicting outcomes with an implantable prosthetic device (Baha) in patients with single-sided deafness. J Am Acad Audiol, 21(10):654-62.

Surgical Counseling

Address any fears about surgery directly

Bone Conduction implants are typically a same day, outpatient procedure

The procedure generally takes about an hour, with additional time in the preparation and recovery areas

Patient will typically go home the same day

After a few days for recovery, most people are back to their normal routine

"The surgery was absolutely nothing. I think when I heard the word 'surgery,' I just got nervous."

Andria L. -Baha recipient

Step 3: Importance of Treating Hearing Loss

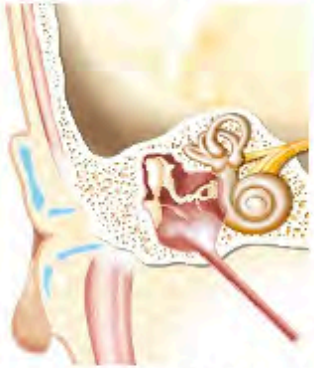
Ensure candidates understand the importance of treating hearing loss

Conductive or Mixed Hearing Loss

- In conductive and mixed hearing loss a Bone Conduction System may provide more benefit than hearing aids when the conductive element is >30 dB[1,2]
- Besides the problem of recurrent ear discharge, **hearing loss is the most frequent effect of COM** and may be both conductive and sensorineural in nature.[3]

Chronic Otitis Media

Otitis Externa



Atresia/Microtia

Otosclerosis

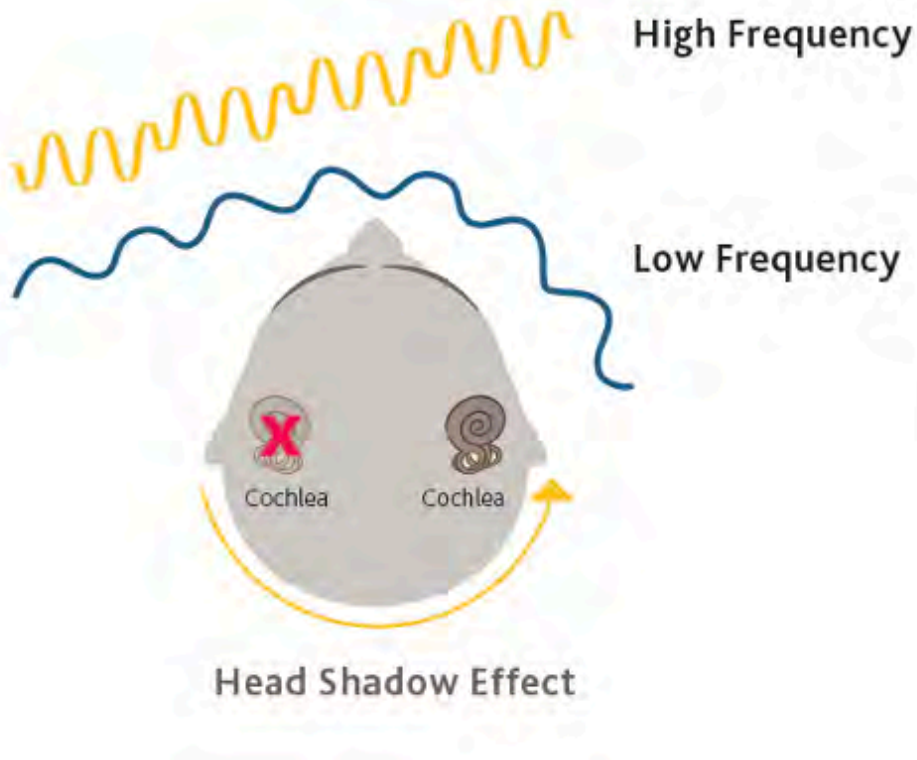
1) Snik AF et al. (2005) Consensus Statements on the BAHA System: Where Do We Stand at Present? Annals of ORL 114(12S). 195:1-12
2) de Wolf MJ, Hendrix S, Cremers CW, Snik AF. Better performance with bone- anchored hearing aid than acoustic devices in patients with severe air-bone gap. Laryngoscope. 2011;121(3):613-6.
3) Islam M, Islam M, Bhuiyan M, Rashid M, & Datta P. Pattern and degree of hearing loss in chronic suppurative otitis media. Bangladesh J. Otorhinolaryngol. 2010;16(2):96-105.

Step 3: Importance of Treating Hearing Loss (cont.)

Ensure candidates understand the importance of treating hearing loss

Single-Sided Deafness (SSD)

- Bone conduction treatments provide improved speech understanding in noisy environments for patients with SSD[1]
- The Osia system has an average of 12 dB more available gain in the high frequencies compared to percutaneous bone conduction options[2], which is especially important in improving speech understanding in background noise

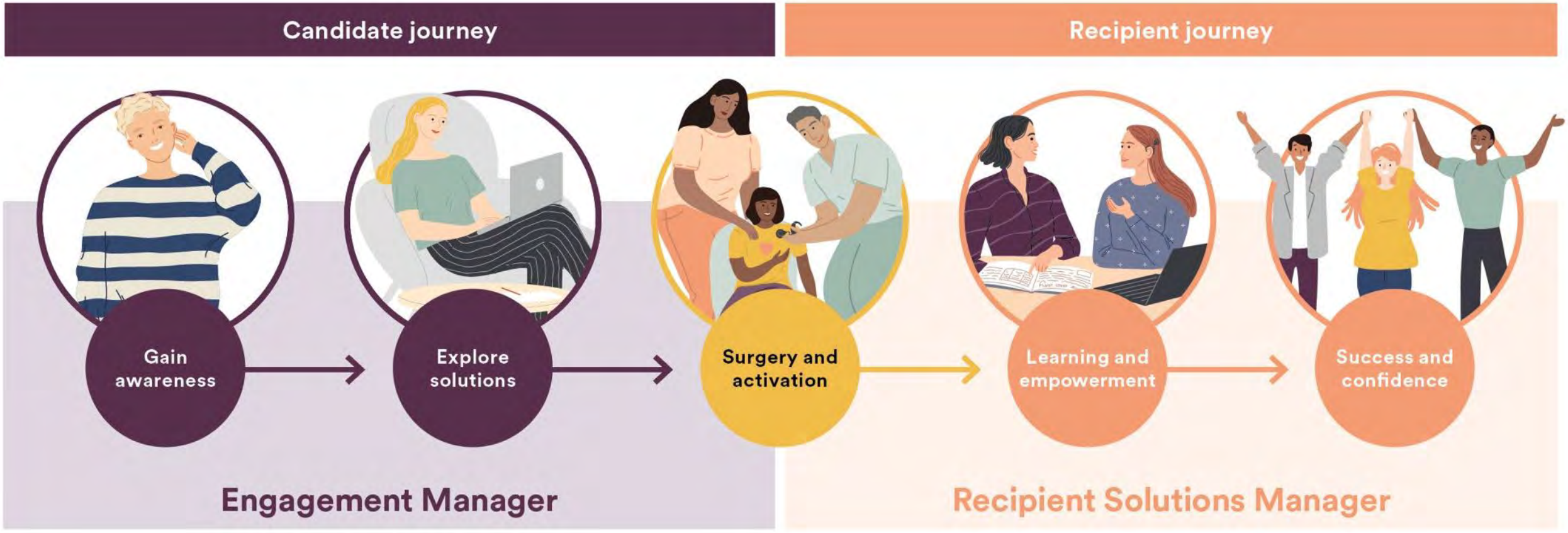


1) Hol MKS, Bosman AJ, Snik AFM, Mylanus EAM, Cremers CWRJ. "Bone anchored hearing aids in unilateral inner ear deafness: an evaluation of audiometric and patient outcome measurements." Otol Neurotol (2005:26): 999-1006
2) Fyrlund, H. (2019). Osia performance [Powerpoint Slide 4]. Data on file

Cochlear®

Lifetime Solutions

Candidate Engagement



Why Choose Cochlear for Bone Conduction?

- Cochlear has delivered proven hearing performance and personalized service to our recipients for over 40 years
- Cochlear offers a full portfolio of bone conduction hearing solutions with a broad fitting range (up to 65 dB) to help you treat more patients

In the United States, the Osia System is cleared for children ages 12 and older. In the United States and Canada, the placement of a bone-anchored implant is cleared for children ages 12 and older.

Case Example: Layla

- Layla was fit with a Baha Start Solution using bilateral Baha 6 Max Sound Processors on a Softband under the Lend an Ear program – the processor will be hers once insurance approval is obtained
- Her parents really like having access to the Baha Smart App* to control and monitor her devices
- Her family uses the mini microphone when at the park, in the car, etc and anticipate Layla will love the direct streaming feature as she gets a bit older
- She is enrolled in preschool and will start in the next few months when she turns 3!

** The Cochlear Baha 6 Max Sound Processor is compatible with Apple and Android devices. The Cochlear Baha Smart App is available on App Store and Google Play. For compatibility information visit www.cochlear.com/compatibility*

Case Example: Mia

- Mia received her Osia system and chose the Aqua+ accessory since she loves to swim
- Mia loves using the direct to iPhone streaming at work and she can hear much better in the fast-paced office environment

Case Example: Krish

- After discussions with his clinician and the Cochlear Concierge, Krish decided to move forward with an Osia system
- He chose a Mini Microphone to help him when travelling and eating out and he loves the iPhone features that help him connect with his grandchildren

Conclusions

- Bone Conduction Solutions can help patients with a variety of common etiologies by treating their hearing along their treatment journey for the disease
- Cochlear's bone conduction portfolio offers patients with conductive hearing loss, mixed hearing loss and SSD more choices than ever before
- Bone Conduction demonstrations coupled with thoughtful counseling will ensure your patients receive the best solution possible

Cochlear®

Hear now. And always

www.cochlear.com