



Treating Severe to Profound Hearing Loss in Adults: A Continuum of Care

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Hear now. And always



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.

Hearing Healthcare Professionals



- Diagnose, manage and treat hearing or balance problems for individuals from birth to adulthood
- Counsel and support patients emotionally
- Familiar with a wide range of treatment options and everchanging technology

“My HCP is a lifesaver”

Life SAVERS



See
Assess
advise
Engage
Refer
Support

Life SAVERS



SEE: Recognize when someone is a candidate for implantable technology

ASSESS: Testing to confirm benefit and candidacy

ADVISE & ENGAGE:
Explain the benefit of implantable technology

REFER: Send to the right place at the right time

SUPPORT: Monitor and assist after referral



See

/sē/ verb

discern or deduce mentally after reflection
or from information; understand

Hear now. And always



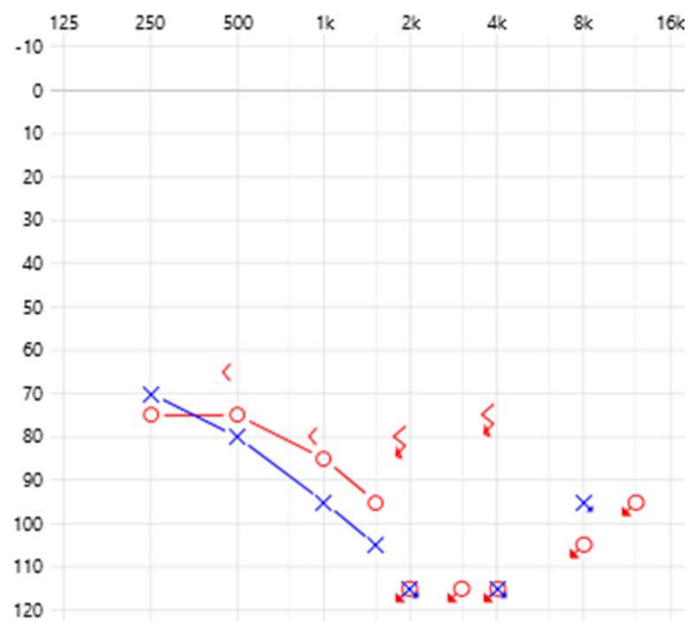
Dante: Introduction



- Longstanding hearing loss since childhood
- Deafness is in his family with many family members using American Sign Language
- Using high-powered hearing aids
- Daughter is getting married and he is afraid he won't hear the music at her wedding



Dante: Audiogram



Otoscopy & Tympanometry:

Normal AU

Word Recognition Scores: (W22 Recorded)

- Right: 20% at 90 dBHL
- Left: 20% at 90 dBHL

Hearing Aids:

Power BTEs; met targets as expected in the low frequencies but not able to meet targets in the highs

Dante: Discussion



- Have you seen patients with a similar history to Dante's?
- What might hold someone back from recommending a cochlear implant for him?
- What could be the benefits of cochlear implantation for Dante?
- What are the chances he will do better with an implant than he does right now?



Hearing Loss

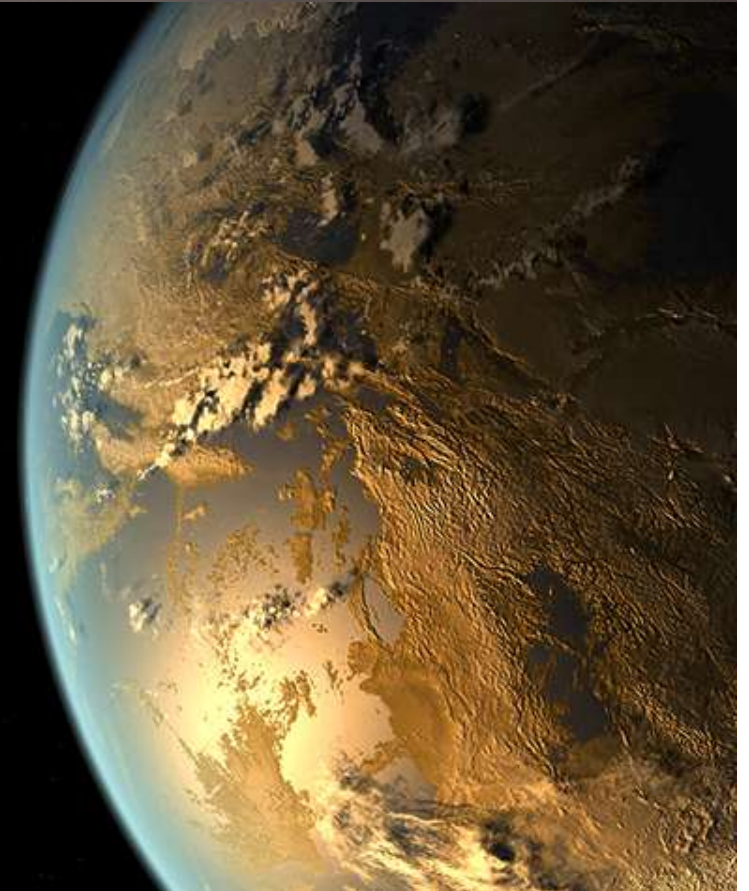


- 466 million people in the world with disabling hearing loss¹
- Nearly 1 out of every 3 people over 65 years are affected by disabling hearing loss¹
- Untreated hearing loss can lead to the acceleration of cognitive decline in the elderly²
- While users are generally satisfied with hearing aids, overall satisfaction is significantly lower for those with severe to profound hearing loss³

1 - Data source: World Health Organization, www.who.it/deafness/en/

2 - Lin FR et al (2013) Hearing loss and cognitive decline in older adults. JAMA Intern Med, 174(4):293-299

3 - Mondelli et al (2013) Degree of satisfaction among hearing aid users. Int Arch Otorhinolaryngol, 17(1):51-56.



Effects of Disabling Hearing Loss



Reduced
interpersonal
communication¹



Decline in
psychosocial
well-being¹



Cognitive
decline²



Reduced
quality of life¹



Reduced
economic
independence¹

¹ – Olusanya BO, Neumann KJ, Saunders JE (2014) The global burden of disabling hearing impairment: a call to action. Bull World Health Organ, 92(5):367-73.

² – Lin FR et al (2013) Hearing loss and cognitive decline in older adults. JAMA Intern Med, 174(4):293-299

Think of Your Patients...



Despite appropriately fit hearing aids...

- ✓ Do they struggle on the phone with unfamiliar speakers?
- ✓ Have they withdrawn from activities or social situations because they can't hear?
- ✓ Does the hearing loss negatively impact their employment or job opportunities?
- ✓ Do they return frequently for hearing aid adjustments that just aren't helpful?

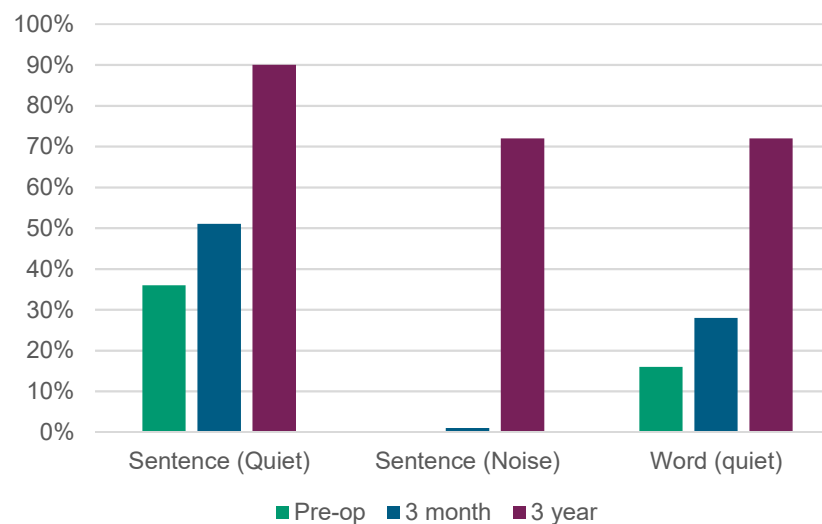
Yes? Then you may have recognized a candidate...

Dante: Outcome



Left ear implanted July 2015

Speech Recognition: Left Ear

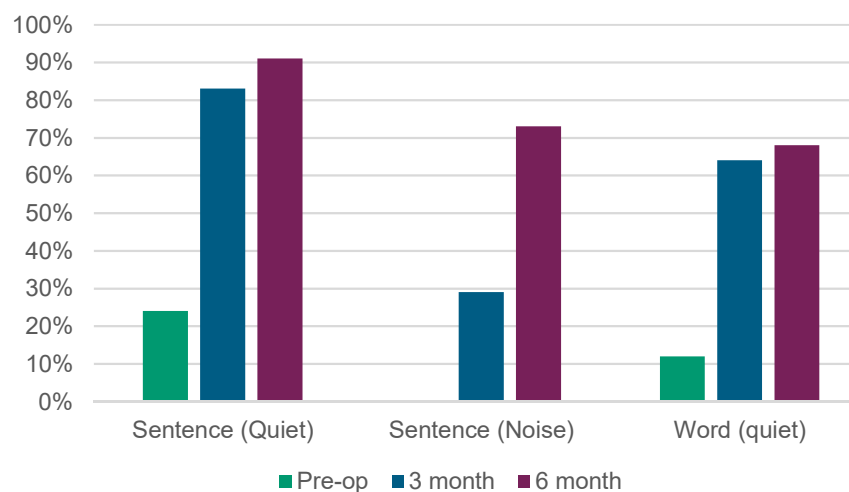


Dante: Outcome



Left ear implanted July 2015
Right ear implanted April 2018

Speech Recognition: Right Ear



Video



<https://youtu.be/USbNHru8T5Q>



In their own words...

“I would have liked to have
the choice presented to me
20 years ago...”

~Dante B



Assess

/ə'ses/ verb

evaluate or estimate the nature, ability or quality of.

Hear now. And always



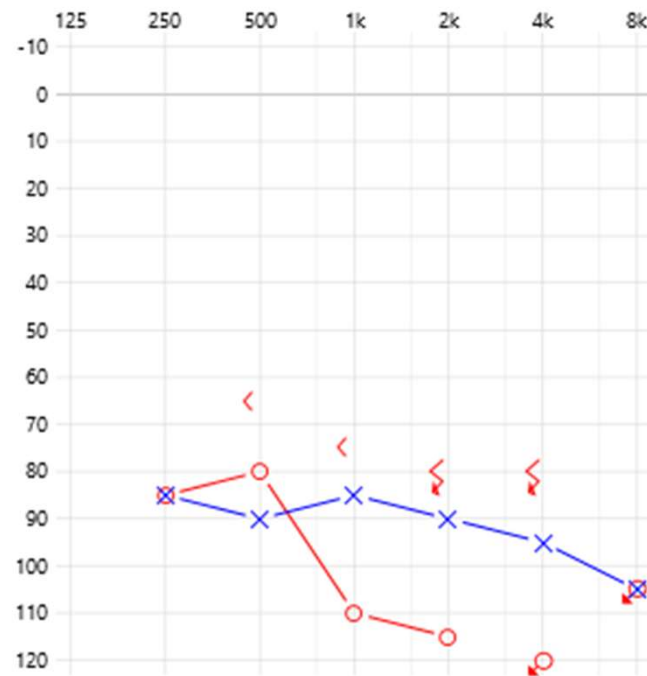
Sue: Introduction



- Meniere's disease with a history of fluctuating and progressive hearing loss
- Father had significant untreated hearing loss for many years and she swore she wouldn't do the same
- Had seen numerous Audiologists and ENT's over the years
- Music is very important to her



Sue: Audiogram



Otoscopy & Tympanometry:

Normal AU

Word Recognition Scores: (W22 Live Voice)

- Right: 68% at 110 dBHL
- Left: 89% at 105 dBHL

Hearing Aids:

Power BTEs; met NAL-RP targets as expected in the left ear, did not meet targets in the high frequencies in the right ear

Sue: Discussion



- Have you met patients like Sue?
- What might hold someone back from recommending a cochlear implant for her?
- How do you know Sue is “ready” for a cochlear implant evaluation? Are there other tests you feel are needed?



Hearing Aid Benefit



How do you measure hearing aid benefit?



cosi¹

NAL
CLIENT ORIENTED SCALE OF IMPROVEMENT

Name: _____ Category: _____ Sex: _____ Ethnic/Language: _____
 Address: _____
 Date: _____

Instructions: Read all instructions carefully. Answer each question as honestly as you can. There are no right or wrong answers. The scale is designed to measure the benefit of your hearing aid.

SPECIFIC NEEDS

Indicate Order of Significance

Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Communication with family and friends																				
2. Communication with people at work																				
3. Communication with people in public places																				
4. Communication with people in noisy places																				
5. Communication with people in quiet places																				
6. Communication with people in noisy places																				
7. Communication with people in quiet places																				
8. Communication with people in noisy places																				
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17. Communication with people in quiet places																				
18. Communication with people in noisy places																				
19. Communication with people in quiet places																				
20. Communication with people in noisy places																				



SSQ²

1. How much trouble do you have understanding speech in noisy places? (e.g., at a party, in a restaurant, in a car, etc.)

De nada a algo 0 1 2 3 4 5 6 7 8 9 10 Perfeccionamiento

2. How much trouble do you have understanding speech in quiet places? (e.g., at a party, in a restaurant, in a car, etc.)

De nada a algo 0 1 2 3 4 5 6 7 8 9 10 Perfeccionamiento

3. How much trouble do you have understanding speech in noisy places? (e.g., at a party, in a restaurant, in a car, etc.)

De nada a algo 0 1 2 3 4 5 6 7 8 9 10 Perfeccionamiento

4. How much trouble do you have understanding speech in quiet places? (e.g., at a party, in a restaurant, in a car, etc.)

De nada a algo 0 1 2 3 4 5 6 7 8 9 10 Perfeccionamiento

5. How much trouble do you have understanding speech in noisy places? (e.g., at a party, in a restaurant, in a car, etc.)

De nada a algo 0 1 2 3 4 5 6 7 8 9 10 Perfeccionamiento

6. How much trouble do you have understanding speech in quiet places? (e.g., at a party, in a restaurant, in a car, etc.)

De nada a algo 0 1 2 3 4 5 6 7 8 9 10 Perfeccionamiento

7. How much trouble do you have understanding speech in noisy places? (e.g., at a party, in a restaurant, in a car, etc.)

De nada a algo 0 1 2 3 4 5 6 7 8 9 10 Perfeccionamiento

8. How much trouble do you have understanding speech in quiet places? (e.g., at a party, in a restaurant, in a car, etc.)

De nada a algo 0 1 2 3 4 5 6 7 8 9 10 Perfeccionamiento

1 – Dillon et al (1997) Client-oriented scale of improvement and its relationship to several other measures of benefit and satisfaction provided by hearing aids. J Am Acad Audiol, 8:27-43.
 2 – Gatehouse & Noble (2004) The speech, spatial and qualities of hearing scale (SSQ). Int J Audiol, 43(2):85-99.

Setting Goals



Patient-centered hearing care¹

- Ask questions:
 - What are some of the biggest challenges of your hearing loss?
 - Is there anything you've had to give up because of your hearing loss?
 - What could you do in your life differently if you could hear better?
- Set goals for hearing treatment
- Evaluate progress on those goals

*If the patient doesn't
meet their goals with
the best possible
hearing aid fitting –
what next?*

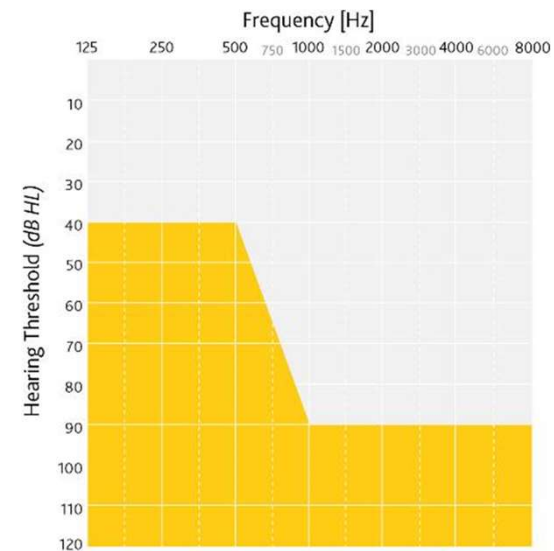
1 – Williams NA (2017) Added value of patient-centered care. The Hearing Journal, 70(5):36-37

Adult Candidacy: Nucleus® Cochlear Implant



Nucleus Cochlear Implants are intended for use in adults who have bilateral sensorineural hearing impairment and obtain limited benefit from appropriately fit binaural hearing aids.

- ✓ Moderate to Profound hearing thresholds
≥ 90 dBHL in the mid to high frequency range
- ✓ Limited benefit from amplification
50% or less in the ear to be implanted (60% or less in the best-aided condition) on recorded sentence measures



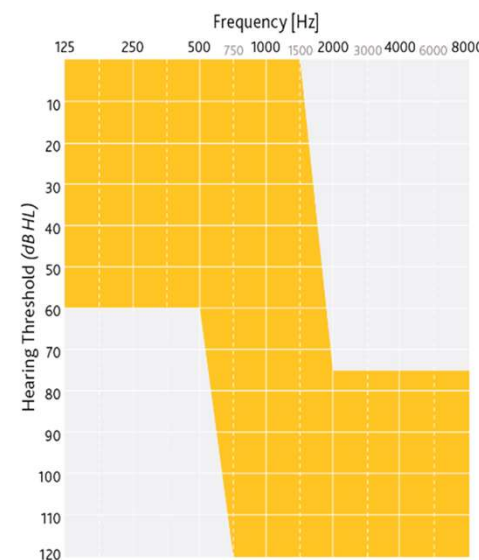
■ Cochlear Implant Electrode Candidate

Adult Candidacy: Hybrid™ L24 Implant*



The Nucleus Hybrid L24 cochlear implant system is indicated for unilateral use in patients aged 18 years and older who have residual low-frequency hearing sensitivity and severe to profound high-frequency sensorineural hearing loss and who obtain limited benefit from appropriately fit bilateral hearing aids.

- ✓ Severe to profound high frequency hearing loss
≥ 75 dBHL PTA for 2, 3 & 4 kHz
- ✓ Limited benefit from amplification
10-60% aided word score in the ear to be implanted and up to 80% aided word score in the opposite ear



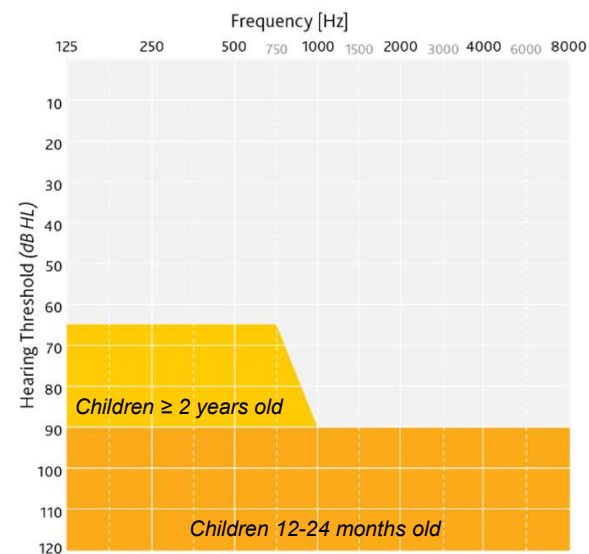
*The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality
Hybrid L24 implant is approved for use in adults ages 18 and older

Pediatric Candidacy: Nucleus Cochlear Implant



Nucleus Cochlear Implants are intended for use in children 12-24 months of age who have bilateral profound sensorineural deafness and children two years of age or older who have severe to profound hearing loss bilaterally who demonstrate limited benefit from hearing aids.

- ✓ Young Children: lack of progress in the development of simple auditory skills when appropriately aided
- ✓ Older Children: $\leq 30\%$ correct on open set word recognition tests

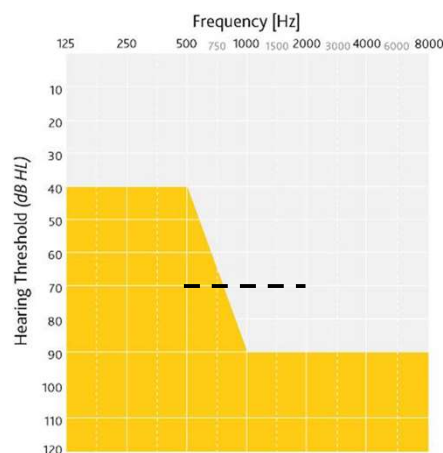


When to Consider Cochlear Implant Evaluation



*Cochlear's Clinical Based Recommendation:*¹⁻⁴

≥ 70 dB HL
PTA*



$\leq 50\%$
Speech
Perception

*PTA defined as .5, 1 & 2 kHz

1 – Gubbels SP et al (2017) Can routine office-based audiometry predict cochlear implant evaluation results? *Laryngoscope*, 127:216-222

2 – Hoppe U et al (2015) Audiometry-based screening procedure for cochlear implant candidacy. *Otol Neurotol*, 36(6):1001-5.

3 - Gates, G. A., & Hoffman, H. (2017, December 20). What the Numbers Mean: An Epidemiological Perspective on Hearing. Retrieved from <https://www.nidcd.nih.gov/health/statistics/what-numbers-mean-epidemiological-perspective-hearing>

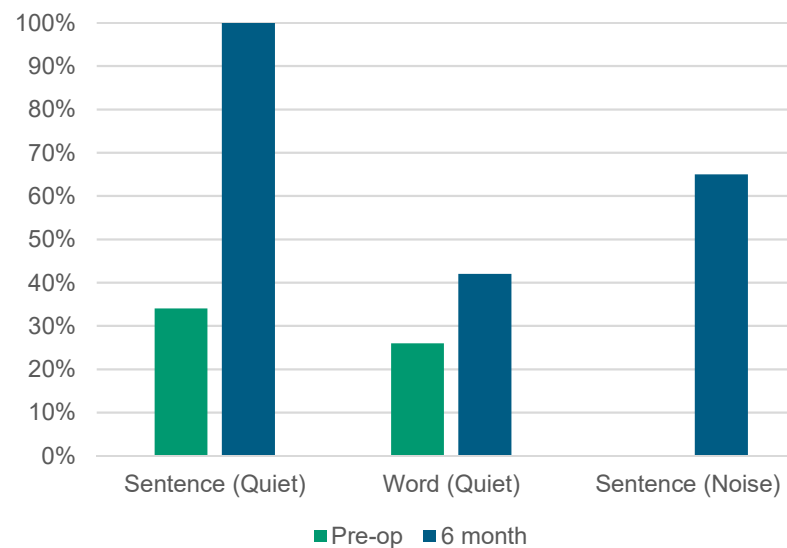
4 - Clinical Evaluation of the Cochlear Nucleus CI532 Cochlear Implants in Adults Investigator Meeting. 2019 Apr

Sue: Outcome



Right ear implanted March 2017

Speech Perception Testing



Video



https://youtu.be/jkqzBNwL_xk



In their own words...

“Ask the patient directly what they feel about...their hearing loss. Often it’s easier to talk to a health professional than loved ones who are also deeply impacted.”

~Sue Y



Advise & Engage

/əd'vīz/ verb

offer suggestions about the best course of action to someone.

/en'gayj/ verb

To occupy oneself; become involved.

Hear now. And always



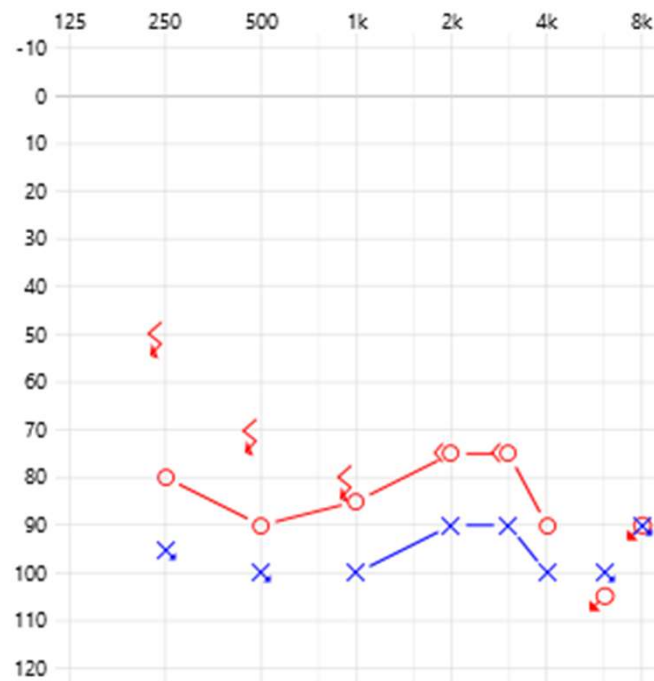
Gay: Introduction



- Loving grandmother with a sudden hearing loss in both ears in her 50's
- Referred to a neurotologist after having an allergic reaction to prednisone
- Has not tried hearing aids



Gay: Audiogram



Otoscopy & Tympanometry:

Normal AU

Word Recognition Scores:

Did not test

Hearing Aids:

Not currently using

Gay: Discussion



- What do you think about Gay's candidacy – would you refer her for consideration of an implant?
- Do you think she should have a hearing aid trial first? Why or why not?
- What if she was reluctant to have surgery? What would you tell her?



Counseling for a Referral



- ✓ How a cochlear implant works
- ✓ How a cochlear implant is different from hearing aids
- ✓ Expected outcomes
- ✓ Information about current technology
- ✓ Address other concerns
 - Cost
 - Surgery
 - Residual hearing

Cochlear Implant Basics



Two main components:

An **internal implant** placed just under the skin, behind the ear

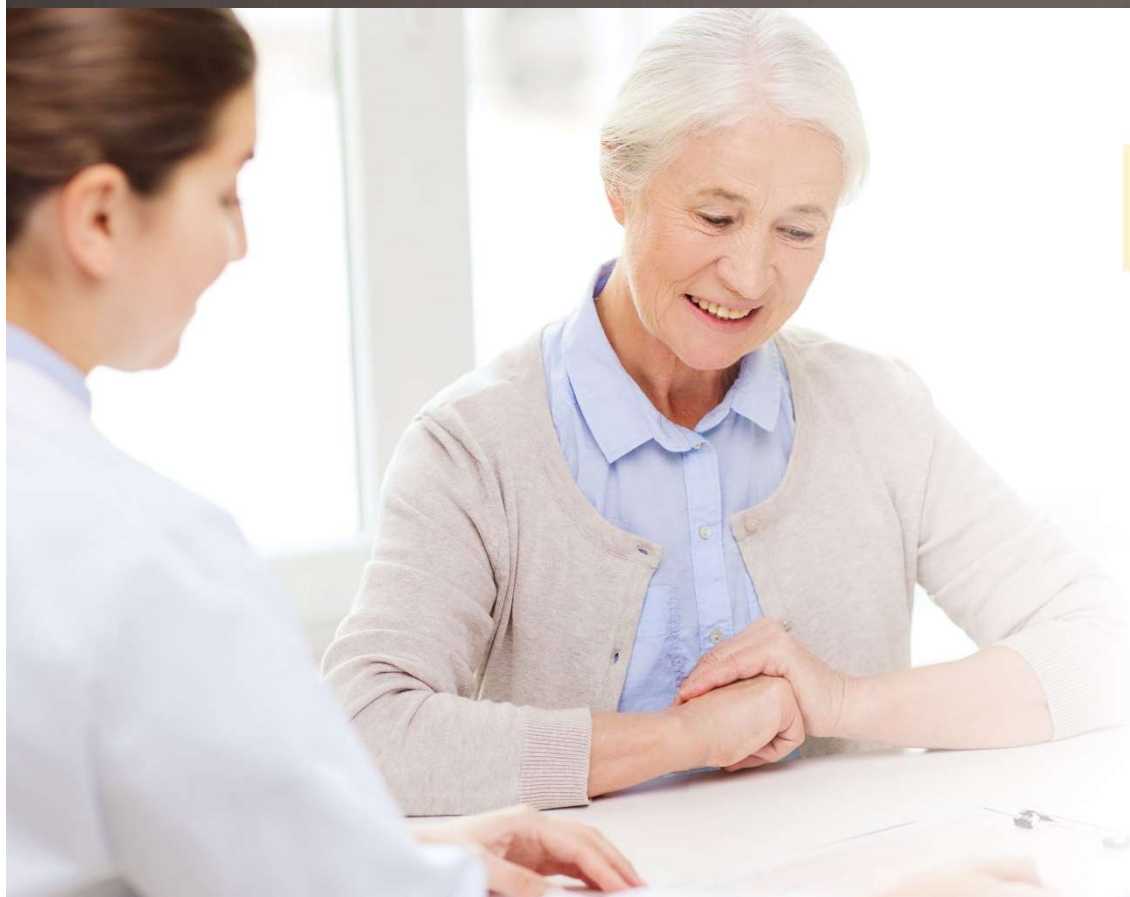
An external **sound processor** that sits behind the ear

Video



<https://youtu.be/Vm0nZH9RahE>

Counseling for a Referral

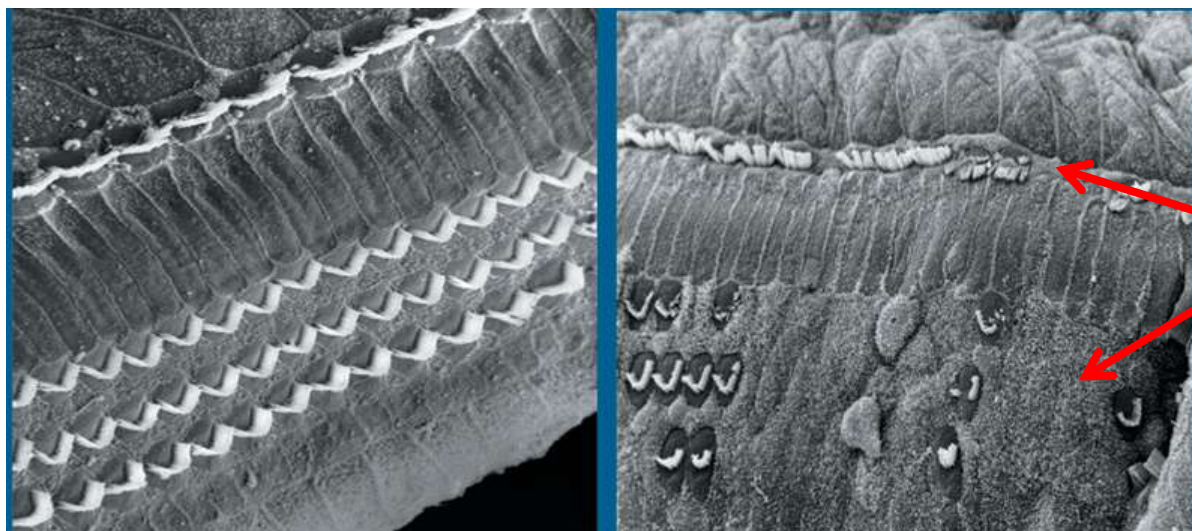


- ✓ How a cochlear implant works
- ✓ How a cochlear implant is different from hearing aids
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 - Residual hearing

Physiological Limitations: Cochlear Dead Regions



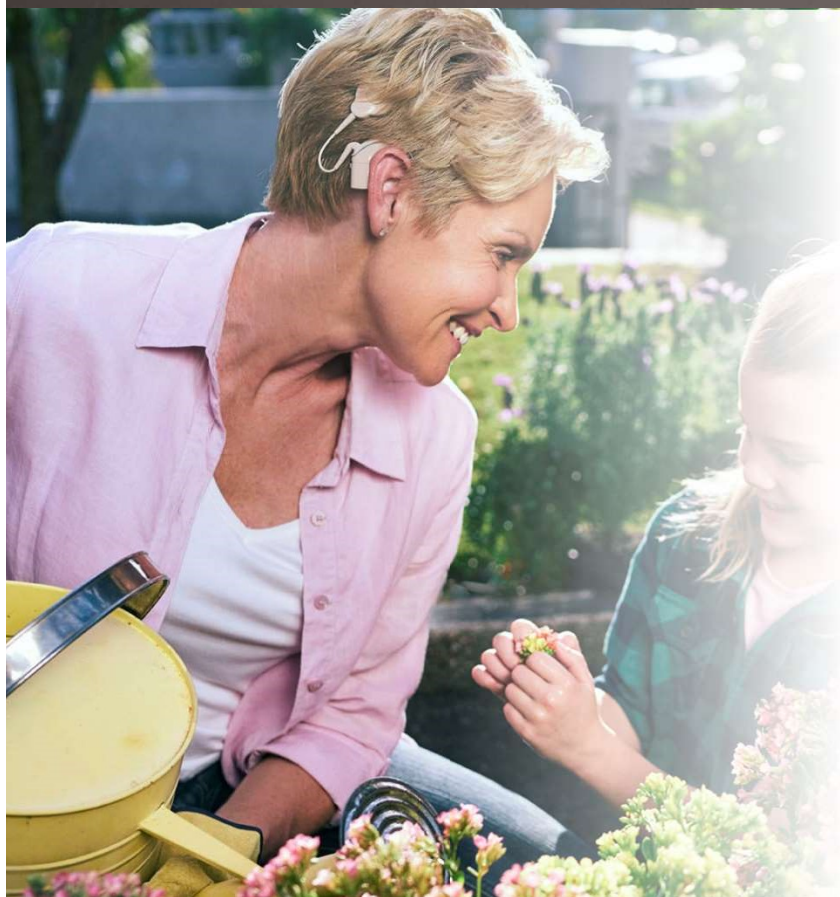
Cochlear dead regions are prevalent
when thresholds ≥ 70 dB HL ($\sim 60\%$)¹



Severe to profound
hearing loss is
associated with hair
cell damage

1 – Vinay & Moore BC (2007) Prevalence of dead regions in subjects with sensorineural hearing loss. *Ear & Hearing*, 28(2):231-41.

Why Cochlear Implantation?



For patients who meet candidacy criteria:

- High likelihood of significantly better speech understanding in both quiet and noise^{1,2}
- Improvement in quality of life³
- Reduced anxiety and depression and improved overall health⁴
- May slow age-related cognitive decline⁵

1 – Balkany et al (2007) Nucleus Freedom North American clinical trial. Otolaryngol, Head Neck Surg, 136:757-762.

2 – Runge CL et al (2016) Clinical outcomes of the Nucleus 5 cochlear implant system and SmartSound 2 signal processing, J Am Acad Audiol, 27(6):425-40.

3 – Gaylor BA et al (2013) Cochlear implantation in adults, JAMA Otolaryngol Head Neck Surg, 139(3):265-72.

4 – Manrique-Huarte R et al (2016) Treatment for hearing loss in the elderly: Auditory outcomes and impact on quality of life. Audiol Neurotol, 21(Suppl 1):29-35

5 – Cosetti MK (2016) Neurocognitive testing and cochlear implantation: insights into performance in older adults. Clin Interv Aging, 11:603-13.

Counseling for a Referral



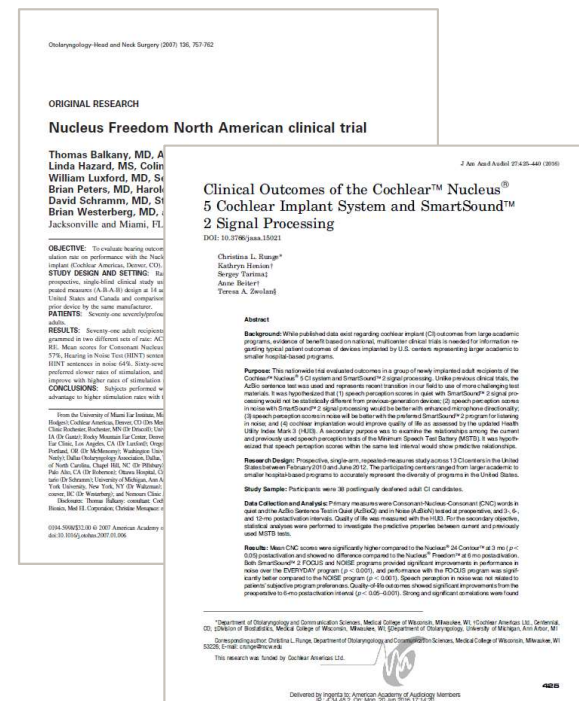
- ✓ How a cochlear implant works
- ✓ How a cochlear implant is different from hearing aids
- ✓ Expected outcomes
- ✓ Information about current technology
- ✓ Address other concerns
 - Cost
 - Surgery
 - Residual hearing

Outcomes



Large clinical trials in the US demonstrate post-operative **speech perception** scores dramatically higher than pre-operative scores^{1,2}

- On average, test scores for single words improve by 50 or more percentage points^{1,2}



1 – Balkany et al (2007) Nucleus Freedom North American clinical trial. Otolaryngol Head Neck Surg, 136:757-762.

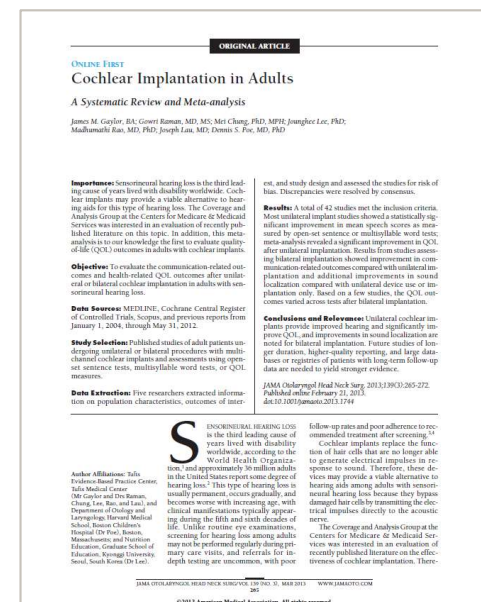
2 – Runge CL et al (2016) Clinical outcomes of the Cochlear Nucleus 5 cochlear implant system and SmartSound 2 signal processing. J Am Acad Audiol, 27(6):425-40.

Outcomes



A meta-analysis of 42 clinical studies revealed that unilateral cochlear implants provide **improved hearing** and significantly improved **quality of life** and improvements in **sound localization** for bilateral cochlear implants¹

- Of the 19 clinical studies that measured quality of life for adults after cochlear implantation, ALL reported a significant improvement



Outcomes



- For patients with severe to profound hearing loss, cochlear implantation results in **reduced anxiety and depression** and improved overall health¹
- Cochlear implants may **slow age-related cognitive decline** with improvements seen in verbal and memory domains after surgery²



1 – Manrique-Huarte R et al (2016) Treatment for hearing loss among the elderly: Auditory outcomes and impact on quality of life. Audiol Neurotol, 21S1:29-35.
 2 – Cosetti MK (2016) Neurocognitive testing and cochlear implantation: Insights into performance in older adults. Clin Interv Aging, 11:603-13.

Discuss Current Performance



In order to know how someone *will* do;
need to know how they are doing *today*

- Formal tools
 - Client-oriented Scale of Improvement (COSI)
 - Abbreviated Profile of Hearing Aid Benefit (APHAB)
- Informal tools
 - “What do you avoid because of your hearing loss?”
 - “What would you do differently if you could hear better?”

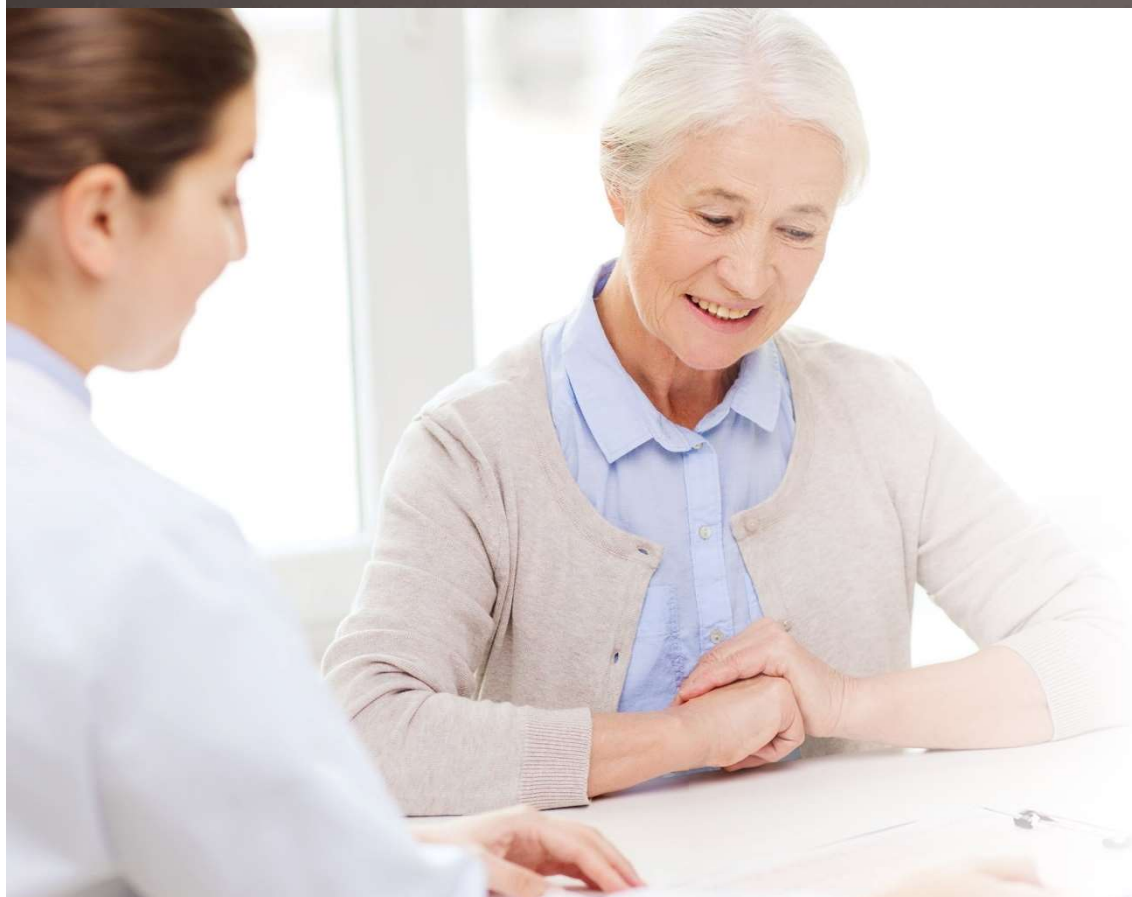
The COSI (Client-Oriented Scale of Improvement) form, published by the National Acoustic Laboratories. It includes a header with the COSI logo and the National Acoustic Laboratories logo. The form contains sections for 'Name', 'Address', 'Phone', and 'Email'. It also has a 'Date of Change' section. The main body of the form is a grid with 12 rows and 10 columns. The first column is labeled 'Indicate Order of Significance' and contains checkboxes. The remaining columns are labeled '1' through '10'. The grid is used to record the order of significance for various hearing-related issues. At the bottom, there is a 'Comments' section with a list of 12 items to be rated on a scale from 1 to 5. The items are: 1. Conversation with 1 or 2 in quiet, 2. Conversation with 1 or 2 in noise, 3. Conversation with group in quiet, 4. Conversation with group in noise, 5. Understanding of spoken content, 6. Understanding of spoken content in noise, 7. Understanding of spoken content in noise, 8. Hearing when talking from another room, 9. Hearing when talking from another room, 10. Hearing when talking from another room, 11. Hearing when talking from another room, 12. Hearing when talking from another room.

Will I Do Better?



How do YOU answer
the question:
“Will a cochlear
implant work for me?”

Counseling for a Referral



- ✓ How a cochlear implant works
- ✓ How a cochlear implant is different from hearing aids
- ✓ Expected outcomes
- ✓ Information about current technology
- ✓ Address other concerns
 - Cost
 - Surgery
 - Residual hearing

Nucleus Cochlear Implants



Most Implanted

Over 379,000 registered Nucleus Cochlear implants worldwide¹

Reliable Track-Record

#1 in Implant reliability today and over time^{1,2,3}

Improved Performance

With improved technology of the implant, patients do better with each implant generation.⁶



Perimodiolar Advantage

Cochlear delivers electrodes that are the closest to the hearing nerve to provide focused stimulation to maximize hearing performance.⁶

20+ Years of MRI Access

Removable magnets were first introduced in Nucleus implants in 1997 for access to MRI – today, the Profile™ Plus allows access to MRI scans at 1.5T and 3.0T with the magnet in place⁴

Natural and Low-Profile Design

Introduced slim implants that reduce the need for drilling⁵

With over 30 years of innovations, Cochlear has continued to deliver exceptional products to ensure our recipients can **Hear Now. And Always**

1. Cochlear Nucleus Implant Reliability Report. Volume 17 | December 2018. D1593476. Cochlear Ltd; 2019.

2. Hearing Implant Reliability Reporting | MED-EL [Internet]. Medel.com. 2018 [cited 06May2019]. Available from: <https://www.medel.com/us/reliabilityreporting>

3. 2018 Global Implant Reliability Report. 027-N025-02. Advanced Bionics AG and affiliates.; 2019.

4. MRI Guidelines D774756

5. Data on File: Internal Specifications

6. CAM-MKTP-673: CI532- A New Benchmark in Hearing Performance

Dedication to Implant Reliability

Built on the unrivalled reliability record of the Profile Series Implant and of the entire Cochlear Nucleus implant portfolio with a longstanding track record of reliable implants



Most reliable today:

Cochlear Nucleus Profile Series¹⁻³

99.82%

Within 5 years



Most reliable over time:

Cochlear Nucleus CI24RE Series¹⁻³

99.00%

Within 14 years



Most reliable for children:

Cochlear Nucleus Profile Series¹⁻³

99.75%

Within 5 years

Implant Reliability^{1,2,3}

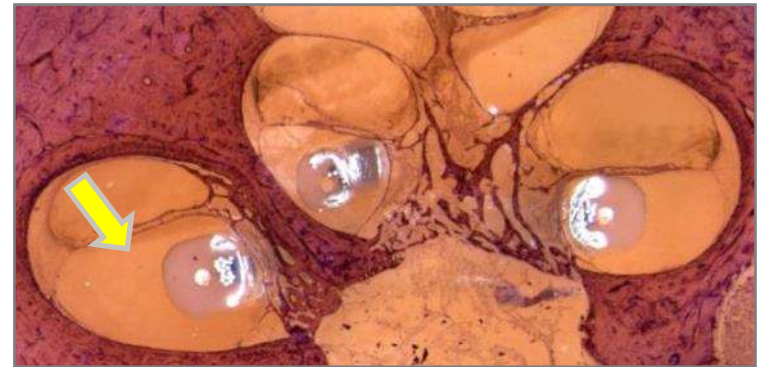
#1

1. Cochlear Nucleus Implant Reliability Report. Volume 17 | December 2018. D1593476. Cochlear Ltd; 2019.
2. Hearing Implant Reliability Reporting | MED-EL [Internet]. Medel.com. 2018 [cited 06May2019]. Available from: <https://www.medel.com/us/reliabilityreporting>
3. 2018 Global Implant Reliability Report. 027-N025-02. Advanced Bionics AG and affiliates.; 2019

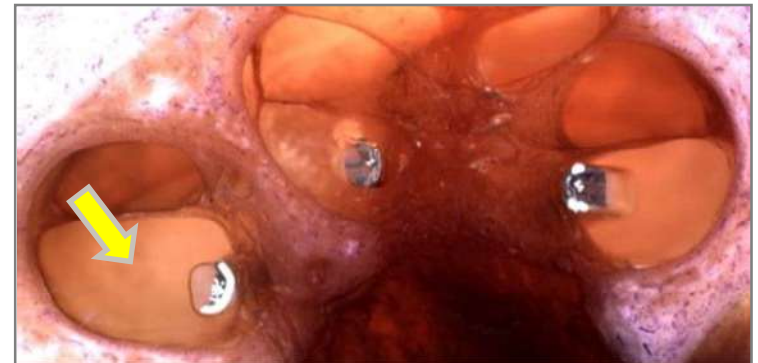
Surgery



- Outpatient procedure using general anesthesia
- Small incision with minimal (to no) hair removal
- Cochlear Nucleus implants are designed to help preserve delicate cochlear structures
- Refined surgical techniques are used
- Intra-operative implant testing may be completed to ensure device integrity



Contour Advance Electrode (CI512)



Slim Modiolar Electrode (CI532)

Video



<https://youtu.be/qO9HuQJ9Kfk>

Hear Your Way



Cochlear's sound processors and wireless accessories allow recipients to **hear their way** with products that are **small, smart and simple**



Hear Your Way



Proven Hearing Performance



Smart Sound iQ with SCAN*

- Automatically adjusts to the hearing situation
- Industry's first scene classifier
- Background Noise Reduction*
- Wind noise reduction*

Hybrid™ Hearing Advantage



Hybrid Hearing with Nucleus 7**

- All Nucleus 7 sound processors are Hybrid ready
- Amplify low frequency residual hearing and provide electrical stimulation with a single device

Uncompromised Hearing Performance



Kanso® Sound Processor

- Smart Sound iQ with SCAN
- Off-the-ear sound processor with the same hearing experience as a behind-the-ear sound processor in quiet and noise¹

¹ – Mauger SJ et al (2017) Clinical outcomes with the Kanso™ off-the-ear cochlear implant sound processor. Int Jour Audiol, 56(4), 267-276.

*SNR-NR and WNR are approved for use with any recipient ages 6 years and older, who is able to 1) complete objective speech perception testing in quiet and in noise in order to determine and document performance 2) report a preference for different program settings. SCAN is FDA approved for use with any recipient age 6 years old and older, to be used at the discretion of the recipient/parent/caregiver.

**The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality

Wear Your Way



Discreet and Comfortable



Industry's Smallest Sound Processors¹

- Nucleus 7 is 25% smaller and 24% lighter than previous processors
- Kanso is the smallest off-the-ear solution on the market²⁻³

Fits Any Lifestyle



Range of wearing options

- Retention options for extra security when needed
- Six color choices for the Nucleus 7 and 8 colors for the Kanso

Swim With Your Processor



Kanso and Nucleus 7 Aqua+

- Nucleus 7 is water resistant with rechargeable batteries (IP57)⁴
- Kanso and Nucleus 7 are water proof with the Aqua+ accessory (IP68)*

¹ - Cochlear Limited. D1190805. CP1000 Processor Size Comparison. 2017, Mar. Data on file

² - Cochlear Limited. CP950 Kanso Sound Processor User Guide. Data on file, July 2016

³ - Me-EL Medical Electronics. RONDO User Manual. Last accessed July 2016. Available at: <http://www.medel.com/int/rondo>

⁴ - Cochlear Limited, Nucleus 7 Sound Processor User Guide, 2017, Jan, Data on file.

*1. The Nucleus Aqua+ accessory is IP68 rated and is approved for use with rechargeable batteries and is not approved for use with the acoustic component. The Nucleus 7 Sound Processor is water-resistant without the Nucleus Aqua+ accessory to level of IP57 of the International Standard IEC60529 when used with rechargeable batteries. 2. The Kanso Sound Processor with the Aqua+ is water resistant to level IP68 of the International Standard IEC60529. This water protection rating means that the sound processor with the Aqua+ can be continuously submerged under water to a depth of 3 meters (9 feet and 9 inches) for up to 2 hours. This water protection only applies when you use the Aqua+ and LR44 alkaline or nickel metal hydride disposable batteries.

Connect Your Way



Direct-to-Device Streaming



Made for iPhone. Made for Android™.

- Stream phone calls, music and more directly from compatible iOS and Android devices*
- Bimodal patients with compatible ReSound hearing aids** can stream directly to both ears

Nucleus Smart App



Convenient Control

- Fine tune settings, access personalized data-logging and easily locate a missing sound processor
- Available for iPhone®, Apple Watch® and Android phones

Wireless Accessories



Wireless Freedom for a Wide Range of Devices

- Robust 2.4 GHz streaming technology
- Bimodal patients with compatible ReSound hearing aids can stream to both ears

*The Cochlear Nucleus 7 Sound Processor is compatible with Apple and Android devices, for compatibility information visit www.cochlear.com/compatibility. Compatible Android devices that enable streaming are anticipated soon.

**For compatible ReSound hearing aids visit: www.cochlear.com/nucleus/compatibility

Care Your Way



Cochlear Family



24/7 Support for Recipients

- Personalized log-in for warranty information, user guides, rehabilitation and more
- Reduces the burden on cochlear implant clinics

Wireless Programming



Program Patients Naturally

- Patients can interact with clinicians in a more natural and comfortable way
- Allows for programming in more environments

Backwards Compatibility



Hear Now. And Always.

- Cochlear has a tradition of making our sound processors compatible with older internal devices
- Support for upgrades through Cochlear customer service

Counseling for a Referral



- ✓ How a cochlear implant works
- ✓ How a cochlear implant is different from hearing aids
- ✓ Expected outcomes
- ✓ Information about current technology
- ✓ Address other concerns
 - Cost
 - Surgery
 - Residual hearing

Addressing Concerns (Activity)



What are some common concerns patients have about moving forward with a cochlear implant?

Video



<https://youtu.be/A5gTroIMmn4>

Gay: Introduction (Reminder)



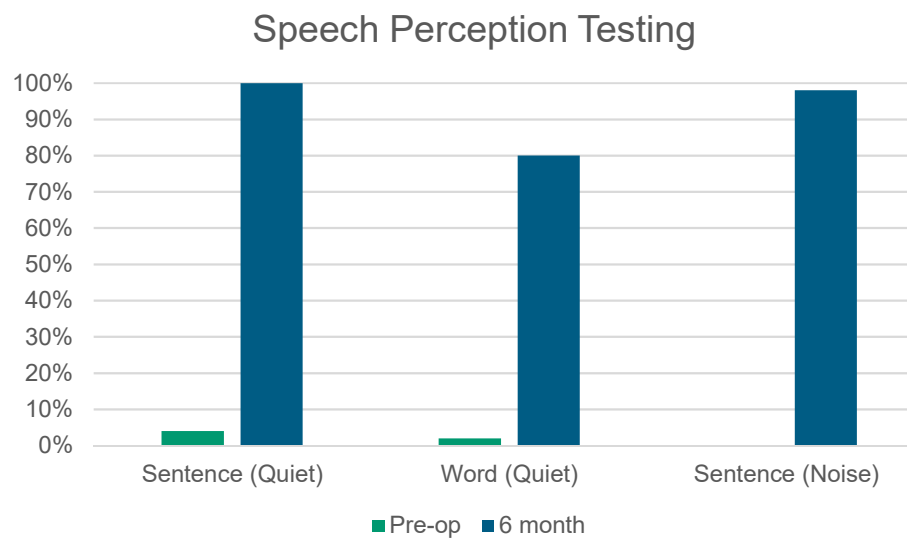
- Loving grandmother with a sudden hearing loss in both ears in her 50's
- Referred to a neurotologist after having an allergic reaction to prednisone
- Has not tried hearing aids



Gay: Outcome



Left ear implanted May 2005



Video

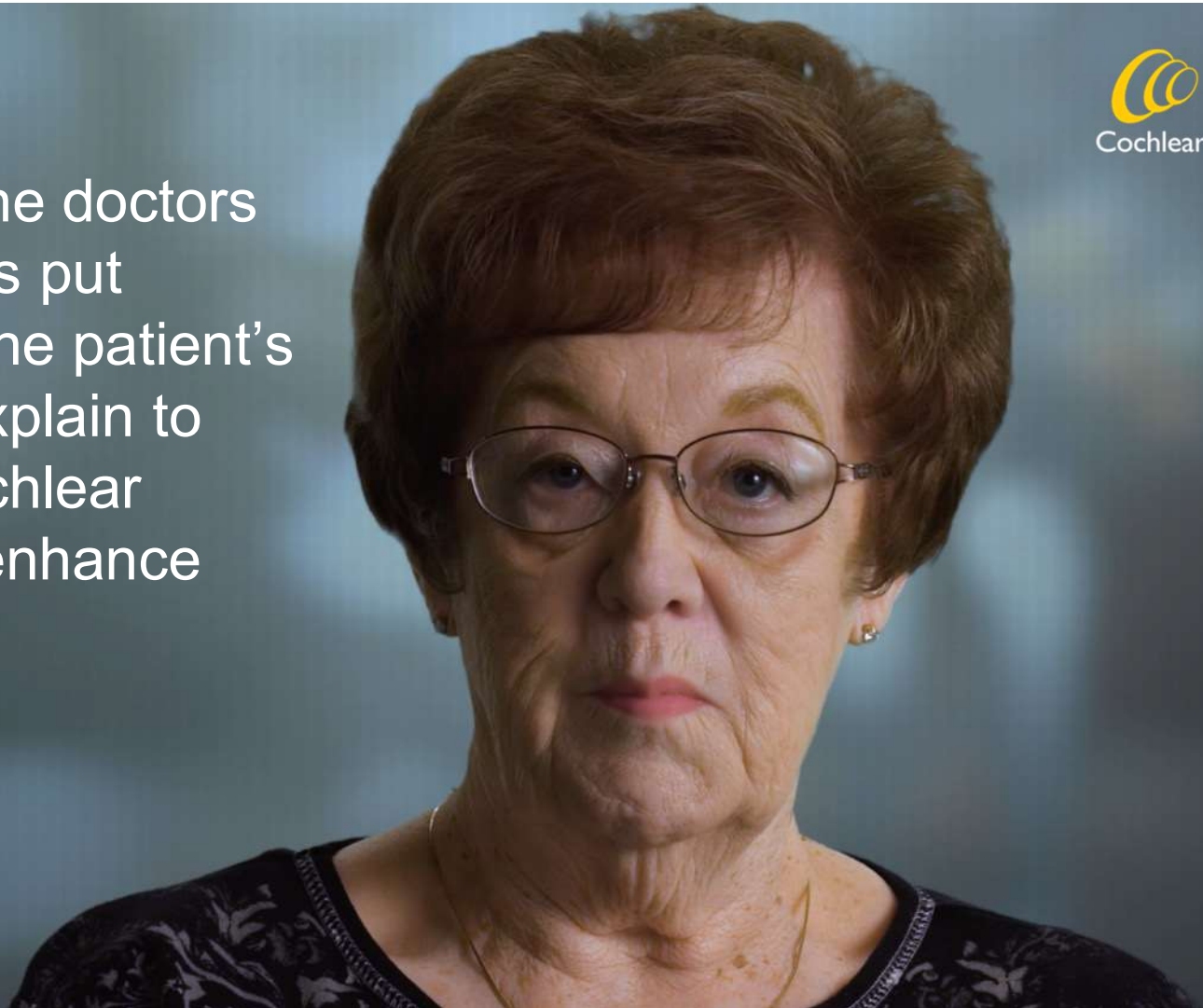


<https://youtu.be/J0xnQiONDEw>

In their own words...

“I would have the doctors and audiologists put themselves in the patient’s situation and explain to them how a cochlear implant would enhance their life”

~Gay M





Refer

/rə'fər/ verb

pass a matter to (another body, typically one with more authority or expertise) for a decision; send or direct someone to a medical specialist

Hear now. And always



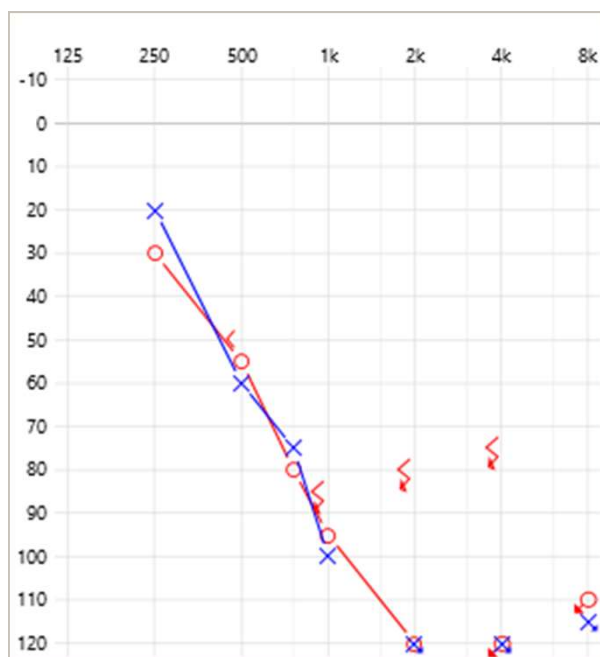
Bob T: Introduction



- Physician (Fertility specialist)
- Gradual hearing loss with tinnitus
- Now 87 years old and anxious to do anything possible to hear better



Bob T: Audiogram



Otoscopy/Tympanometry:

Normal AU

Word Recognition Scores:

RE: 18%

LE: 20%

Hearing Aids:

Frequency-lowering digital HA's; fit to NAL targets

Bob T: Discussion



- Bob has some residual hearing – does this hold you back from suggesting a referral for him? Why or why not?
- How do you know when you have tried everything you can for him prior to referring for an implant?

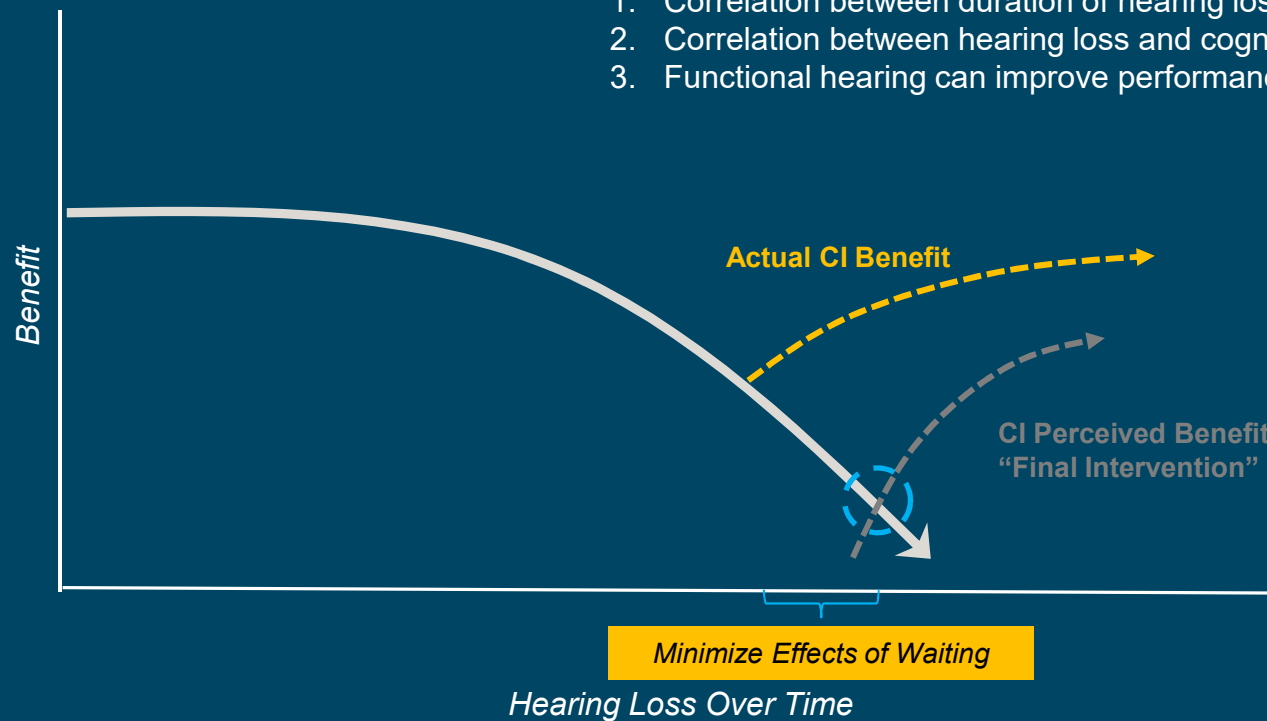


When to Refer



Don't Wait...

1. Correlation between duration of hearing loss and performance¹
2. Correlation between hearing loss and cognitive decline²
3. Functional hearing can improve performance outcomes¹



1 – Lazard et al (2012) Pre-, Per- and Postoperative factors affecting performance of postlingually deaf adults using cochlear implants: A new conceptual model over time. PLOSOne, 7(11)
2 – Livingston et al (2017) Dementia prevention, intervention and care. The Lancet Commissions, online July 20, 2017.

Breaking Down Barriers



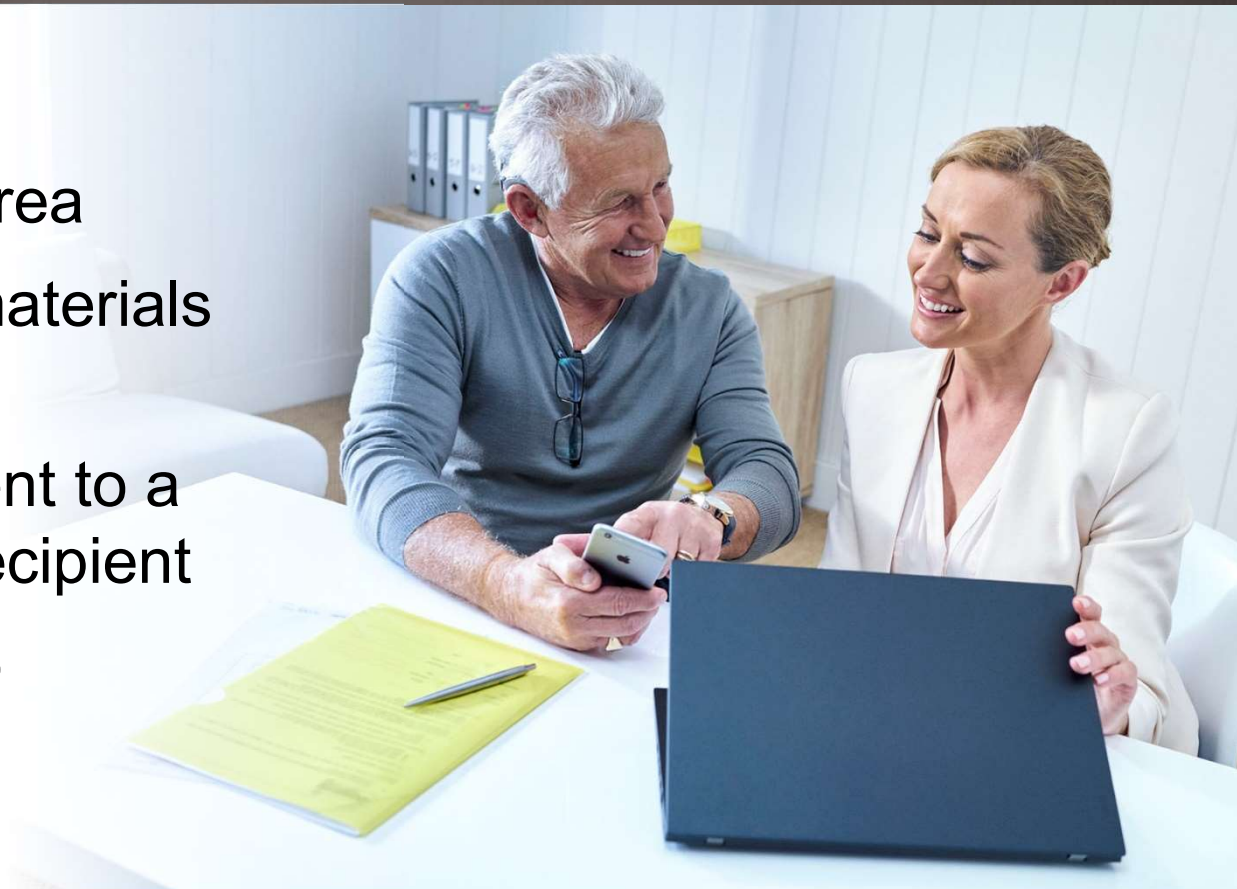
Once someone has decided to look into candidacy for a cochlear implant, what barriers may remain?



Referring Candidates



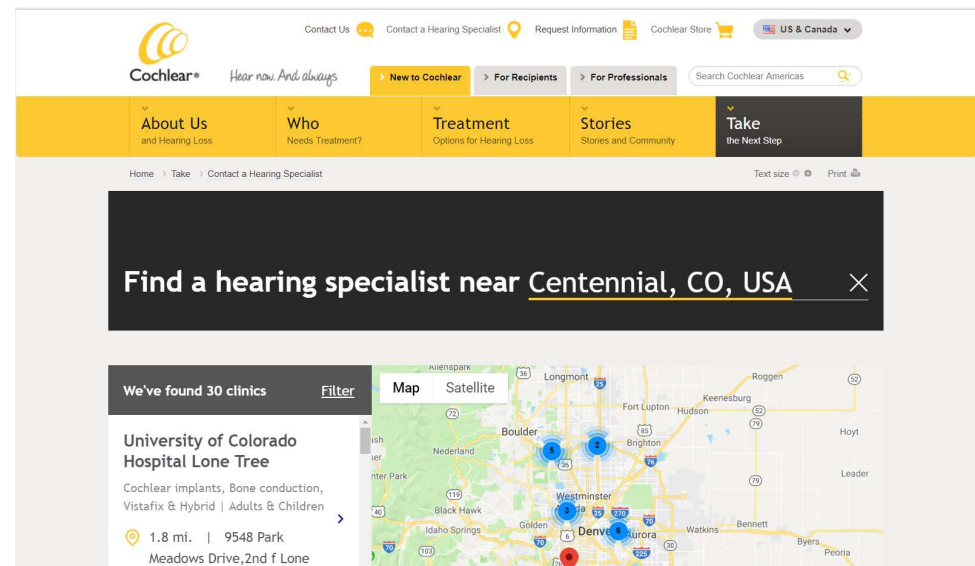
- Identify the clinical specialist in your area
- Request support materials for your patient
- Connect your patient to a cochlear implant recipient
- Schedule follow up



Cochlear Website Resources



- Request an information guide
- Find a cochlear implant specialist
- Support for candidates & recipients
- Professional resources



Connect with a Cochlear Concierge



Speak to a team of experts and audiologists, who include Nucleus® implant users, here to support and guide your patients through their hearing journey

- Discover the benefits of an implantable hearing solution
- Learn about the experiences of others using Cochlear Nucleus Implant, Cochlear Nucleus Hybrid or Baha® Systems
- Get answers to your questions

Email:
Concierge@Cochlear.com

Call:
1 (800) 216-0228

Your Local Concierge

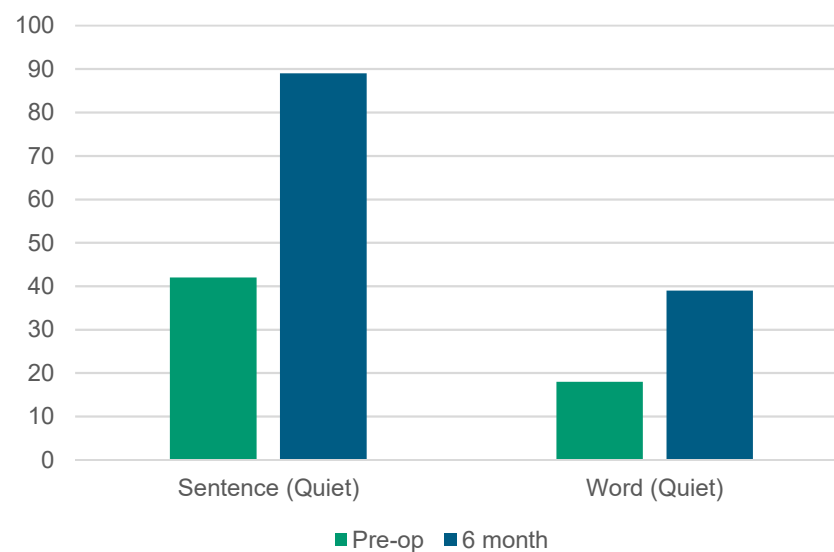


Bob T: Outcome



Right ear implanted during
Hybrid trial, Jan 2006

Speech Perception Testing



Bob T: Outcome (Cont.)



●
Post-op
Right
(unaided)

Video

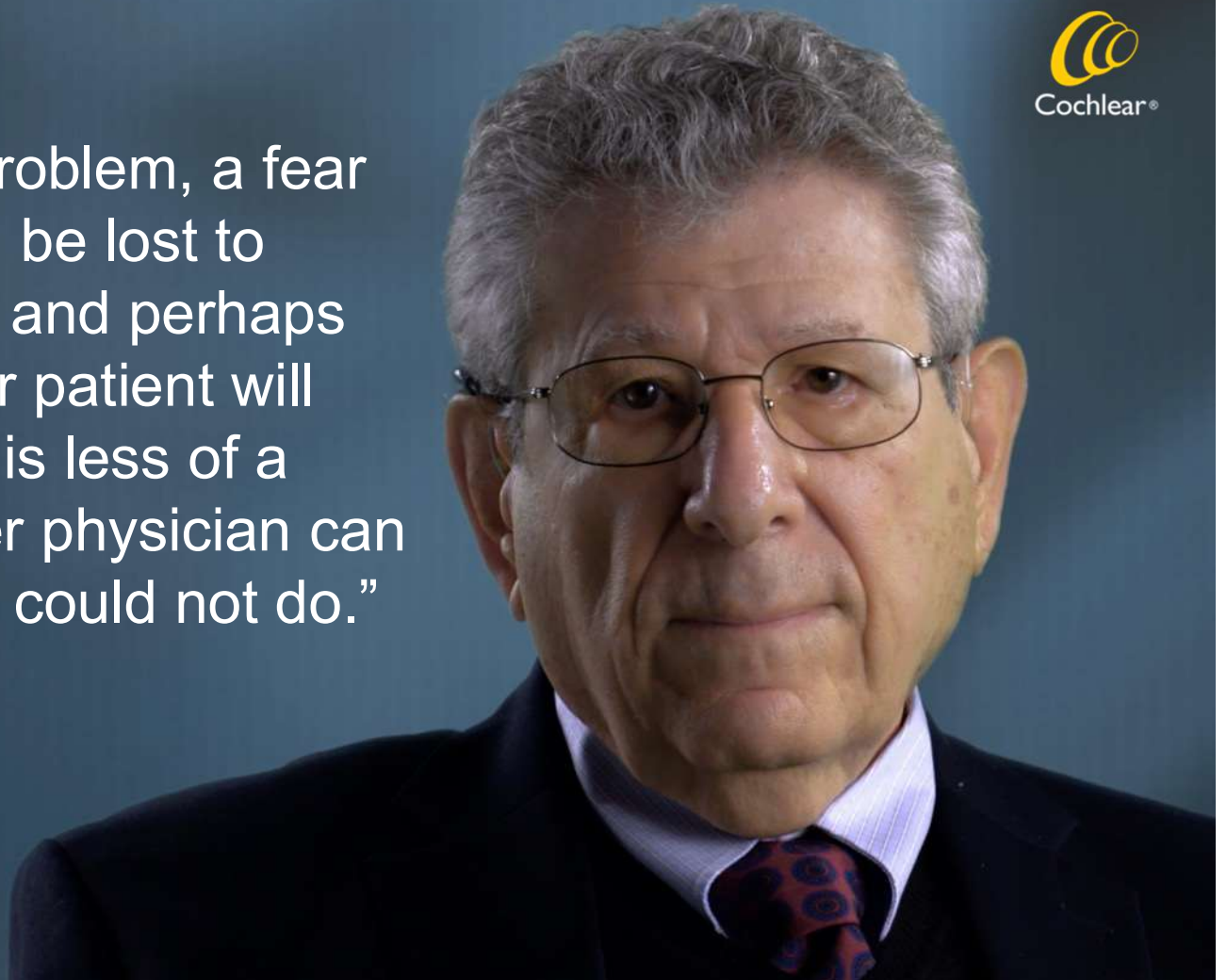


<https://youtu.be/--gHXtX5KfU>

In their own words...

“There is an ego problem, a fear that the patient will be lost to another physician, and perhaps [they] feel that their patient will feel that he or she is less of a physician if another physician can do things that they could not do.”

~Bob T





Support

/sə'pɔrt/ verb

give assistance to; enable to function or act; give approval, comfort or encouragement to

Hear now. And always



Cochlear®

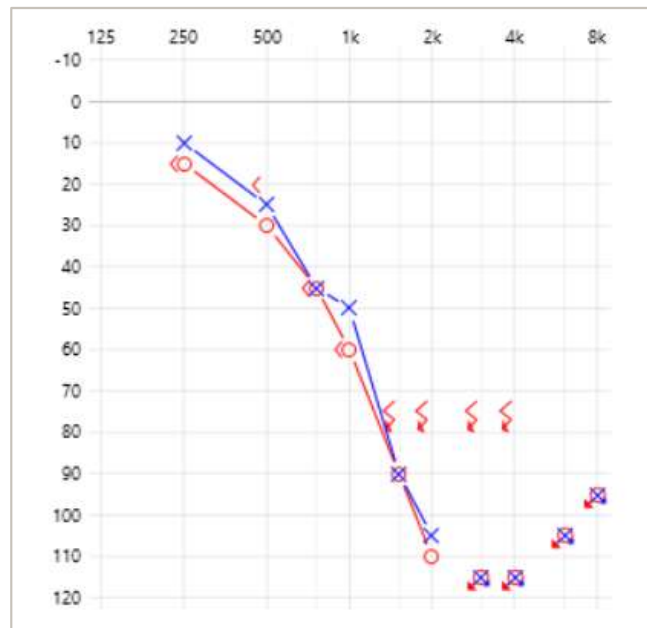
Susan H: Introduction



- Hearing is getting progressively worse
- Daughter is getting older and will be going off to college in a few years
- Purchased a very expensive pair of hearing aids that the dispenser thought would help but she is still not doing well enough to talk on the phone
- Discouraged from seeking an implant by previous audiologists and hearing aid dispensers and “horror stories” from internet groups



Susan H: Audiogram



Otoscopy & Tympanometry:

Normal AU

Word Recognition Scores:

- Right: 54% at 95 dBHL
- Left: 38% at 90 dBHL

Hearing Aids:

New digital aids with frequency-lowering technology; met targets as expected

Susan H: Discussion



- Susan has a progressive hearing loss – how do you know when/if the time is right for a cochlear implant evaluation?
- What are the consequences of waiting too long? Not waiting long enough?
- Is Susan a good candidate for bimodal use? Why or why not?



Ongoing Support



- Monitoring for candidacy if not a candidate today
- Managing the hearing aid on the opposite ear if a unilateral implant is received (ie, Bimodal recipient)
- Offering cochlear implant programming services

Ongoing Education



Talking about cochlear implants if the person is NOT a candidate but may be one in the future...

- When would you start talking about implants?
- How do you explain they are not yet a candidate?
- How do you know when to send them for an evaluation?

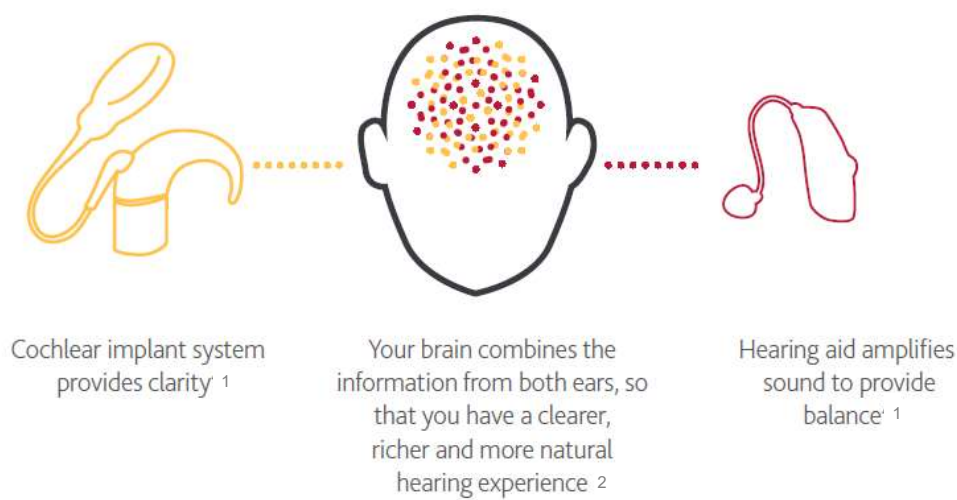
Hearing with Two Ears



- Recipients with residual hearing in the opposite ear will often continue to use a hearing aid with their cochlear implant
- Considerations:
 - Deciding between Bilateral CI vs Bimodal
 - Type of hearing aid in the opposite ear
 - How to program the hearing aid
 - Many Bimodal recipients will continue to get care for their hearing aid from their local professional



Benefits of Bimodal Hearing



Potential benefits:

- Better hearing performance in background noise¹
- Music appreciation²

Up to 70% of CI users are bimodal³

1 - Ching T, van Wanrooy E, Dillon H. Binaural-bimodal fitting or bilateral implantation for managing severe to profound deafness: a review. *Trends Amplif.* 2007;11;161-192.

2 - Potts LG, Skinner MW, Litovsky RA, Strube MJ, Kuk F. Recognition and localization of speech by adult cochlear implant recipients wearing a digital hearing aid in the nonimplanted ear. *Journal of the American Academy of Audiology*/Volume 20, Number 6, 2009.

3 - Holder, J., et al. (2018). Current Profile of Adults Presenting for Preoperative Cochlear Implant Evaluation. *Trends in Hearing.* Volume 22:1-16

Hearing Satisfaction after Cochlear Implant¹



Bilateral Hearing Aids (pre-CI)
(Appropriately fit HAs)

Smart Bimodal* (after CI)
(Nucleus 7 SP + ReSound HA)



HEARING PERFORMANCE
Satisfied or Very Satisfied

9%

95%



Ability to understand
what is said on TV

13%

76%



Ability to understand
Conversations in a small group

8%

79%



Hearing performance in
background noise

2%

58%



Ability to listen to
and appreciate music

13%

68%



Ability to understand
people on the phone

6%

71%

1- Clinical Evaluation of the Cochlear Nucleus CI532 Cochlear Implants in Adults Investigator Meeting. 2019 Apr.

* To view smart bimodal hearing solution compatibility
visit <http://www.cochlear.com/nucleus/compatibility>

Fitting Bimodal Technology



Cochlear's partnership with ReSound offers the industry's most comprehensive portfolio of Smart Bimodal Solutions to best meet patient's needs

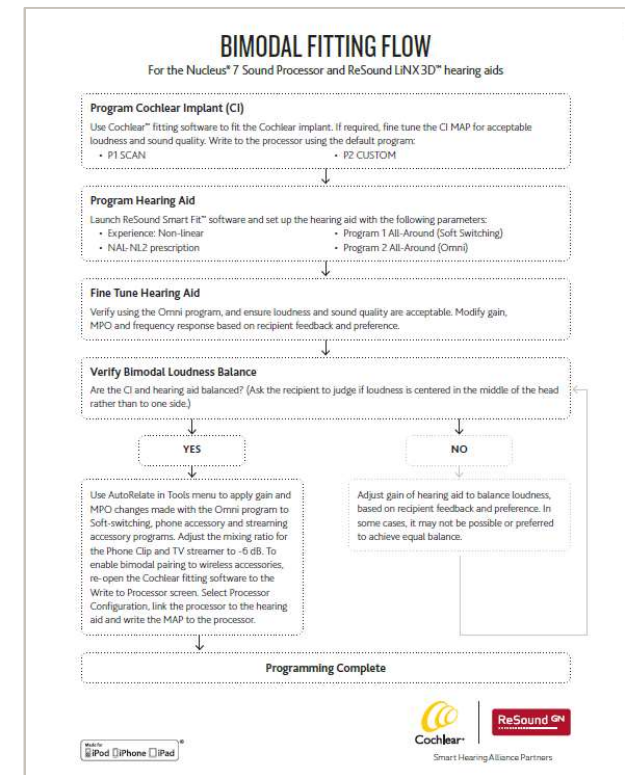
- Recipients can take advantage of made for iPhone technology and True Wireless™ accessories in both ears
- Centralized customer support for bimodal recipients
- Smart Hearing Alliance pricing available for recipients of Cochlear technology
- A complete list of compatible ReSound hearing aids is available at: www.cochlear.com



Fitting Bimodal Technology



- Bimodal fitting recommendations are available
- Recommendations given for directional microphone settings, mixing ratio and balancing gain
- Linking is done through cochlear implant software



Offer Cochlear Implant Programming



Cochlear Provider Network (CPN)

- Connects independent dispensing Audiologists with clinical specialists
- Enhance your clinic's visibility with specialized offerings
- Become a “full hearing solutions” expert
- Industry-leading support from Cochlear

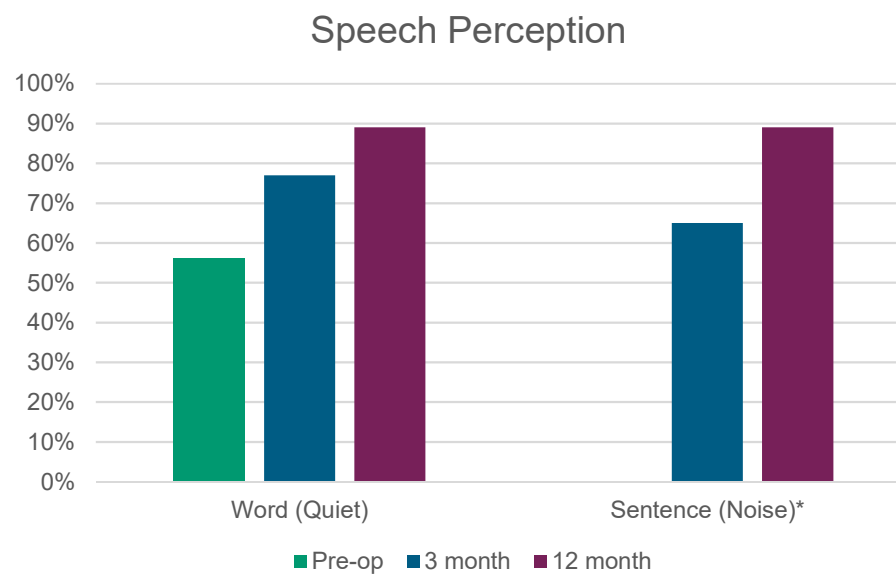


Learn More: (888) 257-6479 or CPN@Cochlear.com

Susan H: Outcome

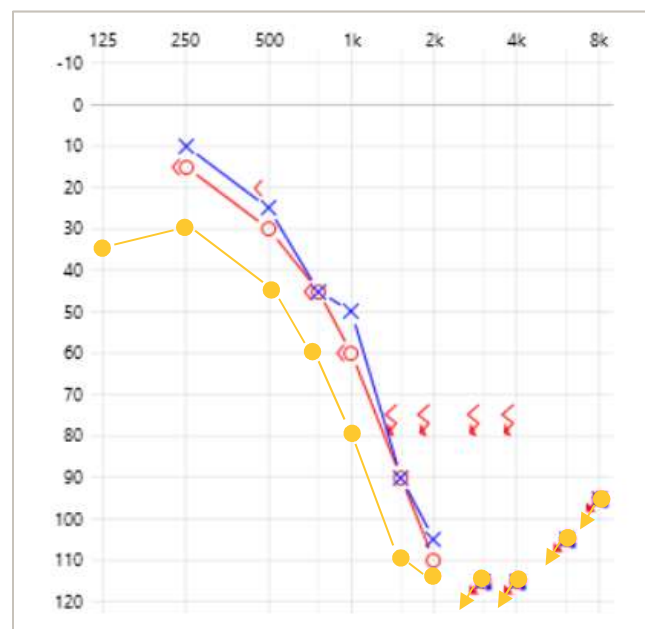


Monitored for 3 years, implanted in 2017 (Right Ear) when Hybrid became available



*Bimodal

Susan H: Outcome (cont.)



●
Post-op
Right
(unaided)

Video



- <https://youtu.be/hXFgFx64oEY>

In their own words...

“Get your patients in the booth periodically and keep a close eye on those word scores....I was not topping 40-45 [percent correct] and still no conversation about cochlear implants.”

~Susan H



Life SAVERS



See
Assess
advise
Engage
Refer
Support

Life SAVERS



SEE: Recognize when someone is a candidate for implantable technology

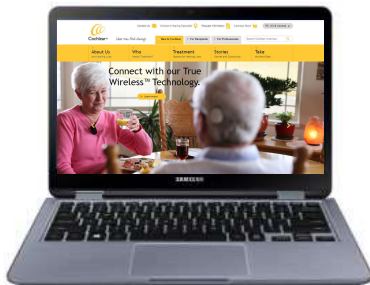
ASSESS: Testing to confirm benefit and candidacy

ADVISE & ENGAGE:
Explain the benefit of implantable technology

REFER: Send to the right place at the right time

SUPPORT: Monitor and assist after referral

Contact Us

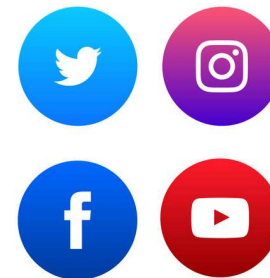


www.cochlear.com/us



procare@cochlear.com

(877) 883-3101



*Follow us on Twitter,
Instagram and Facebook
Find videos for you or your
patients on YouTube*

Closing Video



<https://youtu.be/DJLmleOEOvE>



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